

## Bursitis and Tenosynovitis

Inflammation of a bursa is called bursitis. Where the bursa is a tubular bursa (also called a synovial sheath), bursitis becomes known as tenosynovitis.

### (a) Definitions

#### *Bursa*

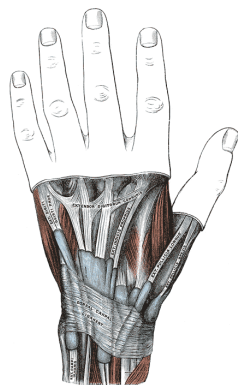
A *bursa* is a coin shaped closed sac, usually fairly flat (but see below *synovial sheath*), lined by *synovial membrane* and filled with *synovial fluid*. Bursae form where structures rub against each other, for example tendons or muscles sliding across bones. They prevent irritation and facilitate relatively friction-free smooth movement. Inflammation of a bursa is known as *bursitis*.

#### *Synovial Sheath*

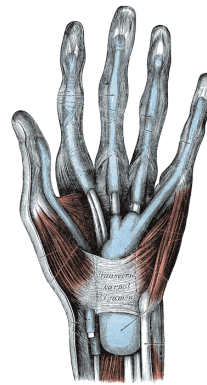
A *synovial sheath* (also known as a *tubular bursa*) is a modified bursa, tubular in shape, which is wrapped around a tendon, mainly in the hand or foot. Inflammation of such "bursa" (bursitis) then becomes known as *tenosynovitis*. Tenosynovitis usually also involves inflammation of the tendon which is enclosed by the synovial sheath (tendonitis) as well as the sheath itself.

Figure 1: Modified Bursae as Synovial Sheaths

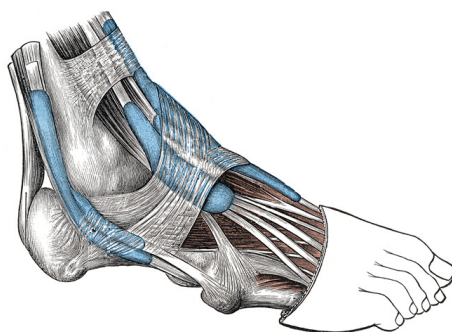
**Left Hand Extensors**  
(Modified bursae in blue)



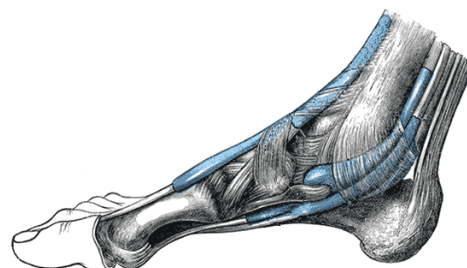
**Left Hand Flexors**  
(Modified bursae in blue)



**Right Lateral Ankle**  
(Modified bursae in blue)



**Right Medial Ankle**  
(Modified bursae in blue)



## **(b) Symptoms**

### ***Bursitis***

When a bursa is inflamed it is sore and swollen, often with considerable pain. Movement will be made more difficult and/or limited by the degree of pain.

Common sites of bursitis include:

1. *Prepatellar Bursitis*. Also known as "housemaid's knee". The prepatellar bursa is a frontal bursa of the knee, and it allows free movement between the skin and the patella bone (kneecap).
2. *Infrapatellar Bursitis*. Also known as "clergyman's knee". The infrapatellar bursa is a frontal bursa of the knee, located just below the patella (kneecap) at the top of the tibia (shin bone). It allows for movement of the patella tendon over the tibia. Infrapatellar bursitis was once commonly seen in preachers who spent a great deal of time on their knees resting upon hard surfaces.
3. *Olecranon Bursitis*. This is characterised by pain and swelling at the elbow. The olecranon bursa allows the movement of skin over the olecranon (the pointy bit) of the elbow.
4. *Subacromial Bursitis*. This is one source of shoulder pain.
5. *Trochanteric Bursitis*. This is one source of hip pain.
6. *Achilles Bursitis*. The Achilles bursa is at the back of the heel just above the attachment of the Achilles tendon to the calcaneus (heel) bone.

### ***Tenosynovitis***

Since tubular bursae occur in the wrist-hand and ankle-foot, these are the sites of this disorder. See Figure 1 on the previous page.

Tapping upon the affected synovial sheath will elicit pain. Pain may be *absent* on *slow* movement but *mild to severe* on *quick* movement, with coexisting *crepitus*. Crepitus is the grating sensation and noise that occurs on movement of the affected tendon within the synovial sheath due to rubbing of tissue over a dry synovial membrane.

## **(b) Cause**

In both bursitis and tenosynovitis the problem is generally related to overuse.

## **(c) Treatment**

### ***Bursitis***

Generally treatment for bursitis involves rest, ice and the use of a healing cream. Tight muscles and myofascia may be contributing to the problem by increasing pressure on the bursa, predisposing it to inflammation. Therefore your practitioner will release all muscles and fascia local to the inflamed bursa.

### ***Tenosynovitis***

Rest, ice and a healing cream are a start. Your practitioner may release the muscle from which the tendon associated with the synovial sheath arises, and also all the surrounding musculature since this is important to creating the conditions for recovery.

In the case of tenosynovitis, deep massage over the sheath may break-up the crystals of dried-up synovial fluid and pave the way for more rapid healing. Whilst this is unconventional, for most rapid improvement please discuss this possibility with your practitioner.