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# Tendinopathy

## (Tendonitis; Tendinosis)

[En Español \(Spanish Version\)](#)

### Definition

Tendons connect muscle to bone and help move joints. Tendinopathy is an injury to the tendon. These injuries tend to occur in tendons near joints such as knee, shoulder, and ankle. The injuries can include:

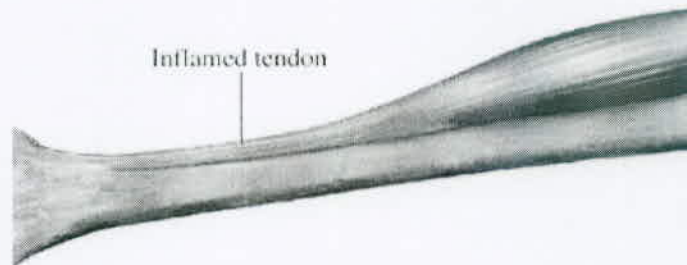
- Tendonitis—an inflammation of the tendon. (Although this term is used often, most cases of tendinopathy are not associated with significant inflammation.)
- Tendinosis—microtears (tiny breaks) in the tendon tissue with no significant inflammation.

Tendinopathy and the associated pain may take months to resolve.

The following tendons are often involved:

- [Achilles](#) —back of heel
- [Rotator cuff in the shoulder](#)
- [Biceps in the shoulder](#)
- Wrist extensors near the elbow (on the outside)
- Wrist flexors near the elbow (on the inside)
- [Patellar tendon](#) (attached to the kneecap)

### Tendinitis



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## Causes

Tendinopathy is caused by overuse of a muscle-tendon unit. The strain on the tendon causes very tiny tears that accumulate over time. These tears cause pain and can eventually change the structure of the tendon.

Overuse can be the result of doing any activity too much, such as:

- Sport activities
- Physical labor—especially those with repetitive motions
- Housework

## Risk Factors

Factors that increase your chance of tendinopathy include:

- Muscle imbalance
- Decreased flexibility
- Overweight
- Advancing age
- Sex: female
- Alignment abnormalities of the leg

## Symptoms

Symptoms include:

- Pain, particularly with activity
- Decreased motion of related joints
- Local swelling

## Diagnosis

The doctor will ask about your symptoms and medical history. A physical exam will be done. Your doctor will ask about your activity and the location of the pain.

In the majority of cases your doctor will make a diagnosis based on the exam and history. If your symptoms are severe your doctor may order:

- X-rays —to look for calcium deposits in the tendon
- MRI scan —to confirm the diagnosis and show the amount of damage to the tendon (more likely when symptoms continue despite treatment)

## Treatment

Treatment depends on:

- Severity of symptoms
- The tendon involved
- Length of time symptoms have lasted

Treatment may include:

- Avoiding the activity that is responsible
- Reduce shock vibration on the joint
- Rest for the affected tendon
- Ice after activity

- Cast or splint for immobilization of the affected area
- Counterforce brace over the painful tendon
- Shoe orthotics for foot alignment problems
- Gentle stretching of the tendon
- Strengthening of the involved muscle
- Over-the-counter medicines for pain, such as [acetaminophen](#), [ibuprofen](#)
- Topical pain medicines (eg, creams, patches) applied to the skin

If inflammation (tendinitis) is suspected, your doctor may recommend:

- Anti-inflammatory medications
- Cortisone injection into the sheath of the tendon

## Prevention

To prevent tendinopathy:

- Gradually work yourself into shape for a new activity.
- Gradually increase the length of time and intensity of activities.
- If you have a tendon that has been a problem, gradually stretch out that muscle/tendon unit.
- Strengthen the muscle to which the tendon is attached.
- If you have pain, do not ignore it. Early treatment can prevent the problem from becoming serious.
- Learn to back off from activities if you are tired or not used to the activity.
- Warm-up the affected area before activity.

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Please be aware that this information is provided to supplement the care provided by your physician. It is neither intended nor implied to be a substitute for professional medical advice. CALL YOUR HEALTHCARE PROVIDER IMMEDIATELY IF YOU THINK YOU MAY HAVE A MEDICAL EMERGENCY. Always seek the advice of your physician or other qualified health provider prior to starting any new treatment or with any questions you may have regarding a medical condition.

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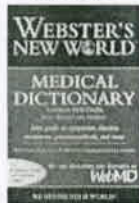
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**Subscapularis muscle:** A muscle that moves the arm by turning it inward (internal rotation).

The tendon of the subscapularis muscle is one of four tendons that stabilize the shoulder joint and constitute the rotator cuff. Each of these four tendons hooks up to a muscle that moves the shoulder in a specific direction.

The four muscles whose tendons form the rotator cuff are:

- The subscapularis muscle;
- The supraspinatus muscle, which is responsible for elevating the arm and moving it away from the body;
- The infraspinatus muscle, which assists the lifting of the arm during turning the arm outward (external rotation);
- The teres minor muscle, which also helps in the outward turning (external rotation) of the arm.

Damage to the rotator cuff is one of the most common causes of shoulder pain.

The term "subscapularis" means under (sub) the scapula (the wingbone). The subscapularis muscle originates there, beneath the scapula.

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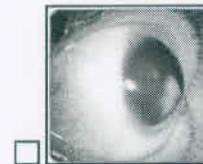
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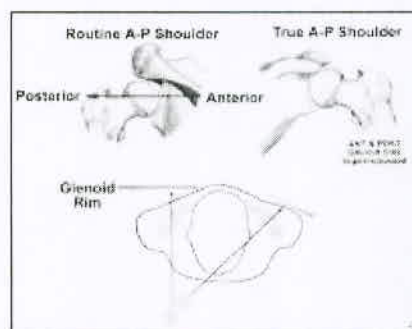
# Glenohumeral Arthritis

- Author: Mark D Lazarus, MD; Chief Editor: Mary Ann E Keenan, MD more...

Updated: Mar 29, 2011

## Overview of the Arthritic Shoulder

The glenohumeral joint normally functions through a wide range of motions in a smooth, congruent fashion. When the articular surfaces of the humeral head or the glenoid are damaged, the smooth, fluid motion is compromised, and arthritis commonly is the result. The anteroposterior anatomy of the glenohumeral joint is demonstrated in the image below.



Diagnosis of osteoarthritis (OA) is made based on history, physical examination, and standard radiographs. A true anteroposterior (AP) view is necessary to gauge the degree of joint space narrowing.

The number of patients presenting with symptoms attributable to glenohumeral arthritis has increased tremendously over the past decade. The reasons for this are multifactorial, including the aging of the population and an increased awareness that, like the hip and knee, the shoulder is not immune to developing arthritis.

## Shoulder arthroplasty

The field of arthroplasty (ie, replacing a worn joint with an artificial one) has grown tremendously since the late 20<sup>th</sup> century. Although the first shoulder replacement was performed in 1893, the field of shoulder arthroplasty did not come into the mainstream until the 1970s, lagging behind hip and knee arthroplasty.

Many shoulder arthroplasty designs have been tested over the years, and various strengths and weaknesses have been noted. Two terms require definition at this point. Hemiarthroplasty, as the name suggests, describes replacing one half of the joint, the humeral side, with an artificial component, thus allowing the prosthesis to articulate with the native glenoid. Total shoulder arthroplasty involves prosthetic replacement of the humeral head and the glenoid.

The different implants introduced over the years can be classified into 3 general types: anatomic, semiconstrained, and constrained. Anatomic designs sought to recreate the normal anatomic relationships and contours of the humeral head and glenoid. Due to these design parameters, anatomic implants had a large amount of rotational movement and were termed unconstrained. Early anatomic implants had a significant rate of loosening, in part due to the materials available and the surgical techniques used at the time.

Semiconstrained implants sought to increase the stability lacking in the early anatomic prostheses by employing a hooded glenoid to help capture the humeral head. Fully constrained prostheses were ball-in-socket implants. These implants initially provided good stability but were difficult to place. Fully constrained implants had high rates of breakage and loosening. Modularity, which was an attempt to accommodate for anatomic variations, was introduced in the 1980s.

Another important design parameter concerned the type of fixation, with cemented versus uncemented options. Cemented and uncemented humeral implants showed good long-term results. However, cementless glenoid

components yielded high rates of failure.

Current total shoulder arthroplasty designs employ a nonconstrained design, usually consisting of a polyethylene glenoid component and a stemmed metallic humeral head component. The humeral component can be either a cemented or uncemented type, with the glenoid being cemented into place. Restoring normal kinematics and soft-tissue tension is of utmost importance for long-term success.