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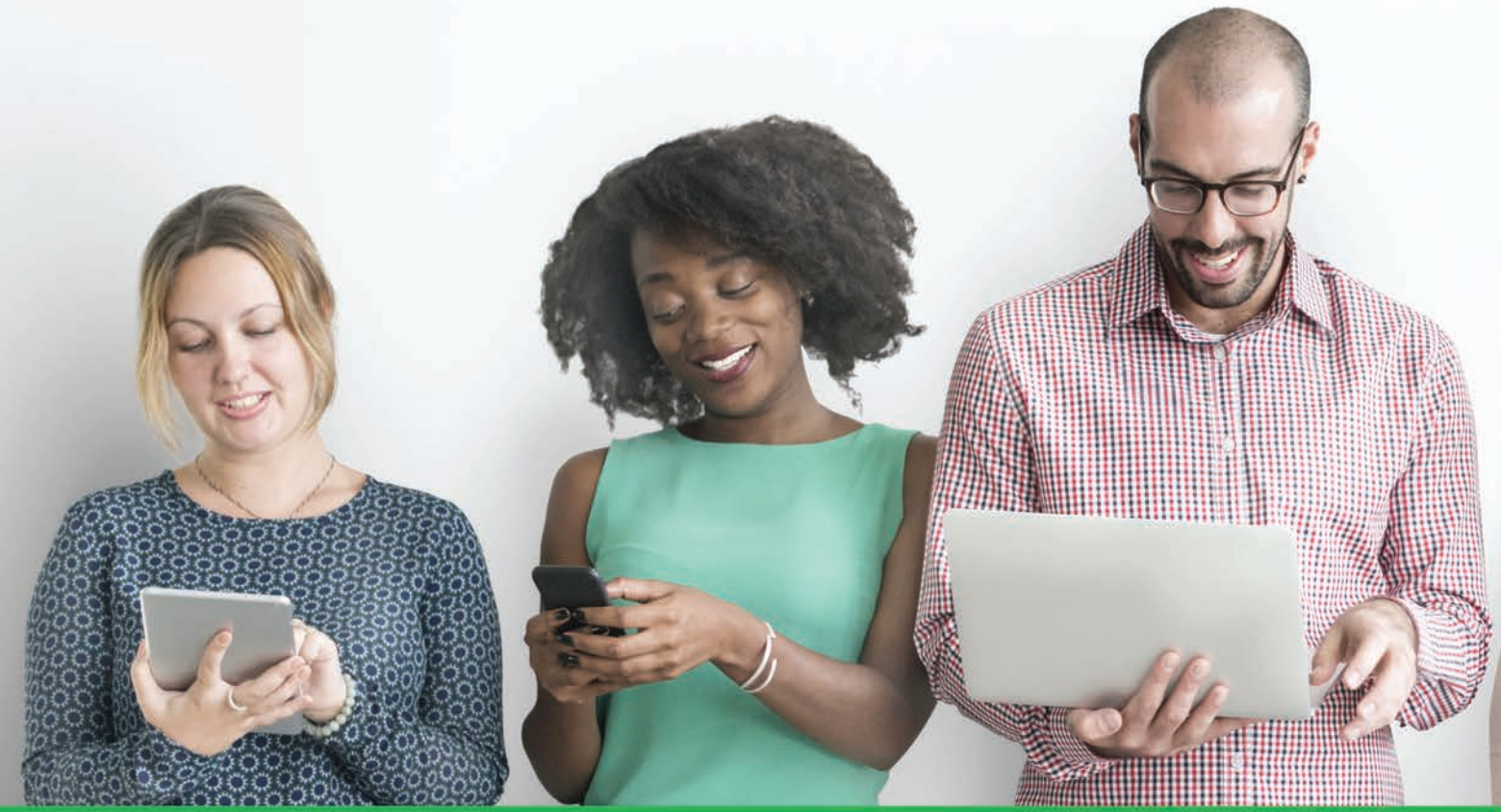

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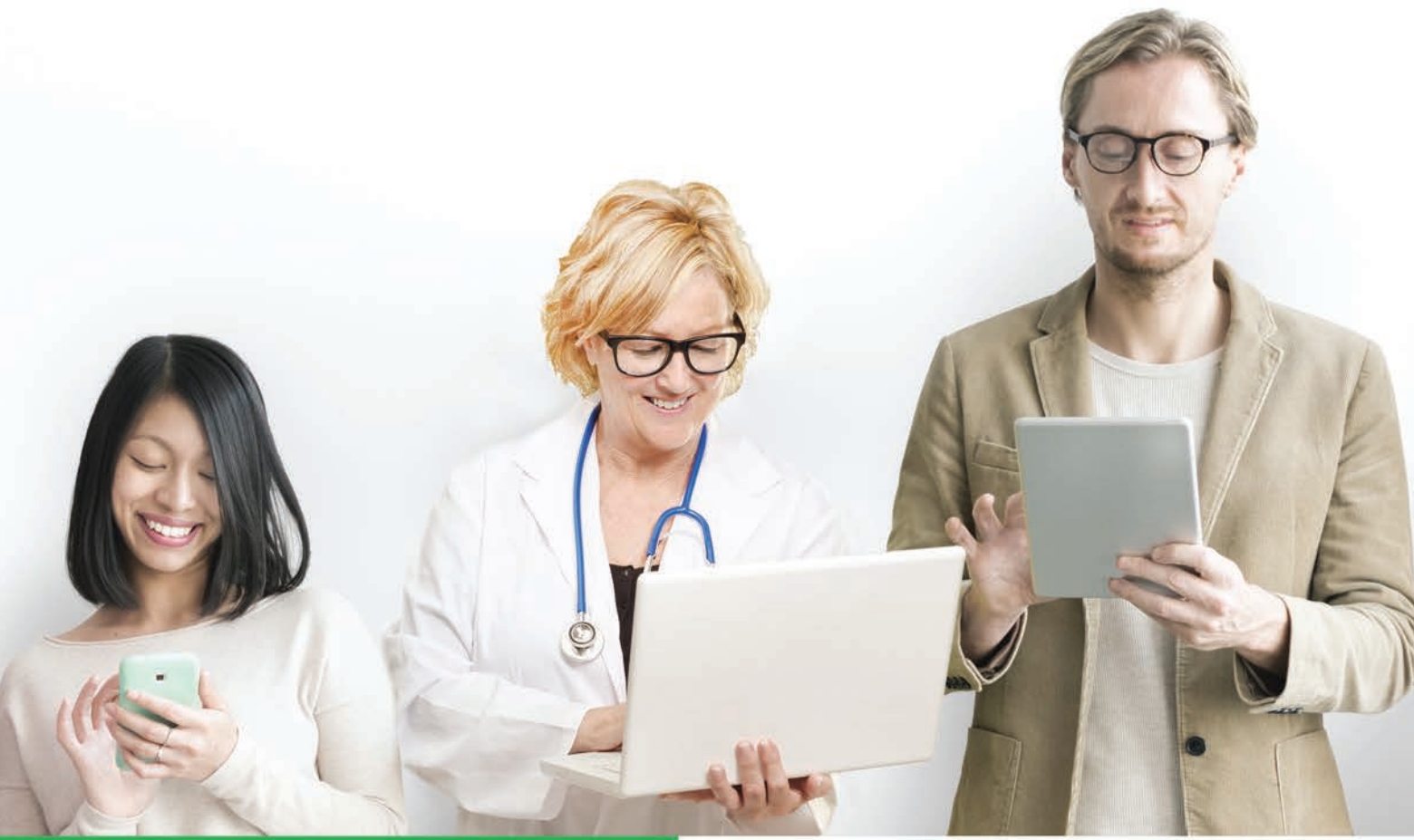

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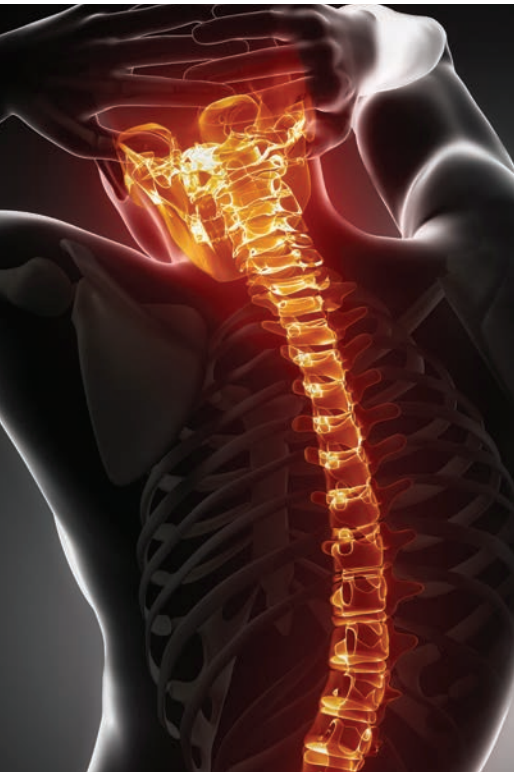

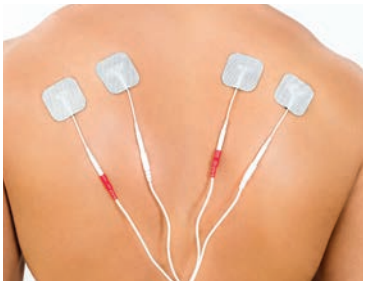

PHOTO CREDITS: ADOBE STOCK

Chiropractic Economics (ISSN 1087-1985) (USPS 019-178) is published monthly except semi-monthly (twice a month) in January, February, April, May, June, August, September, and October; 20 issues annually. Address: Chiropractic Economics Inc., 820 A1A N, Suite W18, Ponte Vedra Beach, FL 32082. Phone: 904-285-6020; Fax: 904-285-9944. Website: www.chiroeco.com. (A Florida Corporation) **Postmaster:** Please send form #3579 to Chiropractic Economics, PO Box 3521, Northbrook, IL 60065-9955. Periodicals class postage paid at Ponte Vedra, Florida and at additional mailing offices. GST #131868416. **Subscription Rates:** U.S. and possessions, $39.95 one year, Canadian subscribers add $35 per year shipping and handling; overseas subscribers add $60 per year shipping and handling. Students, $19.95, Single copy, $4. **Statement:** While encouraging the free expression of opinion by contributors to this publication, *Chiropractic Economics* and members of its staff do not necessarily agree with/or endorse the statements made in the advertisements or contributed articles. *Chiropractic Economics* is owned by Chiropractic Economics, Inc. a Florida Corporation, Joseph D. Doyle, President and CEO and Daniel Sosnoski, Editor. Authorization for the use of photographs and/or illustrations is the responsibility of the author(s). All materials submitted for publication shall remain the property of this magazine until published. **Change of Address:** Six to eight weeks prior to moving, please clip the mailing label from the most recent issue and send it along with your new address (including zip code) to the *Chiropractic Economics* circulation Department, PO Box 3521, Northbrook, IL 60065-9955. For a faster change, go to www.ChiroEco.com and click on "Magazine."

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- Think you or your patients might have adrenal fatigue? Here's how to tell. **ChiroEco.com/adrenalfatigue**

Editor's Pick

The first rule of CrossFit: Make sure you have a chiropractor

Every year, fitness enthusiasts seek to find new ways to build their strength and challenge their bodies to do things they've never done before.

For many, CrossFit has helped them achieve both of these goals, and more.

What is CrossFit? The American Council on Exercise (ACE) defines CrossFit as "an intense exercise program featuring dynamic exercises like plyometric jumps, and Olympic lifts while using non-traditional weightlifting equipment such as kettlbells, sandbags, suspension systems or water-filled implements."

The goal is to complete this workout as fast as possible or within a specified amount of time, which has made it somewhat controversial in nature.

ChiroEco.com/chiropractic-crossfit-marketing

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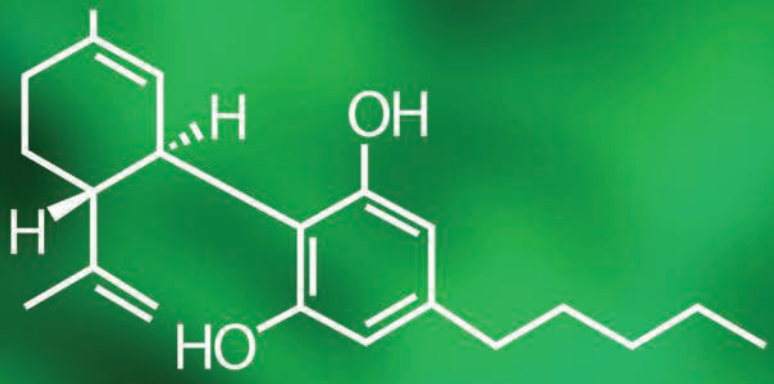

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A FEW DAYS AGO, I WAS LISTENING TO THE RADIO AND A STORY CAUGHT MY ATTENTION. THEY WERE interviewing an anesthesiologist, David Alfery, who works for the consulting firm Health Trust in Nashville. He's part of a collaborative group representing numerous hospitals that are partnering to find solutions to the nation's opioid crisis.[1]

During the interview, he said that patients are going to have to revise their expectations about surgery and pain medication. Whereas before he wasn't prescribing opioids on a highly restrictive basis, now he's following new best-practices for pain management. "We will treat the pain," he said, "but you should expect that you're going to have some pain."

Let me know what's on your mind:
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In other words, if surgery is becoming a more daunting option for treating a given condition, chances are good that patients will be increasingly looking for conservative approaches first—and neck and back pain are among the most common maladies. In this special issue of *Chiropractic Economics,* we're taking a deep dive on the topic of pain management. Every story in this issue discusses options you have available to help patients manage and, hopefully, eliminate pain from their lives.

Another dose of good news comes from the American Chiropractic Association (ACA). The president has just signed Senate bill 1393, the "Jobs for Our Heroes Act." It expands the type of healthcare professionals employed by the Department of Veterans Affairs who are able to certify veterans taking the DOT exam required to operate commercial motor vehicles. Specifically, that includes doctors of chiropractic.

As things go in the VA healthcare system, so goes the rest of the medical profession. And a large number of medical doctors intern at VA hospitals as part of their training. Now that they're seeing DCs working more alongside MDs, they're going to increasingly view DCs as colleagues worthy of respect and, ultimately, referrals.

To your success,

Daniel Sosnoski, editor-in-chief

Reference

[1] Farmer B. "Hospitals Brace Patients For Pain To Reduce Risk Of Opioid Addiction." NPR. https://www.npr.org/sections/health-shots/2018/01/09/576584541/hospitals-brace-patients-for-pain-to-reduce-risk-of-opioid-addiction. Published Jan. 2018. Accessed Jan. 2018.

chiropractic economics

VOLUME 64, NUMBER 2

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THE CHIROPRACTIC PULSE

FDA proposes new rules on homeopathic products

The U.S. Food and Drug Administration is proposing a new, risk-based enforcement approach to drug products labeled as homeopathic. To protect consumers who choose to use homeopathic products, this new approach would update the FDA's existing policy to better address situations where homeopathic treatments are marketed for serious diseases or conditions but where the products have not been shown to offer clinical benefits. It also covers situations where products labeled as homeopathic contain potentially harmful ingredients or do not meet current good-manufacturing practices.

Under the law, homeopathic drug products are subject to the same requirements related to approval, adulteration and misbranding as any other drug product. However, prescription and nonprescription drug products labeled as homeopathic have been manufactured and distributed without FDA approval under the agency's enforcement policies since 1988.

"In recent years, we've seen a large uptick in products labeled as homeopathic that are being marketed for a wide array of diseases and conditions, from the common cold to cancer," FDA Commissioner Scott Gottlieb, MD, says. "In many cases, people may be placing their trust and money in therapies that may bring little to no benefit in combating serious ailments, or worse—that may cause significant and even irreparable harm...."

To read more, visit ChiroEco.com/FDAcustomer
Source: U.S. Food and Drug Administration, fda.gov

In memory of Burl R. Pettibon, DC

It is with great sadness that we note the passing of Burl R. Pettibon, DC, FABCS, FRCCM, on December 22, 2017, at his home in Chehalis, Washington. He was the founder of the Pettibon System of spinal biomechanics and the non-profit educational Pettibon Institute. Thousands of doctors of chiropractic have studied and implemented his insights.

Perhaps best known for his Body Weighting System, Pettibon was a champion of the "Six Sigma" management philosophy as applied to chiropractic. He demonstrated that the effectiveness of spinal adjustment and rehabilitation was both measurable and subject to continuous improvement. His vision encompassed a holistic approach to health care that integrates the adjustment, nutrition, related disciplines, and a commitment to patient involvement in the process. His legacy of healing, teaching, research and writing will long survive in the memory of the thousands of patients for whom he cared, and the institution he created.

To read more, visit ChiroEco.com/Pettibon
Source: Chiropractic Economics, chiroeco.com

F4CP cites new analysis in the journal *SPINE* documenting substantial utilization of chiropractic care

The Foundation for Chiropractic Progress (F4CP), a leading voice in the chiropractic profession, points to an analysis of a national survey recently published in the journal, *SPINE*. This analysis examines the prevalence, patterns and predictors of the use of chiropractic in the U.S. general population, and it reports a large proportion of U.S. adults using chiropractic services with positive outcomes for overall well-being and/or specific health problems.

Sherry McAllister, executive vice president, F4CP, says, "This is further validation of the growing utilization of chiropractic care nationwide, and reaffirms our commitment to providing Americans with drug-free pain management options. Chiropractic care provides a safe, first-line approach to manage spine and joint-related pain before opioids."

To read more, visit chiroeco.com/F4CPSPINE
Source: Foundation for Chiropractic Progress, f4cp.com

BY THE NUMBERS

ADOBE STOCK

25

The percentage of children in the U.S. age 2 to 8 years who have a chronic health condition.

Source: Centers for Disease Control and Prevention

ADOBE STOCK

64,000

The number of people in the U.S. who died from drug overdoses in 2016.

Source: *The New York Times*

ADOBE STOCK

43.4

The millions of Americans who struggle with mental health problems.

Source: Mental Health America

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THE LEARNING CURVE

Sherman College joins Segal AmeriCorps Education Award matching program

In recognition of the dedication and commitment to community service of AmeriCorps alumni, Sherman College of Chiropractic now offers a one-time matching scholarship of up to $4,000 for AmeriCorps Education Award recipients who are admitted to the Doctor of Chiropractic program. In addition, Sherman College will waive the application fee for any AmeriCorps Education Award recipient.

AmeriCorps engages more than 80,000 young adults in service each year. AmeriCorps members meet pressing community needs and mobilize millions of volunteers while gaining valuable professional, educational and life skills. These individuals are leaders with the determination and skills to succeed.

The first recipient of a Segal AmeriCorps Education Matching Award at Sherman College, James Hopkins, is set to enroll in January 2018. Hopkins served as a health educator at the Florida Department of Health in Duval County with the National Health Corps in Florida.

To read more, visit ChiroEco.com/AmeriCorps
Source: Sherman College, Sherman.edu

USA Bobsled & Skeleton partners with NeuroLIFE Institute

Team USA Bobsled & Skeleton (USABS) announced today a partnership with the NeuroLIFE Institute Functional Neurology Clinic (NLI), a leader in the future of health care for improved cognitive function, located in Marietta, Georgia, on the campus of Life University.

"This partnership is a monumental occasion; the USA Bobsled and Skeleton team represents the highest level of excellence in their respective fields," said Nicholas DeFlumeri, DC, director of functional neurology at the NeuroLIFE Institute. "World-class achievements deserve world-class care. The NeuroLIFE Institute believes that every great achievement starts with just as great a commitment. We are committed to providing the best available and leading-edge neurological optimization that world champions demand. We are looking forward to serving these great athletes with as much love, passion and dedication that they so boldly put forth representing our great country."

To read more, visit ChiroEco.com/TeamUSA
Source: Life University, life.edu

Sherman Bookstore leads drive for Puerto Rico relief efforts

The Sherman College Bookstore collected hundreds of items to send to Puerto Rico as part of relief efforts following Hurricane Maria, a Category 4 hurricane that affected millions, including some of our own Sherman College community members and their extended family and friends.

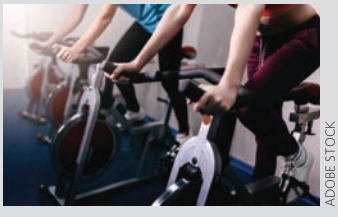
"I'm overwhelmed with the outpouring of generosity from our faculty, staff, students and administration," said Bookstore and Mailroom Manager Angela Thrift. "Sherman College prides itself on fostering a family atmosphere, so when Hurricane Maria ripped through Puerto Rico and so many of our Sherman family were affected, it seemed only natural that we, as a Sherman community, would want to help in some way. We are very pleased to be sending 17 boxes of items for the Hurricane Maria relief efforts on behalf of the Sherman College family."

Items collected included items such as diapers, baby wipes, insect repellent, band-aids, bandages and baby foods. For every 10 cans of food or baby food donated, individuals received a gift certificate to the bookstore for 15 percent off their next purchase.

To read more, visit ChiroEco.com/ShermanBookstore
Source: Sherman College, sherman.edu

WHAT'S HAPPENING IN HEALTH?

Is there a best time of day to exercise?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Many studies have tried to pinpoint the best time of day to exercise for peak performance and best results. But most of these studies were designed for elite athletes.

For general fitness, exercise can be whenever it's most convenient for you. In fact, the best time of day for exercise is whatever time you can do it consistently. That's because fitness benefits come from working out on a regular basis.

Consider factors like work and home responsibilities, your energy level at various times during the day, and what type of exercise you like best when picking your "prime time" for fitness workouts.

If you're a morning person whose energy fizzles by 3 p.m., start your day with a workout, even if it means waking up half an hour early. If you need a workout buddy to stay motivated, schedule exercise when it's easiest for both of you. If you like solitude, try off-peak hours at your gym or create your own at-home workout space.

To read more, visit ChiroEco.com/TimetoExercise
Source: HealthDay News, healthday.com

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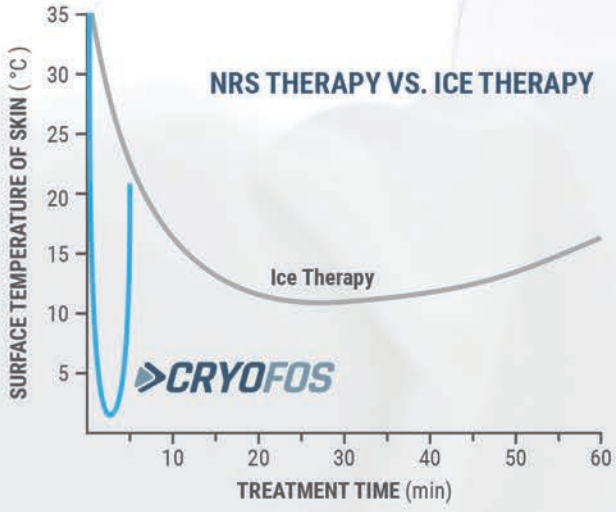

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ADOBE STOCK

Breakthough study: Chiropractic can address the opioid crisis

BY REBECCA MOORE

YEARS AGO, THOSE WHO WERE ADDICTED TO PRESCRIPTION opioids or NSAIDS were attached to a certain stigma. That is no longer the case. Reliance on pain medication is widespread throughout many demographics, and no matter how or why the pills got in their hands, millions of Americans are learning the dire consequences of them.

"When you trace the roots, I think it started maybe 20 years ago, or perhaps less, when there was an actual concern that people's pain wasn't being sufficiently managed or even ignored," says James Whedon, DC, MS, director of health services research at the Southern California University of Health Sciences. "Pharmaceutical companies started to jump on board with this idea and began engaging in some pretty aggressive marketing tactics. Now, we have a situation where many hundreds of thousands of opioid prescriptions are dispensed every day in the United States."

Hands-on healthcare

In the midst of this crisis, stakeholders have devised a number of solutions intended to guide the public away from pharmacological pain-relief solutions. One resounding recommendation is for care by hands-on healthcare professionals who offer non-pharmacological care for pain disorders, but even so, there is debate as to which discipline has the answer. Many studies over the years have shown the benefits of chiropractic as a proven, cost-effective approach to musculoskeletal pain, but where does chiropractic fall in the fight against the opioid epidemic?

"There is a lot of context here as it relates to why chiropractic care as opposed to any other discipline," says Jay Greenstein, DC, chairman of Clinical Compass. "I think it's important to understand that in 2016, the *Lancet* published a paper looking at the global burden of disease. What has been proven in the scientific literature to be effective for the treatment of neck and low back pain is chiropractic. It made so much sense to evaluate chiropractic in the context of opiate utilization because neck and low back pain are literally the world's biggest problems."

The search for an answer

To address the gap in literature, Whedon set out to investigate the use of chiropractic as a solution to the opioid crisis. In 2016, his study, *Association between Utilization of Chiropractic Services and Use of Prescription Opioids Among Patients with Low Back Pain,* found a 55 percent reduction in the likelihood of people filling prescriptions for opioids in those who received chiropractic care as compared to those who did not. Furthermore, the charges for filling opioid prescriptions and

providing clinical services for chiropractic recipients were 74 percent and 78 percent lower, respectively.

"That's statistically significant, and it may be a highly clinically significant result as well," Whedon says. "Seeing this from the point of view of a chiropractor, I would be inclined to say that these results quite possibly stem from the positive clinical changes, reduction in pain, reduction in disability, and so on, that chiropractic delivers these results for the patients and is responsible for the reduced use of opioids. But from the point of view of a scientist, I need to say that what we have here is a correlation, and a correlation simply says these two things are tied together, but we don't know the reason why." According to Whedon, it would be "scientifically irresponsible not to further investigate."

A follow-up study

Currently underway, Whedon's second study will explore the same question as the first, but on a much larger scale. He and his team of researchers have expanded the number of subjects from more than 12,000 to over a million, and they are diving deeper into the data.

"We will have access to a lot more data and there is power in that," Whedon says. "It allows us to cut things a little finer and have more specifically defined cohorts in terms of patient characteristics, diagnoses and treatments, and still have enough subjects to achieve a statistically significant result. To the extent that we're empowered by richer data, we'll be able apply more rigorous methods. The more variables we have, the stronger the study we can make and the better we'll be able to reduce bias and confounding."

While the problem of general underutilization of chiropractic can be attributed to a lack of public awareness and education, the U.S. health care system itself is a massive barrier. "People don't have the same level of access to [chiropractic] as they have with conventional health care. This is particularly true if you look at Medicare, where the restricted coverage is arguably explicitly discriminatory and coverage for chiropractic services is quite limited," Whedon says. And this is also true for other populations, depending on the insurer.

Research that demonstrates how chiropractic can be an alternative to pharmacologic solutions is what the majority of the public needs to hear.

Clinical Compass

These barriers to chiropractic access are why Greenstein and his colleagues at Clinical Compass have a strong incentive to fund and support these studies. The studys' data can not only persuade the public that chiropractic is an imperative component of fighting back against opioid overuse but also the policymakers who establish access to care in the first place.

"I think about the four Ps: driving **policy** change at the legislative level; informing the **public** about what chiropractic can do as opposed to a normal course of care that a medical doctor might provide; helping other health care **providers** understand what the evidence says around the utilization of chiropractic and its impact on prescription drug use; and convincing **payers** that, instead of a patient going to multiple doctors or even a pain management specialist after they see their primary care physician, maybe these patients should be moved on to the chiropractor instead, or maybe the chiropractor should be the portal of entry for spine-related disorders. I think this work that Dr. Whedon is doing is going to have an impact on all four Ps," Greenstein says.

According to a Gallup poll recently conducted by Palmer College of Chiropractic, nearly 80 percent of the public surveyed want a non-pharmacologic approach to physical pain. Research that demonstrates how chiropractic can be an alternative to pharmacologic solutions is what the majority of the public needs to hear. Whedon's studies are an invaluable start. As the profession makes an even stronger case for chiropractic care, the need for research and funding for research will grow.

"We need to dispel this myth that people either believe in chiropractic or they don't, and the only way that happens is through research," Greenstein says. "The more quality research that occurs, the more quality research that *can* occur."

As a chiropractor, driving public education and the funding to take your profession to the next level is a key responsibility.

By donating to Clinical Compass, you can help fund the sort of impactful research that can make a difference in the chiropractic industry as well as in the lives of the millions of people affected by opioid addiction. Visit clinicalcompass.org/donate to help. CE

REBECCA MOORE is the marketing manager for clinical development programs at Performance Health. Over the last two years, she has focused her writing and marketing efforts on bringing quality, innovative clinical education to hands-on health care professionals. She can be reached at rmoore@performancehealth.com.

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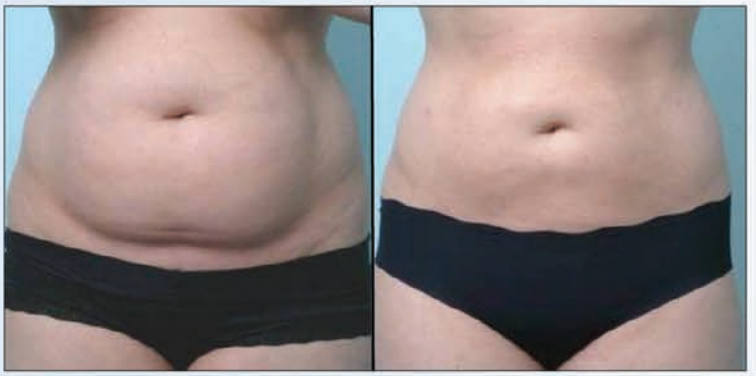

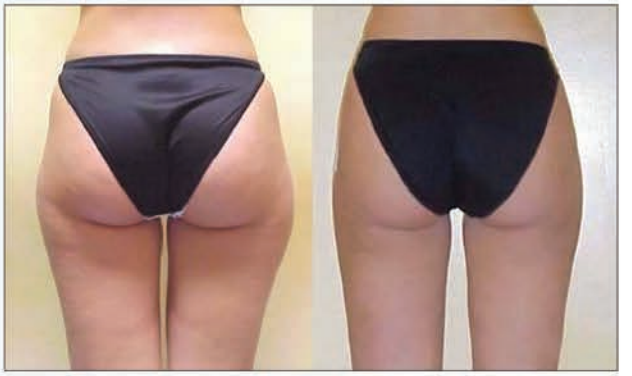

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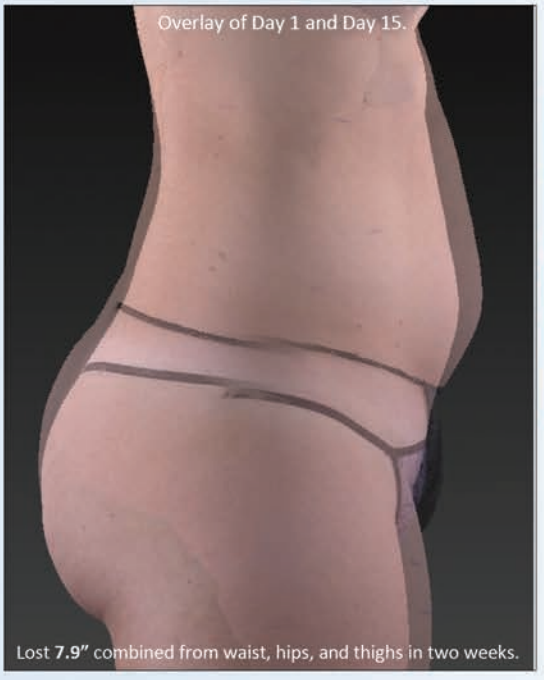

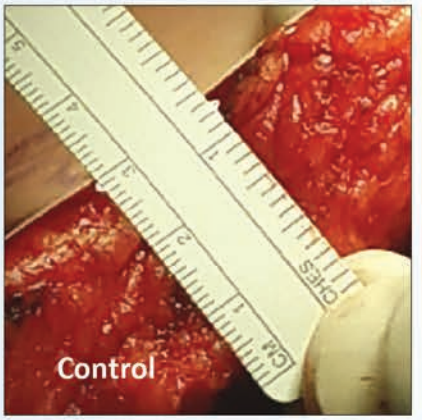

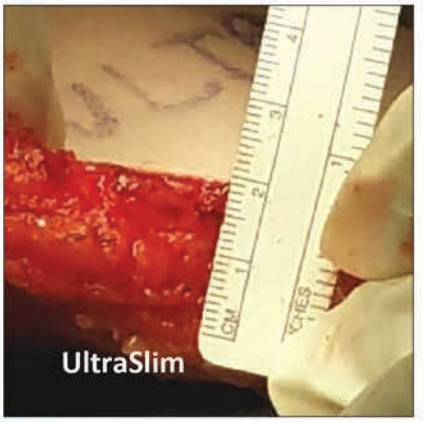

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ADOBE STOCK

The painless dentist

Those who work in dentistry can benefit from chiropractic.

BY JEFFREY BENTZ, DC, AND V. ROBERT AGOSTINO, EDD

THE TERM "DENTAL PAIN" TYPICALLY BRINGS TO MIND uncomfortable patients getting Novocaine injections and the unsettling whine of the drill while having a tooth restored. But the repetitive body positions that dentists and dental hygienists assume during treatment can result in injuries that cause considerable pain. Chiropractic techniques can often be used to treat these common maladies.

A day in the life

The average dental professional spends most of the day delivering dental care in a seated position, bent slightly at the waist, neck tipped downward and arms held at a 90-degree angle. It is easy to see how adopting this position for extended periods day after day can lead to chronic conditions of physical discomfort for the provider.

The length of the average dental procedure is about 45 minutes to an hour. This includes procedures ranging from placing one or two composite restorations to completing root canal treatment or a crown preparation. Most general practitioners in a busy private practice will move steadily from one operatory to the next during the day, providing treatments in almost the same position.

Consider the position of the head and neck when delivering dental treatment. In most cases, the head is tilted at about a 45-degree angle from the torso and canted slightly to the left or the right depending on whether the dentist is right- or left-handed (see Photo 1). This posture is the same for a dental hygienist and dental assistant. It's the only position that allows the provider to clearly visualize the field of treatment. Subsequently, strain is placed on the provider's neck muscles and cervical vertebrae nearly all day, every day.

Similarly, the arms of the dental professional are stretched from 45 to 90 degrees from the body and held in that position throughout the day. The strain on the musculature of the shoulder and neck will certainly at some point create discomfort in those areas as well.

And finally, the most troublesome areas for most dental professionals are the hips and low back (see Photos 2 and 3). While the smart dentist will focus on maintaining good vertical posture to minimize strain on these areas, it is impossible to avoid

this awkward, unnatural position completely.

The chiropractor's perspective

If you have a large number of patients who are dentists and dental hygienists, you'll see these patients tend to present with the same patterns and mechanisms of injury. How these clinicians hold their posture throughout the day correlates with their chronic muscular conditions. Consider how their repetitive postures affect their biomechanics.

If you were to rest your elbow on a table and hold a hammer vertically above your forearm, your entire forearm would eventually become fatigued. Consequently, if you bend your wrist and hold the hammer slightly forward you will notice the muscles in the posterior of your forearm becoming fatigued quicker than the muscle of the anterior forearm.

This is because you moved the hammer outside of your forearm's center of gravity thus forcing the muscles on the posterior of your forearm to work harder to keep the hammer vertical. If you relate this scenario to the muscles of your neck, you can create a simple comparison for the muscular pain a dentist finds after years of practice.

When a dentist's head is tilted 45 degrees from the torso, the stress on the posterior muscles of the neck is increased due to the head being moved outside of the body's center of gravity (see Photo 1). Once the posterior muscles become fatigued, they begin to spasm creating tightening or loss of elasticity of the muscles themselves.

After extended periods of the dentist holding his head in this position, the muscles tend to deplete themselves of oxygen and increase the buildup of waste, resulting in chronic pain. Along with the posterior muscles becoming fatigued, the anterior muscles have a tendency to become contracted and over-developed on the rotated side when the dentist is looking at the patient. In a study on this subject, dentists reported 26 to 73 percent prevalence of neck symptoms over the previous year, and dental hygienists reported even higher rates, from 54 to 83 percent for neck symptoms.[1]

Pain in the neck

A common complaint among dentists and dental hygienists is neck pain with headaches that start halfway through the workday. This complaint is usually directly related to static posture and tightening posterior muscles that cause the occiput to move posteriorly over C1. A manipulative realignment of the cervical region typically results in relief of pain and immediate increased range of motion.

In the adult version of torticollis, a painful spasm of the sternocleidomastoid (SCM) muscle causes the head to be held in rotation and sometimes slight flexion. (Figure 1). In pseudo-torticollis, there is an inability to move the head in any direction without pain.[2] This can easily be caused when the dentist's head is positioned in a flexed and rotated position for extended periods. Pseudo-torticollis can be successfully treated with as little as six treatments over three weeks.

Lower back pain

As a dentist sits in the rotated and slightly forward position, the lumbar erector spinae muscles are fully engaged. In another study, researchers sought to determine the prevalence of back pain among dentists and its possible correlation with working posture. The study was conducted among 60 dentists and showed a 70 percent incidence of back pain among the population under review.[3]

Just as the office worker notices pain after years of sitting, the dentist is no exception. The dentist, however, seems to sit in a more erect angled position that creates more pressure on the lumbar spinal joints. Sitting causes a reduction in lumbar

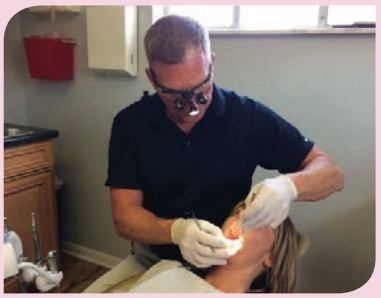
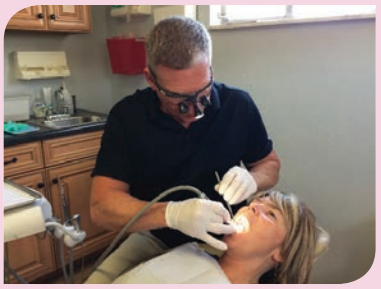


Photo 1

Photo 2



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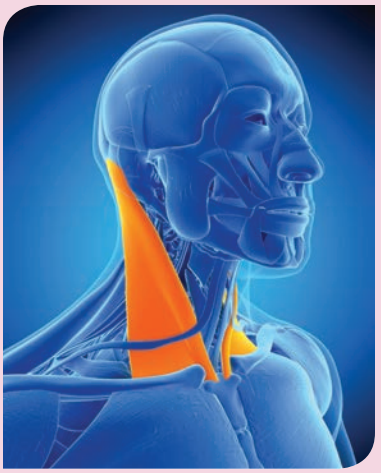

Figure 1

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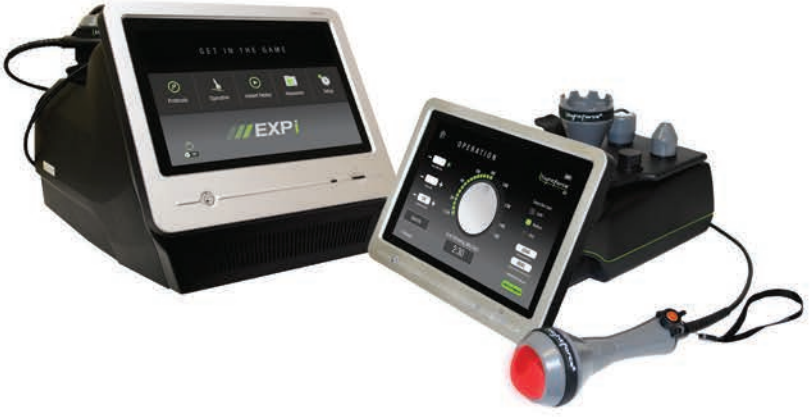

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lordosis and sacral slope compared with standing, which might cause a spinopelvic imbalance and result in chronic low-back pain.[4]

Treatment options

In most cases, treatment consists of chiropractic manipulation and physical therapy to create fluid motion between the vertebral joints and restore elasticity in the chronically tight cervical musculature. Because of the elasticity in the muscles of younger patients, there is a significantly higher prognosis of improvement. Elderly dentists, conversely, may have degenerative factors of the spine complicating their recovery and an X-ray should be taken to assess their condition.

Electrical muscle stimulation and ultrasound can reduce inflammation and increase blood flow to the injured musculature, tendons and ligaments. In fact, thermal ultrasound over latent trigger points is comfortable and can decrease the stiffness of a trigger point.[5] Also, ultrasound and heat are effective in reducing myofascial trigger points in muscles.[6]

Passive gentle stretching, proprioceptive neuromuscular facilitation (PNF) stretches and massage can also reduce muscle stiffness and promote elasticity of tightened muscles. Performing a stretching and strengthening program consisting of cervical stretches that can be performed between patient treatments throughout the day can enable dental professionals to reduce muscle tightening.

Stretches that focus on the SCM muscles can be beneficial to relieving spastic muscles of the neck. Strengthened posterior neck muscles allow the dentist to hold static positions for longer periods. Along with lower back stretches, the chiropractor should emphasize the importance of core strength to enable the dentist to sit in working positions for extended periods.

Lumbar support braces, such as sacroiliac belts, can provide additional support during the workday. These belts act as a secondary support system and relieve muscle tension and pain in the lumbar spine. As the dentist strengthens core muscles through a prescribed exercise program, the support brace can be worn less.

When muscles become chronically tight, there is a restriction of vertebral movement and concomitant reduced range of motion. Clinicians should consider utilizing thrust manipulative procedures to reduce pain and disability in patients with mobility deficits and acute low back and back-related buttock or thigh pain.[7]

[Note: The authors expressly thank Joseph Smith, DMD, who contributed to this article. Photos used by permission; J. Smith, DMD, and J. Jiminez, employee.—eds.] CE

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To view the rest of the references to this article, visit ChiroEco.com/dentist

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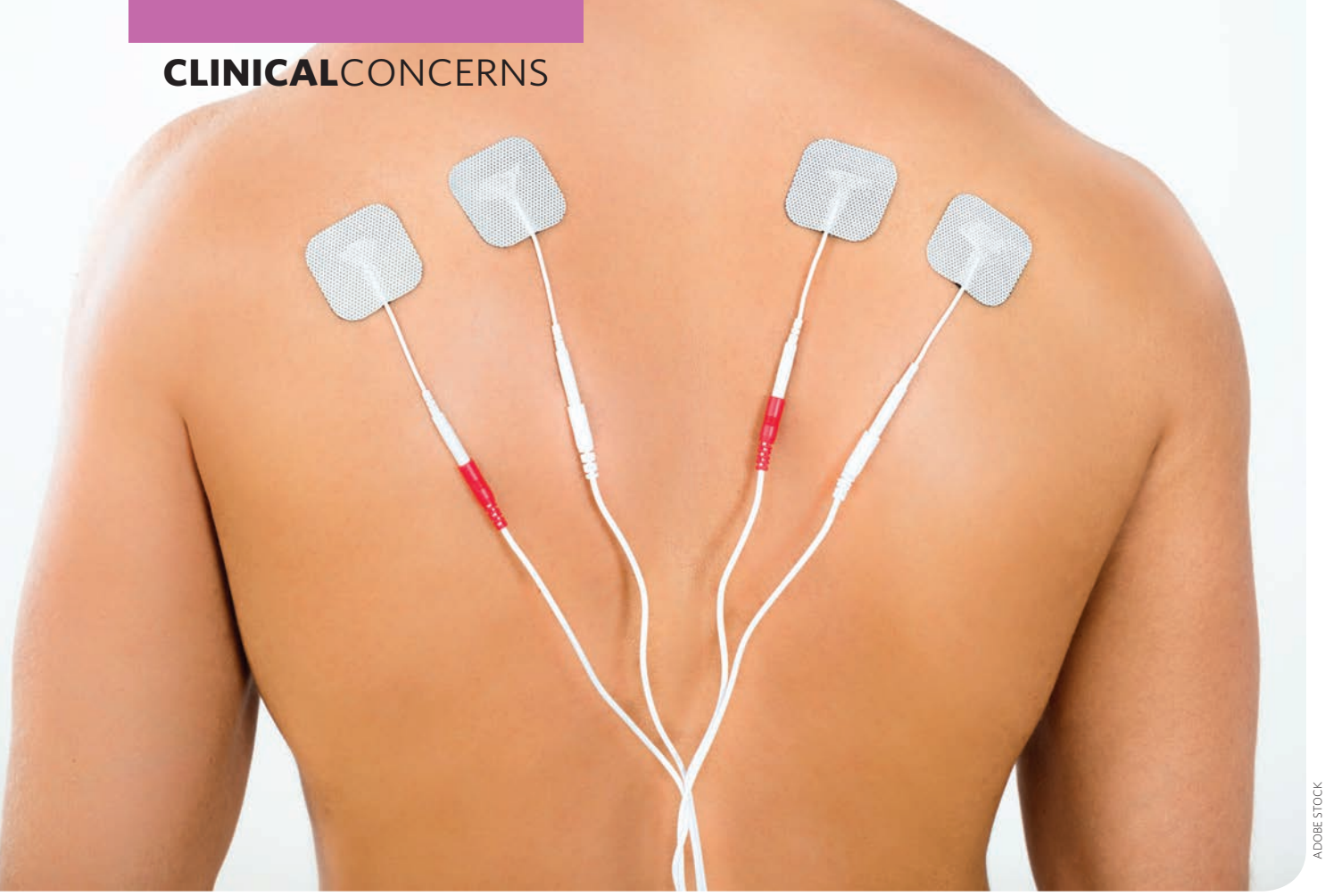
* https://www.ninds.nih.gov/Disorders/Patient-Caregiver-Education/Fact-Sheets/Low-Back-Pain-Fact-Sheet
Collaborators on the research project include University of Minnesota, Oregon Health and Sciences University, Duke University and the University of North Texas.



ADOBE STOCK

Current control

Understand the differences in electrotherapy devices.

BY NICHOLAS EXARHOS, DC

OVER THE PAST 20 YEARS, MANY HEALTHCARE PROFES-sionals have used electrotherapy to help patients relieve acute and chronic sports, arthritic, and post-surgical pain and inflammation. Electrotherapeutic devices come mainly in four different forms: transcutaneous electrical nerve stimulation (TENS), interferential (IF) therapy, microcurrent (Micro) therapy, and electrical muscle stimulation (EMS). While each different type of stimulation offers distinct benefits, choosing the most appropriate one for your patient's clinical goals don't need to be overwhelming or complicated.

How it works

Before exploring the differences in electrotherapeutic devices, you need to have a fundamental understanding of how electrotherapy works. This is a frequently prescribed treatment modality with the ability to target a multitude of acute and chronic musculoskeletal ailments.

Electrotherapy, in basic terms, transfers a measured, safe electrical current from a power source to the soft tissues of the body through the use of electrodes placed over the desired treatment area. The applied electrical current not only induces the body's inherent ability to release endorphins, but, most importantly, it creates a pulse stimulus across the skin surface and underlying nerve structures. This measured electrical stimulus serves to partially disrupt pain signals, preventing them from reaching the brain.

Electrotherapy devices range from large, powerful clinical units, which are intended for use in the clinician's office, to more compact portable units that are handheld and typically intended for personal use at home. One of the many benefits of a home unit is that it serves to encourage the patient's active participation in his or her own care along with the clinician's supervision and guidance.

The therapeutic effects on the neuromuscular tissues of the body may vary depending on the wavelength and frequency of the electrical current applied to the desired area of treatment.

Types of modalities

Each type of electrotherapy serves a different purpose. It is imperative

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to use the proper type of electrical impulse to optimally address the symptoms associated with your patient's diagnosis and maximize the incidence of favorable treatment outcomes.

To review, the following are the four main types of therapeutic electrical current modalities:

- Transcutaneous electrical nerve stimulation (TENS)
- Interferential therapy (IF)
- Microcurrent therapy (Micro)
- Electrical muscle stimulation (EMS)

The first (and most popular) of the electrotherapy modalities is TENS. This type of therapy transfers current through the skin to interact with the nervous system by interrupting peripheral pain pathway receptors leading to the brain, resulting in a decrease of the pain sensation a patient is experiencing. While TENS should not be considered a cure for the cause of the pain, it oftentimes serves to ease discomfort for the duration of treatment.

When applied optimally, the TENS current should feel robust but not painful. TENS therapy offers the advantage of relieving pain without the need for exposure to the potentially harmful side effects inherent in the use of other approaches to pain management, such as narcotics.

IF is another popular type of electrotherapy. It is similar to TENS in that it passes current through the skin to relieve pain. IF travels at a much higher frequency, however, allowing it to penetrate deeper into body tissues. It has the ability to target pain that may reside in parts of the body that cannot be reached by the frequency produced by a TENS unit.

The third type of electrotherapy under discussion is Micro. The current produced by Micro mimics the current that is naturally produced by the body. This promotes the production of adenosine triphosphate (ATP) in cells in and around the treatment area. It also increases blood flow, causing treated cells to become more energetic and may as a result induce healing.

The last of the four main types of electrotherapy is EMS. Unlike the above types of electrotherapy, EMS sends pulsing current specifically to the muscle, causing it to periodically contract and relax. EMS can be used to deter muscle atrophy and improve overall muscle tone or treat conditions such as chronic or recurrent muscle spasms.

These Class II medical devices should not be confused with the recent proliferation of less effective, over-the-counter devices that cannot, by law, produce effective power. Accordingly, they cannot provide the therapeutic advantages

and benefits imparted by a clinician-prescribed electrotherapy device.

Tools worth having

When applied appropriately as indicated, TENS, IF, Micro, and EMS can address and favorably affect a wide variety of neuromuscular conditions and symptoms. Due to the ever-changing state laws and confusing insurance reimbursement regulations, some clinicians have unfortunately become reluctant to offer electrotherapy as a viable treatment option for their patients. However, many clinicians have found that partnering with a reputable DME provider is an efficient and hassle-free way of offering the many benefits of electrotherapy to their deserving patients. CE

NICHOLAS EXARHOS, DC, is a 1990 graduate from Life University. He practiced for several years in Northern Virginia, where he incorporated technology into chiropractic. He was responsible for promoting spinal decompression therapy, which changed the way chiropractors treat herniated discs. He is president and CEO of TENSSource, a durable medical equipment (DME) company. He can be contacted through tenssource.com.

Quick Tip

Benefits of wild oregano oil

Oregano has been shown to have over 42 times the antioxidant activity of apples, 30 times higher than potatoes, and 12 times more than oranges. It is also rich in vitamins and nutrients.

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The light fantastic

Laser therapy can be a non-invasive solution to reducing inflammation.

MARK CALLANEN, PT, DPT, OCS

PAIN MANAGEMENT HAS BEEN GETTING INCREASED ATTENTION in the U.S. health-care market due to the current opioid epidemic. Most healthcare providers are looking for alternatives to pharmaceutical therapies when addressing various musculoskeletal (MSK) pain conditions. Laser therapy is a non-invasive modality that can have effects on both chronic and acute pain through the process of photobiomodulation (PBM).

PBM occurs when an effective dose of light energy is applied to injured tissue. The general mechanism for PBM involves biochemical stimulation of the electron transport chain in eukaryotic cells, which triggers several positive biochemical changes in injured tissue. These changes to MSK tissue and nerve tissue can decrease pain and inflammation, and accelerate tissue healing.[1-6]

Most clinicians understand that by decreasing inflammation and the associated pain mediators, pain can be managed effectively. This is why ice and anti-inflammatory medications are commonly used for acute MSK injuries. But are those the best treatments? While those methods are effective for joint effusion, there is growing debate about the use of ice and nonsteroidal anti-inflammatory drugs (NSAIDs) on injuries to muscle tissue. NSAIDs block the inflammatory cascade at the COX-2 level, which has been shown to have negative effects on the tensile strength of repaired muscle tissue and increases the chances of re-injury.[2]

Although ice delays the inflammatory process by restricting blood flow for a period of time, it may actually slow the process of tissue recovery by restricting blood flow to injured areas that need metabolic activity to recover. A 2016 study looked at delayed-onset muscle soreness where subjects were treated with either ice, laser, or ice used in conjunction with laser after eccentric muscle contractions. When used independently, laser was the best modality for enhancing restitution post-exercise, which led to faster recovery 24 hours after treatment.[7]

Laser research that investigates the mechanisms involved with reducing inflammation at a glance looks similar to pharmacological studies because they impact the inflam-

matory cascade at similar points. These include reduced COX-2 levels, reduced Bradykinin levels, reduction in interleukin-1 levels, and reduction in Prostaglandin E2 (PGE2).[8-11] However, understand that these reductions are fundamentally different from PBM in that they stem from intrinsic, anti-inflammatory signaling generated by better cell metabolism and improved microcirculation at the level of the injured tissue.

When considering laser, there are different classes available in the U.S. that are determined by the power of the unit. So what type of laser is best used to treat pain? A common misconception is that higher-powered Class 4 lasers cannot treat acute conditions because surface heat is produced during treatment. Lower-powered lasers under the threshold of 500 milliwatts have commonly been referred to as "cold lasers" or low level laser therapy (LLLT) because they do not produce any heat on the skin surface when applied.

Regardless of power, PBM is the primary desired mechanism of action when lasers are applied to tissue. They effectively hasten the body's ability to process inflammation, which makes laser treatment in general an appropriate treatment option to address pain. While they are both appropriate for use over acute and chronic inflammation, a benefit of Class 4 lasers is that they allow therapeutic doses of photons to be applied over broader areas and to deeper tissues in smaller windows of time, which is a significant consideration for most clinicians.

Some practitioners might wonder why they would want to heat up the skin surface with a higher-powered laser if they could use a lower powered laser to get the same effect. While both types of lasers can help with inflammation, which is significant in the bigger picture of tissue healing, there is an important difference between the two when it comes to pain modulation.

Recent research has shown that treating afferent nerves with higher power densities (irradiance) significantly impacts pain perception.[1,12] When the laser is applied in higher doses, it can slow down conduction rates and increase the size of the action potentials in both C and A delta afferent nerves.[1,12] This can result in quick changes in patients' pain complaints via true analgesia, which is a phenomenon that cannot be easily accomplished with lower powered lasers.

What does this mean to you, the practicing clinician? The analgesic effect from higher powered lasers can open the door to more manual options on the same day when it is

applied prior to manual treatments. Clinicians are faced daily with acute and semi-acute presentations that are challenging to treat in the early stages due to muscle guarding and subjective complaints that limit treatment options.

Class 4 laser therapy can help address this problem in the clinic with treatments that take less time to perform in most cases than a standard ultrasound. The second benefit of using laser in the clinic is that it will help accelerate tissue healing, reducing the time needed to return patients to functional activities.

With virtually no side effects and a short list of contraindications, laser therapy is something that should be considered in any plan that involves reducing inflammation. Special consideration should be given to higher powered lasers if immediate pain relief is being targeted or if larger areas of tissue are being treated on a regular basis in your practice.

Understanding the similarities and differences of different laser platforms could be a key to helping your patients move away from their current pharmacological methods of dealing with pain and provide a powerful, new avenue for treating painful conditions in your clinic for both short- and long-term relief. CE

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ADOBE STOCK

Stay on topic(al)

What to look for when choosing the right analgesic topical.

BY DAN SANDWEISS

PATIENTS SEEK YOUR SPECIALIZED KNOWLEDGE AND TRAINING to help relieve their pain. Depending on your diagnosis, you may use a combination of adjustments and supplements to make your patients feel better. Your tools may also include a variety of topical analgesics, which you apply during your client's visit and that you might send home with them. It's time to explore the ins and outs of these topicals as there appear to be new ones arriving almost daily.

From the FDA's perspective

Back in 1983, the FDA issued guidance in its *External Analgesic Drug Products for Over-the-Counter Human Use; Tentative Final Monograph.* Apart from periodic updates to this monograph, which serves as an FDA recipe book, a final edict on topicals has not been made. All rules related to the use of medically active ingredients go back to this 34-year-old document. It is worth noting that, as of the date of this article, there are no updates to this document that include cannabidiol (CBD) oil or homeopathic ingredients as scientifically proven active ingredients for topicals.

Topical analgesics are seen by the FDA as over-the-counter (OTC) products, which means they have at least one FDA-approved active ingredient, and can be sold without a prescription. The key is inclusion of an approved active ingredient. For example, a toothpaste without fluoride is considered a cosmetic because it does not contain a scientifically proven active ingredient. If you purchase a topical that includes CBD oil, it will be designated OTC if it also includes menthol, camphor or another FDA-approved ingredient. If it does not include one of these ingredients, it may be classified as a cosmetic, which has much lower regulatory hurdles.

FDA-approved active ingredients

If you use an OTC topical analgesic, it likely includes one or a combination of the following approved pain relievers:

- Menthol
- Camphor
- Salicylate
- Lidocaine
- Histamine dihydrochloride
- Hydrocortisone
- Capsaicin (derived from chili peppers)

These and a few dozen others are detailed starting on page 5,867 of the FDA monograph. Included within those pages are permissible strengths.

As a health professional, your training and practice are based in science. You want to know that the products you use in your practice are backed by the scientific method. FDA-approved ingredients have gone through the rigorous analysis that is required to determine efficacy.

External analgesics

Topical analgesics do not penetrate deeply into the skin, which means that the active ingredients they contain rarely reach the bloodstream in significant concentrations. They provide temporary and effective pain relief without impacting internal organs. Ingested analgesics influence a patient's whole body, including major organ systems. This is the reason for caution with acetaminophen, ibuprofen and similar OTC pain killers. Ingested products will relieve pain, but they also carry the risk of side effects, which can be contrary to a holistic medical philosophy.

The pain-relieving mechanism

It is not entirely clear how topical analgesics work. The gate control theory of pain is the leading explanation, but it has gaps that leave some pain-relieving phenomena unexplained. In any case, the current thinking is that the active ingredients in topical analgesics shut down or mitigate the mechanism within nerve fibers that conveys pain signals to the brain. The end result is that the brain's pain-sensing mechanism is distracted by the analgesic's impact, whether it is a warming, cooling, or vasodilation effect.

Unless the analgesic contains an anti-inflammatory ingredient, the topical does not address the underlying condition that caused the pain and, even then, the inflammation-mitigating effects will be short-term and local. What is clear, however, is that the use of topical analgesics relieves local pain without impacting internal organs.

Using topical analgesics

You are the expert at diagnosing and treating your patients. During your treatment, you may find that permanent pain relief will take some time

for your patient. In the meantime, you want to provide him or her with an analgesic that reduces the pain without causing the side effects of an ingested product. In this situation, you can apply an analgesic to the painful area after performing an adjustment.

Ask patients how the analgesic feels and if the pain seems less intense. Also, observe patients to make sure they are not having an adverse reaction.

Because there are cooling analgesics containing only menthol, as well as warming analgesics containing menthol and other ingredients including capsaicin, you may be unsure of which product to apply. Generally, patients with chronic pain, such as arthritis and lumbago, feel relief from warming products, though some chronic pain patients only get relief from cooling products.

Cooling topicals work well with an acute injury. You may want to experiment so that you get to know the kinds of conditions that each treats best.

Warning: Do not use warming technology or hot towels on patients after applying a topical analgesic. Ultrasound and other heating or hot applications can lead to blistering and burning if used with topical analgesics.

Help patients and increase revenue

As you know, patients who have been in pain for a while before receiving treatment from you can be worried when leaving your office because they worry that their pain will return. If the topical you applied brought them relief in the office, you can recommend that they purchase a supply for home use so they can apply it as needed before their next appointment. Such a move will improve your patients' welfare, relieve their stress and bring you additional revenue.

If you see 25 patients a day and half of them benefit from a topical, you could add $600 per week to your practice. You will find that many patients will return to your office to buy topicals even if they have no scheduled appointment.

Patients often turn to chiropractors to find natural ways of obtaining pain relief. As a result, you may want to make sure that your topicals are natural as well. CE

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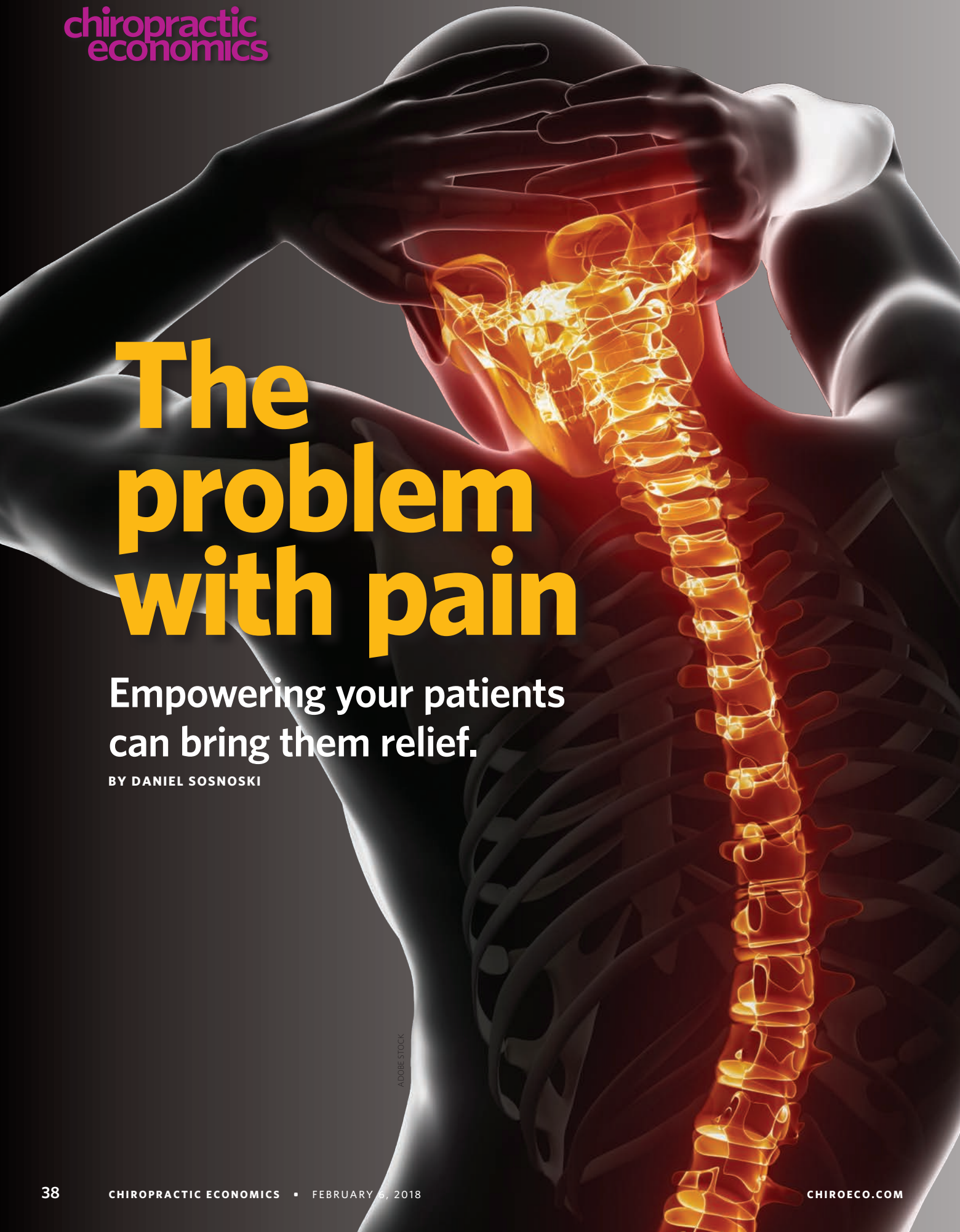

The problem with pain

Empowering your patients can bring them relief.

BY DANIEL SOSNOSKI

ADOBE STOCK

Pain is often a symptom of a disease. And in some cases, pain can become a disease in and of itself.

About 10 percent of the time after an illness, pain persists for months, or even years after an episode. Imagine you're stroking your arm with a feather, while your brain is telling you it feels like a blowtorch.

How can the human body get this sensation so wrong? You'd think the nervous system is hard-wired, like the wires in your house that connect electricity to the lights.

But the situation in the body is far more complicated. Neurotransmitters spill out in three dimensions, interacting with other cells in the body. Glial cells play a vital role in the experience and amplification of the sense of pain. If enough glial cells are activated by chronic pain, people will begin to feel abnormal responses to normal stimuli.

As a result, people are given pain-killing drugs to calm down these sensations, or given physical therapy (which can be uncomfortable) to retrain the nerves in the nervous system to respond normally. There is also the despair and depression that accompany prolonged pain. New drugs may be developed that don't just mask the symptoms of pain, but address glial cell malfunction, too.[1]

The noise of nociceptors

William S. Marras, PhD, holds the Honda Endowed Chair in the Department of Integrated Systems Engineering at Ohio State University. He notes that 80 percent of people will experience at least one episode of low-back pain at some point in their lives. And people spend approximately $100 billion per year in treatment for it.

"If you have lower back pain, chances are it will resolve itself in about two weeks. However, if it lasts more than six weeks, then it becomes chronic." He's a proponent of wellness programs that address multiple domains, such as social, occupational, financial, intellectual and spiritual health.

Lorimer Moseley, PhD, is a graduate of the University of Sydney Pain Management Research Institute. He describes pain as being an illusion. Rather, transmitters of sensation send messages to the brain asking the questions "What does this pain mean?" and "What should be done about it?" But 100 percent of the time, pain is constructed in the brain.

Moseley describes an experiment he's conducted, where they touch something very cold to a participant's hand: "We just show them a red and blue light, and we ask them how much does it hurt?" he says. If they see a red light, they report higher levels of pain.

In a similar experiment, the patient sees that the researcher can turn a dial, and when the researcher turns it higher, the patient reports increased pain. "But the dial isn't connected to anything," Moseley says.

Of course, patients *do* experience pain, and it's a powerful phenomenon. The experiments mentioned above are only meant to underscore that how people perceive pain is highly subjective and context-driven.

The psychology of pain

Even though the brain is constructing it, pain is a real thing, and it can vary in location, intensity and quality. At the same time, pain is personal and individualized.

While neuroscientists at a number of universities have managed to image pain and associate it with a quantitative state using functional MRI, that's obviously not an approach to pain measurement available to the average field practioner.[2] Accordingly, the general tool will be some type of subjective report.

The numeric pain rating scale (NPRS) is one of the most commonly used clinical tools, and it is generally efficient. You simply ask the patient, "How is your pain level, on a scale of zero to 10?" The answer will give you a general sense of a patient's subjective assessment of discomfort. Each patient is unique, and what registers as a "three" on one patient's scale might well be a "five" on another's. (See Figure 1.)

The McGill Pain Questionnaire (or the McGill Pain Index), developed at McGill University, is a more detailed scale for rating pain. It consists of a self-report questionnaire that patients use to give a doctor detailed descriptions of the quality and intensity of their pain. For example, in one section, patients are asked to pick one or more of the following to describe their pain: flickering, pulsing, quivering, throbbing, beating, or pounding. In another they are asked if the pain is spreading, radiating, penetrating, or piercing.

What pain is

You'd think by now researchers would have a solid handle on the etiology and mechanisms of the pain response, but it is only partly understood. Pain is generally an awareness of potential or extant tissue damage or trauma, and nociception is more related to the body's response to harmful stimuli. These overlap but aren't exactly identical.

Most descriptions of what pain is will refer to the nervous system, and nerve cells and fibers. The traditional

idea promoted by medical science was that pain is a warning signal to the body that damage is imminent (or present), encouraging the individual to find a more hospitable environment.

The hypothesis was that the more pain fibers that are active, the more information they receive, so the greater the subjective perception of the degree of pain involved. Thus, for example, stubbing one's toe can be quite painful, but not in the way burning it by stepping on a hot coal would be. In the latter case, there is more trauma inflicted on the body's tissues, thus the amount and intensity of the pain is significantly greater.

This line of thinking was refined and reassessed in the 20th century as researchers came to understand that pain has physical, emotional,

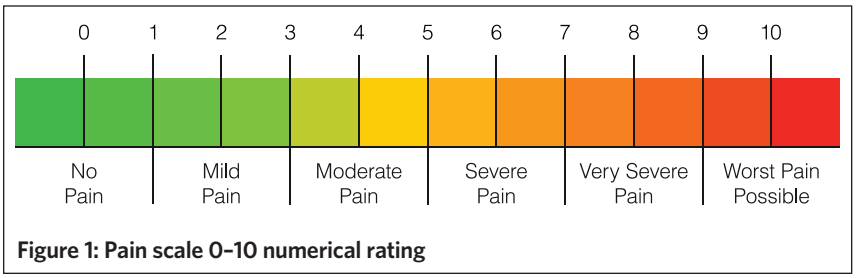

Figure 1: Pain scale 0–10 numerical rating

and psychological components and is much more complex than had been previously thought. A commonly cited case report from 1995 published in England chronicles the case of a contractor who stepped onto a nail, which fully pierced his shoe and came out the top.

He was in such panic and distress that fentanyl had to be administered before treatment could begin. Upon removing the nail and his work boot, doctors were astonished to discover the nail had passed harmlessly between his toes.[3]

In 1996, the neuroscientist V.S. Ramachandran developed a treatment for phantom limb pain. It involves the use of mirrors and boxes. For example, if a patient with only a left arm feels burning or a clenched fist in their missing right arm—the phantom limb—they put the patient's left arm in one box, and they see it reflected as their right arm. When the patient sees the missing limb whole and relaxed, the phantom limb sensation is reduced or eliminated.[4] In these kinds of cases, the pain and its treatment are almost entirely psychological.

Another study looked at two groups of older Americans who had surgery for hip replacement. One group had planned surgeries, and the other had unplanned surgeries, likely the result of trauma such as a slip and fall. Three months post-surgery, participants were asked about their memories of pain. The planned group had accurate memories, and so did the unplanned group when reflecting on their post-surgical experiences. But the unplanned group had more psychological problems in processing the event and its impact on them.[5]

From your own experience, you've seen how a patient can present with trauma and have little to no reported pain, while a similar patient might report a great deal. Just as stress, if unrelieved for too long, can create difficulty for the body to return to stasis, pain can also become its own type of illness.

One of the insidious side effects of chronic pain is the way it can drive a patient toward unhelpful and negative thought patterns, leading to self-defeating behaviors. There is virtually no health care story larger at the moment than the opioid crisis, which is now about the seventh most-common cause of death in the U.S.[6,7] And the heart of this crisis isn't pain medication itself, but rather the pattern of addiction and drug abuse it often creates—a physical problem that stems from misguided goals.

Proven approaches

When patients come to you in search of relief for the pain they are experiencing, they are hoping you have a procedure or a product that can help them. Their natural inclination will be to view the effectiveness of your treatment in terms of the degree to which you can lessen their discomfort. And, to an extent, that's normal and you'll try to help them. Experts in pain management, however, suggest that you might want to re-focus the patient's objectives away from pure pain mitigation and more toward the restoration of function.

As the saying has it, "pain is inevitable; suffering is optional." Once a person is concentrating on overcoming their limitations, pain becomes a secondary consideration and eventually is no longer the primary reason they are seeking care.

As a chiropractor, you offer musculoskeletal treatments, particularly spinal care. You may also provide

When patients come to you in search of relief for the pain they are experiencing, they are hoping you have a procedure or a product that can help them.

When evaluating a patient presenting in pain, look for interventions that can disrupt the vicious physical and mental cycles that reinforce chronic responses.

instrument-assisted soft-tissue mobilization (IASTM) to loosen fascia, and perhaps laser therapy as well. Depending on your outlook and training, you might have additional modalities to assist patients. But the discussion above sounds more like psychology, doesn't it? It should also ring a bell.

D.D. Palmer's famous trio—trauma, toxins, and thoughts—have a direct bearing on pain management. He posited that anxiety, stress, negative thoughts, and pain can all work to affect muscles and posture, gait and movement. Eventually, bones and vertebrae can subluxate, but if thoughts are leading to these subluxations, then adjustments will mainly address the symptom and not the cause of the patient's dis-ease.

Reinforcing patterns

Physiologically, a patient in pain will start exhibiting guarding behaviors, avoiding activities, and eventually start to become deconditioned. This leads to increased pain, further activity avoidance, and further deconditioning. You can see how pernicious this cycle can be.

Mentally, a similar thing can happen as well. Prolonged pain can easily generate negative emotions, such as anger, fear and anxiety. This leads to decreased mood and eventually can result in depression. Depression tends to cause increased awareness of pain, generating more negative emotions and this cycle becomes self-reinforcing as well.

When evaluating a patient presenting in pain, look for interventions that can disrupt the vicious physical and mental cycles that reinforce chronic responses. And you're likely quite knowledgeable about the gate-control theory of pain. Factors that "keep the gates open" include

- Focusing on pain
- Stress
- Poor sleep
- Lack of exercise/activity
- Depression

Get SMART with solutions

You might consider using SMART goals with this type of patient. SMART goals are specific, measurable, attainable, relevant, and time-bound. Telling a patient, "You should try walking more" isn't as SMART as, "Twice a day, can you try taking a walk around the block? I think you could manage that. It will improve your energy and mood. The next time you come in, we'll see how you did."

Relaxation can be excellent therapy for your pain patients. Deep breathing, mindfulness, guided relaxation exercises and similar can lessen the sympathetic nervous system's response to stress. In turn, muscular tension can be eased, and the mind can be distracted away from the source of pain.

And don't overlook the power of pleasant activities. Find out what this patient enjoys doing and see if you can facilitate a return to their enjoyable pastimes. This can lead to improved mood, more social activities, and a return of self-confidence.

Whether acute or chronic, at some point pain can stop serving the patient and become a cruel taskmaster controlling what and how the patient does things. If you can re-orient that relationship, the patient can get back in control—which is empowering.

Your primary tool, the adjustment, both facilitates the innate healing response and also reduces inflammatory cytokines, which are a component of chronic pain conditions. Adjustments can also relieve muscle tension and decrease oxidative stress. Your particular specialty can address some of the physical challenges your patients have, but consider the mental and psychological aspects of pain that may be holding them back.

Ultimately, some patients may not respond and you'll need to refer them to another specialist. But the reason they're choosing you first is the hope of avoiding dangerous drugs and surgery if possible. Know *all* the tools you have at your disposal. CE

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ADOBE STOCK

Fight the fire

The right exercise and diet can reduce chronic inflammation.

BY JENNIFER JAMACK

An alarming number of Americans suffer from chronic inflammatory diseases. But most people who are impacted are unsure of the steps needed to properly address the condition. They continue to experience pain, which at times leads to further injury.

Inflammation is a vital part of the body's immune response. It is the body's attempt to heal itself after an injury; defend itself against foreign invaders, such as viruses and bacteria; and repair damaged tissue.[1] Recently, researchers at the University of California San Diego School of Medicine found how just one session of moderate exercise can act as an anti-inflammatory therapy. The findings have encouraging implications for chronic diseases like arthritis, fibromyalgia and obesity.[1]

The study from the University of California also found that one session of about 20 minutes of moderate treadmill exercise resulted in a 5 percent decrease in the number of stimulated immune cells producing tumor necrosis factor (TNF), a key regulator of local systemic inflammation that helps boost immune responses.[1] According to Suzi Hong, PhD, at UC San Diego, patients with chronic inflammatory diseases should always consult with their physician regarding the appropriate treatment plan, but knowing that exercise is anti-inflammatory is an exciting step forward in possibilities.

Exercising and inflammation

Daily physical activity has many benefits, such as controlling weight, strengthening the muscles, and reducing the risk of certain diseases. And regular participation in moderate-intensity exercise may enhance certain aspects of the immune system in addition to its anti-inflammatory properties. These effects are believed to reduce infection and lower the risk of cardiovascular disease.[2]

Regular exercise tends to lower markers of systemic inflammation.[2] Over-exercising, however, can create increased markers of chronic inflammation. When you over-train, you can become systemically inflamed in the process. The stress remains, and the inflammation will not subside. Popular exercise routines like CrossFit or heavy lifting can become problematic for many people and create a negative inflammatory response.

To some extent, a certain amount

Week	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
1	Light Exercise 30 minutes	Light Circuit 15/20/15	Moderate Exercise 30 Minutes	Rest	Moderate Exercise 30 minutes	Light Circuit 15/20/15	Rest
2	Light Exercise 30 minutes	Light Circuit 15/20/15	Moderate Exercise 30 Minutes	Rest	Moderate Exercise 30 minutes	Light Circuit 15/20/15	Rest
3	Light Exercise 30 minutes	Moderate Circuit 15/30/15	Moderate Exercise 30 Minutes	Rest	Vigorous Exercise 15 minutes	Light Circuit 15/20/15	Rest
4	Light Exercise 30 minutes	Moderate Circuit 15/30/15	Moderate Exercise 30 Minutes	Rest	Vigorous Exercise 15 minutes	Moderate Circuit 15/30/15	Rest
5	Light Exercise 30 minutes	Vigorous Circuit 15/45/15	Moderate Exercise 30 Minutes	Rest	Vigorous Exercise 20 minutes	Moderate Circuit 15/30/15	Rest
6+	Light Exercise 30 minutes	Vigorous Circuit 15/45/15	Moderate Exercise 30 Minutes	Rest	Vigorous Exercise 20 minutes	Vigorous Circuit 15/45/15	Rest

of inflammation is necessary for your training if you are trying to get specific results from your workouts. Increased stamina, strength, focus and endurance are some of the benefits of the body producing inflammation and refortifying its tissues to deal with future training sessions.

Think of training as a machine, or an output-versus-input type of mechanism. Once it begins to turn into a chronic inflammatory response during your training sessions, your body is overworked. This is extremely common for triathletes, marathon runners and others training for competitions. These events could triple the amount of training a person does per day and cause additional stress on the body, which could potentially result in an injury.

The inflammatory response is dependent on two factors; namely, the extent of actual physical damage and the degree of muscle vascularization at the time of injury.[2] Once an injury occurs, depending on the severity, it might take months to reduce the inflammation.

The right combination

So, what is the right mixture of exercise to avoid chronic inflammation? According to the Gene Smart anti-inflammatory diet and exercise program, working out four to five times a week with three days of aerobic exercise (walking, running, using the elliptical) and two days of circuit training or weight training can make the connection between exercise and inflammation, and it can significantly reduce inflammatory messengers and whole-body inflammation.[3]

Observational studies reveal that you are nearly 50 percent less likely to have elevated levels of the inflammatory messenger C-reactive protein (CRP) if you exercise regularly compared to being sedentary.[3] The good news is if you are exercising to achieve weight loss, you can still lose weight and also reduce whole-body inflammation by following this plan.

Note the workout regime has a good mixture of activities and rest periods so that your body has time to take a break in between vigorous exercise days. Following a plan that focuses on reducing inflammation may be a great suggestion to patients who have high levels of CRP.

Getting your heartbeat to 50 to 75 percent of its maximum rate for up to 30 minutes can help get you moving in the right direction.[3] And knowing the benefits of exercise can help you motivate yourself to stick to a set plan.

Adding an anti-inflammatory diet can also be beneficial to increasing one's struggles with inflammation. Here are 10 tips from Mind, Body, and Health that are specific to an anti-inflammatory diet:[4]

- Consume at least 25 grams of fiber every day.
- Eat a minimum of four and 1/2 cups of fruits and vegetables every day.
- Eat four servings of both alliums and crucifiers every week.
- Limit saturated fat to 10 percent of your daily calories.
- Consume foods rich in omega-3 fatty acids.
- Eat fish at least three times a week.
- Use oils that contain healthy fats.
- Eat healthy snacks twice a day.
- Avoid processed foods and refined sugars.
- Eliminate all trans fats.

Limiting certain foods containing high amounts of omega 6 is a good start, as they tend to be pro-inflammatory.[3] There are supplements that contain the right polyphenols and omegas to help live a more fulfilling life. Remember, exercise does not have to be intense to be effective. CE

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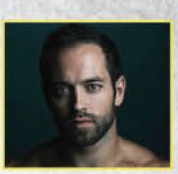
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The Hawthorne effect

BY NANCY SINGLETON

THERE WAS A PRACTICE MANAGEMENT COMPANY IN THE 1990s that serviced dentists and chiropractors. At their seminars, the main speaker would often start off with this joke, "We have two groups of people here today, dentists and chiropractors, and you can easily tell them apart. The dentists are wearing plaid shirts and the chiropractors are wearing smiles." His experience was that dentists found less satisfaction in their work than chiropractors, because chiropractors were so excited about providing care.

It's not uncommon to hear DCs talk about their passion for chiropractic. Many are drawn to this field because they personally had an incredible outcome with chiropractic care and they want to help others experience the same results. Typically, that excitement for chiropractic remains strong, but there is something that can dim that passion if not handled properly—the burden of running a business.

The experiment

The Hawthorne effect is a psychological phenomenon that shows productivity improves when performance is measured. This term grew out of a study on worker productivity back in the 1920s at the Western Electric Company's Hawthorne Works. The company was looking for ways to increase worker productivity.

They focused on a specific group of workers, and they let them know they were being studied. The researchers changed the lighting levels and monitored results. Ultimately, it didn't matter if they increased the lighting or decreased the lighting; as long as the workers were monitored, and knew they were being monitored, their performance improved.

Practices that struggle tend to miss this simple yet important business principle. If the business has a low number of new patients, patient visits, or collections, the temptation is to ignore the unpleasant facts. However, the Hawthorne effect shows that the act of monitoring numbers can help them improve.

Weekly staff meeting

A weekly staff meeting is an essential activity for practice success, and it's the perfect time to assess key practice numbers. The Hawthorne effect also showed that collaborative efforts can enhance results by creating a sense of teamwork and common purpose.

There is a fine line to walk when reviewing and discussing numbers that need to improve. Creating a sense of "we are all in this together" and "we are here to serve patients" will keep the focus positive. While focusing on things that need to improve, focus on what is working.

Back to the basics

Too often, doctors are looking for clever and exciting ways to grow their practices. But the most direct route to practice success is through paying attention to basic metrics. Some of the essential numbers to monitor and then discuss during staff meeting include:

- Number of new patients
- Number of patient visits
- Amount collected
- Number of referrals
- Notable service by staff
- Patient success stories

These areas seem so simple that it might be tempting to not bother reviewing them. But observing these numbers doesn't just happen weekly at the staff meeting. Rather, it happens on a daily basis as your staff records these results and data.

Per the Hawthorne effect, people who know they are accountable and being observed will behave and perform better than those who are unsupervised.

A great leader has a positive focus on the discussion of practice numbers. Greater productivity results when management helps staff feel valued and know that their concerns are taken seriously. CE

NANCY SINGLETON is a 1989 graduate of the Los Angeles College of Chiropractic Assistants. She has been consulting and helping doctors grow their practices for more than 25 years. She and her husband, Todd Singleton, DC, teach chiropractors how to implement multiple cash systems into their existing practices. They can be contacted at contact@singletonsystems.com or through singletonsystems.com.

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Apr. 21-22	**Cox Technic Certification Course in Cervical Spine - Part III**	Fort Wayne, IN	Cox Seminars	800-441-5571
May 3-4	**CEAS I: Ergonomics Assessment Certification Workshop**	Boston	The Back School of Atlanta	800-783-7536
May 5-6	**FAKTR Rehab System**	Portland	Southeast Sports Seminars	877-489-4949
May 12-13	**FAKTR Rehab System**	Park City, UT	Southeast Sports Seminars	877-489-4949
May 18-19	**CEAS I Ergonomics Assessment Certification Workshop**	Raleigh, NC	The Back School of Atlanta	800-783-7536
May 19	**The 3 R's of Chiropractic: Reduce, Restore and Rehab**	Pittsburgh	Foot Levelers	540-345-0008
May 19-20	**FAKTR Rehab System**	Las Vegas	Southeast Sports Seminars	877-489-4949
May 26-27	**FAKTR Rehab System**	Indianapolis	Southeast Sports Seminars	877-489-4949
June 1-3	**FAKTR 3 with Dynamic Tape**	Chicago	Southeast Sports Seminars	877-489-4949
June 2-3	**FAKTR Rehab System**	Dallas	Southeast Sports Seminars	877-489-4949
June 8-10	**FAKTR 3 with Dynamic Tape**	Raynham, MA	Southeast Sports Seminars	877-489-4949
June 16-17	**FAKTR Rehab System**	Seneca Falls, NY	Southeast Sports Seminars	877-489-4949
June 23-24	**FAKTR Rehab System with Tom Hyde**	St. Paul, MN	Southeast Sports Seminars	877-489-4949
June 23-24	**Cox Technic Seminars Honors Course**	Chicago	Cox Seminars	800-441-5571
July 12-15	**Cox Technic Certification Course in Lumbar Spine - Parts I & II**	Fort Wayne, IN	Cox Seminars	800-441-5571
Aug. 4-5	**FAKTR Rehab System**	Fargo, ND	Southeast Sports Seminars	877-489-4949
Aug. 4-5	**FAKTR Rehab System**	Charleston, SC	Southeast Sports Seminars	877-489-4949
Aug. 18-19	**FAKTR Rehab System with Tom Hyde**	New Orleans	Southeast Sports Seminars	877-489-4949
Sept. 8-9	**FAKTR Rehab System**	Birmingham, AL	Southeast Sports Seminars	877-489-4949
Sept. 28-30	**FAKTR 3 with Dynamic Tape**	Pasadena, TX	Southeast Sports Seminars	877-489-4949
Oct. 14-15	**Cox Technic Seminars Honors Course**	Philadelphia	Cox Seminars	800-441-5571
Nov. 3-4	**FAKTR Rehab System**	Miami	Southeast Sports Seminars	877-489-4949
Nov. 8-11	**Cox Technic Certification Course in Lumbar Spine - Parts I & II**	Fort Wayne, IN	Cox Seminars	800-441-5571

For a searchable list of more seminars and show dates or to submit your event, visit ChiroEco.com/datebook.

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Vitamins

Kid's Vitamin C Gummies are the simplest way to provide children with the vitamin C they need to nourish their growing bodies and support their immune systems. This product provides 125 mg of vitamin C in each tangy orange wedge. Children can take one to two gummies daily depending on their nutritional needs. Kid's Vitamin C Gummies do not have any artificial flavors, sweeteners or dyes.*

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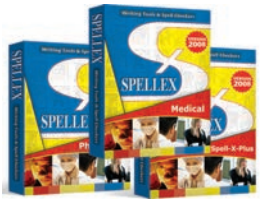

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Sleep aid

The Tempur-Cloud Supreme Breeze is a medium softness Tempur-Pedic product model that offers adaptive support and cooling comfort. It includes three layers (comfort later, support layer and base layer) for added comfort in addition to a cooling cover. The cooling cover includes performance fabric that is lightweight, breathable, and infused with cooling technology. The comfort layer to draws excess heat away from the body, and the support layer and base provides support in addition to distributing body weight.

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Wheel Gym by Lifeline USA was created to maximize the ability of the wheelchair user to perform a variety of resistance exercises properly, conveniently and independently. The Wheel Gym is designed to make performing the exercises and adjusting the equipment easy for the wheelchair user. The product includes various resistance bands allowing for adjustability and adaptability.

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330-549-1900 • maxfreezepro.com

Decompression system

The DRX9000 True Non-Surgical Spinal Decompression System by Axiom Worldwide provides a primary treatment modality for the management of pain and disability for patients suffering with incapacitating low-back pain and sciatica. The DRX9000 features a nested closed-loop feedback system, advanced system diagnostics and a floating lower mattress.

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