TMJA
The TMJ Association, Ltd.

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The Fall Giving Season Is Upon Us

If you are a **government employee** who understands the full impact of Temporomandibular Disorders (TMD) on individuals, their loved ones and society-at-large, please help us continue to *change the face of TMJ* by designating The TMJ Association as your **Combined Federal Campaign (CFC) charity #12102.**

Ask your **mail carrier or family members and friends serving in the military to consider pledging their support to The TMJ Association.** If they don't already have a chosen charity, they may be glad to help!

State employees in *Arizona, California, Connecticut, Florida, Maryland, Massachusetts, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Washington and Wisconsin* can also contribute through the State Employee Contribution Campaign by writing in The TMJ Association on the donor form.

United Way and other nonprofit corporate donor programs are underway and these are great ways to improve the plight of TMD patients. Simply write The TMJ Association on your donor form.

If you don't participate in any of these campaigns, you can still help by donating directly to The TMJA!

Washington Post Article on TMD

The Washington Post recently featured an article on Temporomandibular Disorders. Below is an excerpt from that article and a link to the full story.

"...It's one of the most common pain disorders, after low back pain and headache," says John Kusiak, acting deputy director of the National Institute of Dental and Craniofacial Research. "Fortunately, most first-onset cases of TMD will resolve with either no treatment or minimal care."

About 10 percent of people with TMD go on to develop long-term symptoms that affect

the quality of their daily lives, Kusiak says. Experts usually define chronic TMD as consistent pain in the jaw area that lasts beyond three months, he says.

"The jaw is very important for a number of things, including how we eat, for smiling, for talking, for singing and for kissing," Kusiak says. "People may have difficulty talking, and smiling, difficulty interacting with others. As a result, they may develop emotional and psychological problems that can lead to the inability to work or communicate."

Scientists don't know what causes it, although trauma to the jaw or temporomandibular joint is a clear risk factor. Most of the time, TMD develops for no obvious reason.

Because the condition is more common in women, scientists are exploring its possible connection to female hormones. They also are studying possible genetic links.

Research suggests that TMD risk factors also might include teeth grinding, which can aggravate the joint, smoking and sleep dysfunction - insomnia or sleep apnea, "anything that disturbs the normal cycle of sleep," Kusiak says - but there is no evidence that "a bite that is off, or constant chewing on one side" causes TMD..."

Read more: https://www.washingtonpost.com/national/health-science/if-you-hear-a-click-in-your-jaw-this-is-what-you-need-to-know/2017/06/09/594e1e0e-4a26-11e7-a186-60c031eab644_story.html?utm_term=.c5f088636c4c

Cutting Edge Science Meeting to End Opioid Crisis - Understanding the Neurobiological Mechanisms of Pain

Partnering to Improve Chronic Pain Care

The National Institutes of Health (NIH) held three meetings this summer with the goal of developing the first public-private partnership (PPP) to develop safe and effective treatments for chronic pain, as well as new treatments for opioid addiction and overdose. The proposed partnership would be a joint effort of the NIH, the U.S. Food and Drug Administration (FDA) and the pharmaceutical and medical device industry. Christin Veasley, Director of the Chronic Pain Research Alliance, an initiative of TMJA, was invited to participate in the third meeting focused on the neurobiology of pain. The meeting was hosted by NIH Director, Dr. Frances Collins and the NIH principal Deputy Director, Dr. Lawrence Tabak. Other attendees included several NIH Institute Directors, clinical and basic scientists in pain research and representatives of pharmaceutical and device companies.

Christin was asked to address chronic pain research from her perspective as a chronic pain patient and patient advocate. She noted that pain receives limited research investment, is frequently dismissed by health care professionals, and is not regarded as a major public health problem, despite being the most prevalent, costly and disabling condition in the U.S. Further, the admission of pain remains a source of stigma for patients and is regarded by society as a sign of weakness.

Christin highlighted issues with the current treatment system, namely the shortage of pain specialists, the dearth of education and training in pain management for primary care physicians and the lack of quality evidence of various therapies. This leads to trial-and-error-based clinical decision making. To improve the care of pain patients, better measures of pain are needed, she stated, along with preclinical models and clinical trials that account for the complexity and individuality of responses to the chronic pain experience. These measures should include an assessment of comorbidities, such as sleep and mood disorders, the loss of functional abilities and

health-related quality of life. She emphasized that a precision medicine approach to clarify how genetics, environmental factors and lifestyle interact in an individual pain patient's experience can lead to tailored treatments that can more effectively manage pain. Christin concluded that pain research will greatly benefit from the participation of stakeholders from across the research and clinical translation spectrum, including patients, clinicians and payers. (Click to view the PowerPoint presentation)

The meeting summary, along with those of the earlier two meetings, can be viewed on the NIH's website: https://www.nih.gov/opioid-crisis. Dr. Collins has since met with leaders of pharmaceutical and medical device companies to discuss potential collaborations with the NIH and FDA on some of the projects proposed at the meetings.

Christin is now serving on the planning committee and will be speaking at a follow-up meeting, commissioned by the NIH, to be held October 11-12, 2017 at the National Academies of Sciences, Engineering and Medicine. Additional information on the meeting can be viewed online: http://www.nationalacademies.org/hmd/Activities/Research/NeuroForum/2017-OCT-11.aspx.

We invite you to read a recent blog post in which Christin Veasley shares some of the lessons she's learned from 30 years of living with chronic pain.

Repeated Injections of Botox into the Masseter Muscle... A Longitudinal Study

We thank Dr. Susan Herring for writing the following article summary.

Lee HJ, Kim SJ, Lee KJ, Yu HS, Baik HS. **Repeated injections of botulinum toxin into the masseter muscle induce bony changes in human adults: A longitudinal study**. Korean J Orthod. 2017 Jul;47(4):222-228.

The authors of this study examined mandibular bone before and after subjects received Botox injections into each masseter muscle. These volunteers were healthy adults (22-48 years old), both male and female, who wanted injections to slim their faces. (This happens because the Botox causes temporary muscle paralysis and the masseters undergo atrophy when they are not used.) The 20 subjects were randomized into two groups. One group received a single dose of Botox in each muscle while the second group got two doses. The second dose was given 4 months after the first. The bone scans were cone-beam computed tomography (CBCT), a 3-D technique with relatively low radiation. The after-Botox CBCT scan was performed 6 months after the initial injection. The scans were directed at the mandibular angle, where the masseter attaches. The TMJ region was not examined.

Even 6 months after a single injection, the masseter muscles were much smaller than before injection (loss of about 70 mm^2). Predictably, the shrinkage was much greater for the two-injection group (loss of about 140 mm^2).

The very limited amount of mandibular bone examined is only part of the masseter's attachment, and an unaffected muscle, the medial pterygoid, attaches to it as well. Therefore, it is surprising that the authors were able to document a loss of bone volume which was statistically significant in the 2-injection group. The loss was due to thinning of the bone, because the mandible as a whole did not become smaller. The authors refer to this finding as an "unwanted side effect" of multiple Botox injections of the masseter muscles.

This study was not ideal and leaves many questions unanswered. Sample size was

small, there were no uninjected control subjects, differences between the groups at the start were not reported, the bone examination was very restricted, and it is unknown whether full restoration of muscle and bone would eventually have occurred.

Nevertheless, it is the first prospective, randomized, longitudinal study of the effects of Botox on the human jaw. The finding of bone loss is consistent with the only other human Botox study on jaws, a cross-sectional examination of the condylar bone of TMJ disorder patients who did or did not receive masseter injections (Raphael et al. 2014). The paper by Lee et al. reinforces the idea that thinned and weakened jaw bones are likely side effects of Botox treatment.

Raphael, K. G., A. Tadinada, J. M. Bradshaw, M. N. Janal, D. A. Sirois, K. C. Chan and A. G. Lurie (2014). Osteopenic consequences of botulinum toxin injections in the masticatory muscles: a pilot study. J Oral Rehabil 41: 555-563.

Read the full article:
https://synapse.koreamed.org/Synapse/Data/PDFData/1123KJOD/kjod-47-222.pdf

Systematic Review of Dental Occlusion & TMD

The TMJ Association thanks *Charles S. Greene, DDS* for writing the following summary.

Manfredini, D, Lombardo, L, Siciliani, G. **Temporomandibular disorders and dental occlusion. A systematic review of association studies: end of an era?** J Oral Rehabil. 2017 Jun 10. doi: 10.1111/joor.12531. [Epub ahead of print]

This article by Manfredini and colleagues is not the first to challenge the 20th century concept of dental occlusion as being the main cause of temporomandibular disorders (TMD). As early as the 1970s some investigators were questioning this mechanistic viewpoint, but the adherents to this concept were very strong in defending their turf. By the 1990s, some quantitative studies were showing that occlusal variables of all kinds were equally common in TMD patients and normal populations. Running parallel to these studies were a series of clinical treatment trials in which TMD patients were being successfully treated without recourse to any permanent occlusal interventions.

In the 21st century we have seen a decline in mechanistic models and the emergence of a biopsychosocial model for understanding the etiology and management of TMD. This model embraces the modern concepts of pain physiology as well as the psychological dimensions of pain and suffering. It has become widely accepted throughout the scientific community of researchers and clinicians that conservative treatments without occlusion-changing procedures have become the accepted standard of care. Nevertheless, some members of the "occlusion lobby" have continued to argue for the need to perform jaw repositioning and bite-changing procedures.

Fortunately, skilled investigators like Daniele Manfredini and his colleagues have been producing an extensive series of papers in the dental literature challenging the occlusion concepts. This most recent review paper is the capstone piece in that series, because it examines all the association studies from the past several decades in which researchers have looked at occlusal variables and TMD.

After reviewing 25 papers that have addressed these topics, they concluded that "Findings are quite consistent toward a lack of clinically-relevant association between TMD and dental occlusion." Therefore, they strongly state, "Based on [these findings], there seems to lack ground to further hypothesize a role for dental occlusion in the

pathophysiology of TMD." Their paper is optimistically titled "End of an Era," but there is little doubt that the battles will continue into the foreseeable future. Meanwhile, **TMD patients should be encouraged to read this paper and others like it before embarking on any occlusion-changing protocols; it should persuade them to avoid such treatments and seek more appropriate care.**

Systematic Review of Acupuncture in TMD

Fernandes AC, Duarte Moura DM, Da Silva LGD, De Almeida EO, Barbosa GAS. Acupuncture in Temporomandibular Disorder Myofascial Pain Treatment: A Systematic Review.J Oral Facial Pain Headache. 2017 Summer;31(3):225-232. doi: 10.11607/ofph.1719.

Results: A total of four randomized clinical trials using acupuncture (traditional, trigger point, and laser) for TMD treatment met the eligibility criteria and were included. Although the studies featured small sample sizes and short-term follow-up periods, acupuncture yielded results similar to those observed in groups treated with occlusal splints and were significantly superior than those obtained from placebo acupuncture-treated groups.

Conclusion: **Despite the weak scientific evidence supporting its efficacy, acupuncture treatment appears to relieve the signs and symptoms of pain in myofascial TMD.** More controlled and randomized clinical trials with larger sample sizes are needed in this field of research to verify these initial findings.

Clinical Studies: Volunteers Needed

The TMJA has been informed of the following clinical studies seeking qualified candidates to help in research. Read on to see if you are eligible to participate.

Comparative Study of Women Considering or Currently Receiving Botox© Injections for TMJ Pain

Are you a woman within the Los Angeles or New York City areas with TMJ pain in facial muscles, who has either:

a. recently had Botox© injections for your pain or
b. not had Botox© for your pain but has thought about such treatment?

If either is true for you, you may qualify for an observational research study centrally administered by the New York University College of Dentistry. It is funded by the National Institutes of Health (NIH). The purpose of this study is to understand potential health risks that may be caused by treating "TMJ pain" with Botox© injections. Potentially eligible women must first complete a brief interview via telephone to confirm eligibility. Click here for further study information and details.

Maternal Chronic Pain Study

A high proportion of women with children experience chronic pain conditions such as temporomandibular disorders, low back pain, headache, and fibromyalgia. Parenting with chronic pain is a unique challenge that many parents face. Oregon Health & Science University, Stanford, and Seattle Children's Hospital are conducting a study to learn more about the impact of maternal chronic pain in hopes of helping mothers and families in the future.

This study might be a good fit for you if:

- You are a mother who has had chronic pain for 6 months or longer
- You have a child between the ages of 8 and 12 years old

Participants will complete online questionnaires and electronic diaries. Compensation is provided.

Learn more at: http://www.ohsu.edu/.../studi.../Maternal-Chronic-Pain-Study.cfm

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. We invite you to view a listing of the latest National Institutes of Health (NIH) funding opportunities for scientists interested in advancing TMJ research.

Trans-NIH Strategic Plan for Research on Women's Health (NOT-OD-17-108)
ORWH was established in the Office of the NIH Director by the Public Health Service Act to (a) identify projects and multidisciplinary research related to women's health; (b) encourage research on sex differences and promote coordination among research entities; (c) assist NIH efforts to include women as subjects in clinical research; and (d) develop opportunities and support for women in biomedical careers. These efforts will continue to be part of the office's core mission. ORWH is tasked with the development of a trans-NIH strategic plan for women's health research that promotes allocation of NIH resources for conducting and supporting these research efforts across NIH Institutes and Centers.

Blueprint Neurotherapeutics Network: Small Molecule Drug Discovery and Development for Disorders of the Nervous System (UH2/UH3)
Blueprint Neurotherapeutics Network: Small Molecule Drug Discovery and Development for Disorders of the Nervous System (U44)
NIDCR is interested in neurotherapeutics development for painful disorders of the orofacial region including **temporomandibular joint disorder,** trigeminal neuropathies, burning mouth syndrome, and other conditions. Recent advances in genomics and phenotyping of subjects with orofacial pain conditions have expanded the scope of potential targets to treat these conditions. Receptor systems, ion channels, and pro- and anti-inflammatory molecules have been implicated in chronic pain. NIDCR is interested in supporting research that will lead to highly efficacious and specific pharmacological treatments of subjects with orofacial pain disorders. Investigators are encouraged to contact NIDCR program staff to discuss potential research projects prior to application submission to determine alignment of the planned studies with priorities of the Institute mission and strategic plan.

Neuroskeletal Biology of the Dental and Craniofacial Skeletal System (R01)
Neuroskeletal Biology of the Dental and Craniofacial Skeletal System (R21)
The purpose of this Funding Opportunity Announcement (FOA) is to encourage research on the role of the nervous system in metabolism, homeostasis, remodeling and/or regeneration of the postnatal dental and craniofacial skeletal system (DCS) in health and disease. The objectives are to enhance basic science knowledge about interactions between the peripheral and central nervous systems (PNS/CNS) and the DCS, and facilitate development of strategies to optimize normal function, reduce the impact of disease, and develop capacity to repair and regenerate injured teeth and

craniofacial bones.

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 what are 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.

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!

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.
- Past issues of TMJ News Bites are also available on our website.

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