

# Irritable bowel syndrome: treatment and management

Yaso Shan outlines the complexities of irritable bowel syndrome and its possible remedies including complementary and alternative medicine therapies

## Summary

Irritable bowel syndrome (IBS) is a common functional disorder of the gut characterised by abdominal pain or discomfort, bloating and a change in bowel habit. IBS is a complex condition that affects people on many levels. It is a therapeutic challenge to medical practitioners and other healthcare professionals. This article describes the varied nature and symptoms of the condition, examines some of the possible causes that have been postulated and reviews the treatment strategies being adopted. It also explores management strategies that patients have adopted to cope with their symptoms and steps that can be taken to limit acute episodes or abate the worst effects of this chronic and often unpleasant condition.

## Keywords

Irritable bowel syndrome, complementary and alternative medicine, herbal remedies

THE PREVALENCE of irritable bowel syndrome (IBS) in the UK is estimated at between 10 and 20 per cent (National Institute for Health and Clinical Excellence (NICE) 2008). Globally, it affects between 5 and 11 per cent of people (Rome Foundation 2006, Spiller *et al* 2007). The incidence of IBS is higher in women than in men and may present at any age, although it commonly peaks between the ages of 30 and 50 (Spiller *et al* 2007).

## Definition and classification

To address key issues pertaining to IBS, an adequate definition of the condition must be agreed. This presents a challenge since the symptoms witnessed in the clinical setting are distinct, varied and nearly impossible to attribute to a definitive cause, hence the syndrome. In February 2008, NICE and the National Collaborating Centre for Nursing and Supportive Care issued a comprehensive set of guidelines to improve diagnosis, care and management of IBS in adults.

The guidelines are the first to list a set of symptoms to allow for a positive diagnosis. Spiller (2007) has further categorised IBS according to a symptom profile that is now being adopted

by many practitioners to determine a more symptom-directed treatment plan. The sub-classes often used by clinicians are listed in Box 1.

Until the issue of the NICE guidelines (2008), practitioners found it difficult to make or confirm a diagnosis of IBS because of the overlap in symptoms, the range of symptoms and the less than obvious signs that could be easily missed or misdiagnosed. To appreciate the challenges faced, it is important to examine the range of symptoms and the signs often presented to clinicians (Box 2).

## Diagnosis and investigations

To consider a diagnosis of IBS, a patient needs to have experienced abdominal pain or discomfort and bloating or change in bowel habit for a period of at least six months (NICE 2008), accompanied by at least two of the following:

- Altered bowel habit (straining, urgency, incomplete emptying).
- Abdominal bloating or distension (more common in women).
- Symptoms made worse by eating.
- Passage of mucus from the rectum.

However, a number of tests must be done to provide vital information to make or confirm a diagnosis or rule out other possibilities (Table 1).

Other useful tests include stool culture (especially for diarrhoea-predominant IBS (IBS-D)) and a lactose intolerance test. The following tests are not recommended (NICE 2008):

- Endoscopy (rigid/flexible sigmoidoscopy, colonoscopy, barium enema).
- Ultrasound.
- Thyroid function test.
- Faecal ova and parasite test.
- Faecal occult (hidden) blood test.
- Hydrogen breath test (for lactose intolerance and bacterial overgrowth).

More complicated tests, such as endoscopy, are

**Box 1 Sub-classes of irritable bowel syndrome**

- IBS-C – constipation-predominant IBS affecting approximately one third of patients. Loose stools less than 25 per cent of the time and hard stools more than 25 per cent of the time.
- IBS-D – diarrhoea-predominant IBS affecting approximately one third of patients. Loose stools more than 25 per cent of the time and hard stools less than 25 per cent of the time.
- IBS-M – mixed-IBS symptoms affect the remainder of the patient population who experience both hard and soft stools more than 25 per cent of the time.

There appears to be a significant subgroup of patients in whom IBS is precipitated by an episode of bacterial gastroenteritis (approximately 10 per cent in one study – Neal *et al* 2002). These patients have predominantly diarrhoeal symptoms and less psychiatric illness compared with other IBS patients (Dunlop *et al* 2003).

(Adapted from Spiller 2007)

not usually needed. However, in unusual cases with atypical symptoms or if symptoms have developed later in life (after age 45), endoscopy may be a valuable diagnostic tool to eliminate more serious conditions. Some common symptoms of IBS are similar to those present in more serious illnesses, such as bowel cancer. Signs and symptoms that warrant urgent referral are:

- Rectal bleeding.
- Unintended or unexplained weight loss.
- Onset of IBS symptoms over the age of 50.
- Family history of bowel or ovarian cancer.
- Abdominal or rectal masses.
- Raised inflammatory markers (which suggest an inflammatory bowel disease such as Crohn's or ulcerative colitis).

Other possibilities, such as pelvic infection, endometriosis and undiagnosed psychological conditions, also need to be ruled out.

**Aetiology**

In IBS there is an overactivity of the gut muscles, causing abdominal spasms that lead to pain and discomfort, along with associated symptoms. A number of studies have focused on the brain-gut axis (mind-body link), examining visceral sensations for pain, altered bowel habit and possible psychological or psychiatric causes.

The possibility of an infective cause stems from the fact that up to 25 per cent of cases follow an infection with *Campylobacter* (a cause of food poisoning) or a similar infective agent (Spiller *et al*

**Box 2 Summary of clinical features in irritable bowel syndrome**

- Physical**
- Abdominal distension (clinical sign).
  - Abdominal pain or discomfort.
  - Bloating.
  - Diarrhoea, constipation or both.
  - Lower abdominal pain, alleviated by bowel movement.
  - Change in bowel habit (alternating constipation and diarrhoea) or change in appearance of stools.
  - Mucus in stools.
  - A feeling of incomplete emptying of the bowels.
  - A feeling of urgency.
  - Fatigue, can be persistent.
  - Irritable bladder (including urinary frequency and urgency).
  - Back pain.
  - Pain during intercourse (dyspareunia).
  - Symptoms made worse by eating.
  - Nausea.
  - Headache.
  - Belching and flatus.
  - Poor appetite.
  - Muscle pains.
  - Immediate satiation after eating.
  - Heartburn.
- Mental**
- Anxiety.
  - Depression.

There is variation and overlap in symptoms for many patients and the list of symptoms cited are commonly experienced. It is by no means an indication of a typical IBS profile since many patients experience few or all of these symptoms.

2000, Spiller 2007). Some of these patients have been found to have low-grade inflammation in the gut.

Treatment with antibiotics is controversial in these cases since this disrupts gut flora and can exacerbate the symptoms of IBS (Thomas 2008). Rifaximin is the only antibiotic to have demonstrated a sustained benefit in a placebo-controlled trial after routine conventional

**Table 1 Tests taken for diagnosis**

Test	Rationale
Full blood count (FBC)	To rule out anaemia, particularly in cases of fatigue.
Test for C-reactive protein (CRP)	Presence of CRP in the blood can indicate an inflammatory disease particularly inflammatory bowel disease. Inflammation does not occur in IBS.
Test for endomysial antibodies (EMA) or tissue transglutaminase (TTG)	Indicators for coeliac disease which can present with similar symptoms as IBS.
Erythrocyte sedimentation rate (ESR) or plasma viscosity	Indication of inflammation in the body, which is not a feature of IBS.

treatment has been stopped, but further research is warranted to make a full assessment of its clinical usefulness (Frissora and Cash 2007).

It is likely there is more than one cause (multifactorial aetiology). Factors such as the menstrual cycle, diet, lifestyle and a familial link are associated more with exacerbating the symptoms than being a single causal factor.

### Treatment strategies

The process of treating a patient with IBS needs to be fully considered and due thought given to the nature of the condition, possible causes, the patient profile, personality and symptomology. Complementary and Alternative Medicine (CAM) therapies have proved their worth in offering a more holistic approach to diagnosis and treatment, placing emphasis on the patient as a person, rather than focusing entirely on symptoms.

Conventional treatment has its merits, however, and the first-line, symptom-directed approach involves prescription drugs, either as single preparations or in combination. These include antispasmodics, laxatives and anti-diarrhoeals (anti-motility drugs). Patients should be discouraged from taking lactulose, which many take for constipation due to its laxative properties, because it can disrupt the gut flora and exacerbate symptoms.

Antidepressants, such as tricyclics and selective serotonin reuptake inhibitors (SSRIs) are also often prescribed primarily for pain relief. Although they are recommended at low doses in the first instance (for example, 5-10mg of amitriptyline), in practice higher doses are often required and produce side effects (NICE 2008, Talley 2003). The prescription rationale for tricyclics, in addition to a peripheral anticholinergic action, is that they have a central analgesic effect, which can produce profound relief for some patients.

The use of SSRIs is only recommended where tricyclics have been ineffective and are prescribed to accelerate oro-caecal transit time - meaning they may be more beneficial to patients in the constipation-predominate IBS sub-class (Talley 2003). Because they produce fewer side effects than tricyclics, SSRIs appear to be a more attractive prospect for patients and practitioners. However, randomised trials have reported conflicting results (Talley 2003). Effective follow-up is required in all drug treatment cases.

Anxiolytics, such as benzodiazepines, were once considered but offer little therapeutic benefit in the long term due to habituation and interaction with alcohol and other drugs prescribed for this condition. Other more natural, non-drug

measures, such as talking therapies, should be considered. If anxiety exacerbates symptoms, it is a priority to address this as an integral part of the primary goal in any management strategy. Tranquilisers (such as diazepam) could also be prescribed for a limited time, especially if symptoms are stress-related (Thomas 2008).

Second-line treatment is considered in refractory cases of IBS, that is, where symptoms do not improve after 12 months of drug treatment. Therapies such as cognitive behavioural therapy (CBT), hypnotherapy and psychological therapy (NICE 2008) should be considered. These are aimed at addressing the psychological component of the condition and to alter behaviour traits, thinking patterns and responses to stress by promoting relaxation. They work through an understanding of the mind-body link and established patterns of behaviour that adversely affect IBS symptomology. The relative advantages and disadvantages of CBT, interpersonal psychotherapy, psychodynamic psychotherapy, hypnotherapy, relaxation and stress management, and pharmacotherapy are the subjects of ongoing and controversial research (MacLeod 1998, Wilson *et al* 2006, Webb *et al* 2007, Naliboff *et al* 2008).

The treatment rationales for first- and second-line treatments are summarised in Table 2.

### Natural approaches

Some natural approaches to the treatment and management of IBS are clinically useful and beneficial to patients. Non-drug interventions have yielded positive results in the clinical management of IBS. Therapies include CBT, counselling, psychodynamic psychotherapy and hypnotherapy (Naliboff *et al* 2008).

Hypnotherapy has consistently shown extremely favourable results in test groups. More than half of the trials (ten of 18) indicated a significant benefit (Wilson *et al* 2006), alleviating symptoms and improving the quality of life. Research suggests that hypnotherapy can be used to customise or reinforce traditional management, it can follow medication regimens and help improve relaxation and disrupted sleep patterns. It can serve as a valuable adjunct to conventional drug regimens (Cowen *et al* 2008). Moreover, it is well tolerated with no serious side effects being reported.

Herbal remedies have their benefits. Several clinical trials as well as animal studies have shown the potential benefits of peppermint oil and other studies illustrate a clear understanding of its mode of action on the gut (McKay and Blumberg 2006).

Many patients seek help with nutritional

**Table 2 Conventional treatment strategies in irritable bowel syndrome: a summary of drug type, action and commonly prescribed medicines**

**First-line treatment: various drugs prescribed on basis of symptom profile and pain management**

Drug type	Mode of action/treatment rationale	Examples
Antispasmodics/anticholinergics	Drugs that inhibit nerve stimulation of muscle contraction in the gut thereby preventing spasms and pain, characteristic symptoms of IBS. Of uncertain effectiveness mainly due to poor quality trials.	Mebeverine, atropine, dicyclomine, hyoscine, peppermint oil (colpermine)
Anti-diarrhoeals (anti-motility drugs)	Work by suppressing gut motility. Loperamide, a synthetic narcotic analogue, is commonly prescribed in IBS.	Loperamide (Imodium)
Visceral analgesics	Relieve pain through suppression of pain/nerve impulses and pain receptor responses. Clinically useful in pain relief in IBS cases.	Kappa opioid agonists, codeine
Laxatives, bulking agents	Stimulant laxatives work by increasing gut motility and bulking agents work by providing bulk to the stools thereby assisting formation and bowel movements. These drugs are particularly useful in constipation-predominant IBS.	Fibre-based: methylcellulose (Fybogel) Stimulant: bisacodyl, senna
Antidepressants – tricyclic antidepressants (TCAs), or selective serotonin reuptake inhibitors (SSRIs)	Prescribed primarily for pain relief (both are centrally acting). TCAs block the neuronal re-uptake of the brain's neurotransmitters noradrenaline and serotonin to varying degrees. This triggers adaptive changes in nerve transmission in producing pain relief and an antidepressant effect. SSRIs block the neuronal re-uptake of serotonin only resulting in adaptive responses in nerve signalling and also producing an antidepressant effect. The treatment rationale for both types of drugs is to address some of the profound psychological symptoms of IBS such as depression.	TCAs: amitriptyline (Triptafen), clomipramine (Anafranil)  SSRIs: citalopram (Cipramil), fluoxetine (Prozac)
Anxiolytics, sedatives, tranquilisers	To address the anxiety element of IBS which leads to profound symptoms including stress effects.	Benzodiazepines
Gut modulators	5HT <sub>4</sub> receptor agonist – prokinetic for constipation predominant IBS (stimulates gut motility via receptor activation).  5HT <sub>3</sub> receptor antagonist – inhibits nerve signalling for gut motility so useful in diarrhoea-predominant IBS.	Tegaserod (now withdrawn from some international markets)  Alosetron (withdrawn from the market in 2000 owing to the occurrence of serious life-threatening gastrointestinal adverse effects, although it was reintroduced in 2002 with availability and use being restricted)

**Second-line treatment: non-drug therapies (such as talking therapies and psychological interventions) can be prescribed in refractory cases where first-line treatments have not helped. To address the psychological component of the condition and alter behaviour traits, thinking patterns and responses to stress by promoting relaxation. Works through an understanding of the brain-gut axis (mind-body link) and established patterns of thinking and behaviour that adversely impacts on IBS symptomology. Stress-management techniques and exercise have profound benefits in many patients.**

- Cognitive behavioural therapy/psychotherapy.
- Hypnotherapy.
- Psychological therapy.

Other measures:

- Stress management techniques.
- Exercise.
- Meditation.
- Yoga.
- T'ai-chi.
- Complementary and alternative medicine (CAM) therapies: Western herbal medicine, traditional Chinese medicine.

## Box 3 Specific dietary guidelines in irritable bowel syndrome

- Eat regular meals and take time to eat without rushing.
- Do not skip meals or leave long gaps between eating.
- Drink at least eight cups of fluid a day, particularly water or other non-caffeinated drinks, for example herbal teas.
- Avoid drinking more than three cups of tea or coffee a day.
- Cut down on alcohol and fizzy drinks.
- Consider limiting high-fibre foods (such as cereals high in bran, wholemeal or high-fibre flour or breads, and whole grains such as brown rice).
- Reduce resistant starches in the diet – often found in processed foods.
- Avoid eating more than three portions (about 80g per portion) of fresh fruit a day.
- In cases of diarrhoea, avoid the artificial sweetener sorbitol, which is found in sugar-free sweets (including chewing gum) and drinks, and in some diabetic or slimming products.
- In cases of wind or bloating, eat oats (for example, oat-based breakfast cereal or porridge) and linseeds (up to one tablespoon a day).
- If trying probiotics, vary the products and species of bacteria for greatest suitability. Probiotics need to be taken for at least four weeks at the dose recommended by the manufacturer. Record whether it makes a difference to symptoms.
- Manage fibre intake – soluble fibre is recommended.

(Adapted from NICE 2008 and Patient UK)

therapy in conjunction with other treatments, including prescription drugs. A number of studies have shown a significant correlation between food and symptomology. A comprehensive literature review carried out in 2001 concluded that the existing guidelines on diets specifically geared for IBS patients outline a positive and necessary role for dieticians in the clinical management of this condition that draws on their unique skills in assessing eating habits and therapeutic dietary manipulation (Burden 2001).

A special mention needs to be made on the subject of fibre since there has been much confusion about its clinical usefulness in IBS. Soluble fibre (notably in oats, psyllium husks, and linseed/flaxseed) is beneficial in IBS. This is because it absorbs liquids in the digestive tract to form a stabilising gel that relieves cramping, soothes the gut and regulates its function. Soluble fibre is best taken in its natural form although supplements can be a convenient way to increase patient compliance. Brand names such as Fibogel (psyllium husk) and Celevac (methylcellulose) are routinely prescribed (Lacy and Lee 2005).

Patients are advised to avoid foods high in insoluble fibre (such as bran, whole grain and maize (corn) cereals, nuts and seeds) and foods high in resistant starches (for example, starches in foods that are not completely digested by the body, such as processed foods like potato or pasta salad, manufactured biscuits or cakes). Another

recommendation is to consider probiotics that serve to normalise the gut flora, which is often disrupted in IBS cases. However, not all probiotics contain the same species of beneficial bacteria so patients may need to try other varieties with different species if one type has failed to improve symptoms and/or digestive function (Saggiaro 2004).

## General dietary recommendations

In 2008 NICE produced comprehensive dietary advice and guidelines on which foods to avoid and which are recommended, assessment of food intolerances (which can produce similar symptoms), the use of supplements (such as probiotics), stress management and lifestyle modifications. Specific dietary advice and help with devising an individualised diet plan can be gained through a consultation with a nutritionist or dietician.

The value of elimination diets in IBS remains unclear, although some limited studies suggest that specific food intolerances can be identified in up to 50 per cent of patients who undergo an elimination diet followed by a double-blind food challenge (Talley 2003). Excessive use of laxatives can make the gut lazy and increased doses are required to achieve the desired outcome, something that is not recommended.

Side effects are common with laxative use and include cramping, flatulence, bloating and gastrointestinal obstruction or impaction. Therefore, laxatives should always be prescribed in a conservative manner especially in the first instance. Taking aloe vera for its laxative properties is also not recommended by these guidelines. See Box 3 for more specific guidance.

## Herbal medicines/alternative therapies

The prescription of herbal remedies is usually supplemented with advice on dietary modifications, patient reassurance and education. The holistic approach adopted by herbalists will enable the assessment of lifestyle choices and a psychological profile (for example, is there a predisposition to anxiety, depression or stress?) as well as the clinical features in diagnosis and treatment.

Herbal remedies for IBS can range from the simple to the complicated; those with the following actions are indicated: antispasmodics (spasmolytics), carminatives, demulcents, astringents, nervines, stomachics, hepatics and cholagogues (these improve the general digestive efficiency) and anti-catarrhals (helps clear mucus). Additionally, if symptoms necessitate, haemostatics (styptics), anti-allergens and anti-emetics may be considered.

Herbal teas such as chamomile (*Chamaemelum*

*nobile*) can be surprisingly effective due to their relaxation and gentle antispasmodic properties. Peppermint (*Mentha piperita*) and fennel (*Foeniculum vulgare*) are both antispasmodics as well as anti-inflammatories. Herbalists often recommend combining these three herbs to make a single dose tea to soothe painful spasms and expel excess wind.

Several clinical trials as well as animal studies which have shown the potential benefits of peppermint oil in IBS and other studies illustrate a clear understanding of its mode of action on the gut. However, human studies of peppermint leaf are limited and clinical trials on the actual tea are absent (McKay and Blumberg 2006).

Other examples of herbal remedies that may be used in the symptomatic management of IBS are shown in Table 3.

Some patients have reported significant benefits in managing their symptoms with regular treatment of colonic hydrotherapy (colonic irrigation). The principle on which this works is that manual massage of the lower gut flushes out lingering debris/waste matter that could otherwise cause inflammation and toxic challenge. It will also cause build up of intestinal gas resulting in abdominal bloating – a common symptom in IBS. This relieves the discomfort often experienced through abdominal distension – a common and persistent symptom in IBS. Part of the natural therapeutic approach features a strong element of stress management and techniques such as exercise, t'ai-chi, yoga, meditation and other relaxation methods have proved their worth for many patients.

CAM therapies are particularly useful and offer much to patients who have not responded to conventional treatments, either first- and second-line. NICE (2008) does not encourage the use of acupuncture or reflexology although it does not stipulate why. In clinical practice, however, both of these therapies have been shown to be extremely beneficial to many patients in the management of IBS symptoms. They are particularly useful in relieving pain (acupuncture) and in alleviating stress (reflexology and acupuncture) which can exacerbate symptoms (Agrawal and Whorwell 2006).

Though evidence from large-scale studies into their effectiveness is lacking, this also applies to a number of the pharmacological and psychological interventions recommended and promoted as first- and second-line treatment strategies. Much of the success of non-medical therapies in the management of IBS may be due to the holistic manner in which the diagnosis and treatment is carried out. Due regard is given to the symptoms in the context of other aspects such as diet

and lifestyle practices, work and influences of stress. Emphasis is more on the patient rather than focusing solely on the symptoms.

## Research and conventional medicine

Research into new and current treatments continues not only into conventional drugs but also into herbal alternatives. Various studies continue into serotonin agonists and antagonists as well as combination therapies such as 5HT<sub>4</sub>-receptor agonist with a delta-opiate antagonist in order to enhance the peristaltic response with prokinetic therapy (Talley 2003).

The longer term use of cholecystokinin antagonists (such as loxiglumide and dexloxiglumide), which may benefit constipation-predominant IBS patients, is yet to be established. Visceral analgesics including opioid agonists (for example, asimadoline) are also under consideration. Other drugs under review include the following:

- Corticotropin-releasing factor CRF-1 antagonists.
- Neurotrophic factor receptor agonists.
- Drugs that modulate the n-methyl-d-aspartate (NMDA) type glutamate receptor-somatostatin pathway.
- Other targets:
  - chloride (CFTR) channel
  - peptide hormones (Guanylin)
  - anti-inflammatory agents
  - probiotics
  - non-absorbable antibiotics
  - α-adrenoreceptor agonists (IBS-D patients).

The goal of treatment for those with IBS is to improve the quality of life through a reduction of symptoms. However, significant progress has been made in the development of novel therapies aimed at normalising bowel habit alterations and abdominal discomfort.

Drugs such as alosetran and tegaserod have shown favourable clinical results in clinical trials. Further research is required as they are currently

**Table 3 Herbal approaches in the treatment of irritable bowel syndrome**

Clinical feature	Herbal remedy
Internal remedies:	
■ Stress and pain.	■ Valerian or camomile.
■ Flatulence and bloating.	■ Peppermint, sage, elecampane, fennel.
■ Persistent diarrhoea.	■ Add raspberry leaves or meadowsweet.
■ Persistent constipation.	■ Add dock.
	(Add a demulcent – comfrey, marshmallow or slippery elm – to all preparations.)
Other measures	Eat foods rich in soluble fibre – steamed leafy vegetables, oats.

only available for patients under a restricted access programme and need to be monitored carefully due to their serious and potentially fatal side effects. However, some countries still use them and research continues with clinical trials and modifications to prescription protocols. They are not licensed for use in the UK but they show promise and subsequent findings from research may reveal a greater clinical benefit in the future (Evans *et al* 2007).

## Find out more

- [www.ibs-relief.co.uk](http://www.ibs-relief.co.uk) or [www.theguttrust.org](http://www.theguttrust.org) – general information about the condition and available treatments
- [www.nimh.org.uk](http://www.nimh.org.uk) – information about herbal medicines for IBS and dietary advice

## Key points

- Irritable bowel syndrome is a poorly understood condition for which there is no cure. Drug treatments have some clinical benefit but remain within the confines of management rather than cure and due to the wide spectrum of symptoms associated with this condition (which covers not only the physical aspects but also the mental, psychological and emotional), a holistic approach is recommended.
- Many of the drug treatments result in adverse side effects. There is strong appeal for considering the whole symptomology in a more patient-focused, holistic manner. The importance of counselling and other talk therapies and stress management can never be underestimated. It is important to devise a comprehensive, individualised diet plan for each patient. Much of this process depends on information gleaned from elimination diets, sensitivity tests, and from the patient's previous history and experience.
- IBS can be a debilitating condition with increased levels of morbidity. The loss of productivity, revenue and continuity in work is directly related to the amount of sick leave taken due to the pain, intense muscle spasms, nausea and digestive disturbances. Attention should also focus on the psychological and social aspects of the condition from loss of confidence to depression.
- Patients invariably manage their symptoms by devising specific treatment programmes often involving dietary regimens, lifestyle measures and stress-management approaches for their unique set of symptoms. Some patients respond well to non-drug therapies such as cognitive behavioural therapy, psychodynamic psychotherapy and hypnotherapy. A major component of IBS involves the brain-gut axis and addressing this with some non-medical, holistic therapies will yield results in these patients. Future treatment possibilities lie in combining these philosophies and approaches, devising individual management programmes and embracing more traditional practices with alternative healing modalities.

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