How to Naturally Manage Pain: Pulsed Electromagnetic Field Therapy

by Anne Zauderer, DC

PAIN!! Just the sound of it can invoke a horrible, gut-wrenching feeling. For as much as we know about pain and ways to mediate it, it is still somewhat elusive and mysterious. What is it that causes the experience of pain? And more importantly, how do we control it? This is the million dollar question.

Pain is the most common symptom for which Americans seek medical care. Painkillers are some of the most heavily used and abused prescriptions on the market. According to IMS Health, it is estimated that 92 million prescriptions are written per year for narcotic painkillers alone. These medications have a long list of side effects, most notably the propensity for addiction. According to the CDC, nonmedical misuse of prescription narcotic painkillers costs those who are insured about $72.5 billion per year in health care costs. Narcotics are only one classification of painkillers. Patients are also prescribed corticosteroids, antidepressants and anticonvulsants for pain, as well as having a myriad of over-the-counter options. All of these carry with them the burden of unwanted side effects.

THE PRICE OF PAIN

The burden of the cost of pain on our society is overwhelming. According to Gatskin & Richard (2011), the combined health care and lost productivity costs due to chronic pain per year are between $560 billion and $635 billion. This ranks pain as more expensive than heart disease, cancer and diabetes.

Not only does pain cost us through direct health care costs, but also in missed work, decreased productivity, decreased quality of life and increased numbers of Americans dependent upon disability. The number one reason for long-term disability is arthritis and other musculoskeletal complaints, including low back pain and hip pain.

NO PAIN, NO GAIN

Pain is a necessary evil. Acute pain is a communication that an action is needed. Pain is sensed by the body by peripheral nociceptors that communicate that message in ascending pathways to the brainstem and higher cortical structures. Whether it’s removing your hand from a hot stove or resting after an acute sprain injury, our body...
uses pain to communicate a message. Different types of pain communicate different messages. Generally speaking, the following are some of the messages our pain is telling us:

- **Nerve pain**—burning, tingling, numb, shooting, usually follows a dermatome pattern
- **Muscular pain**—dull, achy, sharp with movement, relieved with rest, can be reproduced by touching/moving the area involved
- **Visceral pain**—diffuse, nauseating, constant, sometimes refers to muscular structures and is unrelieved with rest
- **Joint pain/arthritis**—sharp, localized, constant, reproduced with movement of the joint, associated swelling and redness of the joint

The point at which pain becomes pathological is when it turns chronic. Traditional definitions of chronic pain have a duration of at least 3–6 months and extend beyond a reasonable period where healing should take place. Chronic pain can be caused by an ongoing insult such as degenerative arthritis, chronic inflammation and/or a chronic infection. However, chronic pain can also persist in the absence of an insulting injury. It is thought that chronic pain can be a malfunction at a few different points in a neural pathway.

**THEORIES OF CHRONIC PAIN**

One theory of chronic pain is that peripherally, persistent activation of nociceptive transmission can have a “wind up” effect. This leads to a lowering of the threshold for pain signals to be transmitted. This disruption of communication can lead to the development of patterns and more easily transmit the perception of pain signals. This would be like hitting your thumb over and over again with a hammer. The body learns to “expect” the pain and so all you would need to do is to start swinging the hammer toward your thumb and you would probably experience a degree of pain.

The newest research theorizes that chronic pain is more likely a byproduct of processing malfunctions in the brain. There is not one centralized area of the brain that perceives pain. This is why the perception of pain varies significantly from person-to-person. The path that pain signals take in the brain is largely based on learned behaviors and/or our genetic inheritance of:

- coping skills
- fears
- anxiety
- stress management
- motivation and/or propensity for depression

MRI studies have shown that people who have chronic pain tend to have altered pathways for processing pain. If pain transmission in the brain was like a train, people who have chronic pain are on the local line. They are making more stops and integrating more information into their perception of pain. Also, the “extra stops” in the brain that their pain processing is taking are in the areas of the brain associated with emotional processing. Therefore, people who are depressed or anxious could be connecting their pain to those feelings, which can alter their perception of pain.

Now this isn’t to say that all pain is a figment of the imagination, because it most definitely is not! Pain is a very real thing. What the central modulation of pain in the brain does is either turn up or turn down the volume of that pain. The ability to do that is largely based on a person’s emotional state.
HOW TO BREAK THE CYCLE OF CHRONIC PAIN

Here at Riordan Clinic, we see patients every single day who come to us with chronic pain. We look at them from a nutritional, structural and emotional perspective. Most often chronic pain is a combination of all of these factors and usually takes a multimodal approach to treat. However, what can be done to immediately break the cycle of pain and address some of the underlying structural causes of either acute or chronic pain?

To treat structural pain we use a combination of gentle chiropractic care to address the biomechanics of the body and Pulsed Electromagnetic Field Therapy (PEMT) to reduce inflammation and promote healing at the structural level.

PEMT

One of the “big guns” in our arsenal to manage pain is Pulsed Electromagnetic Field Therapy. There have been more than 2,000 peer-reviewed, double-blind studies done all over the world on the benefits of this therapy.

PEMT has been shown to be effective at reducing both short-term, acute pain and long-term, chronic pain. It relieves pain by blocking pain signals, decreasing inflammation, increasing circulation and increasing cellular flexibility.

So how does this help with pain and healing? As early as the 1940s, magnetic fields have been shown to influence the permeability of our cell membranes. Healthy cells have a cell membrane that acts as a filter for the exchange of ions. In damaged cells, that filter is not working appropriately and it allows an increase in the flow of sodium into the cells. As a result, fluid follows the sodium and the cell becomes bloated and swollen. The application of pulsed electromagnetic therapy can help reestablish normal membrane potentials, which aid the removal of cellular waste and increases cellular oxygenation and nutrition.

PEMT can also lead to faster cellular and tissue regeneration in areas such as bones, cartilage, blood vessels, nerves and muscle tissue. When these areas are metabolically activated with PEMT and circulation is increased, more nutrients and oxygen are supplied and healing progresses faster.

Some of the other effects that PEMT has are:

- Increased production of nitric oxide
- Improved micro-circulation
- Increased ATP production by excitation of electrons
- Anti-oxidant regulation with increased circulation of available electrons
- Increased calcium transport and absorption for stronger bones, joints and muscles
- Enhanced cellular and tissue elasticity with increased collagen production
- Increased absorption of nutrients and pharmaceuticals
- Accelerated detoxification of cells and organs

Endorphins are a body’s natural pain reliever. These natural chemicals block pain signals from reaching the brain. Anxiety, stress, and depression are all associated with pain. Endorphins are produced by exercise, so getting your blood pumping for a sustained amount of time releases endorphins into the body system, providing some relief.

Heat is another natural way to manage pain. All forms of heat can work, for example, hot water bottles, heated gel-packs, electric blankets and hot baths. Benefits to using heat are that it increases the flow of heated oxygen and nutrients to affected areas. It can also suppress the pain signals that are sent to the brain.

Patient Profile

by Danae Baker, MA

Riordan Clinic staff had the pleasure of meeting a co-learner who had sustained a lot of sport injuries and had been in a car accident. These left him suffering with low back pain, a torn ACL, and a shoulder injury. For the last few years he has been living on narcotics that, unfortunately, don’t take away all the pain. The lasting effect of taking pain medication has caused him to add other drugs to help with the side effects. He had to resign from his job because he wasn’t able to operate heavy machinery. Over time his weight increased, adding more strain on his joints. After attending one of our Lunch and Lectures with a friend, he contacted the Clinic to become a patient.

A year has passed since his first appointment. After working and learning alongside the doctor, a diet plan was put together to help reach optimal weight. He received several sessions of pulsed electromagnetic therapy (PEMT), which helps with the pain that he was having and improves his quality of life. Over time he was weaned off the pain medication, obtained his optimal weight, and returned back to work. Happy body, happy life.

Here are some other natural ways to alleviate pain:

- Endorphins
- Heat
- Exercise

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On a cooler note, ice can act as a local anesthetic. It interrupts pain spasm reactions between nerves in affected areas by slowing down nerve impulses.

Some herbs, topicals and supplements have been shown to help reduce pain as well. Before you try any herbs or supplements, always discuss with your doctor first. A few examples are:

- **Aloe vera** (juice or gel)—helps relieve cramps
- **Cinnamon powder**—enhances body circulation
- **Ginger powder**—relieves chronic inflammatory pain and stiffness
- **Tea**—soothes skin burns
- **Turmeric**—natural pain killer for aches and pain
- **Epsom salts**—can help relieve pains and muscle cramps
- **Fatty acids, like fish oil and Omega gamma-linolenic acid (GLA)**—may help with joint pain and stiffness

IN SUMMARY

Pain is an important part of how our body communicates an underlying issue. We should not be so quick to medicate pain away without first exploring what exactly our body is trying to tell us! By addressing underlying structural and emotional issues, we can engage in the right activities and take the appropriate steps to help support our body in its ability to heal.


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There are many alternatives when considering avenues to manage chronic pain. Herbal Therapy is one area that is rapidly growing in popularity. Herbs rarely have an adverse side effect like many pharmaceuticals do and are now easy to access, thanks to the Internet.

When using herbs for pain management, please be reminded that anti-inflammatory herbs will not heal your condition itself, despite their pain-easing effects. Addressing the cause of chronic inflammation is essential when working your way toward optimal health; inflammation triggers pain and is a major risk factor for chronic diseases like cancer, cardiovascular disease, and diabetes.

Warnings aside, here are five herbs that combat inflammation and are all readily available online or at most health focused stores.

1) **White Willow Bark**—This herb contains salicin, the compound from which commercial aspirin was originally extracted. The analgesic actions of the bark are slower acting than synthetic aspirin, but results last longer. In addition to its pain-relieving properties, it is an anticoagulant, assisting in the prevention of blood clot formation and thickening of blood that may lead to stroke or heart failure. It has also been credited with the alleviation of acute back and joint pain, as well as osteoarthritis. Native Americans simply chewed the bark from the tree for natural pain relief.

2) **Boswellia**—Sourced from a resin found in the bark of frankincense trees, boswellia has been shown to thwart chemical reactions involved in the
creation of inflammation. Practitioners of Ayurvedic medicine have long used boswellia to treat arthritis; the herb may also benefit people with inflammatory bowel disease.

3) Bromelain—An enzyme extracted from pineapple stems, bromelain reduces levels of prostaglandins, hormones that induce inflammation. Bromelain may benefit people with arthritis and conditions marked by musculoskeletal tension (such as TMJ syndrome), as well as those suffering trauma-related inflammation. What’s more, the enzyme may promote healing in muscles and connective tissues. Some holistic health practitioners have prescribed patients to eat 8 whole pineapples for 10 days, and they claim their pain was reduced significantly.

4) Curcumin—An Ayurvedic remedy known to tame arthritis pain, curcumin is a compound found in the curry spice turmeric. In an animal-based study published in 2007, scientists discovered that curcumin could overpower pro-inflammatory proteins called cytokines. The compound may also help decrease pain associated with autoimmune disorders and tendonitis. This herbal news is a great reason to eat a little curry! Red Coconut Curry is one of my favorites.

5) Ginger—Sipping ginger tea not only helps relieve cold-related congestion, but supplementing with ginger may deliver other long-lasting health effects. Research indicates that ginger may calm arthritis pain by lowering your prostaglandin levels. One 2005 study even suggests that ginger could reduce pain and inflammation more effectively than non-steroidal anti-inflammatory drugs (such as aspirin). Ginger is available in most grocery produce sections, and ginger tea is quick and easy to make. Slice a thumb-sized bulb of fresh ginger, add to 4 cups of water, and boil for 5 minutes. Strain, add honey, lemon or your choice to taste.

If you consider the use of herbs for pain management, please consult a doctor or holistic health professional before you begin the regimen. Some herbs interact with drugs you are receiving for pain or other conditions you may be medicated for and the combination may harm your health when improperly administered.

Best to you in finding the relief you are searching for pain relief.

Sources:
WebMD.com
Secrets of Self Healing by Dr. Ni

"Caring for the whole person has always been our focus."—Marie Hunt, Owner

3100 N. Hillside, Wichita, KS 67219
316-927-4780 office
316-927-4781 dining room

"After his appointment, my 5-year-old son said tonight, 'That office I went to today was full of peace. It was peaceful.' So thankful for the care we get at Riordan."—S.V.
Health Is... Winners Announced!

Once again, dozens of area 5th graders compiled essays on what health means to them in hopes to be awarded one of 3 monetary prizes in Riordan Clinic’s 4th annual Health Is... essay contest. Judging is complete and the winners have been announced.

The 2013–2014 Health Is... essay contest was open to any 5th grade student in the Wichita area. Students were asked to write an essay communicating what health means to them. Essays were judged on originality, clarity, motivational impact, and emphasis on health (versus focus on disease). In years past, the top 3 essays were awarded. This year, the judges felt compelled to award prizes to the top 4 essays based on the criteria. Monetary prizes totaling $1900 have been awarded to the top entries and their supervising teachers during classroom ceremonies.

1st Prize
Sahvanna Bryson, Ms. Lynda Murphy at Woodland Health and Wellness
Elementary

2nd Prize
Abir Haque, Ms. Brandi Rayl at Bostic
Traditional Elementary

3rd Prize
Allison Tee, Ms. Jennifer Sinsel at Hyde
Elementary

3rd Prize
Khloe Kuckelman, Ms. Paula Stanley/
Mrs. Jennifer Meek at Isely Traditional
Elementary

Thank you to all who participated!

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How You Can Stay Healthy
by Sahvanna Lyn Bryson

I bet your parents told you to eat healthier a million times. You think it sounds appealing, but once you really start to eat healthier it really isn’t as good as you thought it would be. Well I am going to make that thought change by telling you facts and fun ways that you can stay healthy.

One way you can stay healthy is by getting lots of exercise. Running one mile can be boring, so instead of doing that you can play tag with some friends, go roller skating, or play your favorite sport. There are many ways to exercise while you are having fun.

Another way you can stay healthy is by eating right. For instance when you are hungry for a snack you can eat an apple or any kind of fruit or vegetable. At lunch and dinner you need to eat either fruits or vegetables. Getting enough vitamins is also important. Vitamins decrease your chance of getting sick, and they keep your body healthy.

Getting enough water to drink is important because your body is made of 70 percent water. If you don’t drink enough water you can get dehydrated. You need to drink at least 64 ounces of water a day.

Brushing your teeth and washing your body is also very important. Brushing your teeth keeps your teeth nice and strong it also helps keep the cavities away. Washing your body prevents you from getting germs. That is why brushing your teeth and washing your body is the right thing to do.

Getting enough rest is important too. The average kid needs between 8–12 hours of sleep. The average adult needs between 7–9 hours of sleep. If you don’t get enough sleep you will probably feel miserable throughout the day.

Keeping your mind active is also important. Reading books, playing games with strategy, and doing puzzles are some ways you can keep your mind active. The reason to keep your mind active is so that you can learn more and get smarter! So read those books and keep your mind active.

Be aware of stress! Stress can be caused by many different things. Stress can give you depression, anger, and poor judgment. Here are some ways you can reduce stress: eating right, getting enough rest, and getting plenty of exercise.

Another important thing you can do to stay healthy is by limiting the alcohol and cigarettes. Only put in your body what is healthy and avoid alcohol and cigarettes. This will decrease your chances of getting some kind of disease. The best thing to do is to not drink or smoke.

So keep that body nice and healthy and keep those germs away or as you can see there are some consequences. These ways of staying healthy are actually very important. Like I said take very good care of your body.

Please enjoy our 1st place essay, written by Sahvanna Bryson.
Woodland Health and Wellness
Elementary, USD259, Wichita, KS
Teacher: Lynda Murphy
YOU ARE INVITED!

Sunday, April 13, 2–5 p.m.

2:15 Update by Dr. Ron

Riordan Clinic
Bob Page Pyramid
3100 N. Hillside, Wichita, KS

Art Show and Sale by the artists of Gallery XII
(a portion of sales will benefit the Riordan Clinic)

Supplement Store Open
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Please RSVP at 316-927-4705 or reservations@riordanclinic.org

A UNIQUE GIFT IDEA

Have you been looking for a unique gift to recognize a family member or friend for Mother’s Day, Father’s Day, graduation or a birthday? Consider honoring them on the Gratitude Trail at Riordan Clinic where health, hope and healing exist in harmony with nature. Your personal message will be engraved on a brick or stone and installed on the trail. We will send you a photograph of the brick or stone once installed this summer.

The Gratitude Trail began 10 years ago when Riordan Clinic co-founder, Dr. Hugh Riordan, observed the physical effects of stress on his patients and also learned that stress is reduced by expressing gratitude. Since then, numerous co-learners and visitors have found tranquility and inspiration from walking the trail and reading the messages there.

Not only will you honor a special person in your life, your tax-deductible gift will support the education and research efforts of Riordan Clinic. For more information or to place your order, go to http://www.riordanclinic.org/giving. You may also contact Paula Smith, Director of Development at 316-682-3100 or psmith@riordanclinic.org.

Lunch & Lecture Series 2014

A Look Ahead…

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Dates, topics and titles are subject to change.

Call 316-927-4723 to reserve your spot for any of the above lectures or email reservations@riordanclinic.org. Reservations required.