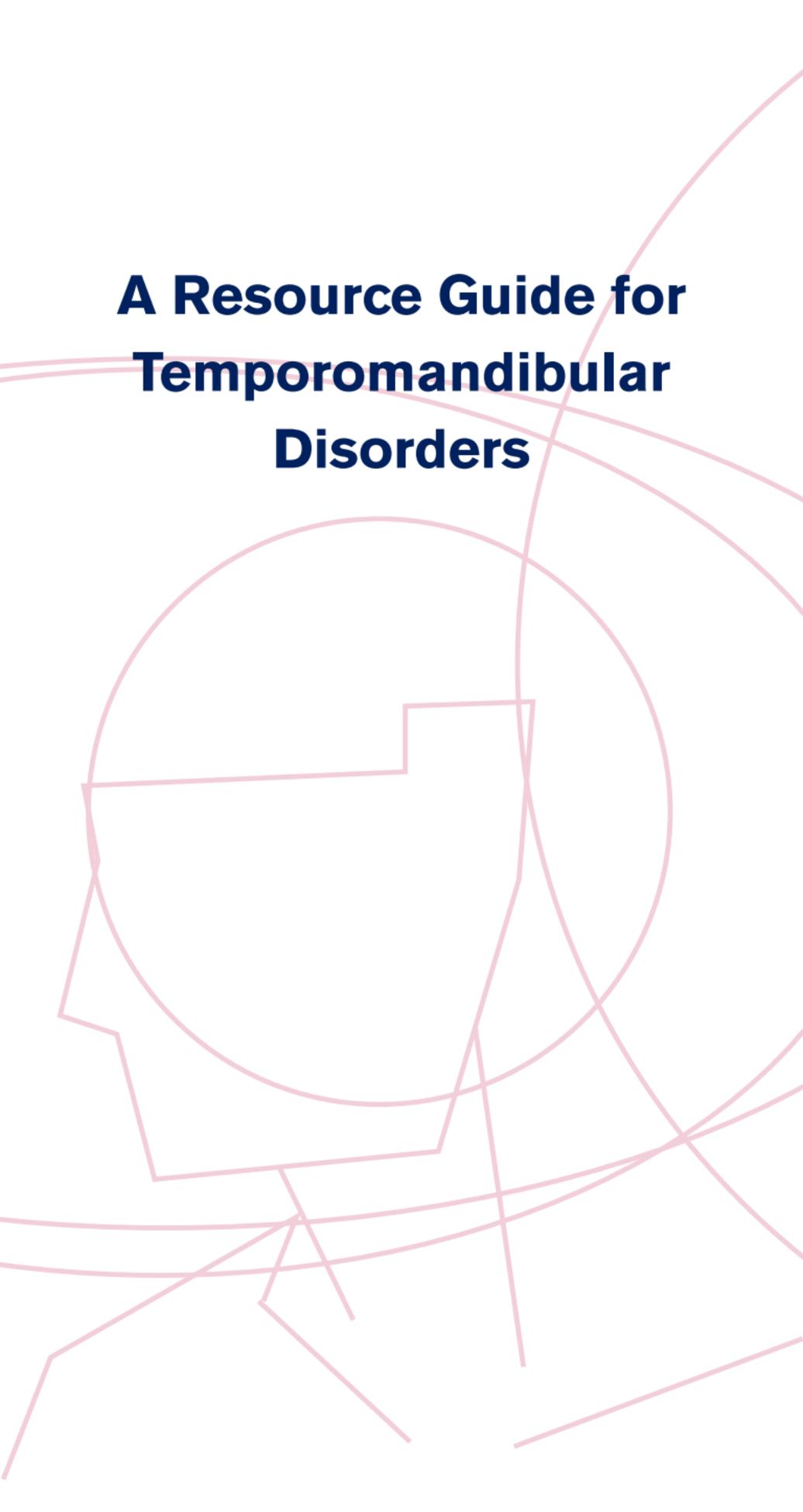


# **A Resource Guide for Temporomandibular Disorders**

A stylized profile of a human head is rendered in light pink lines. The head is facing right. The jawline is defined by a series of connected line segments. A large circle is drawn around the head, and several other curved lines intersect it, creating a complex, abstract background pattern.

***TMJA***

*The TMJ Association, Ltd.*

## Welcome

The TMJ Association presents this information as a guide to patients to help them with their health care decisions. The information is taken from some of the leading authorities on the diagnosis and treatment of temporomandibular disorders. Please remember this is presented as general information for dealing with temporomandibular disorders. Always consult with your health care provider for specific treatment protocols.

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## What Is The Temporomandibular Joint?

The temporomandibular (TM) joint is otherwise known as the jaw joint or TMJ. There are two TM joints, one in front of each ear, connecting the lower jaw (the mandible) to the temporal bone (skull) at the side of the head. The joints are very flexible, allowing the jaw to move in three directions: up and down, side to side, and forward and back. The position and movements of the jaw joints are controlled by muscles attached to the mandible. As you open your mouth, the rounded upper ends of the lower jaw bone, called condyles, glide along the joint socket at the base of the skull. They



then slide back to their original position when you close your mouth. To keep this motion working smoothly, a disc lies between the condyle and the socket. The disc absorbs the shock to the joint from chewing and other movements. The combination of three-dimensional as well as coordinated motions of the two TM joints makes them the most complicated joints in the body. They also differ in make-up from that of other load-bearing joints, like the hip



or knee. The complexity of TMJ movements and their unique composition pose a challenge to both patients and health care providers when problems arise.

## What Are Temporomandibular Disorders?

Temporomandibular (TM) disorders are a complex and poorly understood set of conditions characterized by pain in the jaw joint and surrounding tissues and limitation in jaw movements. Injuries and other conditions that routinely affect other joints in the body, such as arthritis, also affect the temporomandibular joint. One or both joints may be involved and, depending on the severity, can affect a person's ability to speak, chew, swallow, make facial expressions, and even breathe.

Also included under the heading of TM disorders are conditions involving the jaw muscles. These may accompany the jaw joint problems or occur independently. They are often confused with jaw joint problems because they produce similar signs and symptoms.

Researchers have found that temporomandibular disorders often occur along with other – often painful – conditions in other parts of the body, prompting studies in search of a common factor underlying them all. Among these conditions are chronic fatigue syndrome, chronic headache, endometriosis, fibromyalgia, interstitial cystitis, irritable bowel syndrome, sleep disorders, and vulvodynia. Moreover, certain medical conditions such as Ehlers-Danlos syndrome, dystonia, Lyme disease, and scleroderma may affect the TM joint.

## Who Is Affected?

Approximately 35 million people in the United States are affected by TM disorders at any given time. While both men and women experience these disorders, the majority of those seeking treatment are women in their childbearing years. The ratio of women to men increases with the severity of symptoms, approaching 9 to 1 for patients with major limitations in jaw movements and chronic, unrelenting pain.

## Causes

Although the cause of most of these disorders is not known, there are some known contributing factors to the development of these disorders.

Among them are:

- autoimmune diseases
- infections
- injuries to the jaw area
- dental procedures
- stretching of the jaw as occurs with inserting a breathing tube before surgery
- various forms of arthritis

Genetic, hormonal, and environmental factors can also increase the risk for TM disorders. Studies have shown that a particular gene variant increases sensitivity to pain and this variant has been found to be more prevalent among TM disorder patients than among the population at large. The observation that TM disorders are commonly found in women in the childbearing years has also led to research to determine the role of female sex hormones in these disorders. Environmental factors such as habitual gum chewing or sustained jaw positions may also contribute to TM disorders.

## Diagnosis

At present, there is no widely accepted, standard diagnostic test to identify all TM disorders. Because the exact causes and symptoms are not clear, identifying these disorders can be difficult and confusing. The American Association for Dental Research recommends that a diagnosis of TM disorders or related orofacial pain conditions should be based primarily on information obtained from the patient's history and a clinical examination of the head and neck.

In addition to a detailed history and a careful clinical examination, imaging studies of the teeth and jaws may sometimes be helpful as a diagnostic tool. These include:

- **Routine Dental X-rays and Panoramic Radiographs.** These show the teeth and provide a screening view of the bony structures of the TM joint.
- **Computed Tomography (CT or CAT scan).** This provides greater detail of the bone but a somewhat limited view of the disc and soft tissues. It is indicated when a screening radiograph of the TM joint shows some bony changes.
- **Magnetic Resonance Imaging (MRI).** This provides images of the disc as well as the muscles and other soft tissues surrounding the joint.
- **Scintigraphy (Bone scan).** This involves the injection of a radioactive substance that is absorbed by the bone cells and shows whether a pathologic process is in an active or inactive state.

Blood tests are sometimes recommended to rule out possible medical conditions as a cause of the problem.

Before undergoing any costly diagnostic test, it is always wise to get an independent opinion from another health care provider of your choice who is not associated with your current provider.

## Symptoms

The pain of TM disorders is often described as a dull, aching pain which comes and goes in the jaw joint and nearby areas. Some people, however, report no pain but still have problems moving their jaws.

Symptoms can include:

- pain in the jaw muscles
- pain in the neck and shoulders
- chronic headaches
- jaw muscle stiffness
- limited movement or locking of the jaw
- ear pain, pressure
- painful clicking, popping or grating in the jaw joint when opening or closing the mouth
- a bite that feels "off"

Less common symptoms include: ringing in the ears (tinnitus), dizziness, and vision problems.

Keep in mind that occasional discomfort in the jaw joint or chewing muscles is common and is not always a cause for concern. Many people with TM disorders get better without treatment. Often the problem goes away on its own in several weeks to months. However, if the pain is severe and lasts more than a few weeks, you should see your health care provider.

## Whom Should You See?

If you think you have a TM disorder, you may want to see a medical doctor to rule out some of the conditions that may mimic a TM disorder. For example, facial pain can be a symptom of many conditions, such as sinus or ear infections, decayed or abscessed teeth, various types of headache, facial neuralgia (nerve-related facial pain), and even tumors. If the medical doctor or your dentist gives you a diagnosis of a TM disorder, it is recommended that you consult our website, <http://www.tmj.org>, for guidance regarding treatment.

There is no medical or dental specialty of qualified experts trained in the care and treatment of TM patients. As a result, there are no established standards of care in clinical practice. Although a variety of health care providers advertise themselves as “TMJ specialists,” the more than 50 different treatments available today are based largely on beliefs, not on scientific evidence.

Because there is no certified specialty in treating TM disorders in either dentistry or medicine, finding the right care can be difficult. The National Institutes of Health advises patients to look for a health care provider who understands musculoskeletal disorders (affecting muscle, bone and joints) and who is trained in treating pain conditions. Pain clinics in hospitals and universities are often a good source of advice, particularly when pain becomes chronic and interferes with daily life.

Complex cases, often marked by chronic and severe pain, jaw dysfunction, comorbid conditions, and diminished quality of life, will likely require a team of doctors from fields such as neurology, rheumatology, pain management and others to diagnose and treat this condition.

## Treatments

Most people with TM disorders have relatively mild or periodic symptoms which may improve on their own within weeks or months with simple home therapy. Self-care practices, such as eating soft foods, applying ice or moist heat, and avoiding extreme jaw movements (such as wide yawning, loud singing, and gum-chewing) are useful in easing symptoms.

Scientists strongly recommend treating TM disorders with the most conservative approaches possible. These are treatments that do not cause permanent changes in, or change the structure or position of, the jaws or teeth. Even when these disorders have become persistent, most patients still do not need aggressive types of treatment.

If your problems get worse with time, you should seek professional advice. However, first and foremost, educate yourself. Informed patients are better able to communicate with health care providers, ask questions, and make knowledgeable decisions. For information and guidance regarding treatment, visit <http://www.tmj.org>.

## Pain Medications

For many people, short-term use of over-the-counter pain medications or nonsteroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen, may provide temporary relief from jaw and muscle discomfort. When necessary, your health care provider can prescribe stronger pain or anti-inflammatory medications, muscle relaxants, or antidepressants to help ease symptoms.

Be sure to let your health care provider know about all the medications you currently take, including those that are over-the-counter or herbal remedies and review medication side effects and possible interactions.

## Stabilization Splints

Your dentist may recommend an oral appliance, also called a stabilization splint or bite guard, which is a plastic guard that fits over the upper or lower teeth. Studies of their effectiveness in providing pain relief, however, have been inconclusive. If a stabilization splint is recommended, it should be used only for a short time and should not cause permanent changes in the bite. **If a splint causes or increases pain, stop using it and contact your dentist.**

## Dental Treatments

Irreversible treatments that have not been proven to be effective and may make the problem worse include:

- orthodontics to change the bite
- crown and bridge work
- grinding down teeth (occlusal adjustment)
- mandibular repositioning (MORA) splints which can permanently alter the jaw position and bite

## TMJ Surgery

Surgical treatments are controversial and should be avoided when possible. There have been no long-term clinical trials to study the safety and effectiveness of surgical treatments for TM disorders, nor are there criteria to identify people who would most likely benefit from surgery. Failure to respond to conservative treatments, for example, does not automatically mean that surgery is necessary. If surgery is recommended, be sure to have the doctor explain to you, in words you can understand, the reason for the treatment, the risks involved, and other types of treatment that may be available. If you have had prior TM joint surgery, remember that another surgical procedure is not always the answer to the problem.

## TMJ Implants

Replacement of the temporomandibular joint with an artificial implant should be considered a last resort. When used in patients who have had multiple prior jaw surgeries it may improve function, but

## **TMJ Implants (cont'd.)**

studies have shown that it generally does not significantly reduce pain. Before undergoing such surgery on the jaw joint, it is extremely important to get other independent opinions and to fully understand the benefits and risks. Information on TMJ implants can be found at: <http://www.tmj.org/site/content/tmj-implants>.

Questions you should ask your health care professional before agreeing to any procedure for TM disorders are available on our website at: <http://tmj.org/site/content/healthcare-provider-checklist>.

**The U.S. Food and Drug Administration (FDA) monitors the safety and effectiveness of medical devices implanted in the body, including splints and jaw joint implants. Patients and their health care providers should report serious problems with TMJ devices to the FDA through Med-Watch: <http://www.fda.gov/medwatch> or 1-800-332-1088.**

## **Disease Prevention**

Patients who are told they should undergo treatment(s) to prevent the development of a TM disorder problem should know that there is currently no evidence that such conditions can be prevented.

## **Insurance Coverage**

Many medical and dental insurance plans do not cover treatment of TM disorders or only pay for some procedures. Until the causes of these disorders have been discovered, and we have scientifically validated safe and effective treatments, insurance companies

will not pay for treatments that have questionable outcomes. Contact your insurance company to see which treatments are covered.

## **Complex Conditions**

The science on TM disorders is in its infancy and has yet to answer fundamental questions on the causes and risk factors or develop safe and effective treatments and cures.

As research advances to understand more about the TM joint and its associated tissues, many in the health care community are reassessing past treatments and ways in which they were developed. A growing consensus considers TM disorders a complex family of conditions like hypertension or diabetes. In that regard, the TM disorders patient should be seen as a whole individual, subject to a host of genetic, hormonal, environmental and behavioral factors that contribute to his or her state of health or disease. With that perspective, TM disorders cease to be isolated conditions limited to the teeth and jaws, but rather conditions that may coexist with a range of other systemic pain conditions.

There is increasing evidence from research, as well as information compiled by patient health advocacy organizations, that patients with a given chronic condition often experience one or more additional chronic (and often painful) conditions. Among conditions found to overlap with TM disorders are chronic fatigue syndrome, chronic headache, endometriosis,

## Complex Conditions (cont'd.)

fibromyalgia, interstitial cystitis, irritable bowel syndrome, sleep disorders, and vulvodynia, all disorders that are poorly understood. In some cases, a patient may experience one condition initially and then go on to develop another or others. In other cases, two conditions may occur together at the outset. Such a perspective can direct and inspire scientists to discover commonalities that can advance understanding and ultimately lead to beneficial therapies. Research to understand why these conditions coexist has only recently begun.

The TMJ Association continues to strive toward its goal: the development of universal standards for safe and effective evidence-based diagnostics and treatments. Ultimately, we hope to prevent temporomandibular disorders. Promising research is being conducted and you will find the latest evidence-based information on our website <http://www.tmj.org>. We invite you to visit often.

## References

Agency for Health Care Research and Quality. Study of the per-patient cost and efficacy of treatment for temporomandibular joint disorders. 30 April 2001. Prepared by the Lewin Group. (AHRQ Publication No. 290-96-0009). Washington, D.C.

Centers for Disease Control & Prevention. (1998). Taking part in research studies: What questions should you ask? Retrieved May 9, 2005, from <http://www.cdc.gov/hiv/pubs/brochure/unc3bro.htm>.

Christensen, D. (2001). Moving temporomandibular joint research into the 21st century. *TMJ Science*, 1 (2), 9-27.

Christensen, D. (2003). Joint and Muscle Dysfunction of the Temporomandibular Joint, *TMJ Science*, 2 (1), 5-23.

Cowley, T., & Laskin, D. (2002). A plea for the TMD patient. *Dental Abstracts*, 47 (5), 188-189.

Landro, L. (2002, December 5). Assessing safety of clinical trials. *The Wall Street Journal*, pp. D3.

Marwick, C. (2005). Advancing Diagnostic Approaches for TMJ Diseases and Disorders, *TMJ Science*, 3(1), 7-21.

Mercuri, L. (1991). Fixation on the Disc. *Practical Reviews in Oral and Maxillofacial Surgery* [cassette]. Birmingham: Oakstone Medical Publishing.

National Institutes of Health: National Institute of Dental and Craniofacial Research. (1993). Estimated prevalence and distribution of reported orofacial pain in the United States. *Journal of the American Dental Association*, 5 (10), 115-121.

National Institutes of Health Technology Assessment Conference Statement. Management of Temporomandibular Disorders. Bethesda, MD. 1996. Washington, D.C.: Government Printing Office.

National Institutes of Health: National Institute of Dental Research. (March 2010). TMD: Temporomandibular disorders. (NIH No. 10-3487). Washington, D.C.: Government Printing Office.

Overlapping Conditions Alliance. Chronic Pain in Women: Neglect, Dismissal and Discrimination. May 2010, pp. 1-37. Available online at: <http://endwomenspain.org>.

Randal, J. (2007). A Systems Approach to the Understanding of TMJ as a Complex Disease, *TMJ Science*, 4 (1), 9-24.

Randal, J. (2009). Can Studies of Comorbidities with TMJ Disorders Reveal Common Mechanisms of Disease?, *TMJ Science*, 5(1), 11-28.

Schmid, J. M. (2000, September). Should you join a clinical trial? *Ladies' Home Journal*, 117 (9), 110.

Temporomandibular Disorders (TMD). Policy Statement. American Association for Dental Research. Adopted 1996, Revised 2010. Available online at: <http://www.aadronline.org/i4a/pages/index.cfm?pageid=3465>.

## About The TMJ Association

The TMJ Association, Ltd. (TMJA) is a national, non-profit organization whose mission is to improve the quality of health care and lives of everyone affected by temporomandibular disorders.

We achieve our mission by:

- Advocating for the needs of TMJ patients.
- Promoting awareness of TM disorders among the public, policy makers, research and health care communities.
- Connecting TMJ patients with those who can provide knowledgeable support and empathetic understanding.
- Encouraging basic and clinical research on TM disorders to provide greater understanding and safer and more effective methods of diagnosis and treatment, based on scientific evidence.
- Periodically convening international scientific meetings to explore new findings and recommend promising lines of research to further understanding of TM disorders.
- Serving as a resource for the collection and dissemination of information on advances in research, treatment, insurance practices, patients' rights, and legal and ethical issues.
- Communicating with elected officials, government agencies, professional organizations, community leaders and other policy makers concerning TMJ issues.

- Benefiting from a prestigious Scientific Advisory Board for collaboration and consultation.
- Collaborating with other patient advocacy organizations whose members experience conditions that overlap with TM disorders.

## How You Can Help

As a non-profit organization, we rely upon the contributions of those who support our efforts in advocating for patients and searching for effective treatments for TM disorders. Please invest in the future of The TMJ Association through a tax-deductible contribution.

You can also help by contacting your elected officials in Congress at <http://www.senate.gov> and <http://www.house.gov> and the National Institutes of Health at <http://www.nih.gov>. Tell them how these problems have affected your life. Urge them to fund quality, multidisciplinary scientific research, develop safe and effective treatments, and ultimately find ways to prevent TM disorders.

To learn more about The TMJ Association and TM disorders contact us at:

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## Disclaimer

This brochure was funded through an unrestricted grant from Purdue Pharma L.P. Additional support provided by Award Number R13DE019079 from the National Institute of Dental and Craniofacial Research.

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