

Miracles of mindbody medicine

A small but growing number of healthcare professionals believe that chronic pain is often a psychophysical phenomenon that can respond well to psychological treatment. **Alan Gordon** and colleagues tell the story of tension myoneural syndrome (TMS)



Everyone has experienced physical pain at one point or another, but for some that pain is severe and persistent. Albert Schweitzer once said that 'pain is a more terrible lord of mankind than even death itself' – and many people who experience pain chronically would likely agree.

For years the medical community has struggled to understand the cause of many forms of chronic pain, which is prevalent worldwide. In the USA alone, over 70 million adults suffer from chronic pain², resulting in a cost to the public of over \$100 billion annually³.

Common treatments for chronic pain include acupuncture, transcutaneous

electrical nerve stimulation, ultrasound, nerve blocks, physical therapy, trigger point injections, medication, and surgery⁴. Evidence has shown that these interventions have limited effectiveness with regard to long-term pain relief⁵. One of the world's foremost pain experts, Dr Patrick Wall, recently wrote that it was time for a paradigm shift in the way we understand pain¹. It is the aim of this article to provide a new perspective on the purpose of and treatment for chronic pain conditions.

The mindbody connection

In the late 1960s and early 70s, Dr John Sarno was the director of outpatient services at the Rusk Institute of Rehabilitation Medicine, New York University Langone Medical Center.

Treating clients primarily with neck, shoulder, and back pain, he practised conventional pain management techniques and grew frustrated with the results, which were unpredictable and inconsistent. More troubling still was the fact that clients often did not have pain where one would expect, given the findings of their physical examinations⁴.

Sarno began to take a deeper look at his clients' medical histories. He was surprised to find that 88 per cent of them had a history of one or more tension-related conditions, such as ulcers, headaches, or irritable bowel syndrome. He began to wonder, 'Is it possible that the bulk of musculoskeletal pain is not the result of structural damage, but is in fact tension-related?'⁶

The puzzle of pain

For over a century, physicians and psychologists have been interested in the connection between the mind and physical pain symptoms. Sigmund Freud, Jean-Martin Charcot, and Franz Alexander wrote extensively on the subject⁷. But only recently has research started to explore the depth of the connection.

Whiplash

Whiplash is the term used to describe head or neck pain resulting most often from a rear-end traffic collision. Research has shown that about 10 per cent of whiplash injuries result in permanent disability⁸. The director of the Association of British Insurers recently reported that whiplash had become an epidemic in the UK⁹, while in Norway two per cent of the population have chronic disability as a result of the injury¹⁰. The medical community has been confounded by this phenomenon, as there is no structural reason why this condition should persist and become chronic¹¹.

In an attempt to understand this enigmatic syndrome better, a team of researchers turned to Lithuania. In Lithuania, the general public has little

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awareness about the potentially disabling consequence of whiplash injury. The researchers were interested in whether this lack of awareness would impact on the syndrome's prevalence. They interviewed 202 collision victims, as well as 202 control subjects. Their findings stunned the medical community. Not a single collision victim had persistent head or neck pain as a result of their accident¹². The syndrome simply did not exist, prompting one medical journal to publish an article entitled, 'The best approach to the problem of whiplash? One ticket to Lithuania, please'¹³.

The surprising results of the Lithuanian study led a group of researchers to hypothesise that the cause of chronic whiplash was unrelated to physical injury. To test this theory, they set up an experiment where 51 volunteers were involved in a placebo collision. The study involved a simulated car crash, with corresponding sights and sounds to make it appear to the subjects that an accident had taken place, though there was virtually no physical impact on the body. Three days after this placebo collision, 20 per cent of the study subjects reported symptoms of whiplash, and four weeks after the experiment, 10 per cent were still symptomatic. The mere thought that one was in an accident was sufficient to bring about pain in these subjects. Furthermore, the researchers found that psychological factors were highly predictive in determining who would develop pain¹⁴.

Back pain

In the USA, low back pain is second only to the common cold as the reason cited by patients for seeking medical care¹⁵. But despite the fact that manual labour has decreased, and medical technology vastly improved, back pain is far more prevalent than it was 40 years ago¹⁶. Indeed, between 1964 and 1994, the rate of disability claims related to low back pain increased by 14 times the rate of population growth¹⁵.

Although magnetic resonance imaging (MRI) is often used to diagnose the source of back pain, it is an ineffective assessment tool. Authors of a New England Journal of Medicine article found that 64 per cent of people with no back pain have disc bulges or protrusions, and concluded that such spinal abnormalities are often incidental and unrelated to pain¹⁶. Further studies have indicated that there is no relationship between lower back pain and disc degeneration¹⁷. In fact, 85 per cent of back pain has been found to have no apparent physical cause¹⁸. Like whiplash, the enigma of chronic back pain has continued to puzzle the medical community.

A group of researchers at the University of Washington shed some light on this phenomenon. In one of the largest studies ever conducted on back pain, the investigators found that psychological factors were more predictive of the onset of back pain than any of the physical variables analysed. Of particular interest, they found that subjects who stated that they 'hardly ever' enjoyed their work tasks were two and a half times more likely to report back pain than subjects who 'almost always' enjoyed their work tasks.¹⁹

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Tension myoneural syndrome

After surveying the research on musculoskeletal pain (see box opposite) and meeting with thousands of clients, Sarno concluded that the majority of neck, shoulder, and back pain syndromes were not the result of nerve, muscle, or ligament damage, but rather the consequence of psychological processes. He referred to the condition as tension myositis syndrome (TMS⁶, recently renamed tension myoneural syndrome). In addition to musculoskeletal pain, Sarno found that fibromyalgia, repetitive strain injury (RSI), headaches, tendonitis, gastrointestinal disorders, pelvic pain, and various other pain syndromes were also physical manifestations of the same underlying psychological process^{4,7}.

In 1979, Sarno began bringing clients with medically unexplained symptoms together for seminars on the nature of their pain. They covered the onset of TMS pain, its underlying purpose, how it is perpetuated, and the steps necessary to overcome the symptoms. Often, this psychoeducation alone was enough to bring relief to long-time pain sufferers. In some cases, he referred clients to psychologists specialising in TMS for further treatment^{4,6}.

Physiology of TMS

When pain sufferers are initially given a diagnosis of TMS, a common response is, 'Are you saying that it's all in my head?' The answer is an unequivocal, 'No'. Although the origin of the pain is not structural in nature, the pain is most definitely real^{4,6,7}.

John Sarno theorised that the autonomic nervous system is responsible for the great majority of chronic pain conditions. This system controls the circulation of the blood in the body: for example, an increase of blood flow to the cheeks when a person is embarrassed; a physiological reaction to a psychological trigger. The autonomic nervous system can also *reduce* blood flow to certain muscles, nerves, ligaments and tendons in the body. When this occurs, there is less oxygen available to the tissues, and the result will be symptoms, such as pain, numbness, tingling, and sometimes weakness⁴. Various studies have supported this hypothesis^{20,21,22}.



When diagnosed with TMS, clients are told that their pain, although quite real, is not caused by structural damage, but is a physical response to a psychological process. In other words, the mind is responsible for generating the pain. This of course begs the question: *Why?*

The purpose of TMS pain

Our bodies often try to help us in ways that are difficult to understand. Anxiety attacks, for example, are often unwelcome and burdensome, but the body's underlying goal in producing one is to increase the chances of survival against a perceived threat²³. The result may be unpleasant, but the intent is noble. Our bodies are trying to help us.

It is the same with pain. In 1918, psychiatrist Henry Maudsley wrote that 'The sorrow which has no vent in tears may make other organs weep'²⁴. When our habitual ways of coping psychologically are overwhelmed, we are capable of somaticising psychological pain²⁵. In such cases, the mind senses that the emotions are too painful to experience, so it attempts to protect the psyche. Experiencing the pain physically, as terrible as it may feel, is more tolerable than feeling the depth of the psychological pain.

This is primarily an unconscious process. Neuroscientist Paul Whelan wrote that 'Most of what we do every minute of every day is unconscious'²⁶. Because of this, many people are not aware that they have repressed emotions. In fact, when many TMS

clients are initially interviewed, they report that psychologically they are 'feeling fine'. It is only on further inquiry that emotional pain is discovered.

Due to a variety of life experiences, certain emotions have the capacity to become 'off limits.' For example, a child who grows up with an alcoholic mother may learn that anger is too scary. An adolescent who was not allowed to fully grieve her father's death may learn that sadness is not acceptable. TMS clients avoid a variety of feelings, including anger, sadness, helplessness, dependency, envy, rage, guilt, even happiness.

Sarno and the psychologists he worked with found that when TMS clients were focused on their physical pain, they were less apt to focus on deeper psychological pain⁷. Many if not most people have experienced the process of distracting themselves from difficult emotions. To relieve anxiety or depression, people overeat, smoke, drink alcohol, use drugs and bite their fingernails. All these activities serve to shift a person's focus from their emotional pain to a different sensation. The generation of physical pain is simply the mind's way of shifting this focus for us.

Treatment of TMS

Before a diagnosis of TMS is given, it is essential that a physician rules out a purely physical cause for a client's pain symptoms. Once TMS has been clinically diagnosed, the client's acceptance of the diagnosis is an integral part of recovery. This is because as long as a client continues looking at the pain physically, it will continue to serve its psychological purpose⁷. One of the roles of the TMS practitioner is to help the client look at their pain as the somatic expression of underlying psychological processes. This is done by educating the client with regard to the effects of emotions on the body, as well as pointing out correlations between the physical pain and emotional issues (E Sherman, personal communication, 9/5/09).

One of the primary goals of TMS treatment is to help clients reframe the meaning of their pain⁴. Instead of focusing on the pain with a sense of frustration, fear, and powerlessness, the client learns to use the pain as a guide to introspection⁷. *My pain just increased, what is going on psychologically right now?* The symptoms often serve as a signpost to unaddressed emotional issues.

The pain exists for a reason. It is a manifestation of emotions that, due to experiences generated throughout one's life, have become difficult to tolerate. An essential part of treatment is to help clients learn to recognise and identify these difficult to tolerate emotions, and eventually accept and express these painful parts of themselves (E Sherman, personal communication, 9/5/09).

As a result of Sarno's treatment programme, many of his chronic pain clients began showing significant improvement. Indeed, he had a much higher success rate treating pain psychologically than he had had years earlier utilising a variety of physical interventions. However, after

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publishing his findings in the late 1970s and early 1980s, and despite the success of the TMS model, he encountered significant resistance from the medical community, because the concepts it emphasised contradicted mainstream medical thinking⁷. There was little belief at the time that the mind was capable of such profound effects on the body. As a result, TMS treatment remained relatively unknown.

Evidence for TMS

Sarno conducted three formal retrospective studies at the Rusk Institute in 1982, 1987, and 1999 to assess the effectiveness of TMS treatment. In all, 371 randomly selected chronic pain clients were interviewed six months to three years after treatment to determine their level of pain and functional ability. A total of 72 per cent reported being free or nearly free of pain with unrestricted activity, while 16 per cent reported some improvement, and 12 per cent little to no improvement^{4,6,7}. One of these three studies was unique in that it included only clients with documented herniated discs. Over a third had been previously advised by physicians to undergo surgery. However, when interviewed between one and three years after TMS treatment, a remarkable 88 per cent of these clients reported being free or nearly free of pain⁴.

Howard Schubiner of Providence Hospital, Michigan, in conjunction with researchers at the University of Michigan, recently conducted the first randomised controlled study of TMS treatment. The study involved 45 clients with fibromyalgia, 24 of whom were treated with a TMS approach and 21 of whom were assigned to a wait-list control group. After six

months, the intervention group had significantly lower pain severity and higher self-reported physical function.

Further randomised controlled trials comparing the effectiveness of TMS treatment to other pain treatment models are currently underway (H Schubiner, personal communication, 28/7/09). In addition, several functional MRI (fMRI) studies (which measure brain activity) to assess the pain pathways in the brain before and after TMS treatment are under discussion. These and other studies aim to provide further scientific evidence for the efficacy of TMS treatment.

The future of TMS

For years, dozens of physicians and psychologists have been treating pain clients from a TMS perspective throughout the USA and Europe. In March 2009, they came together in Ann Arbor, Michigan, for the first professional TMS conference. At this conference, research was presented, theories discussed, and plans put into place to bring greater awareness of TMS to the medical community and populations at large.

At present, a formal TMS Association is in development, an accreditation programme is in the works, and funding for research is being generated. The second professional TMS conference is scheduled for March 2010.

When John Sarno first introduced the concept of TMS, the mind and the body were looked at primarily as independent entities. Physical symptoms were treated physically, and psychological symptoms treated psychologically. Now, more than ever before, the scientific community is embracing the connection between the mind and the body: eminent neurobiologists are writing books on the benefits of meditation, prestigious universities are developing psychoneuroimmunology centres. Patrick Wall's call for a paradigm shift in the way we view physical pain is taking place.

TMS treatment is gaining momentum, and author and physician, Dr Marc Sopher, speaks for many when he writes: 'Ultimately, I am confident that TMS theory will become part of mainstream medicine

for the simple reason that it is correct, and more successful at alleviating pain than any other modality'²⁷. ■

Alan Gordon is a psychotherapist in Los Angeles, California, and specialises in the treatment of chronic pain.

He can be reached via email at alantgordon@yahoo.com

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