Hughston Health Alert

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Inside...

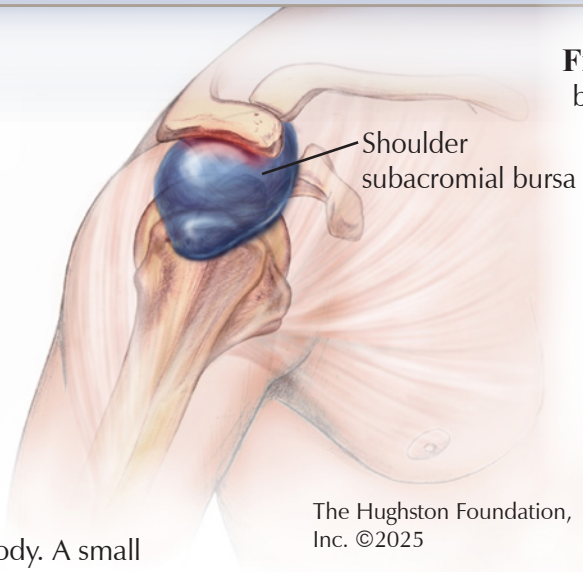
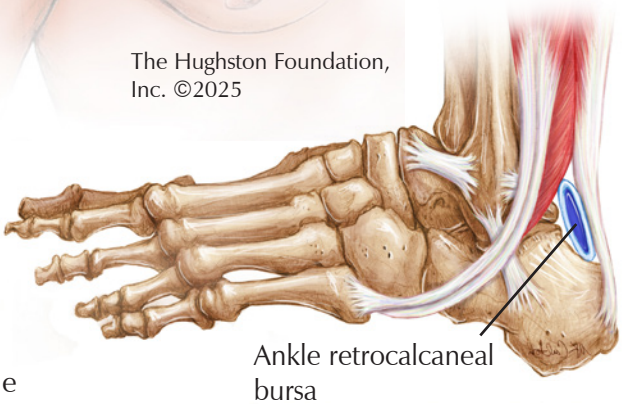


Fig. 1. Examples of bursae locations in the body



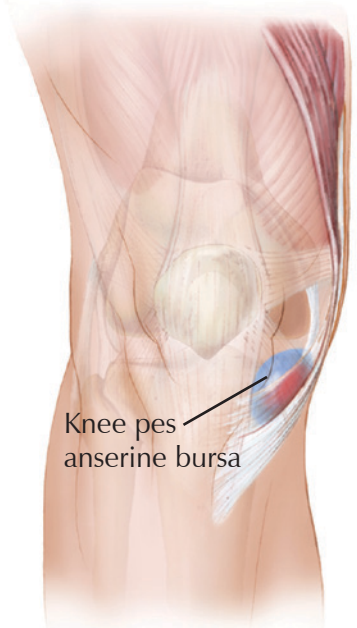
Greater Trochanteric Bursitis and Pain Syndrome

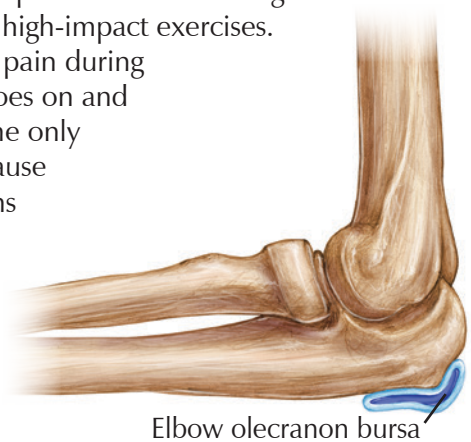
There are approximately 160 bursae throughout your body. A small jelly-like sac, a bursa acts as a cushion to help reduce friction between bones and soft tissue. The submuscular bursae exist between muscles or between muscles and bony prominences. The names of bursae match the location within the human body. Some examples include the shoulder subacromial bursa, ankle retrocalcaneal bursa, knee pes anserine bursa, and the olecranon bursa that is at the tip of the elbow. Bursae of the hip include the ischiogluteal, iliopsoas, and trochanteric. Bursitis develops after friction from a tendon, ligament, or other soft tissue moves over a bony prominence causing the bursa to become inflamed, swollen, and painful. Bursitis can be difficult to live with; but one specific bursa of the hip, once inflamed can cause significant problems.

Greater trochanteric bursitis and pain syndrome

The name “trochanteric” refers to the upper bony prominence region of the femur (thighbone). The predominant cause of greater trochanteric pain syndrome, trochanteric bursitis, involves inflammation of the bursa between the greater trochanter and the iliotibial band and causes pain on the lateral or outside of the hip. The inflammation often triggered by repetitive stress and trauma, manifests as pain in the lateral thigh after prolonged sitting, stair climbing, or engaging in high-impact exercises.

Greater trochanteric pain syndrome produces hip pain during weightbearing, which can cause fatigue as the day goes on and may disrupt sleep. Inflamed tissue or bursitis is not the only cause of lateral hip pain. Other structures that can cause pain in the region include the gluteus medius tendons and the iliotibial band, which can cause tendonitis, tearing, and even rupture. For this reason, we also refer to lateral hip pain as greater trochanteric pain syndrome, which is a collection of symptoms related to conditions, such as gluteal tears, external snapping hip, and abductor tendinopathy.





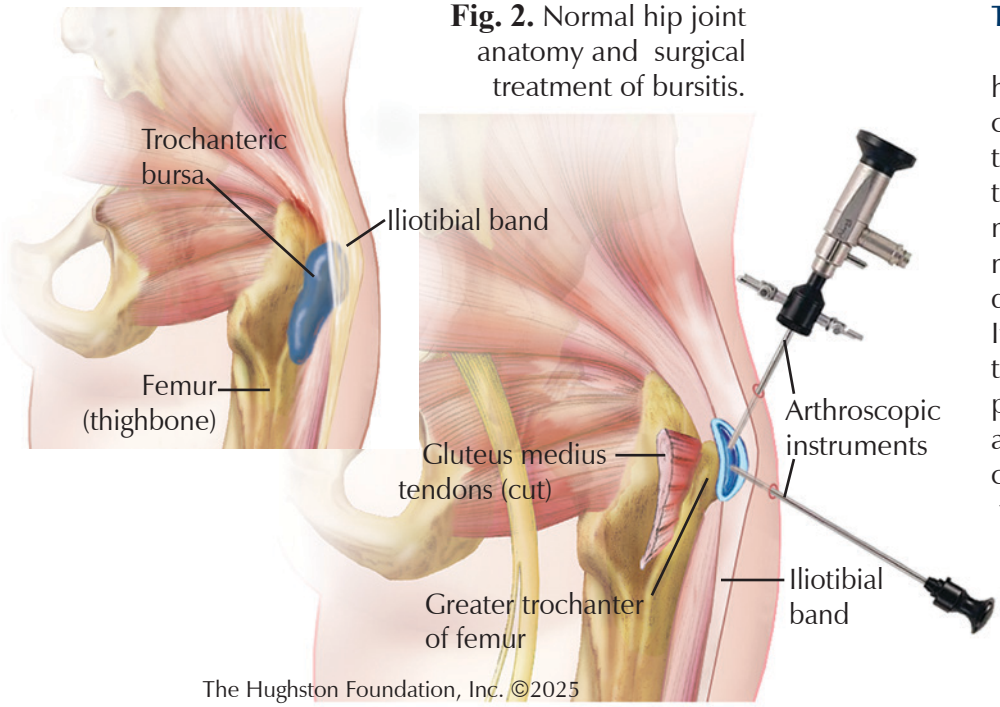


Fig. 2. Normal hip joint anatomy and surgical treatment of bursitis.

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Risk Factors

Greater trochanteric pain syndrome typically presents in patients over the age of 45 and is more common in women. Male patients can also experiences the problem, but typically, they are over the age of 65. It is common for the patient to have other associated symptoms including low back, groin, or knee pain. Physicians often find this disease pattern in individuals who do mostly forward-plane activities, such as running or walking, rather than side-to-side activities such as pickle ball, tennis, or racket ball.

Causes

An injury to the hip, knee, or back can cause a change in body mechanics; as a result, the hips take over more weightbearing during walking and performing everyday activities. With weakness in the hip joint, the pelvis cannot maintain being level during walking; therefore, the hip will drop, and the body compensates. This results in the excess friction over the bony trochanteric prominence and thus bursitis. Over time, the gluteus tendons undergoing excessive loads tear or rupture (tear from the bone).

Seeking medical advice

If you continue to experience pain over the lateral side of the hip, and it starts to affect your life, including avoiding certain activities that you otherwise enjoy, then consider seeking advice from an orthopaedist. The initial screening for greater trochanteric pain syndrome begins with x-rays and a physical examination by an orthopaedist. Your doctor may order magnetic resonance imaging, (MRI), an image that shows the bones, muscles, tendons, and ligaments if you experience significant weakness leading to a change in your gait. If symptoms do not improve with a course of physical therapy or home exercises, the orthopaedist can recommend additional treatment options.

Treatment

If you do not show weakness during hip testing, your doctor can prescribe conservative treatments, such as physical therapy, a home exercise program, and topical, oral, or injectable anti-inflammatory medications. If surgical intervention is necessary, there are a couple of options depending on the severity of the disease. If you have bursitis without tearing of the tendons, surgical treatment can either be performed using an open technique or arthroscopic (minimally invasive with a camera) surgery. Often, you can return to full activity between 2 to 4 weeks after surgical intervention. If you have bursitis with a partial- or full-thickness tear of the gluteus tendon, you may need a surgical repair procedure. After performing an open or arthroscopic repair, you can expect to return to full activity between 3 to 4 months. Following surgery, your surgeon may prescribe physical therapy that can help to improve your pain and return of hip strength. Persistence in a home exercise program after physical therapy can be key to staying pain free.

Outcomes

Since a number of conditions contributes to greater trochanteric pain syndrome, outcomes can vary. For example, with conservative measures, including physical therapy and activity modifications, 25% of patients continue to have symptoms 5 years after the onset. Conservative care, including physical therapy and home exercise programs, can correct some of the underlying disease process. If symptoms do persist, injections and surgical intervention can offer patients excellent improvement in pain level, hip strength, and walking.

Greater trochanteric pain syndrome often results from one directional activities, such as running and walking; therefore, incorporating side-to-side activities and strength training can help prevent the condition from developing. If the problem develops, it is important to treat it quickly to prevent further damage, including tendon tearing. With tendon rupture and significant atrophy (loss of muscle), especially if 50% of the muscle mass is lost, the failure of surgical intervention can be as high as 75%. Under these circumstances, care includes modifying gait and using an aid, such as a walker or cane to minimize the risk of fall and fracture. Patients can develop weakness while walking, which may predispose them to falling. You should seek treatment for hip pain before significant weakness develops to decrease the risk of falling and experiencing a hip fracture, which can be life altering.

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Charcot Joint Disease:

A HIDDEN CONSEQUENCE OF PERIPHERAL NEUROPATHY

Charcot joint, or neuropathic arthropathy, is a progressive and debilitating condition characterized by the deterioration of joints due to nerve damage. Although it can occur in any condition that affects nerve function, it commonly presents in individuals with longstanding diabetes mellitus. Charcot joint typically manifests as a loss of sensation in the affected joint, leading to unnoticed trauma and repetitive stress injuries, which eventually result in joint deformity, instability, and destruction.[1] It typically affects the tarsometatarsal (connects the tarsal bone and metatarsal bone) joints (27% to 60%) (**Fig. 1**) and subtalar (located between the talus and calcaneus) joint (30% to 35%) of the foot, but it can present in other joints as well.[2,3] The potential for severe disability and impact on quality of life emphasizes the importance of early detection, effective management, and preventive strategies. With the newly diagnosed diabetes mellitus cases exceeding 1.5 million annually in the US and an overall prevalence of 20.8 million individuals nationally, foot complications like Charcot joint are becoming more common.[4]

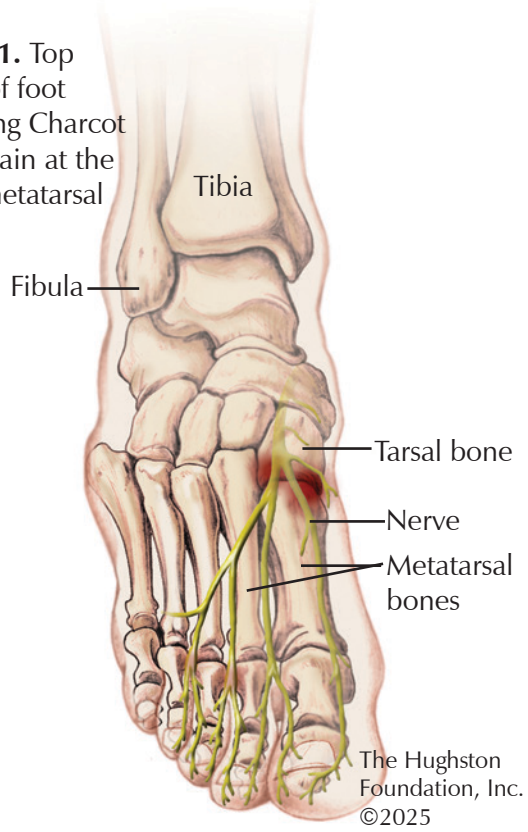

Fig. 1. Top view of foot showing Charcot joint pain at the tarsometatarsal joint

Diagnosis and symptoms

Individuals with severe sensory loss, increased mechanical joint stress, and diminished physical activity are at higher risk for development of Charcot joint. The diagnosis of the disease relies on thorough history and clinical examination. X-ray imaging is helpful in diagnosis, usually showing bone fragmentation, dislocation, or joint destruction. An orthopaedist may use magnetic resonance imaging (MRI), an image that shows the bones, muscles, tendons, and ligaments, if the diagnosis is not evident on x-ray.

The Eichenholtz classification, established in 1966, correlates imaging and symptoms to divide the disease into 3 stages: developmental, coalescent, and reconstruction.[1,3,5] During the developmental stage, the ankle has swelling, warmth, and redness with bone fragmentation and joint dislocation. In the coalescent stage, the ankle warmth diminishes with a reduction in swelling and begins early stages of bone callus formation. Complete resolution of warmth and swelling with increased bone formation and bone stabilization occurs within the reconstruction phase.[1] Many individuals initially experience mild to moderate pain, which progresses in later stages to painless deformity and malalignment of the joint, potentially resulting in joint collapse of the foot's arch and dysfunctional movement..

Treatment

The management of Charcot joint aims to halt disease progression, prevent further joint destruction, and preserve function. Nonsurgical conservative approaches primarily stabilize the ankle joint and control the foot position to allow time for joint healing with intentions of preserving mobility. Initial treatment involves immobilization, nonweight-bearing and offloading the joint for 3 to 6 months, preventing further joint stress and damage. This is typically accomplished with the use of a walker boot or cast. In one study, after completion of conservative treatment and follow-up at 2 years, most patients were able to walk 6 blocks without any walking aid (walker, walking cane), with only a few patients needing an aid to walk the same distance.[6]

If severe instability and joint damage continues despite conservative measures, an orthopaedic surgeon may recommend surgical intervention. The surgical objectives for Charcot joint are to restore

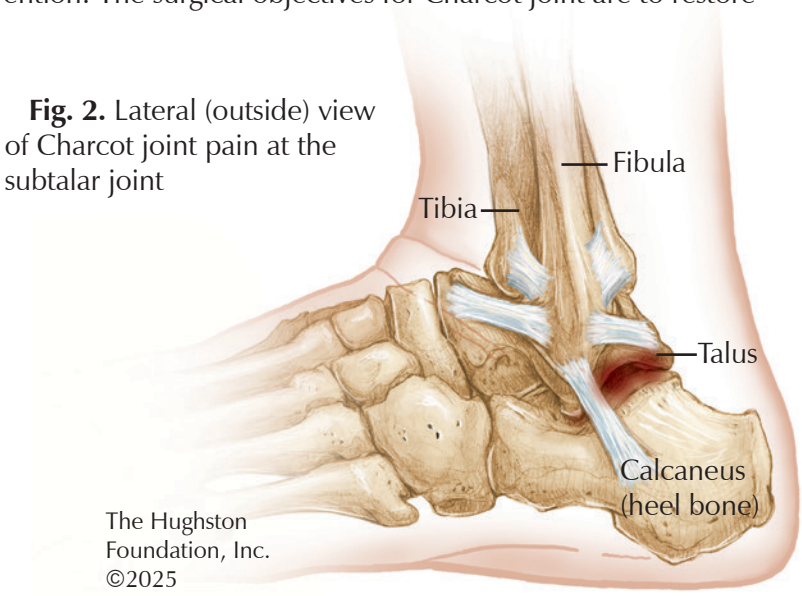

Fig. 2. Lateral (outside) view of Charcot joint pain at the subtalar joint

stability and alignment while preventing deformity, ultimately supporting functional ambulation. Surgical treatments include joint fusion, amputation, or total joint replacement. In the majority of cases, surgical treatment of Charcot joint results in favorable outcomes, including pain relief, functional improvement, and high patient satisfaction, with a relatively low rate of complications and revisions. The orthopaedist may recommend physical therapy during conservative treatment or after surgery to improve strength, range of motion, and function to gain as much mobility as possible.

Early recognition and management of Charcot joint are critical in preventing severe limb deformities, ulceration, and potential limb loss. Preventative measures include smoking cessation, adequate blood sugar control in diabetics, wearing appropriate socks and footwear, and avoiding walking barefoot or with open shoes. Regular diabetic foot exams to assess the extent of neuropathy and any unnoticed ulcers are among the most important preventative measures. Additionally, individuals can use custom footwear and orthotics (inserts worn in shoes) to provide support and help prevent recurrence.

Despite the challenges of Charcot joint disease, early diagnosis and timely treatment can significantly improve quality of life by preserving joint function and preventing severe disability. While the disease typically presents with symptoms like swelling, deformity, and loss of function, the absence of pain due to impaired sensation complicates early diagnosis. Effective management of Charcot joint relies on conservative measures, and in some cases, surgical intervention. Ongoing monitoring, along with a focus on preventing further joint damage, is essential for managing the disease and preventing recurrence.

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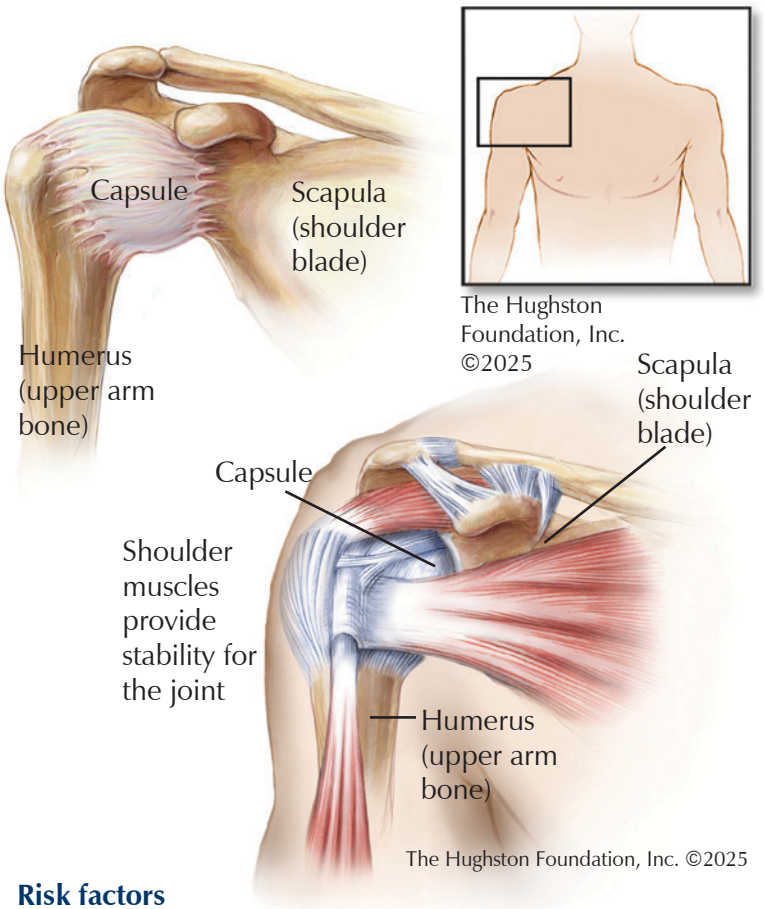
Frozen Shoulder

A ball-and-socket joint that connects the upper arm to the shoulder blade, the glenohumeral joint, more commonly referred to as the shoulder, has the highest range of motion of all the joints in your body. The shoulder joint allows the arm to move around in a near-perfect 360 degrees circular motion while also moving the arm outward and inward. A fibrous capsule surrounds the shoulder and seals it to keep the lubricating synovial fluid inside the joint (**Fig. 1**). The fluid helps reduce friction during movement and keeps the bones sliding in a smooth and painless manner. The capsule, along with your muscles, provides stability during movement. Sometimes, adhesions (scar-like tissue) form in the joint capsule, causing it to thicken and shrink. Inflammation seems to play a role, but often it's not entirely clear why this happens. When the shoulder joint capsule becomes stiff, it can cause pain and limit your range of motion, snowballing into the disease process known as adhesive capsulitis or frozen shoulder.

Fig. 1. Normal anatomy of stabilizers of the shoulder joint



Risk factors

For many patients, their physician cannot pinpoint what causes adhesive capsulitis to occur; however, certain factors increase the likelihood of the disease. Patients who are over 40 years old and female have a higher predisposition for developing frozen shoulder. Medical conditions such as diabetes, hyper- or hypothyroidism, as well as Parkinson's

and cardiovascular disease can also put patients at risk. Secondary factors can include immobility or decreased movement of the joint due to the pain of a recent surgery or injury.

Symptoms

Symptoms differ during each stage of the disease. The gradual first phase, "the freezing stage", involves the joint capsule becoming inflamed, causing stiffness, limiting range of motion, and developing night pain. Patients often complain of a dull ache in the biceps and deltoid muscles that causes difficulty sleeping. As the capsule continues to swell, movement of the joint becomes more difficult and painful. The first stage can last from a few months to a year. The "frozen stage" follows with a decrease in pain for most patients; yet, the capsule remains inflamed and the shoulder becomes stiffer and harder to move. Normal day-to-day activities, such as dressing, cooking, or driving become difficult. This second stage can last from 4 months to beyond a year after the onset of the initial symptoms. During the third and final phase, the "thawing stage" of the disease, the inflammation begins to decrease and the range of motion starts to improve. The last stage can linger 6 months up to 2 years depending on your method of treatment.

Diagnosis

An orthopaedist can diagnose frozen shoulder in the clinic by performing a physical exam, collecting medical history, and ordering imaging. The doctor will ask questions concerning the onset of symptoms, such as when and where the shoulder pain began. Exam techniques include raising your arm above your head, placing your arm behind your back, and performing internal and external rotation of the arm. The physician may stand behind you to evaluate if there is a decrease in your active and passive range of motion. If your shoulder blade rises while raising your arm sideways, it can also be a sign of frozen shoulder. The doctor may also have you lift objects to test the strength in both shoulders. The orthopaedist may order an x-ray or magnetic resonance imaging (MRI), which provides detailed images of the bones, muscles, tendons, and ligaments of the shoulder to rule out an injury or other shoulder joint diseases, such as osteoarthritis.

Treatment

Frozen shoulder can improve on its own, but it can take some considerable time. To improve your range of motion and decrease your pain, your orthopaedist can recommend physical therapy and other nonsurgical treatments. A physical therapist can get your arm moving again and provide you with at home exercises that help strengthen the surrounding muscles and break up the fibrotic tissue in the capsule. Anti-inflammatory medications like NSAIDs, such as ibuprofen and aspirin, as well as steroid injections can reduce the pain and inflammation. If the nonsurgical treatment fails to relieve your symptoms, a surgeon may need to manipulate your shoulder manually. An orthopedic surgeon can break up the fibrotic adhesions in the capsule by performing arthroscopic surgery under anesthesia.

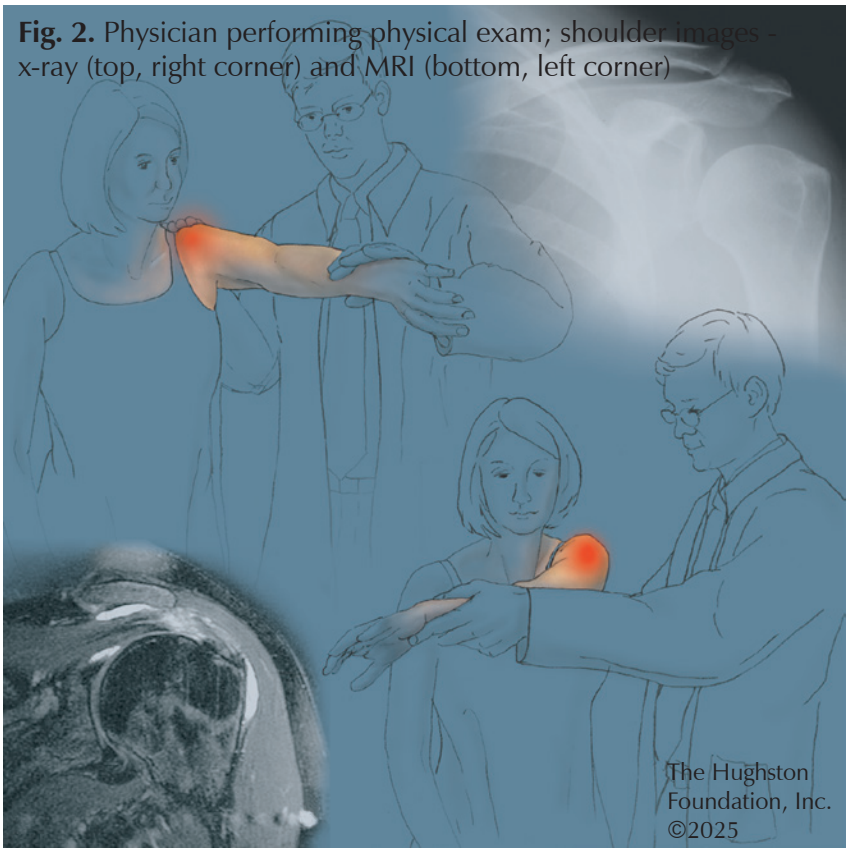


Fig. 2. Physician performing physical exam; shoulder images - x-ray (top, right corner) and MRI (bottom, left corner)

Outcomes

Recurrence of adhesive capsulitis in the same shoulder is rare; however, some patients develop the disease in the other shoulder, roughly within 5 years of the original onset. Frozen shoulder can be a debilitating condition, but with the right care and proper treatment, you can fully recover your range of motion. However, the various types of treatment can determine how long the recovery will take.

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Further reading::

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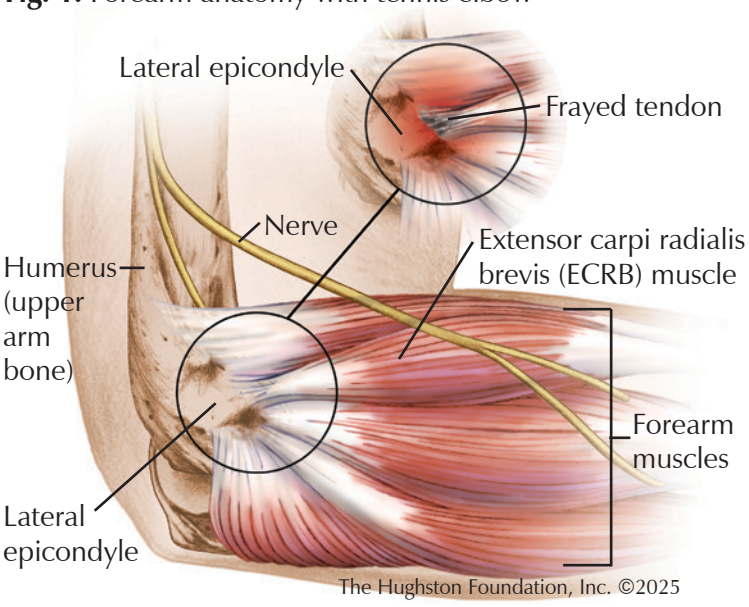
Lateral Epicondylitis - Tennis Elbow

Fig. 1. Forearm anatomy with tennis elbow



Lateral epicondylitis, commonly known as tennis elbow, is one of the most prevalent causes of elbow pain in patients who frequently use their wrist and forearm (**Fig. 1**). Three bones—the humerus, radius, and ulna—come together to form your elbow joint. Tendons (tissues connecting muscle to bone) of the wrist and forearm attach at 2 primary sites, the medial (inside) and lateral (outside) epicondyles, which are bony prominences at the sides of your elbows. Tennis elbow occurs when the tendons that attach to the lateral epicondyle become inflamed due to repetitive forearm and wrist movements, leading to pain over the outside portion of the elbow.

As the name suggests, up to 50% of all tennis players experience this condition at some point during their athletic career.[1] However, it can also occur in other popular sports, like pickleball and golf, where athletes frequently use the muscles of the forearm and wrist. Furthermore, tennis elbow also affects individuals who perform repetitive hand movements, such as swinging a hammer, using a paintbrush, and even cooking.

Causes and risk factors

Tennis elbow results from the overuse of wrist and forearm muscles, leading to irritation of the tendons attached to the lateral epicondyle. The most commonly affected tendon is the extensor carpi radialis brevis, which extends from the lateral epicondyle to the wrist. The tendon helps to extend and stabilize the wrist and elbow, but repetitive motion can cause deterioration and micro tears, resulting in pain.

The condition affects both males and females equally, with most cases arising in people aged 30 to 50, although it can develop at any age. Improper form or inadequate equipment, such as using a tennis racket that is too heavy or that has an incorrect grip size, can lead to overuse of the extensor carpi radialis brevis muscle, and results in tendon irritation. Additionally, individuals who work in jobs requiring vigorous use of their wrist and forearm, such as carpenters who frequently use heavy tools such as hammers, are at a higher risk of developing this condition (**Fig. 2**). Other contributing factors include engaging in repetitive activities without proper rest or inadequate warm-up, smoking, and obesity.

Symptoms and diagnosis

Because tennis elbow stems from overuse and gradual irritation of the tendons, symptoms typically develop gradually over weeks to months. Patients cannot usually pinpoint a specific injury; instead, the pain begins mildly and worsens as the continuous movement irritates the tendons during everyday activities. Common symptoms can include discomfort while holding a coffee mug, shaking hands, turning a doorknob, or lifting objects. Patients may also experience weakness in grip strength and pain that radiates from the outside of their elbow into the forearm.

An orthopaedist can often diagnosis the condition after taking the patient's medical history and completing a physical exam of the forearm, wrist, and elbow. Healthcare providers often ask about the onset of symptoms, including whether it developed acutely or gradually, and if there are any relevant physical activities or occupational hazards. During the physical exam, providers will apply pressure to the lateral epicondyle to check for pain and may perform specific tests such as the Cozen's test (resisted wrist extension) or Mill's test (passive wrist flexion with elbow extended) to check for pain. They may also test for diminished grip strength.

Imaging tests such as x-rays (**Fig. 3**), ultrasound, or magnetic resonance imaging (MRI, an image that shows the bones, muscles, tendons, and ligaments) can help rule out other conditions, such as arthritis, and confirm the diagnosis of lateral epicondylitis by showing changes in the tendons.

Fig. 2. Overuse of forearm muscles from a work environment

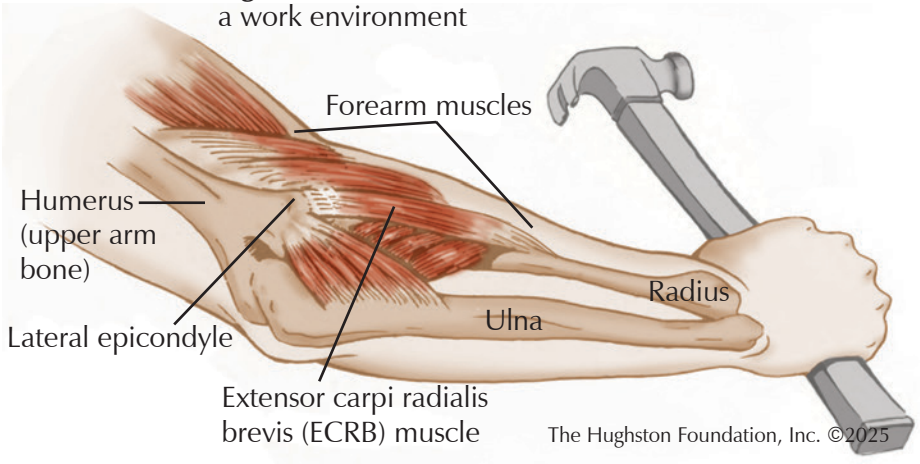
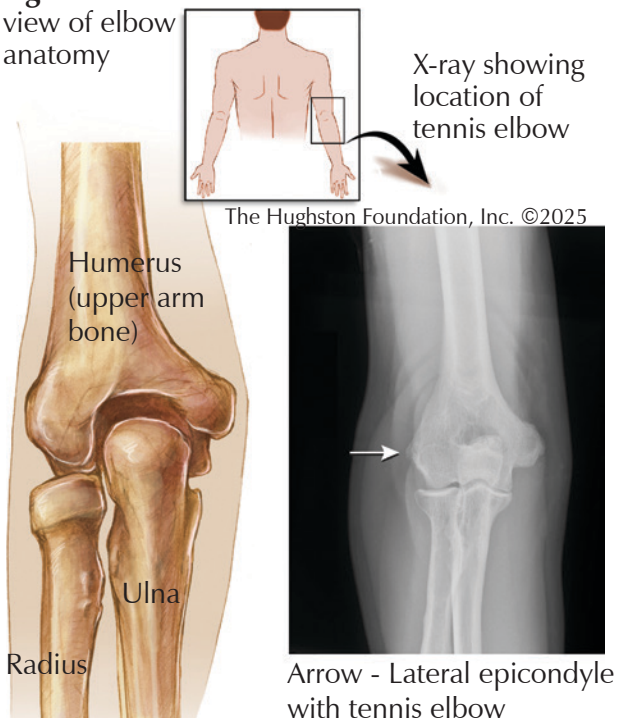


Fig. 3. Back view of elbow anatomy



stretch and warm-up before playing a sport or after activity. Do sport-specific exercises that help prepare you and keep your muscles in shape for the game. Complete a cool down stretch as well. If you start to experience pain, check out your equipment. Wear the right protective equipment for your sport and work activities. Do not use equipment that is too heavy or does not fit your hands. Make sure your equipment and tools fit you.

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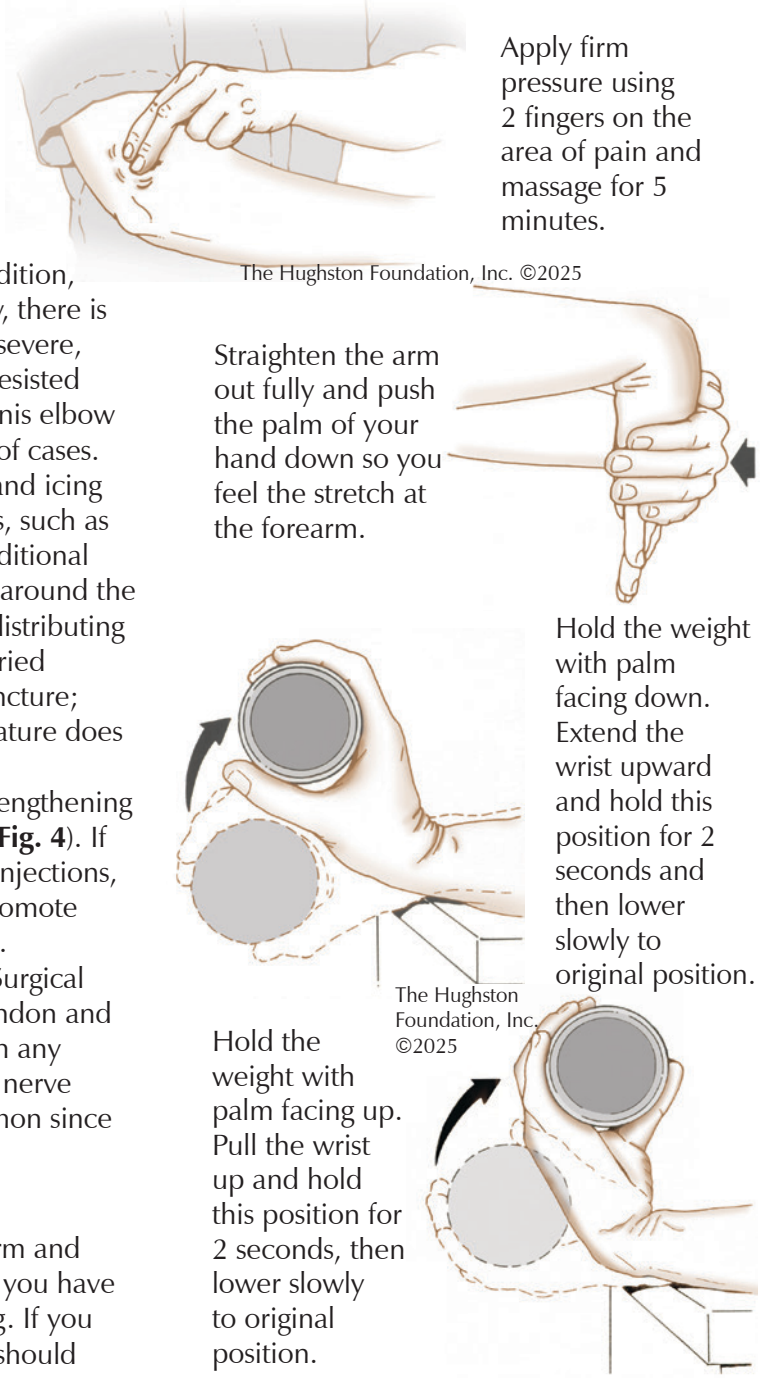
Fig. 4. Exercises examples that stretch and strengthen the affected tendon and muscles of the forearm.



Treatment

Since tennis elbow is primarily a mechanically induced condition, conservative treatments are often effective. With tennis elbow, there is a wide spectrum of severity ranging from slight tenderness to severe, continuous pain. However, the pain is often exacerbated by resisted extension of the middle finger and extension of the wrist. Tennis elbow typically resolves with conservative treatment in 85% to 95% of cases. Initial approaches include lifestyle modifications such as rest and icing for 15 minutes, 4 times a day. Over-the-counter pain relievers, such as ibuprofen (Advil) or acetaminophen (Tylenol), can provide additional relief. Patients may also use counterforce braces, which wrap around the forearm and help to relieve stress on the affected tendon by distributing the force to other muscles and tendons. Some patients have tried nonconventional modalities such as Botox, lasers, and acupuncture; although they may provide some pain relief, the medical literature does not support them as proven long-term treatments.

Another effective treatment, physical therapy focuses on strengthening the forearm muscles to reduce stress on the affected tendon (**Fig. 4**). If these treatments are not effective, platelet-rich plasma (PRP) injections, a nonsurgical procedure that uses a patient's own blood to promote healing, may help reduce inflammation in the affected region.

If conservative treatment fails, surgery may be considered. Surgical options typically involve removing the portion of damaged tendon and reattaching the remaining healthy tendon to the bone. As with any surgery, there are potential risks, including infection, stiffness, nerve damage, and prolonged healing. However, surgery is uncommon since most patients heal without surgical intervention.

Prevention

You can prevent tennis elbow by avoiding overusing your arm and elbow and by paying attention to what your body tells you. If you have pain, it means something has happened or may be happening. If you experience pain, give your arm time to rest and recover. You should

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