DOWNLOAD PDF TEMPOROMANDIBULAR JOINT (TMJ SYNDROME

Chapter 1 : Temporomandibular Joint Disorders | www.nxgvision.com

Your temporomandibular joint is a hinge that connects your jaw to the temporal bones of your skull, which are in front of each ear. It lets you move your jaw up and down and side to side, so you.

Temporomandibular joint syndrome Definition Temporomandibular joint syndrome TMJ is the name given to a group of symptoms that cause pain in the head, face, and jaw. The symptoms include headaches, soreness in the chewing muscles, and clicking or stiffness of the joints. Description TMJ syndrome, which is also sometimes called TMJ disorder, results from pressure on the facial nerves due to muscle tension or abnormalities of the bones in the area of the hinge joint between the lower jaw and the temporal bone. This hinge joint is called the temporomandibular joint. There are two temporomandibular joints, one on each side of the skull just in front of the ear. The temporal bone is the name of the section of the skull bones where the jawbone the mandible is connected. The jawbone is held in place by a combination of ligaments, tendons, and muscles. The temporomandibular joint also contains a piece of cartilage called a disc, which keeps the temporal bone and the jawbone from rubbing against each other. The jaw pivots at the joint area in front of the ear. The pivoting motion of the jaw is complicated because it can move downward and from side to side as well as forward. Anything that causes a change in shape or functioning of the temporomandibular joint will cause pain and other symptoms. Muscle tightness in the temporomandibular joint usually results from overuse of muscles. This overuse in turn is often associated with psychological stress and clenching or grinding of the teeth bruxism. A direct blow to the jaw or the side of the head can result in bone fracture, soft tissue bruising, or a dislocation of the temporomandibular joint itself. Both osteoarthritis and rheumatoid arthritis can cause TMJ. Internal derangement is a condition in which the cartilage disk lies in front of its proper position. In most cases of internal derangement, the disc moves in and out of its correct location, making a clicking or popping noise as it moves. Hypermobility is a condition in which the ligaments that hold the jaw in place are too loose and the jaw tends to slip out of its socket. These are the least frequent causes of TMJ but do occur in a minority of patients. In some cases, the top of the jawbone is too small; in others, the top of the jawbone outgrows the lower part. Some dentists think that such habits as wide yawning, lip or tongue biting, or mouth breathing can contribute to TMJ by putting the jaw in an abnorml position for long periods of time. Other patients develop TMJ following removal of the wisdom teeth. In addition to the physical causes of TMJ, dentists are increasingly recognizing the importance of psychosocial factors in the disorder. People who are already suffering from depression or an anxiety disorder, people who have little social support in their lives, and people who feel that they have little control over their lives are at greater risk of developing chronic pain syndromes, including TMJ. In many cases TMJ results from a combination of psychological, anatomical, and functional factors rather than a single abnormality. The symptoms of TMJ depend in part on its cause or causes. The most common symptoms are facial pain in front of the ears; headaches; sore jaw muscles; a clicking sound when chewing; a grating sensation when opening and closing the mouth; and temporary locking of the jaw. Some patients also report a sensation of buzzing or ringing in the ears. Usually, the temporomandibular joint itself is not painful. Most cases of TMJ are seen in women between 20â€”50 years of age. Diagnosis TMJ syndrome is most frequently diagnosed by dentists. The examination might include pressing on palpating the jaw muscles for soreness or asking the patient to open and close the jaw in order to check for misalignment of the teeth in the upper and lower jaw. This condition is called malocclusion. Imaging studies are not usually necessary to diagnose TMJ. In most cases, x rays and MRI scans of the temporomandibular joint will be normal. Consequently, these two tests are not commonly used to diagnose TMJ. If the dentist suspects that the patient has internal derangement of the disc, a technique called arthrography can be used to make the diagnosis. In an arthrogram, a special dye is injected into the joint, which is then xrayed. Arthrography can be used to evaluate the movement of the jaw and the disc as well as size and shape, and to evaluate the effectiveness of treatment for TMJ. Another aid to diagnosing TMJ is a new questionnaire designed to discriminate between facial pain related to TMJ and myogenic facial pain, a chronic condition that is caused by trigger points in the muscles of the face and neck. The McGill Pain

Questionnaire has been reported to have a high degree of reliability in distinguishing between patients with TMJ and patients with myogenic facial pain. Treatment In many cases, the cause of pain in the TMJ area is temporary and disappears without treatment. Biofeedback , which teaches an individual to control muscle tension and any associated pain through thought and visualization techniques, is also a treatment option for TMJ. Through relaxation and visualization exercises, the patient learns to relieve the tension and can actually see or hear the results of his or her efforts instantly through the sensor readout on the biofeedback equipment. Once the technique is learned and the patient is able to recognize and differentiate between the feelings of muscle tension and muscle relaxation, the electromyographic biofeedback equipment itself is no longer needed and the patient has a powerful, portable, and self-administered treatment tool to deal with pain and tension. Stress management and relaxation techniques may be useful in breaking the habit of jaw clenching and teeth grinding. Tight jaw muscles are often relaxed by applying warm compresses to the sides of the face. Acupuncture may relieve the jaw tension associated with TMJ. Massage therapy and deep tissue realignment can also assist in releasing the clenching pattern. Extra calcium and magnesium can also help relax jaw muscles. Allopathic treatment Allopathic practitioners are increasingly recommending more conservative treatments for TMJ, on the grounds that the majority of patients can be successfully treated with noninvasive, reversible approaches. These include patient education and eating softer foods as well as medication and the use of bite plates. Patients with TMJ can be given muscle relaxants if their symptoms are related to muscle tension. Some patients may be given aspirin or nonsteroidal anti-inflammatory drugs NSAIDs for minor discomfort. Patients who have difficulty with bruxism may be treated with splints. A plastic splint called a nightguard is given to the patient to place over the teeth before going to bed. Splints can also be used to treat some cases of internal derangement by holding the jaw forward and keeping the disc in place until the ligaments tighten. The splint is adjusted over a period of two to four months. TMJ can also also be treated with ultrasound, stretching exercises, transcutaneous electrical nerve stimulation TENS , stress management techniques, or friction massage. A study done at the University of Maryland found that all of these treatments are helpful to patients with TMJ, but none appears to be clearly superior to the others. Surgery is ordinarily used only to treat TMJ caused by birth deformities or certain forms of internal derangement caused by misshapen discs. Expected results The prognosis for recovery from TMJ is excellent for almost all patients. Most patients do not need any form of long-term treatment. Surgical procedures to treat TMJ are quite successful. In the case of patients with TMJ caused by arthritis or infectious diseases, the progression of the arthritis or the success of eliminating infectious agents determines whether TMJ can be eliminated. Home Edition, edited by Robert Berkow, et al. Merck Research Laboratories,

Chapter 2 : Temporomandibular Joint Disorders. Jaw Joint disorders | Patient

TMJ disorders â€" a type of temporomandibular disorder or TMD â€" can cause pain in your jaw joint and in the muscles that control jaw movement. The exact cause of a person's TMJ disorder is often difficult to determine.

How Is It Diagnosed? To identify the cause of your symptoms, your physical therapist may: Review your medical history, and discuss any previous surgery, fractures, or other injuries to your head, neck, or jaw. Ask you to describe your pain, including headaches, and observe any pain patterns in the neck and TMJ. Conduct a physical examination of your jaw and neck, including the soft tissue and muscles in the area. Your physical therapist will evaluate your posture and observe how your cervical spineâ€"the upper portion of your spine, situated in your neckâ€"moves. Your physical therapist will examine your TMJ to find out how well it functions and whether there are any abnormalities in your jaw motion. If, after the examination, your physical therapist suspects that your pain is a result of the position "alignment" of your teeth, the therapist will refer you to your dentist for further examination. How Can a Physical Therapist Help? Your physical therapist can help you restore the natural movement of your jaw and decrease your pain. Based on your condition, your therapist will select treatments that will work best for you. Your treatments may include: If you sit with your head in an increased forward position, you are placing greater strain on the muscles beneath your chin, causing the lower jaw to pull back and the mouth to be in an open position even when resting, increasing stress on the TMJ. Physical therapists use skilled hands-on techniques manual therapy to gently increase movement and relieve pain in tissues and joints. Your physical therapist may use manual therapy to stretch the jaw in order to restore normal joint and muscle flexibility or break up scar tissues "adhesions" that sometimes develop when there is constant injury. If your pain is severe, your physical therapist may provide treatments, such as electrical stimulation or ultrasound to reduce it. Referral to a Dentist. If your TMD is caused by teeth alignment problems, your physical therapist can refer you to a dentist who specializes in TMD, who can correct the alignment with special appliances, such as "bite guards" that create a natural resting position to relax the TMJ, relieve pain, and improve jaw function. Can this Injury or Condition be Prevented? Maintaining good sitting posture is key to preventing TMJ problems. Your physical therapist will show you how to maintain better posture to prevent future episodes of TMD. Place any work you are focusing on written documents, computer screens directly in front of you and not off to the side where you are forced to look in one direction for long periods of time. If you are on the phone at work for long periods of time, use a headset that allows the neck and jaw to remain in a restful "neutral" position. Avoid repetitive chewing, such as chewing gum. Avoid opening the jaw too wide. Avoid eating hard or chewy foods. Maintain good oral hygiene and tooth health. Avoid sleeping on your stomach, which forces the neck to rotate to one direction in order to maintain an open airway, increasing stress on the TMJ. Real Life Experiences Eleanor is a paralegal with a busy workload. She spends long hours at her desk, reviewing documents and filing lengthy reports to meet multiple deadlines. She clenches her teeth when feeling stressed, and often complains to her coworkers about her stiff neck. Eleanor is extremely proud of her daughter Rebecca, who is a star athlete. The next morning, Eleanor noticed her jaw was really sore, and it hurt to chew. Over the next week, the pain got worse. She called her physical therapist. He diagnosed TMD, and determined that her pain was related to postural habits and stress, not to the alignment of her teeth. He helped her achieve a proper resting position of the jaw to minimize pressure on the muscles around the jaw, and explained that this was the position she needed to maintain throughout her day. He asked her to focus on returning her jaw to this position whenever she began to feel tense. He then applied specialized manual therapy techniques to her TMJ and surrounding muscles, and guided her through a few neck and middle-back strengthening exercises. He designed an individualized home-exercise program for Eleanor that included postural exercises, gentle stretches, and strengthening exercises for the neck and middle back. Finally, he taught her some gentle relaxation techniques to help her manage her stress. After a month of receiving physical therapy treatments and sticking to her home-exercise program, Eleanor felt much less pain in the TMJ, and was able to fully open and close her mouth and chew normally. She brought her own stadium chair with back support. And, as she had promised her daughter and

her physical therapist, she cheered less and was careful to not grind her teeth at the big points. This story was based on a real-life case. Your case may be different. Your physical therapist will tailor a treatment program to your specific case. All physical therapists are prepared through education and experience to treat a variety of conditions or injuries. You may want to consider: A physical therapist who is experienced in treating people with musculoskeletal problems. Some physical therapists have a practice with a craniofacial focus, meaning that they focus on movement disorders related to the skull and facial structures. A physical therapist who is a board-certified clinical specialist or who completed a residency or fellowship in orthopedic physical therapy. This therapist has advanced knowledge, experience, and skills that may apply to your condition. You can find physical therapists who have these and other credentials by using Find a PT , the online tool built by the American Physical Therapy Association to help you search for physical therapists with specific clinical expertise in your geographic area. Get recommendations from family and friends or from other health care providers. During your first visit with the physical therapist, be prepared to describe your symptoms in as much detail as possible, and say what makes your symptoms worse. Further Reading The American Physical Therapy Association APTA believes that consumers should have access to information that could help them make health care decisions and also prepare them for their visit with their health care provider. The articles report recent research and give an overview of the standards of practice for treatment of TMD both in the United States and internationally. The article titles are linked either to a PubMed abstract of the article or to free full text, so that you can read it or print out a copy to bring with you to your health care provider. Manual therapy for the management of pain and limited range of motion in subjects with signs and symptoms of temporomandibular disorder: The use of superficial heat for treatment of temporomandibular disorders: Diagnosis and treatment of temporomandibular disorders. Regional effects of orthopedic manual physical therapy in the successful management of chronic jaw pain. Manual physical therapy interventions and exercise for patients with temporomandibular disorders. Home exercise regimes for the management of non-specific temporomandibular disorders. Cleland J, Palmer J. Effectiveness of manual physical therapy, therapeutic exercise, and patient education on bilateral disc displacement without reduction of the temporomandibular joint: J Orthop Sports Phys Ther. Comparative study of repositioning splint therapy and passive manual range of motion techniques for anterior displaced temporomandibular discs with unstable excursive reduction. Article summary not available. An investigation of the effectiveness of exercise and manual therapy in treating symptoms of TMJ osteoarthritis. Posture correction as part of behavioural therapy in treatment of myofascial pain with limited opening. Postarthroscopy physical therapy management of a patient with temporomandibular joint dysfunction. Authored by Eric S. Reviewed by Julie A. Reviewed by the MoveForwardPT. May 27, Last Reviewed:

Chapter 3 : TMJ disorders: MedlinePlus Medical Encyclopedia

Temporomandibular joint (TMJ) syndrome is a disorder of the jaw muscles and nerves caused by injury or inflammation to the temporomandibular joint. The temporomandibular joint is the connection between the jawbone and the skull.

The general approach is to not permanently alter the jaw or treeth. Medication may be prescribed for pain. Relaxation techniques Treating TMJ could involve treatment of pain, mood disorder, anxiety or fatigue. Relaxation techniques may help reduce TMJ. Teeth grinding mouthpieces Mouthpieces, also called bite plates, grind guards or intra-oral appliances, are often used by dentists to treat TMJ. They can be designed to fit on the upper or lower teeth. The mouthpieces are usually worn during sleep and can confirm if someone grinds their teeth by looking at wear on the device. Medication The main way TMJ is treated is through pain killers. It is possible to get medical marijuana perscribed in locations where it is legal for treatment of severe TMJ pain. Surgery This is reserved for the most severe cases Botox injections It is thought that exercises may relieve pain. See more detail on TMJ exercises. Ice packs Eating soft foods and avoiding gum chewing Temporomandibular Joint Disorder and Snoring Treatment It is generally not recommended to use a snoring mouthpiece, such as a mandibular advancement device , when someone has TMJ. Using such a device can cause pain and discomfort because mouthpieces designed for snoring often move the jaw. Mouthpieces often lock the jaw in a certain position and this can cause discomfort. A way to treat snoring for someone with TMJ is often to use a tongue stabilizing device instead of a mandibular advancement device. One such example of a tongue device is the Good Morning Snore Solution. Tongue displacement does not usually cause jaw pain because it does not alter the position of the jaw. Temporomandibular Joint Disorder and Sleep Apnea Dental and sleep researchers have found a that a disorder of the TMJ can contribute to sleep problems like sleep apnea. A common symptom of OSA is headaches and these headaches may be caused by jaw disorder. Temporomandibular Joint Disorder Recap Temporomandibular joint disorder is experienced by over a quarter of the adult population with many causes from stress to injury. Snoring is experienced by almost half of the adult population and there is overlap with those who have TMJ and those who snore. If you have TMJ and snore, you could try a mandibular advancement device. It may prove to be uncomfortable, this is why many snoring mouthpiece companies do not advise use of their product when someone has TMJ. If you experience discomfort using a mouthpiece for snoring which rests on your teeth, you should strongly consider discontinuing using it and instead try a tongue stabilizing device. A tongue device will not alter the position of the jaw and is more likely to be comfortable over time.

Chapter 4 : Temporomandibular disorder (TMD) - NHS

Temporomandibular joint (TMJ) syndrome is a pain in the jaw joint that can be caused by a variety of medical problems. The TMJ connects the lower jaw (mandible) to the skull (temporal bone) in front of the ear.

What is temporomandibular disorder? Temporomandibular disorder is a condition that causes pain in your jaw. The disorder affects the joint between your temporal bone and your mandible jawbone. The muscles and nerves around the joint are also affected. What causes temporomandibular disorder? Dislocation of the cartilage disc in the joint Deformities of the jaw Inflammation, infection, arthritis, muscle problems, or tumors in the jaw area Injury to or fracture of the jawbone Muscle strain from chewing or teeth clenching or grinding What are the signs and symptoms of temporomandibular disorder? Popping or grating sound when you open or close your mouth Headache or pain in your jaw, ear, neck, or face Pain or swelling of the jaw muscles Tingling or numbness in the jaw or face Trouble opening or closing your mouth, or your jaw locks How is temporomandibular disorder diagnosed? Your healthcare provider will examine your jaw, face, and neck. He will ask you about your health conditions or injuries. You may also need the following tests: You may need to have x-rays of your skull, jaw, or teeth. This is an x-ray that uses contrast dye to help the pictures show up better. Tell the healthcare provider if you have ever had an allergic reaction to contrast dye. This scan uses powerful magnets and a computer to take pictures of your jaw. You may be given contrast dye to help the pictures show up better. Do not enter the MRI room with anything metal. Metal can cause serious injury. Tell the healthcare provider if you have any metal in or on your body. This is a test done to look at the bones in your body. The bone scan shows areas where your bone is diseased or damaged. You will get a radioactive liquid, called a tracer, through a vein in your arm. The tracer collects in your bones. Pictures will then be taken to look for problems. Examples of bone problems include fractures breaks and infection. How is temporomandibular disorder treated? These medicines decrease swelling and pain. Ask your healthcare provider which medicine is right for you, and how much to take. NSAIDs can cause stomach bleeding or kidney problems if not taken correctly. This may be injected into the muscles of your jaw to decrease pain. These may be injected into the joint to decrease pain and swelling. Muscle relaxers help decrease pain and muscle spasms. You may need surgery to fix your teeth, jawbone, or the joint. What are the risks of temporomandibular disorder? You may bleed or get an infection if you have surgery. If left untreated, your condition may get worse. You may have trouble breathing, eating, drinking, talking, or opening your mouth. If not treated early, temporomandibular disorder may lead to permanent injury, such as nerve damage, deformity, or paralysis. How can I manage my symptoms? Your healthcare provider may suggest that you eat only soft foods for several days. A dietitian may work with you to find foods that are easier to bite, chew, or swallow. Examples are soup, applesauce, cottage cheese, pudding, yogurt, and soft fruits. Use jaw supporting devices: Splints may be used to support your jaw or keep it from moving. You may need to wear a mouth guard to keep you from clenching or grinding your teeth while you are sleeping. Use ice and heat: Ice helps decrease swelling and pain. Ice may also help prevent tissue damage. Use an ice pack, or put crushed ice in a plastic bag. Cover it with a towel and place it on your jaw for 15 to 20 minutes every hour or as directed. After the first 24 to 48 hours, use heat to decrease pain, swelling, and muscle spasms. Apply heat on the area for 20 to 30 minutes every 2 hours for as many days as directed. Go to physical therapy: A physical therapist teaches you exercises to help improve movement and strength, and to decrease pain in your jaw. A speech therapist may help you with swallowing and speech exercises. When should I contact my healthcare provider? You have a fever. Your splint or mouth guard is loose. You have questions or concerns about your condition or care. When should I seek immediate care or call ? You have nausea, are vomiting, or cannot keep liquids down. You have pain that does not go away even after you take your pain medicine. You have problems breathing, talking, drinking, eating, or swallowing. Your splint or mouth guard gets damaged or broken. Care Agreement You have the right to help plan your care. Learn about your health condition and how it may be treated. Discuss treatment options with your healthcare providers to decide what care you want to receive. You always have the right to refuse treatment. The above information is an educational aid only. It is not intended

as medical advice for individual conditions or treatments. Talk to your doctor, nurse or pharmacist before following any medical regimen to see if it is safe and effective for you.

Chapter 5 : Snoring Treatment and Temporomandibular Joint Disorder (TMJ/ TMD)

Temporomandibular joint dysfunction (TMD, TMJD) is an umbrella term covering pain and dysfunction of the muscles of mastication (the muscles that move the jaw) and the temporomandibular joints (the joints which connect the mandible to the skull).

The symptoms of TMJ disorders depend on the severity and cause of your condition. The most common symptom of TMJ is pain in the jaw and surrounding muscles. Other symptoms typically associated with these disorders include: TMJ disorders can be difficult to diagnose. There are no standard tests to diagnose these disorders. Your doctor may refer you to a dentist or an ear, nose, and throat ENT specialist to diagnose your condition. Your doctor may examine your jaw to see if there is swelling or tenderness if you have symptoms of a TMJ disorder. Your doctor may also use several different imaging tests. X-rays of the jaw CT scan of the jaw to see the bones and joint tissues MRI of the jaw to see if there are problems with the structure of the jaw In most cases, the symptoms of TMJ disorders can be treated with self care practices at home. To ease the symptoms of TMJ you can: Depending on your symptoms, your doctor may prescribe or recommend the following: Talk to your doctor about the potential risks of these procedures. You may not be able to prevent TMJ from developing, but you might be able to reduce symptoms by lowering your stress levels. It could be helpful to try to stop grinding your teeth if this is an issue for you. Possible solutions for teeth grinding include wearing a mouth guard at night and taking muscle relaxants. You may also help prevent teeth grinding by reducing your overall stress and anxiety through counseling, exercise, and diet. TMJ can be successfully treated in many people with at-home remedies, such as changing posture or reducing stress. If your condition is caused by a chronic long term disease such as arthritis, lifestyle changes may not be enough. Arthritis can wear down the joint over time and increase pain. Most cases of TMJ warrant changes in lifestyle habits, possibly combined with medications to ease any pain and discomfort. Aggressive treatments are rarely needed. Talk to your doctor about your options to determine what treatment is right for you.

Chapter 6 : Temporomandibular Joint Disorder - www.nxgvision.com

The temporomandibular joint (TMJ) is the joint that connects your mandible (lower jaw) to your skull. The joint can be found on both sides of your head in front of your ears. It allows your jaw to.

Causes[edit] TMD is a symptom complex i. Disc displacement[edit] In people with TMD, it has been shown that the lower head of lateral pterygoid contracts during mouth closing when it should relax , and is often tender to palpation. To theorize upon this observation, some have suggested that due to a tear in the back of the joint capsule, the articular disc may be displaced forwards anterior disc displacement , stopping the upper head of lateral pterygoid from acting to stabilize the disc as it would do normally. As a biologic compensatory mechanism, the lower head tries to fill this role, hence the abnormal muscle activity during mouth closure. There is some evidence that anterior disc displacement is present in proportion of TMD cases. Anterior disc displacement with reduction refers to abnormal forward movement of the disc during opening which reduces upon closing. Anterior disc displacement without reduction refers to an abnormal forward, bunched-up position of the articular disc which does not reduce. In this latter scenario, the disc is not intermediary between the condyle and the articular fossa as it should be, and hence the articular surfaces of the bones themselves are exposed to a greater degree of wear which may predispose to osteoarthritis in later life. The term arthrosis may cause confusion since in the specialized TMD literature it means something slightly different from in the wider medical literature. In medicine generally, arthrosis can be a nonspecific term for a joint, any disease of a joint or specifically degenerative joint disease , and is also used as a synonym for osteoarthritis. Over time, either with normal use or with parafunctional use of the joint, wear and degeneration can occur, termed osteoarthritis. Rheumatoid arthritis, an autoimmune joint disease, can also affect the TMJs. Degenerative joint diseases may lead to defects in the shape of the tissues of the joint, limitation of function e. The interactions of these biological systems have been described as a vicious "anxiety-pain-tension" cycle which is thought to be frequently involved in TMD. Put simply, stress and anxiety cause grinding of teeth and sustained muscular contraction in the face. This produces pain which causes further anxiety which in turn causes prolonged muscular spasm at trigger points, vasoconstriction , ischemia and release of pain mediators. The pain discourages use of the masticatory system a similar phenomenon in other chronic pain conditions is termed "fear avoidance" behavior , which leads to reduced muscle flexibility, tone, strength and endurance. This manifests as limited mouth opening and a sensation that the teeth are not fitting properly. It has been postulated that such events induce anxiety and cause increased jaw muscle activity. Muscular hyperactivity has also been shown in people with TMD whilst taking examinations or watching horror films. Bruxism Bruxism is an oral parafunctional activity where there is excessive clenching and grinding of the teeth. It can occur during sleep or whilst awake. The cause of bruxism itself is not completely understood, but psychosocial factors appear to be implicated in awake bruxism and dopaminergic dysfunction and other central nervous system mechanisms may be involved in sleep bruxism. If TMD pain and limitation of mandibular movement are greatest upon waking, and then slowly resolve throughout the day, this may indicate sleep bruxism. Conversely, awake bruxism tends to cause symptoms that slowly get worse throughout the day, and there may be no pain at all upon waking. The relationship of bruxism with TMD is debated. Many suggest that sleep bruxism can be a causative or contributory factor to pain symptoms in TMD. Trauma[edit] Trauma, both micro and macrotrauma, is sometimes identified as a possible cause of TMD; however, the evidence for this is not strong. It is thought that this leads to microtrauma and subsequent muscular hyperactivity. This may occur during dental treatment, with oral intubation whilst under a general anesthetic , during singing or wind instrument practice really these can be thought of as parafunctional activities. A causal relationship between occlusal factors and TMD was championed by Ramfjord in the s. Genetic factors[edit] TMD does not obviously run in families like a genetic disease. It has been suggested that a genetic predisposition for developing TMD and chronic pain syndromes generally could exist. This has been postulated to be explained by variations of the gene which codes for the enzyme catechol-O-methyl transferase COMT which may produce 3 different phenotypes with regards pain sensitivity. COMT together with monoamine oxidase is

involved in breaking down catecholamines e. The variation of the COMT gene which produces less of this enzyme is associated with a high sensitivity to pain. Females with this variation, are at 2â€”3 times greater risk of developing TMD than females without this variant. However this theory is controversial since there is conflicting evidence. Low estrogen was also correlated to higher pain. Post-menopausal females who are treated with hormone replacement therapy are more likely to develop TMD, or may experience an exacerbation if they already had TMD. Several possible mechanisms by which estrogen might be involved in TMD symptoms have been proposed. Severe TMD restricts oral airway opening, and can result in a retrognathic posture that results in glossal blockage of the oropharynx as the tongue relaxes in sleep. This mechanism is exacerbated by alcohol consumption, as well as other chemicals that result in reduced myotonic status of the oropharynx.

Chapter 7 : Temporomandibular Joint Disorder

Temporomandibular joint and muscle disorders, commonly called "TMJ," are a group of conditions that cause pain and dysfunction in the jaw joint and muscles that control jaw movement. Researchers generally agree that the conditions fall into three main categories: Myofascial pain involves discomfort.

Structure[edit] The main components are the joint capsule, articular disc, mandibular condyles, articular surface of the temporal bone, temporomandibular ligament, stylomandibular ligament, sphenomandibular ligament, and lateral pterygoid muscle. Capsule and articular disc[edit] Main article: Articular disk of the temporomandibular joint The capsule is a dense fibrous membrane that surrounds the joint and incorporates the articular eminence. It attaches to the articular eminence, the articular disc and the neck of the mandibular condyle. The unique feature of the temporomandibular joint is the articular disc. The disc is composed of dense fibrocartilagenous tissue that is positioned between the head of the mandibular condyle and the glenoid fossa of the temporal bone. The temporomandibular joints are one of the few synovial joints in the human body with an articular disc , another being the sternoclavicular joint. The disc divides each joint into two compartments, the lower and upper compartments. These two compartments are synovial cavities, which consists of an upper and a lower synovial cavity. The synovial membrane lining the joint capsule produces the synovial fluid that fills these cavities. In contrast, the posterior ligament and the surrounding capsules along has both blood vessels and nerves. Few cells are present, but fibroblasts and white blood cells are among these. The central area is also thinner but of denser consistency than the peripheral region, which is thicker but has a more cushioned consistency. The synovial fluid in the synovial cavities provides the nutrition for the avascular central area of the disc. With age, the entire disc thins and may undergo addition of cartilage in the central part, changes that may lead to impaired movement of the joint. The upper joint compartment formed by the articular disc and the temporal bone is involved in translational movementâ€”this is the secondary gliding motion of the jaw as it is opened widely. The part of the mandible which mates to the under-surface of the disc is the condyle and the part of the temporal bone which mates to the upper surface of the disk is the articular fossa or glenoid fossa or mandibular fossa. The articular disc is a fibrous extension of the capsule in between the two bones of the joint. The disc functions as articular surfaces against both the temporal bone and the condyles and divides the joint into two sections, as already described. It is biconcave in structure and attaches to the condyle medially and laterally. The anterior portion of the disc splits in the vertical dimension, coincident with the insertion of the superior head of the lateral pterygoid. The posterior portion also splits in the vertical dimension, and the area between the split continues posteriorly and is referred to as the retrodiscal tissue. Unlike the disc itself, this piece of connective tissue is vascular and innervated, and in some cases of anterior disc displacement, the pain felt during movement of the mandible is due to the condyle compressing this area against the articular surface of the temporal bone. Ligaments[edit] There are three ligaments associated with the temporomandibular joints: These ligaments are important in that they define the border movements, or in other words, the farthest extents of movements, of the mandible. Movements of the mandible made past the extents functionally allowed by the muscular attachments will result in painful stimuli, and thus, movements past these more limited borders are rarely achieved in normal function. The major ligament, the temporomandibular ligament , is actually the thickened lateral portion of the capsule, and it has two parts: The base of this triangular ligament is attached to the zygomatic process of the temporal bone and the articular tubercle; its apex is fixed to the lateral side of the neck of the mandible. This ligament prevents the excessive retraction or moving backward of the mandible, a situation that might lead to problems with the joint. The stylomandibular ligament separates the infratemporal region anterior from the parotid region posterior , and runs from the styloid process to the angle of the mandible ; it separates the parotid and submandibular salivary glands. It also becomes taut when the mandible is protruded. The sphenomandibular ligament runs from the spine of the sphenoid bone to the lingula of mandible. The inferior alveolar nerve descends between the sphenomandibular ligament and the ramus of the mandible to gain access to the mandibular foramen. The sphenomandibular ligament, because of its attachment to the lingula, overlaps the

opening of the foramen. It is a vestige of the embryonic lower jaw, Meckel cartilage. The ligament becomes accentuated and taut when the mandible is protruded. These are only sensory innervation. Recall that motor is to the muscles. The specific mechanics of proprioception in the temporomandibular joint involve four receptors. Ruffini endings function as static mechanoreceptors which position the mandible. Pacinian corpuscles are dynamic mechanoreceptors which accelerate movement during reflexes. Golgi tendon organs function as static mechanoreceptors for protection of ligaments around the temporomandibular joint. Free nerve endings are the pain receptors for protection of the temporomandibular joint itself. Free nerve endings, many of which act as nociceptors , innervate the bones, ligaments, and muscles of the TMJ. When bone tissue, ligaments, or muscles become inflamed or injured, sensory signals are relayed along small-diameter primary afferent nerve fibers that form the trigeminal nerve. Nociceptive signals are subsequently routed to the spinal trigeminal nucleus , which contains second-order sensory neurons. From the trigeminal nucleus, sensory signals are relayed to higher-order brain regions, including the somatosensory cortex and thalamus.

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Chapter 8 : TMD, Temporomandibular Disorders & Oral Health | ColgateÂ®

TEMPOROMANDIBULAR DISORDER (TMD). Definition The temporomandibular joint (TMJ) is the joint that connects the jaw to the temporal bones of the skull. Temporomandibular joint disorder, known more commonly as TMD, occurs when there are problems with the muscles and jaws in the face.

Jaw pain or tenderness of the jaw Locking of the jaw Difficulty opening or closing the mouth Exams and Tests You may need to see more than one medical specialist for your TMJ pain and symptoms. This may include a primary care provider, a dentist, or an ear, nose, and throat ENT doctor, depending on your symptoms. You will need a thorough exam that involves: A dental exam to show if you have poor bite alignment Feeling the joint and muscles for tenderness Pressing around the head to locate areas that are sensitive or painful Sliding the teeth from side to side Watching, feeling, and listening to the jaw open and shut X-rays, CT scan, MRI, Doppler test of the TMJ Sometimes, the results of the physical exam may appear normal. Your health care provider will also need to consider other conditions, such as infections or nerve-related problems and headaches that may be causing your symptoms. Treatment Simple, gentle therapies are recommended first. Soft diet to calm the joint inflammation. Learn how to gently stretch, relax, or massage the muscles around your jaw. Your primary care provider, dentist, or physical therapist can help you with these. Avoid actions that cause your symptoms, such as yawning, singing, and chewing gum. Try moist heat or cold packs on your face. Exercise several times each week to help you increase your ability to handle pain. Read as much as you can on how to treat TMJ disorders, as opinion varies widely. Get the opinions of several providers. The good news is that most people eventually find something that helps. Ask your primary care provider or dentist about medicines you can use. Short-term use of acetaminophen or ibuprofen, naproxen or other nonsteroidal anti-inflammatory drugs Muscle relaxant medicines or antidepressants Muscle relaxant injections like toxin botulinum Rarely, corticosteroid shots in the TMJ to treat inflammation Mouth or bite guards, also called splints or appliances, have long been used to treat teeth grinding, clenching, and TMJ disorders. They may or may not help. While many people have found them to be useful, the benefits vary widely. The guard may lose its effectiveness over time, or when you stop wearing it. Other people may feel worse pain when they wear one. There are different types of splints. Some fit over the top teeth, while others fit over the bottom teeth. Permanent use of these items may not be recommended. You should also stop if they cause any changes in your bite. If conservative treatments do not work, it does not automatically mean you need more aggressive treatment. Use caution when considering treatment methods that cannot be reversed, such as orthodontics or surgery that permanently changes your bite. Reconstructive surgery of the jaw, or joint replacement, is rarely required. In fact, the results are often worse than before surgery. Outlook Prognosis For many people, symptoms occur only sometimes and do not last long. They tend to go away in time with little or no treatment. Most cases can be successfully treated. Some cases of pain go away on their own without treatment. TMJ-related pain may return again in the future. If the cause is nighttime clenching, treatment can be very tricky because it is a sleeping behavior that is hard to control. Mouth splints are a common treatment approach for teeth grinding. While some splints may silence the grinding by providing a flat, even surface, they may not be as effective at reducing pain or stopping clenching. Splints may work well in the short-term, but could become less effective over time. Some splints can also cause bite changes if they are not fitted properly. This may cause a new problem.

Chapter 9 : Temporomandibular joint - Wikipedia

The word TMJ refers to both Temporomandibular Joint and Temporomandibular Joint disorder at the same. Temporomandibular Joint is the region of the between the upper and lower jaw. This region is highly sensitive and gets.

For some exercises, there are frequency recommendations. Relaxed jaw exercise Rest your tongue gently on the top of your mouth behind your upper front teeth. Allow your teeth to come apart while relaxing your jaw muscles. Goldfish exercises partial opening Share on Pinterest Place your tongue on the roof of your mouth and one finger in front of your ear where your TMJ is located. Put your middle or pointer finger on your chin. Drop your lower jaw halfway and then close. There should be mild resistance but not pain. A variation of this exercise is to place one finger on each TMJ as you drop your lower jaw halfway and closed again. Do this exercise six times in one set. You should do one set six times daily. Goldfish exercises full opening Share on Pinterest Keeping your tongue on the roof of your mouth, place one finger on your TMJ and another finger on your chin. Drop your lower jaw completely and back. For a variation of this exercise, place one finger on each TMJ as you completely drop your lower jaw and back. Do this exercise six times to complete one set. You should complete one set six times daily. Resisted opening of the mouth Place your thumb under your chin. Open your mouth slowly, pushing gently against your chin for resistance. Hold for three to six seconds, and then close your mouth slowly. Resisted closing of the mouth Squeeze your chin with your index and thumb with one hand. Close your mouth as you place gently pressure on your chin. This will help strengthen your muscles that help you chew. Tongue up With your tongue touching the roof of your mouth, slowly open and close your mouth. As the exercise becomes easier, increase the thickness of the object between your teeth by stacking them one on top of each other.