

## How Might Thoughts and Diet Influence Nociception and Subluxation?

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So-called bone-out-of-place (BOOP) philosophers perpetuate the notion that a subluxation causes pressure on motor nerves and inhibits the flow of mental impulses from the brain to tissue cells. To my knowledge, this notion is not supported by available literature. As a consequence of this one statement, reactive BOOPers may respond by accusing me of selling out to the allopathic model and concurrently conspiring to destroy BOOPer (so-called straight) chiropractic. If BOOPers would only update their data bases from 1920 to 1994, they would find that the mental impulse concept is supported by current literature but not necessarily in the way a zealot BOOPer might think and want.

If you currently embrace BOOP philosophy, ask yourself the following questions:

- From where in the brain do mental impulses originate?
- In what manner do mental impulses travel down the spinal cord to the motor nerves?
- What precisely do these mental impulses do when they get to the tissue cell?

Unfortunately, only nebulous, philosophical answers to these questions are available. Glib responses like, "Read quantum physics," "Read Depak Chopra," "Go to a DE seminar," or "Call up Dr. Fred Barge" do not provide answers to these questions. There are logical answers to these questions. However if BOOPers refuse to pull themselves out of BOOPdom, they will never know the answers to these questions and will forever be resentful of non-BOOPers. They will continue to suffer from BOOP paranoia syndrome, and will never begin to appreciate the contemporary implications of this basic philosophical tenet of chiropractic.

Figure A demonstrates a proposed mechanism by which nociception can result in pain, autonomic symptoms, vasoconstriction and muscle spasm. Vasoconstriction and muscle spasm can initiate and perpetuate the subluxation complex. Vasoconstriction is an example of sympathetic hyperactivity. Sympathetic hyperactivity may be involved in the pathogenesis of various visceral disorders such as neurogenic pulmonary edema, peptic ulcers and pancreatitis.<sup>1</sup> In the upper left hand corner of Figure A there is a sagittal section of the brain, and projecting from it is the serotonergic descending inhibitory pathway (DIP). The DIP is known to descend down the dorsolateral funiculus and cause a pre-synaptic inhibition of the primary nociceptive neurons and a post-synaptic inhibition of preganglionic sympathetic neurons. The end result is reduced pain and reduced sympathetic hyperactivity. The DIP emanates from the nucleus raphe magnus and is controlled by activity in the periaqueductal gray (PAG) area in the midbrain. Consider the following quote regarding the PAG:

Now, everyone knows that there are yogis who can train themselves so that they do or

do not perceive pain, depending on how they structure their experience. There are other people, called mothers, who have done the same thing. What seems to be going on is that these sort of people are able to plug into their periaqueductal gray. Somehow they gain access to it--with their consciousness, I believe--and set new pain thresholds. Note what is going on here. In these situations, a person has an experience that brings with it pain, but a part of the person consciously does something so that the pain is not felt. Where is this consciousness coming from--this conscious I--that somehow plugs into the periaqueductal gray so that he or she does not feel a thing.<sup>2</sup>

Clearly in certain conditions, mental impulses are required to activate the periaqueductal gray area. This means that consciously-driven and unconsciously-driven mental impulses may ultimately prove to be a means by which sympathetic-induced end organ damage can be prevented. Despite the fact that this explanation is different than what zealot BOOPers want to hear, I do not think that Dr. B.J. Palmer would have put up his cross to this information. He would probably be gratified to know that modern science helps to support old philosophical tenets, especially when we consider the mechanoreceptor axons (which are stimulated by the adjustment) travel into the brainstem and stimulate the periaqueductal gray.

Contrary to what staunch BOOPers might think, very few nonBOOPers have problems with the D.D. and B.J. Palmer's original tenets. The original philosophical tenets were suppositions that were based on observation and an insufficient amount of scientific data to explain treatment outcomes...no big deal. The big deal is the fashion in which die-hard zealot BOOPers choose to cling to outdated theories which have nothing to do with original philosophical tenets of chiropractic. This particular BOOPER blooper has created serious problems for the chiropractic profession as evidenced by various media stories.

Another serious BOOPER blooper is clearly demonstrated in the following quote:

I often say to Chiropractors -- thick or thin, short or tall, exercise daily or not at all, eat at McDonalds or dine at the Ritz ... it makes no difference, subluxation free you are healthy.<sup>3</sup>

This quote in and of itself is a blatant admission of ignorance. It might even be viewed as a desperate call for help from the subconscious. Regardless of the reason for this anti-nutrition statement, such an approach echoes the therapeutical allopathic model of treating disease which calls for minimizing the importance of nutrition in the healing process. The minimization of nutrition has been one of modern medicine's biggest bumbles, and this particular BOOPER would have chiropractors follow the same path as the medics. Thank you very much, but no thank you. Most of us non-BOOPers choose to treat patients in a conservative holistic fashion, which includes the chiropractic adjustment, nutrition, exercise, and stress management. The combination of these four factors provides the body with the best chance to heal itself innately.

Figure A can help us to understand the manner in which poor nutritional habits participate in the pathogenesis of the subluxation complex. In this article we will focus on prostaglandin E-2 (PGE-2) because it powerfully sensitizes nociceptors to other irritants. Of importance to note, is that it has been known since 1971 that aspirin inhibits PGE-2 production. The idea that we should not care about how the adjustment works because no one knows how the aspirin works is foolish and an impossible position to defend. This has been a perennial BOOPER and nonBOOPER blooper. Our collective ignorance demonstrates that we actually have much more in common than we are often led to believe.

The precursor for PGE-2 is arachidonic acid. Arachidonic acid comes prepackaged in animal meats, chicken, shell fish, and dairy products. These foods make up the diet of most Americans including

chiropractors and their patients. Whenever there is tissue injury, arachidonic acid is released from local cell membranes and is promptly converted into PGE-2, which subsequently helps to drive the inflammatory process and powerfully sensitizes local nociceptors and the reflexes that promote subluxation. Green vegetables and cold water fish, in particular, contain fatty acids that are precursors for PGE-3 which antagonizes the action of PGE-2. There are also special supplements which help to inhibit the production of PGE-2, and specific ratios by which we can consume macronutrients that can help to inhibit the production of PGE-2. Thus, there appears to be a nutritional method for the prevention and treatment of the subluxation complex. Clearly, BOOPerisms like the one cited earlier should be eradicated from our minds and should not be introduced into the minds of unsuspecting and vulnerable students.

1. Korr, I., Sustained sympatheticotonia as a factor in disease, p.229-68, in Korr, I., editor, *The Neurobiologic Mechanisms in Manipulative Therapy*, Plenum Press, New York, 1978
2. Pert, C., The wisdom of the receptors: Neuropeptides, the emotions, and bodymind, *Advances* 3(3):8-16, 1986
3. Barge, F., *One Cause One Cure*, p.93, LaCrosse Graphics, LaCrosse, WI, 1990

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