TMJA
The TMJ Association, Ltd.

Issue 8, 2018

Holiday Greetings

The TMJA board, staff and our many volunteers wish you and your loved ones a very safe and happy holiday season!

During this time of giving**, please support The TMJ Association's work with a gift.** Every donation, no matter the size, is valued and appreciated. *Together we are changing the face of TMJ!*

TMJ Tips for the Holidays

The holidays can be a difficult time when you're in pain and have jaw issues. The following are some helpful tips TMJ patients have shared with us for getting through the holidays.

- Make soft foods to bring to holiday parties.
- Make sure those hosting events know of your need for a soft diet. Most people would rather know ahead of time and have something available than feel bad they didn't know.
- Avoid alcohol in the late evening before bed.
- Make sure to rest in between events.
- Carry extra medications with you.
- If you're traveling by car, stop and get out every couple of hours for a break.
- Order gifts online as malls are a struggle with the stress of it all.
- Pace yourself; just focus on the things that are really important to you and gracefully decline the other invites/activities.
- Accept your limitations, and be "mindful" and extra grateful for the little things.
- View the luxury of being able to sleep in, or being able to stay home and watch Christmas movies, as a "gift."
- Bring your own pillow and microwaveable heat pack on overnight trips.

Fibromyalgia and Temporomandibular Disorders - What's the Connection between these Painful Conditions?

The following article authored by Dr. Daniel Clauw, appeared in the latest issue of Dear Doctor, Dentistry and Oral Health magazine.

Dear Doctor,
Four years ago, I was diagnosed with fibromyalgia, and just recently I was diagnosed

with temporomandibular disorder (TMD). I've heard it is not uncommon to have both conditions. What's the connection between fibromyalgia and TMD?

Dear Noelle,
Both temporomandibular disorders (sometimes called TMD or TMJ) and fibromyalgia are painful conditions that can interfere with quality of life. Unfortunately, as you have found, people who already have one chronic pain condition often develop another one, or even more. In fact, many people newly diagnosed with TMD have previously experienced fluctuating pain in various parts of the body, suggesting a connection to fibromyalgia. And according to one study, three-fourths of fibromyalgia patients also have TMD. Yet many chronic pain conditions are known to occur together. What's more, chronic pain conditions have shared characteristics that suggest common underlying disease mechanisms. With this in mind, let's take a closer look at TMD and fibromyalgia.

TMD and Fibromyalgia Basics

Temporomandibular joint disorder is an umbrella term for a group of conditions that cause pain and dysfunction in the joint and muscles of the jaw. Typical symptoms include tenderness, tightness, or pain around the jaw; problems with chewing and opening the mouth wide; and headaches and earaches. TMD can make ordinary activities such as yawning, eating, or speaking difficult and uncomfortable. For many people, the painful symptoms go away on their own. But for some, the pain becomes chronic and debilitating. In these people, it is common to see co-occurring pain conditions such as fibromyalgia.

Fibromyalgia is characterized by widespread pain, aching and stiffness in muscles and joints. In many cases, it is accompanied by tender points on the body, headaches, muscle spasms and tingling sensations. People with fibromyalgia often report fatigue, sleep difficulties, mood disorders and memory problems.

Although both TMD and fibromyalgia can occur in males as well as females, these conditions are far more common among females, particularly among women in their childbearing years.

Frequently Co-Occurring Conditions:

- Fibromyalgia
- Chronic headache/migraine
- TMD
- Chronic fatigue syndrome
- Interstitial cystitis
- Irritable bowel syndrome
- Endometriosis
- Vulvodynia
- Low back pain
- Other non-pain conditions such as sleep disorders, mitral valve prolapse and hearing loss

Where Does the Pain Come From?

For decades, doctors were puzzled when patients complained of pain that had no obvious origin-so much so that many physicians wondered whether their patients were imagining the pain they described. Fortunately, our understanding of chronic pain has grown substantially over the past two decades as we have learned more about how the nervous system transmits and processes pain signals.

The human nervous system is made up of two main parts: the *central nervous system*, consisting of the brain and the spinal cord, and the *peripheral nervous system*, which consists mainly of nerves. Peripheral pain can result when nerve cells are activated,

such as when a person stubs a toe; it may also be caused by nerve damage in the body. When a person experiences jaw pain only once or twice, this may be an instance of peripheral pain rather than an indication of a chronic condition. In contrast, chronic pain conditions like TMD and fibromyalgia are believed to stem largely from defects in the central nervous system; they appear to be related to imbalances in neurotransmitters and pain-processing problems in the spinal cord or brain.

In chronic pain conditions, the central nervous system is thought to generate or amplify the sensation of pain even when nerve cells are not being stimulated. Several studies have found that people with TMD and fibromyalgia have increased sensitivity to pain compared with healthy people. This is borne out by brain-imaging technology: Individuals with chronic pain show more activity in brain regions associated with pain. In addition, scientists have identified specific genes linked to chronic pain conditions, including a gene pair that may explain why women are more likely than men to suffer from chronic pain.

Treatment

Before you consider treatment for TMD, your medical doctor should first rule out any other disease that may be causing your symptoms. If your physician does not diagnose a problem that is routinely treated by physicians, you may be referred to a dentist. Your dentist may recommend a combination of the following simple practices to help relieve your symptoms:

- Eat soft foods
- Avoid hard chewing or extreme jaw movements
- Apply ice packs and moist heat
- Practice stress-reduction techniques

These tips can alleviate jaw discomfort whether the pain is short-term or chronic. In addition, your dentist may be able to show you some exercises to stretch or relax the jaw. The National Institute of Dental and Craniofacial Research and the American Association of Dental Research (AADR) and other experts agree that invasive or irreversible treatments for TMD, such as repositioning splints, grinding down teeth to bring the bite into balance, surgery, or orthodontics that permanently change your bite, should be avoided where possible. If a doctor recommends surgery, be sure to ask about other options-and you may be wise to get a second opinion.

If you are already being treated for fibromyalgia, you may wish to discuss your TMD symptoms with your rheumatologist. Whether you seek care from a medical or dental practitioner, the National Institutes of Health suggest that you consult with a healthcare provider who is experienced in treating pain conditions that affect the muscles, bones, and joints. When symptoms are severe and ongoing, the jaw is not functioning properly or there are co-existing conditions, treatment may involve a team of experts from different fields.

The more we learn about different types of pain, the better chance we have to provide effective and appropriate treatment for each individual's situation. For example, we now know that opioids, in addition to their potential for addiction, are not effective in treating centralized pain conditions but may relieve severe peripheral pain. However, drugs that target neurotransmitter imbalances may be effective in the treatment of fibromyalgia and TMD. Cognitive-behavioral therapy may also be recommended since it has been shown to influence neurotransmission. Meditation and other pain-coping techniques may be helpful as well.

With continuing research, there is greater hope of helping those who suffer from TMD and other chronic pain conditions regain their quality of life through better pain management.

More information on Fibromyalgia can be found at the National Institute of Arthritis and

Musculoskeletal and Skin Diseases and at the National Fibromyalgia Partnership.

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 c*hange the face of TMJ* without YOU.

Click HERE to make a tax-deductible online contribution today!

Long-term Changes in Biopsychosocial Characteristics Related to Temporomandibular Disorder: Findings from the OPPERA Study

The following article by Roger B. Fillingim, Gary D. Slade, Joel D. Greenspan, Ronald Dubner, William Maixner, Eric Bair, and Richard Ohrbach was published in the journal of Pain, November 2018. We are grateful to Dr. Fillingim for writing the following summary of this article for this issue of TMJ News Bites.

Temporomandibular disorder (TMD) is often a chronic condition; that is, it can last for years. In addition to jaw pain and related symptoms, people with TMD also frequently experience changes in other aspects of biological and psychological functioning. However, little research has examined people with TMD over a long period of time to see how their TMD status changes and whether this relates to changes in their other non-TMD symptoms.

Using data from the OPPERA Study, we examined people who had TMD either at baseline or at the time of follow-up, some 7 years later, compared to those who were TMD-free throughout. Perhaps not surprisingly, people who started out as TMD-free but developed TMD sometime during the follow-up showed an increase not only in jaw symptoms, but also in body tenderness, other physical symptoms, and general psychological distress. On the flip side, people whose TMD resolved over time showed improvements across these different measures. Interestingly, the people who had TMD at both time points also tended to show improvements across many of the physical and psychological measures, suggesting positive adaptation in this group.

These findings show that TMD status fluctuates over the course of several years, and these fluctuations are accompanied by changes in other characteristics, including both physical and psychological symptoms. Whether the changes in TMD caused the changes in other symptoms, or vice versa, could not be determined, and should be addressed in future studies.

Abstract
Painful temporomandibular disorders (TMDs) are both consequence and cause of change in multiple clinical, psychosocial, and biological factors. Although longitudinal studies have identified antecedent biopsychosocial factors that increase the risk of TMD onset and persistence, little is known about long-term changes in those factors after TMD develops or remits. During a 7.6-year median follow-up period, we measured change in psychosocial characteristics, pain sensitivity, cardiovascular indicators of autonomic function, and clinical jaw function among 189 participants whose baseline chronic TMD status either persisted or remitted and 505 initially TMD-free participants, 83 of whom developed TMD. Among initially TMD-free participants who developed TMD, symptoms and pain sensitivity increased, whereas psychological function worsened. By contrast, participants with chronic TMD at baseline tended to show improved TMD

symptoms, improved jaw function, reduced somatic symptoms, and increased positive affect. In general, clinical and psychosocial variables more frequently changed in parallel with TMD status compared with pain sensitivity and autonomic measures. These findings demonstrate a complex pattern of considerable changes in biopsychosocial function associated with changes in TMD status. In particular, several biopsychosocial parameters improved among participants with chronic TMD despite pain persisting for years, suggesting considerable potential for ongoing coping and adaptation in response to persistent pain.

Healing After Harm: Addressing the Emotional Toll of Harmful Medical Events

The following article appeared on the Beth Israel Deaconess Medical Center (BIDMC) website and was written by Lindsey Diaz-MacInnis, BIDMC Communications. This article addresses a subject that is seldom discussed and deserves our attention.

BOSTON - Injuries and deaths resulting from medical errors can have profound long-term consequences on patients and families. Seriously harmed patients and/or family members who have lost a loved one may describe feelings of neglect, isolation, fear, anger, and despair, among other emotions, many of which can be heightened by organizational silence and withholding of information.

To date, quality improvement programs have largely focused on preventing more easily seen and measured physical harms, and little is known about the emotional and psychosocial harm stemming from medical errors and adverse events. Yet emerging data suggest that these secondary impacts may be just as harmful, or even more injurious, than the underlying event.

Read the full article at:
https://www.bidmc.org/about-bidmc/news/2018/08/healing-after-harm

Researchers Uncover Link between Migraines and Cochlear Disorders

The following article by Liz Meszaros was published by MDLinx on August 8, 2018. We are sharing this article with you because migraines are one of the overlapping pain conditions associated with Temporomandibular Disorders (TMD) and patients often report tinnitus (ringing in the ears) and other hearing-related problems associated with TMD.

Risks for cochlear disorders, primarily tinnitus, may be significantly higher in patients with a history of migraines, according to results from a population-based study recently published in JAMA Otolaryngology-Head & Neck Surgery.

"It is still unclear whether migraines might increase the risk of other cochlear disorders, including tinnitus and/or sensorineural hearing impairment, even though migraines do not occur concurrently with cochlear disorders. Therefore, the aim of this study was to examine the risk of cochlear disorders for patients with a history of migraines," wrote these researchers led by Juen-Haur Hwang, MD, PhD, Department of Otolaryngology, Dalin Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Dalin, Chiayi, Taiwan.

Using data from the 2005 Taiwan Longitudinal Health Insurance Database, they identified 1,056 patients with migraines (mean age: 36.7 years; 672 women) diagnosed between January 1, 1996, and December 31, 2012, and 4,224 controls.

They compared the incidence of cochlear disorders--including tinnitus, sensorineural hearing impairment, and/or sudden deafness-between the two groups and found a significantly higher cumulative incidence of cochlear disorders in patients with migraines compared with controls (12.2% vs 5.5%, respectively), with a crude hazard ratio (HR) of 2.83 for cochlear disorders (95% CI: 2.01-3.99) and an adjusted HR of 2.71 (95% CI: 1.86-3.93).

In the migraineurs, the incidence of cochlear disorders was 81.4 (95% CI: 81.1-81.8) per 1 million person-years, compared with 29.4 per 1 million person-years (95% CI: 29.2-29.7) in the controls.

Upon subgroup analysis, the researchers also found that migraineurs had an adjusted HR of 3.30 (95% CI: 2.17-5.00) for tinnitus, 1.03 (95% CI: 0.17-6.41) for sensorineural hearing impairment, and 1.22 (95% CI: 0.53-2.83) for sudden deafness.

The mechanisms behind this association between cochlear disorders and migraines are as yet unknown. Dr. Hwang and fellow researchers postulate that "migraine and cochlear disorders might share common pathophysiologic characteristics. Sleep disorders, trigeminovascular theory, neuroinflammation, and/or cortical hypersensitivity have been associated with migraine."

They continued: "It could be suggested that the findings do not reflect the cochlea at all and may reflect a central process causing tinnitus. This possibility would need to be investigated further in studies using audiometry; however, it clearly outlines a link between migraine and tinnitus that will be influential."

In an accompanying editorial, Harrison W. Lin, MD, and Hamid R. Djalilian, MD, Division of Neurotology and Skull Base Surgery, Department of Otolaryngology-Head & Neck Surgery, University of California, Irvine, also consider several vascular and circulatory possibilities:

"Although there are many proposed theories on the pathophysiologic characteristics of migraine, vasospasm of the branches of the posterior cerebral circulation, resulting in compromised blood flow to the inner ear and to the brain, has been proposed as a possible mechanism for migraine-related and episodic hearing and balance symptoms. Cortical spreading depression and altered central processing in the auditory and vestibular cortices could subsequently generate imbalance, nausea, and motion intolerance, among other migraine symptoms."

They stressed the importance of the results obtained by Dr. Hwang and colleagues, but added that larger studies are needed.

"The work by Hwang *et al* provides valuable and convincing population-based evidence that migraine activity can contribute to the generation of auditory symptoms, including sudden and fluctuating sensorineural hearing loss and tinnitus," they wrote.

"Data from controlled studies investigating the efficacy of prophylactic antimigraine therapy on conditions such as benign aural fullness, episodic dizziness, and cochlear migraine, among others, would likely further our understanding of the underrecognized role of migraine in hearing and balance disorders," they concluded.

TMJ Patients Needed for an Important Study on Botox Treatments

We were recently informed by the researchers that they are still looking for more TMJ patients to participate in an important observational study looking at Botox injections for the treatment of Temporomandibular Disorders (TMD) pain. Enrollment in this study will

be ending in December.

Please consider participating if you reside in the New York City, Los Angeles, or Boston areas and have:

- received Botox injections as a TMD treatment or
- considered Botox injections for TMD but have not had this treatment.

To learn more about this study go to: http://www.tmj.org/site/page?pageId=372

Relationships Between Temporomandibular Disorders, MSD Conditions, and Mental Health Comorbidities: Findings from the Veterans Musculoskeletal Disorders Cohort

The following article by Brenda T. Fenton, PhD, MSc, Joseph L. Goulet, PhD, MS, Matthew J. Bair, MD, MS, Terrie Cowley, and Robert D. Kerns, PhD, recently appeared in the journal of Pain Medicine, September 2018.

Abstract Summary

Objective: Temporomandibular disorders (TMDs) have been associated with other chronic painful conditions (e.g., fibromyalgia, headache) and suicide and mood disorders. Here we examined musculoskeletal, painful, and mental health comorbidities in men vs women veterans with TMD (compared with non-TMD musculoskeletal disorders [MSDs] cases), as well as comorbidity patterns within TMD cases.

Design: Observational cohort.

Setting: National Veterans Health Administration.

Subjects: A cohort of 4.1 million veterans having 1+ MSDs, entering the cohort between 2001 and 2011.

Results: Among veterans with any MSD, those with TMD were younger and more likely to be women. The association of TMD with race/ethnicity differed by sex. Odds of TMD were higher in men of Hispanic ethnicity and nonwhite race/ethnicity other than black or Hispanic compared with white men. Odds of TMD were significantly lower for black and Hispanic women relative to white women. Non-MSD comorbidities (e.g., irritable bowel syndrome, mental health, headaches) were significantly associated with TMD in male veterans; their pattern was similar in women. Veterans with back pain, nontraumatic joint disorder, or osteoarthritis had more MSD multimorbidity than those with TMD.

Conclusions: Complex patterns of comorbidity in TMD cases may indicate different underlying mechanisms of association in subgroups or phenotypes, thereby suggesting multiple targets to improve TMD. Longitudinal comprehensive studies powered to look at sex and racial/ethnic groupings are needed to identify targets to personalize care.

Young Investigator Initiative Grant Mentoring and Career Development Program

The TMJA is a member of the United States Bone and Joint initiative. We were asked to post the following announcement on an opportunity for young investigators.

The United States Bone and Joint Initiative (USBJI) and Bone and Joint Canada are dedicated to increasing research of musculoskeletal diseases. To keep pace with the high and increasing burden of these diseases, a higher level of research performed by

young investigators in the musculoskeletal diseases is required, and future levels of research assured. This is particularly important given the current environment for research funding, and academic careers. In response, the Young Investigator Initiative is a grant mentoring program providing early-career investigators an opportunity to work with experienced researchers in our field to assist them in securing funding and other survival skills required for pursuing an academic career.

To date 245 participants (60%) have successfully obtained $421 million in grants for 1,492 new musculoskeletal research studies. Participants consider this program instrumental to their success. They rate highly the one-on-one mentoring with experienced researchers, the opportunity for inter-disciplinary and peer-to-peer exchange, and collaborations established during workshops.

This grant mentoring program and career development program is open to promising junior faculty, senior fellows or post-doctoral researchers nominated by their department or division chairs seeking to pursue a career in clinical or basic research. It is also open to senior fellows or residents that are doing research and have a faculty appointment in place or confirmed. Basic and clinical investigators, without or with training awards, are invited to apply. Investigators selected to take part in the program attend two workshops, 12-18 months apart, and work with faculty between workshops to develop their grant applications. **The Spring 2019 workshop is scheduled to take place on April 26-28, 2019, in Rosemont, IL (Chicago).** The unique aspect of this program is the opportunity for attendees to maintain a relationship with a mentor until their application is funded.

For more about the program and detailed application instructions, please refer to https://www.usbji.org/programs/yi. **Deadline for application submissions is January 15, 2019.**

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:

New Funding Opportunities:

- HEAL Initiative: Translational Development of Devices to Treat Pain (U18)
- HEAL Initiative: Translational Devices to Treat Pain (UG3/UH3)
- HEAL Initiative Translational Devices to Treat Pain (U44l)
- HEAL Initiative: Clinical Devices to Treat Pain (UH3)
- HEAL Initiative: Stimulating Peripheral Activity to Relieve Conditions (SPARC): Anatomical and Functional Mapping of Pain-Related Visceral Organ Neural Circuitry (U01)
- Promoting Research on Music and Health: Fundamentals and Applications (R01) (R21)
- Mechanisms, Models, Measurement, and Management in Pain Research (R01) (R21)
- Global Brain and Nervous System Disorders Research Across the Lifespan (R21)
- NIDCR Small Research Grants for Data Analysis and Statistical Methodology Applied to Genome-wide Data (R03)

Additional Funding Opportunities:

- Research on Chronic Overlapping Pain Conditions (R01)(R21)
- Analytical and/or Clinical Validation of a Candidate Biomarker for Pain (R61/R33)
- Clinical Validation of Candidate Biomarkers for Neurological Diseases (U01)
- Discover and Validation of Novel Targets for Safe and Effective Pain Treatment (R01)(R21)
- Factors Underlying Differences in Female and Male Presentation for Dental, Oral, and Craniofacial Diseases and Conditions (RO1) (R21)
- NIDCR Small Research Grants for Secondary Analysis of FaceBase Data (RO3)
- 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)
- Blueprint Neurotherapeutics Network (BPN): Small Molecule Drug Discovery and Development for Disorders of the Nervous System (UH2/UH3) (U44)
- 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
- Blueprint Neurotherapeutic Network Applications Directed at Small Molecule Drug Discovery and Development of Disorders of the Nervous System

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 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 to 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 postal 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.

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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