

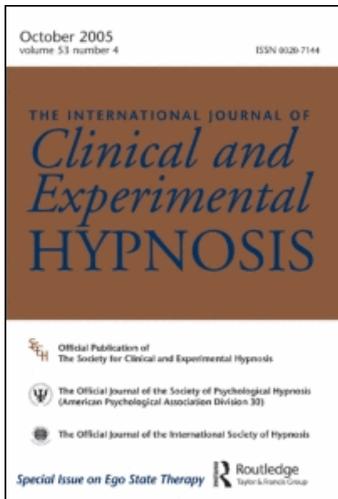
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HYPNOTHERAPY FOR FUNCTIONAL GASTROINTESTINAL DISORDERS: *A Review*

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Abstract: Patients with functional gastrointestinal disorders, such as irritable bowel syndrome, functional dyspepsia, and noncardiac chest pain, can suffer from a range of severe symptoms that often substantially erode quality of life. Unfortunately, these conditions are notoriously difficult to treat, with many patients failing to improve despite being prescribed a wide variety of conventional medications. As a consequence, the potential benefits of hypnotherapy have been explored with evidence that this approach not only relieves symptoms but also appears to restore many of the putative psychological and physiological abnormalities associated with these conditions toward normal. These observations suggest that this form of treatment has considerable potential in aiding the management of functional gastrointestinal disorders and should be integrated into the ongoing medical care that these patients are receiving.

The term *functional* is used to describe a disorder of a system where the function rather than the structure is abnormal. As a consequence, investigations such as x-rays, endoscopies, or blood tests are normal; although this does not necessarily exclude a physiological abnormality. Physicians working in most medical specialties will encounter at least one functional disorder, with irritable bowel syndrome being the one usually seen by gastroenterologists. In rheumatology, fibromyalgia is a good example, and irritable bladder leads to patients being referred to urologists. Pelvic pain often results in a gynecological referral and patients with chronic headaches most commonly get referred to neurologists. No particular specialty cares for patients with chronic fatigue; although immunologists quite frequently become involved in their care. A particular feature of functional disorders is that there is considerable overlap in symptomatology (Wessely, Nimnuan, & Sharpe, 1999), so that they do not neatly fit into the boundaries imposed by the trend towards specialization on a particular system.

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In addition to irritable bowel syndrome (IBS), the other functional disorders that gastroenterologists have to deal with include functional dyspepsia, noncardiac chest pain, biliary dyskinesia, functional abdominal pain, and proctalgia fugax. The latter condition is characterized by episodes of intense anal pain. Of all the functional gastrointestinal disorders, IBS has been the subject of the most research and will be the principle focus of this article. This is not necessarily a problem as IBS does share many of the characteristics of the other disorders and therefore provides a model of how they might be investigated and treated.

IBS affects approximately 10% to 15% of the population and is the commonest condition seen by gastroenterologists (Agrawal & Whorwell, 2006). Unfortunately, the perception of IBS is that it is a nuisance rather than anything particularly serious. It is also regarded as not life threatening and frequently dismissed as being largely psychological in nature. The symptoms of the condition are abdominal pain, which can occur at any site in the abdomen, abdominal distension or bloating, and a disordered bowel habit. The latter can take the form of diarrhea, constipation, or an alternation between the two. One major problem with IBS is that the severity of the condition, at least as witnessed in gastroenterology clinics in secondary care, is considerably underestimated. For instance, many women liken the pain to that of childbirth and, in those patients with the diarrhea form of the condition, urgency and even fecal incontinence can occur in up to 20% of individuals (Agrawal & Whorwell). Many patients experience an exaggerated gastrocolonic reflex whereby eating provokes an urgent need to empty the bowels, with this occurring after every meal. As a consequence, patients become fearful of eating and in severe cases become housebound because it feels like having permanent gastroenteritis. At the other end of the spectrum, patients with the constipation variety of IBS can go for days, or even a couple of weeks, without opening their bowels.

Abdominal distension is another intrusive symptom, and it has been shown that in some patients abdominal girth can increase by up to 12 centimeters during the course of the day (Agrawal & Whorwell, 2008; Houghton & Whorwell, 2005). In addition to their gastrointestinal symptoms, patients also experience a number of noncolonic symptoms, including nausea, thigh pain, low backache, lethargy, and a range of urinary and gynecological symptoms (Whorwell, McCallum, Creed, & Roberts, 1986). The latter can affect sexual function with pain on intercourse being a frequent complaint (Guthrie, Creed, & Whorwell, 1987). Not only do these noncolonic symptoms add to the burden of illness but their presence supports the diagnosis of IBS (Maxton, Morris, & Whorwell, 1991). Further, they can lead to inappropriate referral, such as those patients with low backache going to see orthopedic surgeons

and those with pain on intercourse ending up in gynecological clinics (Francis & Whorwell, 1997). As a result of all these issues, it is not surprising that quality of life is adversely affected, and there are data to show that it can be worse than that experienced by patients with diabetes or chronic renal disease (Lea & Whorwell, 2001). Patients with IBS are often reluctant to own up to having the condition, because they frequently feel stigmatized; this is because they fear that their symptoms will be dismissed as being purely psychological, and employers are often wary of them because of their poor sickness record. All these issues, coupled with the fact that the medical treatment of IBS is far from satisfactory, engender a sense of hopelessness in these patients, which can lead to suicide. This problem has been assessed in tertiary care patients with IBS, comparing them with patients with active Crohn's disease and ulcerative colitis (inflammatory bowel disease: IBD). Thirty-eight percent of IBS patients confessed to having suicidal thoughts concerning their illness, compared with 15% with IBD. Interestingly, depression scores were not especially high in the IBS patients, and it emerged that this suicidal ideation was related to the severity of their illness, as well as interference with life and the inadequacies of treatment. In contrast, the IBD patients were reasonably happy with their treatment (Miller, Hopkins, & Whorwell, 2004).

It was originally considered that IBS was solely caused by a disturbance of gastrointestinal motility. However, as can be seen in Table 1, it is now recognized that the condition is multifactorial (Drossman, Camilleri, Mayer, & Whitehead, 2002) and that visceral sensitivity and the central processing of gut sensations are also disturbed. There is some evidence that genetic influences are important, and inflammation also has a role (Drossman et al.). The psychological aspects of IBS cannot be ignored, but their importance has probably been overemphasized. Last, dietary factors have to be taken into consideration and

Table 1
Pathophysiology of IBS

Motility
Visceral sensitivity
Central processing
Inheritance
Inflammation
Dietary factors
Psychological factors
Disturbed bacterial flora

Note. IBS is multifactorial in nature and these are the factors that are considered most important.

often rate especially highly as far as the patient is concerned (Lea & Whorwell, 2005), because they often find that eating makes their symptoms worse (Ragnarsson & Bodemar, 1998). As a consequence of this, patients blame food for their symptoms, often think they have some form of dietary allergy and usually ask for a diet sheet. There is little evidence that a true food allergy plays a part in IBS, but we have demonstrated that in secondary care patients cereal fiber actually makes 55% of patients worse (Francis & Whorwell, 1994); although the effects are not quite so detrimental in primary care (Miller et al., 2006). A meta-analysis of clinical trials of fiber in IBS has also concluded that its benefits are marginal, and the insoluble variety can even worsen symptoms (Bijkerk, Muris, Knottnerus, Hoes, & De Wit, 2004). Consequently, advising patients to avoid insoluble cereal fiber for 2 to 3 months is well worth trying. Regarding the medical treatment of IBS, this usually involves antispasmodics, if necessary in combination with antidiarrheals or laxatives as appropriate. Probiotics are harmless bacteria that appear to exert health benefits on those who consume them, either in the form of food products or as concentrates in capsule form. Their potential for relieving symptoms in IBS has been evaluated with rather variable results, probably because a range of different organisms has been studied (Quigley & Flourie, 2007). However, more recent studies have shown greater promise (O'Mahony et al., 2005; Whorwell et al., 2006), and they are certainly worth trying. Antidepressants, particularly of the tricyclic variety, can be effective and are usually used at relatively low doses. However, the current medical management of IBS remains far from satisfactory, which led our unit to consider the use of hypnotherapy for this condition.

We developed the technique of "gut-focused hypnosis" back in the early 1980s and have based our clinical and research program on this approach. The technique is dependent on the patient having some form of basic understanding of the physiology of the gut and how this might be disturbed in IBS. For instance, the gut may have a tendency to go into spasm and its lining is often oversensitive so that the individual is much more aware of its activity. This hypersensitivity also explains why so many patients complain of the sensation that their bowels haven't been emptied properly. It is also worth explaining to them that the processing of painful stimuli from the gut by the central nervous system may be disturbed in IBS, and this can be modified by hypnosis so that "pain control" can be enhanced. At this stage, it is also worth inquiring about whether the patient has any personal imagery of their IBS (Carruthers et al., 2009) as if, for instance, they imagine their gut to be inflamed, then suggestions of reducing this inflammation can be introduced into the treatment package. Anatomical diagrams are also helpful so that the patient understands what the gut looks like and where within their abdomen the colon, small intestine,

and stomach are situated. It is surprising how few individuals realize that the large bowel extends up under the ribs and this helps them to understand why the pain from their "bowel" may not necessarily be in the lower abdomen. Once this educational process is complete, the patient is given a session of hypnosis without any specific suggestions relevant to their IBS so that they can get used to the hypnotic phenomenon. In subsequent sessions they are given a series of suggestions on how they might exert control over their gut function. For instance, imagining their gut as a river and modifying its flow according to their needs depending on whether they have diarrhea or constipation. If they have a loose bowel habit they could think of a fast-flowing stream being slowed down to a gently meandering river or the reverse for someone suffering from constipation. We have also found that the tactile approach of the patient placing their hand on their abdomen, feeling warmth, and equating this to pain control in particular can be very useful. Patients often relate well to this approach as it is an everyday experience for someone to rub their abdomen when in pain or alternatively to place a hot water bottle on it. Obviously, if a patient has their own preferred imagery they should be encouraged to continue using it. Each session lasts somewhere between 30 and 60 minutes, and great emphasis is placed on the individual having control over their gut rather than their gut controlling them. This process is relentlessly repeated to the patient over and over again, and they don't seem to mind the whole session being devoted to this approach. Sessions are repeated, preferably at weekly intervals, for a total of 3 months. Each session has a similar content, but it is perfectly reasonable to introduce suggestions and strategies on how to overcome tendencies to anxiety or fear of imminent catastrophe as well as developing the ability to gain control over other coincidental problems. However, as a gastroenterology unit, we do not delve into past events or seek to resolve major psychological problems as these are not within our competence, and we appear to be able to improve patients' symptoms without addressing such issues.

It is critically important that a firm diagnosis of IBS is established before embarking on hypnotherapy. This avoids the potential for something such as colon cancer being overlooked. Our therapists are also instructed to alert the medical team to any new symptoms that may develop during treatment so that an appropriate investigation can be undertaken if necessary. Further, patients sometimes disclose symptoms or problems to their therapist that were not picked up by the physicians, and these may also require further action. Typically, we reserve hypnotherapy for patients for whom all conventional measures have failed. Consequently, these patients are very distressed and anxious, which does not prevent them doing well in the program; although we do avoid treating patients exhibiting major psychopathology.

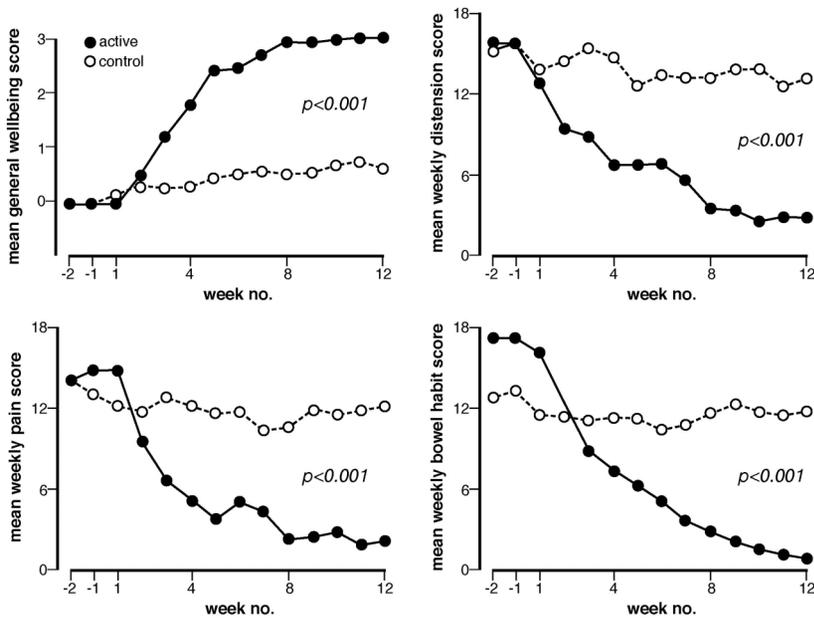


Figure 1. Comparison of the effect of hypnotherapy or supportive therapy on general wellbeing, distension, abdominal pain, and bowel habit in patients with IBS. Reprinted from *The Lancet*, 2(8414), P. J. Whorwell, A. Prior, and E. B. Faragher, "Controlled trial of hypnotherapy in the treatment of severe refractory irritable-bowel syndrome," pp. 1232–1234, Copyright 1984, with permission from Elsevier.

Our first study (Figure 1), involved randomizing 30 patients with IBS to receive seven half-hour sessions of gut-focused hypnosis over a period of 3 months or an equal amount of time devoted to supportive therapy in conjunction with a placebo medication (Whorwell, Prior, & Faragher, 1984). Patients receiving hypnotherapy showed a significantly greater improvement in abdominal pain, abdominal bloating, bowel dysfunction, and general well-being than controls. These results encouraged us to continue providing a service that attracted more and more severely affected patients. As a consequence, it became necessary to extend the number of sessions to 12. In 1996, we published a further study where the outcome of 25 patients receiving 12 sessions of hypnotherapy over 3 months was compared to any spontaneous change occurring in 25 patients being observed on the waiting list for hypnotherapy, over a similar period of time (waiting-list controls). This investigation again revealed a significant reduction in symptoms associated with IBS, as well as an improvement in quality of life (Houghton, Heyman, & Whorwell, 1996). Additional advantages were

also noted, and these included the fact that patients went back to work, took less time off work and felt more effective when working. Furthermore, they consulted their primary care physician (PCP) less frequently, both for IBS and other conditions.

These encouraging results led us to establish a National Health Service (NHS) unit staffed by six therapists who treated patients referred from the gastroenterology clinic irrespective of severity. In 2002, we published an audit of the first 250 patients treated comparing their symptom scores before and after treatment. This again confirmed the efficacy of this approach in relation to IBS symptoms and quality of life (Gonsalkorale, Houghton, & Whorwell, 2002). Another observation in this study was that all the noncolonic symptoms, which have previously been referred to, were also significantly improved. In addition, all patients completed the Hospital Anxiety Depression Questionnaire (Zigmond & Snaith, 1983). Using this instrument, there was a dramatic reduction in anxiety scores, and although not many patients exhibited depression this was also significantly improved. It should be noted that, although anxiety is seen in approximately two thirds of patients attending hospital clinics with IBS, depression is found in only one third (Gonsalkorale et al., 2002).

Our results have been confirmed by others (Forbes, MacAuley, & Chiotakakou-Faliakou, 2000; Galovski & Blanchard, 1998; Harvey, Hinton, Gunary, & Barry, 1989; Palsson & Whitehead, 2002; Vidakovic-Vukic, 1999), and most recently the gut-focused technique has proved highly effective in children (Vlieger, Menko-Frankenhuis, Wolfkamp, Tromp, & Benninga, 2007). Roberts and colleagues also showed benefit in the short term, but this was not sustained in their patients (Roberts, Wilson, Singh, Roalfe, & Greenfield, 2006), which is in contrast to our findings. In a group of 204 patients who had previously received hypnotherapy, we found that 83% of responders were still well 1 to 5 years following treatment (Figure 2). In addition, in the responders 63% did not require any further pharmacological intervention, and in those still requiring some medication 62% were taking it less often. With regard to consultation behavior, 80% of individuals were consulting their PCP or hospital consultant less often or not at all. Interestingly, as observed in our previous studies, patients also mentioned that they were consulting their PCP less often about other problems (Gonsalkorale, Miller, Afzal, & Whorwell, 2003).

In 2002, we reported on a study comparing the effects of hypnotherapy, supportive treatment plus placebo medication, and conventional medical treatment in the management of functional dyspepsia (Calvert, Houghton, Cooper, Morris, & Whorwell, 2002). Twenty-six patients were allocated to 12 sessions of hypnotherapy at weekly intervals, and 24 received supportive treatment plus placebo medication delivered in a similar manner for 3 months. Twenty-nine patients were randomized

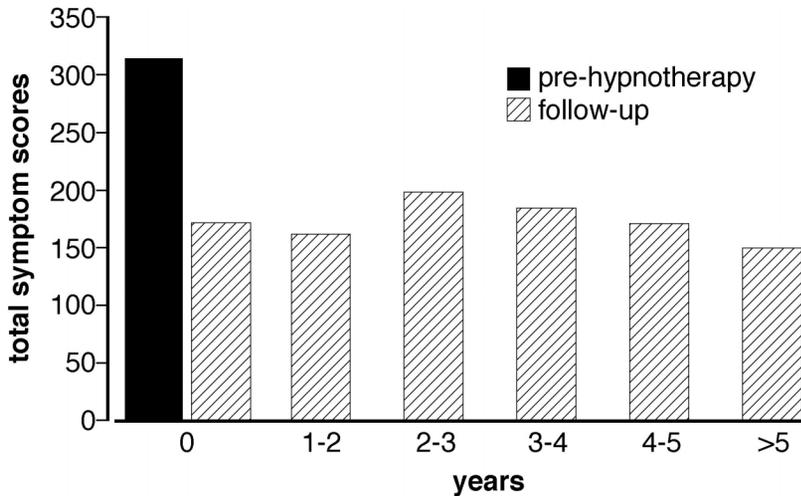


Figure 2. Long-term effects of hypnotherapy on IBS-symptom scores. Adapted by permission from BMJ Publishing Group Ltd. *Gut*, "Long-term benefits of hypnotherapy for irritable bowel syndrome," W. M. Gonsalkorale, V. Miller, A. Afzal, and P. J. Whorwell, 52, pp. 1623–1629, Copyright 2003.

to conventional medical treatment that involved four monitoring visits over a 3-month period. As can be seen from Figure 3, nearly 60% of patients in the hypnotherapy group were improved at 12 weeks, compared with 41% receiving medical treatment and 34% allocated to supportive therapy. After a year, there had been a further increase in the number of patients responding to hypnotherapy, whereas the proportion improved in the other two groups was unchanged. Not one single patient allocated to hypnotherapy had resorted to the use of any medication, whereas 82% and 90% of patients in the supportive and conventional groups respectively required medication. Consultation behavior was also reduced, just as we have observed in previous IBS studies, both with respect to gastroenterology and other types of consultation.

More recently, we have compared the effects of 12 sessions of hypnotherapy or supportive treatment plus placebo medication delivered over a 17-week period in patients with noncardiac chest pain (Figure 4). All these patients had previously received extensive investigation that included coronary angiography. As can be seen, 80% of the 15 patients randomized to hypnotherapy experienced an improvement in chest pain, compared with only 23% of the 12 controls. Similar improvements were observed in general well-being, which was used as an indicator of quality of life (Jones, Cooper, Miller, Brooks, & Whorwell, 2006).

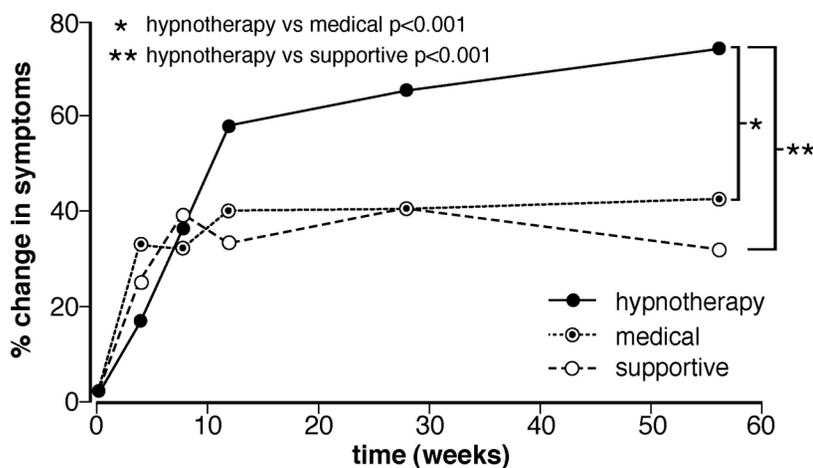


Figure 3. Comparison of the effect of hypnotherapy, supportive therapy, or usual medical care in patients with functional dyspepsia. Reprinted from *Gastroenterology*, 123, E. L. Calvert, L. A. Houghton, P. Cooper, J. Morris, and P. J. Whorwell, "Long-term improvement in functional dyspepsia using hypnotherapy," pp. 1778–1785, Copyright 2002, with permission from Elsevier.

These patients have now been followed up for a mean of 2.8 years with the patients who received supportive treatment showing no change whereas those allocated to hypnotherapy demonstrated even further improvements (Miller, Jones, & Whorwell, 2007). These preliminary results suggest that hypnotherapy is equally effective in noncardiac chest pain as it is in the other functional gastrointestinal disorders. However, a firm diagnosis of this condition, probably involving angiography, is mandatory before embarking on a treatment such as hypnotherapy.

The mechanism by which hypnotherapy mediates its beneficial effect on IBS symptoms has to be somewhat speculative but may involve an effect on both psychological and physiological processes. We have already seen that it reduces anxiety and depression, and, using a cognitive scale specifically designed for use in functional gastrointestinal disorders (Toner et al., 1998), there is evidence that hypnosis also improves cognitive function (Gonsalkorale, Toner, & Whorwell, 2004). From a physiological standpoint, there is evidence that motility (Whorwell, Houghton, Taylor, & Maxton, 1992), visceral sensitivity (Lea et al., 2003), gastric emptying (Chiarioni, Vantini, De Iorio, & Benini, 2006), and the gastrocolonic response to lipid infusion (Simren, Ringstrom, Bjornsson, & Abrahamsson, 2004) can all be influenced by hypnosis. With the advent of techniques such as

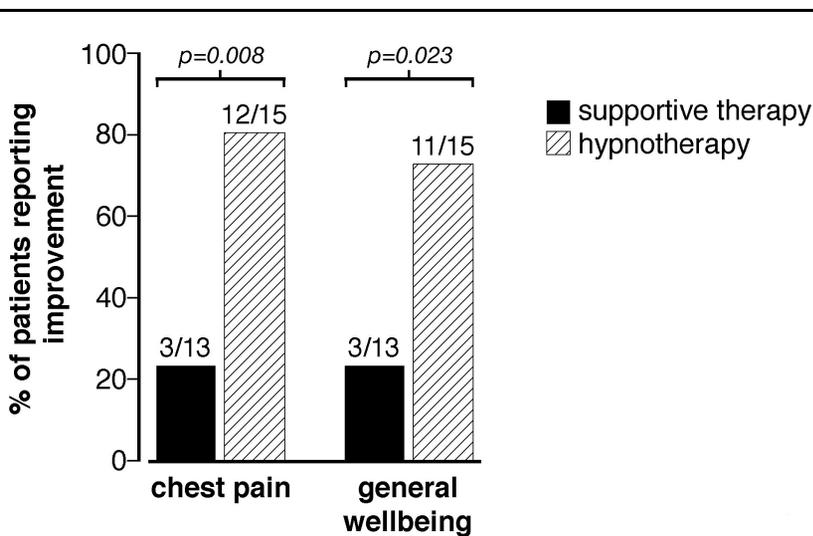


Figure 4. Comparison of the effect of hypnotherapy or supportive therapy on chest pain and general well-being in patients with noncardiac chest pain. Reproduced from *Gut*, 55, H. Jones, P. Cooper, V. Miller, N. Brooks, and P. J. Whorwell, "Treatment of non-cardiac chest pain: A controlled trial of hypnotherapy," pp. 1403–1408, Copyright 2006, with permission from BMJ Publishing Group Ltd.

positron emission tomography (PET) and functional magnetic resonance imaging (fMRI) it has become possible to assess the central response to a noxious stimulus to the gut. Although the data are not always consistent, certain regions of the brain, such as the anterior cingulate cortex, appear to react more in IBS patients than controls (Chang et al., 2003; Mertz et al., 2000; Naliboff et al., 2001). It is, therefore, of considerable interest that hypnosis seems to be able to modulate the activity of this area of the brain (Rainville, Duncan, Price, Carrier, & Bushnell, 1997), which appears to be abnormal in IBS and is where the emotional content of pain is processed. As described earlier, there is now evidence that inflammation may be important in some patients with IBS and it is, therefore, noteworthy that we have recently shown that hypnotherapy may have potential in inflammatory bowel disease (Miller & Whorwell, 2008). Thus, with the exception of inheritance, there is data to support the notion that hypnosis can modify all the putative mechanisms described in Table 1.

In conclusion, hypnotherapy offers patients with functional gastrointestinal disorders a 60% to 70% chance of substantial reduction in their symptoms that can last many years. It also appears to improve a variety of physiological processes that are considered to be abnormal in these conditions, as well as improving quality of life. Patients receiving

this form of treatment go back to work, exhibit less absenteeism, take less medication and consult their doctors less frequently. Hypnotherapy is therefore a valuable addition to conventional approaches to treating these disorders and is probably best offered as part of an integrated care package rather than being a stand-alone form of treatment (Whorwell, 2006).

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Hypnotherapie bei funktionellen Störungen des Gastrointestinalsystems: Eine Übersicht

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Zusammenfassung: Patienten mit funktionellen Störungen des Gastrointestinalsystems, z.B. colon irritabile, funktioneller Dyspepsie und nicht-herzbedingten Brustschmerzen leiden an einer Reihe schwerwiegender Symptome, die die Lebensqualität stark beeinträchtigen können. Diese Störungen sind traditionell schwer behandelbar, viele Patienten sprechen kaum auf viele konventionell Behandlungen an. Aus diesem Grund wurden die möglichen Vorteile von Hypnotherapie untersucht und die Befunde zeigen, dass dieser Ansatz nicht nur die Symptome bessert sondern auch viele angenommene psychologische und physiologische Defizite, die bei dieser Erkrankung auftreten, in Richtung Normalzustand zu verschieben vermag. Diese Beobachtungen legen nahe, dass diese Behandlungsform ein beträchtliches Potential bei der Behandlung von funktionellen Störungen des Gastrointestinalsystems hat und in die medizinische Versorgung der Patienten aufgenommen werden sollte.

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L'hypnothérapie dans le traitement des troubles gastrointestinaux fonctionnels: Un bilan

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Résumé: Des patients souffrant de troubles gastrointestinaux fonctionnels, comme le syndrome du côlon irritable, la dyspepsie fonctionnelle et les douleurs thoraciques non cardiaques, risquent d'éprouver tout un éventail de symptômes sévères qui diminuent considérablement leur qualité de vie. Malheureusement, ces symptômes sont d'une difficulté notoire à traiter, l'état de nombreux patients demeurant stationnaire, malgré la grande variété de médicaments qui leur sont prescrits. Par conséquent, les avantages potentiels de l'hypnothérapie ont été examinés, et il a été démontré que cette approche ne fait pas que soulager les symptômes, mais qu'elle semble également faire évoluer vers la normale les anomalies psychologiques et physiologiques inhérentes à ces affections. Ces observations indiquent le potentiel considérable de cette forme de traitement dans la prise en charge des troubles gastrointestinaux fonctionnels et la nécessité d'intégrer celle-ci dans les soins médicaux courants que reçoivent ces patients.

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Hipnoterapia para trastornos gastrointestinales funcionales: Una revisión

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Resumen: Los pacientes con trastornos gastrointestinales funcionales, tales como el colon irritable, dispepsia, y dolor de pecho no cardíaco, pueden sufrir de una gama de síntomas severos que con frecuencia disminuyen considerablemente la calidad de vida. Desafortunadamente, estas condiciones son notablemente difíciles de tratar y muchos pacientes no mejoran a pesar de recibir una variedad amplia de medicamentos convencionales. Por ende, se han explorado los beneficios potenciales de la hipnoterapia y se ha visto que este enfoque no sólo reduce síntomas sino que también parece restaurar muchas de las presuntas anomalías psicológicas y fisiológicas asociadas con estas condiciones. Estas observaciones sugieren que esta forma de tratamiento tiene un potencial considerable para ayudar en el tratamiento de trastornos gastrointestinales funcionales y debería integrarse a la atención médica que estos pacientes reciben.

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