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F4CP Applauds World Health Organization

The Foundation for Chiropractic Progress applauds the recently published recommendations by the World Health Organization to manage low back pain initially with non-pharmaceutical interventions, such as chiropractic, while avoiding opioids, spinal injections and surgery.

In the *Bulletin of the World Health Organization* article, "Care for low back pain: can health systems deliver?" authors review six sets of updated international guidelines for managing low back pain, pointing out that all recommend avoiding medication, if possible, as a first step. They also highlight that after educating patients about low back pain and urging them to remain active, the second-step care options generally include: therapies such as spinal manipulation, most often performed by a doctor of chiropractic (DC), as well as massage and exercise. International guidelines also prioritize psychological and complementary therapies, such as mindfulness-based stress reduction, yoga, acupuncture and tai chi, over medical and surgical interventions.

"This report confirms what doctors of chiropractic around the world continue to witness in their practices on a daily basis: non-pharmaceutical, non-surgical care approaches to managing general low back pain, such as spinal manipulation and exercise, are vastly superior methods," said Sherry McAllister, DC, executive vice president of F4CP. "This is an important study that we hope will help continue to expand the worldwide consensus toward managing low back pain patients with safer, more effective and longer-lasting pain relief methods that drive increased mobility."

WHO Research Introduction

Low back pain is the single biggest cause of years lived with disability worldwide, and a major challenge to international health systems. In 2018,

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Many orthopedic surgeries don't work better than a placebo

Many studies have shown that almost no matter where you point an MRI on a body, you can find something wrong there, even parts that are completely free of pain.

In one famous study called, *Magnetic resonance imaging of the lumbar spine in people without back pain*, MRIs were performed on subjects who did not have back pain. Fifty two percent of the subjects had at least one bulging disc or other MRI abnormality for which surgery is sometimes recommended. Given these findings, the authors stated that: "the discovery by MRI of bulges or protrusions in people with low back pain may frequently be coincidental."

In a similar study called, *Abnormal magnetic-resonance scans of the lumbar spine in asymptomatic subjects. A prospective investigation*, MRIs on individuals who had never suffered from low back pain revealed that one third had a substantial spinal abnormality and 20% under the age of 60 had a herniated disc.

According to author Todd Hargrove who says in his book, *Playing With Movement: How to Explore the Many Dimensions of Physical Health and*

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IACP

The mission of the Idaho Association of Chiropractic Physicians (IACP) is to act as the unified voice, leader and stalwart supporter of the individual licensed doctors of chiropractic and supporting associates who provide exceptional health care and wellness to the patients and communities of Idaho. In supporting our Idaho chiropractic physicians, the IACP will work diligently to protect, enhance and build opportunities for the chiropractic industry and increase public access to chiropractic care.

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President's Corner

Take some time off with your family

By Dr. Scott Crawford, IACP President

Summer is in full swing and it's busy in and out of the office. Although it's probably easy for some, for me it's been a difficult process. This process I'm referring to is taking time off. I've always felt it would negatively impact my office, but, over time I've realized it's actually the opposite. We deal with people on a daily basis and need to recharge every once in a while. So please, take some time off with your family or just on your own. No matter what, plan to take a break this summer.

"Join the Pack"

Become a member of the IACP

The IACP acts as a resource, representative and leading advocate for the chiropractic industry in Idaho. We cannot continue to properly serve the chiropractic profession without the commitment and support of exceptional industry leaders, such as yourself. The IACP Board and its members believe that membership in the Association is and should be mutually beneficial to both the Doctor and the IACP, which makes it a perfect cooperative relationship. As a member, you will have multiple opportunities to obtain learning and marketing opportunities, at a discounted rate, through membership, as well as, have an opportunity to utilize the services of the IACP team and its Board. You will also have an opportunity to get involved in important issues, from the center, along with other industry leaders and spokespeople. At the same time, the Association continues to grow and provide broader services to the industry with your support. Join now and be a part of the "pack" that will lead us into the future!

Many Orthopedic Surgeries Don't Work Better Than Placebo

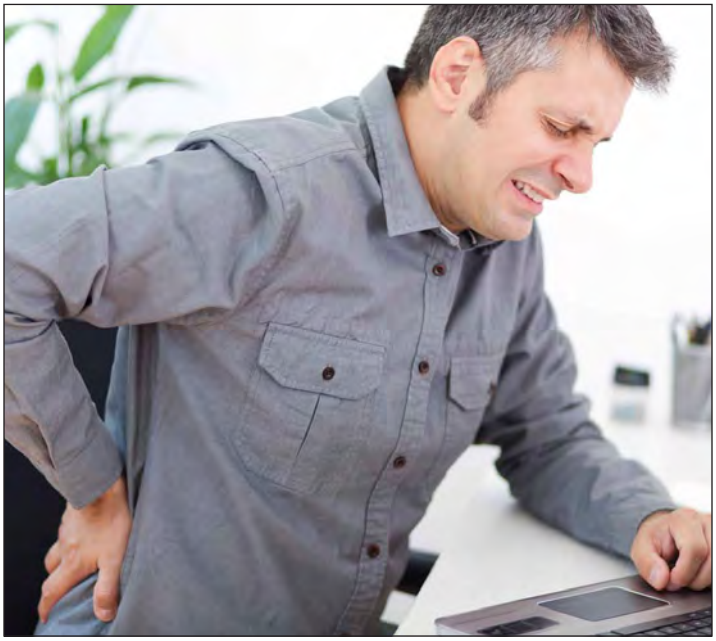
Continued from front page

Performance, "unlike drugs, orthopedic surgeries can be sold to the public before they undergo rigorous testing to ensure they are safe and effective. Thus, millions of surgeries for knee, shoulder, and back pain have been done without studies to confirm they actually work. Recently, research has found that many popular surgeries (but not all) work no better than a placebo. And yet these surgeries are still done at the rate of hundreds of thousands per year. This is something everyone should know if you are considering surgery, or in the business of treating chronic pain."

Hargrove goes on to say that there is evidence that backs can have major structural damage and still not hurt. Further, backs can hurt a lot even when they have no apparent damage. In fact, this is quite common — most chronic low back pain is classified as "non-specific," meaning it cannot be explained in reference to a mechanical or structural cause. Although there is only a poor correlation between back pain and structural back damage, there are many surgeries to correct any damage that happens to appear on an MRI. Several perform no better than conservative care.

For example, vertebroplasty attempts to treat back pain by injecting bone cement into fractured vertebrae. A study published in 2003 in the *American Journal of Medicine* showed it works as well as no treatment at all after six weeks.

In 2009, a study called, *A Randomized Trial of Vertebroplasty for Osteoporotic Spinal Fractures,* showed it worked no better than a simulated procedure for fractures related to osteoporosis. The study said, "In conclusion, at 1 month, clinical improvement in patients with painful osteoporotic vertebral fractures was similar among those treated with vertebroplasty and those treated with a simulated procedure. These data suggest that further studies should be undertaken to determine whether the long-term outcome is similar in the two groups, especially because our crossover study design limited our ability to shed light on the long-term efficacy of vertebroplasty."



Low back fusion is a common procedure, and is intended to enhance low back stability. In 2013, the *Spine Journal* published a study comparing spinal fusion to non-operative treatments like cognitive behavioral therapy and exercise. It found no difference in long term outcomes and concluded that "the use of lumbar fusion in chronic low back pain patients should not be favored" over conservative care and exercise.

Yet the research showing the relative ineffectiveness of surgery has been slow to affect practice. Nikolai Bogduk, an internationally renowned anatomist and back pain expert, explains that, "Surgeons and others believe that surgery is effective for back pain. They base this belief either on their own experience or on observational studies. This belief is, by and large, not vindicated by the outcomes in well-reported clinical trials. Those trials indicate that only a small proportion of patients do well from surgery.

To be clear, none of the above means we should not trust orthopedic surgeons, or that surgery should never be used to treat chronic pain. Many surgeries have been proven to work and are definitely a good idea under certain circumstances. I personally know many people who have received excellent and ethical advice from their surgeons, and dramatic benefits from surgery. By contrast, I also know people who got a surgery that had been proven to be ineffective, were never advised of the relevant research, and ultimately did not get a good result.

The lesson here is that the medical establishment has some biases in the way it treats chronic pain. It favors treatments based on simple structural explanations for pain, and tends to ignore complex neurophysiological processes that may be more important. We need to be aware of these biases and learn as much as possible about the complexity of pain so that treatment can be improved. And chronic pain clients need to ask their surgeons some good questions before going under the knife.

A summary of current studies related to chiropractic and manual therapies for pediatric patients

By JCCP co-editors Cheryl Hawk, DC, PhD, CHES and Sharon Vallone, DC, FICCP
Reprinted from the June JCCP, available online

In the March 2019 position statement by the Chiropractic Board of Australia, Interim policy on spinal manipulation for infants and young children, the Board recommends that chiropractors do not treat any children under age two years with spinal manipulation. This is an interim position awaiting an independent expert review by Safer Care Victoria on spinal manipulation for infants and young children.

The Board goes on to state that, "there is no current clinical guideline, or peer-reviewed publication, to guide chiropractors with respect to the care of infants and young children, and the use of spinal manipulation in particular."

While we acknowledge that there is not enough research on the effects of spinal manipulation on infants and young children, we would like to be sure that chiropractors and the public realize that there currently exists a growing body of evidence, plus an evidence-based set of recommendations for "best practices" for chiropractic care of children, which provide fairly substantial support for the safety of chiropractic care.

It is also important to note that for this interim policy the Board defines "spinal manipulation" as "moving the joints of the spine beyond the child's usual physiological range of motion using a high velocity, low amplitude thrust." This definition is important to keep in mind, because much of the published research on manual therapy involving children, particularly infants, suggests that very often Doctors of Chiropractic (DCs) and osteopathic physicians (DOs) do not use high velocity, low amplitude (HVLA) thrusts.

This editorial will briefly address a few of the studies which we hope will also be covered in the future review by Safer Care Victoria. It focuses on the safety of manual therapy in general because this is the chief concern of the recent policy. Effectiveness is, of course, important, but safety must be a primary concern.

2019 Systematic review of manual therapy for the pediatric population. This review detailed the use of manual therapy for children. "Manual therapy" included high-velocity, low-amplitude thrust maneuvers, mobilization, and low-force manual techniques. It found that in the 20 (of 50) studies that reported on adverse events, no serious or long-lasting adverse events were reported for children receiving any type of manual therapy.[1]

2018 Systematic review and meta-analysis of manual therapy for unsettled, distressed and crying infants.[2] This thorough study is somewhat unique in that it included not only randomized controlled trials (RCTs) but observational studies as well, excluding only single case reports and non-peer-reviewed literature. It included studies in which the intervention was manual therapy, defined as involving "physical and/or manual contact with the patient for therapeutic intent." This study stated that manual therapy is a "relatively low risk intervention."[2, p.13] In fact, in the meta-analysis, the authors found that, "there was an overall RR [Risk Ratio] of 0.12 (95% CI 0.12 to 0.66); that is, those who had manual therapy had an 88% reduced risk of having an adverse event compared with those who did not have manual therapy."[2, p.6]

2015 Review of adverse events related to manual therapy for infants and children.[3] This extensive review searched from the inception of searchable databases through March 2014, and included all manual therapists—this is a period of more than 50 years. Serious adverse events in infants and children receiving any type of manual therapy were rare. A total of 15 serious adverse events were reported, including three reported deaths. It is important to note that none of the deaths and seven of the 15 serious adverse events were attributed to chiropractors, even though chiropractors provide a substantial majority of manual care for children. In four of the seven serious adverse events related to chiropractic care, underlying preexisting pathology such as osteogenesis imperfecta contributed. It is also important to note that HVLA manipulation was applied in 10 of the 15 total serious adverse events. Mild, transient adverse effects such as temporary soreness or temporarily increased crying were much more commonly reported.

Review of biomechanical forces of chiropractic techniques used with children.[4] This study discusses the findings of literature related to the amount of biomechanical force applied when chiropractors work with infants and children. It found that DCs often modify their usual techniques according to the patient's age, decreasing the amount of biomechanical force, particularly with respect to HVLA. The description of Marchand's findings and recommendations arising from a

survey of European chiropractors is particularly relevant to preventing adverse events.[5] See Table 1 for a summary of these recommendations. In this context, it is worth noting that many, if not most, chiropractic colleges in the U.S. are now using Force-Sensing Table Technology in training students in application of HVLA techniques, so they will be able to deliver selected levels of force.[6] It is also worth noting that, as indicated in Table 1, thrust manipulation (HVLA) is not recommended for infants and children under age two.

Recommendations on "best practices" for chiropractic care of children.[7,8] These recommendations were first published in 2009 and then updated, based on an accompanying systematic review, in 2016. The 2009 original paper was actually structured to follow a current (at that time) Australian draft guideline on the same topic. The updated one included a systematic review, but the recommendations regarding safety did not change substantially. Based on the literature, and still congruent with the more recent studies summarized above, we recommended practices which would not only address the safety of manual procedures themselves, but would also help avoid what Vohra et al term "indirect" adverse events: those occurring as a result of delayed referral for necessary care from another provider, or failure to correctly diagnose "red flags" which would contraindicate chiropractic care.[9] These recommendations include age-appropriate history and examination; detection of "red flags" and modification of manual techniques to be suitable to the patient's age, size, developmental stage—especially in terms of skeletal development, muscle mass and ligamentous flexibility—and comfort.

Conclusion

The current studies summarized above suggest that manual therapies are rarely associated with serious adverse events in children, even infants. For additional protection of patients, our profession has also developed an evidence-based set of recommendations for "best practices" for chiropractic care of children.

Level and age	Type of force	% of force used for adults	Approximate Newtons (actual force)
Grade 1: Ages 0-2 months	Low force; Low speed	10%	~11 N
Grade 2: Ages 3-23 months	Low force; Low speed	30%	~34 N
Grade 3: Ages 2-8 years	Moderate force; Moderate speed	50%	~56 N
Grade 4: Ages 8-18 years	Moderate force; High speed	80%	~90 N

Table 1. Recommended application of biomechanical forces to children of different age groups.[4,5]

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WHO recommends spinal manipulation for low back pain over drugs or surgery

Continued from front page

the *Lancet* Low Back Pain Series Working Group identified a global problem of mismanagement of low back pain. The group documented the phenomenon of unnecessary care in both high- and low-income settings, whereby patients receive health services, which are discordant with international guidelines. The articles summarized the strong evidence that unnecessary care, including complex pain medications, spinal imaging tests, spinal injections, hospitalization and surgical procedures, is hazardous for most patients with low back pain.

The movement away from medicalized management of low back pain is reflected in recent clinical guidelines. All six of the major international clinical guidelines released since 2016 prioritized non-medical approaches for patients with low back pain. Primary-care clinicians following these guidelines would manage uncomplicated cases with advice, education and reassurance. For patients at risk of developing chronic pain and disability, clinicians would, depending on which guidelines they followed, consider offering treatments such as spinal manipulation, massage, acupuncture, yoga, mindfulness, psychological therapies or multidisciplinary rehabilitation. Most health systems are not well-equipped to support this approach.

Changing the Culture

Authors point out, however, that reaching a worldwide low back pain consensus among all healthcare providers and payers will require a system-wide change involving governments, employers, consumers, professional organizations and other stakeholders. F4CP recommends helping usher in this cultural change by implementing the following steps:

1. Reduce co-pays for evidence-based, effective treatments such as chiropractic care, acupuncture and occupational therapy
2. Decrease unnecessary administrative obstacles, such as medical necessity reviews for these conservative, cost-effective treatments
3. Refine visit limits to encourage members to make such therapies part of their long-term, chronic pain management strategy, preventing the need for pharmacologic intervention
4. As authors also note, attempts to reduce opioid prescriptions should be accompanied by adequate access to substance-use disorder services, social programs and evidencebased non-pharmacological approaches to relieve psychological and physical pain.

As patients take advantage of non-pharmacological care approaches and experience better outcomes, cultural expectations and beliefs around managing low back pain will change. Continued research on the efficacy of non-pharmacological approaches to low back pain would also help advance this cultural shift.

For example, a study published in *The Journal of Alternative and Complimentary Medicine* concluded that adults receiving chiropractic care for low back pain were 55% less likely to fill a prescription for an opioid analgesic in comparison to adults who did not receive chiropractic care. The object of the investigation was to evaluate the association between utilization of chiropractic services and the use of prescription opioid medications. Based on the findings, the F4CP notes that pain management services provided by DCs may allow patients to use lower or less frequent doses of opioids, leading to reduced costs and risk of adverse effects.

DCs lead in safe, effective low back pain management

DCs are front-line providers for spinal health and well-being, specifically as it relates to the management of back, neck and headache pain. In addition, DCs are required to receive a minimum of seven years of higher-level education—similar to other healthcare providers. In addition, DCs are specifically trained to diagnose, evaluate and provide non-pharmaceutical care and rehabilitation to individuals suffering from acute, subacute and chronic low back and neck pain, headaches, neuro-musculoskeletal and other related conditions.

"It is exciting to be a part of this monumental shift toward evidence-based, safer care for the millions of patients worldwide suffering from low back pain," said Dr. McAllister. "We urge the WHO to move forward in establishing international guidelines for the condition that advises against ineffective pharmacological and surgical care approaches and embraces drug-free pain management methods, such as spinal manipulation delivered by a doctor of chiropractic."

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Protein supplementation increases muscle mass

At a conference in 2012, Luc van Loon was presenting some exciting data from a newly published study called, *Protein supplementation increases muscle mass gain during prolonged resistance-type exercise training in frail elderly people: a randomized, double-blind, placebo-controlled trial*.

The objective of this study, from the abstract: "Protein supplementation has been proposed as an effective dietary strategy to augment the skeletal muscle adaptive response to prolonged resistance-type exercise training in elderly people. Our objective was to assess the impact of protein supplementation on muscle mass, strength, and physical performance during prolonged resistance-type exercise training in frail elderly men and women."

After a heroic research effort that took 2.5 years and 500,000 euros, the research team had managed to shepherd a large group of frail, elderly subjects through a six-month strength-training program. Those who had taken a daily protein supplement managed to pack on an impressive 2.9 pounds of new muscle. Success! Old people could be strong!

But van Loon, an "extraordinary professor" (his actual title) of exercise physiology and nutrition at Maastricht University in the Netherlands, wasn't celebrating. On his phone was a photo one of his students had just sent him of a large plate stacked high with bulging cubes of raw beef. In total, there were 3.1 pounds of beef—a graphic visualization of the muscle lost in just one week by subjects of a bed-rest study the student had just completed.

"I usually put this in more obscene language," van Loon says, "but you can mess up a lot more in one week than you can improve in six months of training."

Over the past decade and a half, van Loon has emerged as one of the world's most rigorous and innovative researchers on the intricacies of how we build muscle. But he has now come to believe that, from a health perspective, how we lose muscle is at least as important. At a recent conference in Rhode Island hosted by the New England chapter of the American College of Sports Medicine, van Loon laid out the key lessons he and other researchers in the field have gleaned. For anyone who seeks to push their limits, or who plans to get old, here are the highlights.

You Are What You Just Ate

To really understand how protein contributes to new muscle, we need to be able to follow the individual components—amino acids—on their journey inside the body. Starting in 2009, van Loon and his colleagues developed a technique that involved infusing 40,000 euros' worth of amino acids, specially "labeled" using a rare and trackable isotope, into a cow. Then they milked the cow and, 24 hours later, slaughtered it. The result: milk and beef that can be tracked with

painstaking precision as it progresses from a person's mouth to their biceps by taking frequent samples of blood and biopsied muscle tissue in the hours after a meal.

In one of the resulting studies, the researchers found that substantial amounts of the "glowing cow" protein was incorporated into muscles within just two hours of ingesting it. As the study's title proclaims, you are, quite literally, what you just ate. Just over 50 percent of the protein made it into the subjects' circulation within five hours, with the rest presumably taken up by tissues in the gut or not absorbed. During the same period, 11 percent of the ingested protein was incorporated into new muscle.

Overall, van Loon points out, we break down and rebuild 1 to 2 percent of our muscle each day, meaning that you completely rebuild yourself every two to three months. This is a message, van Loon hopes, that might persuade people to think a little more carefully about what they put in their mouths.

If You Exercise, You're More of What You Just Ate

We often think of amino acids as the "building blocks" of muscle. That's true, but the amino acids derived from protein actually play a dual role in muscle growth: In addition to being a source of raw materials, protein acts as a signaling molecule, triggering the growth of new muscle. One amino acid in particular, leucine, seems to be the most potent anabolic signaler, but you need all the amino acids together to effectively build muscle.

There are a bunch of subtleties here, like the optimal dose of protein. In healthy adults, a dose of about 0.25 grams of protein per kilogram of body weight seems to max out the protein synthesis signal from a given meal. That's about 20 grams of protein if you weigh 175 pounds. So it makes sense to hit that target three or four or even five times a day.

That's why van Loon and his team decided to experiment with a pre-bedtime dose of protein to see if they could boost muscle synthesis as you sleep. Their initial proof-of-principle study involved snaking a tube down the nose and into the stomachs of their subjects and flushing in 40 grams of protein while they slept. It worked—and van Loon, to his bemusement, soon started getting calls from sports coaches asking where they could get nasogastric tubes. (You can just eat the protein before you go to sleep, he explained to them.)

But the best way to augment protein's muscle-signaling capacity is simple: Exercise before you eat, and your muscles become more sensitive to protein's signals. "You can't study food without exercise, and you can't study exercise without food," van Loon says. "There's a synergy between them."

If You're Inactive, You're Less of What You Just Ate

Unfortunately, there are also factors that make your muscles less sensitive to protein signaling. Getting older is one of them, which is why older adults seem to need a larger dose of 0.4 grams of protein per kilogram of body weight, rather than 0.25, to max out their rates of protein synthesis.

But is it really age that causes this "anabolic resistance"? Or is it simply a consequence of our unfortunate habit of becoming less physically active as we age? Van Loon's bed-rest study piqued his interest in the rapid and devastating effects of inactivity, particularly in hospital settings, where people are often confined to bed for five to seven days. According to the "catabolic crisis" model of aging, we don't lose our muscle mass at a steady and predictable rate. Instead, much of the loss takes place during short periods of time—a week in bed after a fall or a knee replacement, say—during which we lose massive amounts of muscle that we never fully get back.

Van Loon advocates some simple fixes—like never, ever feed someone in a hospital bed unless it's absolutely necessary. Make them get up, and ideally make them shuffle down the hallway to get food. Same for watching TV. Even this tiny amount of muscle contraction, he says, will enhance muscle synthesis when the patient eats. Similarly, since you don't eat as much when you're in bed, the proportion of protein in the meal should be higher to ensure sufficient muscle synthesis signals.

Of course, some people really can't get out of bed—so van Loon did some wild-sounding experiments. In one, he immobilized one leg of his volunteers with a cast for five days, then drilled a hole in the cast to apply neuromuscular electrical stimulation (NMES) to half of those volunteers. The immobilization caused a 3.5 percent reduction in the cross-

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Protein supplementation increases muscle mass

Continued from last page

sectional area of the quadriceps; twice-daily electrical stimulation prevented this loss.

In another study, van Loon tried the technique on actual comatose patients in the intensive care unit of a hospital. Biopsies showed that these patients were seeing a 20 to 30 percent reduction in the size of their muscle fibers during their hospital stays. “Basically the people are melting in front of your face,” he says. So van Loon zapped one leg but not the other with NMES twice a day for a week—and again warded off atrophy. The approach is nowhere near as good as even the most basic exercise, he says, but it appears to be better than nothing.

Chew Your Food

In one of the “glowing cow” studies, entitled, *Minced beef is more rapidly digested and absorbed than beef steak, resulting in greater postprandial protein retention in older men* and published in the *American journal of Clinical Nutrition*, van Loon and his colleagues compared the benefits of eating ground beef to steak. The study objective was to assess the effect of meat texture on the dietary protein digestion rate, amino acid availability, and subsequent postprandial protein balance in vivo in older men.

The gresearch found that minced beef is more rapidly digested and absorbed than beef steak, which results in increased amino acid availability and greater postprandial protein retention. However, this does not result in greater postprandial muscle protein synthesis rates. This trial was registered at clinicaltrials.gov as NCT01145131.

How significant this is remains a bit unclear (rates of muscle protein synthesis weren’t significantly different in the study), but it’s worth noting, particularly because we tend to get less good at chewing our food as we get older.

In fact, van Loon says, studies in the 1960s found that people who retained more of their own teeth tended to have more muscle. Bizarrely, body position also matters: When you eat lying down, you slow down protein digestion and likely reduce the synthesis of new muscle protein.

So, as van Loon told the conference in Rhode Island, the overall body of research boils down to one simple message: Your mom was right. Eat three protein-rich meals a day, get plenty of exercise, and sit up straight and chew your food.

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Exercise Your Brain

Exercise is as good for your brain as it is for your body, and researchers are just beginning to discover why.

Human beings evolved to move. Our bodies, including our brains, were fine-tuned for endurance activities over millennia of stalking and chasing down prey. “We’ve engineered that out of our lives now,” says Charles Hillman, a psychology professor at Northeastern University who has spent decades studying the link between exercise and cognition. The toll our relatively new sedentary lifestyle takes on our bodies is clear: For the first time in U.S. history, younger generations are expected to live shorter, unhealthier lives than their parents.

While the myriad ways exercise can shape our bodies are well known, researchers have long suspected the same might be true of the brain. Decades of research have gone into examining the effect of exercise on attention, memory, and visual sensitivity, according to Richard Maddock, a professor of psychiatry at the University of California, Davis. “There is a very consistent finding that the brain works better after exercise,” Maddock says. But why that is has been harder to figure out.

“Few studies have really looked at what’s actually going on in the brain while we’re moving,” says Tom Bullock, a postdoc at the University of California, Santa Barbara. Only recently has technology given scientists the tools to zero in on the mechanisms at play. Aerobic exercise appears to lead to changes in both the structure of the brain and the way it operates, which together bolster learning in kids, give adults an edge on cognitive tasks, and protect against the cognitive declines that often come with age.

Here, we outline exactly what we know happens in your head when your heart rate rises.

Brain Waves Get a Boost

Your brain becomes much more active during exercise, “perhaps more active than at any other time,” says Maddock. One way neurons communicate is with electrical pulses, and sometimes entire networks of neurons fire in unison, like a group of soccer fans chanting together at a game. These synchronized pulses are known colloquially as brain waves. Different kinds of brain waves, characterized by the number of times they oscillate in a single second, are linked to one’s mental state and mood. Lower-frequency waves occur when we’re running on autopilot: brushing our teeth, driving, or sleeping, for example. Higher-frequency waves, known as beta waves, occur when we’re awake and mentally engaged and are associated with attention, memory, and information processing.

Using tools like an electroencephalogram (EEG), which pick up on these electrical pulses, researchers have found that aerobic exercise causes a shift in the amplitude and frequency of brain waves. More beta waves, in other words, means that exercisers may be in a more alert state. "The brain is in a different gear when the human being is in motion," Maddock says.

You Become More Sensitive to the World Around You

During exercise, the brain becomes much more receptive to incoming information, leading to measurable changes in vision. Tom Bullock and Barry Giesbrecht, a professor of psychology and brain sciences at UC Santa Barbara, work in one of the few labs that have managed to measure the effects of aerobic activity on the visual cortex during exercise. Bullock says it's taken him four years to figure out how to consistently and reliably record an EEG while a subject is in motion.

The toll our relatively new sedentary lifestyle takes on our bodies is clear: For the first time in U.S. history, younger generations are expected to live shorter, unhealthier lives than their parents.

The visual cortex is designed to zero in on important features in the environment—the kind of features that might indicate, for example, the presence of a predator or prey—and filter out less important background noise. This year, Bullock and Giesbrecht found that low-intensity cycling boosted this feature-selectivity ability so the brain was able to better identify specific features during exercise.

Scientists have also administered cognitive tests right after exercise—for example, measuring the flicker fusion threshold (the rate at which a flashing light begins to look like it's steadily glowing) and found the same thing: After exercise, one's senses are heightened and thus can detect the flashing at a higher frequency than before exercise.

Taken together, these findings indicate that "people see more clearly and immediately after exercise," Maddock says. "They can make finer visual distinctions; their perceptions are sharper."

Your Brain Shores Up Neurotransmitter Stores

The benefits of exercise to your brain may begin as soon as your heart rate begins to rise. Imagine, if you will, climbing onto your bike for a morning ride and pedaling at a tough but sustainable clip. Your breath becomes faster and heavier as your lungs struggle to meet the oxygen demands of the body in motion. Your heart rate climbs as it pumps oxygenated blood around the body and into the brain. And in much the same way that your muscles demand more energy during exercise, the brain begins gobbling up glucose or other carbohydrates when the body is in motion.

"In the past, nobody had any idea what the brain was doing with all this fuel," says Maddock. That is, until last year, when he and his colleagues published a new study in the Journal of Neuroscience. They discovered that the brain uses some of that fuel to build more neurotransmitters, the chemicals that relay messages around the nervous system. Maddock and his colleagues used MRI to measure levels of neurotransmitters in study subjects after a bout of exercise on a stationary bike and found that levels of glutamate and GABA—two of the most common neurotransmitters in the brain—had increased. The brain may be "filling up its stores of essential ingredients," Maddock says. "Perhaps in order to deal with a sustained period of hunting, for example, or running or fleeing or war." Exercise, in other words, may restock the brain with essential neurotransmitters that it needs to operate optimally.

This process might be why exercise has been shown to alleviate depression. Maddock's team found that during activity, glutamate levels rise in the same region of the brain where stocks of the neurotransmitter have previously been found to be low in depressed patients.

Your Brain Becomes Younger

A few things happen in the exerciser's brain that make the organ appear younger. First, studies in both animals and humans suggest that exercise sparks the production of growth factors that nourish new neurons and help existing cells survive. Budding neural cells also need more nutrients as they grow, and animal studies suggest that exercise promotes the release of other growth factors that promote blood vessel growth, which could deliver those nutrients. At least one study in humans has found that active individuals tend to have more and healthier blood vessels, or, in the words of the authors, a "younger-appearing brain."

These structural changes in the brain generally take at least a few weeks to develop but lead to long-lasting improvements in regions of the brain associated with cognitive tasks, like working memory. "A lot of intervention studies that are out there show that aerobic exercise increases neurogenesis in

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Exercise is as good for your brain as it is for your body, and researchers are just beginning to discover why.

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the hippocampus, for example" says Giesbrecht. "The hippocampus is really critical for memory."

Beyond that, research shows that aging exercisers have increased gray-matter volume in regions associated with general intelligence and executive function, which encompasses everything from attention to planning to problem-solving skills. Studies also show that fit adults have healthier white-matter tracts—the superhighways that connect various regions of gray matter—in the basal ganglia, a critical region for balance and coordination.

New Connections Between Neurons Emerge

Over time, exercise changes both the number of neurons in your brain and how they communicate. A 2016 study from the University of Arizona, for example, found that cross-country runners had increased connectivity between parts of the brain involved in memory, attention, decision-making, multitasking, and processing sensory information—the very same regions that tend to be hit hardest as we age—compared to healthy but sedentary controls. The networks that fire together as you run—coordinating your route, keeping tabs on traffic, trying not to trip on rocks, and maintaining your pace—strengthen as you use them, so that even at rest, runners tend to have greater connectivity between brain regions. It's the kind of connectivity that musicians and cab drivers and other skills-based experts develop. At the same time, the runners had decreased connectivity with a region of the brain typically associated with mind wandering, which indicates runners may have increased focus or concentration skills.

So, Is Exercise Magic?

Hillman cautions that for now, exercisers should be realistic about what aerobic activities can do for the brain. "You shouldn't expect to increase your IQ or anything of that nature," he says. "We're talking about small to moderate effects, which are potentially great for improving cognition and brain health."

But Bullock and Giesbrecht envision a future in which doctors prescribe exercise instead of drugs. "Exercise is a potential prophylactic against some aspects of age-related cognitive decline," Giesbrecht says. "When you think of the fact that we have an aging demographic and the high prevalence of depression, there might be simpler treatments out there, like exercise."

Acute Exercise Modulates Feature-selective Responses in Human Cortex

Tom Bullock, James C. Elliott, John T. Serences and Barry Giesbrecht

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Abstract

An organism's current behavioral state influences ongoing brain activity. Nonhuman mammalian and invertebrate brains exhibit large increases in the gain of feature-selective neural responses in sensory cortex during locomotion, suggesting that the visual system becomes more sensitive when actively exploring the environment. This raises the possibility that human vision is also more sensitive during active movement. To investigate this possibility, we used an inverted encoding model technique to estimate feature-selective neural response profiles from EEG data acquired from participants performing an orientation discrimination task. Participants (n = 18) fixated at the center of a flickering (15 Hz) circular grating presented at one of nine different orientations and monitored for a brief shift in orientation that occurred on every trial. Participants completed the task while seated on a stationary exercise bike at rest and during low- and high-intensity cycling. We found evidence for inverted-U effects; such that the peak of the reconstructed feature-selective tuning profiles was highest during low-intensity exercise compared with those estimated during rest and high-intensity exercise. When modeled, these effects were driven by changes in the gain of the tuning curve and in the profile bandwidth during low-intensity exercise relative to rest. Thus, despite profound differences in visual pathways across species, these data show that sensitivity in human visual cortex is also enhanced during locomotive behavior. Our results reveal the nature of exercise-induced gain on feature-selective coding in human sensory cortex and provide valuable evidence linking the neural mechanisms of behavior state across species.

Extend Your Lifespan

A few simple habits can tack extra years onto your lifespan

Eat healthy foods. Exercise regularly. Don't smoke. We hear these instructions from doctors, friends, parents, and strangers on the internet so often that the words start to lose their impact. And let's face it, healthy habits are hard to adhere to. But perhaps if there's proof they work, then they might be easier to swallow.

In a study in the journal *Circulation*, researchers studied five lifestyle factors that influence how long humans live. They researchers calculated that people who adhered to five things—drink no more than one glass of alcohol per day (two for men), maintain a healthy body weight, eat a high-quality diet, abstain from smoking, and exercise at a moderate-to-vigorous pace (think a brisk walk, at least) for 30 minutes or more a day—had a greater chance of living longer past age 50. Women who followed all five practices lived 14 years longer, on average, than peers who didn't adhere to any of them. Men lived 12 years longer under the same conditions.

Epidemiologists often judge life expectancy as the number of years you live after you reach the age of 50. Prior to that, deaths are often from diseases not associated with getting older like—like accidents or chronic illnesses such as cancer. Today, the average age that people who make it past 50 live is 83.3 for women and 79.8 for men. By many standards, that's a good long life. In 1940, the life expectancy for all Americans was just 62.9 years. By 2000, it had reached 76.8, and then 78.8 in 2014.

Much of that jump can be attributed to improvements in the standard of living across our country, the fact that far less Americans nowadays smoke, and the great discoveries we've made in medicine.

Unfortunately, Americans have a shorter life expectancy compared with residents of almost all other high-income countries, according to a study called, *Impact of Healthy Lifestyle Factors on Life Expectancies in the US Population*.

There are obviously other factors that could be at play. For one, the United States is the only rich country in the world that doesn't provide universal health coverage to all its citizens. Access to healthcare is a known factor that contributes to prolonged health, infectious disease prevention, and chronic disease prevention and management. But the researchers behind the new study argue that America could get closer to the lifespans of other nations by making certain changes in their lifestyles.

The five that they found are what they call low-risk lifestyle-related factors. To identify them, they analyzed data from two large longitudinal studies—the Nurses' Health Study

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A few simple habits can tack extra years onto your lifespan

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and the Health Professionals Follow-up Study. These are projects that follow people's lifestyles and track their health for a number of years. These took place for around 30 years, starting in 1980 and '83 and ending in 2014. Here's the five conclusions they found, and the scientific evidence we have to support on each one.

Exercise Daily

In the study, researchers found that those who exercised for at least 30 minutes a day at a moderate to vigorous pace (including brisk walking) were in the lowest-risk group for developing certain diseases later in life, and thus they had the potential to live longer.

Exercise does two main things: it boosts metabolism and contributes to weight loss or weight stability. Those two factors significantly increase your chances of living longer. But researchers are finding a whole bunch of other things that happen in your body when you exercise, like the creation of new heart cells and an increase in bone strength. One recent study suggests that even if you have a family history of heart disease, exercise can reduce your risk. Working out can boost your mood, too. Trying to remember how good you will feel after you exercise could help you get going.

Moderate Alcohol Consumption

The researchers also found that people who consumed a moderate amount of alcohol had a better chance of living longer than those who were heavy drinkers. They defined moderate alcohol consumption as five to 15 grams per day for women and five to 30 grams per day for men. According to the National Institutes of Health, a standard drink contains about 14 grams of pure alcohol. That equates to 12 fluid ounces of beer, eight of malt liquor, five of table wine, and 1.5 of distilled spirits.

The available evidence around moderate drinking is tricky. Researchers have solid evidence to say that heavy drinking can absolutely be detrimental to your health. But the line between moderate drinking and abstaining from alcohol altogether is fuzzy. Whether people who moderately drink fare better than people who abstain is even murkier. We still don't have a solid study with enough participants to back that up. For now, it's safe to say that moderate drinking will not cause you severe harm, but whether it's better for your health than abstaining remains to be seen. If you're trying to make the absolute best health decisions based on the available evidence, the smartest move is probably to drink very little or not at all.

A Healthy Weight

To understand the influence of weight, researchers focused on people's body mass index, or BMI. That number is a comparison of a person's height and their weight. You can calculate your own by dividing your weight by your height squared. BMI can be tricky, though. Doctors use it to get a rough estimate of body fat, but for any one individual person, it can be fairly inaccurate. Athletes with high levels of muscle or elderly people with low levels of muscle can get BMIs that do not represent their level of body fat, and not all fat is created equal—some people carry their extra weight in more dangerous places than others. However, when the population number you are studying gets high enough, the outliers average out and BMI paints a far more accurate picture, though still not a perfect one.

What the researchers found was not incredibly surprising. People with BMIs between 18.5 and 22.9 had a higher chance of living longer than those who had BMIs outside that range.

We pretty much knew this already, and it makes sense. Carrying around excess fat can change the way your cells work, causing conditions like type two diabetes, and make more work for your cardiovascular system, which eventually makes you more susceptible to high blood pressure.

The cool thing about body weight, though, is that even small levels of weight loss can mean big differences in health. Research shows that losing just 5 to 10 percent of your body weight can significantly reduce the risk of cardiovascular disease. More weight loss can lead to an even greater reduction in these risks—up to a point. Being too thin can be detrimental to your health as well. For example, not having enough fat can prevent the movement of hormones throughout the body. That's why it's important to work with a doctor when attempting major weight loss.

Not Smoking

We used to think smoking was benign, or even good for us (thanks, tobacco lobby!). Doctors smoked and often recommended cigarettes to their patients to reduce stress or lose weight. But those days are long over. Solid evidence shows smoking significantly increases your chances of lung can-

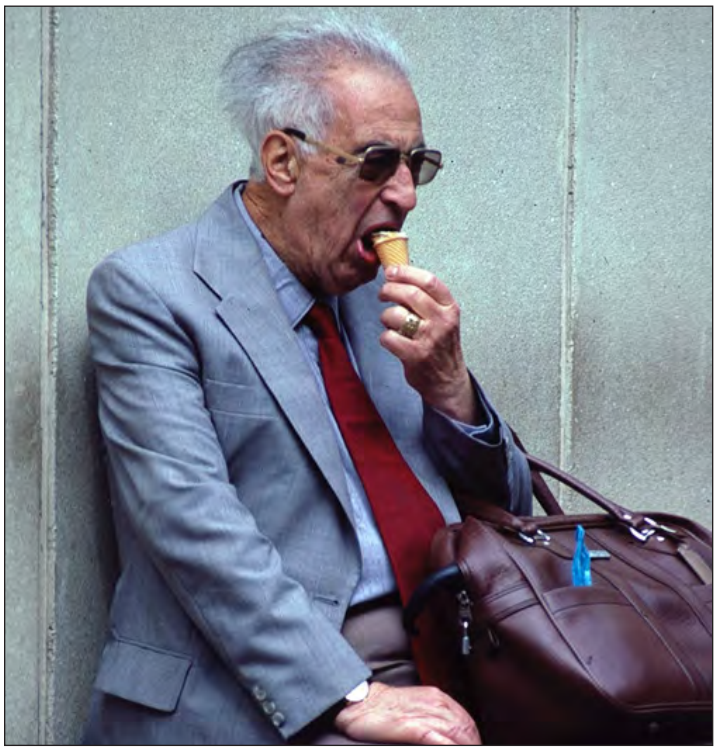
cer as well as other lung and heart diseases. The decline in smoking over the past 50 or so years is a major reason the average lifespan in America has gone up. Let's not ever reverse that. If you want to live longer and you're still smoking (or vaping, for that matter)—well, that doesn't make much sense. Do whatever you can to stop.

A High-Quality Diet

Over the past 100 years, we've gotten really, really good at understanding the mechanisms through which the human body works, and engineering medications that fix things when various bodily functions go awry. But in the process, we've mostly neglected the preventative health benefits of simply adhering to a healthy diet.

To understand the influence of the foods the participants ate on their health, the researchers used something called the Alternate Healthy Eating Index Score. It breaks foods down into their various components. For example, lasagna can break down into ground beef, ricotta cheese, onions, and so on. The cheese is further broken down into a dairy component and a fat component. Points—on a scale of one to 10—were assigned to the participants; a 10 meant total adherence to the recommended servings of fruits, vegetables, whole grains, red meat, sugar, and so on. Those recommendations are already associated with a reduced risk of various diseases like heart disease and diabetes.

Participants who scored in the top 40 percent were deemed healthy eaters. Nutrition studies are, of course, hard to do because of all the other factors that could contribute, like exercise, stress, and environmental factors. And human test subjects are notoriously bad at accurately reporting their own eating habits. But, there's good research to show that poor diets have a direct influence on various factors like blood pressure, cholesterol levels, and body weight. To date, the best diet to follow is probably the Mediterranean diet, however, if you focus on eating a variety of whole, unprocessed foods most of the time, you are doing great things for your health. Just find a nutritional plan you can stick to—enjoying unhealthy things occasionally in moderation is much better than periodically failing hard at your strict diet.



The key takeaway here is that the more of these lifestyle factors people adhered to, the more likely they were to live longer after hitting 50. However, the researchers say, this is on a population level. To better understand people on an individual level, the researchers want to study smaller groups with known certain conditions, like those who had been diagnosed with cancer previously or those with known cardiovascular disease. How large of a benefit do these five lifestyle factors have on those specific populations? More of those studies will help researchers and doctors determine what you should do to live a long and healthy life. But in the meantime, you'll have a hard time finding anyone who will tell you not to follow the practices listed above.

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Be Well: massage your mind

Massage is probably not the first option that comes to mind when considering mental health treatment, but its power to relax and release tension make it an effective tool for many people. A study in *Psychological Bulletin* found that massage therapy reduced trait anxiety and depression symptoms similar to the impact of psychotherapy.

Massage therapy (MT) is an ancient form of treatment that is now gaining popularity as part of the complementary and alternative medical therapy movement. A meta-analysis was conducted of studies that used random assignment to test the effectiveness of MT. Mean effect sizes were calculated from 37 studies for 9 dependent variables. Single applications of MT reduced state anxiety, blood pressure, and heart rate but not negative mood, immediate assessment of pain, and cortisol level. Multiple applications reduced delayed assessment of pain. Reductions of trait anxiety and depression were MT's largest effects, with a course of treatment providing benefits similar in magnitude to those of psychotherapy. No moderators were statistically significant, though continued testing is needed. The limitations of a medical model of MT are discussed, and it is proposed that new MT theories and research use a psychotherapy perspective.

While it should not replace talk therapy entirely, touch therapy is a great addition to a mental health treatment plan, says Sarah Weaver, board-certified massage therapist and assistant professor at Northwestern Health Sciences University.

If you are looking for some of the benefits of meditation but haven't mastered the skill, massage might be the next best option for you. Due to this shortcut, Weaver jokingly calls it "cheater's meditation." It can help treat mental health conditions like depression and anxiety because it likely impacts the stress response known as fight, flight, or freeze, and can help people reach a calmer physiological state.

Certain disorders, like PTSD and anorexia, result in dissociation from the body but massage can help reconnect those dealing with the disorders in their bodies and foster better overall body image, says Weaver. By experiencing the touch of an experienced massage therapist in a safe environment, patients can learn to trust, become more present, and achieve a relaxed self.

Read the full article from *Minneapolis.St.Paul Magazine* online here.

June issue of JCCP now available

Co-editors Cheryl Hawk, DC, PhD, CHES and Sharon Vallone, DC, FICCP have announced that the latest issue of the The *Journal of Clinical Chiropractic Pediatrics* (JCCP) has been published and can be viewed online, without cost or registration, here.

JCCP is the official peer-reviewed journal of the ICA Council on Chiropractic Pediatrics. It is committed to publishing research, scientific and professional papers, literature reviews, case reports and clinical commentaries for chiropractors and other health care professionals interested in the treatment of the pregnant, postpartum and pediatric patient. Through the publication of these papers and the dissemination of this information, the JCCP seeks to encourage professional dialogue and awareness about chiropractic pediatric care to help enhance patient care and improve patient outcomes.

Washington State law opens door for senior chiropractic students

In May, the Washington State Senate Bill 5817 (formerly HB1477) was passed in both Washington legislative chambers and signed into law by Governor Jay Inslee. This bill allows senior chiropractic students in approved preceptor locations to administer chiropractic adjustments. The bill's implementation expands training opportunities for students

in Washington state, which will allow licensed chiropractic physicians to participate in student's clinical training, as well as improve access to chiropractic services for patients.

"University of Western States (UWS) is proud to have played a role in advocating for this important legislation, which will enhance the clinical education opportunities available to our chiropractic students. We are also looking forward to engaging our alumni and friends in Washington state who are interested in participating in our preceptor program," said UWS President Dr. Joseph Brimhall.

Under the previous law, senior chiropractic students in the state of Washington were not permitted to provide adjustments, which was a deterrent for some preceptorship-eligible students to complete their clinical training in Washington, including some that were already residents or wanted to practice in the state once they graduated.

"While my preceptorship experience was great, not being allowed to continue to the full capacity of my skills while in the final months of the program was moderately disconcerting," said UWS Alumna Austin Bell, DC (Class of 2018). "Many students have avoided amazing preceptorship opportunities in the state of Washington simply because they weren't allowed to get more time performing chiropractic manipulations. I was very happy to provide support for this bill to help influence change to this outdated legislature and get more, great, new chiropractic physicians to Washington!"

With the passage of SB5817, students will be able to participate in a variety of preceptor experiences with expanded opportunities to hone their skills in real-world application.

"I was lucky enough to finish all of my school requirements and work under Dr. Jim Kurtz of Northwest Sports Rehab and the Seattle Seahawks as his preceptor," said UWS Alumnus Benjamin Greenwade, DC, MS (Class of 2014). "The clinic system at the school is great, but learning the real world ins and outs of day-to-day practice management was something that school did not provide me with. Working with Dr. Kurtz helped immensely in building my successful clinics on the eastside of Seattle. Unfortunately, due to the previous laws, I was not able to adjust patients during my time as a preceptor. This meant that from the time I started my preceptorship until I was licensed in the state of Washington, I was not able to practice and improve my adjusting skills. To be honest, I lost some of my ability to adjust that working in the school clinics had afforded me. It is a use it or lose it skill, like most complex movements are. I feel that not allowing preceptors to adjust in the state of Washington limited the amount of talented new doctors that are coming to the area."

Life West's The WAVE 2019

Join doctors of chiropractic from across the natgion at The WAVE, Life Chiropractic College West's annual event for the chiropractic community, August 16-18. This is the conference to attend if you want to enhance your skills, expand your knowledge, and make new connections.

Hear from world-class speakers and learn from the experts during this three-day conference in Northern California's beautiful Bay Area. Life West welcomes visitors from around the globe as we will delve into the Science, Philosophy, and Art of Chiropractic with an examination of the Salutogenic Model in 2019.

Learn about salutogenesis, which literally means "that which gives birth to health." The Salutogenic Model guides the way Life West presents its curriculum, providing a place to develop and exercise expertise in a chiropractic philosophy that embraces the mind-body connection, while offering the resources to achieve greater wellness.

Get Your CE at The WAVE. Earn up to 20 CE credits. California attendees will earn all annual required CE categories. Friday and Saturday: 12 CE hours, including 4 hours California mandatory topics. Sunday: 5 X-Ray hours, Online: 3 hours via exclusive Life West online seminars, including 2 hours Ethics.

Click here for event details and registration information.

ACA Interprofessional Collaborative Spine Conference November 8-9, Pittsburgh, PA

Members of the chiropractic, physical therapy and osteopathic professions will come together later this year in the wake of the ongoing U.S. opioid crisis to discuss the use of manual therapy procedures and other non-drug approaches for the treatment of back pain, as well as to identify opportunities for greater interprofessional research and cooperation.

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The Interprofessional Collaborative Spine Conference (ICSC) will take place Nov. 8-9 in Pittsburgh, Pa., and is a collaborative effort of the American Chiropractic Association (ACA), the American Academy of Orthopaedic Manual Physical Therapists (AAOMPT) and the Academy of Orthopaedic Physical Therapy (AOPT). The event will feature lectures, panel discussions and opportunities for professional networking.

Presentations will focus on clinical topics such as the effectiveness and safety of thrust vs. non-thrust manual therapy methods, implementing guidelines and evidence in practice, the use of outcome measures for continuous clinical improvement, and the development of interprofessional care pathways. Issues relevant to patient access such as the cost-effectiveness of manual therapy vs. pharmacological treatment, value-based health care and new models of reimbursement will also be examined.

"The American Chiropractic Association is honored to be a part of this historic event, designed to promote greater engagement and information sharing among the major providers of manual therapy," said ACA President Robert C. Jones, DC. "Back pain is one of the most common conditions for which opioids are prescribed; increasing understanding and collaboration among providers who offer non-drug treatments will be a benefit to patients."

Click here for more information on the Interprofessional Collaborative Spine Conference. The conference will be held at the Westin Convention Center in Pittsburgh, Pa., on Nov. 8-9, 2019.

If you have questions, contact nleisenring@acatoday.org.

Integrative Health & Wellness Congressional Caucus considering Medicare Opt-Out Bill

The International Chiropractors Association (ICA) is pleased to see that Representative Jackie Walorski, (R-IN), Co-Chair of the Integrative Health and Wellness Congressional Caucus recently introduced H.R.2883 – Chiropractors Equity Act of 2019 which seeks to eliminate discrimination in the Medicare "Opt-Out" provision by allowing chiropractors to provide items and services through private contracts with Medicare beneficiaries. Eliminating this disparity has long been a goal of the chiropractic profession and is one of the key parameters in ICA's proposed Medicare Legislation which we are diligently working to get introduced. Our objectives are to:

1. Maintain the current mandate for coverage of the adjustment to correct a subluxation.
2. Remove the restrictive language used to limit reimbursements to the adjustment "only".
3. Introduce the concepts of Sec. 2706 of the Public Health Service Act and eliminate discrimination based upon provider license type.
4. Maintain economic neutrality by removing barriers to reimbursements for existing covered services only.
5. Establishes equitability in reimbursement rates to other physician-level providers.
6. Eliminate discrimination that denies patients of chiropractic physicians the ability to privately contract.

Representative Walorski joined Representative Judy Chu (D-CA) in March as Co-Chairs of the bi-partisan Integrative Health and Wellness Congressional Caucus in the 116th Congress. The Congressional Caucus is intended to provide legislators a forum to learn about and engage with the integrative and wellness community. Both Representatives Chu and Walorski support expanding access to integrative health professionals and both serve on the powerful House Ways and Means Committee. ICA in collaboration with the Integrative Health Policy Consortium (IHPC) sponsored the March event that announced the Caucus.

The ICA has participated in the IHPC for many years. Our President, Dr. Stephen Welsh is on the IHPC Board of Directors and Executive Committee and serves as Co-Chair of the Integrative Approaches to Pain and Addiction Committee.

Working with IHPC during the previous administration, we were able to see the Public Health Service Act amended to include Section 2706, a provision endorsed by the ICA to promote non-discrimination for covered services in insurance.

Dr. Stephen Welsh, stated, "It is heartening to see a member of Congress have the courage to introduce legislation that will eliminate the private contracting disparity and give chiropractic patients who are Medicare beneficiaries the same medical freedom to privately contract with their providers as patients of all the other physician level providers have. We need to help Representative Walorski gain support for HR 2883 and help increase the membership of the Caucus."

Call Your Representative: To help, please call your Representative and ask them to co-sponsor H.R. 2883, the Chiropractors Equity Act of 2019, and also to join the Integrative Health and Wellness Caucus. To join the caucus, members of Congress should contact Representative Chu's office.

ICA wants to hear from you about your interactions with your Representative. Please email Beth Clay, Director of Government Relations at bclay@chiropractic.org and share your experience and any feedback. We will provide updates to this and all legislation on the ICA website and through email communications.

Dr. Stephen Welsh, ICA President added, "The ICA is very active on Capitol Hill. We are continuing to promote our draft Medicare legislation which will fully eliminate discrimination against the patients of chiropractors who are currently being denied reimbursement for covered services such as the exam and x-ray when provided by a Doctor of Chiropractic. We do this while staying true to our values and preserving the existing mandate to cover the adjustment to correct a subluxation in the current definition of chiropractic."

ACA joins Voices Coalition to increase access to non-opioid pain treatments

The American Chiropractic Association (ACA) has joined forces with Voices for Non-Opioid Choices ("Voices"), a non-partisan coalition of more than 20 organizations committed to preventing opioid addiction before it starts by increasing patient access to non-opioid therapies and approaches for managing acute pain. Chiropractors' use of spinal manipulation as a non-drug approach to back pain treatment is especially relevant in combating the U.S. opioid epidemic. Low back pain is one of the most common conditions for which prescription opioid pain medications are prescribed even though research shows the drugs have limited effectiveness in relieving back pain and carry higher risks.

The Voices coalition seeks to increase access to multiple non-opioid and non-drug approaches so that patients can manage their pain more safely and effectively--particularly pain after surgery. According to Voices, pain after surgery is a common path to opioid abuse, misuse and addiction, with about 3 million Americans becoming "persistent" opioid users each year following a surgical procedure. The Voices coalition includes both patient and provider organizations such as the American Nurses Association, the Alliance of Orthopaedic Executives, the American Medical Women's Association and the National Safety Council.

"We are excited to join Voices and its efforts to increase access to non-opioid approaches to pain treatment. Chiropractic services and other non-drug approaches are an important first line of defense against pain." said ACA President Robert C. Jones, DC. "Beyond the risks of addiction and overdose, prescription opioid medications that numb pain may convince a patient that a musculoskeletal condition such as back pain is less severe than it is or that it has healed. This misunderstanding can lead to overexertion and a delay in the healing process or even permanent injury."

Pain Management Task Force issues final report

The Pain Management Best Practices Inter-Agency Task Force, managed by the US Department of Health and Human Services issued their final report entitled, *Pain Management Best Practices, Updates, Gaps, Inconsistencies, and Recommendations*. It is available as a PDF here.

The introductory comments acknowledge the importance of an integrative approach to pain management:

"It is imperative to ensure that patients with painful conditions can work with their health care providers to develop integrative pain treatment plans that balance a focus on optimizing function, quality of life (QOL), and productivity while minimizing risks for opioid misuse and harm."

In establishing 'best practices' for individualized, multimodal, multidisciplinary pain management the Task Force included complementary and integrative health as one of five treatment approaches. The other four are medications (opioid and non-opioid); restorative therapies; interventional procedures; and behavioral health approaches. In the ICA comments submitted to the Task Force on the draft version of the report earlier this year were supportive of the task force's initial conclusion, "…chiropractic treatments, are commonly used for pain management."

Chiropractic College News

NYCC Spring 2019 Commencement Ceremony

New York Chiropractic College will host the Spring 2019 Commencement Ceremony on Saturday, August 3, 2019 at 9:30 a.m. The ceremony will be held on the campus of New York Chiropractic College in the Standard Process Athletic Center. Doors open to the public at 8:30 a.m. and graduates should arrive no later than 8:15 a.m. Tickets are not required and seating is unlimited and on a first-come, first-served basis.

After the ceremony, there is a reception for graduates, guests, faculty, and staff immediately following. The Commencement Ceremony will be live-streamed on the website (www.nycc.edu). The link to the ceremony will go live by 9:55 a.m. on August 3, 2019. On the NYCC home page a link will be posted beneath "News and Events" labeled NYCC Spring 2019 Commencement Livestream. It is hoped this will allow graduates to have family and friends who cannot be here enjoy this wonderful event and celebrate this outstanding achievement.

An important rehearsal for candidates will be held at 4 p.m. on Friday, August 2, 2019 in the Athletic Center gymnasium. Rehearsal will take approximately one hour. In addition to rehearsal, you will be picking up your caps and gowns at this time. All participating candidates are required to attend.

For further details, please call the Registrar's Office at 315-568-3061 or email Sonya Smith at ssmith@nycc.edu.

Logan Preceptorship Program expands clinical opportunities for DC students

Logan University's Preceptorship Program allows qualified Trimester 10 Doctor of Chiropractic students to work in a clinical atmosphere outside the campus setting and gain real-world experience. Logan strives to transform chiropractic clinical education by continuously adding meaningful and engaging clinical sites to its already robust list of partnerships. Logan is also working external clinical experiences earlier into its curriculum. To date, students have completed preceptorships at more than 400 unique clinical sites around the world, from private practices to community health centers to universities.

Lauren Hendrix, DC (2010), MS (2013) has been hosting Logan preceptors, master's interns and chiropractic assistants for the past four years at her private practice, West County Spine & Joint Chiropractic Clinic in Ellisville, Missouri.

Lauren Hendrix, DC, left, with student.

"Logan provides an invaluable education to set students up to be successful in practice. Getting an early opportunity to apply that knowledge in a successful chiropractic office helps students fine-tune their skills prior to graduation," she said.

Dr. Hendrix, who concentrates her practice in treating spinal pain and extremity injuries, said hosting Logan students keeps her on her toes because they often share the latest research and facilitate productive discussions on patient care, technique and office management.

As a Logan student, Dr. Hendrix studied as much research as she could get her hands on and worked as a chiropractic assistant, which helped her develop her office management skills. Today, Dr. Hendrix strives to help her own preceptors and interns develop whichever skill or knowledge base they feel needs improvement.

"I would encourage all students to take advantage of Logan's Preceptorship Program and challenge their clinical skills," she said. "Nothing will prepare you more for practice."

Logan Whole Health: Take 5

School's out which means summer camps and youth sports are in full swing. As youngsters of all ages head to the parks and playing fields, Logan's Human Performance Center Resident Cami Stastny, DC, MS, CCSP, reminds parents and coaches to follow a few simple steps to minimize and prevent the risk of youth sport injuries.

- Ensure proper warm-up and instruction of exercises/drills
- Be aware and cautious of overuse injuries
- Encourage participation in multiple sports and activities so the body learns many planes of movement and becomes more adaptable

Dr. Stastny said some coaches lack a fundamental understanding of exercises and how to implement training methods, and unfortunately, they may mirror their personal past experiences and "old school" mentality, which might not fit the group of children they are training. She said it's not uncommon to see previous collegiate or semi-pro athletes implement training strategies on youth athletes whose bodies are just not ready for it.

When it comes to youth sports, it's also important to take the time to understand best practices and strategies, which include proper nutrition and hydration, getting plenty of rest and wearing proper gear.

Chiropractic care is a valuable tool for treating injuries and keeping active youth in good shape, on and off the field. In general, adjustments help with keeping joints healthy. Additionally, movement and mobility screenings can provide a personalized assessment of an injury.

Dr. Stastny said being able to see deficiencies in movement can allow for some simple rehab exercises that can both enhance performance and prevent injury. For example, a chiropractor can make sure the foot is able to absorb forces properly, which can make a big difference in performance and training.

Not all injuries and athletes should be treated the same. While the knowledge and the techniques used to treat the patient will be similar, how they are applied to each person should be customized to fit the individual.

Logan acquires state-of-the-art assessment tool

Logan will be unveiling a new Simulation Lab featuring a Force Sensing Technology Table, which incorporates technology to aid in development of motor skills used to deliver spinal manipulation. Associate Professor Daryl Ridgeway said the force sensing technology provides instantaneous data on loads transmitted by the manual adjustment, and offers students immediate objective feedback about their performance, through a display of their force-time profile.

"The skills of the student can then be directly quantified and compared, to expert force-time profiles and the students can then use this objective feedback to model the desired behavior, rather than relying on observation and intrinsic feedback alone," he said.

The table was developed by Logan graduate John Triano, DC (1973), PhD and researchers at Canadian Memorial Chiropractic College. Dr. Triano is a leading expert in spine care research and chiropractic procedures. He serves as co-director of Conservative Medicine and Director for the Chiropractic Division at The Texas Back Institute, a multidisciplinary spine facility.

Showcase Sherman College weekend July 26-27

This weekend is designed to ignite your passion to help your community in a growing and rewarding career as a Doctor of Chiropractic. Meet current students, chat with faculty, and explore the Upstate of South Carolina.

This is a quarterly event (July 26-27 and November 15-16) exhibiting all that Sherman has to offer. Bring a transcript for a free evaluation or an application. Out of town (over 200 miles), prospective students get complimentary accommodations and can receive travel reimbursement (restrictions apply). Click here to register or for more information.

Pragmatic Chiropractic Business Models seminar

The event originally scheduled for June 20, 2019 has been rescheduled for October 17, 2019.

Southern California University of Health Sciences is hosting a free panel discussion on pragmatic chiropractic business models. The event will include a catered breakfast, and is free to attend. It will be held October 17, 2019 at the Long Beach Hilton, 701 West Ocean Blvd., in Long Beach, CA.

The goal is to provide SCU students, alumni, and friends with updated information on the best business practices, with a primary focus on Doctors of Chiropractic.

Click here to register for this free event, or to get more information.

Texas Chiropractic College Annual Convention

Texas Chiropractic College will be holding its2019 Annual Convention July 18-20 at the Moody Gardens Hotel in Galveston Texas. Online registration open until July 15, 2019. If you prefer to register via mail, click here to download the registration form. Click here for more informaiton.

Seminars and speakers include:

Continued on next page

Chiropractic College News

Continued from last page

• Adjusting Gems for the Pelvis and Lower Extremities (Sponsored by Foot Levelers) with Dr. William M. Austin

• What Patients Expect and How You Can Capitalize on These to Build Your Practice (Sponsored by ChiroSecure) with Dr. Stuart Hoffman

• Foundations of Women's Health and Pelvic Muscle Dysfunction (Sponsored by Structure and Function) with Tonya Bunner, PT, DPT, OCS, WCS, BCB-PMD

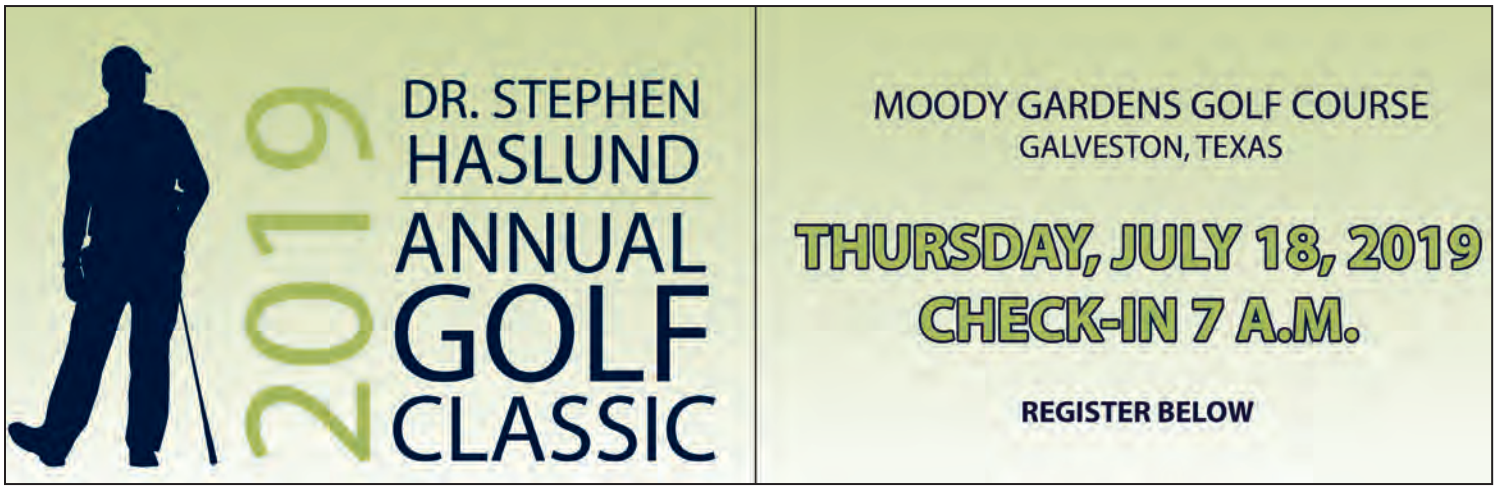
• New Government Compliance and Cybersecurity Solutions - Who Is Getting Audited via HIPAA and OIG and How They Get Caught (Sponsored by HIPAA Compliance Services) with Dr. Ty Talcott

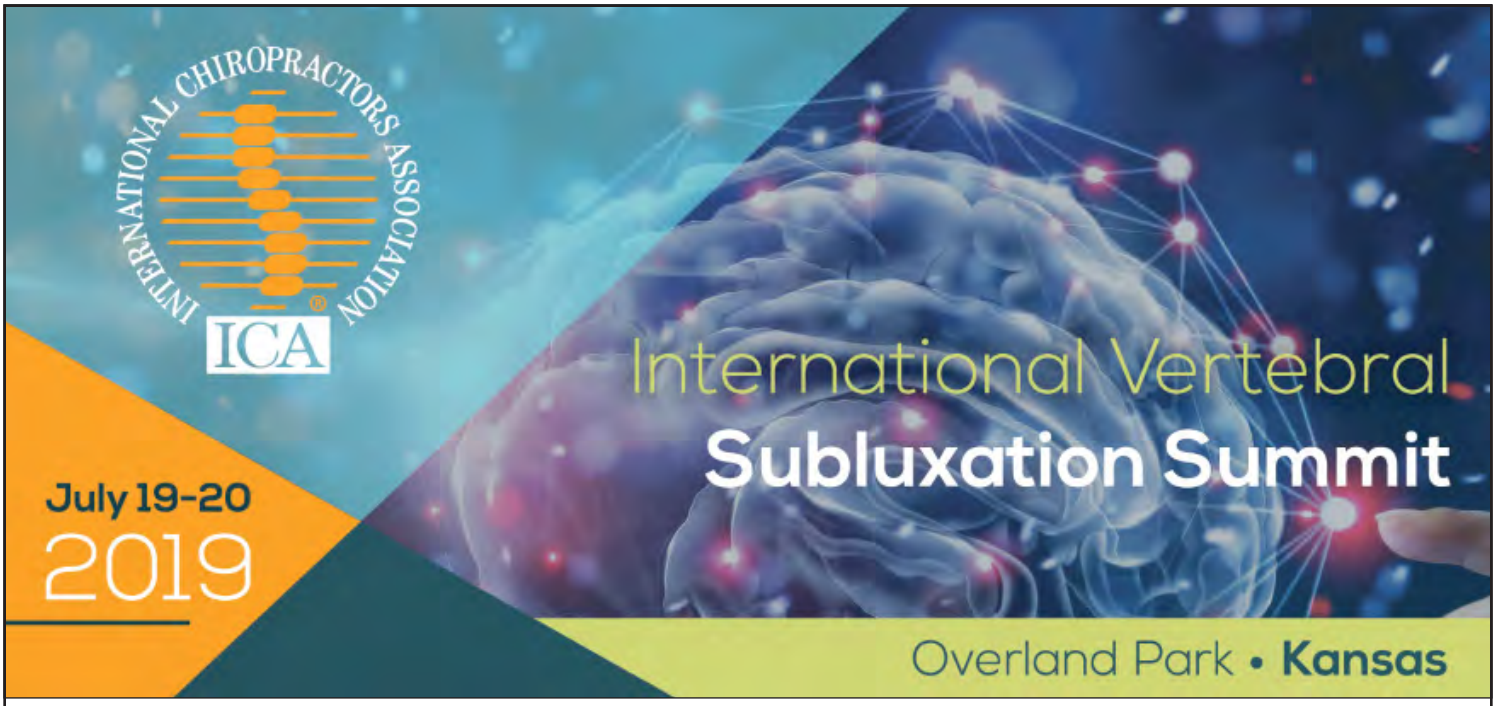
• Ethics, Risk and Documentation with Michele Quattlebaum, Esq.

Showcase Sherman College weekend July 26-27

Join Texas Chiropractic College July 18, 2019 for the Dr. Stephen Haslund Memorial Annual Golf Classic!

The Dr. Stephen Haslund Memorial Golf Classic is named in memory of Dr. Stephen Haslund, a long time administrator, and friend of Texas Chiropractic College. In continuing Dr. Haslund's legacy of helping students, the proceeds from this golf tournament will go to the Texas Chiropractic College Scholarship Fund. Each year, TCC gives over $60,000 in scholarships for both new and current students. These scholarships reward outstanding academic achievement, service to the community, professional and chiropractic research. Your support is invaluable to the sustainability of this program. Click here for more info.





International Vertebral Subluxation Summit
July 19-20, 2019

Cleveland Chiropractic College, Overland Park, Kansas

To provide the Doctor of Chiropractic with an integrated education in the neuropathophysiology of the vertebral subluxation complex incorporating clinical reasoning and outcome assessment applications. Review of the educational structure of the classical and contemporary models of vertebral subluxation. This program is presented to enhance thechiropractic practitioner's understanding of current developments in the assessment, and scientific evidence-based knowledge of the vertebral subluxation complex and the impact to the neurobiological system of the human body.

Featuring: Dr. Dan Sullivan, Brain-Body Subluxation Science
Dr. John Bergman, Validating Chiropractic Outcomes
Dr. Pete Sulack, Neuroscience of Stress

With: Dr. Deed Harrison - Chiropractic Imaging Research
Dr. Ian Bulow - Chiropractic in 3D
Dr. Anna Olivetti - Upper Cervical Spine and VSC
Dr. Beth Zogg - Neuropathophysiology of VSC
Dr. Eric Jaszewski - The Science of VSC

Up to 16 hours of Continuing Ed. Approved in CT, CO, IA, ID, IL, IN, KS, MD, MO, NE, OH, WY

Download the Schedule/Course Outline

Register online here

Or call ICA at 703-528-5000, or fill in the Registration Form and fax to ICA (703-528-5023), or mail with payment (ICA, 6400 Arlington Blvd., Ste. 800, Falls Church, VA 22042).

Office Posters

We have created a FREE printable PDF of the

What your hands can reveal about your health

poster on the following page, and
the following posters are available online:

It's a new year. Eat smarter, be healthier
The drug-free approach to pain reduction
Get up and move!
STRETCHING for better joint health
Five keys to a longer, healthier life
Were you pain free this morning when you got out of bed?
Tips for safe stretches
Don't let pain keep you from enjoying life
Life-saving reasons to drink more water
A high-sugar diet makes halethy people sick - fast
7 simple steps to a longer, healthier life
The secret weapon for lower blood pressure

Please feel free to print out and use any or all of the flyers.
Or, make them available as handouts to your patients.
They are available on the website,
www.IACPnews.com in an easy to print format.

Each has the following tagline:

This healthy living information is provided by
your Doctor of Chiropractic and the
Idaho Association of Chiropractic Physicians (IACP) .

What your hands can reveal about your health

Your doctor doesn't have to be palm readers to make predictions about your health. Your hands speak volumes, especially when something's not working right. Their form, function, and appearance can offer important prognostic and diagnostic clues. "You can learn a lot by looking at the hands," said Kelly Weselman, MD, communications chair for the American College of Rheumatology and a rheumatologist with WellStar Rheumatology in Smyrna, Georgia. Here are some common signs and symptoms your hands reveal:

Weak hand grip: In business, a wimpy handshake says something about your personality. In medicine, it can be a sign of deteriorating health. "During the physical exam for patients, we definitely pay attention to someone's hand grip," says Anne Albers, MD, a cardiologist with OhioHealth Heart & Vascular Physicians in Columbus. "We associate it with frailty," she says. Decreased grip strength coupled with a slow gait may actually portend a higher risk of death from heart disease in the elderly, according to a 2016 review in the International Journal of Cardiology. More recently, a PLOS One study of adults 40 to 69 found stronger hand grip may be a sign of healthy heart function and structure. Based on these findings, researchers suspect hand grip could one day become a useful measure for identifying people at high risk of developing heart disease.

Tiny red bumps or blisters: A red rash on your hand or wrist, sometimes morphing into oozing blisters, may be a sign of nickel allergy. Sensitivity to nickel is one of the most common causes of allergic contact dermatitis, according to the American Academy of Dermatology. Lots of objects that touch your skin contain nickel: bracelets, watches, rings, even cell phones. But did you know you can also develop a hand rash from ingesting foods containing nickel? "Nickel is especially high in beans, chocolate, peanuts, soy, oatmeal, and granola," says Salma Faghri de la Feld, MD, assistant professor in the department of dermatology at Emory University in Atlanta. "You can determine if this applies to you by doing a trial of avoiding foods with nickel," she says.

Numb or tingly hands: Pins and needles in your hands? If you're a young, healthy person, it's likely carpal tunnel syndrome. Many people experience nighttime tingling or numbness because they sleep with their wrists bent. That bend compresses the median nerve leading from the wrist to the hand, explains the American Academy of Orthopedic Surgeons. But there are lots of other reasons for hand numbness and tingling. For example, you might experience temporary tingling in your fingers if you're hyperventilating because you're anxious, he says. One cautionary note: "Any sudden onset of numbness or weakness (of the arms or hands) should always make someone worried about potential stroke," Dr. Barrett adds. In that event, call 911.

This healthy living information is provided by your Doctor of Chiropractic and the Idaho Association of Chiropractic Physicians (IACP) .

The Idaho Association of Chiropractic Physicians

The IACP News

Display Advertising Policy, Rates and Information

The Idaho Association of Chiropractic Physician's *IACP News* is a full-color digital newsletter, published monthly and distributed to member doctors of chiropractic across Idaho as well as out-of-state members and student members.

Advertising deadline

Artwork is needed by the 15th of any month for publication in the following month's newsletter. The *IACP News* is published the last week of every month.

Ad Sizes and Rates

IACP reserves the right to determine position and placement of all advertising. Special positioning may be purchased for an additional 20% if space is available. Inside Cover and Back Cover are charged additional 20% for special positioning. **15% off these rates for IACP Members.**

Rates are for full color ads **per insertion**. Ads published under a multi-run contract can be changed for each issue at no additional cost. Flash animation (.swf files), animations (.gif format) and video clips can be added to any ad. There is no extra charge for video clips or multi-media in ads unless "assembly" of the ad is required. Some file size limitations apply. For details contact Steve at C&S Publishing CandSpublishing@gmail.com or call (916) 729-5432. Email camera-ready ads in high resolution Adobe Acrobat (.pdf) format to: CandSpublishing@gmail.com. Ad creation and graphic design services are available through C&S Publishing at no additional cost.

Ad Type	Ad Size	1 run	3 runs	6 runs	12 runs
Full page (bleed)	8 5/8" wide by 11 1/4" tall	$450	$414	$378	$330
Full page (boxed)	8" wide by 9 3/4" tall	$450	$414	$378	$330
Half page	8" wide by 4 3/4" tall	$267	$264	$224	$190
One Third (V)	2 3/8" wide by 9 3/4" tall	$190	$174	$159	$140
One Third (H)	8" wide by 3 1/8" tall	$190	$174	$159	$140
Quarter Page	3 7/8" wide by 4 3/4" tall	$160	$146	$134	$115
One Sixth	3 5/8" wide by 2 7/8" tall	$105	$97	$88	$75

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