

# THE IMPORTANCE OF DIETARY MANIPULATION IN PAINFUL DISORDERS

*Sally Brown DARM RMT SMTO*

## INTRODUCTION

Pain is the body's way of signaling to us that something is wrong. If our body is under attack by invading organisms (infection), or damaged due to trauma, one of the first signs that indicates these stresses to us is pain: headaches, local pain, systemic pain, acute pain, chronic pain etc. How and where pain is felt varies enormously from person to person and will depend on the stressor involved. Emotional pain can also have very real physical manifestations and should not be overlooked in the long-term sufferer.

Indeed, the subject of pain is vast in its entirety, but one common factor links all pain sufferers: they *are* in pain and will do whatever it takes to be free of it.

In some instances the experience of pain is unavoidable (injuries incurred in an accident) and in others it is largely out of our control (congenital disease). However, in many cases pain can be managed by various means including stress release, exercise, physical therapy, the use of analgesia (where appropriate) and dietary manipulation – the subject of this article.

The value of dietary manipulation as a way of combating physical pain is often overlooked, but the links between the two are very real. Other than the tissues, cells and chemicals that we are composed of, the only tools our bodies have in the armoury to fight against pain is what we put into it by way of food, drink and medicines. Therefore, it follows logically that our bodies' ability to cope with a painful stressor, be it disease, injury or infection, depends on whether or not it has all the necessary components.

In order to maintain a healthy homeostatic balance our bodies require 40 nutrients that cannot be made in the body (1 fatty acid, 15 vitamins, 14 minerals and 10 amino acids). These nutrients can be ingested and, if they are not, homeostasis cannot be sustained, rendering the body vulnerable to the onset of pain. Partial deficiencies of these nutrients can lead to hundreds of diseases, many of which can be corrected when all the nutrients are supplied and, better still, the diseases can often be prevented. Similarly, if the body is not properly nourished it will take longer to heal tissues that have been damaged, thus lengthening the duration of pain.

Some of the ways in which food and pain are linked are fairly obvious. For instance, eating vast quantities of sugary foods will almost certainly result in painful tooth decay, and eating food, which has been infected, can lead to severe cramping and systemic pain due to food poisoning. However, the links between nutrition and pain are not always so easy to recognise. Some examples of how the things that we eat and drink affect pain are given below:

1. Food intolerances can lead to pain, e.g. Irritable Bowel Syndrome, migraine, eczema.
2. Reduced functioning of the immune system due to poor nutrition can cause the development or exacerbation of painful conditions, e.g. rheumatoid arthritis, multiple sclerosis, allergies, sluggish healing.
3. Dietary manipulation can ease painful conditions, e.g. multiple sclerosis, osteoporosis, arthritis.

Although the subject of nutrition, and how it affects the perception of pain is enormous, and I cannot hope to cover it all here, I will discuss each of the main points above in detail to elucidate how important dietary manipulation can be when dealing with people in pain.

### 1. Food intolerances

When a food is ingested which the body is sensitive or intolerant to, the body will find it difficult to digest. This may lead to abdominal pain (often severe), bloating, vomiting, diarrhoea and/or constipation: often labelled Irritable Bowel Syndrome (IBS). Although IBS can be triggered by other factors, e.g. surgery, overuse of painkillers, infection and stress, one of the principal causes of IBS is food intolerance, and one of the most effective ways of treating it is through dietary manipulation. Of paramount importance is the identification of foods to which the IBS sufferer may be sensitive/intolerant. This is not always easy, but a process of elimination and reintroduction of items from the diet is often enlightening. Once sensitive foods have been removed, the diet of an IBS sufferer can be further manipulated to reduce discomfort. For instance, to ease constipation the diet can be supplemented with high fibre foods (all fruit and vegetables, brown rice, cereals, seeds and nuts) and foods rich in magnesium (all green vegetables). Tea should be reduced due to the effects of tannin and if possible the use of painkillers should be reduced, as these can also cause constipation. Through dietary regulation, together with regular massage, exercise and a reduction in stress, the symptoms of IBS can be greatly improved.



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It is also the case that foods which the body is intolerant to can cause the digestive process to go awry, leading to painful conditions such as migraine. A migraine attack does not characteristically occur immediately following the ingestion of sensitive foods, but rather later on in the digestive process. When the sensitive food enters the liver the chemical action of the enzymes that break down the food is altered and causes the release of substances that cause vasodilation (vasodilating amines). The two most common vasodilating amines are tyramine (found in cheeses) and phenylethylamine (found in chocolate). Other similar chemicals are found in citrus fruits (synephrine), alcohol, milk and to a lesser extent pork, bananas, onions, fish, wheat flour, caffeine and mono-sodium-glutamate (MSG). It is for this reason that the above foods are the main triggers of migraine.

As with IBS, the onset of migraine is not always due to food and stress, hormones and tiredness are also important influences, together with a myriad of others. However, in many cases identifying and eradicating foods that are triggering vasodilation can free the sufferer from migraine, or at least reduce the intensity and frequency of migraine attacks.

Another painful disorder that is often (although not always) associated with food intolerance is eczema. In this case, the ingestion of a sensitive food manifests itself as a sore rash and dry, itchy skin: the outside sign that something is wrong on the inside. As with IBS and migraine, foods that the person is sensitive to should be identified using a process of elimination and reintroduction. Reintroducing a sensitive substance will cause rashes to reappear or worsen. This form of dietary manipulation is crucial in the control of eczema and has proven to be the most effective method of any treatment. The most common foods thought to affect eczema are cows milk, eggs, gluten, wheat, nuts and fish. It has also been postulated that the steep rise in the number of people suffering from eczema in the last 15 years is due to the great number of additives now found in food and the contamination of our food with chemicals and pesticides. Therefore, natural and organic foods may go some way to easing the pain of eczema, as can the use of certain herbs (nettles, centaury, red clover and saffron), and herbal and Bach flower remedies.

## 2. Immunity

If our bodies are poorly nourished our immune systems may become weakened leaving us more susceptible to painful disorders and diseases. The functional components of our immune systems (including T and B lymphocytes and granulocytes) rely on the nutrients in our diet for their production and maintenance. For example, the thymus gland requires a supply of zinc to enable it to function and to produce the important immunological T cells. Without the zinc that we ingest in our diets the thymus would have difficulty producing T cells and our immune response would be compromised. Zinc can be gleaned from echinacea, devils claw, bread, cereals, meat, poultry, fish, seafood (particularly oysters), dairy products, nuts and seeds.

Therefore, a key to maintaining a healthy immune system is to provide it with sufficient nutritional support.

Painful conditions that have a strong affiliation with suppressed immunity include allergies, rheumatoid arthritis and multiple sclerosis. Additionally, the rate at which tissues are able to heal will be reduced if the body's natural defences are inhibited, prolonging pain derived from trauma, scarring, inflammation and injury.

In the case of allergies, the immune system provides an abnormal response to certain pathogens, which can lead to local discomfort, severe pain and sometimes systemic pain. In some instances an initially harmless allergy can eventually develop into full-blown degenerative disease. However, with healthy dietary management we can influence the response of the immune system and prepare it to cope more effectively with toxins or invaders.

In the case of rheumatoid arthritis (RA) maintaining a healthy, well-nourished immune system can go some way to relieving pain and discomfort. It is an autoimmune disease and, as such, any measures to improve the function of the immune system is bound to help and, as discussed above, dietary manipulation is one factor that must be considered.

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### 3. Easing Pain through Diet

Not only can food cause or exacerbate pain it can be used with great effect to ease pain. A striking example of this positive link between diet and pain is multiple sclerosis (MS). MS causes a breakdown of the myelin sheath surrounding nervous tissue leading to sensory and motor dysfunction and considerable pain. It has been found that the myelin sheath (and also the red and white blood cells, platelets and plasma) of MS sufferers is deficient in poly-unsaturated fats, when compared to an MS-free person. Poly-unsaturated fats are required by our bodies to allow tissues to grow and repair and they needed to maintain the structure of nervous tissue, which, in MS, is under attack. Consequently, a great improvement has been recorded in MS patients who have cut saturated fats (animal fats) out of their diets and replaced them with an abundant supply of poly-unsaturated fats, as found in fish, liver and green, leafy vegetables. Other than this, MS can be eased with a healthy, balanced diet free from processed or junk foods and substances which cause intolerance or allergy (commonly milk).

Rheumatoid Arthritis (see earlier) also causes painful chronic inflammation, which leads to the production of cytokines. Cytokines increase the resting metabolism and rate of protein breakdown in a person with RA. It is thus necessary for an RA sufferer to increase their calorie and protein intake to meet the nutritional requirements of increased metabolism. Also, many RA sufferers take strong medication, e.g. methotrexate, which can lead to deficiencies in nutrients such as folic acid, vitamins C, D, B<sub>6</sub>, B<sub>12</sub>, E, calcium, magnesium, zinc and selenium. For example, supplementing the diet with foods rich in vitamin E and selenium, which are anti-oxidants, can help to reduce the damage done to joint linings by free-radicals and so reduce swelling and pain.

A large percentage of our population is also the victim of pain from osteoporosis. Osteoporosis brings about a weakening of the bones due to slow, insidious loss of calcium, leaving them very vulnerable to fracture. The calcium lost from the bones is drawn from them in an attempt by the body to maintain blood calcium levels and so, if blood calcium levels are instead maintained through dietary manipulation, osteoporosis can be halted or reversed. Foods high in calcium include fish, all green vegetables, red and orange vegetables, soya, seeds and nuts. Additionally, excessive salt, sugar and caffeine can cause abnormally large amounts of calcium to be excreted in the urine. Alcohol and tobacco cause a loss in bone mass and a diet high in protein will increase blood acidity causing calcium to be pulled from the bones to act as a buffer. There is also a delicate balance between calcium and phosphate levels, where too much phosphate can inhibit calcium absorption.

Thus increasing calcium in the diet (along with weight-bearing exercise), and reducing alcohol, sugar, salt, caffeine, tobacco, protein and phosphates can reduce the painful impact of osteoporosis significantly.

### CONCLUSION

As demonstrated in the preceding text, the ways in which foods can cause, exacerbate, diminish or terminate pain are numerous. In many cases the road to improving painful conditions will involve a combination of three main subjects discussed: seeking out and eliminating sensitive foods; eating a balanced diet to boost immunity and manipulating certain dietary components to relieve specific problems.

The requirements of each person will be different depending on their condition, habits, age etc, but whatever the cause, or experience of pain, the possible benefits that could be reaped through dietary manipulation should not be overlooked.

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**SALLY BROWN DARM RMT SMTO is an Advanced Remedial and Remedial and Sports Massage Therapist practising in Nairn. Tel. 01309 641491. Congratulations to Sally on the recent birth of her baby!**