

Our Advocacy in 2018

Over the past years we have established a TMJ Patient RoundTable with working groups that emphasize a patient-centered approach. We continue to advance the goals of the Chronic Pain Research Alliance (CPRA) with periodic updates of current research to inform investigators of what's happening in the field of overlapping pain conditions. In addition, *TMJ News Bites* alerts readers to conditions that frequently overlap TMD such as migraine headaches and tinnitus. Christin Veasley, the Director and Co-Founder of the CPRA, has been active in meetings at the National Institutes of Health (NIH) that have led to a public-private partnership to advance research on non-opioid pain treatments. We continue to press Congress to urge NIH to support TMJ research (see the item on NIH Report Language below).

A role for you. As we begin 2018, we invite you to send us your comments and suggestions about future issues of *TMJ News Bites*. Let us know what you would like to see more of or less of every month. More patient stories? Recipes for a nutritious soft diet? Profiles of leading researchers? [We look forward to hearing from you.](#)

Hyperreactive Brain Network May Be Cause of Chronic Pain in Fibromyalgia, Study Suggests

Fibromyalgia is one of the overlapping pain conditions with TMD. This article appeared in [Fibromyalgia News Today on January 15, 2018.](#)

A new study suggests a hyperreactive brain network may be the underlying cause of chronic pain in fibromyalgia. The study, "[Functional Brain Network Mechanisms of Hypersensitivity in Chronic Pain](#)," was published in the journal of [Scientific Reports](#).

The report shows that brain networks of fibromyalgia patients have an underlying hypersensitivity that leads them to overreact to stimulation in an explosive, widespread, and synchronized manner.

This type of response is called explosive synchronization (ES), a phenomenon that occurs both in biological and technological networks, such as during epileptic seizures or power grid failures.

"For the first time, this research shows that the hypersensitivity experienced by chronic pain patients may result from hypersensitive brain networks," Richard Harris, the study's co-senior author and associate professor of anesthesiology at the [Chronic Pain and Fatigue Research Center at Michigan Medicine](#), said in a [press release](#).

The electrical activity of the brains of 10 female fibromyalgia patients were recorded by electroencephalogram (EEG), a noninvasive technique.

EEG results revealed that fibromyalgia patients do indeed display brain network configurations with explosive synchronization properties. In each patient, researchers found a significant correlation between the degree of ES and the intensity of reported chronic pain.

Researchers then used computer models of brain activity to simulate how a fibromyalgia brain reacts to stimulation. They found that the fibromyalgia brain was more sensitive to electrical stimulation than a brain model without ES characteristics.

"As opposed to the normal process of gradually linking up different centers in the brain after a stimulus, chronic pain patients have conditions that predispose them to linking up in an abrupt, explosive manner," said UnCheol Lee, the study's first author, a physicist and assistant professor of anesthesiology at Michigan Medicine.

According to the team, this type of modeling could help guide future treatments for fibromyalgia as brain regions important for explosive synchronization behavior and therapies that target it can first be tested on a computer model.

It is still unknown from a global brain perspective which of the brain network interactions create the subjective sensation of chronic pain. This study suggests, for the first time, that the explosive synchronization phenomena might be the cause of chronic pain in fibromyalgia patients.

Dry Eye Linked to Chronic Overlapping Pain in Veteran Population

The following article appeared in [MD Magazine, November 13, 2017](#)

There may be a correlation between dry eye (DE) and chronic pain in the US military veteran population as is evident by a recent study.

In a retrospective review of Florida veteran's medical records between 2010 and 2014, researchers found an association between severe DE symptoms and non-ocular pain. They also found that individuals with chronic overlapping pain conditions (COPC) had more severe DE symptoms, but similar ocular surface signs.

The study, led by Charity J. Lee, from the Miami Veterans Administration Medical Center and Bascom Palmer Eye Institute at the University of Miami, was presented at the 121st Annual Meeting of the American Academy of Ophthalmology (AAO 2017) in New Orleans, LA.

Chronic pain, as defined by the researchers as a pain that persists beyond expected resolution - or about 3 months - is prevalent in 116 million US adults.

Lee explained that COPC is common among non-ocular conditions, including back pain, migraines, and fibromyalgia. DE, a multifactorial disease, affects about 15% of US citizens.

Of the approximate 3.2 million patients seen at Veterans Affairs (VA) hospitals between the studied years, DE was diagnosed in 959,881 (29.4%) patients. Another 854,480 (26.2%) were diagnosed with tear film dysfunction (TFD), and 186,299 (5.7%) were diagnosed with ocular pain. Less than 3% of patients had the latter 2 diagnoses together, Lee said.

Researchers also found that patients were more likely to be diagnosed with DE with the more chronic pain condition diagnoses they had. The 422 patients diagnosed with 13 or more chronic pain conditions had at least an 80% chance of being diagnosed with DE as well.

Ocular pain was most strongly associated with headaches, tension headaches, migraines, **temporomandibular joint disorders**, pelvic pain, central pain syndrome, and fibromyalgia in the veteran patient population, Lee said.

Lee proposed that sensations of dryness in some patients could be a local manifestation of a system-wide diagnosis of chronic pain. She also noted there are few treatment options for DE and multi-disciplinary chronic pain care patients.

Accordingly, panel members at AAO 2017 suggested the next course of research focus on possibly using systemic treatment for DE and COPC.

"Since they tend to coexist together, I think that broad treatment may definitely have an effect, not only with dry eye, but with the rest of the pain conditions that come along with it," Lee said.

2018 NIH Report Language

For over 20 years The TMJ Association's advocacy efforts have resulted in congressional report language, in which funding committees communicate to federal agencies, such as the National Institutes of Health (NIH), that our elected officials are concerned about the plight of TMD patients and propose initiatives needed to improve their health care and lives. These directives have a powerful influence on the decisions made by the government agencies, in particular, the individual components of the NIH. We have established personal contacts with congressional staff and elected representatives and garnered their support by reporting regularly on the state of TMD research and letting them know what we, the patients, need. It is gratifying to report that Congress responds to the needs of the TMD patients and tracks the progress the NIH has made and continues to make on their behalf.

Report Language appearing in the FY2018 Appropriations Bills:

Temporomandibular Disorders [TMD]

[Office of the Director] The Committee understands that NIH-funded research has demonstrated that temporomandibular disorders [TMD] are primarily a multisystem disorder with overlapping conditions influenced by multiple biological and environmental factors rather than solely an orofacial pain condition. However, diagnosis and care of patients have not changed to reflect this major paradigm shift, with many patients continuing to receive treatments solely focused on teeth and jaws. Moreover, the medical community lacks education regarding the complexity and systemic aspects of TMD as well as its many comorbid medical conditions. Patients are treated by a multitude of practitioners across numerous disciplines with treatments that have the potential to cause harm. To address these issues, the Committee requests that NIH provide an update on the state of TMD research, activities related to TMD education, and clinical studies of TMD in the fiscal year 2019.

[National Institute of Dental and Craniofacial Research (NIDCR)] The Committee recognizes NIDCR's leadership in TMD pain research, which has led to establishing TMD as a multisystem disorder with overlapping pain and non-pain conditions. The Committee encourages NIDCR to continue its leadership as a critical member of the Trans-NIH Working Group on Chronic Overlapping Pain Conditions by promoting and

advancing integrated research on these conditions. In addition, as the oral disability associated with TMD affects a patient's nutritional health status, the Committee encourages NIDCR to improve research on orofacial function relevant to the nutritional implications of TMD. Finally, the Committee is aware of the scientific meetings on an integrated systems approach of precision medicine related to cellular-molecular-genetic-epigenetic mechanisms related to diagnosis and treatment of TMD and its comorbid conditions. In 2013, several Institutes co-sponsored a workshop on the topic of the temporomandibular joint. The Committee requests an update on initiatives that resulted from the recommendations that came forth from these meetings in the fiscal year 2019.

Chronic Overlapping Pain Conditions

[Office of the Director] The Committee notes the strong evidence base demonstrating deleterious outcomes for patients with Chronic Overlapping Pain Conditions, which include hit-or-miss, ineffective, or even harmful treatments, poor health and quality of life outcomes, markedly increased disability rates and personal and societal financial burdens. The Committee is pleased with NIH's efforts to develop a chronic overlapping pain conditions screening tool. However, an expanded, coordinated, and collaborative initiative is needed to maximize the Federal research investment, reduce spending, and improve clinical practice. There is an urgent need to analyze the state of science on Chronic Overlapping Conditions, which will identify both research gaps and future research directions and collaborations. As such, the Committee urges the Director to consider the relevant recommendations of the Federal Pain Research Strategy to guide the development of a comprehensive effort that spans the basic, translational, and clinical research continuum to advance scientific understanding of chronic overlapping pain conditions, as well as the development and discovery of safe and effective treatments.

What is the National Institutes of Health (NIH)? Why is it Important to TMJ Patients?

The NIH, one of 10 federal agencies under the direction of the U.S. Department of Health and Human Services, is the primary federal agency that conducts and supports medical research. With the support of the American people, the NIH annually invests over \$30 billion in medical research. The NIH is comprised of 27 Institutes and Centers. It provides leadership and financial support to researchers in every state, and throughout the world. Helping to lead the way toward important medical discoveries that improve people's health and save lives, NIH scientists investigate ways to prevent disease, work to determine causes, and establish treatments, and even cures for common and rare diseases. One of those 27 components is the National Institute of Dental and Craniofacial Research (NIDCR), which supports the bulk of research on TMD. Now that scientific understanding has uncovered the neurological and other complexities of Temporomandibular Disorders (TMD), an increasing number of agencies of the NIH are recognizing that they have a significant role in solving the puzzle of TMD by also providing funding for integral research programs.

Know the Science About Drug-Supplement Interactions

Many Americans take both dietary supplements and prescriptions or over-the-counter drugs. Sometimes, drugs and supplements interact in harmful ways.

For example:

- The herb St. John's wort interacts with many drugs, including drugs used to treat

HIV infection or cancer. Some of these interactions decrease the amount of the drug in the body, so it won't work as well as it should. Others can cause dangerous side effects.

- Some supplements may cause problems during surgery by interacting with anesthetics or other medicines given before, during, or after the operation. And some supplements can increase bleeding.

To avoid drug-supplement interactions, it's important to tell your health care providers about all supplements that you're taking.

[Click here to learn more about this topic on the National Center for Complementary and Integrative Health's website.](#)

All of Us Research Program Seeks Your Input

The *All of Us* Research Program invites you to submit your ideas about important research questions the program could answer. This input will help the program identify new features to add to the *All of Us* platform to support research across a range of health topics and advance precision medicine. The program requests submissions by February 23 in advance of the *All of Us* Research Priorities Workshop in March.

As you may already know, the *All of Us* Research Program aims to build one of the largest, most diverse datasets of its kind for health research, with one million or more volunteers nationwide who will sign up to share their information over time. Researchers will be able to access participants' de-identified information for a variety of studies to learn more about the biological, behavioral, and environmental factors that influence health and disease. The findings may lead to individualized health care approaches in the future.

For more information, please visit <https://allofus.nih.gov/researchprioritie>

NIH Funding Opportunities

Basic and Clinical Research

In an effort to promote greater understanding of TMD, and to develop safe and effective evidence-based diagnostics and treatments, The TMJ Association promotes and encourages basic and clinical research on Temporomandibular Disorders. [Click here to view the latest National Institutes of Health \(NIH\) funding opportunities for scientists interested in advancing TMJ research.](#) The following NIH research opportunities are currently available:

- Factors Underlying Differences in Female and Male Presentation for Dental, Oral, and Craniofacial Diseases and Conditions (R01) (R21)
- NIDCR Small Research Grants for Secondary Analysis of FaceBase Data (R03)
- Tailoring Dental Treatment for Individuals with Systemic Diseases that Compromise Oral Health (R01) (R21)
- Personalized Strategies to Manage Symptoms of Chronic Illness (R15) (R01) (R21)
- Research on the Mechanisms and/or Behavioral Outcomes of Multisensory Processing (R01)
- MAPP Network Basic/Translational Science
- Blueprint Neurotherapeutics Network (BPN): Small Molecule Drug Discovery and

Development for Disorders of the Nervous System (UH2/UH3) (U44)

- Building Genetics and Genomic Knowledge about Dental, Oral, and Craniofacial Diseases/Disorders (RO1)
- Population Health Interventions: Integrating Individual and Group Level Evidence (R01)
- Family-Centered Self-Management of Chronic Conditions (R21) (R01)
- mHealth Tools for Individuals with Chronic Conditions to Promote Effective Patient-Provider Communication, Adherence to Treatment and Self-Management (R01) (R21)
- The Biomarkers Consortium
- Notice of National Institute of Neurological Disorders and Stroke (NINDS) and National Institute on Drug Abuse (NIDA) Interest in Blueprint Neurotherapeutic Network Applications Directed at Small Molecule Non-Addictive Pain Therapies

Research E-Newsletter

Cutting Edge - COPCs Research Advances, is an electronic newsletter published by the Chronic Pain Research Alliance, an initiative of The TMJ Association. Developed to keep the medical-scientific community abreast of



CUTTING EDGE a publication of 
COPCs Research Advances

recent research advances, this publication contains abstracts of recently published studies on the epidemiology, pathophysiology and clinical management of Chronic Overlapping Pain Conditions. These conditions include **temporomandibular disorders**, chronic low back pain, chronic migraine and tension-type headache, endometriosis, myalgic encephalomyelitis/chronic fatigue syndrome, fibromyalgia, vulvodynia, irritable bowel syndrome and interstitial cystitis/painful bladder syndrome.

The most current issues are now available for your review at:

http://www.cpralliance.org/New_Findings. If you would like to receive future issues of *COPCs Research Advances*, [click here to register](#).

Educational Brochures on Chronic Overlapping Pain Conditions

This brochure addresses Chronic Overlapping Pain Conditions (COPCs), how COPCs are diagnosed, the complexity of the chronic pain experience, and how to work with your health care provider to develop a treatment plan. It is available by [postal mail](#) or as a [PDF on our website](#).

Educational Brochures on TMD

Your Guides for Temporomandibular Disorders - This brochure written by the TMJA is a straightforward, easy-to-read booklet that guides patients in how to make health care decisions. It is available [by mail](#) or as a [PDF on our website](#) and we encourage you to share it with your friends, health care professionals and family members.

TMJ Disorders - This brochure is produced and distributed by the National Institute of Dental and Craniofacial Research in partnership with the Office of Research on

Women's Health, components of the National Institutes of Health (NIH) in Bethesda, Maryland. Part of the U.S. Department of Health and Human Services, NIH is one of the world's foremost medical research centers and the federal focal point for medical research in the United States. This booklet is available in English and Spanish at: <https://www.nidcr.nih.gov/OralHealth/Topics/TMJ/TMJDisorders.htm>.

Dental Care Guide

Temporomandibular Disorders, Dental Care and You

The TMJ Association developed this guide to provide you with oral hygiene self-care tips that you can do at home, as well as suggestions for future dental appointments. Routine maintenance of your teeth and gums should reduce the risk of dental disease and the need for invasive dental treatments. [Click here to view on our website.](#)

TMJ Science Journal

Our latest issue of *TMJ Science*, which includes the summary and recommendations from our 8th scientific meeting—*How Can Precision Medicine Be Applied to Temporomandibular Disorders and Its Comorbidities*—is now available. We hope you're impressed with how far the science of Temporomandibular Disorders has come. [We invite you to read this new publication which is available in the publication section of our website as a pdf file.](#)

Support Our Work

The TMJ Association (TMJA) is the only patient advocacy organization fighting for the best science that will lead to a greater understanding of Temporomandibular and related disorders, as well as safe and effective treatments. We cannot *change the face of TMJ* without YOU.

[Click HERE to make a tax-deductible online contribution today!](#)



About The TMJ Association

Changing the Face of TMJ

The TMJ Association, Ltd. is a nonprofit, patient advocacy organization whose mission is to improve the quality of health care and lives of everyone affected by Temporomandibular Disorders (TMD). For over 25 years, we have shared reliable information on TMD with people like you. We invite you to visit our website, www.tmj.org.

- If you're not currently receiving *TMJ News Bites* and would like to [be on our mailing list, sign up here.](#)
- [Read Past issues of TMJ News Bites](#) available on our website.

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