

Identifying and Treating the Underlying Causes of Pain by Dr. David Seaman

D.D. Palmer correctly alerted us to identify and address the underlying causes of disease. He stated in 1910: "The symptoms of disease are the expressions of abnormal functional activity – pathological physiology ... Impingements, poisons and intense thinking, auto-suggestion, unrelieved change of thought, insufficient rest and sleep, increase or decrease the moment of impulses. In the study of pathology we should look to the etiological factors which, by their exciting or debilitating effects, retard or liberate stored up energy, resulting in abnormal functioning and morbid structure ... the determining cause of disease are traumatism, poison, and auto-suggestion."¹

If D.D. were alive today, he likely would change some of his terminology to reflect the modern day; however, his basic position that "pathological physiology" leads to disease or symptom expression has been bolstered by years of research. Examples of this can be identified if we consider spine-related pain, which is the most common symptom that presents to a chiropractor's office.² Perhaps the best resource that orients us toward evaluating and managing the causes of **spine pain** are the excellent chapters in Dr. Tom Souza's text: the general approach to musculoskeletal complaints, neck and arm complaints, thoracic complaints, lumbopelvic complaints and headaches.³

Causes of Pain Expression

Joint complex dysfunction: Dysfunction of any tissue in the joint complex is capable of generating pain, as all spinal tissues are heavily innervated with nociceptors. The most common pain generators include the joint, disc, nerve and muscle, to which we apply adjustments and other manual therapies.⁴⁻⁵

For many patients, substantial pain relief is derived from manual care, such that the use of medications can be eliminated or substantially curtailed. In these cases, we can envision that the pain was caused largely by a previously unaddressed mechanical problem, rather than a chemical/inflammatory problem. For the patients who do not respond adequately to adjustments and other forms of manual care, we have to look to other causes of pain expression. The most common appear to be functional instability, psychosocial issues, diet-induced inflammation, and various lifestyle choices.

Functional instability: Deconditioning of the stabilizing muscles of the spine can lead to a state of functional instability that can participate in chronic pain expression. A proposed mechanism is that "functional instability" creates a state in which the common pain-generating tissues of the joint complex now begin to generate nociceptive impulses that lead to pain.

In many cases, straightforward stabilization, **postural** and proprioceptive exercises can be used to substantially modulate pain expression. Dr. Craig Liebenson's text on rehabilitation of the spine is our most thorough resource in this area.⁶

Psychosocial issues: D.D. Palmer would likely have viewed psychosocial issues under the heading of "auto-suggestion," which he characterized as intense thinking that leads to psychosomatic expressions of pain and other symptoms. A recent study demonstrated how susceptible we are to thinking ourselves in and out of pain.⁷ All patients underwent microdiscectomy for radicular symptoms. The only difference in patient management involved showing half of the patients their excised disc fragments. Those shown the fragments used less medications and had less back pain, limb weakness and paresthesia. The authors concluded that "presentation of excised disc fragments is a cheap and effective way to improve outcome after lumbar microdiscectomy."

Multiple outcome assessment tools are available to identify patients who are "catastrophizing" themselves into chronic pain. The best resources we have that discuss these tools are texts by Drs. Souza, Liebenson and Steven Yeomans.⁸ For patients with benign pain, the most important measure we can add is reassurance.

Diet-induced inflammation: While a bit confusing because of how pain and inflammation are sometimes taught and described, it is important to understand that inflammation chemistry is identical to pain chemistry. Over the years, I have written many articles for *Dynamic Chiropractic* that discuss this relationship. Dietary and nutritional supplement details can be found in chapters I wrote in the previously mentioned texts by Hammer⁵ and Liebenson.

In essence, the current American diet consists of inflammatory foods that lead to the overproduction of inflammatory chemicals that cause pain. The culprit foods include sugar, refined grains and seed oils, which provide approximately 60 percent of calories for the average American.⁹ Replace these pro-inflammatory calories with anti-inflammatory foods including vegetables, fruits, nuts, and omega-3 seeds, such as chia and hemp, and the problem of diet-induced inflammation is easily corrected.

Multiple supplements can be used to help reduce the chronic inflammatory state that causes pain. The foundational supplements include magnesium, vitamin D, fish oil, probiotics, fiber, lipoic acid, acetyl-L-carnitine, coenzyme Q₁₀, and botanicals such as ginger, turmeric and boswellia.

An excellent example of a diet-induced pro-inflammatory state is the metabolic syndrome X, an insulin-resistant state that is first caused by inflammation and then serves to perpetuate inflammation.¹⁰ While syndrome X is typically considered a cause of heart disease and diabetes, it turns out that individuals with **impaired glucose tolerance** are at an increased risk for expressing musculoskeletal pain syndromes.¹¹⁻¹⁵

The possible extent of syndrome X-promoted pains should not be underestimated. Studies suggest that 35 percent of individuals over the age of 50 and 45 percent of individuals over the age of 60 suffer from syndrome X.¹⁶ The nutritional approach is the same as described above. Anti-inflammatory foods and weight loss can promote insulin sensitivity.¹⁷ Key supplements to improve insulin sensitivity include magnesium, vitamin D, omega-3 fatty acids, lipoic acid and chromium.¹⁸⁻²²

Lifestyle Issues That Add to the Inflammatory State

A well-known promoter of back pain is smoking. A likely mechanism for this is that smoking adds to the body's inflammatory burden.²³ Adequate sleep is also important. Inadequate sleep promotes a chronic inflammatory state.²⁴ A recent study highlighted that less than six hours or greater than nine hours of sleep may augment pain expression.²⁵

Our Larger Role: Addressing the Cause of Pain Expression

While our empathic focus should be to address the needs of patients, that is, to reduce their pain experience, our interventional focus needs to be on addressing the underlying cause of the pain expression. Fortunately, a great many underlying causes respond to the natural interventions within the scope of chiropractic practice.

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