# Forward head posture found to be a primary cause of altered sensori-motor control and excitability of the autonomic nervous

The following edited article by Deed Harrison, DC, was first published by the CBPNonProfit. It can be read in full here.

Recently, the <u>CBP NonProfit</u> and Cairo University research team published in the <u>Journal Gait and Posture</u>. Their article was entitled: "Is forward head posture relevant to autonomic nervous system function and cervical sensorimotor control? Cross sectional study" and authored by Professor Ibrahim M. Moustafa and colleagues.<sup>1</sup>

Importantly, this is really a breakthrough investigation documenting that forward head posture (FHP) is There is a growing interest concerning the understanding of the sagittal configuration of the cervical spine as a clinical outcome.

a strong driver of altered-abnormal sensori-motor control and increased amplitude (strength-activity) in the autonomic nervous system (ANS).

In its essence, sensori-motor control is the ability of the brain and nervous system to process different sources of external stimuli (sight, sound, touch, taste, smell) and rapidly transform this sensori input into an output of

muscle or motor activity. For example, if you were in the mountains hiking a back country trail and a loud, strange animal sound is heard to your right, your brain immediately processes this into a multitude of actions-reactions such as turning your body or neck sharply towards the direction of the noise and getting ready for a possible fight or flight response.

To this end, the sensori-motor system has evolved over millennia and is constantly learning, developing, and adapting to the tasks that an individual performs both physically and cognitively.

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# IACP

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# Please join us for the RESCHEDULED 2020 IACP Annual Convention November 7th & 8th, 2020

## **Exceptional Speakers & Exhibitors**

Join us November 7 & 8, 2020 at The Grove Hotel in Boise for our rescheduled 2020 IACP Annual Convention. Our fresh and diverse set of speakers, along with our exhibition of industry partners, will provide you with professional development as well as applicable products and services to benefit your practice. 18 hours of CE will be offered over two days. Register by Saturday, September 26th for early-bird pricing!

PLUS, 9 hours of CA training will be provided focusing on multiple areas of practice management, billing, coding, documentation, and audit protection.

# Agenda coming soon!

### Keynote Speaker - Dr. Mitch Mally, DC



Dr. Mitch Mally's proprietary techniques for the diagnosis and treatment of extremity injuries have been praised by the chiropractic profession, often regarded as the "10th Degree Black Belt" in extremity adjusting. His diagnostic and non-surgical treatment techniques for Sports and Occupational Injuries and Carpal Tunnel Syndrome have been very well received. Dr. Mally is a noted academician, author, and inventor of the X-POSER and the QUAD BASE SCALE. Dr. Mally lectures internationally for state associations, conventions, and chiropractic colleges. Dr.

Mally is a post graduate faculty member for several chiropractic colleges and is a powerful, dynamic, entertaining, and motivational educator with presentations armed with documented research.





# Forward head posture found to be a primary cause of altered sensori-motor control and excitability of the autonomic nervous

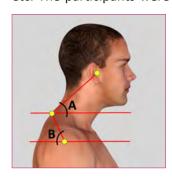
#### Continued from front page

The sensori-motor system involves complex interactions between the brain and visual, auditory, muscular, ligamentous, and skin receptors. Because the sensori-motor system is constantly evolving for good or bad in each person, it is important to engage in activities that promote an efficient system. Small and large motor tasks involving hand eye-coordination activities, balance activities, regular functional fitness, etc. are all important as part of a weekly regimen to increase the efficiency of the functionality of the sensori-motor system. Problematically, injuries to the individual components of the sensori-motor system can cause a cascading effect where the entire system can go awry. For example, inner ear infections can cause serious balance and posture control problems in people leading to abnormal walking, dizziness, and nausea to name a few.

Regarding the spine, it is known that injuries to the joints, ligaments, discs, and muscles of the spine will cause abnormalities of the sensori-motor control system. Thus, motor vehicle crashes, falls injuring the head, neck and spine joints may potentially create detrimental long-term problems with sensori-motor control. Joint range of motion, muscle strength and endurance are also known to have influences on the sensori-motor system. However, until recently, the effect of abnormal posture alignment on the sensori-motor system has not been precisely documented.

Recently a breakthrough case control trial was conducted at Cairo University in Egypt and co-authored by CBP NonProfit President Dr. Deed Harrison, DC. The Cairo University team was led by Professor Ibrahim Moustafa, PT, PhD.

**Clinical features:** The study investigated 160 participants aged between 20-35 years. The participants were matched for important clinical and physical characteristics and all of them were asymptomatic, without neck pain, headaches, etc. The participants were divided into those with forward



head posture and those without forward head posture. When forward head posture increases in a person, angle A becomes increasingly smaller, oppositely, when head posture becomes more normal, angle A increases. The cut point for normal head posture in studies is 55 degrees and larger.<sup>2</sup> In the new, current trial, Moustafa et al used less than 50 degrees for abnormal forward head posture and above 55 degrees for normal aligned head posture.

**Assessments:** There are a variety of methods to assess the function and efficiency of the sensori-motor control system. Moustafa and colleagues chose to use four primary assessments including:

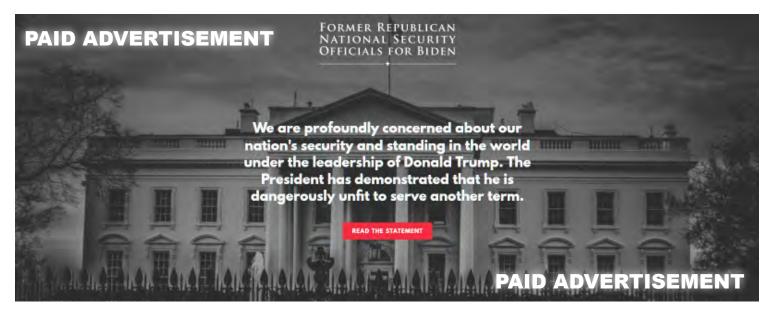
- a measurement of the ability to reposition joints in a certain movement and neutral posture termed head repositioning accuracy,
- the ability to control the center of gravity of the body on a balance stability dynamic platform,
- a measurement of the efficiency of the eyes and the cervical spine to control and coordinate movement called the smooth pursuit neck torsion test,
- and they included an assessment of the efficiency of the autonomic nervous system looking at the speed and strength of the sympathetic skin resistance response.

Important Findings and Conclusion: The study findings are very important in the assessment of and treatment of patients with cervical spine and task performance problems. Reading the study, it becomes apparent that abnormal head and neck alignment are at the root cause of many neuro-musculo-skeletal disorders. Specifically, the study by Moustafa and colleagues identified the following main features:

- Forward head posture negatively affects cervical sensorimotor control.
- Forward head posture negatively affects the autonomic nervous system.
- There is strong correlation between the CVA (forward head posture) and cervical sensorimotor outcomes.
- There is strong correlation between the CVA (forward head posture) and skin sympathetic outcomes.

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#### A Statement by Former Republican National Security Officials

We are former national security officials who served during the administrations of Presidents Ronald Reagan, George H.W. Bush, George W. Bush, and/or Donald Trump, or as Republican Members of Congress. We are profoundly concerned about the course of our nation under the leadership of Donald Trump. Through his actions and his rhetoric, Trump has demonstrated that he lacks the character and competence to lead this nation and has engaged in corrupt behavior that renders him unfit to serve as President. For the following reasons, we have concluded that Donald Trump has failed our country and that Vice President Joe Biden should be elected the next President of the United States.

Donald Trump has gravely damaged America's role as a world leader. Trump has disgraced America's global reputation and undermined our nation's moral and diplomatic influence. He has called NATO "obsolete," branded Europe a "foe," mocked the leaders of America's closest friends, and threatened to terminate longstanding US alliances. Other global leaders, friends and foes alike, view him as unreliable, unstable, and unworthy of respect.

Donald Trump has shown that he is unfit to lead during a national crisis. Instead of rallying the American people and the world to confront the coronavirus, Trump has spent the past half year spreading misinformation, undermining public health experts, attacking state and local officials, and wallowing in self-pity. He has demonstrated far greater concern about the fate of his reelection than the health of the American people.

Donald Trump has solicited foreign influence and undermined confidence in our presidential elections. Trump publicly asked Russian president Vladimir Putin to assist his 2016 campaign, called on Chinese president Xi Jinping to "start an investigation" into his current political opponent, and pressured the president of Ukraine to act against his opponent.

Citing exaggerated claims of voter fraud, he has challenged the integrity of this year's election, even suggesting that it be postponed.

Donald Trump has aligned himself with dictators and failed to stand up for American values. Trump has regularly praised the actions of dictators and human rights abusers. He proclaimed his "love" and "great respect" for North Korean strongman Kim Jong Un, endorsed "brilliant leader" Xi Jinping's move to serve as China's president for life, repeatedly sided with Vladimir Putin against our own intelligence community, and pronounced himself a "big fan" of Turkish president Recep Erdogan despite his crackdown on democracy.

Donald Trump has disparaged our armed forces, intelligence agencies, and diplomats. Trump has attacked Gold Star families, scoffed at American prisoners of war, interfered in the military justice system, and embroiled our military in domestic politics. He has ridiculed US intelligence agencies and falsely branded our nation's diplomats as the "deep state."

Donald Trump has undermined the rule of law. Trump has compromised the independence of the Department of Justice, repeatedly attacked federal judges, and punished government officials who have sought to uphold the law. To protect himself from accountability, he has fired officials who launched investigations or testified against him, threatened whistleblowers, dangled pardons as incentives to stay silent, and blocked prison time for a political crony convicted of lying on his behalf. He has impugned journalists investigating his misconduct and has repeatedly denounced the press as the "enemy of the people."

Donald Trump has dishonored the office of the presidency. Trump engages in childish name-calling, mocks the disabled, belittles women, persistently lies, peddles baseless conspiracy theories, and continually embarrasses Americans in the eyes of the world.

Donald Trump has divided our nation and preached a dark and pessimistic view of America. Trump consistently seeks to incite political, racial, and ethnic divisions, weakening our nation and delighting our adversaries. In contrast to Reagan's vision of America as a "shining city on a hill," Trump speaks of "American carnage," pits Americans against each other, and stokes fears that "angry mobs" and "anarchists" are destroying our country.

Donald Trump has attacked and vilified immigrants to our country. Trump routinely denigrates immigrants and inflames prejudices as he seeks support for his reelection. Despite America's legacy as a nation of immigrants, he has demonized Americans who come from other countries, even telling members of Congress whose families immigrated to the United States to "go back" to the "crime-infested places" from which they came.

Donald Trump has imperiled America's security by mismanaging his national security team. Trump has dismissed or replaced — often by tweet — the secretaries of State, Defense, and Homeland Security, the Attorney General, the

Directors of National Intelligence and the FBI, three National Security Advisors, and other senior officials in critical national security positions, many because they refused to cover for his misdeeds or demonstrate sufficient personal loyalty.

While we – like all Americans – had hoped that Donald Trump would govern wisely, he has disappointed millions of voters who put their faith in him and has demonstrated that he is dangerously unfit to serve another term.

In contrast, we believe Joe Biden has the character, experience, and temperament to lead this nation. We believe he will restore the dignity of the presidency, bring Americans together, reassert America's role as a global leader, and inspire our nation to live up to its ideals.

While some of us hold policy positions that differ from those of Joe Biden and his party, the time to debate those policy differences will come later. For now, it is imperative that we stop Trump's assault on our nation's values and institutions and reinstate the moral foundations of our democracy.

To that end, we are firmly convinced that it is in the best interest of our nation that Vice President Joe Biden be elected as the next President of the United States, and we will vote for him.

Adm. Steve Abbot Fmr Dep Homeland Security Advisor

Mary Catherine Andrews Fmr Special Asst to the President

Richard Armitage Fmr Deputy Secretary of State

Christopher Barton Fmr Director, NSC Staff

John Bellinger

Fmr Legal Adviser, Dept of State Adm. Kenneth Bernard

Fmr Special Asst to the President

Amb. Robert Blackwill Fmr Deputy National Security Advisor

Linton Brooks Fmr Under Secretary of Energy

Fmr Dep Asst Secretary of State

Amb. Richard Burt Fmr US Ambassador to Germany

Victor Cha Fmr Director, NSC Staff

Thomas Christensen Fmr Dep Asst Secretary of State

Eliot Cohen Fmr Counselor of the Dept of State

Joseph Collins Fmr Dep Asst Secretary of Defense

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Chester Crocker Fmr Asst Secretary of State

Fmr Asst Administrator, USAID

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Fmr Under Secretary of Defense

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Fmr Director, NSC Staff
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Fmr Director of National Intelligence, and Fmr Deputy Secretary of State

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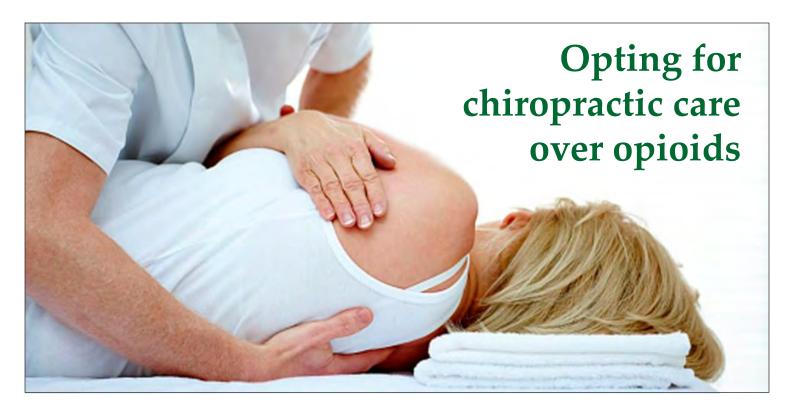
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Fmr Under Secretary of Defense

Philip Zelikow

Fmr Counselor of the Dept of State



Opioid analgesics are commonly used to treat acute and chronic pain; in 2016 alone, more than <u>60 million patients</u> had at least 1 prescription for opioid analgesics filled or refilled. However, the use of this powerful pain medication prescribed for many patients has in part led to an opioid addiction crisis that has gripped the nation.

Musculoskeletal issues – specifically back and neck pain – afflict thousands of people each year, and add significant costs to our healthcare system. In some cases, it is believed that surgery, the use of opioids, or both, are the only recourse for those suffering from back or neck issues.

About 22 million Americans visit chiropractors annually seeking pain relief from such conditions. Chiropractors seek to first understand the core problem underlying a patient's condition, and where indicated, to proceed with a manual therapy approach that will often include spinal and extremity manipulation to improve joint function and provide pain relief.

A key focus in the curriculum of chiropractic education programs is preparing student interns to identify and manage those patients most likely to respond to conservative manual manipulation, and not only help to reduce pain in patients, but possibly to reduce the need for opioids or surgery. An additional important part of chiropractic education is training for future portal of entry health care providers to identify potential pathology and contraindications to manual therapy, and to recommend appropriate referral and co-management of many health conditions.

Cleveland University Kansas City Director of Research, Dr. Mark Pfefer, presented research at the annual Kansas Public Health Association's Fall Conference in 2018, reviewing the use of opioids, and how chiropractic care pursued by those in pain, could potentially lead to a decline in the use of that pain medication used by some patients. He emphasized that the likelihood of filling a prescription for an opioid was much lower among recipients of chiropractic care who had complaints of musculoskeletal pain.

The fact that opioids can be an effective pain reliever is not in dispute. However, what cannot be overlooked, is the terrible consequences that can result for those who become addicted. The danger of pain medication is revealed in the numbers, and shows how quickly its use can lead to a downward spiral if not monitored closely.

Recent <u>research</u> has found that one day of opioid usage carried a 6% chance of being on opioids one year later. After eight days of use, that chance increased to 13.5%, and after 31 days of use, the chance spiked to nearly 30%.

Cleveland University Kansas City (CUKC) Director of Research, Dr. Mark Pfefer, is hopeful opioid use can be significantly reduced in the treatment of musculoskeletal problems. In research presented at the annual Kansas Public Health Association's Fall Conference in 2018, he reviewed

the use of opioids, and how chiropractic care pursued by those in pain, could potentially lead to a decline in the use of the powerful pain medication used by some patients. He emphasized that the likelihood of filling a prescription for an opioid was much lower among recipients of chiropractic care who had complaints of musculoskeletal pain.

"The evidence supports that chiropractic care plays a role in reducing opioid use for back pain, neck pain, headaches, and other musculoskeletal pain," Pfefer said. "These are conditions where most medical practitioners would agree that opioids should be used only sparingly or not at all. If a trial of chiropractic care results in a decreased reliance on opioid use, I think that should be explored, especially considering that chiropractic is safe and cost-effective."

Others have been similarly curious, and support for an alternate approach seems to be growing. Recent European guidelines promote patient education, exercise, and manual therapy which is congruent with the typical chiropractic approach. These recent guidelines caution against the use of opioids for low back pain and radiculopathy.

A 2017 JAMA systematic review of spinal manipulative therapy for low back pain found that spinal manipulative therapy has a "statistically significant association" with improvements in both pain and function. Additionally, there were no serious adverse effects associated with spinal manipulation.

"The mission of the doctor of chiropractic is to improve movement, reduce pain, and ensure proper spine and extremity function," Pfefer said. "The more conservative approach to care offered by chiropractors continues to be a viable option to reduce the reliance on opioids for pain. Researchers are just now starting to take notice of this."

Recent research has demonstrated that those who used chiropractic had a 64% lower chance of receiving an opioid prescription compared to non-chiropractic users, and the adjusted likelihood of filling a prescription for an opioid was 55% lower among recipients of chiropractic care. The study abstract said: "Pain relief resulting from services delivered by doctors of chiropractic may allow patients to use lower or less frequent doses of opioids, leading to reduced risk of adverse effects. The objective of this investigation was to evaluate the association between utilization of chiropractic services and the use of prescription opioid medications."

Further, those who saw a chiropractor within the first months of diagnosis saw an even greater reduction in risk compared to those in their first visit following the acute phase. There is other emerging evidence in the reduction of opioid use associated with chiropractic care.

That study by William Weeks and Christine Goertz, entitled Cross-Sectional Analysis of Per Capita Supply of Doctors of Chiropractic and Opioid Use in Younger Medicare Beneficiaries and published in J. Manipulative Physiol Ther in May 2016, noted:

"Per-capita supply of DCs and spending on CMT were strongly inversely correlated with the percentage of younger Medicare beneficiaries who had at least 1, as well as with 6 or more, opioid prescription fills. Neither measure was correlated with mean daily morphine equivalents per opioid user or per chronic opioid user. Conclusions: A higher percapita supply of DCs and Medicare spending on CMT were inversely associated with younger, disabled Medicare beneficiaries obtaining an opioid prescription. However, neither measure was associated with opioid dosage among patients who obtained opioid prescriptions."

Opioids have long had a role in the treatment of pain, but the fact that there are certain inherent risks present in their use is unassailable. With outcomes research (ACP; JAMA; European Spine Journal) demonstrating the effectiveness of less invasive, conservative interventions, the inclusion of non-pharmacological approaches for the treatment of back pain and other musculoskeletal conditions has now become part of today's guideline-based approach for pain management.

Also, two new studies from the Boston University School of Public Health (BUSPH) shed light on the relationship between obesity and the use of prescription opioids in the United States.

One of the studies, published in the American Journal of Preventive Medicine, finds that patients with higher body mass indices (BMIs) were up to 158% more likely to use prescription opioids long-term, and that 27% of long-term opioid prescriptions from 2000 to 2015 were attributable to higher BMIs.

The other study, published in JAMA Open Network, examines the pain conditions underlying this increased likelihood of opioid prescriptions for people with higher BMIs. This study finds that osteoarthritis and other joint disorders were the two reasons for an opioid prescription most strongly associated with obesity. Together, osteoarthritis, other joint disorders, and back disorders accounted for more than half of the difference in opioid prescriptions by obesity.



# Improvement in neck curve and posture using the Denneroll improves long standing dizziness, neck pain, and disability in cervico-genic dizziness sufferers

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Cervicogenic dizziness is a frequent disorder that is strongly associated with delayed recovery, persistent disability, psychologic distress and increased health care utilization and costs.<sup>1,2</sup> Despite the relatively high prevalence of this condition, its management has long been a challenge for both clinicians and patients.<sup>3-5</sup>

In general there is mild-moderate (30-50% improvement in the condition) short term treatment outcomes immediately after intervention and 3- month follow up, however, there is no strong evidence for the effectiveness of most treatments at long-term management follow-ups of one year or longer.

There is evidence that cervicogenic dizziness is a result of perturbation in the information from sensory afferents in the cervical spine.<sup>6</sup> Abnormal alignment of the cervical lordotic curve from the side view (straightening and kyphosis) has been found to result in degenerative changes in the muscles, ligaments, intervertebral discs and bony structures of the cervical spine.<sup>7,8</sup> This altered alignment and degenerative cascade could potentially lead to mechanoreceptive dysafferentation (abnormal and altered barrage of afferent neurological input). A correction of altered cervical spine alignment therefore, might be required to achieve optimal

information from sensory afferents in the cervical spine, where the signs and symptoms of patients with cervicogenic dizziness can be decreased. The development of effective intervention strategies and trials testing this concept in Dizziness patients is thus sorely needed.

Recently a breakthrough randomized trial was conducted at Cairo University in Egypt and co-authored by CBP NonProfit President Dr. Deed Harrison, DC. The Cairo University team was led by Professor Ibrahim Moustafa, PT, PhD and included collaborating author Professor Aliaa Diab PT, PhD.<sup>9</sup>

Clinical features: The study investigated 72 patients (47 males) aged 40-55 years with chronic pain and disability with a primary complaint and diagnosis of cervico-genic dizziness. The short (10-weeks) and long term (1-year) outcomes of neck pain, dizziness severity and frequency, and cervical positioning sense were assessed in the project.

**Interventions:** The investigation used a standard intervention frequency and duration of 3x per week for 10 weeks or 30 total treatment sessions. Patient participants were assigned equally to one of two groups: Denneroll group and Non-Denneroll Group. Of interest both groups received a standardized multiple treatment procedure protocol including:

• Cervical Spinal joint mobilization therapy for the cervical

spine,

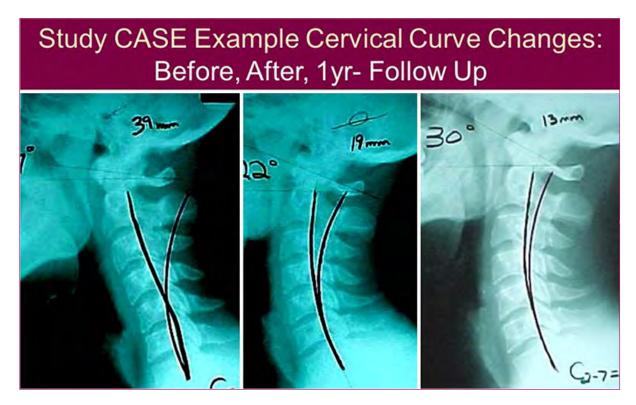
- Myofascial stretching and release techniques to the suboccipital spine,
- Tens and hot packs to the cervical region,
- Functional and strengthening exercise protocol designed to improve strength, flexibility, posture, and reduce pain,
- A series of home care instructions.

Only the Denneroll group received the cervical denneroll in addition to the standardized multiple treatment techniques. All treatments were applied 3x per week for 10 weeks. At the end of the 30 treatments, following a minimum of 1-day with no treatment, all subjects were re-evaluated. Lastly, treatment was then stopped and all subjects were followed for an additional 1-year to see if the 10-week outcomes were maintained at this long term follow up.

Important Findings and Conclusion: The addition of the cervical denneroll orthotic device to a multi-modal physical therapy intervention program was found to improve the cervical lordotic curvature by an average of 14° and improve anterior head translation by 2.4cm. This improvement in cervical curvature and posture in the Denneroll group was found to be associated with improvement in dizziness disability and severity and frequency, chronic neck pain, and head repositioning accuracy. In the group receiving the denneroll and consequent curve correction, their results were maintained at 1-year follow up whereas the control subjects regressed back to baseline values for all clinically relevant measures.

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Two European patients, one in Belgium and one in the Netherlands, have been infected twice by the coronavirus, virologists say. Researchers have <u>reported</u> that a 33-year-old man in Hong Kong might be the first known person to get Covid-19 twice. The man first tested positive on March 26 and had symptoms such as fever, headache and cough. Almost five months later, while returning from Europe on August 15, the man tested positive at the Hong Kong airport — though he did not have symptoms that time.

"The patient got re-infected 4.5 months after the first infection. Therefore, it shows that for this patient, the immunity induced by the first infection is short lasting," Dr. Kelvin Kai-Wang To of the University of Hong Kong, who worked on the study, said. For the study, researchers at the university and various hospitals in Hong Kong analyzed specimens collected from the patient 10 days after his symptoms emerged in the first episode and then one day after hospitalization for the second episode.

"This case illustrates that re-infection can occur even just after a few months of recovery from the first infection," researchers from the University of Hong Kong wrote. "Our findings suggest that <u>SARS-CoV-2</u> may persist in humans, as is the case for other common-cold associated human coronaviruses, even if patients have acquired immunity via natural infection or via vaccination."

This new coronavirus is one of seven coronaviruses that

have been known to infect humans — including SARS, MERS, and some that are linked to the common cold. It's too early to say whether some people might get long-term immunity with the new coronavirus. But with "common cold coronaviruses, you don't actually have immunity that lasts for very long," said Dr. Celine Gounder, a professor of medicine and infectious diseases at the New York University School of Medicine. "We don't know the answer with this specific coronavirus."

Overall, the new study "is a textbook example of how immunity should work," said Akiko Iwasaki, of the Yale School of Medicine, who was not involved in the study.

"Second infection was asymptomatic. While immunity was not enough to block reinfection, it protected the person from disease," Iwasaki tweeted. "Patient had no detectable antibody at the time of reinfection but developed detectable antibody after reinfection. This is encouraging."

She added that since reinfection can occur, herd immunity by natural infection is unlikely to eliminate the novel coronavirus.

"The only safe and effective way to achieve herd immunity is through vaccination," Iwasaki tweeted. "Lastly, while this is a good example of how primary infection can prevent disease from subsequent infection, more studies are needed to understand the range of outcomes from reinfection."

Additional evidence that covid-19 herd immunity might be a fleeting dream is Spain's recent <u>large-scale study</u>, published in *The Lancet*. That coronavirus research found that just 5% of its population has developed antibodies, strengthening evidence that a so-called herd immunity to Covid-19 is "unachievable."

The findings show that 95% of Spain's population remains susceptible to the virus. Herd immunity is achieved when enough of a population has become infected with a virus or bacteria -- or vaccinated against it -- to stop its circulation.

The European Center for Disease Control told CNN that

Spain's research, on a nationwide representative sample of more than 61,000 participants, appears to be the largest study to date among a dozen serological studies on the coronavirus undertaken by European nations. It adds to the findings of an antibody study involving 2,766 participants in Geneva, Switzerland, published in the Lancet on June 11.

There have been similar studies in China and the United States and "the key finding from these representative cohorts is that most of the population appears to have remained unexposed" to Covid-19, "even in areas with widespread virus circulation," said a <u>Lancet commentary</u> published along with Spain's findings.

# More infectious coronavirus mutation discovered in Indonesia, Singapore and Malaysia

The infectious D614G mutation of the virus has been found in genome sequencing data in Indonesia. It has also been detected in Singapore and Malaysia.

A more infectious mutation of the new coronavirus has been found in Indonesia, the Jakarta-based Eijkman Institute for Molecular Biology said on August 30, as the Southeast Asian country's caseload surges. Indonesia reported 2,858 new infections on August 30 alone, data by the health ministry showed, below the previous day's record 3,308 but above the past month's daily average. Its total number of cases was 172,053, with 7,343 COVID-19 fatalities.

The infectious D614G mutation of the virus has been found in genome sequencing data from samples collected by the institute, deputy director Herawati Sudoyo told Reuters, adding that more study is required to determine whether that was behind the recent rise in cases. The strain, which the World Health Organization said was identified in February and has been circulating in Europe and the Americas, has also been found in neighbouring Singapore and Malaysia, and is said to be 10 times more infectious.

The White House Corona Virus task Force has made no comment on this new, more infectious strain, and no plan has been forthcoming on how America will deal with it.

Syahrizal Syarif, an epidemiologist with the University of Indonesia, warned Indonesians must remain vigilant, as his modelling suggests the country may see its caseload rise to 500,000 by the end of the year. "The situation is serious .... Local transmission currently is out of control," Syarif said, adding that the number of infections found daily could have been much higher if laboratories were able to process more specimens in a day.

The capital Jakarta on Sunday saw a record daily increase of more than 1,000 cases, which the city government linked to a higher mobility rate during a mid-August independence celebration. "There needs to be an awareness and a collective effort, be it from the government or the people, in addressing the rising number of cases," Dwi Oktavia, an official at the Jakarta health agency, said in a statement, urging people to stay at home and wear a face mask when they must go out.

Global coronavirus cases surged past 25 million, according to a Johns Hopkins University's tally, as deaths exceed 843,000. Nearly 25% of all dealths worldwide are here in the USA, even though America has only 2% of the world's population.



In the late 1800s, the German scientist Carl Flügge had a hunch: Maybe if you maintain enough physical distance between people who are sick and those who are well, you can prevent the spread of pathogens from person to person. At the time, it was just a hypothesis, one that scientists like him often tried to test out using glass plates.

It would take another four decades for technology to advance enough to confirm the idea, with the advent of high-speed photography. In the early 1940s, scientists finally got their first glimpses of people's sneezes hurtling through the air in real time, at a capture rate of 30,000 frames a second, confirming that indeed, most of the stuff we throw into the



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air when we sneeze, cough, or yell tends to settle down to the ground within about a wingspan or so (say, 3 to 6 feet).

The photo, at the left, of a sneezer caught in the act was taken by the professor Marshall Jennison from MIT and published in a 1941 research paper. Bettmann/Getty Images. Back then, scientists maintained that most of the infectious gunk people expel (say, about 90% of their pathogens) travel less than 6 feet away. Their study measurements were never meant to be taken as hard-and-fast rules about how far we should stand from other people during a pandemic, though. Nevertheless, these 3-to-6-feet rules of thumb have become easy-to-follow protocols for keeping potentially sick people at arm's length during the coronavirus outbreak.

"The dogma was born," the professor <u>Lidia Morawska</u>, a leading aerosol scientist in Australia, said of the 80-year-old 6-foot rule. "Like any dogma, it's extremely difficult to change people's minds and change the dogmas."

But as the coronavirus pandemic drags on for months on end, Morawska and other leading air and virus scientists and engineers are starting to lead a charge toward dismantling the old 6-foot rule and taking a more nuanced approach to managing the novel coronavirus' spread.

Instead of always being on super-high alert, or assuming

that a distance of 6 feet (or wearing masks, or washing hands) keeps us 100% safe all the time, they say, we should be learning how better to assess the situations we're in every day, letting our guard down now and again when it's relatively safe and moving back onto high alert when it's appropriate.

Recently, hoping to inject a little more of such empowerment into the ways people protect themselves from the virus' spread, researchers from Oxford and MIT released a new "traffic-light" system that they hope will help people live life to its fullest while still being careful enough during the pandemic. Here is part of what was published in *thebmj* on August 25, 2020:

"Physical distancing is an important part of measures to control covid-19, but exactly how far away and for how long contact is safe in different contexts is unclear. Rules that stipulate a single specific physical distance (1 or 2 metres) between individuals to reduce transmission of SARS-CoV-2, the virus causing covid-19, are based on an outdated, dichotomous notion of respiratory droplet size. This overlooks the physics of respiratory emissions, where droplets of all sizes are trapped and moved by the exhaled moist and hot turbulent gas cloud that keeps them concentrated as it carries them over metres in a few seconds. After the cloud slows sufficiently, ventilation, specific patterns of airflow, and type of activity become important. Viral load of the emitter, duration of exposure, and susceptibility of an individual to infection are also important.

"Instead of single, fixed physical distance rules, we propose graded recommendations that better reflect the multiple factors that combine to determine risk. This would provide greater protection in the highest risk settings but also greater freedom in lower risk settings, potentially enabling a return towards normality in some aspects of social and economic life.

#### Origins of 2 metre rule

"The study of how droplets are emitted during speech or more forcefully when coughing or sneezing began in the 19th century, with scientists typically collecting samples on glass or agar plates. In 1897, for example, Flugge proposed a 1-2 m safe distance based on the distance over which sampled visible droplets contained pathogens. In the 1940s, visual documentation of these emissions became possible with close-up still imaging of sneezing, coughing, or talking. A study in 1948 of haemolytic streptococci spread found 65% of the 48 participants produced large droplets only,

fewer than 10% of which travelled as far as 5½ feet (1.7 m). However, in 10% of participants, haemolytic streptococci were collected 9½ feet (2.9 m) away. Despite limitations in the accuracy of these early study designs, especially for longer ranges, the observation of large droplets falling close to a host reinforced and further entrenched the assumed scientific basis of the 1-2 m distancing rule.

"Yet eight of the 10 studies in a recent systematic review showed horizontal projection of respiratory droplets beyond 2 m for particles up to 60  $\mu$ m. In one study, droplet spread was detected over 6-8 m. These results suggest that SARS-CoV-2 could spread beyond 1-2 m in a concentrated packet through coughs or sneezes. In recent related viral outbreaks, such as SARS-CoV-1, MERS-CoV, and Avian flu, multiple studies reported suspected spread beyond 2 m.

#### Droplet size, droplet spread

"The 1-2 m rule is based on a longstanding framework which dichotomises respiratory droplets into two sizes, large and small. The size of a droplet is thought to determine how far it will travel from the infected person. According to studies by Wells, emitted large droplets fall through the air more quickly than they evaporate and land within a 1-2 metre range. Small droplets (later called aerosols or airborne droplets), typically invisible to the naked eye, evaporate more quickly than they fall. Without airflow, they cannot move far, remaining in the exhaler's vicinity. With airflow they can spread along greater distances.

"While conceptually useful up to a point, this dichotomy framework overlooks contemporary science about respiratory exhalations. Droplets exist across a continuum of sizes. Contextual factors such as exhaled air and ambient airflow are extremely important in determining how far droplets of all sizes travel. Without exhaled airflow, the largest droplets would travel furthest (1-2 m), while the small ones would encounter high resistance (drag) and stay close to the source. When accounting for the exhaled airflow, clouds of small droplets can travel beyond 2 m in the air, and even large droplets have enhanced range.

#### Airborne particle spread of SARS-CoV-2

"Diseases that can be transmitted by airborne particles, such as measles and varicella, can travel much further, and in concentrated clouds, than those transmitted by large droplets, which drop from clouds more quickly. They can therefore expose others rapidly and at greater distance and may need different public health measures,

Continued on next page

# The 6-foot social-distancing rule is based on nearly 80-year-old science Scientists at MIT and Oxford have created a better, traffic-light system

#### Continued from last page

including extended physical distancing. Laboratory studies also suggest SARS-CoV-1, SARS-CoV-2, and MERS-CoV viral particles are stable in airborne samples, with SARS-CoV-2 persistent for longest (up to 16 hours).

"In a literature search for studies using air sampling techniques to detect viral particles surrounding covid-19 patients, we found nine studies in hospital and two in community settings. Seven of the hospital studies reported at least one airborne sample tested positive for SARS-CoV-2, though the proportion of positive samples across studies ranged between 2% and 64%. Only two reported positive results in relation to distance from an infected patient (one at 2 m18 and another at ≥4 m in the corridor). Of the two hospital studies that did not find SARS-CoV-2 particles in air samples, one collected positive swab samples from ventilation units in the patient's room, which is consistent with airborne droplet spread.

"Neither community study reported positive air samples, although one collected specimens up to 17 days after covid-19 carriers had left the room and the other did not report time of sampling since cleaning or sampling distance from the infected person. These negative studies thus fall substantially short of proving that airborne spread does not occur.

#### Distance and transmission risk

"The UK's Scientific Advisory Group for Emergencies (SAGE) estimates that the risk of SARS-CoV-2 transmission at 1 m



could be 2-10 times higher than at 2 m. A systematic review commissioned by the World Health Organization attempted to analyse physical distancing measures in relation to coronavirus transmission. Physical distancing of <1 m was reported to result in a transmission risk of 12.8%, compared with 2.6% at distances ≥1 m, supporting physical distancing rules of 1 m or more. The review's limitations should be noted. Not all distances were explicit in the original studies; some were estimated by the review authors. Different distances were used to categorise social contact in different studies (1.8 m was considered close in one study but distant in another, for example), yet these were pooled within the same analysis. The summary relied heavily on data from the SARS-CoV-1 and MERS outbreaks and only partially accounted for environmental confounders.

#### More nuanced model

"Environmental influences are complex and are likely to be mutually reinforcing. This is shown, for example, in meat packing plants, where outbreaks have been attributed to the combination of high levels of worker contagion, poor ventilation, cramped working conditions, background noise (which leads to shouting), and low compliance with mask wearing. Similar compound risk situations might occur in other crowded, noisy, indoor environments, such as pubs or live music venues.

"Physical distancing rules would be most effective if they reflected graded levels of risk. Figure 3, next page, presents a guide to how transmission risk may vary with setting, occupancy level, contact time, and whether face coverings are worn. These estimates apply when everyone is asymptomatic. In the highest risk situations (indoor environments with poor ventilation, high levels of occupancy, prolonged contact time, and no face coverings, such as a crowded bar or night club) physical distancing beyond 2 m and minimising occupancy time should be considered. Less stringent distancing is likely to be adequate in low risk scenarios. People with symptoms (who should in any case be self-isolating) tend to have high viral load and more frequent violent respiratory exhalations.

"The levels of risk in fig 3 are relative not absolute, especially in relation to thresholds of time and occupancy, and they do not include additional factors such as individuals' susceptibility to infection, shedding level from an infected person, indoor airflow patterns, and where someone is

placed in relation to the infected person. Humidity may also be important, but this is yet to be rigorously established.

"Further work is needed to extend our guide to develop specific solutions to classes of indoor environments occupied at various usage levels. Urgent research is needed to examine three areas of uncertainty: the cut-off duration of exposures in relation to the indoor condition, occupancy, and level of viral shedding (5-15 minute current ad-hoc rules), which does not seem to be supported by evidence; the detailed study of airflow patterns with respect to the infected source and its competition with average venting; and the patterns and properties of respiratory emissions

and droplet infectivity within them during various physical activities.

"Physical distancing should be seen as only one part of a wider public health approach to containing the covid-19 pandemic. It needs to be implemented alongside combined strategies of people-air-surface-space management, including hand hygiene, cleaning, occupancy and indoor space and air managements, and appropriate protective equipment, such as masks, for the setting.

Citation: *BMJ* 2020; 370 doi: <a href="https://doi.org/10.1136/bmj.m3223">https://doi.org/10.1136/bmj.m3223</a> (Published 25 August 2020).

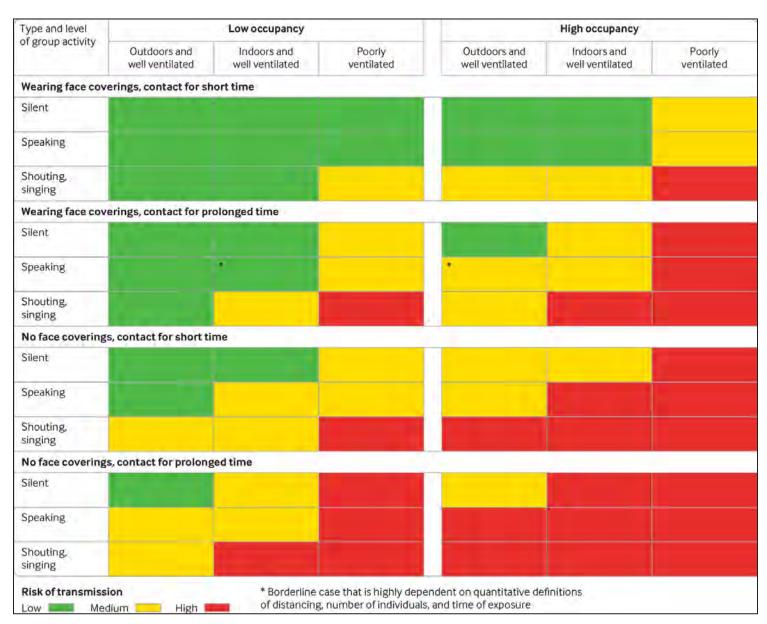


Fig 3. Risk of SARS-CoV-2 transmission from asymptomatic people in different settings and for different occupation times, venting, and crowding levels (ignoring variation in susceptibility and viral shedding rates). Face covering refers to those for the general population and not high grade respirators. The grades are indicative of qualitative relative risk and do not represent a quantitative measure. Other factors not presented in these tables may also need to be taken into account when considering transmission risk, including viral load of an infected person and people's susceptibility to infection. Coughing or sneezing, even if these are due to irritation or allergies while asymptomatic, would exacerbate risk of exposure across an indoor space, regardless of ventilation.

# Creating waves of change for chiropractic and our military

## By Kristi Hudson Director of Business Relations at ChiroHealthUSA

It was 6:00 in the morning when I received the call from Reagan Foxworth Chappell and all I heard was sobs, and my heart nearly stopped. After composing herself, she let me know that with the help of her grandparents, Drs. Betty Rose and Charles Mathews, they had selected the recipient of this year's scholarship. They were literally moved to tears by his story. After looking up his application, I too was feeling "purple," as Dr. Betty would say, which means crying happy tears.

What was so compelling about Jared Ollis' application? For starters, he served nearly ten years in the military, four of those years as a paratrooper in the 82nd Airborne Division. He is a father with a family, attending chiropractic college, and managing all of those responsibilities. He was very candid about the challenges. They truly resonated with Dr. Betty Rose Mathews who started chiropractic school as a single mom with young children. For Reagan, his story reminded her of her father, Dr. Ray Foxworth, who started chiropractic school with a young family, and her grandfather, Dr. Charles Mathews, who also served in 3 branches of the military before entering chiropractic school.

But perhaps for all of us, we were moved by reading about his desire to help make chiropractic care readily available to active duty service members on their respective military installations. This has also been a desire of Dr. Ray Foxworth since starting the Chiropractic Services Department for the G.V. Sonny Montgomery VA Medical Center in Jackson. Dr. Foxworth served four years as the VA Staff Chiropractor. He cherishes those days and has always had a great respect for our military.

Jared outlined a plan of action to get chiropractic fully integrated into the military and he has absolute passion, which made him stand out from the hundreds of applications that we received. "I saw many paratroopers incur nagging injuries and deal with chronic pain as a result of ruck marching, consistent distance running, and hard landings during jumps," stated Ollis. "Seeing so many men and women I served with discharged for musculoskeletal complaints that could have been managed with chiropractic care, further developed my desire to help service members have better access to

chiropractic." He went further stating, "The Department of Defense (DoD) only hires a very limited number of DoD civilian chiropractors to provide care to service members in a very limited number of locations. This makes it very difficult for service members to get the care that they need. For instance, Fort Bragg, in North Carolina, is the largest military installation in the world with over 50,000 soldiers currently on assignment. There are only four DoD chiropractors at Fort Bragg. Considering the fact that being a soldier is the most demanding neuromusculoskeletal job a person can have, this is unacceptable. Many of our service members struggle with chronic pain that could be well addressed with chiropractic care. I plan to fight to get chiropractors commissioned and integrated into the armed forces as officers."

Jared doesn't just talk the talk. By the time I met him in person and stepped on campus, he was already well on his way, working with Bharon Hoag, Executive Director for One Chiropractic and the Patriot Project, to accomplish his goal.

Like most everything in 2020, the announcement of this year's Foxworth Family Scholarship recipient looked a little different. Each year, with the help of the Florida Chiropractic Association, we announce and present our scholarship winner to the chiropractic profession at the FCA National Convention in Orlando, Florida. With the postponement of this year's convention until November, Dr. Ray Foxworth, President of ChiroHealthUSA, put me on plane to lowa where I would surprise Jared Ollis and present him with a check for \$5,000 to help offset his living expenses, \$10,000 for tuition,



and a donation of \$10,000 for Palmer College of Chiropractic. You can watch the video of my surprise visit here, courtesy of the amazing production team at Palmer College.

The scholarship is incredibly special to each of us at Chiro-HealthUSA. This year will be memorable for so many reasons. On the morning that I left for Iowa I awoke to a text letting me know that Dr. Betty Rose Mathews had passed away making Jared the last recipient that Dr. Betty Rose would help to select. Knowing that she was so moved by his application and seeing just how much he has accomplished before graduating, means so much to all of us. My only regret is that Jared and I didn't get to spend more time together. His heart, passion, persistence, excitement, and love for this profession, remind me so much of Dr. Betty. She knew him without even having the opportunity to meet him.

Jared is creating waves of change for chiropractic as a student. I, for one, can't wait to see the impact he has on this profession in the years to come. Thank you, Jared, not only for your service to our country, but for your service to this profession.

The Foxworth Family Scholarship would like to thank the many organizations who helped in the evaluation process of this year's applicants. 400 applications were narrowed down to 25 finalists thanks to the help of the Chiropractic Congress, Federation of Chiropractic Licensing Boards, Chiropractic Summit, Clinical Compass, American Chiropractic Association, American Black Chiropractic Association, Women Chiropractors, National Board of Chiropractic Examiners and the Foundation for Chiropractic Progress. Students interested in applying for the 2021 scholarship may apply at www.chusascholar.com.

Kristi Hudson is a Certified Professional Compliance Officer and host of one of the largest chiropractic webinar series in the country. She is the Director of Business Relations at ChiroHealthUSA, Administrator of the Foxworth Family Chiropractic Scholarship, a speaker, mom, and writer.



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# RESCHEDULED The IACP Annual Convention November 7-8, 2020 at The Grove Hotel



Join your fellow chiropractic colleagues for the rescheduled 2020 IACP Annual Convention November 7-8, 2020 at The Grove Hotel in Boise. The event will be filled with innovative presentations, networking opportunities, and discussions on our efforts to grow the chiropractic industry into the future. Early bird registration is open through September 26th, 2020. Our fresh and diverse set of speakers, along with our exhibition of industry partners, will provide you with professional development as well as applicable products and services to benefit your practice. Our CA track will focus on multiple areas of practice management, billing, coding, documentation, and audit protection. Book your discounted room at The Grove Hotel <a href="here">here</a>. We will proceed with the conference, barring further government restrictions. If we must cancel, all registrants will receive a full refund.

### **Chiropractic News**

# New officers for the Association for the History of Chiropractic

The Association for the History of Chiropractic (AHC) named two from CUKC's faculty and staff as officers for 2019-20. Dr. Edward McKenzie is First Vice President, and Dr. Steve Agocs is Secretary.

The Association for the History of Chiropractic is an international association founded in 1980. The association promotes the scholarly recording of the chiropractic profession's history. This mission is fulfilled through the peerreviewed journal, Chiropractic History, the support and publication of books related to chiropractic history, and an annual conference where presentations about chiropractic history are made.

Dr. McKenzie, a College of Chiropractic clinical instructor since 2017, received his Doctor of Chiropractic degree from Cleveland Chiropractic College in 1969. Following graduation, he worked in practice with his father in the Kansas City area. In 1976, he and his family moved to the Holton, Kan., area where he operates a practice. In 2017, McKenzie was appointed a clinical educator in the Cleveland University-Kansas City (CUKC) student clinic. His other chiropractic leadership positions included officer and director in the Kansas Chiropractic Association (KCA), and serving as a delegate and alternate delegate to the American Chiropractic Association (ACA).

Dr. Agocs, assistant dean of chiropractic education in the CUKC College of Chiropractic, is a graduate of the University of Northern Iowa and Palmer College of Chiropractic. He joined Cleveland University-Kansas City in 2007. He's been involved with the AHC for the past 10 years.

"I am involved with the AHC because I enjoy history, in general, and I'm particularly interested in chiropractic history on a professional level," Agocs said. "My understanding of chiropractic is much deeper and richer knowing the history of chiropractic. Every time I attend a conference or open our journal, or look at the AHC's Facebook group, I learn something new."

In addition to serving as a clinician at KC CARE Health Center, which serves a diverse population in the urban core of

Kansas City, Mo., Agocs teaches History of Chiropractic and Technique Systems, Thompson Technique, and Flexion-Distraction Technique. He teaches pain science seminars, chiropractic technique, and RockTape's Functional Movement Techniques at the postgraduate level.

Each year, the AHC presents its Lee-Homewood Chiropractic Heritage Award to a chiropractic pioneer who has made outstanding contributions to the chiropractic profession. The award includes a certificate and a lifetime membership to the AHC.

AHC also communicates to members about new books about chiropractic, such as 2020's Finding Langworthy: The Quest to Discover the Life and Times of a Chiropractic Pioneer. This biography provides the story of an early chiropractic pioneer, Dr. Solon Massey Langworthy. The author is Steve Troyanovich, D.C.

The 40th Annual Conference of The Association for the History of Chiropractic is scheduled for June 19-20, 2021, at Palmer College of Chiropractic. Davenport, Ia.

# The American Chiropractic Association is offering discounted PPE for ACA members

The American Chiropractic Association (ACA) has teamed with The Raw Office to create a website where doctors of chiropractic can purchase personal protective equipment (PPE) and other supplies necessary to enhance their safety, as well as the safety of patients and staff, during the COVID-19 pandemic.

Many chiropractors, who were identified in March as essential healthcare workers by the Department of Homeland Security, continue to provide care to their patients. At <a href="https://example.com/HealthSupplies.pro">HealthSupplies.pro</a>, they can now purchase certified PPE at a lower cost. Additionally, ACA members receive a 10% discount.

The site is a reliable source for items the Centers for Disease Control and Prevention (CDC) has recommended in its guidance to healthcare providers, including masks, face shields, goggles, gloves, medical gowns, and hand sanitizer. All products are currently in stock, as opposed to many other online retailers where inventory is backordered.

# ICA Annual Pediatric Conference postponed until next year

Dur to the ongoing COVID-19 pandemic, the International Chiropractic Association (ICA) has postponed the Pediatric Super Conference until 2021.

# Federation of Chiropractic Licensing Boards establishes COVID-19 resources

The Federation of Chiropractic Licensing Boards (FCLB) has added changes to its regulatory guidance, along with new continuing education courses explicitly aimed to help chiropractors keep themselves and their patients safe from COVID-19 and other infectious diseases and viruses.

"In the early days of the virus, the FCLB swiftly affirmed that chiropractic doctors are essential health care providers and moved to help state boards assert this position to their respective state governors and healthcare leaders," said Karlos Boghosian, DC, president, FCLB. "Following FCLB's advocacy, some states re-evaluated their position regarding chiropractors as essential health care workers."

On March 28, the U.S. Department of Homeland Security CISA formally identified chiropractors as essential care providers. In April 2020, the State of Colorado issued a proclamation naming April 24, 2020, as Colorado Chiropractic Regulation Day. The proclamation was awarded in acknowledgment of the FCLB mission to protect the public by promoting excellence in chiropractic regulation.

In support of chiropractic state boards' efforts to help chiropractors communicate with patients, the FCLB created resources for use by boards and chiropractic professionals. These resources included a video discussing steps boards and chiropractors should take to understand their specific state requirements, restrictions, and advice when re-opening clinics or serving patients during the global pandemic.

#### World Spine Day, October 16, announces theme

The World Spine Day theme for 2020 is: BACK ON TRACK!

With the challenges of the coronavirus pandemic affecting millions of people worldwide, lockdown



restrictions have led to a lack of physical activity that has made people more susceptible to spinal pain and disability.

World Spine Day 2020 will focus on getting people BACK ON TRACK to revitalize their spines and restore spinal health and well being.

We're inviting governments, communities, organizations, associations, health professionals – anyone with an interest in spinal pain and disability – to get involved. World Spine Day 2020 will provide an opportunity to raise awareness of the global burden of spine pain and help people to get BACK ON TRACK by organizing and participating in events and initiatives.

This campaign will be the spinal public health event of 2020. Our vision is a world of healthier spines – help us to get the world get BACK ON TRACK! <u>Click here</u> for more information.

Taking place on October 16 each year, World Spine Day highlights the burden of spinal pain and disability around the world. With health professionals, exercise and rehabilitation experts, public health advocates, schoolchildren and patients all taking part, World Spine Day is celebrated on every continent. World Spine Day highlights the importance of spinal health and well being. Promotion of physical activity, good posture, responsible lifting and healthy working conditions will all feature as people are encouraged to look after their spines and stay active.

# New research shows benefits to electronic chiropractic adjusting devices

An August 2020 <u>paper</u> published in *Scienticif Reports*, called Beneficial effects of manually assisted chiropractic adjusting instrument in a rabbit model of osteoarthritis, demonstrated the benefits of chiropractic manipulation using the Activator V® for induced osteoarthritis (OA) in animals.

Continued on next page

## **Chiropractic News**

#### Continued from last page

The Abstract to the research reads:

"Osteoarthritis (OA) is a degenerative disease characterized by injury of all joint tissues. Our previous study showed that in experimental osteoporosis, chiropractic manipulation (CM) exerts protective effects on bone. We here assessed whether CM might ameliorate OA by improving subchondral bone sclerosis, cartilage integrity and synovitis. Male New-Zealand rabbits underwent knee surgery to induce OA by anterior cruciate ligament injury. CM was performed using the chiropractic instrument ActivatorV 3 times/week for 8 weeks as follows: force 2 setting was applied to the tibial tubercle of the rabbit right hind limb (TM-OA), whereas the corresponding left hind limb received a false manipulation (FM-OA) consisting of ActivatorV firing in the air and slightly touching the tibial tubercle. After sacrifice, subchondral bone integrity was assessed in the tibiae by microCT and histology. Cartilage damage and synovitis were estimated by Mankin's and Krenn's scores, respectively, and histological techniques. Bone mineral density and content in both cortical and trabecular compartments of subchondral bone decreased in OA rabbits compared to controls, but partially reversed in the TM-OA group. Trabecular bone parameters in the latter group also showed a significant improvement compared to FM-OA group. Moreover RANKL, OPG, ALP and TRAP protein expression in subchondral bone significantly decreased in TM-OA rabbits with respect to FM-OA group. CM was associated with lower Mankin's and Krenn's scores and macrophage infiltrate together with a decreased protein expression of pro-inflammatory, fibrotic and angiogenic factors, in TM-OA rabbits with respect to FM-OA. Our results suggest that CM may mitigate OA progression by improving subchondral bone as well as cartilage and synovial membrane status."

The study found: "A significant loss of subchondral bone mass was observed in the tibia of the OA group of rabbits compared to control animals at time of sacrifice, as confirmed by microCT. Thus, both BMD and BMC in cortical and trabecular compartments of subchondral bone were lower in FM-OA rabbits than in control rabbits. ActivatorV adjustment (TM-OA group) produced an increase in BMD and BMC in both skeletal compartments, without reaching the corresponding values in control animals. In addition, in

subchondral trabecular tibia of FM-OA rabbits, we found a significant decrease in BV/TV as well as in Tb.N, Tb.S and Tb. Th values, compared to those in healthy controls, which was partially reversed by CM (TM-OA group).

Osteoarthritis is one of the most common chronic diseases that affects all anatomical structures of a joint, including cartilage, subchondral bone and connective tissue that lines the inside of a joint capsule. The disease affects about 15% of the global population between the ages of 25 and 75 years, with prevalence that increases significantly with age. More than 70% of those over the age of 65 suffer with osteoarthritis. There is currently no effective pharmacotherapy available for osteoarthritis. Patient treatment is typically based on established guidelines for structural conservation of the joints by correcting posture and avoiding joint overload.

# Deadly trends in rural U.S. counties shown by enhanced COVID-19 map

Perception Health, a provider of market-predictive intelligence for the health care industry, this week released an enhanced version of its map "COVID-19 Cases in U.S. Counties" showing hot spots for the coronavirus among small, close-knit communities. Some of the U.S. counties have a higher ratio of cases per 1,000 population than New York City. The new version of the map also lists the numbers of tests conducted, patients hospitalized, patients recovered from the coronavirus, and a calculation of the number of cases per 1,000 population, for each county.

"Take for example Blaine County in Idaho, which has a population of only 21,551," said says J. Tod Fetherling, CEO of Perception Health. "The county recently reported 454 COVID-19 cases, which works out to 21.07 cases per 1,000 population. That's a higher ratio than any of the boroughs in New York City. Other examples include three counties in Georgia...[and] that the coronavirus can escalate quickly in small towns and close-knit communities because of the familiarity of the people who live there."

For more info go to go.perceptionhealth.com/covid19.





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## **Chiropractic College News**

# Cleveland University-Kansas City names Chris Todden dean

Cleveland University-Kansas City (CUKC) has announced that Dr. Chris Todden has been named dean of the University's College of Health Sciences. Todden comes to CUKC from Baker University in Baldwin City, Kan., where he served as the chair of the department of applied health science, and director of the exercise science program.



Todden assumed his duties during the summer term, and will oversee all of the daily academic and administrative responsibilities associated with the health sciences degree programs at CUKC. Dr. Cheryl Carpenter-Davis, vice president of academic affairs at the University, welcomed the addition of Todden and his broad scope of experience.

"Dr. Todden brings over 25 years of experience in administration and teaching in institutions of higher education," Carpenter-Davis said. "He has a wealth of experience in developing new programs that align with the Cleveland University Kansas City mission of health and wellness. He is an active member on the Committee on Accreditation for the Exercise Sciences and has authored many peer reviewed articles. We are pleased that Dr. Todden has chosen to join our team."

# Life University intorduces palpation and adjustment trainer

Life University (LIFE) is leading the way in chiropractic education with the creation of the Palpation and Adjustment Trainer (PAT). Developed by the University's Dr. Sid E. Williams Center for Chiropractic Research (CCR), the PAT is an anatomically accurate, technology-based mannequin with the look, feel, size and weight of an average person.

The PAT allows students to study the biomechanics of the chiropractor's most important tool, the adjustment. Embedded pressure sensors measure location of contact on the mannequin as internal controls create

intersegmental fixation at specific spinal regions. PAT will help students learn to locate vertebral landmarks by palpation, find restricted motion and perform adjustments with controlled amounts of force and speed, and along a specific vector. The complete system shows student performance in comparison to a benchmark. PAT allows students to receive immediate, objective feedback about the "where, how hard, how fast and in which direction" part of adjusting to develop these important skills necessary for care of patients.

The key features of the PAT include:

- 3D-printed spine, pelvis and occiput surrounded by viscoelastic skin and soft tissue
- 64 pressure sensors at key spinal landmarks from EOP to pelvis and sacrum
- Software monitors pressure levels at each sensor and shows location of contact on screen.
- Location labels on computer screen can be turned on or off.
- Ability to zoom in to specific regions on computer screen
- Screen indicates heavy or light forces, which can have sensitivity modified.
- Strong enough to withstand thrusts, and when paired with force plate table or glove, can measure force profiles
- Individual thoracic segments can be fixated. Right or left fixation capabilities within lumbar and cervical regions

# The BJ Palmer Lifetime Achievement Award winner is Dr. Perry Rush, DC

The ICA Council on Upper Cervical Care recently honored pioneer graduate and retired long-serving Sherman College Associate Professor Dr. Perry Rush with the B.J. Palmer Lifetime Achievement Award. "It is the selfless act of giving by professors across the nation at our chiropractic colleges that helps to guard specific chiropractic practices of the future," the ICA Council on Upper Cervical Care noted in its announcement.

"The future of our profession and chiropractic colleges is only as good as the faculty and staff that make up those institutions. So it is with our greatest appreciation that we award Dr. Perry Rush with the B.J. Palmer Lifetime Achievement Award for being a beacon of light in serving to guard the sacred



trust, and shape the future of specific upper cervical chiropractic for generations to come."

Dr. Rush is a 1976 Sherman College pioneer graduate; upon graduation, he taught at Pennsylvania College of Straight Chiropractic for two years. Dr. Rush returned to Spartanburg in 1980 to join the Sherman College faculty in 1980, and he remained there, teaching and serving in his private practice for more than 30 years, until his retirement in 2011.

While on the Sherman College faculty, Dr. Rush taught courses in X-Ray Physics, X-Ray Anatomy, X-Ray Positioning I and II, Upper Cervical Rationale, Instrumentation, and Blair Technique. His favorite part of teaching was relating what he saw in his office to his students, and his students appreciated the opportunity to hear those real-life stories and to spend countless hours shadowing his office.

# Upper Cervical Chiropractor of the Year honors go to Tyler Evans BS, DC, DCCJP



Dr. Tyler Evans owns a private Upper Cervical Blair practice with his wife Dr. Mychal Beebe in Portsmouth, New Hampshire since 2016, prior to which he worked as the Associate Clinical Director of CLEAR Chiropractic in Kirkland Washington. He graduated with his BS in Biology from Ball State

University in 2007, Proceeded to pursue his Chiropractic Degree from Life Chiropractic College West, and graduated in 2011. He was also a member of the inaugural DCCJP class, completing that course in 2015.

When opening their practice in New Hampshire, Dr. Evans and Beebe became one of the earliest upper cervical offices to move to CBCT as their primary imaging for the UC region, and have led the charge towards

a better understanding of 3D imaging of the CCJ and wider acceptance of this imaging modality on a state and educational level. Dr. Evans is a regular presenter on CBCT imaging, dose, and usage at numerous Chiropractic Colleges and Societies.

He has chaired the ICA UCC Committee for UC Standards of Care since 2017 and has been a director with the Upper Cervical Council since 2019.

# Palmer College alumni and friends are welcomed for Homecoming events at all campuses

On September 18, 2020, the chiropractic profession marks its 125th anniversary. We all have looked forward to celebrating our profession and this milestone with thousands of chiropractors and friends from around the world in Davenport, lowa where chiropractic began.

The landscape of the COVID-19 pandemic is everchanging, and the impacts are deepening. Health, safety, visitor experience, and liability considerations make it impossible to plan an in-person celebration worthy of this significant milestone for our profession.

Therefore, we are canceling all in-person events for the 125th Anniversary Celebration of Founder's Day scheduled for September 18-19, 2020 at Palmer College.

Even as the world faces unprecedented challenges, it's important for us to pause and recognize the people and extraordinary events that brought us here. At Palmer, we are shifting our focus to marking this milestone in a distinctive way that will allow chiropractors all over the world to collectively and virtually celebrate the historymaking first adjustment by D.D. Palmer. Expect to hear more about what we'll be doing in the weeks ahead.

As we recognize this anniversary, we also look forward to the next 125 years, and many more milestones for the chiropractic profession. The next major milestone is the 125th anniversary of the Fountainhead, Palmer College of Chiropractic, in 2022.

Click here for more information on Palmer Homecoming events or call the Continuing Education Department toll free at 800-452-5032.

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We have created a FREE printable PDF of the Do the right thing

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

Ways to keep moving with join pain Basic Coronavirus protective measures The drug-free approach to pain reduction Get up and move! STRETCHING for better joint health

Yoga and pilates may help with chronic back pain 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 Go outside and get the benefits of vitamin D 7 simple steps to a longer, healthier life Exercise regularly to maintain your health

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:



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# White House corona virus task force urges all Americans to "Do the right thing"



As the United States exceeds 6 million Covid-19 cases, the coordinator of the White House coronavirus response urged Americans not to wait for a vaccine to stop community spread of the virus.

"Do the right thing today," Dr. Deborah Birx said. "Because if we do the right thing today, we go into the fall with much fewer cases. Right now, we gain freedom through wearing our masks and socially distancing."

She urged vigilance, noting that crowds gathered at concert venues can spread the virus, but so too can people gathered in a backyard.

"We know we can't always be perfect. We know that we'll put this message out about private gatherings and something will happen and you'll realize you have been in a situation, you've been around people, you didn't have your mask on," Birx said. "That is the time to make sure you're protecting others in your household and around you by wearing a mask when you're around them, even if they're family."

Coronavirus continues to be a serious threat in the US, but knowledge gained about the virus over the last six months means Americans have power against it, Birx said.

"We see the numbers on the TV and in the news every single day of the number of Americans who have lost their lives to this virus. We don't lose that many Americans to a virus like the flu virus every year," Birx said during a media appearance in Minnesota. "So, this is a serious threat."

But, she said, the US knows how to stop transmission. The last six months of the pandemic have provided insight into why masks are important, that homemade two-ply masks are effective and the physical distancing is important, Birx said.

"Not only is the virus real, the consequences of the virus is real. The hospitalizations that we still have every week is real. The number of Americans that we have lost to this virus are real," Birx said. "But what is also real is we have a way to prevent its spread, and I think this really needs to be a balanced message of 'we have power against this virus, but it requires all of us to exert our power



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### The Idaho Association of Chiropractic Physicians

#### The IACP News

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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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