

**The Efficacy of Guided-Imagery/Visualization and Journaling in  
Patients with Irritable Bowel Syndrome**

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The work reported in this thesis is original and carried out by me solely, except for the acknowledged direction and assistance gratefully received from colleagues and mentors.

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## ABSTRACT

A guided-imagery/visualization and journaling protocol, as part of a multi-component treatment program, was tested as a treatment for irritable bowel syndrome (IBS)—a functional disorder of the lower gastrointestinal tract characterized by abdominal pain and altered bowel habits. Participants included 41 adults who self-selected into an eight-week meditation/multi-component condition or wait-list condition. Twenty patients completed treatment and follow-up (N=20). Patients in the treatment group met twice a week for four weeks for hour-long sessions in which the first half-hour was devoted to the guided-imagery/visualization and journaling method. This segment of the session was followed by a half-hour of support and educational group activities. Composite primary symptom reduction (CPSR) scores, IBS-quality of life (IBS-QOL) ratings, and individual symptom reduction scores were the dependent measures and were assessed prior to treatment and at two weeks post-treatment. Within group pre-post comparisons revealed significant improvements for abdominal pain ( $F(1, 39) = 23.56, p < .001$ ), tenderness ( $F(1, 39) = 39.62, p < .001$ ), bloating ( $F(1, 39) = 44.73, p < .001$ ), belching ( $F(1, 39) = 38.13, p < .001$ ), and flatulence ( $F(1, 39) = 34.07, p < .001$ ). Additionally, a two-way repeated measures analysis of variance and follow-up comparison examining overall quality of life (IBS-QOL) found that a multi-component treatment program including a guided imagery/visualization protocol was superior to no intervention. Implications and discussions are included for further research using guided imagery and visualization as part of a multi-component treatment program for reducing symptoms associated with IBS.

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## INTRODUCTION

### **Prevalence and Epidemiology**

Irritable bowel syndrome (IBS) is a functional gastrointestinal (GI) disorder with worldwide prevalence rates ranging between 9 and 23%.<sup>1</sup> It is the most frequently diagnosed GI disorder in both clinical settings and the general population,<sup>2</sup> accounting for an estimated 28% of patients seen by gastroenterologists and approximately 12% of those seen in primary care settings.<sup>3</sup> In comparison to other diseases in the United States, IBS is more prevalent than diabetes (3%), asthma (4%), heart disease (8%), and hypertension (11%).<sup>4</sup> IBS affects an estimated 10-20% of adolescents and adults, with 14-24% incidence in females and 5-19% in males<sup>5</sup>—a discrepancy that is also common to males in India and Japan<sup>6</sup> and which may reflect increased healthcare-seeking behavior in women.<sup>7</sup> The overall prevalence of IBS fluctuates with age; a prevalence rate of 14% occurs in individuals between 15 and 44 years old, and decreases to approximately 9% after age 45.<sup>8</sup>

### **Psychosocial Influences**

Not all patients with symptoms consistent with IBS seek health care. Based on several epidemiologic studies, only 20-50% of IBS patients seek medical attention at some point in their lives.<sup>9</sup> Abdominal pain<sup>10</sup> appears to be the primary symptom predicting care-seeking behavior. However, in addition to GI symptoms, cultural, economic, and psychosocial factors likely play a part in care-seeking behavior.<sup>11</sup> In fact, a recent study of patients with moderate to severe IBS revealed that pain reports are more frequently related to psychosocial factors than to physiologic factors. In several studies,

psychosocial factors determined patients' healthcare utilization as well as overall quality of life.<sup>12</sup>

Although psychiatric illness does not cause IBS,<sup>13</sup> it may be related to the number of sufferers who seek care. Almost 50% of IBS patients<sup>14</sup> who seek medical care meet with criteria for psychiatric diagnoses, with depression, anxiety, and panic disorder appearing most frequently.<sup>15</sup> However, the psychosocial features of individuals with IBS who do *not* seek healthcare are no different from those of the general population.<sup>16</sup>

### **Changing Identity**

Over the last two decades, citations of IBS have increased ten-fold,<sup>17</sup> reflecting increasing incidence of and interest in this disorder. The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) and various gastroenterologic societies have increased exposure of IBS through education and research programs. Most recently, the pharmaceutical industry has begun international marketing campaigns related to new enteric receptor agents.<sup>18</sup>

Nevertheless, the etiology and development of IBS are still puzzling, as no distinctive morphologic, physiologic or pathologic patterns have been identified. Without these biological markers, biomedical physicians are ill-equipped to diagnose or treat this disorder.

Within the last decade, the biopsychosocial model of illness and disease<sup>19</sup> has characterized IBS as a "discrete clinical entity that can be diagnosed and treated in a positive and empiric manner."<sup>20</sup> Additionally, the refinement of investigative methods, including positron-emission tomography (PET), functional magnetic resonance imaging (*f*MRI), the electronic barostat,<sup>21</sup> the IBS-quality of life (IBS-QOL)<sup>22</sup> measure, and the

composite primary symptom reduction (CPSR)<sup>23</sup> score, are helping to differentiate, diagnose, and treat patients suffering with IBS.

These processes have allowed clinicians to sort out the mechanisms by which physiologic, psychological, behavioral, and environmental factors interact simultaneously and at multiple levels to produce this disorder. The relative contributions of these factors vary between patients and within individual patients over time, and can determine the severity of the symptoms and the overall clinical presentation.

## **History**

Despite the broadening awareness and increased focus on IBS in this country, physicians have been cognizant of its symptoms for over a century. In 1849, the first reports appeared in medical journals describing symptoms consistent with IBS, including the following diagnosis by W. Cummings: “The bowels are at one time constipated, at another lax in the same person. How this disease has two such different symptoms, I do not profess to explain.”<sup>24</sup> Several terms describing IBS became popular in the early 20<sup>th</sup> century including, “spastic colon” (which is still used today), “neurogenic mucous colitis,” and “irritable colon syndrome.”<sup>25</sup> In 1967, the term “irritable bowel syndrome” was introduced as a “functional enteropathy characterized by a combination of symptoms including abdominal pain, diarrhea, constipation, ‘dyschezia,’ and passage of mucus in the stool.”<sup>26</sup>

## **Definition**

According to Rome II<sup>27</sup> criteria, IBS is a chronic functional bowel disorder characterized by abdominal pain or discomfort and alterations in bowel habits<sup>28</sup> such as diarrhea, constipation, or alternating diarrhea and constipation. Symptoms must be

present “at least 12 weeks or more, which need not be consecutive, in the preceding 12 months.”<sup>29</sup>

The Rome II criteria was developed from a succession of diagnostic tools dating back twenty years and based on the original Manning criteria.<sup>30</sup> This original symptom profile was used extensively in epidemiologic and clinical studies, but was later found incapable of differentiating IBS from organic lower GI tract diseases (i.e., Crohn’s disease and Ulcerative colitis). The Manning criteria was supplanted by Rome I<sup>31</sup> and later simplified into Rome II.

The use of symptom-based criteria allows for positive diagnosing of IBS and reduction of lengthy and painful diagnostic testing to exclude for other conditions. These criteria also serve to legitimize the disorder to patients and clinicians. However, developing diagnostic criteria is difficult based on the absence of specific physical or biochemical findings, the variability of symptoms (with regard to pattern, location, and severity) among patients or in the same patient over time, and the “inconsistency of the clinical course.”<sup>32</sup>

### **Pathophysiology**

The pathophysiology of IBS remains unknown.<sup>33</sup> However, the data suggests that symptoms most likely arise from a complex biopsychosocial interaction of physiological, psychological, and social factors.<sup>34</sup> An important component of this model is a chronically enhanced stress responsiveness in patients with IBS and all functional GI disorders. The biologic and psychologic factors that lead to or aggravate IBS are not mutually exclusive or well understood.<sup>35</sup> Although a particular dysfunction may predominate, more than one factor may be operating in any given individual.<sup>36</sup>

The biopsychosocial disorder involves dysregulation of the nervous system, altered intestinal motility, and increased visceral sensitivity.<sup>37</sup> All of these result from dysregulation of the bidirectional communication between the gut and the brain, modulated by various psychosocial and environmental factors.<sup>38</sup> Numerous neurotransmitters (between one and 2,000, approximately)<sup>39</sup> form a communication system between the CNS (brain and spinal cord) and the ENS (esophagus, stomach, small intestine, and colon), regulating both GI activities and mood states.<sup>40</sup> “When one system gets upset, the other one does too. Your gut can literally drive your brain crazy, and vice versa.”<sup>41</sup>

### **Treatment and Management of IBS**

Current treatment of IBS includes both pharmacologic and non-pharmacologic therapies, including diet and lifestyle modifications and various psychotherapeutic and behavioral treatments.

Little evidence exists for the efficacy of pharmaceutical agents used in routine treatment of IBS.<sup>42</sup> Two reviews recently published concluded that most treatment studies for IBS were of poor quality and only a few were randomized controlled trials.<sup>43</sup> Some trials did show that specific drug therapies improved a particular symptom of IBS, but no one drug was effective in treating all symptoms.<sup>44</sup>

Furthermore, the placebo effect in previous IBS drug studies has been significant, reaching 70% and higher.<sup>45</sup> Some researchers have suggested that the extra care and attention given to these patients by their physicians was responsible for the higher percentages.<sup>46</sup>

As far as psychological interventions are concerned, the three main treatments used for IBS patients are cognitive behavioral therapy, psychodynamic therapy, and relaxation training, including hypnotherapy and biofeedback.<sup>47</sup> According to the literature, these therapies are most successful for patients presenting with intermittent pain exacerbated by stress, bowel discomfort of a short duration, and overt psychiatric symptoms.<sup>48</sup> However, with the exception of hypnotherapy (which is most effective for pain reduction), none of these individual therapies appear to be effective for IBS symptom-reduction.<sup>49</sup>

### **Statement of the Problem**

#### Justification of the Study:

Physicians and researchers have often underestimated the effect that IBS has on its sufferers' quality of life, as these individuals do not face a life-threatening disease or overt physical disability.<sup>50</sup> For the same reasons, friends and family members of IBS sufferers also tend to underestimate the impact of the disorder on their loved ones' life.<sup>51</sup>

Although IBS is not life-threatening, it is important to recognize the dramatic impact this disorder has on overall quality of life. Studies have shown that IBS can effect employment, leisure activities, travel, sleep, and sexual function. In fact, patients with IBS have a poorer health-related quality of life<sup>52</sup> than do patients with migraines, asthma, gastroesophageal reflux disease (GERD), Type II diabetes, or even life-threatening diseases such as diabetes mellitus and end state renal disease.<sup>53</sup> Furthermore, a review by Wells, Hahn and Whorwell indicates that impairment in several aspects of life, such as energy level, social functioning, and general health, is similar to that of clinical depression.<sup>54</sup>

Additionally, many of those with IBS present with coexisting non-GI and GI physical symptoms which significantly worsen quality of life, including GERD, nausea, globus sensation (lump in the throat), early satiety, and noncardiac chest pain.<sup>55</sup> Furthermore, IBS is often associated with disorders such as fibromyalgia, chronic fatigue syndrome,<sup>56</sup> and interstitial cystitis (in females),<sup>57</sup> all of which tend to worsen quality of life.<sup>58</sup>

Since most primary care physicians are not well-acquainted with various aspects of IBS or the Rome II criteria, patients face the additional burden of undergoing numerous invasive, painful, time-consuming exams and GI procedures to exclude for biochemical, structural, infectious, or inflammatory disease processes. For some patients, it may take several years and a series of different doctors before a diagnosis is offered.<sup>59</sup>

Unfortunately, many doctors do not recognize IBS as a legitimate disorder, and dismiss patients and their symptoms as psychosomatic—not in the holistic sense of the word (“mind and body as one”), but rather as an implication that patients are imagining their symptoms. From a biomedical point of view, the doctor is correct. However, most chronic gastrointestinal illnesses cannot be explained in terms of “observable disease,” and require a biopsychosocial model for diagnosis and management.<sup>60</sup>

The biopsychosocial model proposes that illness and disease result from interacting systems at the cellular, tissue, organismal, interpersonal, and environmental levels.<sup>61</sup> In terms of diagnosing a patient, a biopsychosocial model involves bidirectional communication between physician and patient.<sup>62</sup> Factors involving diet and lifestyle, stress levels, social support, life trauma, and coping mechanisms are evaluated to determine what part (if any) they play in the patient’s symptom-expression.<sup>63</sup> “For

treatment, one should look at the severity of the condition, the biological and psychosocial factors that may be influencing the nature and severity of the symptoms, and let one's treatments be guided by that."<sup>64</sup>

Few biopsychosocial medical models exist in this country.<sup>65</sup> Managed health care, rising insurance rates, and medical malpractice are inhibiting healthcare institutions from evolving into anything other than biomedical models of standardized care.<sup>66</sup> In fact, most medical offices are running on 15-minute exam appointments in order to keep costs down and pay the overhead.<sup>67</sup> With this in mind, both IBS patients and non-patients (those who meet the criteria for IBS without a medical diagnosis) must self-manage symptoms using their own biopsychosocial paradigm.<sup>68</sup> This involves carefully tracking foods, environmental and internal stressors, or other factors that exacerbate conditions; keeping a diary is advisable.<sup>69</sup>

It is equally important for individuals with IBS to learn how digestive and nervous system interactions—i.e. the brain/gut connection—affect mood, digestion, behavior, negative cognitions, etc.<sup>70</sup> Then, utilizing various personalized therapies, an individual can learn to observe, monitor and control these processes before IBS manages to take control.<sup>71</sup> Through better food choices and relaxation/meditation exercises including guided imagery, journaling, progressive muscle relaxation, deep breathing exercises, and yoga, individuals with IBS can learn to inhibit daily stress responses and improve their quality of life.<sup>72</sup>

Chronic illness can lead to loss of physical conditioning, fatigue, anxiety, and feelings of helplessness.<sup>73</sup> Breaking this cycle takes commitment and self-management.

Different ways to self manage chronic illness in order to control or improve IBS symptoms include: <sup>74</sup>

- Developing problem solving skills and healthy responses to trends in disease
- Overcoming physical/emotional problems
- Maintaining exercise and nutrition program
- Learning relaxation techniques to deal effectively with stress
- Locating and using community resources
- Talking about illness with friends and family
- Changing social activities if necessary
- Taking control of IBS before it takes control

### **Present Study**

The present study sought to reduce IBS symptomology using guided-imagery/visualization and journaling as described in the book and CD *Releasing the Inner Magician, Ways to Find a Peaceful and Happy Life*,<sup>75</sup> by Deborah Sandella, Ph.D.—heretofore known as the RIM method. In general, the RIM method is a synthesis of Eriksonian Hypnosis, interactive guided imagery, somatic therapy, and journaling.<sup>76</sup> Group discussion/support group sessions and patient education classes were combined with the RIM method to provide a multi-component treatment program for the reduction of IBS symptoms in patients diagnosed with this disorder using Rome II criteria.

Specifically, GIV allows for purposeful use of the imagination that automatically alters consciousness, providing evocative, multi-sensory meditation that causes deep shifts in body, psyche, and spirit.<sup>77</sup>

Words, images and music are integrated into meditations to mobilize neurophysiology and biochemistry, to produce healing waves that surge through the body, soothing and nurturing every cell from top to bottom.<sup>78</sup>

The RIM method utilizes these GIV principles and goes a step further by tapping into the unconscious mind to bring new insight into awareness; old images are transformed into new images and reintegrated into cellular body memory.<sup>79</sup>

The Eriksonian aspects of the meditations are those parts that allow the listener to speak the language of the unconscious or soul (that is, imagery or imagination).<sup>80</sup>

Through these meditations, symbolic images that reside deep within the listener's psyche are resurrected.<sup>81</sup> The style of guiding is interactive, i.e., rather than using a formula script that provides specific images,<sup>82</sup> the listener is asked to "invite" to the surface images that are personally relevant.

The somatic aspects of the RIM meditations are those segments that ask the listener to find or somatize where in their body he or she is carrying feelings.<sup>83</sup> Feelings are then released through the imagination and new images are free to fill the ensuing space.<sup>84</sup> The RIM method varies from interactive guided imagery in that it does not use an active dyad (client/therapist).<sup>85</sup> Although a "voice" leads the meditation, no suggestions are purposefully interjected; no pointed questions are asked. The patient/listener is encouraged to free his or her unconscious without fear of the introduction of intrusive suggestions into the subconscious.<sup>86</sup>

IBS patient-education and support group discussions preceded journaling. These biweekly, multi-component treatment sessions assisted individuals in consciously confronting their illness and acquiring biologic, psychologic, social, spiritual, and behavioral skills required for self-managing and controlling symptoms.<sup>87</sup>

Two groups of individuals aged 18-65 who were diagnosed with IBS using the Rome II criteria<sup>88</sup> elected into an eight-week treatment or control condition to determine the following hypotheses:

1. Does the use of guided-imagery/visualization and journaling as part of the RIM multi-component treatment program contribute to the reduction of primary symptoms (including diarrhea, constipation, and abdominal pain, as described in the Rome II criteria) in individuals with IBS?
2. Does the use of guided-imagery/visualization and journaling as part of the RIM multi-component treatment program contribute to the reduction of secondary symptoms (including bloating, flatulence, and belching as described in the Rome II criteria) in individuals with IBS?
3. Does the use of guided-imagery/visualization and journaling as found in the RIM multi-component treatment program improve quality of life for individuals with IBS?

To answer these research questions, a quasi-experimental, repeated-measures design was used.<sup>89</sup> A one-tailed independent t-test<sup>90</sup> compared the treatment CPSR scores. Two-way repeated measures analysis of variance<sup>91</sup> compared individual gastrointestinal (GI) symptom reduction scores between treatment and control groups across time. Two-way repeated measures ANOVA<sup>92</sup> was also used to test the IBS-QOL overall and subscales.

IBS has been described as faulty communication between the mind and the body.<sup>93</sup> It appears that “multilingual” neurotransmitters suddenly lose their ability to translate conversations between the brain and the gut.<sup>94</sup> Increasing numbers of IBS

patients are turning to alternative therapies to reduce symptoms and feel better, as there are no prescribed therapies addressing the various symptoms inherent in this disorder.<sup>95</sup>

The multi-component treatment program—especially the RIM method—introduces a spiritual language understood by all things in nature. It needs no translation; this is the language of mind, body, and spirit—the universal language of wholeness.

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<sup>1</sup> D.A. Drossman et al., *Rome II: The Functional Gastrointestinal Disorders*, (McClean: Degnon Associates, 2000).

<sup>2</sup> Ibid.

<sup>3</sup> Ibid.

<sup>4</sup> P.F. Adams PF and V. Benson, “Current Estimates from National Health Interview Survey,” *Vital Health Statistics 10*, 181 (December 1991).

<sup>5</sup> D.A. Drossman et al., *Rome II: The Functional Gastrointestinal Disorders*, (McClean: Degnon Associates, 2000).

<sup>6</sup> M. Camilleri and M.G. Choi, “Review Article: Irritable Bowel Syndrome,” *Alimentary Pharmacological Therapeutics*, 11 (1997): 3-15.

<sup>7</sup> G.F. Longstreth and G. Wolde-Tsadik. “Irritable Bowel-Type Symptoms in HMO Examinees: Prevalence, Demographics and Clinical Correlates,” *Digestive Disease Science*, 38 (1993): 1581-9.

<sup>8</sup> G.F. Longstreth and G. Wolde-Tsadik, “Irritable Bowel-Type Symptoms in HMO Examinees: Prevalence, Demographics and Clinical Correlates,” 1581-9.

<sup>9</sup> Ibid.

<sup>10</sup> B. Hahn et al., “Irritable Bowel Syndrome Symptom Patterns: Frequency, Duration and Severity,” *Digestive Disease Science*, 43 (1998): 2715-8.

<sup>11</sup> D.A. Drossman et al., “The Influence of Psychosocial Factors on Health Status in Patients with Functional Bowel Disorders,” *Gastroenterology*, 118 (2000): A398.

<sup>12</sup> Ibid.

<sup>13</sup> Ibid.

<sup>14</sup> E.B. Blanchard, L Scharff, S Schwarz et al., “The role of anxiety and depression in the irritable bowel syndrome. Behavioral Research Therapy 28 (1990): 401-405

<sup>15</sup> Ibid.

<sup>16</sup> Drossman, DA, DC McKee, RS Sandler, CM Mitchell, CM Cramer, BC Loman, et al. “Psychosocial factors in the irritable bowel syndrome: A multivariate study of patients and non-patients with irritable bowel syndrome,” *Gastroenterology*, 95 (1988): 701-708

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## **CHAPTER 1: LITERARY REVIEW**

Irritable bowel syndrome (IBS) is a gastrointestinal (GI) disorder that manifests itself in chronic or recurrent symptoms of abdominal pain associated with disturbed bowel function.<sup>1</sup> Symptoms include diarrhea and/or constipation, bloatedness, and distension. IBS affects between 11 and 22% of American adults between the ages of 30 and 64,<sup>2</sup> with a 2:1 predominance of females over males.<sup>3</sup> It is not known if this larger female prevalence represents a reporting bias or a biological difference.<sup>4</sup> Similar to other functional disorders, IBS may be influenced by a variety of cultural, social, environmental, and behavioral factors.<sup>5</sup> In addition, diet, hormonal influences (e.g. menses), psychological stress, and activity levels may exacerbate IBS symptoms.<sup>6</sup>

IBS is associated with significant disability and health care costs approaching \$8 billion per year.<sup>7</sup> While fewer than 10% of persons with IBS seek medical attention, the disorder is still responsible for more than 3 million physician visits per year—12% to primary care providers and 25-50% to gastroenterologists—making IBS the most common GI complaint and diagnosis.<sup>8</sup>

Due in part to its unknown etiology<sup>9</sup> and to conflicting views of pathophysiology,<sup>10</sup> IBS has proved difficult to understand and manage despite its high rate of occurrence. Until recently, IBS was a wastebasket diagnosis given to patients with unexplained gastrointestinal symptoms.<sup>11</sup> It was considered “a diagnosis of exclusion”<sup>12</sup> whenever extensive work-up for organic disease yielded no conclusion. Patients were routinely told that their symptoms were imagined<sup>13</sup> and that nothing could

be done. Consequently, IBS sufferers have become a difficult population to locate and/or treat.

In a literature search conducted to identify randomized controlled trials of IBS treatments, only six out of 45<sup>14</sup> fulfilled all three criteria used to assess quality of randomized controlled trials, including adequate description of randomization, double blinding, and description of withdrawals and dropouts.<sup>15</sup> Further review of randomized controlled trials that used behavioral or relaxation treatments as interventions for IBS revealed extremely small sample sizes. Of the twenty studies reviewed, only three had sample sizes larger than N=30.<sup>16</sup> Of those, only one had a sample size larger than N=50.<sup>17</sup>

To improve the recognition and diagnosis of IBS, a classification system known as the Rome criteria for 24 functional GI disorders was developed. It defined IBS as a “combination of chronic or recurrent gastrointestinal symptoms not explained by structural or biochemical abnormalities and attributed to the intestines and associated with symptoms of pain and disturbed defecation and/or symptoms of bloatedness and distension.”<sup>18</sup> Specifically, this criterion includes symptoms of abdominal pain or discomfort accompanied by two or more of the following: relieved by defecation; onset associated with change in stool frequency and/or consistency; onset associated with change in form or appearance of stool. These symptoms must be present at least 12 weeks, which need not be consecutive, over a period of 12 months. Thus, the layperson can now identify and diagnose IBS as abdominal pain, distension, diarrhea, constipation, or a combination thereof.

The past 15 years of research has suggested that psychosocial treatments such as short-term psychodynamic therapy,<sup>19</sup> hypnotherapy,<sup>20</sup> multi-component cognitive behavioral therapy,<sup>21</sup> and cognitive therapy<sup>22</sup> are commonly more effective than medication alone.<sup>23</sup>

Although a 1999 Albany study used progressive muscle relaxation meditation, a review of the literature has not identified protocols using guided-imagery/visualization for treatment of IBS, despite the fact that it is commonly thought of as a stress-related disorder<sup>24</sup> with physiological hyper-arousal in the gut region.<sup>25</sup> Whereas many of the psychosocial treatments previously mentioned are fairly complex and require a high level of therapist skill, guided-imagery/visualization training and journaling are relatively easy and cost-effective treatments that can have many positive effects. Thus, it remains important to continue testing innovative skills such as imagery, visualization, and journaling for the treatment of IBS.

Several studies have used guided-imagery/visualization and journaling for treatment of psychosomatic problems,<sup>26</sup> including hypertension, anxiety, depression, insomnia, allergies, and arthritis.<sup>27</sup> Given the role of stress in the etiology of IBS, it seems reasonable to explore this protocol for reducing and possibly alleviating the symptoms associated with this disorder.

Before exploring various psychosocial studies available for the treatment of IBS, some background history is crucial to understanding the mind-body connection, which plays a major role in the etiology and evolution of functional gastrointestinal disorders.

## History

Historians and physicians have documented the presence of Functional Gastrointestinal disorders (predominantly IBS) throughout recorded human history.<sup>28</sup> However, until recently, limited attention has been granted to these disorders due to the lack of identifiable pathology and the absence of a conceptual framework with which to understand and categorize these ailments. A brief historical review of the relationship between psychosocial factors and gastrointestinal illness is presented here in conjunction with an examination of the impact that the scientific community has had on said relationship.

One must examine two differing theories in order to understand the historical classification of IBS and similar disorders: *holism*, a philosophy built on the idea that the mind and body are integrated and utterly inseparable; and *dualism*, which separates the mind and body.<sup>29</sup>

The Greek philosophers Plato, Aristotle, and Hippocrates first proposed the principle of holism about 3000 years ago, and the Jewish physician and philosopher Maimonides followed suit in the 12<sup>th</sup> century.<sup>30</sup> Based on the concept of holism, disease is seen in relation to the whole organism rather than as a separate entity. Holism served as the predominate medical theory until, in the 17<sup>th</sup> century, dualism usurped holistic thinking and assumed a principal position in medical circles.

This shift in ideology was initiated by Rene Descartes,<sup>31</sup> a French mathematician and philosopher who made a deal with the Pope in order to perform human dissections for scientific investigation. In a testimony before the Congressional House Committee following the publication of her book, *Molecules of Emotion*, Candace Pert referenced the “split” that took place with the advent of dualism:<sup>32</sup>

In our culture, psychological contributions to physical health and disease are often viewed with suspicion. Psyche is a word that hints at the mystical realm where scientists have been forbidden to tread ever since the 17<sup>th</sup> century, when the philosopher and founding father of modern medicine, Rene Descartes, had to make a deal with the Pope in order to get the human bodies he needed for dissection. Descartes agreed he wouldn't have anything to do with the soul, the mind or the emotions—those aspects of human experience heavily under the church's jurisdiction—but would stick strictly to the physical. Alas, this bargain set the tone and influence for the future of Western science over the next two centuries, dividing the human experience into two distinct and separate spheres that could never overlap, creating the lop-sided mainstream medicine we know today, enshrined by the NIH.<sup>33</sup>

Following Descartes, disease was defined in terms of “structural” deviations; its validity hinged upon “abnormal morphological observations,”<sup>34</sup> without which symptoms were considered “psychiatric” and unworthy of medical attention.

Holistic theory, however, made a few brief appearances. Most notably, Benjamin Rush sought to integrate psychological and medical knowledge into the diagnosis and treatment of medical illness.<sup>35</sup> Nevertheless, following Rush's death in 1813, psychiatry was summarily separated from the medical field and relegated to the asylums.

Fueled by the discovery of microorganisms and germ theory, Pasteur and Koch elevated dualism and reductionism to new heights.<sup>36</sup> According to Douglas Drossman, Senior Editor of *Functional Gastrointestinal Disorders*, “Only in recent years (for example with tuberculosis and AIDS) have we learned that the social environment can influence susceptibility to disease and can affect its clinical expression.”<sup>37</sup>

From 1900 to 1959, a small group of researchers attempted to reintegrate holism into the existing medical model by studying and reporting the effects of emotion on gastrointestinal function. As early as 1902, W.B. Cannon studied the movement of the intestines during pain, hunger, fear, and rage with the use of roentgen rays.<sup>38</sup> A year

later, Ivan Pavlov completed his work on the digestive glands in dogs, leading to his conditioned response reflex theory.<sup>39</sup> In 1946, Hans Selye studied the influence of stress on one's ability to cope and adapt to the pressures of injury and disease, later referred to as "separate stress syndrome" or "general adaptation syndrome (GAS)."<sup>40</sup> By 1949, T.P. Almy was describing increased sigmoid motility in response to stress in both healthy patients and those with IBS-type symptoms, thus correlating mood states with motility.<sup>41</sup>

Stuart Wolf studied the relationship between stress and hypertension (1949),<sup>42</sup> followed by George Engel, who discovered a link between psychological processes and ulcerative colitis.<sup>43</sup> These discoveries would challenge the biomedical model that had long presided over the scientific/medical community.

Although many of these studies established relationships between gut physiology, emotion, and environmental stimuli (stress), few studies reported the influence of psychological functioning on gut physiology. It is only within the last few years, with the emerging study of psychoneuroimmunology, that interactions and consequences of the mind-body connection are drawing attention from the biomedical community.<sup>44</sup>

From 1959 until 1980, psychosomatic studies received criticism from the scientific community, discouraging continued holistic mind-body research in favor of reductionist exploration. "The search for the etiology and pathophysiology of disease took precedence over the study of the patient. Psychosocial processes were considered important, but only as secondary phenomena."<sup>45</sup> In the 1970s, the scientific/medical community became increasingly dependent on technological advances to evaluate such problems as motility abnormalities, presumed to be etiologic for most functional gastrointestinal disorders. Consequently, patients experiencing exaggerated motor

response to stimuli such as stress,<sup>46</sup> peptide hormones,<sup>47</sup> and fatty meals<sup>48</sup> were diagnosed with lower GI disorders referred to as “spastic colon, mucus colitis and nervous stomach”<sup>49</sup> without any thought given to the precipitating psychosocial implications inherent in these illnesses.

While psychosocial investigations remained out of the mainstream of medical research, psychologists and psychiatrists became the sole investigators of the mind-body connection. They provided methods for evaluating psychosocial dimensions of functional gastrointestinal disorders using standardized measures.<sup>50</sup>

In 1977, the publication of Engel’s biopsychosocial model<sup>51</sup> and its later demonstration in gastrointestinal disorders marked an important change in thinking. It influenced the revision of previous IBS biomedical interpretations to include “the integrated product of altered motility,<sup>52</sup> enhanced visceral sensitivity,<sup>53</sup> and brain-gut dysregulation,<sup>54</sup> as modified by psychosocial influences.”<sup>55</sup> The use of a biopsychosocial paradigm for IBS disorders provided an umbrella for multi-component treatments including diet, psychological/behavioral therapy, and intestinal and centrally-acting medications.<sup>56</sup> Finally, the development of the Rome criteria and the expansion and refinement of investigative methods helped diagnose and legitimize IBS for both patients and clinicians.

### **Biopsychosocial Model**

A biopsychosocial model of illness and disease provides a framework to understand, categorize, and treat common GI symptoms. As such, IBS symptoms can now be interpreted as the integrated product of altered motility, enhanced visceral

sensitivity, and brain-gut dysregulation, all of which may be influenced by psychosocial factors.

Early in life, genetics and environmental influences (family attitudes toward bowel training or illness in general, major loss or abuse history or exposure to infection) may affect one's psychosocial development (susceptibility to life stress, psychological state, coping skills, social support) or development of gut dysfunction (abnormal motility or visceral hypersensitivity). Additionally the presence and nature of a functional GI disorder is determined by the interaction of psychosocial factors and altered physiology via the brain-gut axis.<sup>57</sup>

In other words, an individual who suffers from a bowel disorder but has good coping skills, adequate social support, and no psychosocial disturbances might have less-severe symptoms and may not seek medical care. Conversely, an individual with similar symptoms but with coexistent psychosocial disturbance, high life stress, or poor coping skills may frequent his/her physician's office and have a generally poor outcome.

### **Development of New Investigative Methods**

In the past ten years, positive diagnoses of IBS and its underlying pathophysiological features have been encouraged by the development, expansion, and refinement of investigative methods, including:

the improvement of motility assessment, the standardization of the barostat to measure visceral sensitivity, the enhancement of psychometric instruments to determine psychosocial influences, the introduction of brain imaging (PET, fMRI) to determine CNS contribution to symptoms, and the molecular investigation of brain-gut peptides, which provide insight into how these symptoms become manifest.<sup>58</sup>

### **The Rome II Symptom Criteria**

Rome II has been an international effort to characterize and classify functional GI disorders using a symptom-based classification system built on the Manning criteria,

which was developed from “discriminate function analyses of GI patients”<sup>59</sup> to distinguish IBS patients from those with organic diseases.

Since the publication of the Manning criteria 20 years ago, the use of symptom-based criteria for the diagnosis of IBS has become accepted as the diagnostic standard for research and clinical care. The rationale for such a system is based on the premise that patients with functional GI complaints consistently report symptoms that “breed true in their clinical features, yet cannot be classified by any existing structural, physiological or biochemical substrate.”<sup>60</sup>

Criteria for Rome II include at least 12 weeks (which need not be consecutive) in the preceding 12 months during which the patient experienced abdominal discomfort or pain that had two out of the three following features: (1) relieved with defecation, (2) onset associated with a change in frequency of stool, or (3) onset associated with a change in form (appearance) of stool. Other symptoms that are not essential but support the diagnosis of IBS include:

- Abnormal stool frequency (greater than 3 bowel movements/day or less than 3 bowel movements/week)
- Abnormal stool form (lumpy/hard or loose/watery stool)
- Abnormal stool passage (straining, urgency, or feeling of incomplete evacuation)
- Passage of mucus
- Bloating or feelings of abdominal distension

Rome II criteria are reliable *only* when there is no abnormal intestinal anatomy or metabolic process which would yield negative results from physical examination and

diagnostic testing and otherwise explain the symptoms.<sup>61</sup> Furthermore, certain co-existing features, referred to as “alarm signs” or “red flags,”<sup>62</sup> call for special consideration of their disorders before a patient’s symptoms can be attributed to IBS. These include weight loss, frequent awakening by symptoms, fever and recent antibiotic use, rectal bleeding and anemia, and family history of colon cancer.<sup>63</sup>

In a recent study, Vanner and colleagues<sup>64</sup> examined the predictive value of the Rome II criteria using the gastroenterologist’s final diagnosis as the gold standard. They found that the combination of the Rome criteria and the absence of alarm signs or red flags yielded 63% sensitivity and 100% specificity with a positive predictive value (PPV) of 98 to 100% and negative predictive value of 76%.<sup>65</sup> Additional studies on the validation for the Rome II criteria are currently under way.

### **Motility**

In healthy subjects, “stress” can increase motility<sup>66</sup> in the enteric nervous system, which includes the esophagus, stomach, small and large intestines, and colon. Abnormal motility can generate a variety of GI symptoms, including vomiting, diarrhea, constipation, and acute abdominal pain due to abnormal muscular spasms.<sup>67</sup> If the motility is too fast, diarrhea may result, and if too slow, constipation may result.<sup>68</sup> Abnormal motility can also result in belching, urgency, and abdominal cramping.<sup>69</sup> In comparison to normal subjects, patients with IBS as well as other functional bowel disorders (FBD) have increased motility in response to stressors.<sup>70</sup>

### **Visceral Hypersensitivity**

IBS patients suffering from visceral hypersensitivity may have a lower pain threshold to balloon distension (of the bowel) compared to normal patients, as well as

increased sensitivity to even normal intestinal function.<sup>71</sup> There may also be an increased or unusual area of somatic referral of visceral pain.<sup>72</sup> Recently, it has been concluded that visceral hypersensitivity may be induced in response to rectal or colonic distension in normal subjects, and to a greater degree in persons with IBS.<sup>73</sup> Therefore, the pain of functional GI disorders may relate to sensitization resulting from chronic abnormal motor hyperactivity, GI infection, or trauma/injury to the viscera.<sup>74</sup>

### **Brain-Gut Axis**

The concept of brain-gut interactions brings together observations relating to motility and visceral hypersensitivity and their modulation by psychosocial factors.<sup>75</sup> By integrating intestinal and central nervous system (CNS) activity, the brain-gut axis explains the symptoms relating to IBS.<sup>76</sup> In other words, senses such as vision and smell—as well as enteroceptive information (emotion and thought)—have the ability to affect gastrointestinal sensation, motility, secretion, and inflammation.<sup>77</sup>

Conversely, viscerotopic effects (receptors in the GI tract) reciprocally influence central pain perception, mood, and behavior.<sup>78</sup> For example, spontaneously induced contractions of the rat colon lead to activation of “the locus coeruleus in the pons,”<sup>79</sup> an area closely connected to pain and emotional centers in the brain. “This increased arousal or anxiety is associated with a decrease in the frequency of migrating motor complex activity of the small bowel, possibly mediated by stress hormones in the brain.”<sup>80</sup> Based on these observations, it is no longer rational to try to discriminate whether physiological or psychological factors produce pain or other bowel symptoms. Rather, IBS is understood as a dysregulation of the brain-gut function, and the task is to determine to what degree each is remediable. A possible treatment approach consistent with the

concept of brain-gut dysfunction may do well to focus on neuropeptides and receptors present in both the enteric and central nervous systems.<sup>81</sup>

### **The Role of Psychological Factors**

Although psychological factors do not define IBS and are not required for diagnosis, they are important modulators of the patient's experience and, ultimately, the clinical outcome. Research on the psychosocial aspects of patients with IBS yields three general observations:<sup>82</sup>

- Psychological stress exacerbates gastrointestinal symptoms in IBS patients and, to a lesser degree, produces symptoms in healthy patients (e.g., butterflies in stomach before giving a speech, etc.).
- Psychological disturbances modify the experience of illness and illness behaviors such as health care seeking. For example, a history of major psychological trauma (e.g., sexual or physical abuse) is more common among patients seen in referral centers than in primary care and is associated with a more severe disorder and a poorer clinical outcome. Additionally, psychological trauma may increase pain-reporting tendencies.
- Having IBS can lead to psychological consequences related to one's general well-being, daily functional status, level of concern in regard to control over symptoms, and the future implications of the illness.

Enhancements in psychosocial assessment and analysis have helped address the growing evidence of the intrinsic psychological factors which obviously influence both expression and symptomology of IBS. *The Diagnostic and Statistical Manual of*

*Psychiatric Diagnosis (DSM-IV)*, now in its fourth edition,<sup>83</sup> has been used extensively in confirming higher frequencies of psychiatric diagnoses in patients with IBS.

Using standardized psychiatric criteria, investigators confirmed that patients with IBS have higher frequencies of psychiatric diagnoses (particularly those seen in tertiary specialty offices) than those with other gastrointestinal problems, and the psychiatric diagnosis often antedated the onset of the bowel disorder.<sup>84</sup>

Although not part of the irritable bowel per se,<sup>85</sup> psychosocial factors precipitate illness recognition, use of services and treatments, and response to non-drug and drug-related treatments.<sup>86</sup>

The biopsychosocial process, the expansion and refinement of investigative instruments and tools, and the development of the Rome II criteria<sup>87</sup> have changed the way IBS is conceptualized. They have also reduced the need for excessive diagnostic testing which is expensive, time-consuming, uncomfortable, and worrisome.<sup>88</sup> All of these factors have contributed to the acceptance of IBS as a discrete clinical entity, capable of positive diagnosis and treatment.<sup>89</sup>

Furthermore, the aforementioned processes have enabled clinicians to sort out the mechanisms in which physiologic, psychological, behavioral, and environmental factors interact both simultaneously and at multiple levels to characterize IBS.<sup>90</sup> The relative contributions of these factors determine the severity of symptoms and the overall clinical presentation that often varies among patients and within individual patients over time.<sup>91</sup>

In summation, the development of symptom-based criteria derived from biopsychosocial determinants encourages an awareness and focus on the patient and his or her illness experience. Additionally, these criteria help standardize diagnostic and treatment approaches and ease facilitation of IBS clinical trials.<sup>92</sup>

## **Development of Instrumentation**

In order to assess efficacy of various treatments for IBS used in clinical trials, it was important to develop instruments sensitive to subjective measures (symptoms) where “objective verifiable symptoms”<sup>93</sup> were lacking. With the advent of the GI symptom diary,<sup>94</sup> the CPSR,<sup>95</sup> and the IBS-QOL,<sup>96</sup> researchers were able to evaluate subjective symptom data and utilize the information for establishing future IBS protocols.

## **Composite Primary Symptom Reduction Score (CPSR)**

The composite primary symptom reduction (CPSR) scores reflect the reduction of gastrointestinal symptoms as recorded by patients in their GI symptom diaries. E.B. Blanchard and S.P. Schwarz developed this instrument and diary in 1988 as part of their “Albany Studies,”<sup>97</sup> which tested the efficacy of various psychosocial treatments on symptoms of IBS in clinical trials over the last fifteen years.

The GI symptom diary includes eight GI symptoms: pain, tenderness, diarrhea, constipation, flatulence, belching, nausea, and bloating.<sup>98</sup> Patients numerically rate their symptoms<sup>99</sup> one time each day during treatment.

Although the diary does a good job of capturing most troubling IBS symptoms, deriving statistical data is difficult because of the “multiple comparison problem.”<sup>100</sup> Each patient would ideally like complete relief, and barring that, at least a noticeable reduction of symptoms; from the patient’s point of view, analyzing the relative degree of change for each symptom makes sense.<sup>101</sup> The patient would like to know, for example, whether abdominal pain and/or diarrhea and/or bloating are likely to be reduced by a particular treatment.<sup>102</sup>

However, from a statistical standpoint, performing multiple statistical analyses (i.e., analyzing each symptom separately) on the data from a set of patients leads to the possibility of capitalizing on chance rather than finding true differences.<sup>103</sup> (That is, if one performed 20 analyses on the data from a set of patients, by chance alone, 1 out of 20 should be significant at the .05 level.)<sup>104</sup> As a result, Blanchard devised the CPSR for principal analyses in all treatment trials.<sup>105</sup> In this way, a single analysis on a set of patients could be performed to test treatment efficacy.<sup>106</sup>

The CPSR score is obtained after calculating a symptom-reduction score from the three primary symptoms of IBS (abdominal pain or tenderness, diarrhea, and constipation).<sup>107</sup> For purposes of this literature review, an individual CPSR score is the average percent reduction in primary GI symptoms from before to after treatment.<sup>108</sup>

In general, the CPSR score assumes that improvement in one symptom is equivalent to improvement in another symptom (i.e., if diarrhea decreases, so then would symptoms of abdominal pain improve).<sup>109</sup> For research purposes, this is a reasonable approach when averaging 10 to 30 cases; in individual cases, one could use the symptom reduction score for the symptom(s) that are most distressing to the individual.<sup>110</sup>

Blanchard and Schwartz believe that this scoring is highly preferable to global ratings by patient or therapist “given the biases and overestimations both of those can show.”<sup>111</sup> In terms of frequency in returning a patient to a normal state, “this is problematic as a criterion for clinically significant improvement because normal state for bowel habit is not universally agreed upon.”<sup>112</sup>

*Essentials of Behavioral Research: Methods and Data Analysis* authors Rosenthal and Rosnow state that “self-recorded diaries can provide more reliable data than just

using questionnaires or interviews to elicit answers to autobiographical questions.”<sup>113</sup>

According to a 1983 study by Conrath, Higgins, and McClean, results from questionnaire data “were less reliable than the self-recorded diary data.”<sup>114</sup> Rosenthal and Rosnow conclude that with adequate preparation, “The self-recorded diary can play a useful role as a supplement in almost any research study in which self-report information about events is of interest.”<sup>115</sup>

### **IBS-Quality of Life Score (IBS-QOL)**

The IBS-QOL, a self-report quality of life measure specific to IBS, is currently used to assess the impact of IBS and its treatment on patients.<sup>116</sup> It consists of 34 items<sup>117</sup> relating to symptoms of IBS, and uses a 5-point, Likert response scale<sup>118</sup> to assess how much each item describes the respondent’s feelings toward a particular symptom (not at all, slightly, moderately, quite a bit, or extremely/a great deal).<sup>119</sup> The IBS-QOL provides an overall score<sup>120</sup> in addition to eight subscales, including dysphoria, interference with activity, body image, health worry, food avoidance, social reaction, sexual problems, and relationship problems.<sup>121</sup>

Previous health-related quality of life measures (HR-QOL)<sup>122</sup> for GI disorders have been primarily based on “generic concepts of functional status that do not fully capture the subjective evaluation of life quality associated with the symptoms of IBS and its treatment.”<sup>123</sup> Therefore, the IBS-QOL was developed as an “assessment battery” that would contain measures of IBS symptom-frequency and bothersome-ness, general functional status and well-being, and perceived quality of life specific to IBS.<sup>124</sup>

Gastroenterologists meeting at the Rome II Convention in July 2000<sup>125</sup> issued the following statement regarding the use of IBS quality of life questionnaires: “The most

important outcomes in the treatment of functional gastrointestinal disorders are those that reflect the patient's symptoms. Since individual symptoms can vary from patient to patient and from time to time, a measure of 'overall change in symptoms' should be the primary outcome criterion."<sup>126</sup>

According to researchers responsible for the development and utilization of the GI symptom diaries and the IBS-QOL,

Since no physiologic measure is available for assessing IBS, the development of subjective, personal reports of symptoms as well as health related quality of life instruments, are important to augment investigation and treatment of this disorder. Poor quality of life can depend greatly on the attitude, psychosocial state, and the support systems of the individuals themselves, as well as coexistent conditions.<sup>127</sup>

It is increasingly important to apply these patient report measures in clinical and community investigations of functional bowel disorders, specifically IBS.<sup>128</sup> The combination of the IBS-QOL and the GI symptoms diaries in conjunction with the CPSR will assist in these applications.<sup>129</sup>

### **Epidemiology of IBS**

Two epidemiologic IBS surveys of American samples have been published in the last 10 years: the "Olmsted County Studies" by Talley et al<sup>130</sup> and the "U.S. Householder Survey of Functional Gastrointestinal Disorders" by Drossman et al.<sup>131</sup>

In the "Olmsted County Studies," a validated self-report questionnaire<sup>132</sup> that identified GI symptoms experienced over the past year which led to valid diagnoses of functional GI disorders was sent to an age and sex-stratified sample (N = 1,021) of Olmsted County, Minnesota residents between the ages of 30 and 64. Altogether, 835 individuals (82%) returned usable surveys.<sup>133</sup> Of these, 26% reported abdominal pain

more than six times in the past year, 17.9% reported chronic diarrhea, and 17.4% reported chronic constipation.<sup>134</sup> Talley et al<sup>135</sup> found an overall prevalence of IBS at 17.0% (range = 14.4-19.6; 95% confidence interval), with women outnumbering men 1.15 to 1.0. Of the 329 individuals with functional GI disorders, only 14% (n = 46) had seen a physician in the past year regarding GI symptoms.<sup>136</sup>

In the same geographical area, Talley et al conducted a second, larger study (N = 4,108)<sup>137</sup> covering a broader age range (20-95), and found a prevalence of IBS in 17.7% of the population; women outnumbered men 1.44 to 1.0. Using available data, they estimated U.S. medical costs associated with IBS at around \$8 billion a year.<sup>138</sup> (This estimate included missed workdays, physician/hospital visits and GI tests, psychological testing and subsequent therapy, prescriptions, and over-the-counter drugs relating to IBS.)

In the “U.S. Householder Survey,” Drossman et al<sup>139</sup> surveyed 8,250 U.S. households, stratifying subjects in a manner similar to this country’s population in terms of geographic region, age, and household size. The return rate was 65.8% (51% female, 96% Caucasian). Overall, 69.3% of respondents acknowledged one or more functional GI disorders.<sup>140</sup> With the use of the Rome criteria, IBS was diagnosed in 606 individuals (11.2%), leading to a national estimate of prevalence in 9.4% of the population.<sup>141</sup> The sex ratio was 2:1 females over males, and sufferers missed an average of 13.4 days of work or school per year due to IBS and related symptoms.<sup>142</sup>

These surveys convey the seriousness and extent of IBS currently affecting 19-34 million American adults<sup>143</sup> at an estimated annual cost of \$10 billion in medical and

related expenses.<sup>144</sup> Of that amount, approximately \$250 million is lost due to missed work and school earnings.<sup>145</sup>

### **Psychological Distress and Psychiatric Comorbidity in IBS Patients**

It has been recognized that individuals with IBS who seek treatment (referred to from now on as “IBS patients”) are, as a group, somewhat psychologically distressed.<sup>146</sup> For example, Latimer and others<sup>147</sup> found significantly higher scores for IBS patients in comparison with normal controls on the Beck Depression Inventory (BDI)<sup>148</sup> and the State-Trait Anxiety Inventory (STAI).<sup>149</sup> On the BDI, IBS patients scored an average of 16.4, whereas normal controls scored 2.8;<sup>150</sup> on the STAI, IBS patients scored 47.3 on average, whereas controls scored 32.9.<sup>151</sup>

Welgan, Meshkinpour, and Hoehler<sup>152</sup> also found significantly higher scores for IBS patients than normal controls on Scales 1, 2, and 3 of the Minnesota Multiphasic Personality Inventory (MMPI). Ten years later, Schwarz and others<sup>153</sup> reported similar results: significantly higher scores for IBS patients than for normal controls for BDI, STAI, and MMPI Scales 1, 2, 3, and 7. In a recent report of norms for the BDI and STAI from a large sample of IBS patients seen at the Center for Stress and Anxiety Disorders, Blanchard reported median scores of 10 on the BDI, 48 on the STAI-State, and 48 on the STAI-Trait.<sup>154</sup>

Although IBS patients scored higher on these combined tests, other studies reported patients scoring in the normal range. In Blanchard’s 1993 study,<sup>155</sup> 32% of the IBS patients had BDI scores of 6 or less, which is in the normal range.<sup>156</sup>

### Psychiatric Comorbidity:

There is an equally-long history of research reporting high rates of diagnosable, psychiatric conditions among IBS patients. As previously noted in a study by Drossman, two of the earliest studies used structured interviews based on the Washington University criteria published in Feighner et al,<sup>157</sup> the predecessor of the *Diagnostic and Statistical Manual of Mental Disorders*, third edition (*DSM-III*),<sup>158</sup> with its use of explicit inclusion and exclusion criteria.<sup>159</sup> Liss and others found that 92% of 25 IBS patients met the criteria for a specified psychiatric disorder or a residual category of “undiagnosed psychiatric disorder.”<sup>160</sup> In a second study, Young and others<sup>161</sup> found that 72% of 29 IBS patients met the criteria for a psychiatric diagnosis, as compared with only 18% of patients with other GI illnesses who were seen at the same clinic. For the most part, these studies found primary affective disorder and anxiety neurosis.<sup>162</sup>

More recent studies using *DSM-III-R*<sup>163</sup> criteria and well-validated, structured interviews found high proportions of IBS patients meeting criteria for some Axis I conditions (e.g., anxiety disorders and social phobias).<sup>164</sup> Using the Diagnostics Interview Scheduled (DIS),<sup>165</sup> Walker et al<sup>166</sup> found that 93% of IBS patients met criteria for at least one Axis I disorder in comparison with 19% of patients with inflammatory bowel disease (IBD)<sup>167</sup> (a GI disease with a fair degree of symptom overlap with IBS).

In a similar study from the University of Albany, Blanchard et al,<sup>168</sup> using the Anxiety Disorder Interviewer Schedule (ADIS),<sup>169</sup> found that 56% of IBS patients met criteria for an Axis I condition compared with 25% of patients with IBD and 18% of non-ill controls. Whereas Walker et al<sup>170</sup> primarily encountered patients with mood disorders, especially major depression (76% of IBS patients), Blanchard et al found a high prevalence of anxiety disorder, especially generalized anxiety disorder (GAD), which had

a prevalence of 21%.<sup>171</sup> However, a study conducted in the United Kingdom by Blewett and others<sup>172</sup> used the Composite International Diagnostic Interview (CIDI)<sup>173</sup> and found that only 33% of IBS patients met with *DSM-III-R* for an Axis I disorder—primarily major depression (MD) or panic disorder (PD).<sup>174</sup>

However, it is still unclear what becomes of comorbid psychiatric disorder(s) when IBS is successfully treated. In one study, Blanchard and others<sup>175</sup> showed that IBS patients treated with cognitive and behavioral procedures had significant reductions in BDI and STAI scores when the treatment was considered successful. Blanchard suggests that IBS may be categorized as a “somatopsychic” condition,<sup>176</sup> defined as the disturbance of cognition and emotion due to abnormal body chemistry.<sup>177</sup>

### **Drossman and Thompson’s Graduated Treatment Approach**

In an article published by Drossman and Thompson,<sup>178</sup> the IBS patient population was divided into three groups based on the severity and impact of IBS on the patients’ lives. (These subdivisions are conceptual, and are meant to be informative; they were not empirically based.) The article outlined treatment recommendations for each segment of the population and included patients with mild, moderate, and severe IBS.

#### Patients with Mild IBS:

Patients with mild IBS comprise about 70% of the individuals with this condition who seek medical attention.<sup>179</sup> They are not seen as having much psychological or psychiatric comorbidity or as having episodic disorders that interfere greatly in their lives. For these patients, Drossman and Thompson<sup>180</sup> recommended education, reassurance that their symptoms are not a serious or life-threatening disease, and possible dietary interventions to detect food sensitivities and/or bulking agents such as psyllium

(e.g., Metamucil). In Drossman and Thompson's opinion, this group did not require psychological help.

Patients with Moderate IBS:

Patients with moderate IBS comprise 25% of those who seek medical attention.<sup>181</sup> They are more likely to have their lives disrupted by IBS symptoms and have psychiatric and/or psychological comorbidity. These patients are more likely to seek the help of a specialist (gastroenterologist) than patients with mild symptoms, who generally prefer to stay with primary-care physicians.<sup>182</sup> Drossman and Thompson<sup>183</sup> made general but cautious pharmacotherapy recommendations for patients with mild or moderate IBS and varied these recommendations per dominance of diarrhea, constipation, alternating diarrhea and constipation, and/or pain. They also recommended patient referrals for psychological treatment.<sup>184</sup> (Patients with moderate to severe IBS are more likely referred to a psychologist or other mental health professional than are those with mild symptoms.<sup>185</sup>)

Patients with Severe IBS:

Patients with severe IBS comprise 5% of those who are afflicted with the disorder and seek treatment.<sup>186</sup> They tend to be refractory to most treatments and have noticeable levels of psychological and psychiatric comorbidity.<sup>187</sup> They are more concerned with possible life-threatening GI diseases that they think doctors may have overlooked than are patients with less-severe IBS.<sup>188</sup> According to Drossman and Thompson,<sup>189</sup> patients with severe IBS do not readily accept referrals for psychological counseling. Drossman and Thompson suggested treating these patients similarly to those with other chronic pain

problems, e.g., using a multidisciplinary approach including antidepressants and physician-based behavioral techniques.<sup>190</sup>

### **Drug Therapy for IBS**

In 1988, Klein published a summary and critique of drug treatments for patients with IBS.<sup>191</sup> He identified and analyzed 43 double-blind, randomized, placebo controlled trials.<sup>192</sup> In addition, he noted 50 other resources that had not met his inclusion criteria and concluded that “no single study offers convincing evidence that any therapy is effective in treating the IBS symptom complex.”<sup>193</sup> This conclusion was based on methodological flaws, which Klein observed in all of the trials reviewed. Additionally, Klein found a placebo response ranging from 20-70% in these studies.<sup>194</sup>

Despite this study, drugs continue to be part of a graduated treatment approach, especially when either diarrhea, constipation, or abdominal pain is the dominant symptom.<sup>195</sup>

### **Psychological Treatments for IBS**

There are at least four distinctly different psychological treatments that have been evaluated in random controlled IBS studies (RCTs), including brief psychodynamic psychotherapy, hypnotherapy, biofeedback, and various combinations of cognitive behavioral treatment (CBT).<sup>196</sup> Two of the components or techniques frequently included in CBT—relaxation training and cognitive therapy—have also been evaluated as individual treatments in RCTs.<sup>197</sup>

### Psychodynamic Psychotherapy:

There are two RCTs evaluating brief psychodynamic psychotherapy as treatment for IBS. Svedlund and others<sup>198</sup> is the oldest RCT (1983) using psychological treatment for IBS. It was a large study (N=101) in which 50 subjects participated in the treatment condition and 51 enrolled in the control condition for a duration of 3 months and 10 visits.<sup>199</sup> Participants in both conditions received conventional medical care including “bulk-forming agents, and when appropriate, anticholinergic (antispasmodic) drugs, antacids, and minor tranquilizers.”<sup>200</sup> Using structured interviews by blinded assessors, individuals were examined during pre-treatment, again at 3 months post-treatment and finally at 12-month follow-up.

The authors of the treatment described the psychotherapy:

The psychotherapy was aimed at modifying maladaptive behaviors and finding new solutions to problems. The focus was on means of coping with stress and emotions and on teaching about relations between stressful life events and abdominal symptoms. All psychotherapeutic measures were tailored to suit individuals and took the patients’ tolerance of anxiety into account.<sup>201</sup>

The psychotherapy was dynamically oriented and mainly supportive, and flexible enough to be adapted according to degree of patient’s insight. The therapeutic goals therefore could vary from pointing out connections between symptoms and stressors to handling of more specific conflicts of great importance to the patient. The principles were to work on a conscious level to consider the patient’s own concept of their disorder, which could be modified by therapy.<sup>202</sup>

The outcome was assessed primarily by independent physician evaluators rating six different clusters of symptoms, and then by patient global ratings at post-treatment and 12-month follow-up. (No patient diary was used.)

The physician ratings showed significantly greater improvement for the psychotherapy condition as compared to rates of improvement for routine medical care for “abdominal pain and total somatic symptoms at post treatment and for these two plus bowel dysfunction at the 12 month follow-up (all  $p < .001$ ).”<sup>203</sup> On all of the mental health symptoms (anxiety, depression, etc.) both conditions showed comparable improvements at end of treatment, which were maintained at the one-year follow-up.<sup>204</sup>

The second RCT was reported by Elspeth Guthrie, professor of psychological medicine at the School of Psychiatry and Behavioural Sciences, University of Manchester (1991), and was a large-scale trial with a 12-month post-treatment follow-up.<sup>205</sup> Over the previous 6 months, all participants had failed to respond to standard medical care involving a combination of bulking agents and antispasmodic medication.<sup>206</sup> Similar to the Svedlund study,<sup>207</sup> conventional medical care continued for both conditions. “Individuals were assessed by their gastroenterologist (who was blind to treatment condition), with ratings of GI symptoms, by patient diary ratings of the same symptoms, and by ratings of how much the GI symptoms interfered in their lives.”<sup>208</sup> A psychiatrist completed the Hamilton Rating Scale for Depression<sup>209</sup> and assessed Clinical Anxiety Scale<sup>210</sup> ratings for the participants.

Fifty-three patients were randomized to treatment and 49 to the control condition.<sup>211</sup> Treatment consisted of one long, initial interview (2-4 hours) during which bowel and psychiatric symptoms were assessed and the patients’ feelings about their illness and any emotional problems were explored.<sup>212</sup> There were six additional interviews over the next 3 months, and patients were given a relaxation tape to use at home on a regular basis.<sup>213</sup> (This represents a noticeable departure from the procedures in

the Svedlund study.) The control group saw the psychiatrist for three brief visits to discuss GI symptom diary ratings.

According to Guthrie, her later treatments involved three parts:<sup>214</sup>

During the initial visit (which can last from 2-4 hours), there is a prolonged conversation with the patient about his or her GI symptoms, feelings about these symptoms, and how these feelings affect relationships. There is usually a great deal of emotion expressed in this descriptive phase, as it may be the first time the patient has ever talked to anyone about the GI symptoms and his or her feelings. There is a strong effort to understand and use the patient's language and to understand surface-level images and interpretations of the patient.<sup>215</sup>

In the middle part of therapy, Guthrie explains,

There is an attempt to convert the patient to having a positive attitude, rather than the typical, negative, defeatist attitude one can find in chronic IBS patients about the disorder. There is also an emphasis on change in beliefs and attitudes using small steps. The therapist is expected to develop an interpersonal formulation of the patient's problems, but this is not given to the patient..<sup>216</sup>

The final part of the therapy is the concluding visit, which examines progress and emphasizes the patient's gains and need for continued support.<sup>217</sup> (According to Guthrie,<sup>218</sup> the use of relaxation tapes was discontinued; however, approximately 10 hours of patient-therapist contact still took place during the 12 weeks of treatment.)

Seven patients dropped out of the psychotherapy condition compared to six in the control group. Following 3-month post-treatment, 33 of the control patients received treatment, whereas 10 from the control group who were improved from symptom monitoring alone were merely followed.<sup>219</sup> Gastroenterologists' ratings showed significantly greater improvement for abdominal pain and diarrhea for both treatment groups than for the control participants at end of treatment. The patients' ratings showed similar improvement for abdominal pain and diarrhea as well as improvement in bloating.

The treated group also showed greater changes on ratings of depression and anxiety than did the control participants.<sup>220</sup>

The one-year follow-up data based on global patient ratings revealed that for those who were treated initially, 32 of 47 (68% of) patients rated themselves as “better or much better,”<sup>221</sup> including 28 of 33 (85%) who were improved at post-treatment.<sup>222</sup> Among the treated patients, 21 of 33 (64%) rated themselves as better or much better at follow-up. Interestingly, only 4 of the 10 (40% of) patients who were spontaneously improved at post-treatment remained improved at follow-up. There was, however, a significant reduction in outpatient GI clinic visits from a year before the trial (median = 4) to the year following treatment (median = 1;  $p < .001$ ).<sup>223</sup>

Both of these treatments showed significantly greater improvement in post-treatment abdominal pain than in the control condition, and greater improvement in bowel functioning at post treatment or follow up than the control group. The treatment group yielded comparable improved results across a variety of symptoms, and the improvements appeared to hold up over time.

#### Hypnotherapy:

In 1984, Whorwell reported successful treatment of relative refractory cases of IBS using hypnotherapy.<sup>224</sup> “This study consisted of initial hypnotic induction using an arm levitation procedure. Hypnotherapy was aimed at general relaxation and gaining control of intestinal motility with some attention to ego strengthening.”<sup>225</sup> In addition, patients were issued an audiotape for autohypnosis to be practiced daily.

Hypnotherapy treatment included “seven 30-minute sessions of decreasing frequency over 3 months.”<sup>226</sup> There was a control condition receiving placebo medication

as well as supportive psychotherapy consisting of discussions of GI symptoms and exploration of possible contributions of emotional problems and stressful life events. The active treatment group received identical psychotherapy with the same frequency (seven 30-minute sessions) delivered by the same therapist.<sup>227</sup> An independent assessor performed evaluations based on patients' daily diary ratings. These ratings analyzed abdominal pain, bloating, dysfunctional bowel habits, and general improvement and well-being.<sup>228</sup>

At 3-month post-treatment, results showed significantly ( $p < .001$ ) greater reductions on all four measures for patients receiving hypnotherapy than for those in the control condition.<sup>229</sup> All 15 patients in the hypnotherapy treatment were either symptom-free or suffering from only mild symptoms by the end of treatment. These results clearly demonstrated the effectiveness of hypnotherapy for all four hallmark symptoms of IBS as part of the protocol. The control group also showed significant ( $p < .05$ ) improvement in abdominal pain, bloating, and general sense of well-being.<sup>230</sup>

In the next report by Whorwell's group, Whorwell, Prior and Colgan reported data from 50 IBS patients treated with hypnotherapy.<sup>231</sup> These 50 patients, including 15 subjects from the original study, were combined with an additional 35 cases of refractory IBS as an extension of the previous study.<sup>232</sup> The same gastroenterologist made evaluations and participants used the same GI symptom diaries. Although the protocol remained the same, this last trial added 3 sessions of hypnotherapy, bringing the total number of sessions to 10 rather than 7.<sup>233</sup> The following results were similarly impressive:

For the 38 cases described as classical IBS, 36 (95%) responded with elimination of symptoms or no more than mild symptoms.<sup>234</sup>

For 5 classical cases with high scores on the General Health Questionnaire (GHQ; indicative of psychiatric disturbance),<sup>235</sup> only 3 (60%) responded.<sup>236</sup> Finally, of 7 atypical IBS cases, (primarily intractable abdominal pain with little altered bowel habit or bloating), only 3 (43%) responded.<sup>237</sup> Thus, overall, there were positive results in 42 of 50 cases (84%).<sup>238</sup>

Houghton et al replicated Whorwell's treatment in 1996.<sup>239</sup> In this study, hypnotherapy proved superior to a wait list control group in terms of pain reduction, bowel habit disturbance, and bloating.<sup>240</sup> The treated patients also showed improvement in quality of life ratings as compared with controls.<sup>241</sup>

Harvey and others<sup>242</sup> reported an independent replication of the utility of hypnotherapy by comparing individual and group-administered hypnotherapy. There were no differences between the two forms of administration.<sup>243</sup> According to patient diaries, "20 of 33 patients (60.6%) were symptom free or improved at a 3-month follow up point."<sup>244</sup>

Galovski and Blanchard<sup>245</sup> replicated Whorwell's study at the University of Albany using protocols supplied by Whorwell et al in six matched pairs of IBS patients. Compared with a symptom-monitoring control group, those treated initially with hypnotherapy showed significantly greater reduction in a composite measure of GI symptoms based on their symptom diaries than did the controls. Of those treated, 55% were clinically improved.<sup>246</sup>

In the treatment of IBS, Whorwell's groups targeted physical as well as psychological improvements, adding that "irritable bowel syndrome seemed the ideal disorder for treatment with hypnosis; there is no structural damage and various underlying mechanisms such as disordered motility and visceral sensitivity are susceptible to modulation of the mind."<sup>247</sup> Whorwell has confirmed this hypothesis over

the last 20 years as patients altered IBS symptoms of disordered motility and visceral sensitivity in the desired direction.<sup>248</sup>

Comorbid symptoms associated with IBS, such as nausea, lethargy, backache, and urinary problems, have decreased using hypnotherapy.<sup>249</sup>

This is in sharp contrast to the medications currently available for IBS which often help one or two symptoms if at all. We have also undertaken some research in an attempt to ascertain how hypnosis might lead to benefit. There is no doubt that it can improve anxiety, cognitive function and coping capacities, as might be expected.<sup>250</sup>

The hypnotic state itself, without any particular suggestions, seems to slow down the gut, while other clear-cut, specific changes in GI functioning can be induced in patients by directing thinking or inducing specific emotional states.<sup>251</sup> In a study by Beaugerie et al, the oro-caecal transit time (digestion process from mouth to first part of colon) was measured in healthy, hypnotically-relaxed volunteers; the transit time slowed from 93 to 133 minutes.<sup>252</sup>

In a similar study, a hypnotic state was used to decrease muscle movements in the stomach. It was found that happiness suppressed gastric muscle activity, while anger and excitement increased it.<sup>253</sup> A pair of other studies used hypnosis to measure secretion of gastric juices while “eating” a delicious meal (acid increased 89%) and “removing” the meal (acid production decreased).<sup>254</sup>

When used as a treatment for IBS, hypnosis is similar to very deep relaxation, whereby the focus is entirely on the bowel without exploring the patient’s state of mind. No attempt is made to regress the patient;<sup>255</sup> rather, a deep, trance-like state is induced and attention is directed towards control of the intestinal smooth muscle. The patient is asked to place his or her hand on the abdomen, feel a sense of warmth, and associate that

warmth with relief of pain and muscle spasm.<sup>256</sup> Using this technique, the patient is encouraged to believe that they can exert control over gut function.<sup>257</sup>

Hypnosis is believed to be a naturally occurring phenomenon that can be purposefully self and other-induced.<sup>258</sup> While another person can induce hypnosis through repetitive rhythms of voice or movement, self-hypnosis can occur while engaging in boring or highly familiar situations, such as driving the same road to work everyday.<sup>259</sup> In such instances, attentional thought processes are often turned inward, but may be either highly focused or random and non-directed.<sup>260</sup>

Hypnotic, trancelike states also occur during intense focus, characterized in crisis situations where feelings and anxiety are high.<sup>261</sup> Although not sleep, the hypnotic state is often relaxing and resembles sleep in appearance;<sup>262</sup> i.e. hypnosis is similarly characterized by a “glassy-eyed stare, cataplexy, waxy movements, paralysis, numbness, amnesia, and dissociated and hallucinatory experiences.”<sup>263</sup> These behaviors may also be experienced in GIV, which similarly produces highly vivid imagery, meditation, deep relaxation, and biofeedback.<sup>264</sup>

Although hypnotherapy has demonstrated its effectiveness in reducing IBS symptoms, Whorwell admits that many people do not benefit from hypnosis. “Hypnosis should not be regarded as a panacea; 25% of patients fail to respond to this type of therapy.”<sup>265</sup> Of those who are most resistant, people over age 50 make up the largest noncompliant percentage.<sup>266</sup> Others either include patients exhibiting atypical IBS symptoms<sup>267</sup> or individuals who do not like the idea of letting go—those who are afraid of the process or have difficulty trusting the therapist performing the hypnosis.<sup>268</sup>

Time and money are additional obstacles associated with hypnotherapy, as patients with severe symptoms require multiple sessions, contributing to increased cost and length of treatment.<sup>269</sup> Hypnosis also carries a stigma, not to mention a certain amount of prejudice and resistance from referring internists, gastroenterologists, and psychiatrists.<sup>270</sup> This stigma may be partially responsible for the limited availability of hypnosis in this country.<sup>271</sup>

Overall, hypnotherapy appears to be well-supported as a treatment for IBS, as further evidenced by two independent replications of Whorwell's gut-directed hypnotherapy programs.<sup>272</sup> Nevertheless, a variety of techniques including relaxation exercises, biofeedback, yoga, and guided imagery are striving to achieve similar endorsement.<sup>273</sup> "Hypnosis probably only differs in that it concentrates more on the 'trance' element targeted at a specific problem."<sup>274</sup>

#### Cognitive and Behavioral Treatments:

Over the last 15 years, there have been a series of small and medium-sized trials evaluating various combinations of behavioral and cognitive procedures as treatments for IBS (referred to as cognitive behavioral therapy or CBT).<sup>275</sup>

Bennett and Wilkinson reported the first CBT trial in 1985, comparing a combination of drugs with a blend of progressive muscle relaxation, education, and modification of self-talk.<sup>276</sup> The treatments were equally effective, except that the CBT condition led to significantly greater reduction in state anxiety.<sup>277</sup> In 1989, Lynch and Zamble compared CBT with a wait list condition and found that active treatment led to greater improvement in abdominal pain and discomfort, constipation, and STAI-Trait.<sup>278</sup>

In 1991, Shaw et al found that stress-management emphasizing progressive muscle relaxation was superior to a drug treatment on global ratings.<sup>279</sup> In the same year, Corney et al compared CBT to regular medical care over 3 months and found that approximately twice as many CBT participants improved (59%) compared to routine medical care patients (30%).<sup>280</sup>

Two studies have investigated delivery of CBT in small groups. In 1996, Van Dulmen et al found that CBT led to a greater improvement on a composite measure derived from a GI symptom diary than was the case with a wait list control group.<sup>281</sup> In a 1998 study involving 101 women with IBS, Toner et al compared CBT with a psycho-educational group and a group using regular medical care.<sup>282</sup> The CBT condition was apparently not superior to the psycho-educational group on any measure. However, it was superior to routine medical care in reducing depression (as measured by the BDI) and bloating.<sup>283</sup>

Although overall statistics for CBT are encouraging, it does not appear to be as effective as hypnotherapy or brief psychodynamic psychotherapy in reducing symptoms of IBS.<sup>284</sup>

#### University of Albany Studies

Since the mid-1980s, Blanchard and colleagues have evaluated RCTs using various cognitive and behavioral techniques as treatment for IBS.<sup>285</sup> The advantage of the “University of Albany Studies” is that the same assessment procedures, including the same GI symptom diary, were utilized in all studies and are thus readily and easily comparable.<sup>286</sup>

Blanchard et al began with a cognitive behavioral treatment package consisting of education, relaxation training (progressive muscle relaxation or PMR), thermal biofeedback, and elements of cognitive therapy, with symptom monitoring taking place throughout the process.<sup>287 288</sup> Next, they evaluated the CBT combination in comparison with an attention placebo condition (pseudo meditation and EEG biofeedback for alpha suppression) and with a symptom-monitoring condition (in two separate studies).<sup>289</sup>

Blanchard and colleagues evaluated individual components of the treatment package, including (1.) relaxation (PMR) alone in comparison with symptom-monitoring<sup>290</sup> and (2.) cognitive therapy alone in comparison with symptom-monitoring.<sup>291</sup> The cognitive therapy group was compared to a support group and symptom-monitoring group.<sup>292</sup> The study also compared cognitive therapy delivered individually to that performed in small groups.<sup>293</sup> As noted earlier, Blanchard and colleagues examined the effectiveness of hypnotherapy,<sup>294</sup> and, in their most recent study, used the “relaxation response meditation” created by Benson.<sup>295</sup>

According to Blanchard, two elements of these studies stand out. First, the CBT condition was not superior to the attention-placebo control condition, confirming the 1998 results of Toner et al.<sup>296</sup> Second, cognitive therapy alone produced the most *consistent* results.<sup>297</sup> In Payne and Blanchard (1995), CBT was shown to be “superior to support groups that were equally credible and aroused equally positive expectations.”<sup>298</sup> Furthermore, CBT presented consistent, positive results per diary validated follow-ups at 1, 2, and 4 years.<sup>299</sup>

From these studies, hypnotherapy appears to have the strongest empirical support.<sup>300</sup> It is superior to a placebo control and has been replicated in RCTs at two other sites,<sup>301 302</sup> showing significant post-treatment and follow-up results.<sup>303</sup>

According to the “Albany Studies,” CBT had the next-strongest results from three separate RCTs;<sup>304</sup> however, it has not been replicated outside of Albany. Brief psychodynamic psychotherapy is supported by two RCTs conducted at separate sites and positive post-treatment evaluations at 1-year follow-ups.<sup>305</sup>

In all of these studies, Blanchard et al calculated a CPSR<sup>306</sup> score which represents the average percent reduction for abdominal pain and tenderness, diarrhea, and constipation based on pre-treatment and post-treatment diary ratings.<sup>307</sup> In each of the “Albany Studies,” the score was presented for each treatment condition whereby “a patient was considered improved if his or her CPSR score was 50 or greater.”<sup>308</sup>

### **Guided Imagery and Visualization**

According to a review of the literature, only two studies included guided imagery and visualization (GIV) for GI disorders. Of these two, the first (1993), smaller study (n=28) used GIV to measure decreases in nausea and vomiting during chemotherapy.<sup>309</sup> The second (1997), larger study (n=130) used GIV for patients undergoing colorectal surgery.<sup>310</sup> In both studies, the GIV group had a greater reduction of symptoms, including diminished nausea and vomiting. In the surgical study, the GIV group had less anxiety and required less analgesia and post-operative surgical care as compared to the control group.

According to nursing, medical, and psychological journals from 1966-1998,<sup>311</sup> approximately 46 hospital research trials (without a control group) used GIV, resulting in

reduced hospital stays,<sup>312</sup> diminished blood loss,<sup>313</sup> and reduction in pain medication and anesthesia<sup>314</sup> during and after surgery. Hospitals involved in the research included Cleveland Clinic Foundation, Columbia Presbyterian Hospital, Memorial Sloan Kettering, UC Davis Medical Center, and Pennsylvania State University.<sup>315</sup>

GIV provides patients the opportunity to effectively reduce stress and to control and manage their own healthcare program.<sup>316</sup> GIV tapes and programs have become increasingly popular in the last decade, both in public and private healthcare sectors.<sup>317</sup> In May 2000, Blue Shield of California began offering free GIV audiocassettes “for patients aimed at harnessing their imagination to promote healing.”<sup>318</sup>

In 1991, *The New England Journal of Medicine*<sup>319</sup> published a study showing a direct link between patients’ mental states and disease.<sup>320</sup> Researchers discovered a striking correlation between patients’ level of psychological stress and their susceptibility to infection, providing dramatic evidence of the negative effects of stress on healthy immune functioning.<sup>321</sup>

GIV plus relaxation is used with increasing frequency to help people control their responses to stressful situations.<sup>322</sup> Hospital studies have confirmed the relationship between physical and psychological stress and enhanced post-surgery pain perception, prolonged post-operative recovery time, and increased immunosuppression.<sup>323</sup> These negative conditions improved following the emergence of patient programs utilizing relaxation techniques such as guided imagery.

A four-week GIV research study was conducted at Norwegian University of Science and Technology in 2002<sup>324</sup> for the treatment of fibromyalgia (FM), which shares many characteristics with IBS and is often similarly comorbid.<sup>325</sup> Fifty-five women

diagnosed with FM used guided imagery and visualization for reduction of pain while taking amitriptyline, which was tested against placebo for reduction of FM symptoms.<sup>326</sup> This randomized, control trial showed greater reduction of FM pain in the GIV group as compared to the control group. In addition, the group receiving amitriptyline showed no significant advantage over the placebo group for reduction of FM pain.<sup>327</sup>

At present, GIV is used at the Pain Institute of Chicago<sup>328</sup> in conjunction with other relaxation therapies for the treatment of FM. According to Perkus, an instructor at the institute, “By using a comprehensive, integrated approach, muscle spasms and pain responses can be ‘retrained.’ This has led to considerable remission of FM symptoms in a majority of sufferers being treated at The Pain Institute.”<sup>329</sup>

Current research indicates that patients achieve improved results when they participate in their own treatment plan.<sup>330</sup> “Active participation gives patients a sense of empowerment as well as coping mechanisms for anxiety, stress, and pain.”<sup>331</sup> GIV-therapy provides patients with the opportunity to experience their own healing potentials.

GIV is a therapeutic technique that can be used to ease anxiety levels and promote relaxation. Belleruth Naparstek, a pioneer of guided imagery, describes this process as deliberate, directed daydreaming—

a purposeful use of the imagination that deploys words and phrases designed to evoke rich, multi-sensory fantasy and memory. The voice tone, pacing and choice of language, usually accompanied by relaxing music, create a deeply immersive mind-state which is ideal for catalyzing desired changes in mind, body, psyche, and spirit. For most people, imagery is an easy, user-friendly form of meditation that yields immediate results. Its gentle nature belies its potency and its research-proven cumulative efficacy.<sup>332</sup>

GIV has been instrumental in helping people enhance their performance (career, sports, etc.), increase mental creativity, and improve physical health. According to a

review of the literature, some of the benefits of this intervention include the following: reduced anxiety and depression;<sup>333</sup> lower blood pressure;<sup>334</sup> reduced cholesterol<sup>335</sup> and lipid peroxides;<sup>336</sup> faster healing from cuts;<sup>337</sup> fractures;<sup>338</sup> and burns;<sup>339</sup> reduced blood loss<sup>340</sup> and length of hospital stay post-surgery;<sup>341</sup> heightened short-term immune function;<sup>342</sup> reduced arthritis<sup>343</sup> and fibromyalgia pain,<sup>344</sup> and increased comfort during medical procedures.<sup>345</sup>

GIV is not only simple and subtle, but also highly effective in bypassing cognition and sending healing messages straight into the whole being by way of primitive sensory and emotion-based channels in the brain and nervous system.<sup>346</sup> “Imagery travels primarily via right brain sensing, perceiving, feeling and apprehending, rather than through left-brain thinking, judging, perceiving, analyzing and decision-making.”<sup>347</sup> The use of GIV also creates a highly malleable reverie state, where healing images can “act as a depth-charge dropped deep beneath the surface of the body-mind, reverberating again and again, and delivering complex, layered, oblique healing messages to mind, body and spirit.”<sup>348</sup> GIV becomes increasingly effective with continued use, and eventually requires less time and effort in order to achieve the desired results. “The more you use imagery, the more your response to it deepens, intensifies, and becomes more controllable.”<sup>349</sup>

Human beings worldwide use imagination and imagery every day to review the past and imagine the future.<sup>350</sup> It is a powerful mental function used positively or negatively.<sup>351</sup> Sadly, those suffering from a chronic disorder deemed untreatable (or, in the case of IBS, “nonexistent”) tend toward the negative when utilizing imagination and

imagery.<sup>352</sup> For these patients, images of pain, suffering, and even dying are commonplace.<sup>353</sup>

In *Guided Imagery for Self-Healing*, Rossman (co-founder of the Academy for Guided Imagery) examines the effects of negative imagery:

Worry is an excellent example of the psychophysiologic power of imagery. When you worry, you focus on thoughts of danger and disaster, which may or may not come to pass. As you do this, your body becomes tense and aroused, anticipating a threat or challenge. The fight-or-flight response is activated, initiating a chain of physiologic changes that ready you for intense physical activity. Your body is on alert and prepared for the worst. Yet imagined threats may never materialize, and worse, may never go away.<sup>354</sup>

Millions of chronic sufferers are engaged in daily, stress-related imagery that exacerbates their symptoms, weakens their immune system, and depletes any spiritual reserves that might otherwise be available.<sup>355</sup>

However, the mind-body connection—largely mediated through emotions—is one of the powers of imagination that closely links it to healing. When an individual shifts from a state of anxiety, depression, and fear to one of comfort, peace, and harmony, physiologic changes take place, homeostasis returns, and healing can occur.<sup>356</sup>

The use of GIV as an intervention for the reduction of pain and symptoms in patients with IBS is appropriate for three main reasons:<sup>357</sup>

1. Relaxation and Stress-Reduction: This practice has been shown effective in reducing the severity and number of GI “attacks” characteristic of IBS. It is easy to teach and learn, and almost universally helpful.
2. Active Visualization or Directed Imagery: Patients are encouraged to imagine desired, therapeutic outcomes while in a relaxed, open state of mind. This provides a sense of participation and control in a healing process that

characteristically lacks control. Visualization is similarly beneficial for symptom-reduction and stimulation of the healing response. It can also modify health-endangering behaviors and provide motivation for positive life changes.

3. Receptive or Insight Oriented imagery: Images are invited to enter conscious awareness where they are interactively explored to gather more information regarding symptom(s), illness, mood, treatment, situation, and/or possible solution.

According to Bresler, co-founder and director of the Academy for Guided Imagery (AGI) in California,

Interactive Guided Imagery is much more than simply having a client listen to a predetermined script. It helps a patient/client connect with the deeper resources available to them at cognitive, affective, and somatic levels. The guide's role in this process is not to provide better images for the client, but to facilitate an enhanced awareness of the unconscious imagery the client/patient already has, and help the client learn to effectively interact with this process on their own behalf. This is not only capable of bringing about profound psychological and physiologic change, but also empowers the patient who learns to use the process.<sup>358</sup>

Through extensive GIV training and practice, the theta state of consciousness (the third stage required for effective hypnosis) may be realized, and if combined with biofeedback and/or autogenic training, may lead one toward the ultimate goal of "self-mastery."<sup>359</sup>

If one wishes to get answers, the answers are there. If one wishes to reprogram the body, or emotions, or mind, visualization while in the theta state tends to be converted into reality.<sup>360</sup>

With the development of biofeedback instrumentation and resulting data, the medical/scientific community can quantitatively analyze and legitimize psychosomatic illnesses, as well as the mind-body techniques used for healing them.

GIV is an effective treatment that provides healing imagery and symbolic messages within the mind-body phenomena. According to GIV expert Jean Achterberg,

Imagery is the thought process that invokes and uses the senses: vision, audition, smell, taste, and the senses of movement, position, and touch. It is the communication mechanism between perception, emotion, and bodily changes. A major cause of both health and sickness, the image is the world's greatest healing source.<sup>361</sup>

Elmer Green states, "As they (patients) go along it soon becomes clear that their emotions rule the body, and finally they realize (through visualization training) that the mind can rule the emotions and thus can also rule the body."<sup>362</sup>

Many people are now turning to alternative therapies to regain control of their bodies and become their own healer, recognizing that "the best analyst for each person is their own True self."<sup>363</sup> In a survey from *The New England Journal of Medicine*, Dr. David Eisenberg and colleagues from Harvard report that one-in-three adults use alternative medicine and/or unconventional resources for healing; of those resources, guided imagery is the most frequently used treatment.<sup>364</sup> Relaxation was cited as the most popular treatment, which also draws on imagery and symbols.<sup>365</sup>

Studies suggest that GIV therapy encourages communication between the subconscious and the conscious mind, acting as a bridge between deep seeded emotional feelings and physical realities and/or symptoms.<sup>366</sup> In her book with Garrett Porter, *Why Me? Harnessing the Healing Power of the Human Spirit*, Pat Norris describes this phenomenon:

Visualization is the consciously chosen intentional instruction to the body. Imagery is the spontaneously occurring “answer,” qualifier and modifier from the unconscious. The two-way communication is set up by the interplay of visualization and imagery. The relationship between the two can also be thought of as a metaphor, as the relationship between a transmitter and a receiver. The visualization acts as a message to the unconscious, including the subcortical parts of the brain, and particularly the limbic system, hypothalamus, and pituitary. The images are messages from the unconscious to consciousness, much as dreams are.<sup>367</sup>

GIV is currently used for treatment of chronic pain associated with psychosomatic illnesses/disorders<sup>368</sup> and is utilized in hospitals both pre and post-surgically to increase the effects of anesthesia and speed healing.<sup>369</sup> GIV offers comparable benefits to hypnotherapy without the stigma, prejudice, and high cost involved in hypnosis.

GIV provides a greater sense of control over the healing process than does hypnotherapy, as the images created by the listener are uniquely his or her own, providing more conclusive aspects and reasons for presenting symptoms. Finally, GIV is easy to both administer and use. Together with journaling, this treatment supplies a personal archive of emotions, insights, and discoveries, leading to wholeness of mind, body, and spirit.

### **Journaling/Expressive Writing**

It is the act of journaling, according Baldwin, that bridges the inner and outer worlds and connects the paths of action and reflection.<sup>370</sup> “Writing down your stream of thought lets you see all the chatter you’ve been carrying around inside.”<sup>371</sup> In terms of healing, journaling can help rid the body of this internal chaos.<sup>372</sup>

External expression, through voice or writing, empties the clutter. To gaze upon the written version is to realize that these thoughts and feelings are transient states passing through you, but they are

not you. You are much more than your feelings, and emptying them onto the pages frees you to again feel your vastness.<sup>373</sup>

Journaling also bridges the subconscious and conscious minds by bringing the experience of meditation into full conscious awareness. As one emerges from GIV alpha-theta brainwave activity, journaling begins to translate those immediate, meditative “felt” senses into beta brainwave thought forms.<sup>374</sup> “Writing or speaking about meditative experiences immediately after completion will draw the contents up into the beta mind so they can be consciously retained.”<sup>375</sup> The more one speaks or writes about the meditation, the more one remembers.<sup>376</sup>

Researchers and practitioners have historically cited the expression of negative emotions as vital for good mental and physical health; conversely, an inhibition toward expressing negative emotions has been found to increase the stress response and weaken the immune system.<sup>377</sup> In general, expressing negative emotions has a positive effect across a number of variables of reported health<sup>378</sup> (e.g., health center visits and self-reported symptoms), including psychological well-being<sup>379</sup> (e.g., happiness and adjustment), physiological functioning<sup>380</sup> (e.g., blood pressure and heart rate), and general functioning<sup>381</sup> (e.g., re-employment and absenteeism). Emotional “inhibition,” on the other hand, can have harmful effects on such factors.<sup>382</sup>

Pennebaker reports that emotional writing produces positive health benefits as witnessed by rising T-cell counts after inner thoughts are disclosed.<sup>383</sup> His latest trial from New Zealand tested 37 HIV patients, half of whom were randomized to an “emotional writing” treatment group while the other half (the control group) was asked to write only about benign issues. Participants wrote 30 minutes per day for 4 days. The CD4+ lymphocyte count and HIV viral load were measured at baseline at 2 weeks, 3

months, and 6 months post-treatment. Relative to the drop in HIV viral load, lymphocyte counts increased for the treatment group over the control group.<sup>384</sup>

In cases of chronic illness, writing is a way to release stored feelings and discover new voices.<sup>385</sup> Emotions are expressive acts that have powerful effects on the body according to Griffith and Griffith, who explain that “the release of suppressed emotion breaks the silence imposed by illness and ushers in new language.”<sup>386</sup> Pennebaker also emphasizes the importance of giving trauma a way to communicate in order to expel emotional energy stored in the body: “The freedom of expression that comes through journaling has a positive effect on our immune system and reduces the effects of trauma by bringing the unspoken aspects of the trauma into language.”<sup>387</sup> Pennebaker asserts that inhibiting emotional expression compromises the immune system by creating internal stressors that often result in illness.<sup>388</sup>

According to a review of the literature, people have an intense desire to discuss trauma, and patients undergoing therapy are often encouraged to verbalize negative emotions associated with traumatic events.<sup>389</sup> However, social constraints often inhibit clients from doing so.<sup>390</sup> According to Pennebaker, “One reason why writing is more potent than discussing a situation is that usually when we start to tell somebody a personal story, we’re watching their face very closely to see how they react—if we see any sign that the other person is shocked or disapproving, we immediately start to change the story.”<sup>391</sup> For this reason, journaling provides a practical, concrete, and specific mechanism of emotional expression.<sup>392</sup> Pennebaker suggests writing or journaling without an audience, as feedback inhibits possible health gains.<sup>393</sup>

Understanding the Effects of Expressive Writing:

“Disinhibition” describes the beneficial effects of writing and verbal expression on health; it is a way of potentially releasing internal negative stressors.<sup>394</sup> Conversely, “inhibition” is the failure to acknowledge, understand, and emotionally grasp stressors, and is considered potentially unhealthy.<sup>395</sup> Inhibition serves as a cumulative stressor that builds with time as more and more issues are disregarded. Moreover, “failure to appropriately address stressful events impedes the cognitive-affective assimilation process leaving emotion resolution incomplete.”<sup>396</sup>

Journaling, also known as expressive writing, can facilitate confrontation of self and current issues. This confrontation acts as a source of “habituation and desensitization while diminishing negative arousal and emotions that follow exposure to threatening material (i.e., memories of a negative experience, etc.).”<sup>397</sup>

Confrontation can break the pathological feedback loop of avoidance and negative rumination and, in this way, diminish negative affect. These processes might be reflected in changes of self-reported arousal when remembering the problematic event and also in a decrease in avoidance as a coping mechanism.<sup>398</sup>

Confronting traumatic experiences helps facilitate personal understanding of the incident and assists in re-framing it.<sup>399</sup> Confrontation allows people to change their original appraisals of negative events into more benign evaluations. Events are reconstructed as more meaningful and controllable.<sup>400</sup>

Studies have attempted to separate the contributions of emotion and language, specifically to determine the degree to which language is necessary for improving mental and physical health. Research on catharsis has failed to support the clinical value of “emotional expression in the absence of cognitive processing.”<sup>401</sup> Smyth cites Krantz and

Pennebaker<sup>402</sup> to illustrate the impact of writing on cognitive processing in order to make the expression of emotion therapeutic.

Thus, the mere expression of trauma is not enough to bring about long-term, positive change.<sup>403</sup> Gains seem to require the translation of experience into organized, meaningful language.<sup>404</sup> Thirteen experiments with more than 800 individuals were included in a meta-analysis by Smyth.<sup>405</sup> He found the “binomial effect size of writing to be a 23% improvement in those assigned to write about stressful events over those who wrote about neutral topics.”<sup>406</sup>

Positive effects of journaling were established in a study using employment as the dependent variable.<sup>407</sup> A joint 1994 study by psychologists and the Drake Beam Morin job placement firm followed 63 unemployed professionals (N=63) for 5 months. These participants were divided into three writing conditions. In the experimental writing condition, participants were instructed to write about their deepest personal and professional thoughts and feelings concerning their layoff. In the control writing condition, participants were asked to write about their plans for the day and their job search activities without any emotional input. In the no-writing condition, participants were not given any writing instructions.

After five consecutive days of 30-minute writing sessions, researchers started tracking employment status. Four months after treatment, 53% of the experimental writing participants—those individuals who wrote about losing their jobs with the most intensity—found new employment. Of the other two control groups, 24% of the non-emotional writing group found jobs as compared to 14% of the non-writing control group.<sup>408</sup>

In 1999, Smyth, Stone and colleagues at SUNY/Stony Brook assigned patients with asthma and rheumatoid arthritis to either write about the most stressful event of their life or to write about a neutral topic.<sup>409</sup> Four months later, asthma patients in the experimental group showed improvements in lung function, while arthritis patients in the same group showed a reduction in disease severity. In all, 47% of the patients disclosing stressful events showed clinically relevant improvement compared to the control group who exhibited 24% improvement.<sup>410</sup>

Journaling was initially believed to provide individuals the opportunity to confront upsetting topics by reducing the constraints or inhibitions associated with not talking about the event.<sup>411</sup> The assumption was that the effort of inhibition caused or increased stress-related disease processes.<sup>412</sup> Although early work focused on the central role of emotional expression,<sup>413</sup> evidence suggested that it may be necessary (but not sufficient) in producing positive change.<sup>414</sup> More recently, researchers have suggested that emotional expression facilitates cognitive assimilation of the traumatic memory, which leads to “affective and physiological change.”<sup>415</sup> Specifically, written emotional expression leads to a change of the traumatic experience into a “linguistic structure that promotes assimilation and understanding of the event and reduces negative affects associated with thoughts of the event.”<sup>416</sup>

Although journaling has resulted in the reduction of negative emotions, these results include a short-term emotional paradox: an increase in short-term distress.<sup>417</sup> During the actual writing experience, study participants tend to show marked increases on measures of autonomic arousal such as blood pressure and skin conductance.<sup>418</sup>

“Those writing about traumas show a distinct shift to more negative affect, while no changes in affect are observed for participants writing about innocuous topics.”<sup>419</sup>

In his meta-analysis, Smyth found that average short-term distress was unrelated to all long-term successful outcomes examined.<sup>420</sup> In the absence of intervening coping strategies, this is contrary to the prediction of stress and coping theory, which would suggest that short-term stress produced by writing about past traumas would result in negative long-term mood and health outcomes.<sup>421</sup> The negative physiological and affective states produced by writing must be alleviated or reversed at some point after writing but prior to measurement of health outcomes.<sup>422</sup>

In summary, when individuals express their emotional upheavals in writing, their mental and physical health improves in the long-term.<sup>423</sup> However, there may be a paradoxical increase in short-term anxiety and other emotions during journaling that should not be ignored by attending counselors; rather, therapists should be prepared to help patients process these emotions appropriately.<sup>424</sup>

#### Factors Related to Effectiveness of Expressive Writing/Journaling:

Accumulated evidence suggests that writing about stressful events can play a significant role in influencing health and well-being.<sup>425</sup> It is important, however, to investigate the parameters of written self-disclosure. Very few personality or individual difference measures have been distinguished among persons who do or do not benefit from writing.<sup>426</sup> Many commonly examined variables were found to be unrelated to outcome, including age, anxiety, and measures of inhibition or constraint.<sup>427</sup>

However, it seems that journaling may be more effective for men than for women, as reported by Smyth in his meta-analysis.<sup>428</sup> A few years after Smyth’s

investigation, another meta-analysis confirmed that men disclose less than women do.<sup>429</sup> Narrative reviews also suggest that women disclose more on emotional topics than men do.<sup>430</sup>

This finding suggests that people who are less emotionally open benefit more from journaling.<sup>431</sup> Because traditional gender roles make it less-likely for men to disclose traumas and related emotions than women, men may experience greater benefit due to lower pre-writing levels of emotional expression.<sup>432</sup> In addition, men tend to use more problem-focused coping strategies,<sup>433</sup> and may focus more on the actual trauma when writing—a difference that could facilitate the beneficial effects of disclosures.<sup>434</sup>

Another variable—hostility—was investigated using cancer patients. This investigation found that highly hostile individuals benefited more from writing than those with little or no hostility.<sup>435</sup> It has been theorized that the more hostile the patient, the greater the increase in natural killer-cell activity.<sup>436</sup>

Writing about stressful events has been studied among individuals of varying educational levels, who speak assorted native languages (in the U.S.), and who hail from diverse cultures and countries outside the U.S.<sup>437</sup> In this country, writing about stressful events has produced similar benefits for such diverse groups as senior professionals with advanced degrees and maximum security prisoners with little or no education.<sup>438</sup> Differences among college students' ethnicities or native languages were not related to the outcome of their journaling therapy, and the positive benefits of writing about stressful events were confirmed throughout the world in countries such as Belgium, Mexico, Spain, the Netherlands, and New Zealand.<sup>439</sup>

Concerning length, time, or spacing of journal sessions, participants in various experiments have written for different lengths of time and at assorted intervals.<sup>440</sup> Subjects have written for as little as 1 day and for as many as 5, typically on consecutive days, but spaced as much as a week apart.<sup>441</sup> The length of each journaling session has varied from 15 to 30 minutes, although one study asked participants to write only 3 minutes for 1 day.<sup>442</sup> Smyth's meta-analysis suggested that the strongest effects are related to the treatment ranging over more days, but with the length of the individual sessions not related to writing effectiveness.<sup>443</sup> In other words, writing once each week over a month may be more effective than writing four times within a single week. The therapeutic process (the meaningful integration of negative information) may progress over time, increasing benefits to writers.<sup>444</sup> Similarly, prolonged exposure strategies have been shown to provide greater opportunity for improvement, i.e., longer writing sessions over more days.<sup>445</sup>

The topic of trauma-related disclosures about which participants were requested to write (past trauma, current trauma, or either) is relevant to outcome.<sup>446</sup> It appears that instructions do not influence overall effect size, but participants writing only about current traumas had well-being outcomes superior to those instructed to write about any traumas, either past or present.<sup>447</sup> In addition, addressing ongoing traumas more intimately linked to daily life tends to produce greater positive change than addressing past traumas that are less-relevant to daily life.<sup>448</sup>

(In many of these studies, authors use the terms "trauma" and "stress" interchangeably. Although stress often results from a traumatic event,<sup>449</sup> it is defined as "any stimulus requiring adaptation or change."<sup>450</sup> While stress can be both positive and

negative,<sup>451</sup> negative stress is seen as the culprit in the development and onset of IBS,<sup>452</sup> and is therefore the focus of this paper.)

The research on journaling or expressive writing presented in this literature review helps broaden the field of stress-management programs<sup>453</sup> for individuals either suffering from stress-related diseases or interested in preventing them. The American Digestive Disease Society has labeled stress a “disease,”<sup>454</sup> attributing it to such illnesses as tension headaches, chest discomfort, fatigue, muscle aches, susceptibility to infection, and IBS.<sup>455</sup> Alternately, trauma, which often precipitates the stress response,<sup>456</sup> is defined as a natural human response to the physical, psychological, social, and spiritual manifestation of stress in a person’s life.<sup>457</sup> In these same studies, authors reveal how journaling can assist individuals in identifying distinct manifestations of stress and traumatic events so that they may effectively cope, adapt, and manage stress.<sup>458</sup>

There is evidence that writing may not be effective with some groups of impaired individuals.<sup>459</sup> Those failing to benefit include recently bereaved elderly, individuals with disordered cognitive processing, and those with severe depression.<sup>460</sup> Similarly, a group of patients with PTSD got worse when writing about traumatic events; researchers concluded that additional therapy was needed.<sup>461</sup>

Overall, journaling, when used with appropriate caution and good judgment, seems to produce relevant and generalize-able effects across age, sex, race/ethnicity, social class, and educational level.<sup>462</sup> In terms of treatment with IBS patients, writing appears to be a suitable adjunct as a stress-reducer and an appropriate part of a multi-component treatment program for symptom-reduction.<sup>463 464</sup>

After reviewing the literature, the researcher's opinion is that engaging in "written conversation" or journaling can be relatively transformative. In terms of being emotionally and physically "stuck," journaling provides a venue for releasing the negative, self-defeating thoughts and chatter filling one's mind, body, and soul, thus providing space for healthier feelings, ideas, and experiences. According to Yogananda, "The instrument is blessed by that which flows through it."<sup>465</sup>

In *Man's Search for Meaning*, Viktor Frankl discusses the link between connection with life meaning, purpose, and survival.<sup>466</sup> He suggests that man is not diminished by suffering, but by suffering without meaning—that those individuals who survive adversity retain their connection with life purpose and find meaning through their suffering.<sup>467</sup>

Journaling offers patients an opportunity to clarify and process their experience of illness and find opportunity in their adversity.<sup>468</sup> Through this type of historical life transcript, journaling encourages patients to consciously confront illness while acquiring the biologic, psychologic, social, spiritual, and behavioral skills needed for self-management and recovery.<sup>469</sup> Increased feelings of control and choice along with decreased feelings of hopelessness and depression appear to be facilitated by the journaling process.<sup>470</sup>

Writing deeply to heal is not easy, but its rewards appear to exceed all risks;<sup>471</sup> the end of the tunnel may lead to a deeper connection with the divine and the rhythms of the body,<sup>472</sup> and, with dedication, a deeper understanding of both.

## Current Study

Based on a review of the literature, the decision was made to utilize guided-imagery/visualization and journaling for reduction of symptoms in a designated IBS population. The *Releasing the Inner Magician*<sup>473</sup> method (heretofore known as the RIM multi-component treatment program) comprised of guided-imagery/visualization and journaling, was the independent variable utilized in this study.

Two groups of individuals ranging in age from 18 to 65 and diagnosed with IBS using the Rome II criteria<sup>474</sup> elected into an eight-week treatment or control condition to establish the following hypotheses:

- 1.) Does the use of guided-imagery/visualization and journaling as part of the RIM multi-component treatment program contribute to the reduction of primary symptoms (including diarrhea, constipation, and abdominal pain as described in the Rome II criteria) in individuals with irritable bowel syndrome (IBS)?
- 2.) Does the use of guided-imagery/visualization and journaling as part of the RIM multi-component treatment program contribute to the reduction of secondary symptoms (including bloating, flatulence, and belching as described in the Rome II criteria) in individuals with IBS?
- 3.) Does the use of guided-imagery/visualization and journaling as found in the RIM multi-component treatment program improve quality of life for individuals with IBS?

To answer these research questions, a quasi-experimental, repeated-measures design was used.<sup>475</sup> A one-tailed, independent t-test<sup>476</sup> compared the treatment CPSR scores. Two-way repeated measures analysis of variance<sup>477</sup> compared individual gastrointestinal (GI) symptom reduction scores between treatment and control groups

across time. Two-way repeated measures ANOVA<sup>478</sup> was also used to test the IBS-QOL “overall” and “subscale” scores.

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- <sup>469</sup> Emeran A. Mayer, "Convergent Traditional and Scientific Approaches to Health, Disease, and Healing," *The Neurobiology Basis of Mind Body Medicine*. (Milwaukee: International Foundation for Functional Gastrointestinal Disorders, 2000): 4-6.
- <sup>470</sup> J.W. Pennebaker, <sup>470</sup> J.W. Pennebaker, *Opening Up: The Healing Power of Expressing Emotion* (New York: Guilford Press, 1997).
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- <sup>472</sup> Robert Yehling, "Write deeply, heal deeply," *Science of Mind*, 6 (2004):27
- <sup>473</sup> Deborah Sandella, *Releasing the Inner Magician: Ways to find a peaceful and Happy Life* (Denver: Inner Magician Series, 2002).
- <sup>474</sup> D.A. Drossman, "The Rome Criteria Process: Diagnosis and Legitimization of Irritable Bowel Syndrome," *The American Journal of Gastroenterology*, 94 (1999): 2803-7.
- <sup>475</sup> P.S. Hinton, *Statistics Explained: A Guide for Social Science Students* (London: Rutledge, 1995).
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## CHAPTER 2: METHODS

### Participants

Fifty-two women and men diagnosed with irritable bowel syndrome (IBS) by their personal physician or gastroenterologist were initially interviewed for the study. All met the Rome II criteria for IBS. Participants were recruited by two local internists and through fliers posted in two medical buildings and one senior center. Additionally, study administrators ran newspaper advertisements for IBS volunteers every Tuesday for three consecutive weeks. These ads appeared in two local newspapers (twice in the *Rocky Mountain News* and once in the *Denver Post*); both with average circulations of 300,000 copies per day (see Appendix A).

Participant inclusion criteria were as follows: at least 18 years of age and have received a diagnosis of IBS from their physician or gastroenterologist. Exclusion criteria included having a secondary gastrointestinal diagnosis such as IBD, which is beyond the scope of this study. Hence, two participants were excluded for Crohn's disease and ulcerative colitis, and nine others dropped out because of schedule conflicts, lack of verifiable diagnosis, and problems with transportation.

### Sample Demographics:

The final sample for the treatment group included 20 females and 0 males (n=20), whereas the control group included 18 females and 3 males (n=21). The average age for the treatment group was 48.35 years (range 18-84 years, SD=17.83 years) with a mean of 14.82 years with IBS (range 0 years to 38 years, SD=11.59 years). The average age for the control group was 44.19 (range 19-63 years, SD=13.08) with a mean of 13.92 years with IBS (range 2-30 years, SD=8.58).

Marital Status for the treatment group: Married: 15; Single: 3; and Divorced: 2. Control Group: Married: 10; Single: 5; Divorced: 5; and Widowed: 1. Annual Income for the treatment group: Earnings of \$25,000 and under: 4; \$25,000-\$50,000: 4; \$50,000-\$75,000: 2; \$75-\$150,000: 4; and \$150,000 and over: 5. Control group: Earnings of \$25,000 and under: 1; \$25-\$50,000: 5; \$50-\$75,000: 8; \$75-\$150,000:5; and \$150,000 and over:1. One individual from each group failed to report income. Years of Education for the treatment group: High School: 5; College: 9; and Post Graduate: 6. Control Group: High School: 5; College: 14; and Post Graduate: 2.

Participants self-selected into treatment or control group, stating a preference for one or the other at the time of the initial interview. Participants opting for the control condition agreed to participate in the treatment condition following completion of the present study. Groups were equivalent based on mean age and years with IBS.

### **Dependent Measures: The CPSR and the IBS-QOL**

The Composite Primary Symptom Reduction score (CPSR)--  
The Gastrointestinal (GI) Symptom Diary (See Appendix B):

The composite primary symptom reduction score (CPRS) is an instrument that reflects the reduction of gastrointestinal symptoms as recorded by patients in a gastrointestinal symptom diary, also known as the GI symptom diary.<sup>1</sup> This was developed from a determination that clinically significant changes in behavioral medicine were in need of objective and publicly verifiable measures with which to report findings.<sup>2</sup> Four problems with a long history of behavioral intervention were targeted for use with this measure, including hypertension, obesity, smoking, headache, “and one relatively understudied but widespread problem, irritable bowel syndrome”<sup>3</sup>

According to Edward B. Blanchard and Shirley P. Schwarz, developers of the measurement, “Objective, publicly verifiable measures (‘signs’) of change are to be preferred to subjective measures (‘symptoms’); however, where objective measures do not exist, systematic self-report of symptoms may be the best and most appropriate measure available.”<sup>4</sup> The GI symptom diary was introduced in 1988 at the University of Albany Center for Stress and Anxiety Disorders, and is considered by many to be “the gold standard”<sup>5</sup> for measuring outcome in IBS treatment studies.

The GI symptom diary includes eight GI symptoms which patients rate from 0-4 (absent to debilitating) one time per day. Symptoms include pain, tenderness, diarrhea, constipation, flatulence, belching, nausea, and vomiting. The GI symptom diary has been shown reliable in the short term, with correlations of weekly average symptoms scores from week 1 to 2 ranging from 0.76 to 0.94.<sup>6</sup>

An inherent difficulty in clinical treatment and IBS research is the multi-symptomatic nature of this disorder.<sup>7</sup> By definition, the patient must have pain or tenderness and altered bowel habit present with two to eight other symptoms. The diary is a way of clinically determining significant improvement or change. First, a “percent improvement score”<sup>8</sup> is calculated for each symptom the patient presents. An example for diarrhea would be as follows:

$$\frac{\text{Percent Reduction Score}}{100} = \left( \frac{\text{Average baseline diarrhea rating from diary} - \text{Average post-treatment diarrhea rating from diary}}{\text{Average baseline diarrhea rating}} \right) \times 100$$

From this, a composite primary symptom reduction score (CPSR) is obtained:

$$\text{CPSR} = \frac{\text{Percent Reduction Scores for Abdominal Pain and Tenderness, Diarrhea, Constipation}}{2 \text{ or } 3 \text{ (depending on number of symptoms present)}}$$

Although the description of the CPSR score is a bit tedious, it represents the culmination of previous test results. An individual CPSR score is the average percent reduction in primary GI symptoms from before to after treatment.<sup>9</sup> The CPSR score assumes that improvement in one symptom, such as diarrhea, is equivalent to improvement in another symptom, such as abdominal pain. For research purposes, this is a reasonable approach when averaging 10 to 30 cases (unlike in individual cases, wherein one could use the symptom reduction score for the symptom(s) that are most distressing to the individual). In addition, a CPSR score of 50 or greater represents clinically meaningful improvement.<sup>10</sup>

Presently, no measures for functional gastrointestinal disorders are “sufficiently validated to be recommended unequivocally as the primary outcome measure.”<sup>11</sup> As such, the GI symptom diary represented by the CPSR score appears to be a viable assessment of IBS symptoms as compared to other statistical tests used to measure outcomes in functional gastrointestinal disorders.

IBS-Quality of Life score or IBS-QOL (See Appendix C):

Quality of life research in relation to the study of IBS has only reached prominence as a research topic in the last five years. There are now several questionnaires to measure quality of life in IBS patients. One of the first—the IBS-QOL—<sup>12</sup> was designed by investigators at the University of North Carolina Center for Functional GI and Motility Disorders in collaboration with researchers at other

institutions. According to the authors of the IBS-QOL, it was important that a quality of life measure be specific to “persons with the symptom constellation of IBS and including all the human concerns related to these symptoms.”<sup>13</sup>

Most researchers studying treatments for IBS now assess the change in quality of life associated with treatment in addition to quantifying changes in bowel symptoms. Doing this gives a better view of what difference IBS treatments really make in ways that are important to the patient.<sup>14</sup>

The IBS-QOL uses a 5-point Likert response scale to assess how much each item describes the respondent’s feelings to a particular symptom: not at all, slightly, moderately, quite a bit, or extremely/a great deal. All 34 items are scored through simple cumulative scaling to derive an overall total score and eight subscales, including dysphoria, interference with activity, body image, health worry, food avoidance, social reaction, sexual, and relationships. To facilitate interpretation of scores, the summed total score is transformed to a 0-100 scale ranging from 0 (poor quality of life) to 100 (maximum quality of life).<sup>15</sup> The questionnaire is designed to be self-administered and takes an average of 10 minutes to complete.

#### Reliability and Validity of IBS-QOL:

To develop a quality of life measure specific to IBS, questions were generated using both a conceptual model and qualitative interviews with persons diagnosed using the Rome criteria.<sup>16</sup> Symptom frequency and bothersomeness indices were created. Psychometric evaluation methods involved an initial cross-sectional survey followed by a repeat survey.<sup>17</sup>

The resulting 34-item measure demonstrated high internal consistency (Cronbach's alpha = 0.95) and high reproducibility (ICC = 0.86) with average time of seven days (SD = 1).<sup>18</sup> For discriminant validity number of symptoms ( $P < 0.05$ ), self-reported severity of symptoms ( $P < 0.001$ ), and the functional bowel disorder severity index ( $P < 0.001$ ) significantly predicted IBS-QOL scores.<sup>19</sup> Convergent validity and analyses confirmed predictions that scores are more closely related to overall well-being (0.45) than to function (0.36).<sup>20</sup> The IBS-QOL meets established psychometric criteria for reliability and validity.<sup>21</sup>

Upon reviewing validity and appropriateness of IBS outcome measures, a Netherlands group concluded that “the IBS-QOL measurement by Patrick and Drossman is the best choice because it has been the most extensively validated and shows appropriate psychometric quality.”<sup>22</sup> Additionally, a study by European gastroenterologists report that the IBS-QOL has “excellent test-retest reliability and internal consistency.”<sup>23</sup>

According to Patrick and Drossman, the IBS-QOL was constructed specifically for persons with IBS using a “conceptually driven needs-based model”<sup>24</sup> to obtain IBS-related effects and concerns with the language and culture of the patients.

This instrument captures the concerns of patients with a high level of specificity and attribution to the bowel symptoms of IBS. It may also prove to be a more responsive measure of HR-QOL for persons with IBS, that is one capable of detecting minimally important changes that can be attributed to treatment.<sup>25</sup>

In studies involving health-related quality of life measures, Patrick and Drossman et al., found that impairment in quality of life is somewhat independent from symptom severity and is not an inevitable consequence of symptoms.<sup>26</sup>

Consequently, both the CPSR and the IBS-QOL were chosen to provide the most conclusive measurements for this study.

#### Experimental Design:

A quasi-experimental, repeated measures design was used at baseline (two weeks pre-test) and at two weeks post-test; randomization was not possible. A one-tailed, independent t-test compared the treatment CPSR scores. Two-way repeated measures analysis of variance compared individual gastrointestinal (GI) symptom-reduction scores between treatment and control groups across time. Two-way repeated measures ANOVA was also used to test the IBS-QOL overall and subscale scores.

#### **Procedures**

##### Data Collection:

Interested parties were initially phone-screened, followed by informational packets that were mailed to all potential subjects consisting of a letter of explanation/rational for the study, a sample GI symptom diary, a consent form (See Appendices B, D, and E) and a map with directions to the treatment center. Subsequent phone calls were made (by the PI) to confirm receipt of packets and to remind individuals of the date, time, and place for the first pre-treatment meeting.

Potential subjects attended one of two, pre-treatment meetings held in the Community Room at the Aurora Urgent Care Center. This large community room consisted of several rows of long tables, chairs, a podium, blackboard, piano, and kitchen facilities.

The meetings were held on February 11 and 18, 2004 (the second meeting was scheduled due to heavy snowfall on the first date), to administer the IBS-QOL pre-test,

and several other forms, including the Albany IBS History (a structured and detailed gastrointestinal history),<sup>27</sup> the Rome II criteria, an IBS diagnosis form, (See Appendices C, F, G, and H) and additional GI symptom diaries.

Participants were taught how to monitor their symptoms using the GI symptom diary. Each diary contained a week's worth of symptom-tracking information. GI symptoms were rated on a 0-4 scale: 0 = no problem, 1 = mild problem, 2 = moderate problem, 3 = severe problem, and 4 = debilitating problem. Symptoms included abdominal pain, abdominal tenderness, diarrhea, constipation, bloating, belching, and flatulence. If participants experienced diarrhea, they reported the number of times it occurred.

In addition to symptom severity, participants recorded whether they changed medication or avoided any food, drinks, or activities because of their symptoms. Participants were instructed to record this information in their diaries each evening to ensure accurate reporting.

Participants self-selected into treatment or control groups based on presumption of need and/or work schedule, and were assigned symptom-monitoring (in their GI diaries) for two-week baseline assessments to begin immediately. Participants in the control group were asked to mail or drop off two-week GI symptom diaries at the end of baseline. The control group also received post-treatment symptom diaries to be collected at the final post-treatment meeting on May 4, 2004, approximately eight weeks from the initial pre-treatment meeting(s).

Participants in the treatment group were asked to bring their completed baseline symptom diaries to the first treatment session on March 2, 2004.

All participants were contacted during the two-week baseline period to confirm:

1. Their ability to participate in the study
2. Their ability to fill out the GI symptom diary
3. Any questions they might have in relation to the study or complications resulting from their disorder (or any comorbid disorders) that might prevent completion of study.

Therefore, this treatment protocol consisted of an eight week, quasi-experimental, repeated measures design consisting of two weeks/baseline symptom monitoring, four weeks/biweekly treatment sessions (eight sessions), and two weeks/post-treatment symptom monitoring. The condition-wait list/ control group was subsequently scheduled for treatment at the conclusion of this study trial.

### **Independent Measures:**

#### Treatment:

*Releasing the Inner Magician: Ways to Find a Peaceful and Happy Life*<sup>28</sup> (RIM method) served as a basis for the one-hour, four week/biweekly sessions (eight sessions total). The coordinator/GIV administrator and discussion leader for this study was also the principal investigator (PI)—an advanced doctoral student in theology, trained by the RIM author to administer and serve as a guide for this treatment. All participants in treatment group received a book and accompanying CD.

*Releasing the Inner Magician*, heretofore known as the RIM method, is divided into four intuitive meditations (referred to as initiations), each one appearing in the book and recorded on the CD. Participants listened to all four initiations twice a week for four weeks during the treatment sessions. Each meditation ran approximately 20 minutes and

was accompanied by journaling exercises outlined in the book. Participants were given approximately 15-20 minutes to work on the exercises, but could continue journaling outside of the sessions if they so desired.

During the first session, participants were given a rationale for GIV-journaling, including an explanation of its ability to reduce “the stress response,”<sup>29</sup> leading to a decrease in pain and severity of IBS symptoms. The group received pamphlets containing information about IBS (Appendix I) and stating the negative effects of stress and its role in precipitating chronic (IBS) gut responses.

Before listening to their first meditation, participants were introduced to a “sensualization”<sup>30</sup> exercise to facilitate their visualization technique. This was given because many people have fixed ideas about what visualization means, how to visualize, and whether or not they are doing it “right;” the exercise was intended to help broaden one’s concept of visualization to include sensualization so that non-visualizers could enjoy the benefits of GIV. The sensualization exercise that was used is described below.<sup>31</sup>

Close your eyes. Imagine that you are going to have a drink of some sort. Is it in a cup or a glass? What color is the container—or is it transparent? What color is the liquid? Feel the container. Is it hot or cold? How full is the container? Pick it up and feel the weight. Put it back down on the table heavily. Can you hear the bang? Smell it. Now, finally taste it. Be careful not to burn yourself if it is hot. Drink as much as you want. Open your eyes and return. What happened? What were you drinking? Could you taste it or smell it? Could you feel or hear the container? If you can answer any of these, you can visualize, even if you had trouble seeing it with the visual sense.<sup>32</sup>

From this exercise, subjects recognized and acknowledged use of the different senses.

According to Wise, using all of the senses during GIV leads to deeper meditative states

via alpha brain wave activity,<sup>33</sup> ideally facilitating the recall of past images, symbols, and memories so they may be reinterpreted and healed.

The PI taught the treatment group about the combination of alpha and theta brainwaves involved in meditation (Appendix J). Theta brainwaves (subconscious) provide the depth and insight of the meditation experience—the subconscious inner space from which creativity, insight, and healing emerge. Alpha brainwaves (detached awareness) provide the bridge to the conscious, thinking mind so that the one meditating can actually remember the contents of his/her meditation.

The PI gave instructions on the use of the RIM method and its limitations (i.e., the RIM method is not a substitute for currently prescribed drugs or psychological interventions, but an adjunct to them). The RIM method is simply a tool used to gain control over a condition that is out of control.

Subjects were taught five elements of intuitive meditations:

1. Select a quiet environment.
2. Assume a comfortable “sitting” position so as not to fall asleep.
3. Discern metaphoric insights.
4. Assume attitude of receptivity (i.e. non-judgmental).
5. Journal insights.

According to Sandella, the RIM method is a guided-imagery/visualization experience which provides participants with the “venue and equipment necessary for exploring one’s inner landscape.” The recorded meditations use nature as a metaphor to mirror different human qualities that are found in the core elements (earth, air, water, and fire). At week 1, subjects were initiated into the earth, uniting with the “core” of their

being; by week 4, participants had united with all of their core elements while recording insights along the way.

(Before the study commenced, the RIM method was ultimately expanded to include support group and lecture/discussion activities. It was subsequently renamed “the RIM multi-component treatment program.” Rationalizations for these additions are addressed in the discussion section.)

### Week 1

The first meditation (Appendix K), “An Initiation with the Earth/Unearthing Your Soul,” was played while listeners (with closed eyes) were encouraged to dig into the layers of their consciousness and excavate artifacts from the past. The meditation ran approximately 20 minutes and was followed by a journaling exercise (15-20 minutes). Participants who wanted to share their insights were invited to do so following the exercise (5-10 minutes).

Secondly, The PI reviewed GI symptom diaries to assess for any difficulties, and passed out blank diaries for the following week. The final portion of each session (10 minutes) focused on a topic related to the IBS experience. The topic for week 1 was “Diet/Nutrition and Food Intolerances for IBS Sufferers” (Appendix L).

Food intolerances are a major concern for IBS sufferers. Of those diagnosed, over 50 percent suffer from lactose intolerance,<sup>34</sup> and a third of that percentage suffers from wheat intolerance.<sup>35</sup> Over-the-counter fiber supplements,<sup>36</sup> herbal teas for stomach cramps, teas for constipation, and foods to facilitate easier bowel movements or prevent diarrhea were included in the discussion. The PI gave handouts on the ill effects of fat

and fructose on symptoms of IBS<sup>37</sup> (Appendix L). Sessions ended with positive affirmations by the PI (Appendix M).

### Week 2

For the second meditation (Appendix N), “An Initiation with Air/ Swinging on a Breath” participants were instructed to follow their breath into their heart and were then encouraged to heal old wounds (20 minutes). The meditation was followed by a journal exercise (15-20 minutes). Any participant interested in sharing insights was given an opportunity to do so (5-10 minutes).

The PI then reviewed GI symptom diaries to assess for any difficulties. Diaries were collected and blank ones were handed out. The discussion for Week 2 focused on successful behavioral therapies (including those outlined in handouts) used in treating IBS, including hypnotherapy, cognitive behavioral therapy (CBT), biofeedback, and progressive muscle relaxation or PMR<sup>38</sup> (Appendix O). The session concluded with positive affirmations (Appendix M).

### Week 3

The third meditation (Appendix P), “An Initiation with Water/Bathing in the Waters of Forgiveness” was played next. Participants were asked to compare the paradox of life to water—an element which is both life-giving and life-taking, creative and destructive (20 minutes). This meditation was followed by a journal exercise (15-20 minutes). Participants were then given the opportunity to share insights (5-10 minutes).

The PI then reviewed GI symptom diaries to assess for any difficulties. Diaries were collected and blank ones were handed out. The discussion for week 3 focused on several comorbid IBS disorders/illnesses, such as fibromyalgia (FM), chronic fatigue

syndrome (CFS), and interstitial cystitis (IC)<sup>39</sup> (Appendix Q). Approximately one-third of the treatment group suffered from one or more of these comorbid disorders. The PI emphasized the importance of continued use of anti-stress techniques, including deep breathing, GIV meditations and journaling, and any other activities (including vigorous exercise) to reduce sympathetic fight-or-flight responses precipitating symptoms in these comorbid disorders ( IBS included).<sup>40</sup> The PI ended the session with positive affirmations (Appendix M).

#### Week 4

The last meditation (Appendix R), “An Initiation with Fire/ Tending our Inner Fire, Seat of our Passion” was played (20 minutes) and followed by a journal exercise (15-20 minutes). In this final meditation, participants were connected to their natural passions and the boundaries surrounding them. Participants were given time to share insights (5-10 minutes). Final GI symptom diaries were collected and two weeks of blank diaries were distributed for post-test symptom-monitoring data.

Week 4 was spent collecting any missing data from the treatment files and assisting subjects with plans for integrating and utilizing GIV and journaling. The PI also introduced the book *Radical Forgiveness*<sup>41</sup> and outlined highlights from the forgiveness program (Appendix S). Author Colin Tipping states “*Radical Forgiveness* is a great complementary treatment for cancer, MS, CFS and other immune system related diseases. (*The immune system is extremely susceptible to emotional stress—especially when it is suppressed or repressed.*)”<sup>42</sup> The PI concluded the study with positive affirmations (Appendix N).

#### Final Meeting - 2 weeks Post-Treatment

Two weeks post-treatment, control and treatment groups met for a final session. Each condition returned two-week post-treatment GI symptom diaries and answered final IBS-QOL questionnaires. Following data collection, the PI introduced another meditation by Belleruth Naparstek<sup>43</sup> that was specific for IBS and IBD. All subjects listened to the CD, which ran for approximately 20 minutes.

The PI asked for any final comments, questions, or observations since the last meeting for the treatment group. The majority of treatment subjects said they were integrating GIV and journaling into their lives at least 2-3 times per week with above average results. They admitted to feeling less stressed, with stable or improved symptoms.

The PI gave out contact information for further assistance and ended the meeting with positive affirmations. The PI called or e-mailed control group participants the last week in May to establish a meeting place and time for commencement of treatment phase. (Eight control group subjects commenced treatment on June 8, 2004.)

## **Data Analysis**

The data was compiled upon completion of the eight-week study. It was reviewed for accuracy in data-input and corrections were made to inputting errors, after which it was converted to an SPSS file for analysis. An alpha level of .05 was used for statistical testing/comparisons.

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<sup>1</sup> E.B. Blanchard and S.P. Schwarz, "Clinically Significant Changes in Behavioral Medicine," *Behavioral Assessment*, no. 10 (1988): 171-88.

<sup>2</sup> Ibid.

<sup>3</sup> Ibid.

<sup>4</sup> Ibid.

<sup>5</sup> J.S. Meissner et al., "Comparison of Treatment Outcome Measures for Irritable Bowel Syndrome," *Applied Psychophysiology and Biofeedback*, 22 (1997): 55-62.

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- <sup>6</sup> E.B. Blanchard and S.P. Schwarz, "Clinically Significant Changes in Behavioral Medicine," *Behavioral Assessment*, no. 10 (1988): 171-88.
- <sup>7</sup> Ibid.
- <sup>8</sup> Ibid.
- <sup>9</sup> Ibid.
- <sup>10</sup> Ibid.
- <sup>11</sup> Ibid.
- <sup>12</sup> D.L. Patrick et al., "Quality of Life in Persons with Irritable Bowel Syndrome: Development and Validation of a New Measure," *Digestive Diseases and Sciences*, 43 (1998): 400-11.
- <sup>13</sup> Ibid.
- <sup>14</sup> O.S. Palsson et al., "Impact of Somatization and Comorbid Medical Conditions on Health Care Utilization, Disability, and Quality of Life in Irritable Bowel Syndrome (IBS)," *Gastroenterology*, 122 (2002): A501-2.
- <sup>15</sup> D.L. Patrick et al., "Quality of Life in Persons with Irritable Bowel Syndrome: Development and Validation of a New Measure," *Digestive Diseases and Sciences*, 43 (1998): 400-11.
- <sup>16</sup> Ibid.
- <sup>17</sup> Ibid.
- <sup>18</sup> Ibid.
- <sup>19</sup> Ibid.
- <sup>20</sup> Ibid.
- <sup>21</sup> Ibid.
- <sup>22</sup> C.J. Bijkerk et al., "Outcome Measures in Irritable Bowel Syndrome: Comparison of Psychometric and Methodological Characteristics," *The American Journal of Gastroenterology*, vol. 98 (January 2003): 587-91.
- <sup>23</sup> M.R. Borgiaonkar and E.J. Irvine, "Quality of Life Measurement in Gastrointestinal and Liver Disorders," *Gut*, vol.47 (September 2000): 444-54.
- <sup>24</sup> D.L. Patrick et al., "Quality of Life in Persons with Irritable Bowel Syndrome: Development and Validation of a New Measure," *Digestive Diseases and Sciences*, 43 (1998): 400-11.
- <sup>25</sup> Ibid.
- <sup>26</sup> Ibid.
- <sup>27</sup> E.B. Blanchard, *Irritable Bowel Syndrome: Psychological Assessment and Treatment* (Washington: APA Press, 2001).
- <sup>28</sup> Deborah Sandella, *Releasing the Inner Magician: Ways to Find a Peaceful and Happy Life* (Denver: Inner Magician Series, 2002).
- <sup>29</sup> A. Emeran, "Convergent Traditional and Scientific Approaches to Health, Disease, and Healing," *The Neurobiology Basis of Mind Body Medicine*, (Milwaukee: International Foundation for Functional Gastrointestinal Disorders, 2000): 4-6.
- <sup>30</sup> Anna Wise, *the High Performance Mind*, (New York: Jeremy Tarcher Publishers, 1997), 95-100.
- <sup>31</sup> Ibid.
- <sup>32</sup> Ibid.
- <sup>33</sup> Ibid.
- <sup>34</sup> Gerald Guillory, *IBS: a Doctor's Plan for Chronic Digestive Troubles: the Definitive Guide to Prevention & Relief*, (Vancouver: Hartley and Marks Publishers, 2001).
- <sup>35</sup> Ibid.
- <sup>36</sup> Ibid.
- <sup>37</sup> Charlene Laino, "Fat, Fructose May Contribute to IBS Symptoms," *Medscape Medical News* (2003); available from <http://www.medscape.com>: Internet.
- <sup>38</sup> E.B. Blanchard, *Irritable Bowel Syndrome: Psychological Assessment and Treatment*, (Washington: APA Press, 2001).
- <sup>39</sup> W.E. Whitehead et al., "Systematic Review of the Comorbidity of Irritable Bowel Syndrome with Other Disorders: What are the Causes and Implications?" *Gastroenterology*, 122 (2002): 1140-56.
- <sup>40</sup> Gerald Guillory, *IBS: a Doctor's Plan for Chronic Digestive Troubles: the Definitive Guide to Prevention & Relief*, (Vancouver: Hartley and Marks Publishers, 2001).
- <sup>41</sup> T. Colin, *Radical Forgiveness: Making Room for the Miracle*, (Marietta: Global 13 Publishing, 2002).
- <sup>42</sup> Ibid.

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<sup>43</sup> Belleruth Naparstek, *Irritable Bowel Syndrome and Irritable Bowel Disease*. (CD) Cincinnati, Ohio: Health Journeys, 2001.

## **CHAPTER 3: RESULTS**

### **Demographic Comparisons Between Treatment and Control Groups**

There were no statistically significant differences between the treatment and control groups with regard to age ( $t(39) = -0.85, p = .40$ ) and years with IBS [ $t(39) = -0.26, p = .80$ ]. Comparisons of the two groups for gender, marital status, income, and years of education did not produce statistically valid results because more than 20% of the cells in the cross tabulation table used in the Chi-square analyses had expected frequencies less than 5.

### **IBS-Quality of Life Scores (IBS-QOL)**

To determine if participation in the RIM method improved quality of life as measured by the overall and subscale scores from the IBS-QOL, two-factor repeated measures ANOVAs were executed. ANOVA results for the test of the group-by-time interaction and group-by-time means and standard deviations are presented in Table 1. The test of the “group-by-time” term addresses the question of whether or not the four group-by-time means are equal. Inequality of means suggests that there may be significant changes in quality of life related to the RIM method.

Statistically significant differences were found for all the subscales and overall scores at the .05 alpha level. Thus, the hypothesis that the RIM method would increase quality of life for persons’ suffering from IBS was confirmed.

**Table 1. ANOVA for a Two – Factor Repeated – Measures Design (IBS-QOL)**

Scale	<u>Control</u>		<u>Treatment</u>		F	p
	Pre mean (SD)	Post mean (SD)	Pre mean (SD)	Post mean (SD)		
Dysphoria	74.41 (16.55)	78.27 (13.82)	58.59 (26.69)	78.91 (20.12)	10.35	.003
Interference w/ Activity	74.66 (18.83)	75.51 (19.04)	55.18 (26.84)	76.07 (19.36)	16.77	.000
Body Image	69.05 (20.81)	69.36 (20.60)	53.13 (25.21)	70.63 (17.69)	25.62	.000
Health Worry	69.84 (22.44)	72.22 (20.13)	57.50 (26.48)	75.42 (16.10)	12.31	.001
Food Avoidance	54.37 (25.50)	54.76 (28.33)	43.75 (30.93)	55.42 (29.40)	4.75	.035
Social Reaction	75.89 (17.71)	77.98 (18.61)	72.19 (22.71)	84.69 (14.97)	8.00	.007
Sexual	76.19 (27.02)	79.17 (23.16)	66.88 (26.37)	81.25 (22.40)	6.87	.012
Relationships	71.43 (16.79)	73.81 (17.54)	69.58 (26.11)	82.08 (19.92)	6.75	.013
Overall	71.67 (14.25)	73.67 (14.34)	58.90 (21.42)	76.07 (16.25)	20.26	.000

As a follow-up to the significant interactions, post hoc comparisons were conducted within groups to determine change *between* pre and post-test as well as *at* pre and post-test in order to uncover any differences. The results of these comparisons are shown in Table 2. There were no pre-post differences for the control group; the treatment group was found to have statistically significant improvement from pre-test to post-test. Within time-group comparisons indicated that at pre-test, the treatment group reported more dysphoria, interference with activity, dissatisfaction with body image, and a reduction in overall quality of life. At post-test, treatment and control group subscales were equivalent, as were over-all quality of life scores.

**Table 2. Results of Post Hoc Comparisons for Overall and Subscale of IBS-QOL**

Scale	Pre vs. Post		Control vs. Treatment	
	Control	Treatment	Pre	Post
Dysphoria		***	*	
Interference with Activity		***	**	
Body Image		***	*	
Health Worry		***		
Food Avoidance		**		
Social Reaction		***		
Sexual		***		
Relationships		***		
Overall		***	*	

\*\*\* Statistically different at the  $p \leq .001$

\*\* Statistically different at the  $p \leq .01$

\* Statistically different at the  $p \leq .05$

Overall, these results suggest that the treatment group experienced a significant improvement in quality of life.

### **GI Symptom Diaries: CPSR**

To test the first hypothesis (i.e., the RIM method would reduce the three main symptoms of IBS as defined by Rome II criteria, leading to posttest symptomology superior to that of the control condition), daily symptom diaries were used to calculate composite primary symptom reduction (CPSR) scores that describe clinically significant improvements in GI symptoms. For the purposes of this research, primary GI symptoms included abdominal pain and tenderness, constipation, and diarrhea. An independent sample t-test was conducted in order to compare CPSR scores between the treatment and control condition. It revealed that the treatment group was not superior to the control group [ $t(34) = -1.59, p = .121$ ]; hence, it does not appear that Rome II criteria symptoms were reduced more in the treatment group than in the control group.

However, examination of the individual symptom ratings from the GI symptom scores using two-factor, repeated measures ANOVA found statistically significant group-by-time interaction effects for abdominal pain, abdominal tenderness, bloating (fullness), flatulence, and belching, thus confirming the second hypothesis, which stated that the RIM method would reduce individual GI symptoms from pre-test to post-test (See Table 3).

**Table 3. ANOVA for a Two – Factor Repeated – Measures Design (GI Symptoms)**

Symptom	<u>Control</u>		<u>Treatment</u>		F	p
	Pre mean (SD)	Post mean (SD)	Pre mean (SD)	Post mean (SD)		
Abdominal Pain	0.79 (0.58)	0.61 (0.44)	1.02 (0.80)	0.44 (0.58)	5.88	.020
Abdominal Tenderness	0.89 (0.57)	0.65 (0.44)	0.97 (0.75)	0.39 (0.49)	6.83	.013
Constipation	0.80 (0.73)	0.60 (0.63)	0.69 (0.75)	0.33 (0.42)	1.40	.244
Diarrhea	0.49 (0.52)	0.42 (0.39)	0.51 (0.53)	0.35 (0.54)	.88	.355
Bloating/ Fullness	1.03 (0.82)	0.92 (0.68)	1.47 (0.81)	0.77 (0.68)	16.37	.000
Nausea	0.29 (0.60)	0.28 (0.41)	0.41 (0.51)	0.16 (0.32)	3.65	.063
Flatulence	0.90 (0.67)	0.78 (0.61)	1.04 (0.72)	0.54 (0.56)	10.27	.003
Belching	0.12 (0.26)	0.15 (0.29)	0.73 (0.69)	0.29 (0.45)	22.32	.000

Follow-up post hoc comparisons shown in Table 4 indicate that there was statistically significant improvement for the treatment group from pre-test to post-test, but not for the control group. Additionally, the treatment group experienced more belching problems at pre-test than did the control group.

**Table 4. Post Hoc Comparisons Significant GI Symptoms**

Scale	<u>Pre vs. Post</u>		<u>Control vs. Treatment</u>	
	Control	Treatment	Pre	Post
Abdominal Pain		***		
Abdominal Tenderness		***		
Bloating/Fullness		***		
Flatulence		***		
Belching		***	***	

\*\*\* Difference statistically significant at  $p \leq .001$ .

### GI Symptom Graphs

The graphs illustrate weekly average severity ratings for each of the eight symptoms listed in the GI symptom diary. Each diary contained one week's worth of symptom-tracking information. GI symptoms were rated on a 0-4 scale, with "0" indicating no problem, "1" representing a mild problem, "2" representing a moderate problem, "3" representing a severe problem, and "4" representing a debilitating problem. The group mean is based on weekly averages for each participant with higher values representing greater severity of symptoms, as previously explained.

These graphs suggest a consistent decrease in symptom severity for the treatment group across time (from week 1 to week 8) for the following symptoms: abdominal pain, abdominal tenderness, abdominal bloating (fullness), flatulence, and belching. Trends also suggested a potential decrease in symptoms of constipation. No significant symptom score improvements were noted for control group during the same time period.

As seen in Figure 1, the weekly mean pain severity for abdominal pain decreased from beginning to end of treatment for the treated group. At week 1, treatment group reported “mildly distressing and interfering pain” per the GI symptom diary rating score (represented by a score of “1”). By week 8, treated subjects experienced very little distress or interference. During this same time period, the control group reported minimal change in mean pain severity for abdominal pain.

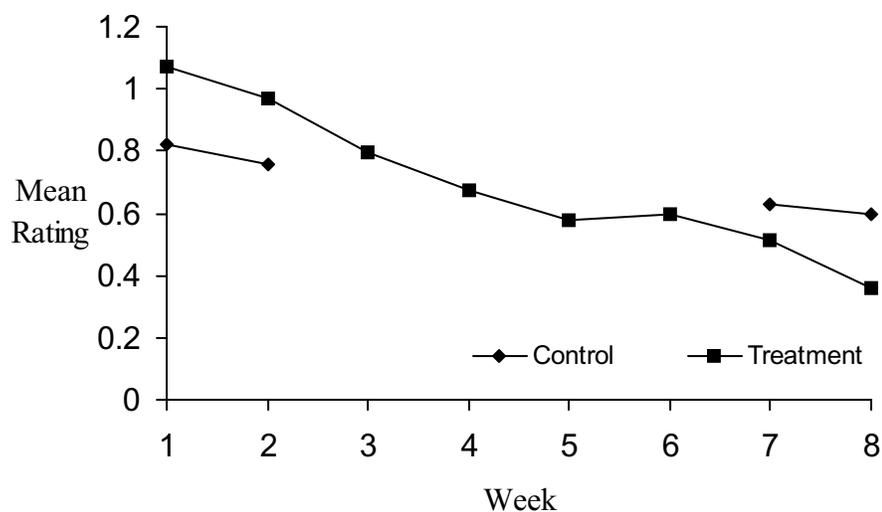
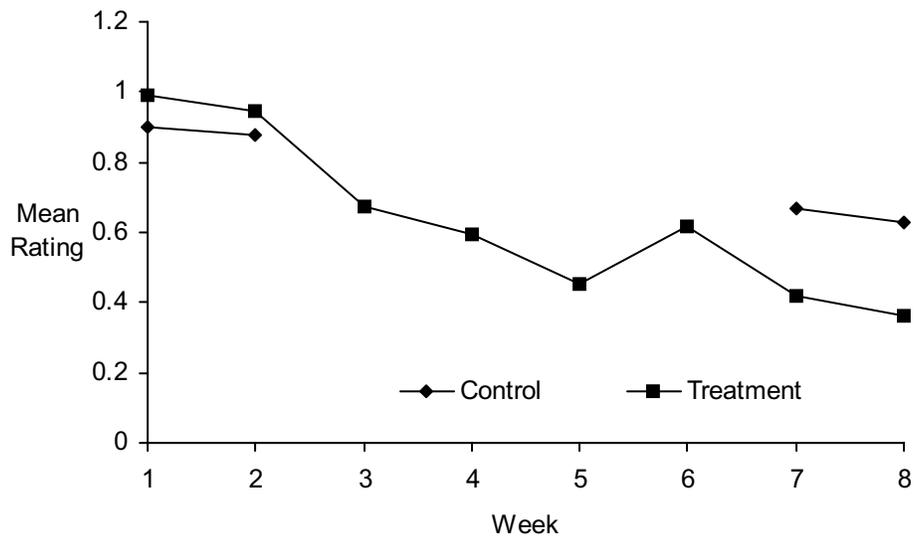


Figure 1. Mean Weekly Abdominal Pain Rating by Group

Figure 2 displays mean weekly abdominal tenderness severity ratings for both groups. The treatment group shows similar decreases in both abdominal tenderness and abdominal pain. In both of these ratings, the treatment group reduced severity of symptoms from beginning to end of the intervention condition. However, the control group was not able to reduce symptoms of abdominal tenderness from week 1 to 8, and their mean weekly ratings for abdominal tenderness showed no statistical significance from beginning to end of trial.



**Figure 2. Mean Weekly Abdominal Tenderness Rating by Group**

Figure 3 shows a trend towards improvement for the treatment group for mean weekly constipation ratings from week 1 to week 8. The control condition shows very little change from beginning to end of trial for the symptom of constipation.

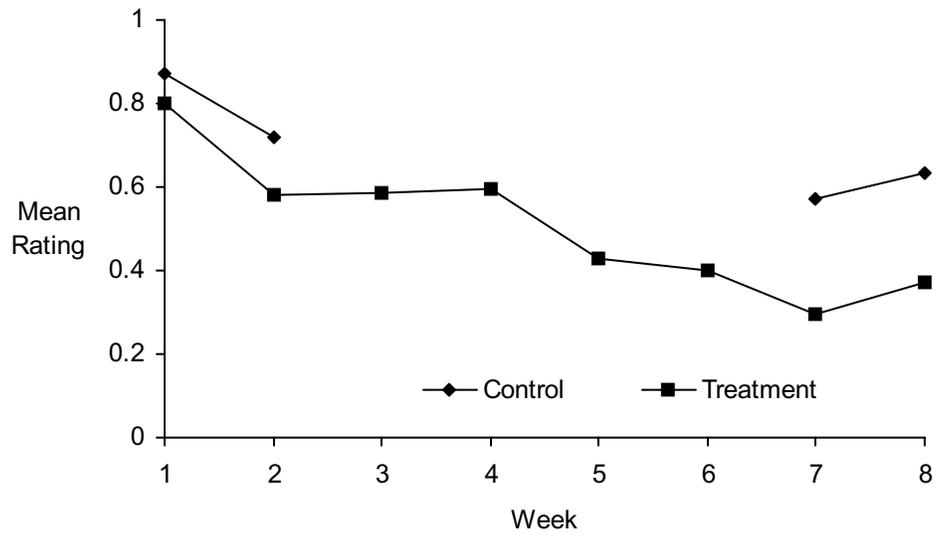
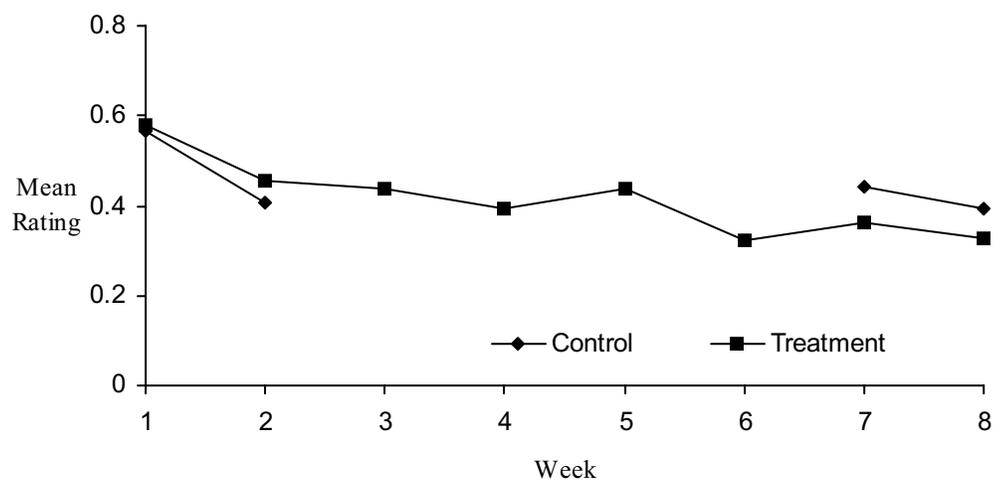


Figure 3. Mean Weekly Constipation Rating by Group

There was no effect for the mean weekly diarrhea ratings for either the treatment or control group, as illustrated in figure 4.



**Figure 4. Mean Weekly Diarrhea Rating by Group**

In the mean weekly ratings for bloating or “fullness” shown in Figure 5, there was a statistically significant reduction from beginning to end of treatment among participants in the treatment group. The control group showed no statistical significance for mean weekly bloating ratings from week 1 to week 8.

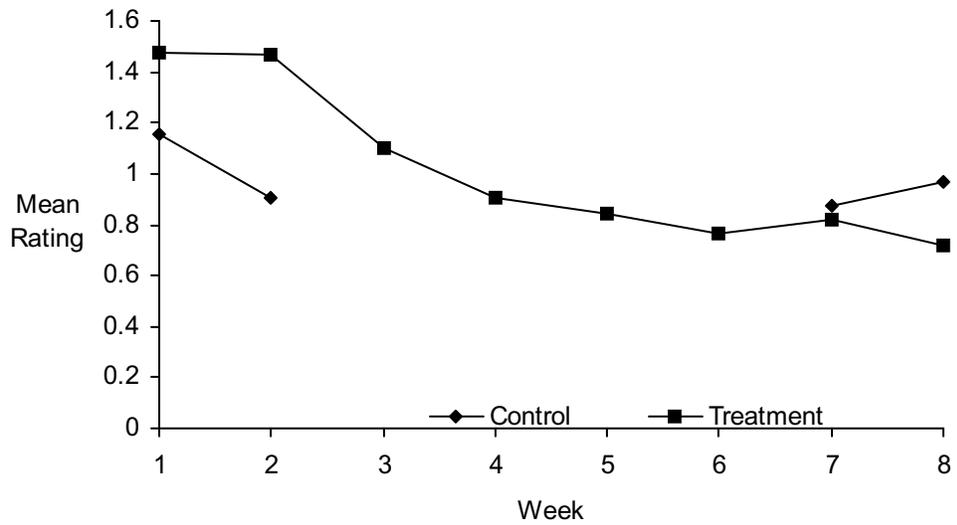
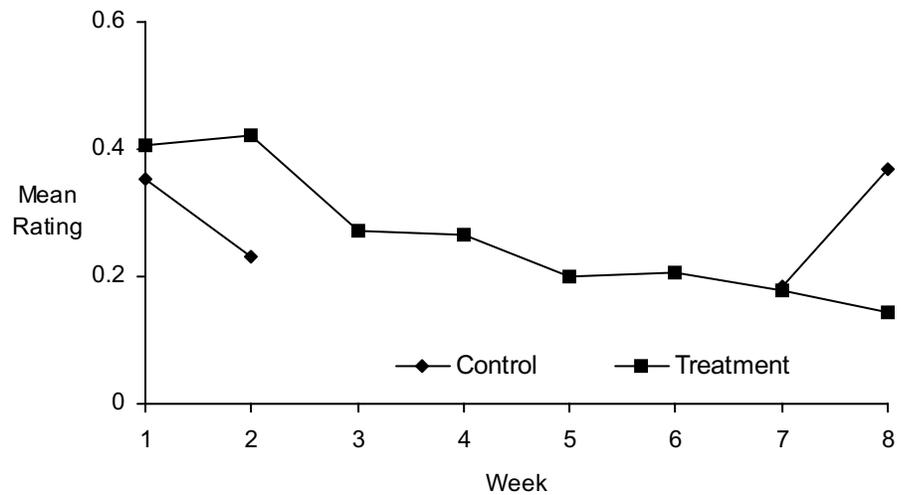


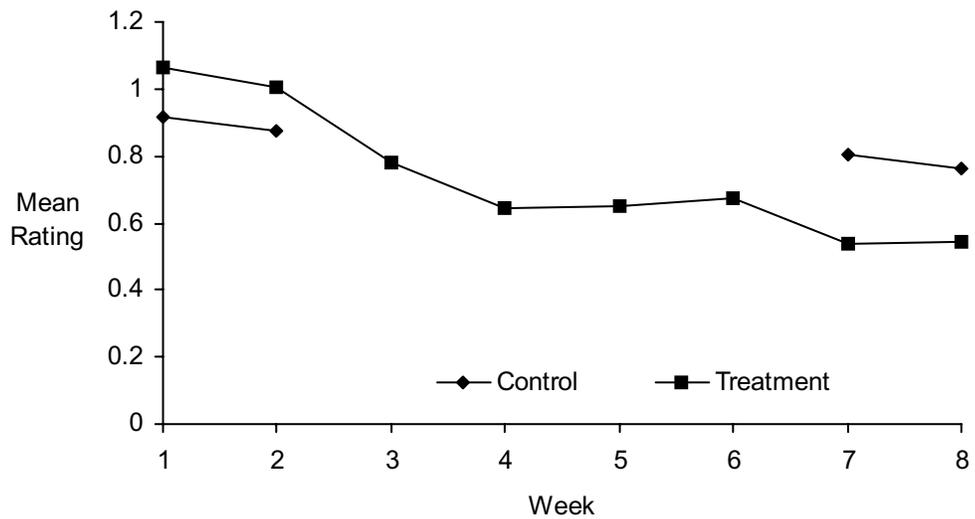
Figure 5. Mean Weekly Bloating Rating by Group

Figure 6, which displays mean symptom severity ratings for nausea, illustrates a reduction in the mean ratings for the treatment group, and therefore demonstrates statistical significance at post- test. The condition group did not show a significant statistical reduction in mean weekly nausea ratings for the same time period.



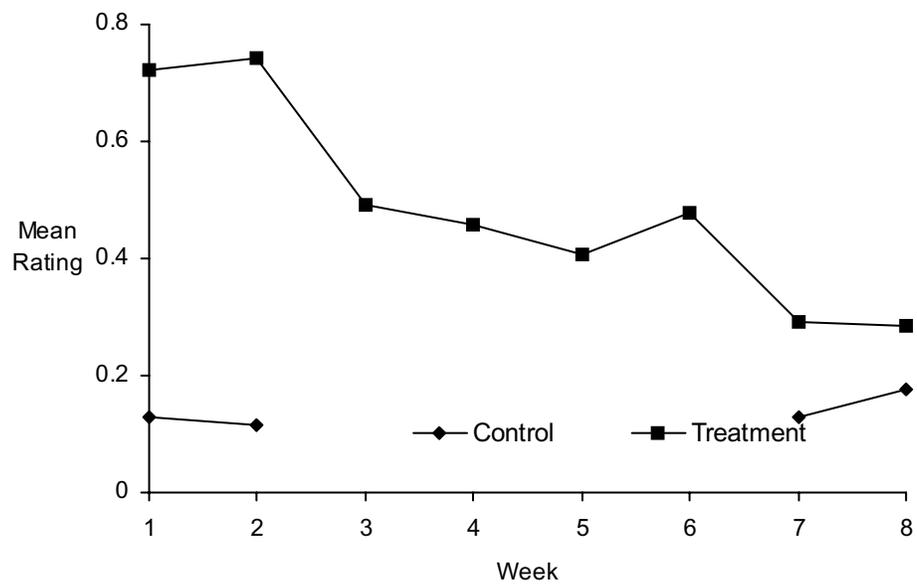
**Figure 6. Mean Weekly Nausea Rating by Group**

Figure 7, which displays mean weekly symptom severity for flatulence ratings, shows statistical significance from beginning to end of treatment for the treatment group. The control group did not note any change in mean weekly flatulence ratings during the eight-week trial.



**Figure 7. Mean Weekly Flatulence Rating by Group**

Figure 8 shows that the treatment group experienced a statistically significant decrease in mean weekly ratings for belching from week one to week eight. The control group did not demonstrate any changes in the mean weekly ratings for belching in this same eight-week time period.



**Figure 8. Mean Weekly Belching Rating by Group**

## **Qualitative Results**

Qualitative measures used in this study included the Albany IBS History<sup>1</sup> (Appendix F), data from the GI symptom diary unrelated to the CPSR or to symptom severity (Appendix B), and PI observations/logs of treatment sessions from beginning to end of trial.

The Albany IBS History was administered to all subjects during the initial pre-test interview. This test was originally created for use at the Clinic for Stress and Anxiety at the University of Albany, and is a comprehensive examination of the biopsychosocial aspects of the IBS complex. The Albany IBS History contains three sections: (I.) the detailed history and description of GI symptoms, (II.) an elaborate psychosocial history and description of current psychosocial functioning and potential problem areas, and (III.) a brief mental status examination.

For the purposes of this study, only the first section (“History and Description of GI Symptoms”) was used. Specifically, the study examined questions involving basic IBS symptom criteria (to help confirm diagnosis), descriptive analyses for antecedents, and consequences of each symptom, i.e., what situational factors preceded the onset of a symptom and what happened after the symptom first occurred.

The subjective data from these histories revealed a more inclusive picture of the biopsychosocial processes inherent in IBS symptomology. In conjunction with the IBS-QOL, the GI symptom diaries, and the RIM method, these histories assisted participants in gaining a better understanding of their mental and physical relationships to this disorder.

Answers to questions posed in the Albany History are included in Appendix F; they demonstrated the frustration and anger experienced by many of the individuals

participating in this study. In addition, the PI examined several subjective questions/answers included in the GI symptom diaries (and not related to CPSR or symptom severity measurements):

- “Did abdominal problems cause you to avoid certain foods or beverages?” (Y/N)
- “Did abdominal problems cause you to avoid certain activities?” (Y/N)
- “What medications did you take?” (List dose.)

Ninety-five percent of the subjects in both the treatment and control groups responded that they did avoid certain foods and beverages regardless of abdominal problems and/or secondary symptoms. Once participants successfully eliminated offending foods and beverages from their diet, they were not willing to try these foods again—even on “good days.”

Only 20 percent of subjects in both groups responded affirmatively to the question concerning limitation of activities due to abdominal symptoms. This was surprising in light of previous questions about bloating and participation in activities. During support group discussions, most participants had agreed that the thought of getting dressed when feeling bloated was not worth the activity. In fact, the PI learned that bloating was most patients’ primary reason for not leaving the house. Other symptoms (including abdominal pain and tenderness) did not have as great an impact or prevent activity as much as bloating.

The last question in the diary asked participants to list current medications. Approximately 20 percent of participants in both the treatment and control groups had prescriptions or were taking drugs specifically for IBS symptoms. Three participants (two in the treatment group and one in the control group) had prescriptions for antidepressants,

and four participants (three in treatment group and one in control group) had prescriptions for antispasmodic and/or anticholinergic drugs, which they used 25% of the time. The remaining participants used OTC gut-specific drugs on occasion, including Tagamet, Prilosec, and Zantec. Additional OTC drugs and “natural” supplements for diarrhea and constipation were used more often, including Pepto Bismol, Metamucil, Fibercon, Laxatea, peppermint oil, antacids, and, to a lesser degree, Fleet enemas.

Participants in both groups awaited a prescription medication for constipation and bloating: *Zelnorm* (for female constipation only) was introduced in the media just before this trial ended. However, most treatment participants were more interested in natural (rather than chemical) remedies, which precipitated their decision to join the study.

Interestingly, 90% of the treatment group suffered from constipation and bloating rather than diarrhea. These findings were confirmed in the literature, where a majority of primary healthcare GI complaints came from “females with constipation, bloating, and gas.”<sup>2</sup> The literature also reported a prevalence of diarrhea over constipation as the predominant GI complaint among males.<sup>3</sup>

In the control group, the three male participants suffered from diarrhea, as did three other control participants, creating a dissimilar symptom profile between the control and treatment groups. This confounding variable may have influenced pre and post-test results between the groups and will be reexamined in the discussion chapter.

The PI was able to chart subjects’ progress throughout the treatment based on their cooperation and expertise with several criteria integral to the success of this program. These included attendance, ability to listen and meditate along with the CD, concentration during journaling, aptitude of answers to key meditative questions in each

chapter of the book, commitment to keeping the symptom diary current and returning it to PI each week, and participation in support group sessions.

Assuming these criteria were met, participants showed improvement in overall quality of life as well as a reduction in symptoms. The reverse was also true: unmet criteria decreased chances of QOL improvement or symptom-reduction. The following treatment records demonstrate these phenomena:

Each week \_\_\_\_\_ would arrive 10-15 minutes early and complain that every one else was late. Approximately 5 minutes into the CD, she would fall asleep and snore. During the journaling session, she made “to do lists” while checking out others in the group to see if they were still journaling. During the support-group discussions \_\_\_\_\_ would again fall asleep. When her scores were reviewed, the PI noted that one of her symptoms was reduced (pain and tenderness); however, her chief complaint, diarrhea, worsened and so did her quality of life. Clearly, \_\_\_\_\_ signed up for the wrong type of protocol, considering her inability to meditate, journal, or join the group discussions. At the end of treatment, she revealed that she suffered from narcolepsy.

\_\_\_\_\_ was committed to the RIM program, but had problems showing up for all of the meetings. However, when she did show up, she appeared to meditate deeply and was able to journal for the entire time (15 minutes). She participated in discussions, and had an upbeat and positive attitude. By the end of treatment, she had a better quality of life although her biggest problem, constipation, was not relieved. However, she felt as if she had a “handle” on the situation, and said she felt more “in control” of her IBS than she previously felt.

\_\_\_\_\_ is an optometrist who uses guided imagery in her practice with vision-impaired children. (She was hesitant about using GIV for symptom-reduction as she had practiced meditation and GIV for several years and her symptoms had not subsided. She recently had colon surgery to remove polyps and decided to try this intervention.) She missed the first two sessions due to travel/work conflicts. The first session of week 2, \_\_\_\_\_ cried while listening to the CD and continued to cry during the journaling portion of the session. She attended the rest of the sessions and was responsive to both meditation and journaling, although she did not shed any more tears. She seemed to enjoy support-discussions, but listened

more than spoke. By the end of treatment, she had purchased numerous copies of the RIM book/CD to give to clients and friends. By post-treatment, her symptoms had subsided and quality of life was improved.

The qualitative measures used in this study provided a subjective analysis of IBS, which, with its unknown etiology and multi-symptomatic presentation, is itself considered rather subjective. IBS is actually a theoretical explanation for a group of symptoms appearing and disappearing serendipitously in a sizable portion of today's population, primarily among females. Nobody really knows what, where, how, when, and for how long this disorder exists, and the answers to the "why" question are only beginning to emerge. Objectively speaking, IBS is still an unknown.

However, what *is* known about this illness is that certain characteristics influence symptom expression among IBS individuals. Without the use of qualitative data and interpretation, these characteristics become extremely obscure within and among objective translations and diagnoses. Qualitative results provide the human dimension necessary for continued research and implementation of holistic paradigms that might move the healthcare system toward a more comprehensive biopsychosocial model.

The purpose of the qualitative measures included in this study was to increase awareness (for both the participant and the PI) of the mechanisms contributing to IBS symptomology, and to provide a forum for symptom expression—either verbally (support group discussions) or in written form (journaling). Participants were given the opportunity to observe emotional and physical obstacles contributing to their illness.

Qualitative measures from the Albany History, GI symptom diary, and RIM journaling segments helped pinpoint triggers of chronic stress. These measures also helped participants recognize the stressful thoughts and feelings inherent in their

respective triggers, which are partially responsible for onset and continuation of symptoms.<sup>4</sup> Once participants recognized their triggers, they were able to integrate stress-reducing measures into their daily routines in order to diminish/eliminate causes of chronic stress and improve overall quality of life.<sup>5</sup> These stress-reducing measures might include practicing slower, deeper breathing patterns for physically reducing anxiety, and reanalyzing catastrophic thoughts and negative perceptions and behaviors in order to mentally decrease stress.

Additional information regarding unforeseen circumstances, limitations, and confounding variables will be examined in the discussion chapter.

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<sup>1</sup> E.B. Blanchard, *Irritable Bowel Syndrome: Psychosocial Assessment and Treatment* (Washington: APA Publishing, 2002).

<sup>2</sup> D.A. Drossman et al., "The American Gastrointestinal Association Technical Review on Irritable Bowel Syndrome," *Gastroenterology* 123 (2002): 2108-31.

<sup>3</sup> Ibid.

<sup>4</sup> EA Mayer, the Neurobiology of Stress and Emotions. *Participate*, Winter (2001)

<sup>5</sup> Ibid.

## **CHAPTER 4: DISCUSSION**

The following section presents the interpretations and conclusions drawn from the findings for each of the three research questions. Comparisons of how the current findings, which were presented in the results chapter, relate to previous literature will be made when possible.

### **Purpose of the Study**

The purpose of the study was to determine whether the RIM multi-component treatment program could significantly reduce the symptoms of irritable bowel syndrome (IBS) and, as compared to a control group not receiving treatment, improve the quality of life for individuals diagnosed with this disorder. This chapter includes:

- a consideration of the findings in light of existing research
- implications of the study for current theory
- an examination of the RIM method as it relates to spiritual healing and energy medicine (SH/EM)
- limitations of the study
- recommendations for further research

### **Overview of Significant Findings**

#### Hypothesis 1:

For individuals with irritable bowel syndrome, does the use of the RIM multi-component treatment program, which includes guided-imagery/visualization, journaling, support group discussions, and lecture sessions, contribute to the reduction of primary symptoms, including diarrhea, constipation, and abdominal pain, as described in the Rome II criteria?

The treatment group was not superior to the control group in terms of reducing the symptoms of diarrhea and constipation (two of the three primary symptoms of IBS listed in the Rome II criteria). However, abdominal pain—which is the hallmark symptom of IBS and is integral to its diagnosis—was reduced through implementation of the methods described above. Without the presence of abdominal pain, chronic diarrhea and/or constipation are inconclusive symptoms for this disorder.

Hypothesis 2:

Does the use of the RIM multi-component treatment program contribute to the reduction of secondary symptoms (including bloating, flatulence, and belching as described in the Rome II criteria) for individuals with IBS?

The treatment group showed statistically significant improvement for all secondary symptoms of IBS, including (at post-treatment) abdominal pain and tenderness, bloating, nausea, flatulence, and belching. The control group showed no improvement from pre to post-test.

Hypothesis 3:

Does the use of the RIM multi-component treatment program improve quality of life for individuals with IBS?

Statistically significant differences were found at post-test for all subscale and overall quality of life scores in the treatment group. Subscales included the following categories: dysphoria, interference with activity, body image, health worry, food avoidance, social reaction, sexual problems, and relationship problems. There were no statistically significant differences in the control group subscale or overall quality of life scores from pre to post-test.

## Consideration of the Findings in Light of Existing Studies

### Hypothesis 1

In Hypothesis 1, post-test results were established using the composite primary symptom reduction (CPSR) score, which was developed by Blanchard and Schwarz in 1988 as a way of simplifying data from multiple (GI) comparisons across a large group of subjects.

According to Blanchard,

Each of the GI symptoms measured with the diary is a problem of some magnitude for the IBS patient. He or she would like complete relief and barring that, at least noticeable reduction. From the patient's point of view, analyzing the relative degree of change for each symptom makes sense: The patient would probably like to know, for example, whether abdominal pain and/or diarrhea and/or bloating are likely to be reduced by a particular treatment. However, from a statistical point of view, performing multiple statistical analyses, (i.e., analyzing each symptom separately) on the data from a large set of patients leads to the possibility of capitalizing on chance rather than finding true differences.<sup>1</sup>

The CPSR has been used to evaluate IBS research for the last 15 years, predominantly in randomized control trials (RCTs) using cognitive behavioral therapy (CBT) at the University of Albany Center for Stress and Anxiety Disorders.<sup>2</sup> These protocols, although labeled "CBT," were actually "CBT package programs"<sup>3</sup> in which multi-component treatments including progressive muscle relaxation training (PMR), thermal biofeedback, cognitive therapy, patient education, and support group programs were integrated into a single treatment program. The control group studies consisted of various types of "pseudo" treatments.<sup>4</sup>

All of the "CBT package" studies reported statistically significant results for the treatment group over the control group using the CPSR as the dependant variable.<sup>5</sup> However, when Blanchard took these "packages" apart in order to test the strength of the individual

therapies, the post-treatment CPSR scores were not statistically significant for all three major IBS symptoms (abdominal pain, diarrhea, and constipation). Additionally, the CBT interventions at Albany were conducted for a minimum of 3 months and averaged fewer than 50 participants per study.

Comparatively speaking, the RIM multi-component treatment group appeared less improved (according to CPSR scores) than the treatment participants in the “Albany Studies.” However, the RIM intervention demonstrated greater improvement in individual symptoms such as pain and bloating. As Blanchard did not use quality of life scores in any of the Albany trials, further comparisons between the RIM and CBT interventions were not possible.

One of the later IBS studies reported by Albany used Herbert Benson’s *Relaxation Response Meditation* (RRM),<sup>6</sup> which served as a comparison study for the original RIM method design (GIV and journaling only). Although the RRM treatment group achieved statistically significant improvement over the control group (using the CPSR as the dependant variable), only flatulence and belching were improved on individual GI symptom scores. Furthermore, there was no change for overall abdominal pain and tenderness scores in the treatment group from pre to post-test.

Conversely, the RIM intervention did show improvement in abdominal pain and tenderness from pre to post-treatment, as well as a trend toward reduction in constipation. However, the treatment group showed no change in overall diarrhea rating. The RRM was a six-week, twice-*daily* meditation treatment (not including 2 weeks pre and post-treatment)<sup>7</sup> compared to the twice-weekly protocol design of the RIM intervention.

There are no GIV protocols for IBS symptom-reduction reported in the literature. Therefore, the RRM protocol was the closest design used for comparison to the RIM intervention. Considering the longer duration for the RRM treatment and smaller treatment sample (N=13), the RIM intervention appears to be comparable as a viable treatment for reduction of IBS symptoms.

Whorwell's original hypnotherapy trial (1984, N=30),<sup>8</sup> which is considered the most effective intervention used for IBS symptom-reduction, was the impetus for the original RIM treatment (GIV and journaling only). Hypnotherapy incorporates a great deal of GIV before the induction process, and because GIV does not require induction or other techniques leading into the trance state (i.e., deepening and alerting techniques), it incurs less risk and is easier to administer because it does not require a therapist.<sup>9</sup>

GIV as a healing modality is similar to hypnosis in that it helps reduce stress by placing subjects in a deeply relaxed state, promoting positive thoughts and clearing the mind of negative attitudes.<sup>10</sup> According to the literature, stress, anxiety, or recall of aversive memories enhances perception of painful events, whereas distraction, hypnosis, and relaxation can decrease perceptual sensitivity and conceivably diminish abnormal gut response inherent in IBS symptomology.<sup>11</sup>

Stress-induced visceral hyperalgesia may be an important mediator of visceral hypersensitivity in IBS patients. Therapeutic approaches aimed at attenuating stress responsiveness may affectively prevent the development of stress-induced visceral hypersensitivity as well as attenuate autonomic gut responses to stress.<sup>12</sup>

The RIM method (apart from the multi-component intervention) is a therapy incorporating GIV and journaling using elements of Eriksonian Hypnosis, interactive guided imagery, and somatic therapy. Therefore, it seemed a logical choice for reducing sympathetic stress

responses that lead to increased gut motility and exacerbate IBS symptoms (diarrhea, constipation, abdominal pain, tenderness, bloating, etc).

Finally, the original RIM method, which included only GIV and journaling therapy, evolved into a multi-component intervention treatment package. This included support group interaction followed by educational lectures and handouts issued by the PI. The handouts contained the latest therapies, diets, and stress-reduction programs available for IBS symptom-reduction.

These supplementary components were integrated into the RIM intervention for several reasons. Early in the trial (during the RIM introductory meeting), participants grew restless and distracted after only minimum exposure to the treatment. Aside from a short attention span, participants appeared more interested in asking questions or telling stories about their own IBS experiences than in doing visualizations. Blanchard's research confirms similar experiences<sup>13</sup> whereby protocols without active behavioral therapy or support group interaction (i.e., protocols using meditation or PMR alone) resulted in higher dropout rates (up to 43%) than those therapies directly dealing with the patient, i.e., psychodynamic therapy and CBT. According to Blanchard, "We believe the relaxation training, which is fairly protocol driven, does not engage the IBS patients enough to hold him or her in treatment."<sup>14</sup>

Hence, the "RIM method" evolved into the "RIM multi-component treatment program." This program consisted of an hour-long session including twenty minutes of meditation, 15 minutes of journaling, 10 minutes of support group discussions, and 15 minutes of lecture/questions and answers. These support group/lecture activities received positive feedback at the post-treatment meeting.

At the end of treatment, 75% of the subjects admitted “not caring for the GIV” and voiced a preference for precluding GIV from future sessions (although they did not object to journaling). Approximately 25% of participants in the treatment condition enjoyed the GIV and journaling and felt that they “benefited” from it; these subjects tended to be younger and more adaptable to change. However, these observations are strictly subjective, as psychological testing was not a part of the RIM intervention protocol.

To summarize, although the RIM multi-component intervention did not obtain statistically significant results using the CPSR<sup>15</sup> (which measured the average reduction of abdominal pain, diarrhea, and constipation), it did relieve the hallmark symptoms of abdominal pain and tenderness—the two most distressing symptoms found in IBS—when compared to CBT or hypnotherapy trials.<sup>16</sup> Added to the fact that the RIM intervention requires less therapist skill, time, and money to operationalize than either CBT or hypnotherapy, the RIM multi-component treatment program appears to be a practical alternative to these therapies.

### Hypothesis 2

In Hypothesis 2, individual GI symptoms were tested in the treatment and control groups from pre to post-test. The treatment group reported statistically significant results for the reduction of symptoms including abdominal pain, tenderness, bloating, flatulence, and belching from pre to post-test. In a review of the literature, “abdominal pain and bloating” are the primary symptoms responsible for work and school absenteeism, missed social events, and an overall reduction in the quality of life.<sup>17</sup>

Specifically, bloating has been identified primarily as a female health concern and has been linked to daily female hormonal fluctuations.<sup>18</sup> Among participants in this study,

the Albany IBS History revealed that bloating was the number one reason for lack of social participation or engagement in outside activities. At post-test, the treatment group showed statistically significant reduction in bloating compared to pre-test scores.

According to Drossman, because of hypervisceral gut sensations in many IBS sufferers, patients may experience problematic bloating even when medical testing and symptom diaries show otherwise. For example, persons who “feel” bloated as a result of constipation may in fact not be constipated according to their last bowel movement or rectal examination.<sup>19</sup> The literature states that biopsychosocial factors are responsible for many of these “felt” sensations (including bloating and constipation) which otherwise lack biologic and physiologic etiology, and would therefore be amenable to such mind-body treatments as GIV and journaling as part of a multi-component wellness program for IBS symptom-reduction.<sup>20</sup>

Even though 50% of the participants in both the treatment and control groups cited flatulence as a major concern and/or problem, flatulence is not considered part of the IBS symptom profile. According to Guillory,<sup>21</sup> flatulence is not a symptom of this disorder, nor is it included in the Rome II criteria. Yet, flatulence is included in both the GI symptom diary and the CPSR, as it appears to be a major concern for IBS sufferers regardless of its classification.<sup>22</sup>

Within the last few years, numerous articles have explored the relationship between diet, flatulence and bloating—specifically the impact of carbohydrates (including all forms of sugar, e.g., sucralose, fructose, and maltose) on these symptoms. According to the literature, diets eliminating carbohydrates have reduced symptoms of flatulence and bloating.<sup>23</sup> Dietary considerations were discussed during the lecture

sessions as part of the RIM multi-component intervention, and may have been a confounding variable in the reduction of bloating and flatulence in post-treatment results.

### Hypothesis 3

In the treatment group, all of the subscales in the IBS-QOL were improved at post-test confirming Hypothesis 3. The dependant variable used to test this hypothesis was the IBS-QOL, which addresses the psychological and social consequences and changes related to IBS. According to the literature, “When using IBS-QOL questionnaires, patients show the lowest scores related to ‘interference with activity,’ ‘food avoidance’ and ‘health worry concern.’”<sup>24</sup> These findings were consistent with those found in the RIM multi-component subscale results (with the addition of “body image”).

Further research adds that, “quality of life improves in relation to changes in pain severity and daily function after psychological or antidepressant treatment.”<sup>25</sup> In the RIM multi-component intervention, pain severity associated with three of the major IBS symptoms was reduced, and, as a result, quality of life was improved in the treatment group at post-test.

### Influence of RIM Method on all Hypotheses

In examining the development of IBS, research states that early-life factors influence later psychosocial experiences, physiologic functioning, and susceptibility to developing IBS

Therefore, a psychosocial stressor, interpreted from previous life experiences may produce symptoms primarily through changes in intestinal function, central amplification of normal gut signals (brain-gut axis) or a combination of these factors. The combined and integrated effects of altered physiology and the person’s psychosocial status via the brain-gut axis affect symptom

experience, the individual's illness behavior, and ultimately the outcome. Furthermore, the clinical outcome will affect the severity of the disorder. Therefore, while psychosocial factors are not etiologic to IBS, they are relevant to understanding the patient's adjustment to IBS, the clinical outcome and the plan of treatment.<sup>26</sup>

The RIM multi-component intervention—specifically the RIM meditations and journaling—were initially created by Sandella to redefine and/or diminish the importance of (previous) negative life experiences.<sup>27</sup> With these meditations, Sandella provides opportunities for listeners to connect with deeper resources available at cognitive, affective, and somatic levels.<sup>28</sup> Additionally, the meditations aim to facilitate awareness of individuals' unconscious imagery, which is beneficial for subsequent interaction on the patients' behalf.<sup>29</sup> According to Sandella, the RIM program not only helps bring about profound psychological and physiologic changes, but also empowers the individual to use this process on his or her own. “Many clients have uncannily accurate intuitions about their problems and solutions, and this process (imagery) makes these insights easily available to them.”<sup>30</sup>

In summary, the RIM multi-component treatment program appears to be instrumental in the reduction of primary and secondary IBS symptomology, as well as in improving overall quality of life for individuals suffering from IBS.

### **The RIM Method and Spiritual Healing and Energy Medicine**

The effects of the brain–gut axis (or mind-body communication) are so closely integrated that there is no way of knowing where one ends and the other begins. Pert refers to this communication as “bi-directional networking,”<sup>31</sup> whereby the mind and body have an entire network of informational pathways, allowing somatic systems to communicate and share information with each other. Consequently, neurological,

immunological, and endocrinological systems are continuously communicating and influencing one another.<sup>32</sup> According to Pert, “The body is the unconscious mind.”<sup>33</sup>

Imagery, as part of the RIM multi-component intervention, is simply thinking in sensory terms.<sup>34</sup> It has a long history in the healing traditions of humankind and is central to a variety of healing modalities<sup>35</sup> within the spiritual healing and energy medicine (SH/EM) paradigm. Imagery can encourage relaxation by helping people imagine a peaceful place or help relieve painful symptoms by facilitating visualization of a healing action in a specific area; it can also motivate individuals to rehearse, set goals, or take action.<sup>36</sup>

For many years, IBS and other chronic disorders have been treated with traditional medicine, psychotherapy, and/or other biomedical treatments. Some of these methods may have been successful or at least aided in progress toward recovery.<sup>37</sup> However, for numerous IBS patients who are either actively symptomatic, have symptoms in remission, or appear fully recovered, some patterns of subconscious behavior may still manifest, causing significant impact on quality of life.<sup>38</sup> The interactive guided imagery and journaling within the RIM multi-component intervention includes components of somatic therapy<sup>39</sup> and Ericksonian Hypnosis,<sup>40</sup> which are similarly included in the SH/EM paradigm. These techniques can help individuals use their minds to relieve stress, encourage physical healing, bring about emotional balance, and enhance quality of life.<sup>41</sup>

Countless IBS patients live primarily in their heads, and have not yet learned (or fail to remember) to relax, be still, or accept things outside of themselves that may be positive and beneficial.<sup>42</sup> Those who allow positive elements into their lives may

nonetheless return to negative behavioral patterns (including self-criticism, self-abandonment, and low self-esteem) in a short period of time.<sup>43</sup>

As a projection of spiritual healing and energy medicine, the RIM multi-component treatment program becomes a bridge between IBS sufferers' subconscious, spiritual/higher self and their conscious, physical self.<sup>44</sup> When an IBS patient becomes overly stressed and internalizes this anxiety by creating pain and bloating along with other symptoms of disordered brain-gut motility,<sup>45</sup> --somewhere along the way-- that individual has disconnected from his or her higher-self and body in order to survive painful feelings and/or unpleasant memories.<sup>46</sup>

As part of the RIM multi-component intervention, guided imagery and journaling facilitate communication between the individual and his or her higher self, body, and even cellular memories—all of which leads to a revelation of one's authentic self, including positive or negative messages and feelings.<sup>47</sup> Unless individuals can return to their mental, emotional, physical, and spiritual bodies, they may more easily slip into painful patterns of behavior, feelings, and thoughts, thereby sustaining suffering and attachment to a false self-system.<sup>48</sup>

The RIM multi-component intervention and SH/EM, strive to integrate a healing connection involving the mind, body, spirit, and soul in order to create a sense of balance and grounding which may be difficult to achieve using only a single therapy. For instance, within the RIM intervention, unconscious habitual patterns of behavior and belief are brought into focus during the RIM meditations<sup>49</sup> and made conscious during the journaling exercises. Subsequently, individuals examine these conscious behaviors<sup>50</sup>

through discussions with fellow participants during support group sessions and may then make an effort to avoid damaging patterns.

In addition, the GIV meditations and journaling included in the RIM intervention strive to restore personal power (especially that transferred to others over the years) by retrieving parts of the self that may have been lost, disconnected, or become invisible.<sup>51</sup> Power can be reclaimed as individuals connect with their true nature, metaphorically represented in these meditations as universal core elements of “earth, water, air and fire.”<sup>52</sup>

Mind, body, spirit, and soul, as experienced through SH/EM and specifically the RIM multi-component intervention, can provide access to new information about oneself and one’s connection to other forms of energy that could not have been easily realized with only intellectual and cognitive-type stimulation. Cultivating this type of opening in a safe, healing environment allows participants to transcend psychological boundaries and internal limitations,<sup>53</sup> encouraging recognition of and connection with wholeness.

IBS sufferers must work prodigiously to bond with their authentic selves in order to relinquish negative yet familiar patterns of behavior and beliefs that have kept them unbalanced for years.<sup>54</sup> Encouraged by the higher self, this form of self-connection strengthens emotional wounds and reveals gut feelings that are no longer hidden within subconscious subterfuge. At last, the IBS sufferer is free to heal.<sup>55</sup>

In summary, the SH/EM paradigm is integral to the RIM multi-component treatment program, in which mind, body, spirit, and soul ideologies in support of wholeness are similarly fundamental and important to a unified vision of healing.

## **Implications of the Study for Current Theory**

*Releasing the Inner Magician: Ways to Find a Peaceful and Happy Life,*<sup>56</sup> by Deb Sandella, is a GIV and journaling program which utilizes interactive guided imagery, Ericksonian Hypnosis, and somatic therapy. According to Holos ideology, “Facilitation of intuitive insights can be perhaps the most direct and effective of all approaches.”<sup>57</sup>

The RIM meditations, as part of the RIM multi-component treatment program, use the “inner magician” to facilitate intuitive insights:<sup>58</sup>

The voice on the CD will guide you into your inner magician—the intuitive Self. You will sail the inner passage to the heart where truth, power and magic live. The recording will invite your unconscious to bring pictures into your mind’s eye. Pictures and feelings comprise the primary and primal language of the body. Children identify pictures from as early as nine months, while identification of words comes years later.<sup>59</sup>

The images revealed during the meditations provided several of the participants in this treatment with important information, not only about their problems, but also about their hopes, beliefs, expectations, fears, resources, and solutions.

According to the literature, few physical, emotional, or behavioral symptoms and illnesses are not affected by the mind to some degree.<sup>60</sup> The activities comprising the RIM multi-component intervention were established for “mobilizing the latent, innate healing abilities of the individual to support rehabilitation, recovery, and promotion of health.”<sup>61</sup>

Sandella integrated Ericksonian Hypnosis and somatic therapy into the RIM guided imagery, and thus created a system that has helped relieve chronic symptoms in individual case studies.<sup>62</sup> Consistent with the literature describing the benefits of somatosensory hypnotherapy,

The approach of utilizing Somatosensory-hypnotherapy is based upon the premise that experiences, memories and their related thoughts and feelings are stored in the somatic system of our bodies. Over time, these frozen undischarged experiences and emotions evolve into symptoms, which are both expressions of and maintained by the individual's life narrative. Somatosensory hypnotherapy is an approach, which develops hypnotic language to address the function and meaning of the particular symptom and thus facilitates the unbinding of these symptoms from the person's life narrative. Clients can then release the symptom from their somatic system and develop more adaptive and healthy life choices and behaviors.<sup>63</sup>

The RIM multi-component treatment program, hypnotherapy, CBT, and psychodynamic behavioral therapies used for IBS symptom-reduction<sup>64</sup> are powerful approaches to mind-body healing. For the past two decades, these protocols have enabled patients to connect with their inner resources at cognitive, affective, and somatic levels in order to reduce IBS symptomology.<sup>65</sup>

From a treatment standpoint, the RIM multi-component intervention integrates the most relevant therapies used in today's biopsychosocial IBS trials.<sup>66</sup> These include GIV, comprised of somatic therapy and Ericksonian Hypnosis, journaling, support group meetings, and lecture/discussion sessions. Additionally, this program provides both written and recorded meditations (a book and CD, respectively), a journaling manual (as part of the book), and additional course outlines, ensuring standardization of future IBS RCTs.

The current RIM multi-component treatment program was initially conceived solely as a GIV and journaling protocol for IBS symptom-reduction. However, at the pre-treatment meeting, the PI determined that additional measures would be necessary for participants who appeared disconnected from the mediation and journaling exercises at that time.

Most of the women participating in the treatment group held traditional biomedical beliefs; their resistance to this protocol was therefore reasonable based on prior studies.<sup>67</sup> (It should be noted that during initial phone interviews, all individuals expressed a desire for “something new,” and indicated dissatisfaction with previous treatments.) The expectation of successfully challenging biomedical methodology within a four-week period proved to be a miscalculation by an overly optimistic PI and a group of discouraged IBS patients who were anxious to try new treatments.

In the RRM study at Albany, Keefer reported that “at least two months of active treatment is required for participants to incorporate a complex technique into their lifestyle and experience results.”<sup>68</sup> She added that symptoms not improved at two weeks post-treatment showed improvement by the three-month follow-up. “After five months of treatment and follow-ups, participants began meditating on a daily basis.”<sup>69</sup> This was in contrast to the RIM intervention, which ran for only four weeks and included eight sessions.

Interestingly, two women in the RIM intervention treatment group listened to the RIM mediation and journaled approximately 4-5 times a week during the four weeks of treatment. Both of these individuals showed a significant improvement in GI symptom reduction scores from pre to post-treatment.

Based on this trial and a review of the literature,<sup>70</sup> it is the opinion of this researcher that protocols for the reduction of IBS symptomology that include meditation techniques should exceed a four-week treatment, even when utilized more than twice a week.

For clarification of treatment results, it will be necessary to examine and test individual therapies or treatments contained in this multi-component intervention. Therefore, the RIM method, GIV and journaling, support group therapy, and instructional lecture/discussion sessions will each need to be tested separately to determine the strength or statistical significance of each individual therapy. It is important for future protocols to determine which one of these treatments, if any, has the greatest effect on IBS symptom-reduction.

While the results of this study suggest that the RIM multi-component treatment program may be useful in treating patients with IBS, data are only preliminary. This is the first study of its kind to test the RIM multi-component treatment program for this population. While other relaxation and stress-reducing techniques have been proven effective,<sup>71</sup> the positive results in this study were subject to several limitations and delimitations.

### **Limitations and Delimitations**

The sample size in this study was smaller than standardized RCTs. However, for this population (and compared to previous IBS trials),<sup>72</sup> it was an “average” sized trial.<sup>73</sup> Ideally, the number of participants in a randomized controlled trial should exceed 60,<sup>74</sup> with a minimum of 30 subjects in each group. With only 40 people completing treatment, it was more difficult to generalize results and detect statistically significant symptom changes. Another limitation of the study was the short treatment time.

Moreover, several problems existed within the research design that either prevented interested participants from volunteering or caused them to drop out after enrolling in the study. Major factors limiting the size of this study included time of year

(winter), mixed-gendered protocol, lack of funding, lack of patient base, group vs. independent study, self-selection into treatment or control group, and various time constraints.

The lack of testing to determine the strength of individual therapies contained in the RIM multi-component intervention was another limitation that did not affect sample size but was a definite limiting factor in the study. This omission precluded the PI from establishing the strength or weakness of individual therapies that may have been more or less responsible for IBS symptom-reduction. These independent variables will need to be isolated in future studies to help discern appropriateness of various treatments for differing symptoms and populations.

#### Winter Driving:

Quite a few elderly people responded to the newspaper advertisement for this trial because there were no drugs in the protocol. However, for this same population, the time of year was a problem. Many of these people refused to travel in winter conditions; this coupled with the fact that the first meeting took place during a snowstorm fractured any chance for a large elderly turnout.

Several participants who were not elderly objected to driving in the winter as well, and opted into the control group, where treatment would commence late spring or early summer. Some callers asked to participate in the “next trial” (although there was no mention of another trial) in hopes of determining this program’s success before venturing into the cold, winter weather.

#### Mixed-Gender Group:

There was a larger-than-expected male response to the newspaper advertisements. However, once these male callers learned that treatment included both males and females, they withdrew their names from the treatment list. Blanchard reported similar findings:

Two male participants declined treatment after the 12 weeks of symptom-monitoring when they learned that treatment was to be in small mixed gender groups. We suspect this was due to potential embarrassment over discussing bowel symptoms in mixed company. It might be better to have an all male group for such hesitant patients, preferably led by a male therapist. (One other male patient dropped out after a few visits.)<sup>75</sup>

Drossman reported similar difficulties when male patients attempted to discuss their bowels with anyone, including physicians (male or female) and spouses.<sup>76</sup>

Upon learning that females were included in the treatment, potential male participants repeatedly failed to return the PI's phone calls. Since support group activities were not part of the original RIM protocol, the PI had failed to recognize this potential problem.

Attendance:

Subjects were required to be physically present for this study. Independent treatment was not a consideration when formulating this protocol. However, numerous people responded to the IBS newspaper advertisement from rural (Bailey, Bennett) and mountain (Vail, Glenwood Springs) areas, and from cities a great distance from the treatment center (Pueblo, Colorado Springs, Thornton). This was of special concern as heavy road construction caused major time delays even within the city limits.

Callers from outlying areas requested admission to this study because medical personnel were not adequately addressing their IBS symptoms, but rather advising patients to "go home and relax." One female caller reported that her doctor recommended

she eat more fiber, which aggravated her gas and diarrhea, causing increased pain and anxiety. Future treatments to serve this population deserve immediate consideration, as this disorder is a growing problem, especially for those unable to obtain immediate or appropriate health care.

Time issues:

For some potential study candidates, time was a primary issue. Many respondents had no extra time for another activity; they either worked full time (although this was seldom the case with interested callers, as noted by the PI) or did not want to leave the house twice a week. Although none of these respondents elaborated on their aversion to leaving home, the PI assumed that severity of presenting IBS symptoms influenced this decision.

Two elderly women who did not own a car had a problem with the bus schedules and/or routes—either the buses did not drop them close enough to the treatment site or the weather precluded walking any long distances.

No Funds:

Lack of funding for this study influenced the size and attrition rate. Many callers inquired about compensation for their “time and effort.” Several others simply assumed they would be paid “something.” However, once potential study participants realized that no funds were available, all contact ceased.

When the PI informed callers they would receive a free book and CD during the study, the response was usually, “Yeah, so?” One woman (who eventually dropped out) suggested adding incentives, i.e., giving each person a leather journal and pen.

As more and more drug companies compensate volunteers for time, travel, and drug therapy, “payment for treatment” has become a common assumption among prospective volunteers.

Self-Selection:

An additional limitation for this study was the self-selection of participants into the control or treatment group. The researcher originally designed this study as a matched pair, random assignment, into one group or the other. Following self-selection, the overall symptom picture between the two groups was comparatively unequal. Those participants whose symptoms were not particularly bothersome and/or those who did not want to travel or take time out of their schedule opted to delay treatment (control group). Subjects whose symptoms were problematic and bothersome chose to begin treatment immediately (treatment group).

As seen in the IBS-QOL subscales and overall scores, the control group pre-test scores are similar to the treatment group post-test scores. This confounding variable prevented random assignment of matched pairs and precluded comparisons between the treatment and control participants for the IBS-QOL scores.

Length of Study:

Another limitation in this study was the shortened treatment span. Many clinicians view a new skill as simple enough to be taught in one or two sessions, assuming that once a participant tries the technique, he or she can be left alone.<sup>77</sup> However, as Keefer points out, successful practice of any new therapy or activity requires that a number of changes take place within a participant’s daily routine.<sup>78</sup> Additionally, Wise reports that changes

must occur within individuals' cognitions, perceptions, and/or beliefs regarding the proposed treatment before it can be successfully utilized.<sup>79</sup>

These studies indicate that, in the case of the RIM multi-component intervention, GIV meditation and journaling, (which are central to the RIM method) lacked the exposure time necessary for these changes to occur. According to Keefer, it takes more than six weeks to experience the results (her clients reported the greatest symptom-reductions at the three-month follow-up) from a complex relaxation program.<sup>80</sup> Hence, an IBS symptom reduction program lasting eight to 12 weeks would best establish desired outcomes.

### **Taking IBS to the Next Level:**

In successive trials aiming to measure IBS symptom-reduction using similar protocols, certain guidelines are suggested to improve study design and outcome measures.

### Isolating Components of RIM Multi-Component Intervention:

It will be necessary for individual components involved in this multi-component treatment program to be isolated and tested in order to determine whether individual therapies can achieve similar results when utilized independently. These findings may assist patients with debilitating IBS symptoms who are unable to attend weekly sessions/treatments, yet require supplementary services.

Additionally, IBS topics and themes (as contained in the RIM intervention) presented by the PI during discussion and lecture sessions will need to be isolated to determine if they are confounding variables within the study. For instance, diet augmentation (a confounding variable) may have been the result of nutritional lectures

outlining food-elimination diets for IBS symptom-reduction. Following this discussion, one individual in the treatment group removed sugar and lactose from her diet for the remainder of the study (approximately 3-4 weeks). At the end of four weeks, her symptoms of constipation and painful bloating were gone.

By keeping a food diary along with the GI symptom diary, confounding variables such as diet augmentation can be monitored in future studies.

#### Satellite Treatments:

The RIM multi-component treatment program introduced in this study-- particularly the GIV and journaling treatments contained in the original RIM method-- could be utilized in satellite programs for treatment of long-distance IBS patients. As reported previously, this study prompted numerous inquiries from outlying IBS sufferers looking for treatments that were either unavailable in their particular region or unobtainable due to an inability to leave the house for fear of “accidents.”

With previous IBS research stressing the importance of group interaction for retention of and involvement in treatment,<sup>81</sup> little thought was given to independent utilization of this intervention for IBS symptom-reduction. However, it became clear during the course of this study that numerous housebound and/or outlying IBS patients lacked adequate medical treatment. Future programs for these individuals could be packaged as “satellite” GIV and journaling or multi-component intervention protocols; “group interaction” would be supplanted by auxiliary communication comprised of phone and/or email communication to reinforce new concepts. Alternatively, the PI could meet with these patients once or twice a month during treatment to facilitate these satellite programs.

Credibility:

Many people will not volunteer for a study unless it is recognized or sponsored by a known institution, company, or healthcare organization.<sup>82</sup> Therefore, obtaining a grant or institutional backing would have a positive effect on patient turnout in subsequent studies. Since insurance companies pay millions of dollars to hospitals, physicians, and subscribers for unnecessary testing to diagnose IBS,<sup>83</sup> this researcher believes that such corporations would be amenable to subsidizing and/or funding future IBS trials involving mind-body therapies.

Little additional testing is required for diagnosis in patients under 50 who meet the Rome II criteria and have no family history of colon cancer. Nonetheless, millions of dollars are expended each year<sup>84</sup> on IBS testing that could be eliminated using the Rome II criteria.

A validation study of the Rome criteria after excluding patients with symptoms suggestive of medical conditions other than IBS (alarm signs, etc.) showed that 100% of individuals who met the diagnosis of IBS based on the Rome criteria truly had IBS rather than an alternative diagnosis. At two years follow-up, none of the IBS patients required a change in diagnosis.<sup>85</sup>

Furthermore,

Care should be taken to avoid unnecessary investigations that may be costly and even harmful. Blood may be drawn once for a complete blood cell count and measurement of erythrocyte sedimentation rate or C-reactive protein, but such tests are rarely abnormal in patients identified by symptom criteria. An initial diagnosis of IBS should be a safe one and rarely needs revision over time.<sup>86</sup>

The United States alone spends billions of dollars treating IBS symptoms. The latest estimates indicate that yearly direct costs for this disorder are \$10.6 billion with indirect costs at \$19.2 billion each year. An article entitled, “The Cost-Effectiveness of

Mind-Body Medicine Interventions”<sup>87</sup> by Northern California’s Kaiser Permanente portrays the changing attitudes of healthcare institutions toward alternative health care methods:

Clinical intervention can be brought into better alignment with the emerging evidence on the health and cost-effectiveness of mind-body interventions. Mind-body medicine is not something separate or peripheral to the main tasks of medical care but should be an integral part of evidence-based cost effective, quality health care.<sup>88</sup>

#### All-Male Studies:

The number of females who have been diagnosed with IBS is far greater than the number of known male sufferers. Since males generally refuse to seek treatment for irritable bowel syndrome, this discrepancy is due in part to an assumed lack of symptom-reporting.<sup>89</sup> As previously explained, males are seldom willing to talk openly about their bowels with doctors or spouses.

Over a period of four months spent working for a general practitioner specializing in IBS, this researcher witnessed only one male patient reporting symptoms associated with the disorder. He was literally dragged in for the appointment by his wife, who, not surprisingly, did all of the talking for him.

Yet, after receiving almost as many phone calls from men as women in reference to the RIM-IBS newspaper advertisement, it became increasingly clear that discrepancies between the sexes in regards to this issue deserve further investigation.

According to the literature, males have a greater problem with IBS-diarrhea (IBS-D) than females (who suffer more from IBS-constipation and bloating). In previous studies, IBS-D symptomology was more amenable to treatment and reported statistically better results than IBS-C.<sup>90</sup> Therefore, it would appear that male IBS sufferers could

potentially achieve a greater degree of success in treating their disorder than could IBS females, providing increased incentive to initiate all-male studies and/or create programs that encourage male sufferers to seek help.

In recent neurologic-enteric testing, females reported more painful gut-brain messages than males did in similar tests. Researchers theorize that although the gut sends visceral stimulus to the brain, the male brain never receives it,<sup>91</sup> and thus the possibility exists for more profound symptom-reduction in males. In these same studies, it was reported that males suffer more from psychologic stimulus and other anticipatory-type conditions (leading to diarrhea) while females suffer more from fatigue (leading to a sluggish gut and constipation.)<sup>92</sup>

If men afflicted with IBS had the opportunity to participate in an all-male study, this researcher believes there would be a large response for potential volunteers. Moreover, the majority of male callers responding to this study specifically expressed interest in mind-body or alternative therapies that did not utilize drugs. Therefore, any study trial using a mind-body protocol (such as the RIM intervention) would be well suited to this population.

#### Three-Month IBS Study:

As previously stated, the optimum time for behavioral integration and/or learning new techniques is eight weeks at minimum.<sup>93</sup> Increasing that time to a 12-week treatment would greatly improve meditation skills,<sup>94</sup> increase ease of journaling, extend discussions regarding healthier lifestyle choices, and more completely engage the participant in treatment.<sup>95</sup> All of these factors would undoubtedly lead to improvement of IBS symptoms.

### Somatosensory Hypnotherapy:

Based on past trials (Whorwell and others)<sup>96</sup> and a review of the literature, it appears that hypnosis is the most effective treatment for IBS symptom-reduction.

Although the use of somatosensory hypnotherapy is a relatively new treatment for use in chronic illnesses and disorders, it appears to be an exciting modality combining hypnosis and somatic therapy and symptom release.

Somatosensory hypnotherapy allows clients to communicate with the symptom through hypnotic language and learn its value and purpose in their lives.<sup>97</sup> The client may then articulate his or her unexpressed life narrative and release the symptom, which is no longer required to manifest in the individual's life.<sup>98</sup> Somatosensory hypnotherapy appears to be the next level in mind-body medicine, and may lead to more profound healing for IBS and other functional somatic illnesses. Although not suited to group treatment,<sup>99</sup> this form of hypnotherapy can be used on individual clients whose symptoms are refractory to other forms of treatment.

### **Concluding Statements**

In summary, the RIM multi-component intervention treatment method appears to be moderately effective for treating patients with irritable bowel syndrome. Future research should focus on replicating these findings using larger samples, and possibly altering the treatment length and duration to determine improvement in outcomes when participants are more adept at GIV meditation and journaling.

The test results obtained in the RIM multi-component intervention add to the body of literature involving mind-body therapies for IBS symptom-reduction. As with many previous IBS controlled trials, larger studies are needed for randomization,

especially those involving non-drug therapies, which are not as well funded as those supported by larger drug companies.

Perhaps the greatest contribution one can make to the field of mind-body medicine for any illness or disorder is to establish programs to teach effective self-management, including self-healing exercises. This was the goal of the RIM intervention—to teach people to trust their own intuition and be their own doctor/healer.

In the words of Albert Schweitzer,

The witch doctor succeeds for the same reason all the rest of us succeed. Each patient carries his own doctor inside him. They come to us not knowing that truth. We are our best when we give the doctor who resides within each patient a chance to go to work.<sup>100</sup>

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<sup>1</sup> E.B. Blanchard, *Irritable Bowel Syndrome: Psychosocial Assessment and Treatment* (Washington: APA, 2001):56

<sup>2</sup> *Ibid.*, 153-181.

<sup>3</sup> *Ibid.*

<sup>4</sup> *Ibid.*

<sup>5</sup> *Ibid.*

<sup>6</sup> L. Keefer and E.B. Blanchard, “The Effects of Relaxation Response Meditation on the Symptoms of Irritable Bowel Syndrome: Results of a Controlled Treatment Study,” *Behaviour Research and Therapy*, 39 (2001): 801-11.

<sup>7</sup> *Ibid.*

<sup>8</sup> P.J. Whorwell et al., “Controlled Trial of Hypnotherapy in the Treatment of Severe Refractory Irritable Bowel Syndrome,” *Lancet*, 2, (1984): 1232-3.

<sup>9</sup> M.L. Rossman, *Guided Imagery for Self-Healing* (Tiburon, CA: HJ Kramer, 2000).

<sup>10</sup> *Ibid.*

<sup>11</sup> D.A. Drossman et al., “AGA Technical Review on Irritable Bowel Syndrome,” *Gastroenterology*, 123 (2002): 2108-31.

<sup>12</sup> *Ibid.*

<sup>13</sup> E.B. Blanchard, *Irritable Bowel Syndrome: Psychosocial Assessment and Treatment* (Washington: APA, 2001)

<sup>14</sup> *Ibid.*

<sup>15</sup> E.B. Blanchard and S.P. Schwartz, “Clinically Significant Changes in Behavioral Medicine,” *Behavioral Assessment*, Vol.10 (1988), 171-88.

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- <sup>24</sup> D.L. Patrick et al., "Quality of Life in Persons with Irritable Bowel Syndrome: Development of a New Measure," *Digestive Dis Sci*, 43 (1998): 400-11.
- <sup>25</sup> D.A. Drossman et al., "AGA Technical Review on Irritable Bowel Syndrome," *Gastroenterology*, 123 (2002): 2108-31.
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- <sup>28</sup> Ibid.
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- <sup>30</sup> Ibid.
- <sup>31</sup> C.B. Pert, *Molecules of Emotion* (New York: Scribner, September 1997).
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**APPENDIX A:  
Newspaper Article**

**Mind/Body Research** 

**IBS Volunteers Needed!**

 **Informational Meeting**  
Wednesday, Feb. 11,  
2:30 pm  
at Aurora Urgent Care  
(Community room)  
13650 E. Mississippi

Please call 303.689.0421  
for further details concerning this exciting new study.

## APPENDIX B: GI Symptom Diary

Name: \_\_\_\_\_ Week of \_\_\_\_\_

Using the following rating scale, please identify how much of a problem each of the listed symptoms caused you over the day as well as any medication you took for the problem.

**RATING SCALE:** 0 = not a problem  
 1 = mildly distressing and interfering  
 2 = moderately distressing and interfering  
 3 = severely distressing and interfering  
 4 = debilitating

Symptoms	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
abdominal pain							
abdominal tenderness							
constipation							
diarrhea (rating)							
diarrhea (# of times)							
bloating/"fullness"							
nausea							
flatulence							
belching							
Did abdominal problems cause you to avoid certain foods or beverages? (Y or N)							
Did abdominal problems cause you to avoid certain activities? (Y or N)							
What medications did you take? (list dose)							

Courtesy of Edward B. Blanchard, Ph.D.

**APPENDIX C:  
IBS-QOL**

PARTICIPANT ID:

Please write in

TODAY'S DATE:                                
                          Month    Day    Year

**PLEASE READ THIS CAREFULLY**

ON THE FOLLOWING PAGES YOU WILL FIND STATEMENTS CONCERNING BOWEL PROBLEMS (IRRITABLE BOWEL SYNDROME) AND HOW THEY AFFECT YOU.

FOR EACH STATEMENT, PLEASE CHOOSE THE RESPONSE THAT APPLIES BEST TO YOU AND **CIRCLE** THE NUMBER OF YOUR RESPONSE.

IF YOU ARE UNSURE ABOUT HOW TO RESPOND TO A STATEMENT, PLEASE GIVE THE BEST RESPONSE YOU CAN. **THERE ARE NO RIGHT OR WRONG RESPONSES.**

YOUR RESPONSES WILL BE KEPT STRICTLY CONFIDENTIAL.

IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT:

**\*\*SITE ADDRESS AND PHONE NUMBER TO BE PLACED HERE\*\***

The IBS-QOL was developed by Donald L. Patrick, Ph.D. at The University of Washington, Douglas A. Drossman, MD at The University of North Carolina, Novartis Pharmaceuticals Corporation, and Novartis Pharma AG. Authors hold joint copyright over the IBS-QOL and all its translations.

Please think about your life over the **past month (last 30 days)**, and look at the statements below. Each statement has five different responses. For each statement, please circle the response that best describes your feelings.

Q1. I feel helpless because of my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 EXTREMELY

Q2. I am embarrassed by the smell caused by my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 EXTREMELY

Q3. I am bothered by how much time I spend on the toilet. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 A GREAT DEAL

Q4. I feel vulnerable to other illnesses because of my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 EXTREMELY

Q5. I feel fat/bloated because of my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 A GREAT DEAL

Q6. I feel like I'm losing control of my life because of my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 A GREAT DEAL

Q7. I feel my life is less enjoyable because of my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 A GREAT DEAL

Q8. I feel uncomfortable when I talk about my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 EXTREMELY

Q9. I feel depressed about my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 EXTREMELY

Q10. I feel isolated from others because of my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 EXTREMELY

Q11. I have to watch the amount of food I eat because of my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 A GREAT DEAL

Q12. Because of my bowel problems, sexual activity is difficult for me. *(Please circle one number)*  
*(If not applicable, please circle "NOT AT ALL")*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 EXTREMELY

Q13. I feel angry that I have bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 EXTREMELY

Q14. I feel like I irritate others because of my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 A GREAT DEAL

Q15. I worry that my bowel problems will get worse. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 A GREAT DEAL

Q16. I feel irritable because of my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 EXTREMELY

Q17. I worry that people think I exaggerate my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 A GREAT DEAL

Q18. I feel I get less done because of my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 A GREAT DEAL

Q19. I have to avoid stressful situations because of my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 A GREAT DEAL

Q20. My bowel problems reduce my sexual desire. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 A GREAT DEAL

Q21. My bowel problems limit what I can wear. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 A GREAT DEAL

Q22. I have to avoid strenuous activity because of my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 A GREAT DEAL

Q23. I have to watch the kind of food I eat because of my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 A GREAT DEAL

Q24. Because of my bowel problems, I have difficulty being around people I do not know well. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 A GREAT DEAL

Q25. I feel sluggish because of my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 EXTREMELY

Q26. I feel unclean because of my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 EXTREMELY

Q27. Long trips are difficult for me because of my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 EXTREMELY

Q28. I feel frustrated that I cannot eat when I want because of my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 EXTREMELY

Q29. It is important to be near a toilet because of my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 EXTREMELY

Q30. My life revolves around my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 A GREAT DEAL

Q31. I worry about losing control of my bowels. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 A GREAT DEAL

Q32. I fear that I won't be able to have a bowel movement. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 A GREAT DEAL

Q33. My bowel problems are affecting my closest relationships. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 A GREAT DEAL

Q34. I feel that no one understands my bowel problems. *(Please circle one number)*

- 1 NOT AT ALL
- 2 SLIGHTLY
- 3 MODERATELY
- 4 QUITE A BIT
- 5 EXTREMELY

**APPENDIX D:**  
**Letter of Explanation/Rational**

Audrey Boxwell, ThD ©  
Mind/Body Research  
aboxwell@in21.com  
303-689-0421 (Office)  
303-618-0681 (Cell)

Dear Participant:

Thank you for your interest in “The Effects of Guided Imagery/Visualization (GIV) and Journaling on Symptoms of IBS;” this study will be used as a doctoral research for Holos University Graduate Seminary.

You will be involved in a four-week guided-imagery/visualization and journaling program including biweekly-one hour meditation/journaling sessions *free of charge*. We will also discuss IBS related issues such as etiology, diet, stress reduction techniques, and comorbid disorders, such as fibromyalgia and Chronic Fatigue Syndrome. Any questions/comments concerning your personal issues with IBS or this protocol will also be addressed at these sessions.

Your participation is appreciated and solicitation of this research trial is strictly voluntary. We promise that your name will not be associated in any way with the research findings; only a code number will identify your information. A summary of the results may be obtained upon written request at the conclusion of this study.

There are no known risks associated with this type of study and we are confident that your involvement and information gleaned from this trial will positively affect future research in/for functional bowel disorders. If you have any questions or require additional information concerning this study, please contact me by phone or email.

Enclosed is a map of the Aurora Urgent Care Center and questionnaires for you to complete before the first session, Wednesday, February 11, 2004, at 2:30 p.m. in the Community Room.

Thank you so much for your willingness to participate in this innovative mind, body and spiritual healing program that we believe can positively affect your life. We applaud your spirit and look forward to co-creating a healing experience with all of you!

Very Truly Yours,

Audrey Boxwell, ThD ©

## **APPENDIX E: Consent Form**

**STUDY NAME: The Effects of Guided Imagery/Visualization (GIV) and Journaling on Symptoms Of Irritable Bowel Syndrome (IBS) Using *Releasing the Inner Magician* in a Controlled Treatment Study**

**STUDY ID#: 430**

**DATE APPROVED BY IRB: 10/30/04**

**BEGINNING OF STUDY: Mid February**

**LENGTH OF STUDY: Eight Weeks**

---

### **SUBJECT INFORMED CONSENT**

**PRINCIPLE INVESTIGATOR IN CHARGE OF STUDY:** Audrey Boxwell, RDH,  
Th.D.©

**NAME OF THERAPY: *RIM Method*:** Utilizing Guided Imagery/Visualization (GIV) and Journaling

**PURPOSE: Symptom reduction for Individuals with Irritable Bowel Syndrome**

**INCLUSION CRITERIA:**

1. Subjects must be diagnosed by health professional with Irritable Bowel Syndrome (IBS) using Rome II Criteria and present written confirmation of said disorder
2. Subjects must be at least 18 years of age
3. Subjects will show willingness to participate by signing voluntary informed consent form.
4. Subjects will show ability and state willingness to follow the directions of the Principal Investigator (PI)

**EXCLUSION CRITERIA:**

1. Individuals under 18 years of age
2. Individuals failing to present with IBS using Rome II guidelines and written medical diagnosis.
3. Individuals presenting with IBD as well as IBS.

**PROCEDURES:**

1. The length of the study is eight weeks; (two-week pre-treatment, 4 weeks active treatment and two weeks post-treatment). Patients will be matched into pairs based on demographics and then randomly assigned to treatment or

control/wait-list group. Control group will have opportunity to cross over to treatment group at the end of post-treatment.

2. Each person will fill out a health history as well as a questionnaire assessing their IBS history and symptoms. They will also complete an “expectations questionnaire” for the study. (At post-treatment, individuals will again fill out this questionnaire to see if expectations were met.)
3. Each person will fill out a Quality of Life Survey (IBS-QOL) during pre and post-treatment.
4. After randomly assigning individuals to either the treatment/symptom monitoring group or the control/wait list group, all members of the study will be given GI symptom diaries and instructions for recording symptoms. These diaries will be turned in weekly by the treatment group; the control group will turn their diaries in during pre and post-testing only.
5. Each person in treatment group will be given the book and CD, *Releasing the Inner Magician* and a schedule for GIV/journaling sessions. (These will take place twice weekly, 60 minutes each session, for four weeks. This will provide eight sessions-eight hours of active treatment.)
6. Treatment group will record in their GI symptom diaries for the entire eight week study;
  - a. Weeks 1-2: Baseline/pretreatment, both groups
  - b. Week 3-6: Four weeks symptom monitoring by treatment group
  - c. Weeks 7-8: Post-treatment symptom monitoring, both groups.
7. At post-treatment, all participants will fill out a final IBS-QOL.

#### **POSSIBLE BENEFITS:**

Possible reduction of IBS symptoms and/or reduction in severity of symptoms.  
Learning techniques to relieve tension and stress  
Meeting others with IBS who share similar chronic symptoms and associated problems

#### **ALTERNATIVE TREATMENTS:**

Participation in this Research Design/Study is strictly voluntary.

#### **RIGHT TO LEAVE STUDY**

1. As a volunteer, you will enter this study of your free will; without undue pressure or duress, and are free to leave at any time without loss of benefits or rights to which you may be entitled.
2. Every effort will be made to inform you of new research resulting from this project.
3. Your participation in this study may be stopped by your health professional should he/she determine that your safety is being compromised.

#### **CONFIDENTIALITY OF RECORDS**

1. As a part of this study your identity will be kept confidential.
2. The sponsoring institution and members of the Institutional Review Board (IRB) may review and/or copy your medical records and any information collected during this study
4. For your safety, your name, address and social security number will be filed at the Sponsor's office
5. Results of this study may be reported in scientific presentations or publications; however, your identity will not be revealed unless required by law.
6. There will be no charge for any materials received during this study.

**QUESTIONS:**

This form provides study information. If you have any questions regarding this information, please call Audrey Boxwell, Principal Investigator and researcher at 303-689-0421.

**SUBJECT STATEMENT:**

I am signing this consent-form freely and without force. I understand that by signing this form, I do not lose any rights to which I am entitled.

I hereby state that I have the legal capacity to enter into contract and that no guardian has been appointed for me.

The consent form has been read by me and study information has been fully explained. Any questions that have occurred to me have been answered by the Principal Investigator. I may request a signed copy of this form.

I agree to cooperate with all research personnel and to follow the procedures as outlined to me.

By signing this Consent Form, I am authorizing release of my medical records to the Institutional Review Board and any third party required by law.

\_\_\_\_\_  
**Subject's Signature**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Subject's Name (Printed)**

**APPENDIX F:  
Albany IBS History**

Courtesy of Edward B. Blanchard, PhD.

Physical Factors

1. When did GI distress first become a problem? No. years \_\_\_\_\_
  
2. When did you first seek medical attention for abdominal problems?  
No. Years \_\_\_\_\_
  
3. Which of the following medical professionals have you consulted about your problem?
  - Family physician 1 = yes, 0 = no \_\_\_\_\_
  - Internist 1 = yes, 0 = no \_\_\_\_\_
  - OB/GYN 1 = yes, 0 = no \_\_\_\_\_
  - Gastroenterologist 1 = yes, 0 = no \_\_\_\_\_
  - Other 1 = yes, 0 = no \_\_\_\_\_
  
4. What kinds of diagnostic tests have you been given?
  - Upper GI series (barium swallow) 1 = yes, 0 = no \_\_\_\_\_
  - Lower GI series (barium enema) 1 = yes, 0 = no \_\_\_\_\_
  - abdominal X-rays 1 = yes, 0 = no \_\_\_\_\_
  - Gall-bladder series 1 = yes, 0 = no \_\_\_\_\_
  - Sigmoidoscopy 1 = yes, 0 = no \_\_\_\_\_
  - Colonoscopy 1 = yes, 0 = no \_\_\_\_\_
  - Negative lactose tolerance test 1 = yes, 0 = no \_\_\_\_\_
  - Neg. response to lactose-free diet 1 = yes, 0 = no \_\_\_\_\_
  - Neg. stool for ova and parasites 1 = yes, 0 = no \_\_\_\_\_

5. Have any of your IBS symptoms ever caused you to see a physician?  
1 = yes, 0 = no \_\_\_\_\_
6. Approximate date first saw a physician for IBS symptoms: \_\_\_\_\_
7. Have any of your IBS symptoms ever caused you to take prescription medication?  
1 = yes, 0 = no \_\_\_\_\_
8. What? \_\_\_\_\_
9. When were they first prescribed? \_\_\_\_\_
10. Have any of your IBS symptoms ever caused you to take nonprescription (over-the-counter) medications? 1 = yes, 0 = no \_\_\_\_\_

For which symptoms? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

12. What medication(s) have been *prescribed* for your IBS symptoms?

	Name of Drug	Taken in The past	Currently taking
Minor tranquilizers/anxiolytics	_____		
Antidepressants	_____		
Analgesics	_____		
Antispasmodics	_____		
Anticholinergics	_____		
Other (list)	_____		

13. What nonprescription medication(s) have you taken for IBS?

Name of Drug	Taken in The past	Currently taking
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Analgesics (aspirin, Tylenol, etc.) \_\_\_\_\_

Enemas \_\_\_\_\_

Bulk agents \_\_\_\_\_

Antacids \_\_\_\_\_

Antidiarrheals \_\_\_\_\_

Fiber supplements (Metamucil) \_\_\_\_\_

Other (list) \_\_\_\_\_

### ***Gastrointestinal Symptom Questionnaire***

From what you have told us thus far, we believe you have a disorder that is called irritable bowel syndrome, or IBS for short. People who suffer from IBS may have a wide array of symptoms. For this reason, I want to ask you a series of questions about your possible gastrointestinal (GI) symptoms.

#### **I. PAIN**

**First, I want to ask about pain in your abdominal region, that is, from the area below your chest or rib cage.**

1. Do you *frequently* have abdominal pain?  
1 = yes, 0 = no \_\_\_\_\_
2. (If no) if you do not have pain, do you frequently have abdominal discomfort or abdominal tenderness? 1 = yes, 0 = no \_\_\_\_\_
3. (If no to 2) do you *occasionally* have abdominal pain, or discomfort or tenderness? 1 = yes, 0 = no \_\_\_\_\_

***\* (If "No" to #3, then patient does not have IBS)***

4. Depending upon the patient's term (i.e., pain, discomfort, tenderness), use his or her term for all of the next questions.

Over the last year, how often was abdominal pain present? (Check one)

Constant \_\_\_\_\_

Daily \_\_\_\_\_

Weekly \_\_\_\_\_

Monthly \_\_\_\_\_

Other \_\_\_\_\_

Over the last 2 *weeks*, on about how many days was abdominal pain present?

No. of days \_\_\_\_\_

On about how many days was abdominal pain a problem?

No. of days \_\_\_\_\_

Now, ever since you have had IBS, about how frequently has abdominal pain been a problem? (Have patient give an estimate of the percent of time.)

% of time \_\_\_\_\_

5. Does the abdominal pain ever awaken you from sleep? 1 = yes, 0 = no \_\_\_\_\_

(If yes) about how often? \_\_\_\_\_

6. Does your abdominal pain usually occur in a specific location?

1 = yes, 0 = no \_\_\_\_\_

7. (If yes) can you (show me) (point to) where it generally occurs?

(Record location) \_\_\_\_\_

8. Does it also occur regularly anywhere else?

(Record location) \_\_\_\_\_

9. (If no) is there some area where it is more likely to occur? 1 = yes, 0 = no \_\_\_\_\_

10. (If yes) please show me where? (Record location)

- 
11. Has the location of the pain changed at all over the past year?  
1 = yes, 0 = no \_\_\_\_\_
12. (If yes) describe how that occurred. \_\_\_\_\_
13. Is your abdominal pain fairly *constant*? 1 = yes, 0 = no \_\_\_\_\_  
Or does it come and go? 1 = yes, 0 = no \_\_\_\_\_
14. (If constant) are there times when the pain disappears? 1 = yes, 0 = no \_\_\_\_\_
15. (If no) is the pain with you almost all of the time? 1 = yes, 0 = no \_\_\_\_\_
16. Does it fluctuate in severity? 1 = yes, 0 = no \_\_\_\_\_
17. How? Describe? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
18. How intense is your abdominal pain usually? (Check one)
- Mild \_\_\_\_\_
- Moderate \_\_\_\_\_
- Severe \_\_\_\_\_
- Debilitating \_\_\_\_\_

What is the worst pain of any kind you ever experienced?

---

19. Compared to the worst pain you have experienced [call it 100]:  
(a) how severe is your usual abdominal pain? \_\_\_\_\_  
(b) how severe was the worst abdominal pain you can remember? \_\_\_\_\_
20. (If yes) what kinds of things seem to lead to the pain's becoming less or disappearing?
- Psychological event \_\_\_\_\_
- Physical event \_\_\_\_\_

Both psychological and physical \_\_\_\_\_

Nothing \_\_\_\_\_

Don't know \_\_\_\_\_

21. (If intermittent) for the last 2 weeks, about how many hours per day did you have noticeable pain? No. hours \_\_\_\_\_

22. What kinds of things seem to cause the pain to begin? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**(CHECK FOR THESE POSSIBLE TRIGGERS)**

Does the pain *sometimes* or *regularly* start shortly after you eat a normal meal?

\_\_\_\_\_

\_\_\_\_\_

Does the pain *sometimes* or *regularly* start shortly after you eat certain specific foods?  
1 = yes, 0 = no \_\_\_\_\_

Describe \_\_\_\_\_

\_\_\_\_\_

Does the pain *sometimes* or *regularly* start after you have had a stressful situation? 1 = yes, 0 = no \_\_\_\_\_

or had to rush too hurriedly? 1 = yes, 0 = no \_\_\_\_\_

or do things which were unpleasant? 1 = yes, 0 = no \_\_\_\_\_

23. What kinds of things seem to relieve the pain?

\_\_\_\_\_

\_\_\_\_\_

24. Does having a bowel movement *usually* or *occasionally* relieve the pain?  
1 = yes, 0 = no \_\_\_\_\_

Do you take any medicine to relieve the pain? 1 = yes, 0 = no \_\_\_\_\_

Does the pain seem to ease on it own over time? 1 = yes, 0 = no \_\_\_\_\_

If yes, how long? Duration \_\_\_\_\_

25. When you have abdominal pain, do you ever notice that you may need several bowel movements before the pain is relieved? 1 = yes, 0 = no \_\_\_\_\_

Describe

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26. (If bowel movement relieves pain) when you have a bowel movement that relieves abdominal pain, does it tend to be:

relatively hard and well formed \_\_\_\_\_

soft and not well formed \_\_\_\_\_

loose and watery \_\_\_\_\_

pellet-like (little small pellets) \_\_\_\_\_

27. Does your abdominal [pain] ever interfere in your life or cause you to avoid activities? 1 = yes, 0 = no \_\_\_\_\_

Elaborate

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28. For women only – is your abdominal pain at all related to your menstrual cycle?

1 = yes, 0 = no \_\_\_\_\_

29. Do you ever get cramps or pain associated with your menstrual cycle?

1 = yes, 0 = no \_\_\_\_\_

Is this menstrual pain different than IBS pain? 1 = yes, 0 = no \_\_\_\_\_

Elaborate

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**II. ALTERED BOWEL FUNCTION**

1. For the last 2 weeks, about how many bowel movements do you have per day?

If very irregular, what is the range of daily BMs over the last 2 weeks? \_\_\_\_\_

2. Is the pattern over the past two weeks fairly typical for you and your IBS?

1 = yes, 0 = no \_\_\_\_\_

3. (If no) what is the more typical pattern? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

(Probe to see if patient alternates between periods of frequent BMs or diarrhea and periods of infrequent BMs or constipation.)

4. Has this pattern changed over the course of your IBS?

1 = yes, 0 = no \_\_\_\_\_

How?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**III. DIARRHEA**

1. Do you ever suffer from diarrhea? Is that a big part of your IBS?

1 = yes, 0 = no \_\_\_\_\_

2. (If yes) about how often (how many days per week) have you had diarrhea over the past two weeks?

No. of days \_\_\_\_\_

3. Is this fairly typical of your IBS over its lifetime course? 1 = yes, 0 = no \_\_\_\_\_

4. (If not) how is it different?

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5. Different people describe diarrhea differently (everyone has different definitions).  
When you have diarrhea, what do you mean? \_\_\_\_\_

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Soft, semi formed bowel movements \_\_\_\_\_

Frequent, small bowel movements \_\_\_\_\_

Loose, watery stools \_\_\_\_\_

Passage of gas, mucus, and liquid with little solid stool \_\_\_\_\_

6. Do you take anything or do anything to try to stop the diarrhea?

1 = yes, 0 = no \_\_\_\_\_

7. (If yes) what?

---

8. Are there any things regularly associated with diarrhea? (Certain foods, eating too much, abdominal pain, stress, etc.)

1 = yes, 0 = no \_\_\_\_\_

9. Do you ever have a sudden strong urge to have a bowel movement?

1 = yes, 0 = no \_\_\_\_\_

10. (If yes) is this usually accompanied

by pain 1 = yes, 0 = no \_\_\_\_\_

or by diarrhea 1 = yes, 0 = no \_\_\_\_\_

Describe

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---

11. About how often does this occur?

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12. Have you even had an accident where you soiled your underclothes because of sudden, strong urges to defecate?  
1 = yes, 0 = no \_\_\_\_\_
13. (If yes) about how often has this occurred in the last year? \_\_\_\_\_
14. (If it hasn't occurred in the last year) about how many times in the past 5 years?  
\_\_\_\_\_
15. Have you had a lot of close calls? 1 = yes, 0 = no \_\_\_\_\_
16. (If yes) do you take special precautions to avoid a repeat of the accident (i.e., not eating?) 1= yes, 0 = no \_\_\_\_\_
17. (If yes) do you avoid situations where a toilet is not available (generally restrict activities, etc.)? \_\_\_\_\_

Psychological event \_\_\_\_\_

Physical event \_\_\_\_\_

Both psychological and physical \_\_\_\_\_

Nothing \_\_\_\_\_

Don't know \_\_\_\_\_

#### IV. CONSTIPATION

1. Do you ever suffer from constipation? 1 = yes, 0 = no \_\_\_\_\_
2. (If yes) about how many days were you constipated over the past 2 weeks?  
No. days \_\_\_\_\_
3. Is this typical of your IBS over its lifetime course? 1 = yes, 0 = no \_\_\_\_\_
4. (If no) how is it different?  
\_\_\_\_\_
5. Different people describe constipation differently. When you are constipated what do you mean?

Go for 1 day with no bowel movement 1 = yes, 0 = no \_\_\_\_\_

Go for 2 days with no bowel movement 1 = yes, 0 = no \_\_\_\_\_

Go for 3 or more days with no bowel movement 1 = yes, 0 = no \_\_\_\_\_

Do you have very hard bowel movements? 1 = yes, 0 = no \_\_\_\_\_

6. Do you ever have the sense after a bowel movement, that you were unable to pass all of the fecal matter or that you did not really finish the emptying?  
1 = yes, 0 = no \_\_\_\_\_
7. (If yes) how often does this happen? \_\_\_\_\_
8. About what percentage of time does this happen? % time \_\_\_\_\_
9. Do you ever have to strain, or try to force the feces out, in order to have a bowel movement? 1 = yes, 0 = no \_\_\_\_\_
10. (If yes) about what percentage of time does this happen? % time \_\_\_\_\_
11. Do you take anything (such as laxatives, bulk agents, fiber, etc.) or do anything to counteract constipation? 1 = yes, 0 = no \_\_\_\_\_
12. (If yes) what do you do and how often? \_\_\_\_\_  
\_\_\_\_\_

How often \_\_\_\_\_

13. Are there any things regularly associated with constipation? (Certain foods, eating too much, abdominal pain or tenderness or bloating, stress, etc.)  
1 = yes, 0 = no \_\_\_\_\_
14. (If yes) describe \_\_\_\_\_
15. Do you ever have times when you feel as if you should have a bowel movement and sit on the toilet for a while but nothing happens? 1 = yes, 0 = no \_\_\_\_\_
16. (If yes) elaborate \_\_\_\_\_  
\_\_\_\_\_

## V. BLOATING

1. Do you ever have feelings of being bloated, or excessively/uncomfortably full, or

- that your abdomen is enlarged or protruding? 1 = yes, 0 = no \_\_\_\_\_
2. (If yes) over the last 2 weeks, how many days were you bloated? \_\_\_\_\_
3. Now, ever since you have had IBS, about what percentage of time has bloating been a problem? % time \_\_\_\_\_
4. How severe is the bloating as its worst?
- Mild \_\_\_\_\_
- Moderate \_\_\_\_\_
- Severe \_\_\_\_\_
- Debilitating \_\_\_\_\_
5. Does the bloating ever cause you to forgo activities? 1 = yes, 0 = no \_\_\_\_\_
6. (If yes) what? \_\_\_\_\_
7. Is bloating associated with particular events? 1 = yes, 0 = no \_\_\_\_\_
- Psychological event \_\_\_\_\_
- Physical event \_\_\_\_\_
- Both psychological and physical \_\_\_\_\_
- Nothing \_\_\_\_\_
- Don't know \_\_\_\_\_
8. Borborygmi (How about gurgling noises? Can you hear them?)  
1 yes, 0 = no \_\_\_\_\_
9. As part of the bloating do you even notice audible sounds from your abdomen?  
1 = yes, 0 = no \_\_\_\_\_
10. Do you notice them at other times?  
Elaborate \_\_\_\_\_
- \_\_\_\_\_
11. Can other people hear bowel sounds (borborygmi)? 1 = yes, 0 = no \_\_\_\_\_

12. Have you felt embarrassed because of these bowel sounds occurring when you were with others? 1 = yes, 0 = no \_\_\_\_\_

13. Or avoided activities because of them? 1 = yes, 0 = no \_\_\_\_\_  
Elaborate \_\_\_\_\_  
\_\_\_\_\_

14. How intense of a problem are borborygmi:

Mild \_\_\_\_\_

Moderate \_\_\_\_\_

Severe \_\_\_\_\_

Debilitating \_\_\_\_\_

15. About how often do you have audible bowel sounds? How often? \_\_\_\_\_

**VII. BELCHING**

1. Do you ever belch or burp as part of your IBS? 1 = yes, 0 = no \_\_\_\_\_

2. (If yes) over the last 2 weeks, on about how many days was belching noticeable?  
1 = yes, 0 = no \_\_\_\_\_

3. As a general part of your IBS, what percent of time is belching a problem?  
% time \_\_\_\_\_

4. How severe is your problem with belching?

Mild \_\_\_\_\_

Moderate \_\_\_\_\_

Severe \_\_\_\_\_

Debilitating \_\_\_\_\_

5. What factors are associated with an increase in belching?  
\_\_\_\_\_

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6. Have you ever been embarrassed because of belching? 1 = yes, 0 = no \_\_\_\_\_  
Elaborate

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7. Do you avoid activities because of potential belching? 1 = yes, 0 = no \_\_\_\_\_  
Elaborate

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### VIII. NAUSEA AND VOMITING

1. Do you ever experience nausea (feeling sick and as if you might vomit or throw up)? 1 = yes, 0 = no \_\_\_\_\_

2. (If yes) is nausea a part of your IBS? 1 = yes, 0 = no \_\_\_\_\_

3. (If yes to 2) over the last 2 weeks, on about how many days was nausea present?  
No. days \_\_\_\_\_

4. As a general part of your IBS, what percent of time is nausea a problem?  
% of time \_\_\_\_\_

5. How severe is your problem with nausea?

Mild \_\_\_\_\_

Moderate \_\_\_\_\_

Severe \_\_\_\_\_

Debilitating \_\_\_\_\_

6. Is your nausea associated with any particular foods, beverages, or activities?  
1 = yes, 0 = no \_\_\_\_\_

Elaborate. \_\_\_\_\_

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7. Do you ever vomit when you feel nauseous? 1 = yes, 0 = no \_\_\_\_\_

8. About how many times have you vomited in the last year? No. times \_\_\_\_\_

9. In general, how severe is your problem with vomiting?

- Mild \_\_\_\_\_
- Moderate \_\_\_\_\_
- Severe \_\_\_\_\_
- Debilitating \_\_\_\_\_

**IX. OTHER SYMPTOMS**

1. Do you frequently have a low-grade or higher fever? 1 = yes, 0 = no \_\_\_\_\_
2. Do you frequently feel very tired and lethargic because of IBS, even when you have not been exercising? 1 = yes, 0 = no \_\_\_\_\_ How often? \_\_\_\_\_
3. Have you gained or lost weight, without dieting, over the past year? 1 = yes, 0 = no \_\_\_\_\_ How many lbs.? \_\_\_\_\_
4. Have you ever had dark, somewhat tarry-looking stools? 1 = yes, 0 = no \_\_\_\_\_
5. Have you ever noticed bright red blood in the toilet or on toilet paper after wiping yourself? 1 = yes, 0 = no \_\_\_\_\_
6. (If yes) do you know the cause?  
\_\_\_\_\_

- Psychological event \_\_\_\_\_
- Physical event \_\_\_\_\_
- Both psychological and physical \_\_\_\_\_
- Nothing \_\_\_\_\_

**X. OTHER—INTERFERENCE WITH LIFE**

1. Have any of your IBS symptoms ever caused you to miss work or school? 1 = yes, 0 = no \_\_\_\_\_
2. About how many days over the last year? Days/last year \_\_\_\_\_  
Last 2 years \_\_\_\_\_

3. Have any of your IBS symptoms ever interfered in your social or family life?  
1 = yes, 0 = no \_\_\_\_\_

Avoid activities \_\_\_\_\_

After schedules \_\_\_\_\_

Avoid foods, etc. \_\_\_\_\_

Elaborate

\_\_\_\_\_

4. How would your life be different without IBS? Elaborate.

\_\_\_\_\_

5. Overall degree of interference (Interviewer Rating)

1. None-very mild \_\_\_\_\_

2. Mild-noticeable \_\_\_\_\_

3. Moderate \_\_\_\_\_

4. Severe \_\_\_\_\_

5. Debilitating \_\_\_\_\_

## ALBANY IBS HISTORY

### ANSWERS TO VARIOUS QUESTIONS FROM TREATMENT GROUP

**Q. “What kinds of things seem to cause the pain to begin?”**

(All individuals answered similarly)

Onset was a by-product of digestion and stress.

**Q. “What kinds of things relieve the pain?”**

Besides the use of prescription drugs, individuals sought rest-relaxation, and application of heat to offending area(s): upper, lower and left side of stomach, lower back.

**Q. “Does your abdominal pain ever interfere in your life or cause you to avoid activities?”** (This question is similar to those found in IBS-QOL; however, unlike the Likert responses in the QOL, participants had to answer Albany questions without using predetermined answers.)

All respondents answered “YES” (This question would be asked repeatedly during the treatment sessions and in the GI Symptom Diary.)

In terms of numbers, physical exercise was the activity avoided the most, followed by social gatherings and going out to eat.

**Q. “Does bloating ever cause you to forgo activities?”**

The only “NO” answers came from the (3) male participants in the control condition. The remaining thirty-eight (38) participants answered “YES!” One participant elaborated; “It’s hard to do Pilates with my [bloated] stomach hanging over my exercise clothes.”

The last question in this section:

**Q. “How would your life be different without IBS? Elaborate.”**

(This question proved the most profound; many of these topics would reappear during support group sessions

“I could exercise and feel better about myself;”

“I could eat or drink whatever I wanted.”

“My husband would have a partner living outside of the bathroom.”

“I could go back to work”/ “Return to my old job”

“I could go on vacation without worrying about the food or ‘facilities;”

“I could go to a Bronco Game;”

“I would have a life.”

“I would not have to feel lousy everyday”

“I wouldn’t have to justify feeling sick even though I don’t have a fever, sore

throat, or even look sick”

“I would never have to listen or answer the same old questions—‘Aren’t you feeling better yet? Isn’t there something (drug) you can take? Aren’t there any doctors who can help you?’ It gets so old”

“I could go to sleep without a stomach ache and wake up without a stomach ache”

## **APPENDIX G: Rome II Criteria**

At least 12 weeks, *which need not be consecutive, in the preceding 12 months, of*

1. Abdominal discomfort or pain
2. Accompanied by two or more of the following:
  - a. relieved by defecation;
  - b. onset associated with change in stool frequency and/or consistency; and/or
  - c. onset associated with change in form or appearance of stool.

Supportive symptoms of the irritable bowel syndrome:

1. Fewer than three bowel movements a week
2. More than three bowel movements a day
3. Hard or lumpy stools
4. Loose (mushy) or watery stools
5. Straining during a bowel movement
6. Urgency (having to rush to have a bowel movement)
7. Feeling of incomplete bowel movement
8. Passing mucus during a bowel movement
9. Abdominal fullness, bloating, or swelling

**APPENDIX H:  
Physician Evaluation Form**

Re: \_\_\_\_\_ Physician: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(1) Is there any medical information which would indicate that this person not be permitted to participate in the program outlined in the enclosed letter?

NO \_\_\_\_\_ YES \_\_\_\_\_

If yes, please \_\_\_\_\_  
specify \_\_\_\_\_

(2) Diagnosis of gastrointestinal problem. Check all that apply:

- \_\_\_\_\_ Irritable bowel syndrome
- \_\_\_\_\_ Peptic ulcer
- \_\_\_\_\_ Duodenal ulcer
- \_\_\_\_\_ Gastroenteritis
- \_\_\_\_\_ Crohn's Disease
- \_\_\_\_\_ Ulcerative Colitis
- \_\_\_\_\_ Other gastrointestinal problem(please indicate) \_\_\_\_\_  
\_\_\_\_\_

(3) Date of last complete physical examination: \_\_\_\_\_

(4) What diagnostic tests were conducted? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Physician's Signature: \_\_\_\_\_

Physician's Phone Number: \_\_\_\_\_  
(Courtesy of E.B. Blanchard)

## **APPENDIX I: Information about IBS**

### IRRITABLE BOWEL SYNDROME: A COMMON DISORDER

#### **A Mixture of Symptoms**

Just as the word “syndrome” suggests, IBS can produce a wide variety of bothersome gastrointestinal symptoms. Usually, though, not all of these symptoms occur at the same time or in the same person.

#### *Abdominal Pain*

Abdominal pain is perhaps the most common and recognizable symptom of irritable bowel syndrome (IBS). It is the reason most IBS patients initially come to see their physicians.

Although IBS pain most typically occurs in the lower left abdominal area, it may be felt on the right side, or much higher up. In fact, one type of IBS pain is actually felt in the chest, shoulders, and arms. IBS pain may take the form of aching or cramping. It may be constant, or it may be felt on and off and be relieved by passage of stool or gas.

#### *Constipation and Diarrhea*

At times, even more distressing than pain, are the disturbances in bowel function that occur with IBS. Not uncommonly, IBS may produce both diarrhea and constipation (with or without pain) intermittently in the same person.

Constipation may be characterized by the passage of small hard fecal balls or small soft stools. In a typical pattern, several days of constipation will lead to passage of hard stools, followed by several softer ones, and finally watery excretion. Strands of mucus and spots of bright red blood may be noticed in stool but are usually the result of rectal irritation. Any increased or persistent bleeding should be discussed immediately with your physician.

Diarrhea most commonly occurs in the morning before or after breakfast and is often accompanied by a strong sense of urgency. Stools are usually soft, watery, and only partially formed. The urge to defecate may also be quite strong immediately following other meals during the day. However, only a few watery stools may be passed at each bowel movement. Diarrhea will rarely awaken an IBS sufferer at night, although sleep may occasionally be interrupted by cramping.

#### *Other Complaints*

Other symptoms of IBS may include indigestion, bloating, belching, excess gas, nausea, vomiting, and loss of appetite. Headache, heart palpitations, dizziness, fatigue,

shortness of breath, and tingling of the hands and feet may also be experienced by the person with IBS.

## **Causes of IBS**

What causes IBS? Well, researchers have determined that most symptoms are directly related to an abnormal pattern of motion (motility) of the large intestine (colon).

The colon is a 5-foot area of bowel between the small intestine and the anus. Its main function is to remove water and salts from digestive products coming from the small intestine and hold the remaining residue until defecation. This fecal material then passes through the colon by means of a very delicate process of motion.

The motility of the colon is controlled by the body's nervous system. There are nerve impulses that stimulate activity, others that inhibit it—and with a fine balance between the two types of impulses, gastrointestinal contents are propelled forward smoothly and without problems.

In persons with IBS, however, this delicate balance is disturbed. In addition to the regular contractions that propel colon contents along, there are irregular, nonpropulsive contractions that can upset normal rhythm.

Constipation occurs when the propulsive movements are inhibited and absorption of water in the colon is increased, leaving the feces dry and hard. Diarrhea results when the propulsive movements are excessive, and there is little chance of water absorption. Abdominal pain and cramping result from the spasm of the colon and a buildup of gas that fills the bowel.

### *Emotional Triggers*

Why the nerve impulses that control colonic motility are out of balance in persons with IBS has been the subject of much investigation. All the answers are still not known. However, it has become obvious that both emotional factors and dietary habits play a very important role.

By measuring colon contractions in patients under stressful and non-stressful conditions, scientists have demonstrated that emotional stress clearly helps trigger abnormal motility. This is further borne out by the fact that many persons who suffer from IBS are sometimes tense, anxious and given to emotional ups and downs. There is usually a history of overwork, inadequate sleep, and hurried and irregular meals.

### *Dietary Abuse*

Colon contractions are also regulated by the amount and types of food consumed. High caloric meals and meals high in fat content can produce exaggerated contractions in persons with IBS, leading to cramps and diarrhea. Fats in the form of oils, animal fat, or butter are particularly important culprits, while carbohydrates, dietary protein, and blander foods usually have a minimal effect on the colon.

## **A Vicious Cycle You Can Break**

Once you understand why irritable bowel syndrome occurs you can begin to do something about it. For example, it is important to recognize that there is a distinct cycle of events that takes place during a bout with IBS.

First, the attack may be triggered by anxiety, tension, and emotional stress. This causes the pain and diarrhea or constipation. In turn, these symptoms produce even more anxiety and the cycle begins all over again.

### **Stay Calm**

It is obvious, then, that reducing emotional stress will reduce the frequency and severity of irritable bowel syndrome and help break the vicious cycle. Of course, none of us can change our personalities or the way we react to people or events in our lives overnight. However, try to keep things in perspective and learn to deal with any anger, hostility, or anxieties you may have. Also remember that, although, the symptoms of IBS are very real and often very distressing, they are not usually the result of any serious organic disease. That is why your doctor has fully examined you before making the diagnosis. If you get an attack, stay calm and try to ride it out. You will be surprised at the positive results you will get.

#### *Exercise and Get Plenty of Rest*

One good way to get rid of any bottled up hostilities or anxiety you may have is regular, vigorous, and enjoyable physical exercise. Exercise clears the mind and tones the body.

Get plenty of rest, too, and if possible, try to live according to a regular daily schedule. That means working, sleeping, and eating at the same times during each 24-hour period. Try to eat the same number of meals each day always at evenly spaced intervals. Be sure to get enough sleep—all at one time, if possible, rather than catnaps. And try to avoid alcohol and tobacco.

### **Eat the Right Foods and Learn Which Foods Bother You**

If your situation warrants it, your physician may recommend a special diet for you. In general, you should try to stay away from heavy meals and lean toward blander foods. Avoid very fatty foods. Cut down on your intake of fried foods, milk, and any milk products. Don't drink a lot of coffee and stay away from very hot or very cold drinks.

Try to learn which foods are most irritating to your own digestive system. Keep a log of your IBS episodes and note the foods you ingested prior to the attacks. After a few weeks, you may find that certain foods are more likely than others to set off symptoms. Tell your doctor what they are and avoid or cut down on these foods if your physician so advises.

In some IBS patients, particularly where constipation is the dominant problem, a diet high in fiber has been useful. Your doctor can tell you if increased fiber intake will help in your case.

### *Medication*

There are a number of medications your physician may elect to prescribe for you if your case warrants. Two of the most common types are tranquilizers and antispasmodics. Tranquilizers are designed to help calm you down a little so that unusual stresses are less likely to trigger or perpetuate an attack of IBS. Antispasmodics are intended to help normalize colon contractions by regulating the chemicals that help produce the rhythm-controlling impulses. For your convenience, your doctor may sometimes prescribe a medication that contains both an antispasmodic and a tranquilizer.

Whatever medications your doctor prescribes, take them exactly as he or she directs. Timing of medication doses can be very important in treating IBS. Also, if you experience any side effects be sure to tell your physician.

### *Keep Your Chin Up*

Remember, the WORST thing you can do is WORRY. IBS is controllable but it takes some positive thinking and positive effort. So keep you chin up. Smile! Your doctor is there to help you, and you're there to help yourself!

Taken from *Irritable Bowel Syndrome: Psychosocial Assessment and Treatment* by E.B. Blanchard.

## APPENDIX J: Brain Wave Activity

The following was taken from *Awakening the Mind: A Guide to Mastering the Power of Your Brain Waves*, by Anna Wise.

### The Work

#### The Awakened Mind

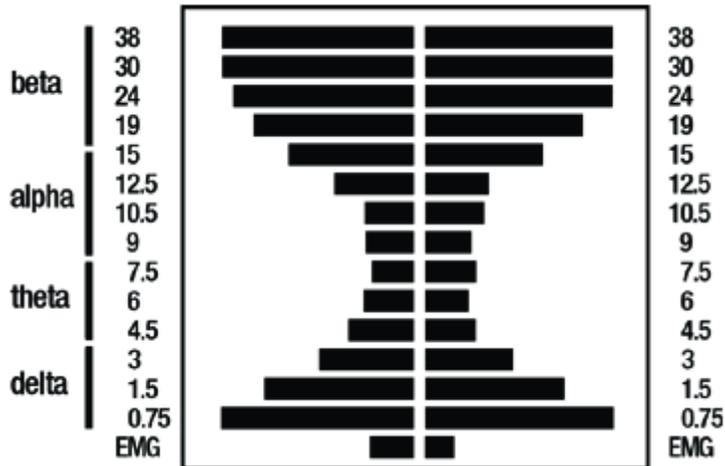


For almost three decades, we have measured the brainwave patterns of people whose states of consciousness one would emulate – spiritual masters, meditation teachers, and people of optimum creativity in all walks of life. The brainwave pattern that we found, named the Awakened Mind, is a combination of all four categories – beta, alpha, theta, and delta – in the right relationship and proportion.

Since beta is thinking and the combination of alpha, theta and delta is meditating, you can see that the masters are in a state of thinking and meditating simultaneously, with a flow of connection between the two functions. Someone in the Awakened Mind brainwave state has access to the unconscious empathy, intuition, and radar of the delta waves, the subconscious creative storehouse, inspiration and spiritual connection of the theta waves, the bridging capacity, lucidity and vividness of imagery, and relaxed detached awareness of the alpha waves, and the ability to consciously process thoughts in beta – all at the same time!

### The Basics of Brainwaves

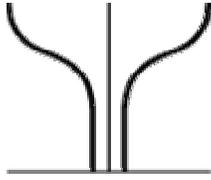
Brainwaves, like all waves, are measured in two ways. The first is frequency, or speed of the electrical pulses. Frequency is measured in cycles per second (cps or Hz), ranging from .5 cps to 38 cps. The second measurement is amplitude, or how strong the brainwave is. Brainwaves are categorized by frequency into four types: beta, alpha, theta, and delta. Each of these is explained below. The Mind Mirror displays these measurements of the brainwaves of the left and right hemisphere. Each bar graph represents the output of one filter. The bar graphs are centered on the frequencies shown in the diagram. The bottom bar graph, labeled EMG, measures muscle tension on the right and left side of the head. (Relaxation is a key step in creating an awakened mind.)



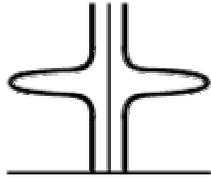
Above is a freeze-frame of a played beta pattern on the Mind Mirror – the brainwaves of normal waking thought. Below are a few seconds of actual brainwaves of someone meditating, as seen on the Mind Mirror (in a continuous loop).



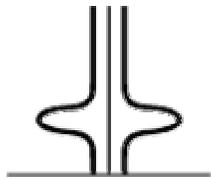
While an entire session with the Mind Mirror III can be saved on a computer, it was not always so. The first incarnations of the Mind Mirror (I and II) did not have any session storage capacity. Therefore, Anna invented a "shorthand" for drawing the patterns that occurred to act as a synopsis of each session. However, while it is often useful to review the recorded sessions, it was soon discovered to be time consuming to review hour-long files from the Mind Mirror III in order to recall the patterns that were generated during a session. So, the use of the "drawing language" for communicating with students what patterns they generated, and to remember quickly what transpired with someone in a previous session continued. Anna teaches her students this technique of drawing patterns, and workshop participants take home a sheet of drawings of the patterns they generated during the meditations. The brainwave descriptions and corresponding drawings follow.



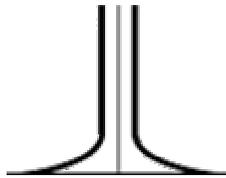
**BETA** brainwaves are the fastest frequencies ranging from 14 cycles per second up to 38 cycles per second. Beta is your normal thinking state, your active external awareness and thought process. Without beta you would not be able to function in the outside world.



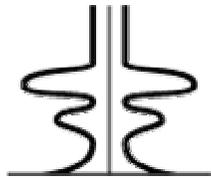
**ALPHA** brainwaves are the brainwaves of relaxed detached awareness, visualization, sensory imagery and light reverie. Ranging between about 9 cycles per second and 14 cycles per second alpha is the gateway to meditation and provides a bridge between the conscious and the subconscious mind.



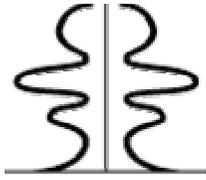
**THETA** brainwaves are the subconscious mind. Ranging from about 4 cycles per second up to 8 cycles per second, theta is present in dreaming sleep and provides the experience of deep meditation when you meditate. Theta also contains the storehouse of creative inspiration and is where you often have your spiritual connection. Theta provides the peak in the peak experience.



**DELTA** brainwaves are your unconscious mind, the sleep state, ranging from about 4 cycles per second down to 0.5 cycles per second. But when present in combination with other waves in a waking state, Delta acts as a form of radar – seeking out information – reaching out to understand on the deepest unconscious level things that we cannot understand through thought process. Delta provides intuition, empathetic attunement, and instinctual insight.



The **MEDITATION** brainwave pattern is a combination of alpha and theta where theta provides the depth and profundity of the meditation experience – the subconscious inner space from which creativity, insight, and healing spring – and alpha provides the bridge, or the link, to the conscious thinking mind so that you can actually remember the contents of your meditation.



The **AWAKENED MIND** brainwave pattern combines the intuitive, empathetic radar of the delta waves, the creative inspiration, personal insight, and spiritual awareness of the theta waves, the bridging capacity and relaxed, detached, awareness of the alpha waves, and the external attention and ability to consciously process thought of beta waves, all at the same time. It is a brainwave pattern shared by people in higher states of consciousness regardless of their philosophy, theology or meditation technique. This brainwave pattern can be found during “peak experience” and in all forms of creativity and high performance. The awakened mind is also the “ah-ha,” appearing at the exact instant of solving the problem, or getting the insight.

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## **APPENDIX K: Meditation Exercise 1 & Journal**

The following mediation exercises were taken directly from *Releasing the Inner Magician: Ways to Find a Peaceful and Happy Life*, by Deborah L. Sandella, Ph.D., R.N.

### **Unearthing Your Soul**

Find a Place where you can relax without being interrupted for 20-30 minutes. Lower the lights and get into a comfortable position, either sitting or lying down, as you begin the journey down through your layers, digging into the soil of your past and preparing the garden of your future.

Settle into yourself and allow your eyes to gently close. With a deep cleansing breath, exhale all tension. Breathe in relaxation and exhale doubt; breathe in clarity and exhale confusion. When you are relaxed, turn in to your place of wisdom. In your mind's eye, invite the image of a place in nature. It may be someplace you have visited or a place you are creating in your mind at this moment. Sense the power, beauty and safety of this place. Breathe it in and let it fill you. As you relax in this sweet spot, notice the temperature of the air against your skin, the smells and the sounds. Taking a deep breath of tranquility, look around until you discover a hidden trail. Follow it until it leads you to a rocky cliff, where, peering over the edge, you see a small dirt road that crisscrosses along the rocky cliffs to the bottom of a canyon. Sure-footed, like a mountain goat, find the entrance to this trail and climb downward.

On the underside of the edge, you discover a small cliff dwelling. This site houses the fossils of your adult life. Wander around this place and reclaim valuable information about your adulthood. Take some time. **What do you find? What meaning do these items**

**have for you?** Gazing at this site and its artifacts, feel clarity about the primary lesson that has consumed your adulthood.

Look around for a container in which you may carry relics with you during this journey. **What do you see as you walk down the path? What catches your eye? How do these objects represent you?** Collect items to represent your adult nature. Take some time.

Give thanks to your adult Self for the gifts s/he has brought you and follow the cliff-side trail deeper down into the canyon. As you round the bend, notice that an older strata of rock is exposed. This is the strata of your adolescence. Study this rock wall and the art etched into it to understand the wisdom it reveals about this time in your life. Take some time to learn about your inner pubescent Self.

In front of you, bones lie in the graveyard of your adolescence. Pick them up and feel their energy. **What do you notice?** As you hold these artifacts, let an image of the adolescent “you” float into your mind. **What do you look like? What does your adolescent Self feel like? Ask this image what was your greatest sorrow during your adolescence? What was your greatest joy? What does this adolescent Self want you to know about your adult Self?**

Say a prayer of gratitude to your adolescent, then take these bones with you as you return to the dirt trail. Follow it farther down into the canyon. Soon you come upon another cliff dwelling, one more ancient than the first. It houses the fossils of your childhood. Walk around and explore this area. **What are the items, fossils and shards lying about? What valuable information do they reveal about your inner child?**

Relics from your childhood graveyard lie on the ground. Collect them to carry with you. **As you touch them, what do you discover about your inner child?** Invite an image of your inner child to enter your mind’s eye. **What age does this child appear to be? How is s/he dressed? What feelings are present? What role did this child play in your**

**family? How did s/he feel about this role? How were boundaries handled by your family?**

**Ask this child what wisdom s/he has to impart to you. What words did this child long to hear from your parents?** Right now, say these words. Take a minute.

**How does your inner child continue to cry out in your life? What does s/he want from you?**

When you are ready, let these images fade. Bless this site and say a prayer of gratitude to your inner child.

Notice how the area feels and looks. **Has it changed in any way since you first arrived?**

Begin walking down the dirt trail again. Spiral down deeper and deeper until you sense a divine aura. There, in your presence, is the sacred garden of your soul. Find a space of earth that feels powerful and safe. Let your intuition guide you. Dig a shallow space large enough for your body. In this cleared space of earth, arrange your collection of bones, fossils and shards in the outline of your true nature. Take some time.

Lie down in this sacred site upon your fossils and say a prayer of forgiveness. Feel the earth crumble against your skin and smell the sweet scent of moisture. Allow your tears to flow freely and water your garden.

Breathing deeply, your hot breath enlivens these relics and your inner flame melds them into you.

There, deep in your DNA, you feel the seed of your original wholeness gently being nourished by the wisdom of your past.

Suddenly, clouds cover the sun, and darkness covers the earth. A crack of lightning strikes, and you feel the original electricity of your nature as you fall deep into the center of your being. Look around. **What do you see?**

You have fallen into your vastness. Floating in the void, connect with the Source of all creation. Take some time. Observe yourself from this place and ask, **“What is the essence of my inner spirit?”**

Suddenly a lovely voice speaks. It is your inner voice. Ask, **“What is my greatest gift, that aspect of me that innately craves to bloom? How is this gift related to my life’s purpose?”** Take a moment to listen.

**“What are the human imperfections that give me depth? What is my greatest lesson for this lifetime?”** Listen as the voice shares with you words of wisdom and encouragement.

Take some time to ask any questions you might have. When you are ready, feel your essence form itself into a seed. Nestle into a tender bed of earth and feel yourself swell with warmth and moisture in preparation for germination. Gently, crack open and grow new roots to ground you. In your mind’s eye, take some time to grow them as deep and wide as desired. Once centered in the earth mother, feel a small sprout of Self peek out, a little green shoot that breaks through the crust of the ground. Open to receive the nourishing rays of the sun and begin to grow at your own pace. **How do you feel?** Soak up the sun, and in your own time, feel your inner spirit burst into full bloom.

**What new parts of yourself are unfolding? How do you feel? Let yourself become fully ripe. How does this feel?**

When you’re ready, your ripe bloom dies away into mother earth and incubates to form a new seed. **What feelings rise up during this stage?**

Take some time now to flow through the growing process until your unconscious mind comes to rest in your current stage of growth. **What stage is this?**

**What have you learned about yourself and your growth?**

Look around and see what weeds, in the form of thoughts, behaviors and habits, need to be plucked in order for you to grow in the direction of your dreams. In your mind's eye, see those weeds being removed. **How does this feel?** Take some time.

**What have you learned during this meditation?**

**How can you apply this knowledge in your life?**

When you are ready, let your mind journey back to this room. Become aware of your surroundings. Let your arms and legs return to their normal weight as you wiggle the feeling back into your fingers and toes. Take whatever time you need, then open your eyes and answer the following questions.

### **Journal Exercise**

1. Describe your “cliff dwelling” of adulthood. What did you learn about your nature and your primary lesson as an adult?
2. What did the rock art and bones of your adolescence teach you about this time in your life? What did your adolescent Self have to say?
3. What did you learn about your inner child? What words did your inner child crave to hear? For what does s/he still cry out?
4. What wisdom did the voice of your soul share?
5. What is your primary lesson for this lifetime? What is your life's purpose?
6. What is your greatest gift that longs to blossom? How is it connected with your life's purpose?
7. What was your experience as a seed germinating into a flower? How is this similar to your life experience?
8. What parts of you are blossoming at this time in your life?
9. What parts of you are germinating in preparation for full bloom?

10. What was your experience as a ripe bloom dying and returning to the earth for rebirth?
11. Currently, in what stage of the growing cycle are you?
12. Please journal freely any additional insights or experiences.

**APPENDIX L:**  
**“Diet/Nutrition and Food Intolerances for IBS Sufferers” and “The Ill Effects of Fat and Fructose on IBS Symptoms”**

**Quick Tips for IBS Patients**

Things you can do to make your symptoms improve:

1. Excessive gas and diarrhea are suggestive of possible food intolerances. Keep a diet diary to identify potentially troublesome foods. Then, once you have a list of “suspects,” an elimination diet is the most effective way to discover actual food intolerances.
2. Dairy products are the most common dietary triggers of IBS symptoms. Your doctor may advise a simple lactose intolerance test if you experience troublesome symptoms when you eat dairy foods. Many people with IBS symptoms may be suffering from a pure lactose intolerance, without the underlying intestinal disorder present in IBS patients.
3. The sweeteners fructose and sorbitol may produce symptoms similar to those of lactose intolerance. Eliminating foods containing these products may be considered as part of your elimination diet.
4. Foods with a high fat content should be avoided. They are a common trigger of negative IBS symptoms.
5. Be careful not to eliminate too many foods, or the wrong foods from your diet. Sometimes foods which you think are making your symptoms worse, are not the real culprits. For instance, spicy foods sometimes make symptoms worse, but not always. If salsa is served with fatty foods like fried chips, cheese and refried beans, the foods giving you the troublesome symptoms may not be the salsa at all, but the accompanying fatty foods.
6. A fresh food diet is essential in treating IBS. Always have “safe” foods (those that do not provoke IBS symptoms) on hand, whether at home or traveling.
7. If caffeine, nicotine and alcohol trigger your IBS symptoms, consider reducing or eliminating them from your diet.
8. For many IBS sufferers, particularly those with constipation, increasing dietary fiber is of great benefit. When increasing fiber in your diet, start low and go slow. Take fiber supplements around mealtime to increase their effectiveness.
9. To reduce intestinal gas: eat slowly, chew food well, avoid gum, mints, and carbonated beverages.
10. Frequent small meals are better than one or two large meals.
11. Do not habitually use laxatives. They should only be used for a short period of time, under your physician’s guidance.
12. Establish a consistent time for bowel movements, and allow adequate time for elimination, especially if experiencing constipation.
13. Establish a regular exercise regimen to improve digestion and overall fitness. Many people find a brisk walk can help alleviate abdominal pain.

14. Herbal therapy can be effective for relief of IBS symptoms. For instance, in studies, peppermint oil appears to be effective at relieving cramps, taken in the correct dosage.
15. Complimentary alternative therapies can be effective in the treatment of IBS. If you are finding herbs, vitamins, or other alternative therapies helpful, be sure to let your physician know what you are using. Natural remedies, just like medications, may have side effects and potential for interaction with medications.
16. If stress is contributing to your IBS symptoms, use appropriate stress management techniques such as time management, exercise, deep breathing, visual imagery, progressive muscle relaxation, yoga or martial arts. Some people benefit tremendously from assertiveness training, and self-help courses which teach communication skills.
17. Sometimes the causes of stress are not obvious. To alleviate IBS symptoms for the long-term, it is most effective to uncover the underlying causes of your distress, by learning about patterns of behavior (thinking, feeling, acting and reacting) which may be contributing to your IBS symptoms.
18. Avoid wearing tight fitting garments.
19. Self massage can help ease the discomfort of symptoms. While lying down, clockwise self-massage with one hand applied to the abdomen. Some people find warmth applied to the abdomen relieves symptoms.
20. Check if extremities are chilled, as this may trigger negative symptoms.
21. Children can suffer from IBS too. Don't automatically dismiss complaints of recurrent abdominal cramps as your child's way of avoiding school or other activities.

### **Quick Facts About IBS**

- IBS affects one in five Americans.
- The social and economic costs of IBS are enormous, leaving many people unable to fully participate in life and work. IBS is a leading cause of worker absenteeism, second only to the common cold.
- IBS was previously referred to as spastic colon or nervous stomach. It is now a recognized disorder in which the intestine is overly sensitive to various stimuli including food, emotions, and drugs. With IBS there is interruption in the normal rhythmic contractions of the intestine.
- There is no single conclusive test available to diagnose IBS. However, physicians look for the cardinal symptoms, which are abdominal pain accompanied by alternating diarrhea and/or constipation. Often, gas, bloating, nausea and other symptoms are also present.
- Theories on the causes for the disruption of normal intestine contraction include: poor dietary and lifestyle habits; food sensitivities; lack of fiber; stress; psycho-physiological (brain-gut) factors.
- Diet and/or stress are usually the triggers of IBS symptoms.
- Dairy products are the most common dietary triggers of IBS symptoms. Foods with a high fat content are also a leading trigger. Other foods which top the list

are wheat, citrus fruits and juices, chocolate, eggs, and sweets. Alcohol, nicotine, and caffeine are common culprits as well.

- Although chronic, IBS does not lead to more serious illnesses, like colon cancer or colitis. It does not require surgery, and it does not shorten life expectancy. However, the symptoms can be debilitating and isolating for many sufferers.
- IBS frequently co-exists with pre-menstrual complaints and fibromyalgia syndrome.
- Anxiety and depression often co-exist with IBS.
- Common gastrointestinal disorders that may mimic or co-exist with IBS include appendicitis, colon cancer, diverticulosis, gallstones, hiatal hernia, inflammatory bowel disease, peptic ulcer disease, polyps and reflux esophagitis.
- For some undetermined reason IBS occurs twice as frequently in women as in men, in North America. In India and Sri Lanka, however, estimates show a higher incidence of IBS in males. One possible explanation is that there are cultural factors that determine who seeks medical care, and these cultural factors are more important than gender.
- IBS can interfere with sexual enjoyment. Women with IBS are more likely to complain of uncomfortable intercourse than women with peptic ulcer disease. The likely explanation for this finding might be that abdominal cramps, gas, and bloating make intercourse less pleasurable and thus lessen sexual gratification. Many women have reported enhanced sexuality with mastery and control of their IBS symptoms.

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### **III Effects of Fat & Fructose on IBS Symptoms**

*Diet may play role in IBS and dyspepsia:* In forum News, Research and Abstracts at “IBS Self Help and Support Group” Bulletin Board.

*Diet may play role in IBS and dyspepsia*

Studies link fructose and fat to IBS symptoms

BALTIMORE (October 13, 2003)-- Two recent studies released today attempt to unravel the role that diet plays in gastrointestinal disorders such as irritable bowel syndrome (IBS) and dyspepsia. The preliminary findings suggest that both fructose and fat contribute to symptoms of IBS, a disorder affecting about 10 to 15 percent of the American population. The findings will be presented at the 68th Annual Scientific Meeting of the American College of Gastroenterology.

For several years, University of Iowa researchers have been investigating how fructose, the simple sugar found in honey and many fruits, may play an important role in some of the symptoms of IBS, a leading cause of referral to a gastroenterologist. IBS is characterized by abdominal discomfort, bloating, and change in bowel habits (constipation and/or diarrhea).

Although lactose intolerance is well-known, fructose intolerance is just beginning to be recognized. Young K. Choi, M.D., and colleagues from the University of Iowa Hospitals and Clinics (Iowa City, IA) found previously that one-third to one-half of patients with IBS symptoms are fructose intolerant.

"A fructose-restricted diet significantly improved symptoms in patients with IBS and fructose intolerance," said Dr. Choi. "Fructose intolerance is yet another piece of the IBS puzzle, whose treatment -- when adhered to -- confers significant benefits."

For this study, the University of Iowa researchers tested 80 patients with suspected IBS and found that 30 were fructose intolerant. Patients were taught about eliminating fructose from their diet, and after one year, 26 were interviewed to assess their symptoms. Only one-half of the patients complied with the fructose-restricted diet.

For those who were compliant, symptoms (such as abdominal pain, bloating, and diarrhea) declined significantly from their reported symptoms before the diet modification. Also, the prevalence of IBS in this group declined. For the group that did not comply with the diet modification, bowel symptoms stayed the same over the study period. Given the modest number of patients, additional confirming studies would be an important prerequisite to consideration of a modification in general disease management strategies in IBS.

In the second study, Yuri A. Saito, M.D., M.P.H., and colleagues of the Division of Gastroenterology and Hepatology at Mayo Clinic and Foundation (Rochester, MN) attempted to tease out the dietary factors that may explain some of the symptoms of functional gastrointestinal disorders, such as IBS and dyspepsia. Their population-based study provides the framework for establishing whether dietary components are the causative factors in the development of symptoms.

The investigators mailed a questionnaire to an age- and gender-stratified random sample of Minnesotans aged 20 to 50 years old. Those who reported IBS or dyspepsia or who claimed no GI symptoms had a physical exam and completed a survey on diet. Of the 221 participants who completed the diet survey, 53 cases and 58 controls were asked to record their diet for one week.

Dr. Saito and colleagues found that those with IBS or dyspepsia reported consuming a significantly higher proportion of fat in their diet (33.0 percent for those with GI disorders, 30.7 percent for controls,  $P < 0.05$ ). No significant differences were found for protein, fiber, iron, calcium, niacin, or vitamins B<sub>1</sub>, B<sub>2</sub>, B<sub>6</sub>, B<sub>12</sub>, C, D, or E.

"Future studies are needed to determine whether fat intake causes gastrointestinal symptoms," said Dr. Saito.

The ACG was formed in 1932 to advance the scientific study and medical treatment of disorders of the gastrointestinal (GI) tract. The College promotes the highest standards in medical education and is guided by its commitment to meeting the needs of clinical

gastroenterology practitioners. Consumers can get more information on GI diseases through the following ACG-sponsored programs:

Posted by **Jeffrey Roberts** (Member # 1) on 11-17-2003 02:30 PM11-17-2003 02:30 PM:

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## **APPENDIX M: Positive Affirmations**

Courtesy of *Science of Mind* Magazines

- I keep my mind focused on the love and the power of the Spirit. I totally accept myself exactly as I am and I know that healing is happening, as the perfection of my being is revealed.
- I now choose a positive attitude. I know that my choice of attitude creates my experience. I do not deny or resist my feelings but I know there is always a higher truth. I trust that my future is secure, because Spirit and Soul are at the core of all there is.
- I now accept my good, which is mine by right of divine inheritance. With every spiritual tool I use, my consciousness grows and the nature of the good that I desire grows as well.
- I open to the divine wisdom within me. The answers I need are always available to me. I trust in divine guidance to always be for my highest good and I allow that good to operate in my life.
- I am now willing to let go of all that was, and I am ready to receive all that is, in the moment. In this moment, God is. In this moment, I accept my God-given good.
- I affirm my worthiness, as a divine child of God. I accept the full measure of God's abundance as mine by right of divine inheritance.
- I make a daily commitment to meditate and pray. I release all expectation and judgment and simply allow myself to be.
- The divine within me desires my expansion for greater good. I allow and celebrate the growth and expansion in myself and in everyone else.
- I choose my mission to keep affirming my good. I accept my good and know that with Spirit, all things are possible.
- I release all anxiety, and live with positive expectancy. Good is always flowing to me and I live in gratitude always.
- I allow the peace that is always within to be the peace in my life. The way is made easy for me because that peace follows me in all I do. No circumstance can touch the peace that is mine today.

## **APPENDIX N: Meditation Exercise 2 & Journal**

The following mediation exercises were taken directly from *Releasing the Inner Magician: Ways to Find a Peaceful and Happy Life*, by Deborah L. Sandella, Ph.D., R.N.

### **Swinging on a Breath**

Take a deep cleansing breath, exhaling through your mouth. Focus on your breathing. Notice the air flowing in and out. Inhale so that your breath fills your belly and travels all the way down to your toes. With each exhale, breathe out all tension or anxiety.

Imagine yourself swinging on each breath. Gliding forward on each inhale, gracefully swing backward with each release. Swing on your breath for a few minutes and enjoy the ride. When you're ready, notice the precise point at which your breath starts to come in and starts to go out. Without changing anything except your attention, act as if the air is breathing you. Let the air be the doer and reach down into you and draw itself out.

Now reverse your point of view and act as if you are the doer. Observe yourself as the one doing the breathing.

Now shift back again and act as if the air is breathing you. **Is there any change in your feelings when you surrender control?**

**Which role is most comfortable? How does this preference show up in your life?**

Let these images and feelings fade.

Ride your breath deeply down into your soft center. Spiral farther down into your heart... Without critique or analysis, sense your heart, the container of your feelings... notice what you see, sense and feel.

Look around and find the key to your heart...**Where is it kept? What does it look like?**

Delicately and with great love, find the entrance and use the key to open it. Look around. **What do you sense?...What feelings flood your senses as your heart opens?**...Take a minute.

Here at the entrance stands the keeper of your heart who steps forward to greet you. **What does this being look like?** Ask what name it prefers. Without critique, let the name enter your mind.

Ask the keeper if it is willing to speak with you. If you get agreement, ask any questions you wish. Use whatever time you need to dialogue. When you are ready, look around your heart and find where you carry pain...**What does it look like? What color is it?**

Gently move your awareness into the center of this pair...**What do you experience?**...To what relationships, situations or issues is the pain related?...Ask your heart if it would be willing to release this pain.

The keeper reveals to you the costs you are paying by continuing to hold this pain and the rewards you could reap by releasing it. Take a minute.

Ask the keeper of your heart if it would be willing to release the pain by expressing it in journal writing following this meditation. Let your mind bring up an image of the best method for you to clear this pain.

When you are ready, look around and find where you carry love. **What does it look like? What color is it?**...Move your awareness into the center of this love...**To what relationships, situations or issues is the love related?** Ask your unconscious if it would be willing to continuously remind you of these images of love...let these images move to the perfect site of accessibility, whether inside or around your body. When you are ready,

consciously inhale the color of love and exhale the color of pain. Breathe in love and exhale pain...until all that remains is love.

**Ask the keeper of your heart if it automatically will activate this process whenever pain is present so your heart constantly generates its own healing...** Standing before you, the keeper of your heart invites you to remain in communication. Ask it how it can get your attention when repressed feelings are seeking recognition. As you prepare to leave, decide if you wish to lock your heart or leave it open...Determine where you wish to keep the key...When you are ready, thank your heart and its keeper for their generous sharing and tireless performance to sustain your life.

Now, turn your awareness to the rest of your body. **What are you experiencing?...Is there any tension, heaviness or tingling?** Notice where, and let your attention move to one of these locations. Swim around in it and become aware of the sensations, feelings and thoughts stored here.

Allow the heaviness or tension to bubble up and rise at a safe pace toward your throat. Slowly watch the bubbles transform into words, feelings or thoughts...Take whatever time you need.

When you are ready, let the emotions and thoughts float up through you outwardly.

Relax and notice. You need not do anything with the thoughts or feelings. Merely acknowledge them in whatever way feels right to you. It is safe to express yourself. If tears are present, let them flow freely.

When you are ready, let yourself relax back into your body. Notice what it feels like...**Do you sense any differences in those parts of your body where you previously held tension or anxiety?**

**What have you re-learned about yourself that you already knew? What have you learned about yourself that is new?** Invite an image of this newfound wisdom into

your mind...Ask it “**How can I incorporate you into my life?**” Take a minute to decide when you will be willing to affect this change.

Thank this image of new knowledge and ask it to move either inside or around your body to a location where you can be reminded of its content.

When you are ready, begin your journey back to the room. Sense the walls around you and the surface beneath you. Let your hands and feet return to their normal weight. When you are ready, return fully by opening your eyes. Enjoy the music, open to the journal writing exercise and continue.

### **Journal Exercise**

1. Describe the image of heart that came to you. What meaning did this vision hold?  
How can this image serve you?
2. Describe the keeper of your heart. What meaning does the keeper convey?
3. What color was the pain? What color was the love? Journal about each and the interconnection with certain relationships, issues and events in your life.
4. What did you feel like when you breathed in love and exhaled pain? How can you remind yourself consciously of this option?
5. What feelings were present in your body? What words, thoughts and feelings arose out of your sensations?
6. What was the most poignant image you saw and what did this image teach you?
7. Listening now to your inner voice, list any images or issues with which you need to continue working. When will you be willing to pursue this work?
8. How do you feel this moment? Please write freely any additional insights and experiences.

## **APPENDIX O: Behavioral Therapies for IBS Treatment**

### **Cognitive Therapy & Psychodynamic Interpersonal Therapy**

A Consensus on Psychological Treatment Approaches for Functional Bowel Disorders

International Foundation for Functional Gastrointestinal Disorder

By: Elspeth Guthrie, MD. Department of Psychiatry, Victoria University of Manchester, Manchester, UK

#### **Introduction**

Traditionally, individuals with functional bowel disorders have sought help from primary care physicians or gastroenterologists. The relative failure of (solely) pharmacological (drug) treatment, and the lack of a clear pathogenic (specific disease-causing agent) cause for the conditions has resulted in increased interest in psychological treatments. The recognition of the importance of both physiological (physical, organic) factors and psychological factors has meant that instead of the conditions being thought of as either purely caused by a bowel abnormality, or as being “all in the mind,” the conditions can be regarded as the result of a complex interplay between physical, psychological and social factors.

There is still, for some people, a stigma attached to seeking psychological treatment and some doubt the legitimacy of psychological symptoms. It is important that physicians recognize individual concerns regarding psychological treatment, so that erroneous beliefs can be dispelled and the treatment can be presented in a positive and realistic manner.

#### **Referral Patterns**

Irritable bowel syndrome (IBS) and functional dyspepsia are common in the community and in the primary care setting. Most individuals who have bowel symptoms do not seek treatment from a doctor. Of those who do seek treatment, the majority are satisfied with the treatment they receive, and their symptoms quickly resolve. Of those patients who are referred for treatment, between 50-70% will improve with conventional treatment over the next few months. A smaller proportion of patients develop chronic complaints and continue to seek medical help.

This pattern of symptom resolution is important when considering appropriate treatment interventions. It would be unwise to recommend psychological treatment approaches for all individuals with functional bowel disorders

These treatments should be reserved for patients with any of the following:

- symptoms of greater than six months duration
- symptoms that have not been helped by conventional treatment
- symptoms that are present for less than six months, but recur on a regular basis

#### **Different Types of Psychological Treatment**

There are many different kinds of psychological treatments, but they can be broadly divided into two main approaches: psychotherapeutic treatments and treatments based upon muscle relaxation. Psychotherapeutic treatments involve the patient working with a therapist to produce some kind of psychological change, which then impacts upon the patient’s bowel symptoms. Treatments based upon relaxation involve the patient learning techniques to reduce

anxiety and control bowel symptoms. Treatment approaches may include a combination of both kinds of treatments, as they are not mutually exclusive. In this article, the key aspects of psychotherapeutic treatment will be described below.

### ***Psychotherapeutic Treatments***

There are two major kinds of psychotherapeutic treatment approaches. The first kind is called cognitive therapy or cognitive behavioral therapy and the second kind is called dynamic psychotherapy or psychodynamic interpersonal therapy. Many people can be helped by either approach. There is no empirical evidence which suggests that either treatment is better than the other.

Cognitive Therapy – Cognitive therapy is derived from the work of American psychiatrist, Dr. Aaron Beck. The essence of Beck's theory is that individuals can rapidly become trapped in a vicious cycle, where their mood state increases the negative view they hold of themselves and this, in turn, makes them feel worse.

Beck's ideas can be used to understand beliefs and behavior related to physical condition. An individual's concern about a symptom may result in increasing tension and arousal, which in turn may heighten the physical sensation of the symptom, which then increases worry and leads to further vigilance. Instead of resolving the individual's concern, medical consultation often results in negative investigations (what it is not) and further ambiguity, which increases the individual's worry.

### ***Adaptation of cognitive therapy***

Experienced therapists are required to undertake cognitive behavior therapy with patients with functional bowel disorders. In the USA and Canada these treatment approaches have been pioneered by Edward Blanchard and colleagues at the State University of New York, and Brenda Toner in Toronto. Toner has emphasized the importance of modifying traditional cognitive therapy approaches so that the specific concerns of individuals with functional gastrointestinal disorders are integrated into the treatment. In addition, she has highlighted the need to address particular concerns and difficulties faced by women in Western society, as two thirds of individual with functional bowel disorders are female.

Most patients at the outset of treatment believe that their complaints are solely caused by a physical disorder and may not be aware of a psychological component. It, therefore, comes as a surprise to them if their gastroenterologist suggests referral to either a psychiatrist or psychologist.

In some cases a lengthy process of engagement has to occur in which the patient is given the time and opportunity to describe his or her symptoms in detail. The therapist must also assure the patient that their symptoms are being taken seriously. At the end of the assessment, the therapist should be able to present the patient with a cognitive formulation of the origin and development of their symptoms, making use of the vicious cycle of negative thoughts, assumptions and behaviors, which the patient has described during the interview.

Although in practice most patients recognize this is a radically different way of approaching their problem, they are being given something, which explains how their symptoms have developed, rather than being told what they do not have. In addition, it includes the individual in a joint process which results in this new understanding.

As emphasized earlier, this kind of psychological approach does not cancel or negate the possibility of physiological (physical or organic) factors also being important in functional bowel disorders.

### ***Studies of cognitive-behavior therapy***

There have been several good studies of cognitive behavioral therapy in individuals with functional bowel disorders, most of which have demonstrated positive results.

Treatments have tended to be more successful when the therapist and client have worked together to tackle thoughts and illness beliefs rather than behavior. Most treatments have been carried out on a one-to-one basis, but Brenda Toner in Canada and an English psychologist, Nicola Rumsey, have used cognitive therapy in a group format with some success.

### ***Psychodynamic interpersonal therapy***

Psychodynamic interpersonal therapy is derived from psychoanalysis, but is very different in its actual approach and practice. The underlying theory is based upon the idea that the way in which individuals form and maintain interpersonal relationships is directly related to well being; both physical and psychological. Deep unhappiness in a current relationship or previous experience of deep unhappiness or distress in childhood can influence an individual's overall physical and psychological well being.

Again, this approach does not imply that a patient's symptoms are "all in the mind," but that there may be subtle and complex interaction between physical/physiological factors and psycho/social factors.

The main approach involves exploring physical symptoms in great depth. The quality and nature of pain is discussed, and the effect the symptoms have on the person's life and particularly on relationships with important others is carefully noted. Background and upbringing are explored, and an account is taken of any particular early traumas or loss.

The therapist works with the client to identify any possible links between the patient's physical symptoms and their psychological status. If some association can be identified, the patient and therapist then explore the possibility of bringing about change. The therapy is called 'psychodynamic interpersonal' because it focuses mainly upon issues to do with relationships.

### ***Studies of psychodynamic interpersonal therapy***

Studies have shown encouraging results. However, the small number of empirical studies of dynamic therapies in the irritable bowel syndrome makes it very difficult to generalize the results of reported work to other somatic (physical) conditions. Further studies are urgently required.

### **Main Conclusions**

- 1) There is growing evidence for the effectiveness of brief psychologic therapies in the treatment of functional bowel disorders, especially their long-term effectiveness.
- 2) Psychological treatments can be helpful for patients with mild symptoms, but, in view of the time and cost, should be reserved for patients with chronic or relapsing symptoms.
- 3) There is some evidence that individuals who recognize that they have psychological distress, in addition to their bowel symptoms, respond favorable to either cognitive or psychodynamic psychotherapy, whereas individuals with no psychological symptoms appear to respond particularly favorably to hypnosis.
- 4) Therapists, using a psychotherapeutic approach, have to be experience in working with patients with bowel complaints, and the availability of such therapists is at present limited. In practical terms, the choice of therapy, at present, may be determined purely by the availability of therapists rather than by the particular inclination of the patient.

## **Biofeedback Training: An Effective Treatment for Stress and IBS**

Biofeedback training is an effective means of stress management by gaining control of the body using the mind. These techniques are also very useful in treating many health problems, including IBS. In fact, research by the National Institutes of Health has shown that biofeedback can reduce symptoms of bowel disorders by 75 to 80 percent.

Biofeedback uses a computer to monitor bodily functions, such as heart rate, muscle tension, respiration patterns, skin moisture, hand and foot temperature, and brain wave activity. The computer is connected to the body in several different ways. For example, to discover muscle tension, small electrodes are placed on muscle sites to measure the amount of electricity sent by the brain. Other electrodes are attached to the skin to measure skin moisture, indicating whether the body is in a fight/flight response. A small thermometer is attached to the skin to measure skin temperature, an indirect measure of blood flow and the amount of stress in the cardiovascular system. Electrodes can also be attached to the scalp area; this type of feedback is called neurotherapy, and allows an individual to observe and modify brainwave activity.

The feedback that comes from the attached sensors is displayed in graphs, charts, pictures of various types, and auditory signals. By observing this feedback while using stress management techniques, you know immediately whether or not the techniques are effective. For example, you can observe how your breathing patterns are bringing oxygen into the bloodstream. Biofeedback respiration training involves attaching a Velcro belt to the waist area to measure the expansion of the diaphragm area. First you observe the computer feedback of the effects of your normal breathing pattern. (It is normal to breathe in for about two seconds and breathe out for about two seconds.) Then you consciously change your breathing pattern to breathe in for approximately four seconds and breathe out for four seconds, with a one-second pause between the two. During this exercise, you observe immediate feedback from the computer regarding various physiological measurements that indicate a heightened state of relaxation.

With training, you can often learn how to alter heart rate, blood pressure, blood flow, muscle tension, chronic pain due to muscle tension and stress, skin moisture, headaches, and gastrointestinal problems. Remember—most stress comes from the perception of threat, so if we can change the way we look at life, we may also be able to change the way we react to it. Let's look at how biofeedback helped a person with IBS improve her health and marriage.

Grace was in her early 70s and had been suffering from IBS for a number of years. She was referred by her internist for biofeedback training when he suspected a link between stress and IBS. An initial consultation revealed that Grace suffered from a great deal of emotional tension at home. She felt her husband was overbearing and controlling. She wanted to travel but her husband rarely wanted to leave home, which frustrated and angered her. Instead of sharing her feelings, she buried them and became increasingly angry. Whenever his behavior angered her, IBS symptoms erupted. Truly, her IBS was both a barometer and a means of expressing her feelings.

We initiated biofeedback to first observe the physical symptoms that contributed to IBS. We noticed that her hand temperature was in the low 70-degree range. In addition, the muscle tension in her shoulder area was elevated. We worked with

changing her breathing patterns by using a respiration belt to measure the amount of expansion in the diaphragm area. By taking in more oxygen into the blood stream, Grace learned how to relax. Increased blood flow and oxygen to the gastrointestinal tract also improved her digestion and elimination processes.

Grace also began to learn more about her emotions and improve her communication skills. She kept a daily journal, noting her emotional states when her IBS symptoms occurred. She noticed that symptoms were worse when she was upset with either her husband, close friends, or herself. In consultation, I asked her to fully describe why she was upset, and we discussed alternative ways of healing with her emotions. I encouraged her to be more open with her feelings, first by writing about them and then by sharing them with her husband and friends in a respectful way. Over the course of time, we created effective strategies for dealing with her anger. To her surprise, Grace's husband was not as hostile toward her openness as she had feared. In fact, he began to respect her more.

Within eight weeks of beginning the biofeedback and stress management training, Grace was IBS-symptom free. Not only had she improved her marriage, but she had also gained mastery of her body and emotions. In subsequent weeks, whenever IBS symptoms appeared, she was able to identify the underlying frustration or anger and quickly deal with it by practicing biofeedback techniques and communication skills.

By Jack Martin, PhD

Courtesy of Gerard Guillory, M.D. *IBS: A Doctor's Plan for Chronic Digestive Troubles. The Definitive Guide to Prevention & Relief.*

## **APPENDIX P: Meditation Exercise 3 & Journal**

The following mediation exercises were taken directly from *Releasing the Inner Magician: Ways to Find a Peaceful and Happy Life*, by Deborah L. Sandella, Ph.D., R.N.

### **Bathing in the Waters of Forgiveness**

Relax into a comfortable position and take a deep breath; settle into yourself. Take another cleansing breath and exhale through your mouth, reaching all the way down to your toes. Coming to that place of total emptiness, hold your breath for just a moment, then gradually being a full inspiration. Feel the air bathe every cell in your body with oxygen. Richly supplied, your organs, muscles, bones and nerves shift into perfect alignment. Your mind settles down just like a pebble gently settles to rest on the bottom of a clear stream.

Immersed in this perfect nourishment, bring into your mind's eye the image of an ocean beach. Feel the warm, fine sand crunch under your feet. Smell the fresh salt air as the breeze gently caresses your face. Hear the waves flowing out to the horizon. Immerse yourself in the beauty, abundance and serenity of your surroundings. Take a few minutes to smell, see, touch and feel this special place.

As you sit in this place of natural beauty, you notice three homeless orphans walking in the distance. As they approach, you see that they represent the parts of yourself you have disowned. Wandering aimlessly, they seek home.

**What do these figures look like? What are they wearing?**

Notice what you feel as you behold them.

One of the castaways wishes to speak with you. S/he is very adamant about gaining your attention and asks you to hold counsel with her/him. Sit and face this figure. Notice what this being looks like, how old s/he is.

**Ask this orphan why s/he wishes to go first? What disowned part of parts of yourself does s/he represent? What does this figure want? What blocked him/her from getting this? What does s/he need from you in order to find a safe harbor? Where in your body was this orphan hiding? As you pay attention to this being, does his/her appearance change? If so, in what way?**

Communicate forgiveness to this abandoned part of yourself. When you are ready, invite this aspect inside. Slowly, the figure grows transparent and melds into you. Take some time to notice how you feel. **How did your body shift?**

The empty space now in front of you fills with a second figure. Ask this being what disowned part of your s/he represents? **Why did you abandon him/her? What is the shame connected with him/her?** Dialogue until you both feel understood. **Where in your body did this orphan live?** When you are ready, embrace this outcast with forgiveness. Once again, this form dissolves into you. Notice how you feel.

Now facing you is the last figure. Notice his/her appearance. **How is s/he dressed and what is his/her age?**

**Ask him/her what this castaway represents and why s/he was cast out by you. Why did s/he wait until last? What kept you from embracing this aspect of yourself? What is it about yourself that feels so uncomfortable to acknowledge that you hid it?**

Quietly and gently move your awareness into the center of the shape that sits before you. **What do you learn as you look out of these eyes?**

When you are ready, return you awareness and look over at the figure. **Does s/he look any different? How? Ask this figure where in your body s/he was hiding?**

When you are ready, show forgiveness and compassion. **How does this person's appearance change?**

Once again, this displaced Self merges into you and you are one. **How does your body feel now?**

As you look around this beautiful ocean scene, notice the clearness of your vision.

Gazing about, glimpse a trail that you did not notice before. The trail is lush with fresh green foliage and brilliant colored blooms, and it disappears inland. As you walk the trail, you feel centered and strong. The scents of the surrounding forest fill your nostrils with sweetness.

Looking ahead, you spy several pools of spring water. Each pool is encircled with rock outcroppings, and a small gentle waterfall flows from one pool to the next. The waters shimmer with a radiant glow; inner stillness has left the surface looking like a sheet of liquid silver. Approaching the pools, you sense a sacred aura.

These are the baths of forgiveness-birthing pools in the days of the indigenous native.

Today they birth your wholeness.

Sit beside the pool of your choice and gaze into the reflection of your soul.

When you know in your heart you are ready to truly touch the pool's surface, wade into the sparkling water. As you touch the pool's surface, an intense light appears in your heart. It spreads throughout your body, then out into the forest. You feel a divine flow of cleansing energy moving through you. As you step fully into the waters, warm soothing bubbles effervesce around you and flush away all tension, guilt, anger and shame.

Immersed in these healing waters, you sink to the bottom. Birthing your wholeness, you push off with supernatural strength, spring up through the pool's surface and let out a yell of freedom. Playing and splashing with light-heartedness, you remember your original lightness. Play to your heart's content.

When you are ready, float in perfect suspension, letting the sun warm your body and the water gently lap against your skin. A blue light enfolds your heart. Feel your openness and invite images of the spiritual figures of your childhood; they have special messages of forgiveness for you. Take some time to bask, cleanse and heal in these divine waters.

Ever so gently, become aware of your surroundings. Feel your fingers and toes, and let your limbs return to their normal weight. When you are ready, open your eyes and begin the journal writing exercise.

### **Journal Exercise**

1. What displaced parts of you did the three homeless orphans represent?
2. What meaning did you derive from your conversations with these figures?
3. Where were they hiding in your body? How do these locations correlate with any physical symptoms?
4. How does your body feel, now, in comparison with how you felt before the meditation?
5. What did you experience in the pools of forgiveness?
6. How often do you need to visit forgiveness? What will it take for you to be committed to this practice?
7. Please journal freely any additional insights or experiences.

## **APPENDIX Q: Comorbid Disorders**

### **Managing Your Fibromyalgia**

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*By Karen Lee Richards, Co-Director NFA*

A disease like Fibromyalgia has a way of taking control of your life. It can consume every ounce of your energy and every moment of your day if you don't learn ways to manage it. You have to control the disease...don't let the disease control you. You can begin now to take back control of your life. As humans, we are physical, mental and spiritual beings. I'd like to suggest some things in each of these areas that you can do to begin managing your FM and taking back control of your life.

#### **Physical**

##### ***Do your own research.***

No one is going to be more interested in your health than you. There is quite a bit of information about FM becoming available through books, tapes, newsletters and on the internet. Search every available resource you can find. The more you learn about FM, its effects and the variety of treatment methods used, the sooner you will be able to reclaim control of your life. At NFA we are working on compiling a database of resource information and can help you with specific topics.

##### ***Take charge of your medical treatment.***

You know your own body and medical history better than anyone. Find a doctor who will listen to you and work with you. I know this is easier said than done, between doctors who are not educated in FM and insurance companies who limit your choices of physicians. But it is worth the effort to keep searching. (In my personal experience, I have found female doctors in general more willing to take the time to listen to me and try various treatments until we hit on something that helps--but remember, that is just my experience.) The important thing is not to be hesitant in talking to your doctor. It is easy to feel intimidated when talking with a doctor but you need to remember that it is your body and your health that you are dealing with. And every individual responds differently to various treatments so you have to be open and clear about how you are feeling, how you react to medications and what you want the doctor to do for you. Since fibro-fog seems to set in every time I walk into a doctor's office, I always take a list of everything I need to discuss during my appointment. I have found it works well to give a copy of the list to the doctor. That way they are seeing it as well as hearing it. Also, it then goes into your file and becomes part of your medical records that they can refer to later.

##### ***Put together your own nutrition and exercise plan.***

Without good nutrition and moderate exercise, even the best medical treatment has

limited benefits. But, once again, you have to find what works best for you, your body and your lifestyle. I do not believe there is one diet that works for everybody. Only through study, trial and error will you find the foods and supplements your body responds best to. And exercise is a very individual thing. I know people with FM who are able to ride a bike for several miles and others who can barely do the simplest stretches. Start slowly and build on your exercise program until you find the balance that works for you.

## **Mental**

### ***Take one day at a time.***

Projecting what is ahead...how we are going to feel, what we can and cannot do in the months and years to come can be overwhelming. Focus on what you have some control over right now. Focus on today. If you are having a bad day, remind yourself that you have had bad days before but then you've had better days, too. You do not have to cope with the rest of your life. You just have to get through today. If you are having a good day, let yourself really enjoy it.

### ***Do not expect too much of yourself.***

Know your limitations and plan your days accordingly. Allow enough leeway in your schedule for days when you do not feel well enough to accomplish much. Then do not beat yourself up mentally when you have one of those days. Start thinking of resting and taking care of yourself as an accomplishment and part of your schedule.

### ***Use positive self-talk.***

Yes, I am recommending talking to yourself. (If there are other people around you may want to just do this mentally so they do not think you have totally flipped!) Negative thoughts have a way of growing and spiraling downward until you feel out of control. Do not let yourself get trapped in a negative mode of thinking. Try to turn every negative thought into a positive statement. Repeat this statement to yourself several times throughout each day..."I am in charge of my life. I am taking control of my own health and well-being."

## **Spiritual**

### ***Set aside a quiet time each day.***

Regardless of our individual religious beliefs, we all need time to refresh and renew our spirits. Try to take at least a few minutes each day to sit quietly by yourself and reflect on something that lifts your spirit, whether it's a Scripture passage, a poem or an inspirational story. Feeding our spirits can be as important as feeding our bodies.

### ***Laugh.***

The old saying, "Laughter is the best medicine" has more than a grain of truth to it. Medical experts are finding that laughter has definite physiological, as well as psychological benefits. Rent funny movies, check books of humor out of the library, find a friend to share jokes with you. I keep a file folder labeled "Giggles" in which I put copies of jokes and humorous stories people have shared with me over the years.

Whenever I'm having a rough day, I just pull out a few of those and have a good laugh. I have an online friend with FM who sends me bits of humor every day. I don't know whether she thinks of it this way or not, but in my mind she is performing a real ministry of healing. She'll never know how often she has lifted my spirits.

***Do something for fun.***

Sometimes we become so bogged down with the "have to" and "should dos" of life that we do not have time to just do something for fun. It is not only okay to have fun; it is an important and necessary part of taking control of your life. Plan something that you really enjoy and make it a priority.

You *can* manage your fibromyalgia and your life. Just take it 1 step and 1 day at a time.

<http://fmaware.org/patient/coping/managingfmFP.htm>

## **Chronic Fatigue Syndrome**

### **Imagery**

The use of imagery with CFS involves inventing symbols in your mind's eye which will help you play out in a visualization how you want things to occur in your body. This may involve, for instance, visualizing your immune system working harmoniously and in balance; seeing your immune system eliminating viruses or other pathogens; or a general symbol to represent the syndrome, and another symbol to represent all your healing forces, etc. Visualization is a process in which you see the desired outcome develop.

Two theories have been proposed to explain how imagery works. One theory is called specificity hypothesis and the other one is called general effect hypothesis. Specificity hypothesis suggests that the effects of imagery are very specific and depend on the details of the message we want to send. The messages we are sending through the pathways connecting mind and body, the neuroimmune network, are heard at the cellular level, and the body respectfully responds to our commands.

In a study at the University of Arkansas, an experienced mediator using imagery techniques was able to manipulate her immune system's reaction to an injection of harmless virus particles just below the skin. The material injected called a "varicella zoster test reagent," ordinarily gives rise to a type of inflammation called a delayed hypersensitivity reaction. This reaction is created by white cells releasing chemicals such as histamines, which have the effect of causing inflammation.

It was found that on demand, the woman being studied could alternately  
(1) suppress her inflammatory reaction and white-cell responsiveness, and  
(2) allow her inflammatory reaction to respond normally.

In other words, she was able to communicate with and influence the behavior of her white cells.

This and other studies suggest that it might be possible for people with CFS to deal with the problem of chronic immune activation through such methods. For example, by imagining the white cells becoming more relaxed and practicing the relaxation response, the patients will be able to reduce their hyperactivity.

The general effect hypothesis suggests benefits arise from the general overall feeling of greater control that we feel when we believe we can influence our health through these methods. It gets better as our confidence grows. Studies have shown that a sense of control over the source of stress leads to better immunity.

A study of cancer patients found improvement in immunity associated with imagery practice. Ten metastatic cancer patients attended monthly group sessions for a year in which they were supervised in imagery practice. Between sessions they performed the exercises twice a day. After each monthly meeting, blood samples were drawn to monitor immunologic changes. Significant improvements were found in several immune functions, including natural killer cell activity.

If the general effect hypothesis is true, then it does not matter what we imagine or visualize so long as it provides us heightened sense of well being and control. The feelings of confidence or competence are the key. Carl Simonton, M. D., once suggested that if you feel hopeful, powerful, and optimistic after doing your imagery, then that is the criterion of success, much more than the details of the images used. It follows that if you are confident in your ability to influence your health, this confidence will reduce the degree of stress you feel as a result of CFS. Then your healing can progress more readily.

### **Learning from Drawing**

One tool you can use to harness the power of imagery is by drawing. Drawings and images can help you clarify issues in your life. They reveal the person's inner attitudes and beliefs about what is happening. This can lead to useful insights about needed changes.

William Collinge, in *Recovering from Chronic Fatigue Syndrome*, described how one patient during a group imagery session drew a picture of herself being subdued by CFS. CFS was represented by a monster. Seeing this drawing, she realized how victimized she felt, and she immediately became in touch with her anger at this situation. Her anger fueled a renewed determination to break her old habit of volunteering to do all the legwork for her support group, which had been draining her of energy she needed to combat her illness.

This was the beginning of a much-needed change in her life - to stop doing favors for others that she really did not want to do. That shift has endured beyond her illness.

### **Imagery and Belief in Recovery**

Imagery can help you strengthen your belief in recovery. Belief in recovery is a prerequisite in healing from CFS. Very often, people cannot actually imagine themselves recovered. This needs to be addressed. A major source of the difficulty is the powerful images of debilitation portrayed by the media. Very often we see the negative images of suffering; we do not see the positive images of people having recovered from this illness. We need to balance the two.

The ability to imagine yourself well affects you in many ways. On the physical level, the biochemistry of hope is very different from that of despair, and your immune responsiveness is affected by both. On the psychological level, a great deal of change in behavior is necessary to promote healing. Without belief in recovery, there is no incentive to sincerely follow through with such changes. And also, in those moments when you are in despair, feeling your absolute worst, imagery can be a resource to get you through.

One of the best ways to strengthen your belief in recovery is to create images of yourself well, and view them each day. Now that you understand the nature of CFS and the major principles in promoting recovery, you can create images that should be both realistic and inspiring to you.

Excerpted from *Recovering From Chronic Fatigue Syndrome* by William Collinge, PhD

### **What's in a Name: Fibromyalgia vs. Chronic Fatigue Syndrome**

Fibromyalgia and chronic fatigue syndrome (CFS) share a number of symptoms, and the names are often used interchangeably in the medical literature. If you are confused about the difference between the syndromes, you are not alone. Even doctors are confused. Many experts, however, think fibromyalgia and CFS are the same -- or are at least variations of the same--pain and fatigue syndrome.

Research shows that between 50 percent and 70 percent of people with fibromyalgia also fit the criteria for CFS, and vice versa. Because the symptoms are so similar, the difference between one diagnosis and another may be simply a matter of degree. "Most patients with CFS have some kind of pain, and, of course, that is a hallmark of fibromyalgia. In addition, most patients with fibromyalgia report fatigue -- a hallmark of CFS. Likewise, both involve a high frequency of sleep and cognitive disturbances," says Cary Engleberg, MD, chief of the infectious diseases division at the University of Michigan Medical School in Ann Arbor.

The diagnosis also may depend on whether your doctor is more familiar with the criteria for CFS, developed by the Centers for Disease Control and Prevention (CDC) or those for fibromyalgia, developed by the American College of Rheumatology.

There are a few documented differences between the conditions. Fibromyalgia often is traced to an injury or physical or emotional trauma, whereas CFS tends to have a flu-like onset. Researchers have found that people with fibromyalgia may have abnormal levels

of several chemicals, such as substance P and serotonin, used by the body to transmit and respond to pain signals. Whereas, people with CFS do not have tender points.

These findings have led to different trends in research. Many fibromyalgia researchers have explored problems with pain transmission and pain amplification that may affect the condition. Researchers who study CFS have tended instead to investigate what role viruses may play in triggering CFS.

Until researchers determine conclusively the fundamental biological, neurological and psychological differences between the syndromes, the diagnostic label makes little difference as long as both the physician and the patient take a comprehensive approach to treating symptoms. "Rational treatment consists of maintaining good general health--in other words, a balanced diet and exercise as tolerated and symptomatic relief of pain, sleep or mood disorders with carefully selected medications or cognitive behavioral therapy," says Dr. Engleberg.

—*Caralyn Davis*

[http://www.arthritis.org/resources/news/news\\_fibro\\_cfs.asp](http://www.arthritis.org/resources/news/news_fibro_cfs.asp)

**Interstitial Cystitis and Related Pain Syndromes: Overlap of Bladder and Bowel Dysfunction** Interstitial cystitis (IC) and irritable bowel syndrome (IBS) may be classified as functional medical disorders, in which obvious pathophysiological abnormalities cannot explain the signs observed. Despite distinct differences, patients with IC and IBS share many epidemiological, clinical, pathophysiological findings. These disorders also can occur in the same individual. This overlap has resulted in the concept that both disorders share enhanced stress responsiveness as an important underlying mechanism.

**Epidemiological similarities:**

Approximately 700,000 women in the US suffer from IC (NIDDK), whereas the prevalence of IBS in the United States recently was estimated to be 10-15%. As mentioned, IC and IBS can occur together in the same patient. For example, Koziol reported that IBS occurred in 22.5% of 565 IC patients vs. 6.7% of 171 control subjects studied. Frequent stools and “spastic colon” were found in 20 and 18.4% of patients v. 2.4 and 3% of controls, respectively. Clauw, et al., found significant increases in bloating and changes in stool consistency, form and passing of stool in 30 IC patients compared with 30 control subjects. IN a study of 2862 IC patients from the national database of Interstitial Cystitis Association, IBS was the second most common co-morbid disease (allergies were the most common) reported, having been diagnosed in 30.2% of patients.

Patients with IBS frequently report urinary symptoms such as nocturia, frequency, urgency and incomplete bladder emptying; these symptoms may be present in more than half of IBS patients, but most IBS patients do not appear to be evaluated for IBS by a urologist. Both IC and IBS are more common in women than in men. The ratio of females: males in IBS is 3:2, whereas in IC it is reportedly closer to 10:1. This apparent difference occurs without inclusion of men with nonbacterial prostatitis (CPPS III) and bladder lesions compatible with IC. If these men are included in the definition of IC, the

proportion of affected women and men would be similar. Patients with both syndromes frequently report symptoms of pain and discomfort of other organ systems, and commonly show comorbidity with anxiety disorders. Additionally, the severity of IBS, IC, and CPPS III is significantly exacerbated by low socioeconomic status, further supporting a connection between stressful circumstances and expression of clinical signs.

**Clinical similarities:**

Both disorders are characterized by chronic pain/discomfort associated with bowel/bladder function, which in the majority of patients is stress-sensitive and not associated with detectable evidence for organic disease. Current symptom criteria probably include heterogeneous population of patients. Many patients respond to CNS-targeted therapies such as tricyclic antidepressants and cognitive behavioral approaches.

Quality of life of patients with these disorders also is compromised, as shown in Figure 1. The QOL of patients with IBS, IC and CPPS III are significantly and comparably degraded compared with healthy individuals. Common comorbid disorders, including fibromyalgia (FM) chronic fatigue syndrome (CFS), panic disorder, and migraine are included for comparison.

**Pathophysiological similarities:**

The urinary bladder and the distal colon share autonomic (sympathetic, sacral parasympathetic) and visceral afferent innervations. IC and IBS patients exhibit visceral hypersensitivity to mechanical stimuli and there is evidence for increased mucosal/urothelial permeability in both syndromes. Animal models for both conditions suggest involvement of the corticotrophin releasing factor (CRF) and the CRF1 receptor (CRF/CRF1R) and the substance P (SP) and neurokinin 1 receptor (SP/NK1R) systems. Current evidence also suggests autonomic dysregulation of visceral function with near normal functioning of the hypothalamic pituitary adrenal (HPA) axis, suggesting the possibility of uncoupling of the integration of these systems.

A variety of physiological abnormalities have been identified in some humans with IC that also can occur in patients with IBS. These include abnormalities of the epithelium, sensory (afferent) neuron function, and the sympathetic (efferent) nervous system. Increased urothelial permeability has been identified in both humans and cats with IC, and increased mucosal permeability has been reported in some patients with IBS. Intestinal permeability in humans has been measured using differential urinary excretion of sugars such as lactulose/mannitol or lactulose/L-rhamnose. Such tests, however assume an impermeable bladder wall, a circumstance that may not be present in patients with comorbid IC. These tests may thus underestimate the degree of intestinal permeability in some IBS patients.

Other reported epithelial abnormalities include increased numbers of mast cells identified in some patients with IC and IBS, and increased inducible nitric oxide synthase (iNOS) in the bowel of humans with IBS and iNOS generated NO in the bladder of cats with IC. Mast cells are an integral part of the body's defense system, and may be activated by both interoceptive and exteroceptive events. Although increased mast cell degranulation in

bladder of IC patients and the bowel of IBS patients has been reported, the finding has not been consistent and may not be specific. The central nervous system can respond to perceived exteroceptive stresses by including brain, skin, and lung. In previous studies of mast cell involvement in IC and IBS, other tissues were not evaluated to permit assessment of the specificity of the response and potential for exteroceptive activation. Given the overlap of symptoms in this patient population, such studies seem indicated.

Increased iNOS expression and activity have been identified in patients with IBS and in models of intestinal inflammation. In one such study, increased iNOS was associated with hypermotility of the small intestine. Preliminary data in urinary bladder of cats with FIC suggests that there is a high level of continuous basal release of NO due to activation of iNOS, and that NO release due to constitutive NOS activity is depressed. Suppressed phasic and elevated basal NO release could disrupt the epithelial barrier and lead to increased afferent excitability. Increased expression of iNOS also has been identified in enteric nerves in the later stages of inflammation, during the beginning of tissue repair and re-innervation and compensatory growth of nerves, suggesting it also may play a role in tissue repair. Further studies in patients will be necessary to determine the etiopathogenic significance of these observations.

Patients with IC and IBS both appear to be more sensitive to visceral stimulation than healthy people are. In patients with IBS, this sensitivity has been documented throughout the gastrointestinal tract. In humans with IC, awareness of bladder filling at occurs in smaller volumes than in normal individuals, an observation confirmed by urodynamic studies. In cats with FIC, increased sensitivity to bladder filling in both anesthetized and awake cats has been observed. Increased pelvic nerve activity to bladder distention also has been identified in cats with FIC, and lumbosacral dorsal root ganglion cells from cats with FIC exhibit abnormal firing properties and responses to stimulation with capsaicin, a vanilloid receptor agonist. The latter may be due to enhanced endogenous activities of protein kinase C.

In addition to increased afferent sensitivity to bladder filling, urothelial cells from cats with FIC also exhibit an increased sensitivity to the “mechanical” stimulation of hypotonic stretch. Similar to results in humans with IC, urothelial cells from FIC respond to hypotonic stretch by releasing more ATP. This increased ATP could stimulate both afferent neurons and other urothelial cells. ATP also participates in the transduction of sensory stimuli from the gut lumen and in the subsequent initiation and propagation of enteric reflexes, but to our knowledge abnormalities of mucosal ATP production have not yet been investigated in patients with IBS. In summary, current evidence is consistent with the concept that the overlap between the two syndromes is best explained by the presence of hyper-responsiveness of central stress circuits, mediating altered autonomic regulation and altered perceptual responses to visceral stimuli.

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## **APPENDIX R: Meditation Exercise 4 & Journal**

The following mediation exercises were taken directly from *Releasing the Inner Magician: Ways to Find a Peaceful and Happy Life*, by Deborah L. Sandella, Ph.D., R.N.

### **Tending the Inner Fire, Seat of Your Passion**

Close you eyes and let your body ease into a natural position. Smooth and relax your muscles as you settle into a perfect resting position. Breathing deeply, allow air to fill your lungs, then carry nutrients to replenish every cell in your body.

Imagine a bright light entering the crown of your head and slowly moving through your entire physical Self. Waves of relaxation penetrate the back of your head, your case and your neck; they flow down through your chest and abdomen, then spread into your arms and hands. The light moves on through your pelvis, your legs and your ankles until it gently exits through the bottoms of your feet.

Now gently move your awareness inward, to that space of inner wisdom, where you will learn to tend your inner fire-the seat of your passion.

There, in your mind's eye, ask your unconscious mind to bring up an image of a place in nature, a beautiful spot that is safe and powerful.

**What are the contours and colors of this natural sanctuary?** Notice the smells and sounds. Feel the temperature of the air against your skin.

Looking to the horizon, the lavender skyline tells you it is dusk and you see or sense the sun sinking in the west. Notice the colors and cloud formations. **What feelings or sensations do you have?**

Deciding to make a fire to bring warmth and light, you gather fallen branches and twigs and arrange them in a pile beside you. Look around for rocks to encircle the flames.

As you arrange them in preparation for your campfire, notice the color, size and texture of each rock. They are the guardians of your sacred fire, the seat of your inner passion.

After you have arranged the rocks, build a fire with the wood you have collected and light it. Matches lay on the ground beside you.

**What happened as you tried to ignite the flame? Did the fire start easily? If not, what made it difficult?**

Tend your fire until it develops steady flames. Hold it with your gaze and feed it as needed.

Observe the frequency with which the flames must be fed in order to maintain a constant supply of warmth and light. Sitting beneath a starry sky, watch the flashes of orange, red and blue dance before you. Hear the crackling of the wood, feel the warmth and sense the radiant glow of your sacred fire. Staring intently into the flames, you see a vision. This is an image of you when your inner fire is dim or going out. Notice your appearance and behavior.

**How does this state of mind feel? Ask this image what led to this lack of fire. What caused this absence of passion? What are the events, feelings or issues that drown out the flame in your soul?** Listen carefully.

Whatever feelings bubble up, let them be expressed. There is no need to withhold. Whenever you are ready, thank this image and let it fade back into the campfire.

Holding a steady gaze, ask the flame for yet another image. This time, bring up a picture of you when your inner fire burns out of control and escapes its boundary burning outside the circle of rocks. **What does your life look like at these times? How do you feel? What are the consequences?**

Thanking the flames, let this image fade back into the tended fire encircled by the earthen rocks.

**Next, ask the fire to conjure up images of the kinds of fuels necessary for your unique inner passion? Where and how can you acquire these? What must you do to consistently feed your inner flame?**

Thank these images and let them fade.

There is someone with whom you need to speak in order to nourish your inner flame. This person stands in the shadows waiting. If you are willing, invite him/her to join you at the campfire. Sit face-to-face and speak your peace as this person listens. Dialogue until there is clarity between you.

Take some time.

Thank this person for the visit and watch him/her walk away into the darkness.

Ask the flames for one final image. This is a vision of you when your inner flame is ignited and your passion connects you with your heart. **What do you look like? What personal characteristics do you display?** Look into these eyes and witness your natural vibrancy. Gently and steadily move your awareness into the center of this passionate, enlivened being and look out at the world.

**How do you feel?**

Looking from this perspective, see the people with whom you are in love. Witness the dreams and experiences that nourish passion and commitment within you.

Feeling the constant warmth of the inner flame that burns in your heart, notice how you feel sitting before this roaring campfire. Grounded with the earth and fueled with the natural life force, it protects you from the cold and lights your darkness. Thank it for its stories that have given you new sight.

Looking back over the night's events, notice what you learned about yourself. **What did you learn that is new? What did you relearn?**

When you are ready, let these thoughts and images gradually fade as you journey back into this room. Become aware of the surface that supports you. As your arms and legs return to normal weight, you regain feeling in your fingers and toes. When you are ready, open your eyes and begin the journal writing exercise.

**Journal Exercise**

1. What feelings, events and issues cause your passion to dim?
2. With whom do you need to hold council in order to keep your sacred fire burning consistently? What is it you need to help them understand?
3. What experiences, feelings or relationships fuel the light of your soul?
4. How can you ignite your passion?
5. What did you learn about maintaining an appropriate boundary for your inner passion?
6. When are you most likely to cross boundaries? How do you know when you cross a boundary?
7. Please journal freely any additional insights or experiences.

## APPENDIX S: Radical Forgiveness

### Making Room for the Miracle A Radical Forgiveness Worksheet

Date: \_\_\_\_\_ Worksheet # \_\_\_\_\_

Subject: (X) *Whoever you are upset about* \_\_\_\_\_

#### TELLING THE STORY

1. The situation causing my discomfort as I perceive it now, is:

2a) CONFRONTING X: I am upset with you because:

2b) Because of what you did (are doing), I FEEL:

#### FEELING THE FEELINGS

SPACE FOR ADDITIONAL COMMENTS

3. I lovingly recognize and accept my feelings, and judge them no more:

Willing:	Open:	Skeptical:	Unwilling:

4. I own my feelings. No one can make me feel anything. My feelings are a reflection of how I see the situation:

Willing:	Open:	Skeptical:	Unwilling:

5. Even though I don't know why or how, I now see that my soul has created this situation in order that I learn and grow.

Willing:	Open:	Skeptical:	Unwilling:

6. I am noticing some clues about my life, such as repeating patterns and other features of my life that indicate that I have had many such healing opportunities in the past, but I didn't recognize them as such at the time. *For example:*

**COLLAPSING THE STORY**

7. I am willing to see that my mission or soul contract included having experiences like this – for whatever reason.

Willing:	Open:	Skeptical:	Unwilling:

8. My discomfort was my signal that I was withholding love from myself and (X) by judging, holding expectations, wanting (X) to change and seeing (X) as less than perfect. *(List the judgments, expectations and behaviors that you were wanting (X) to change)*

9. I now realize that I get upset only when someone resonates in me those parts of me I have disowned, denied, repressed and then projected onto them. SPACE FOR ADDITIONAL COMMENTS

Willing:	Open:	Skeptical:	Unwilling:

10. (X) \_\_\_\_\_ is reflecting what I need to love and accept in myself.

Willing:	Open:	Skeptical:	Unwilling:

11. (X) \_\_\_\_\_ is reflecting a misperception of mine. In forgiving (X), I heal myself and recreate my reality.

Willing:	Open:	Skeptical:	Unwilling:

12. I now realize that nothing (X) or anyone else has done is either right or wrong. I drop all judgment.

Willing:	Open:	Skeptical:	Unwilling:

13. I release the need to blame and to be right and I am WILLING to see the perfection in the situation just the way it is.

Willing:	Open:	Skeptical:	Unwilling:

14. Even though I may not know what, why or how, I now realize that you and I have both been receiving exactly what we each had subconsciously chosen, and were doing a healing dance with and for each other.

Willing:	Open:	Skeptical:	Unwilling:

15. I bless you (X) \_\_\_\_\_ for being willing to play a part in my healing and honor myself for being willing to play a part in your healing

Willing:	Open:	Skeptical:	Unwilling:

16. I release from my consciousness all feelings of:  
(as in Box #2b)

17. I appreciate your willingness (X) \_\_\_\_\_ to mirror my misperceptions, and I bless you for providing me with the opportunity to practice Radical Forgiveness and Self-Acceptance.

Willing:	Open:	Skeptical:	Unwilling:

## REFRAMING THE STORY

18. I now realize that what I was experiencing (my victim story) was a precise reflection of my unhealed perception of the situation. I now understand that I can change this 'reality' by simply being willing to see the perfection in the situation. For example (*Attempt a Radical Forgiveness re-frame which may simply be a general statement indicating that you know everything is perfect, or specific to your situation, if you can actually see what the gift is. Note: Often you cannot:*)

19. I completely forgive myself, \_\_\_\_\_ and accept myself as a loving, generous and creative being. I release all need to hold onto emotions and ideas of lack and limitation connected to the past. I withdraw my energy from the past and release all barriers against the love and abundance that I know I have in this moment. I create my life and I am empowered to by myself again, to unconditionally love and support myself, just the way I am, in all my power and magnificence.

20. I now SURRENDER to the Higher Power I think of as \_\_\_\_\_ and trust in the knowledge that this situation will continue to unfold perfectly and in accordance with Divine guidance and spiritual law. I acknowledge my Oneness and feel myself totally reconnected with my Source. I am restored to my true nature which is LOVE, and I now restore love to (X). I close my eyes in order to feel the LOVE that flows in my life and to feel the joy that comes when the love is felt and expressed.

## INTEGRATING THE SHIFT

21. A Note to You (X) \_\_\_\_\_ Having done this worksheet, I .....

I completely forgive you (x) \_\_\_\_\_ for I now realize that you did nothing wrong and that everything is in Divine order. I acknowledge, accept and love you unconditionally just the way you are.

22. A Note to Myself:

I recognize that I am a spiritual being having a human experience, and I love and support myself in every aspect of my humanness.

From the book *Radical Forgiveness* by Colin Tipping. Acknowledgements: Dr. Michael Ryce, Arnold M. Patent.