

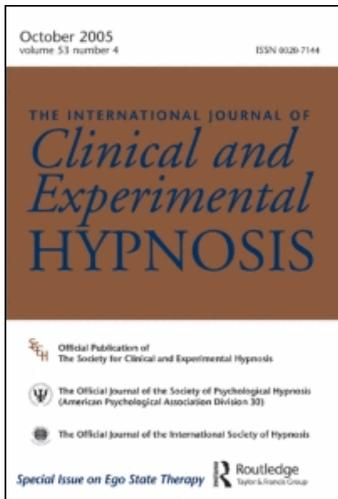
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### Using Art to Help Understand the Imagery of Irritable Bowel Syndrome and Its Response to Hypnotherapy

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# USING ART TO HELP UNDERSTAND THE IMAGERY OF IRRITABLE BOWEL SYNDROME AND ITS RESPONSE TO HYPNOTHERAPY<sup>1</sup>

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**Abstract:** A medical artist asked 109 patients if they had an image of their IBS pre- and posthypnotherapy, making precise watercolor paintings of any images described. Results were related to treatment outcome, symptoms, anxiety, depression, and absorption (hypnotizability); 49% of patients had an image, and a wide variety were recorded and painted. Imagery was significantly associated with gender ( $p < .05$ ), anxiety ( $p < .05$ ), noncolonic symptomatology ( $p < .05$ ), and absorption ( $p = .001$ ); 57.8% of responders compared with 35.5% of nonresponders to hypnotherapy had an image of their disease ( $p < .05$ ) before treatment, and color images were associated with better outcomes ( $p = .05$ ) than monochrome ones. All images changed in responders, often becoming more nonspecific in nature. Inquiring about IBS imagery helps to identify potential responders and nonresponders to hypnotherapy and may also provide insights into how patients think about their illness.

Mental imagery, especially of the visual variety, is a common experience but varies considerably from individual to individual. For instance, in some it can be more of an idea than anything specific whereas in others it may be extremely vivid and realistic. Approximately 10% of people

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claim they have never experienced the phenomenon (Stanford Encyclopedia of Philosophy: Mental Imagery, n.d.). The capacity for visualization has been harnessed for healing purposes for centuries in a wide range of techniques and even today is often used in nonpharmacological approaches to treatment, such as cognitive-behavioral therapy, guided imagery, biofeedback, and hypnosis.

The therapeutic application of imagery varies considerably ranging from simply asking a patient to imagine something pleasant in the hope of restoring health to much more direct approaches such as the hypnotic suggestion that, for instance, a tumor is being devoured by white cells (Spiegel & Moore, 1997; Walker et al., 1999). There has been remarkably little systematic research on the relative merits of any particular method of using therapeutic imagery, and, consequently, how a patient is ultimately treated in practice often depends more on the beliefs of the therapist rather than any strict protocol. Further, the relationship between the ability of an individual to perceive the required image and outcome is not entirely clear.

Another potentially useful application of imagery is to ask a patient to endeavor to draw how they feel about their illness or what they imagine it to be, with this approach allowing them to express their emotions in a nonverbal way. The resulting images may provide their medical attendants and even relatives with useful insights into what is going on in the patient's mind (Heiney & Darr-Hope, 1999; Heywood, 2003). The images produced in this way are more likely to be found in exhibitions rather than serious journals (Reif, 2002). However, with the advent of the Internet, patients now have the opportunity of posting their images in the galleries of Web sites of patient support groups (Multiple Sclerosis Society Web site, n.d.). One obvious drawback to this approach is that it excludes individuals who are unable to draw or are self-conscious about attempting to express themselves in this fashion; although this problem can sometimes be overcome using hypnosis, a process called hypnography (Watkins & Barabasz, 2007).

For many years, our unit has been successfully using gut-focused hypnosis to treat patients with irritable bowel syndrome (IBS; Gonsalkorale, Houghton, & Whorwell, 2002; Gonsalkorale, Miller, Afzal, & Whorwell, 2003; Houghton, Heyman, & Whorwell, 1996; Whorwell, Prior, & Faragher, 1984), and the role of hypnosis in IBS has been the subject of an in-depth review in a special issue of this journal (Palsson, 2006). More recently, we have shown that hypnotherapy appears to also be effective in other functional gastrointestinal disorders such as functional dyspepsia and noncardiac chest pain (Calvert, Houghton, Cooper, Morris, & Whorwell, 2002; Jones, Cooper, Miller, Brooks, & Whorwell, 2006; Whorwell, 2006). The gut-focused technique depends heavily on imagery; this is largely imposed by the therapist, and we have never specifically sought to systematically explore what the patient's own

image of their illness might be. It is possible that establishing whether patients consistently have an image of their IBS might not only give us new insights into the condition but also have a utility in the provision of hypnotherapy.

It was the purpose of this study to investigate the imagery of IBS, to reproduce the images in the form of paintings by a medical artist, and to establish whether such images are linked in any way to the efficacy of hypnotherapy.

## METHOD

One hundred and nine consecutive patients (aged 17–74, mean 41.7 years, 88 female, 21 male) attending the hypnotherapy unit at Wythenshawe Hospital who fulfilled the Rome II criteria for IBS participated in the study; 93 completed and 16 failed to complete treatment.

At the first visit, the patient completed a semistructured prehypnotherapy imagery questionnaire in the presence of HRC prior to consultation with the hypnotherapist. This questionnaire comprised the following questions:

Do you ever think of your IBS in terms of an image or picture however unusual it may seem to you?

On a scale of 0–100, how vivid is this image?

If yes, can you describe it in detail?

Do you see the image in full color or black and white?

How often do you think of this image?

Particular care was taken to avoid suggesting any images to patients. The validated IBS Symptom Severity Questionnaire (Francis, Morris, & Whorwell, 1997) was also completed, and a reduction in score of greater than 50 points was considered clinically significant. In addition, the Hospital Anxiety and Depression (HAD) Scale (Zigmond & Snaith, 1983), the noncolonic symptom score, and quality of life scale (Gonsalkorale et al., 2002) were administered as well as the Tellegen Absorption Scale (Tellegen & Atkinson, 1974), which is used to assess hypnotizability. The patient then attended 12 sessions of gut-focused hypnotherapy (Gonsalkorale & Whorwell, 2005) over a 3-month period, usually at weekly intervals, after which the IBS Symptom Severity Questionnaire and the HAD Scale were again completed together with the Posthypnotherapy Imagery Questionnaire. This questionnaire asked the following questions:

Do you ever think of your IBS in terms of an image or picture however unusual it may seem to you? On a scale of 0–100, how vivid is this image? If yes, can you describe it in detail?

Do you see the image in full color or black and white?

How often do you think of this image?

Has this changed from the original image?

Has changing this been helpful?  
Do you ever think of the original image?  
How often do you think of the original image?  
Has using imagery helped your IBS to improve?  
How much have you improved in percentage terms compared with how you were before treatment with an improvement of greater than 50% being considered as indicating a successful outcome?

Watercolor paintings were made by HRC of a selection of both the pre- and posthypnotherapy images, initially using the descriptions given by the patients. Subsequently, the paintings were shown to the patients and modified until the individual felt that the picture was a true representation of their image. Special attention was given to ensuring that the final product was as close to the patient's image as possible rather than being an artist's impression of the situation.

Response to hypnotherapy was assessed on an intention-to-treat basis in order to establish whether patients who failed to start or complete treatment had any particular characteristics with regard to their capacity to experience imagery. The statistics package SPSS 11.5 was used for the analysis of the data. The Pearson chi-squared test was used to assess the relationships between categorical variables and Fisher's exact test where the patient numbers were small. Linear-by-linear associations were used to assess the linear trend across the three classifications of hypnotic ability on the Tellegen Absorption Scale. Comparison between normally distributed data of individual groups, such as assessing the relationships between imagery and depression, were carried out using the two-sample *t* test.

Ethical approval was sought and obtained from South Manchester Local Research Ethics Committee and all subjects gave written informed consent before participating.

## RESULTS

Of the 109 patients, 53 (48.6%) had an image of their IBS with women having an image more often than men (53.4% vs. 28.6%). A wide range of images were described (Table 1), painted, and altered until patients were happy that it was a true representation of what was in their mind.

The presence of an image was not related to symptom severity, bowel habit subtype, quality of life, or depression but was more common in females (females 53.4% vs. males 28.6%,  $p < .05$ ), anxious individuals (anxious 76.9% vs. nonanxious 23.1%,  $p < .05$ ), and patients with high absorption scores (high score 81.8%, medium score 56.5%, low score 34.0%,  $p = .001$ ). In addition, imagery was also related to high scores for noncolonic symptoms (235.8 vs. 201.9,  $p < .05$ ).

Table 1  
*Imagery of IBS Pre-Hypnotherapy (N = 53)*

Type of Imagery	<i>n</i>	%
Blocked/sore intestines	8	15.1
Knife stabbing stomach	8	15.1
Balloon/ball	5	9.4
Pregnant stomach	4	7.5
Hands squeezing colon	4	7.5
Metal clamp/vice	4	7.5
Volcanic activity/bubbles	3	5.6
Gremlin	2	3.8
Knotted colon	2	3.8
Toilets	2	3.8
Rotting moss, mushrooms, & fungi	1	1.9
Washing machine	1	1.9
Snake in stomach	1	1.9
X-ray full of faeces	1	1.9
Grinding stones rubbing together	1	1.9
Hard rectangular box	1	1.9
Anxious looking person	1	1.9
Grey mist*	1	1.9
Person curled up in bed	1	1.9
Black hole*	1	1.9
Dry, cracked desert landscape	1	1.9

\*Images regarded as more nebulous and nonspecific.

Fifty-nine percent of patients exhibited a greater than 50% reduction in symptoms following treatment with hypnotherapy, and this was accompanied by a mean reduction in symptom-severity scores of 139 with a reduction of anything greater than 50 points regarded as clinically significant (Francis et al., 1997). Of the 64 patients who responded to hypnotherapy, 57.8% compared with 35.5% of the 45 nonresponders and nonfinishers had an image of their disease irrespective of gender ( $p < .05$ ). In 54.1% of responders compared to 25.0% of nonresponders and nonfinishers, the initial image was in color as opposed to black and white ( $p = .05$ ). However, if the image was in black and white, it was still associated with a reasonable response rate (45.9%).

Of all responders, 90.7%, irrespective of whether they had reported an image before treatment, said that they had found that the use of imagery during treatment had been helpful with respect to improving their IBS. Interestingly, 58.3% of nonresponders claimed that they had found the use of imagery helpful despite the fact that it had not resulted in a large reduction in symptoms.

Before treatment with hypnotherapy the IBS images were very specific and detailed, and in only 2 of the 53 (3.7%) could they be classified as

Table 2  
*Posthypnotherapy Imagery of IBS in Responders (N = 43)*

Type of Imagery	<i>n</i>	%
Flowing river	12	27.9
Dissolved/melted image*	5	11.6
Healthy intestines	5	11.6
Tranquil water, e.g., colors and patterns*	3	7.0
Color*	3	7.0
Protective, e.g., wrapped in duvet	2	4.6
Small ball	2	4.6
Sky	1	2.3
Swirls*	1	2.3
Ski tracts in snow*	1	2.3
Smooth marble*	1	2.3
Blue "calm"*	1	2.3
Gently flickering flames*	1	2.3
Park scene	1	2.3
Rays of light*	1	2.3
Holding icicle to cool insides	1	2.3
Warm glow in tummy*	1	2.3
Billowing silk*	1	2.3

\*Images regarded as more nebulous and nonspecific.

more nebulous and not specific for any symptom (Table 1). In all the 43 responders who had an image, this changed following treatment (Table 2), and in 19 of them (44.2%) it became more nebulous (Table 2). In the 10 nonresponders with an image, the image either did not change or became "worse" after treatment. Images became more colorful after hypnotherapy in both responders and nonresponders.

## DISCUSSION

To the best of our knowledge this is the first study to systematically record the patient's image of a disease, to document the images with paintings, and to assess the effect of a treatment. It shows that in IBS approximately half the patients have a wide variety of disease images, and these individuals are more likely to respond to hypnotherapy.

Children, who may have more difficulty communicating how they feel, can sometimes be encouraged to express their emotions in the form of artwork to give their caregivers insight into their problems (Burgess & Hartman, 1993; Carpenter, Kennedy, Armstrong, & Moore, 1997). Unfortunately, adults may be more reluctant to express themselves in this medium particularly if they are not especially artistic; although there is one study where the drawings by victims of myocardial infarction

predicted outcome better than conventional measures (Broadbent, Petrie, Ellis, Ying, & Gamble, 2004). In situations where patients are reticent about drawing, an artist can provide the means of expression, and there are descriptions of this process in relation to breast cancer (Ponto et al., 2003) and Alzheimer's disease (Rockwood, 2004). However, the images produced in this way tend to often represent the artist's interpretation of what is going on, with the images looking more like a piece of artwork rather than a snapshot of the patient's own personal imagery. A study that did attempt to depict imagery in this more realistic way was one on facial disfigurement where an artist painted images first of an individual's actual disfigurement and second of the patient's perception of how he or she appeared to others (Levy, 1995). Patients found this process extremely useful in coping with their problem, often finding they did not appear as bad as they thought. Thus, it appears that systematic research into how patients visualize their illness in more specific terms is an area worthy of further exploration, which could provide valuable insights into the nature of suffering as well as improving our understanding of how symptoms affect an individual. Hopefully, this might also encourage greater engagement by the medical profession in a field in which hitherto it has not shown a great deal of interest, especially at a time when it is becoming increasingly clear that what is going on in the mind clearly affects outcome in so many disease areas (Chuh, Wong, & Zawar, 2006; Hill, Weber, & Werner, 2006; Ray, 2004; Vitetta, Anton, Cortizo, & Sali, 2005).

Some of the IBS images recorded were what might be expected in a condition where gut-muscle spasm may contribute to the pain. Another common physiological finding in IBS is visceral hypersensitivity, and certainly some of the images could be construed as reflecting this abnormality. In others, it is more difficult to "interpret" their meaning; although it is noteworthy that noncolonic symptoms were more common in patients with an image of their disease and therefore could also be influencing the pattern of imagery. Noncolonic features such as backache, lethargy, urinary, and gynecological complaints are extremely common in IBS (Whorwell, McCallum, Creed, & Roberts, 1986) and considerably add to the burden of the condition. Other ways of exploring the "meaning" of these pictures could include showing them to IBS sufferers and nonsufferers to ascertain whether they evoke differing reactions. Alternatively, assessing their effect with functional brain imaging might also be of interest, as it has previously been demonstrated that showing individuals pictures of faces exhibiting a variety of emotions can elicit different patterns of response to nonpainful visceral stimulation of the gut (Phillips et al., 2003).

Gut-focused hypnosis utilizes imagery involving controlling the flow of a river as a metaphor for normalizing gut function, and this probably explains why rivers feature quite frequently in the posthypnosis images. However, not all patients find the river analogy useful, and another

possible utility for these paintings might be to help the therapist choose the best imagery for a particular individual rather than necessarily relying on the conventional gut-focused technique. Knowledge of the prehypnototherapy images also gives the therapist an opportunity to focus on and to help dispel such conceptions that the patient might associate with his or her disorder. In addition, showing the images to nonvisualizers prior to hypnotherapy may possibly help to improve responsiveness in this group that does not appear to do so well with this form of treatment. Furthermore, the paintings might even have utility in subjects who are already responding to therapy by providing them with additional images with which they can work possibly augmenting their response to treatment. It was noteworthy that nonfinishers, some of whom did not actually start treatment, had particularly poor imagery, indicating that hypnotherapy may not be the best option for them. Alternatively in such individuals, it might be necessary to deliver the hypnosis in a different style that is not so dependent on the use of imagery. Finally, simply asking patients in the clinic whether they have an image of their illness should help to select those who are most likely to respond to this rather time consuming and relatively expensive form of treatment.

Interestingly, when a patient was asked if they had an image of their disease they were immediately able to confirm the presence or absence of an image without having to think about it, suggesting that they don't just conjure up an image in response to this question. In addition, the observation that the disease images changed after successful treatment suggests that imagery is a dynamic process that does actually reflect the health status of the patient. Before treatment, images tended to be very strong and detailed, whereas posttreatment images became much more vague and nonspecific. This implies that symptoms actually play a part in determining the type of imagery reported so that as symptoms decline so does the capacity for more specific imagery. It is probably not surprising that a measure of hypnotizability, such as the absorption score, was related to the capacity for imagery as this particular scoring system does to some extent assess an individual's imagination. What was notable was that imagery predicted response to treatment, and there is some evidence that individuals with higher hypnotizability scores are more susceptible to certain illnesses such as posttraumatic stress disorder, which also responds well to hypnosis (Brown, 1918; Spiegel, Hunt, & Dondershine, 1988). Furthermore, we have shown that imagery is also related to noncolonic symptomatology, which is consistent with a report that individuals with high hypnotizability scores are more likely to suffer from somatic complaints (Younger et al., 2007). Thus, traits that contribute to hypnotizability may actually predispose to the very disorders that respond well to hypnosis, and it is tempting to speculate that this might also apply to IBS. It would therefore be interesting to assess whether the prevalence of disease

imagery varies between different illnesses and to establish whether individuals with a strong imagination are more susceptible to certain diseases.

Closer collaboration between the medical artist and the physician could lead to a better understanding of the nature of a range of disorders and, in some instances, even provide a guide to treatment.

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### **Kunst als Mittel zum Verständnis der Vorstellungen bei Reizdarmsyndrom (RDS) und dem Ansprechen auf Hypnotherapie**

**Helen R. Carruthers, Vivien Miller, Julie Morris, Raymond Evans,  
Nicholas Tarrier und Peter J. Whorwell**

**Zusammenfassung:** 109 Patienten gaben an ob sie eine mentale Vorstellung ihrer RDS-Erkrankung hätten. Ein Künstler setzte dann diese Vorstellungen in Wasserfarbzeichnungen um. Die Ergebnisse standen in Zusammenhang mit dem Behandlungsergebnis, Symptomatik, Angst, Depression, und Absorption (Hypnosefähigkeit). 49% der Patienten verfügten über eine Vorstellung, und deren große Vielfalt wurde künstlerisch umgesetzt. Das Vorhandensein von Vorstellungen stand in signifikantem Zusammenhang

mit Geschlecht ( $p < .05$ ), Angst, nicht-darmbezogener Symptomatik und Absorption ( $p < .001$ ). 57.8 % derjenigen, die auf Hypnosetherapie ansprachen, aber nur 35.5% der nicht-ansprechenden Teilnehmer hatten eine Vorstellung ihrer Krankheit vor der Behandlung ( $p < .05$ ). Es gab eine Beziehung zwischen der Farbigkeit der Bilder besserem Therapieerfolg ( $p < .05$ ). Alle Vorstellungen veränderten sich bei den auf die Therapie ansprechenden Teilnehmern, wobei sie oftmals spezifischer ausgestalten wurden. Die Untersuchung auf krankheitsbezogene Vorstellungen kann helfen Personen zu identifizieren, die von Therapie profitieren, und könnte Erkenntnisse über subjektive Krankheitstheorien liefern.

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### Le rôle de l'art dans la compréhension de l'imagerie du côlon irritable et de l'influence de l'hypnothérapie

Helen R. Carruthers, Vivien Miller, Julie Morris, Raymond Evans,  
Nicholas Tarrier et Peter J. Whorwell

Résumé: Les auteurs ont demandé à 109 patients de décrire à un artiste médical l'image qu'ils se faisaient, le cas échéant, de leur état, avant et après une hypnothérapie. L'artiste a ensuite produit des aquarelles précises de toutes les images décrites. L'issue de ce test était lié au résultat du traitement, aux symptômes, à l'anxiété, à la dépression et à l'absorption (hypnotisabilité) des patients. Quarante-neuf pour cent des patients s'en faisaient une image, et les perceptions enregistrées et peintes présentaient une grande variété. L'imagerie était fortement associée au sexe des sujets ( $p < 0,05$ ), à l'anxiété ( $p < 0,05$ ), à la symptomatologie non colonique ( $p < 0,05$ ) et à l'absorption ( $p < 0,001$ ); 57,8 % des répondants à l'hypnothérapie, comparativement à 35,5 % des non-répondants, se faisaient une image de leur maladie ( $p < 0,05$ ) avant le traitement, et la description d'images de couleurs était associée à de meilleurs résultats ( $p < 0,05$ ) que ne l'était celle d'images monochromes. Toutes les images des sujets répondants à l'hypnothérapie se sont modifiées pour devenir souvent d'une nature imprécise. La recherche sur l'imagerie relative au côlon irritable aide à déterminer quels sont les répondants et les non-répondants potentiels à l'hypnothérapie, et peut également nous donner un aperçu de l'idée que les patients se font de leur maladie.

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### El uso del arte para entender las imágenes concernientes al colon irritable y su respuesta a la hipnoterapia

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Resumen: Los autores preguntaron a 109 pacientes si tenían una imagen de su colon irritable (CI) pre y posthipnoterapia, y un artista médico hizo pinturas de acuarela precisas de las imágenes descritas. Los resultados

estuvieron relacionados con resultado de tratamiento, síntomas, ansiedad, depresión, y absorción (hipnotizabilidad). El 49 % de los pacientes tuvieron una imagen; una amplia variedad fue registrada y pintada. Las imágenes estuvieron asociadas significativamente con el género ( $p < .05$ ), ansiedad ( $p < .05$ ), sintomatología no colónica ( $p < .05$ ), y absorción ( $p < .001$ ); el 57.8 % de respondientes comparado con el 35.5 % de no respondientes a la hipnoterapia tuvieron una imagen de su enfermedad antes del tratamiento ( $p < .05$ ), y las imágenes en color estuvieron asociadas con mejores resultados ( $p < .05$ ) que las monocromas. Todas las imágenes cambiaron después de la terapia, a menudo haciéndose menos específicas. Preguntar sobre imágenes de CI ayuda a identificar quiénes pueden responder a la hipnoterapia y también puede proporcionar conocimiento sobre cómo los pacientes piensan sobre su enfermedad.

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