InfoSheet – Biceps Tendon Injuries
[*in the upper arm*]

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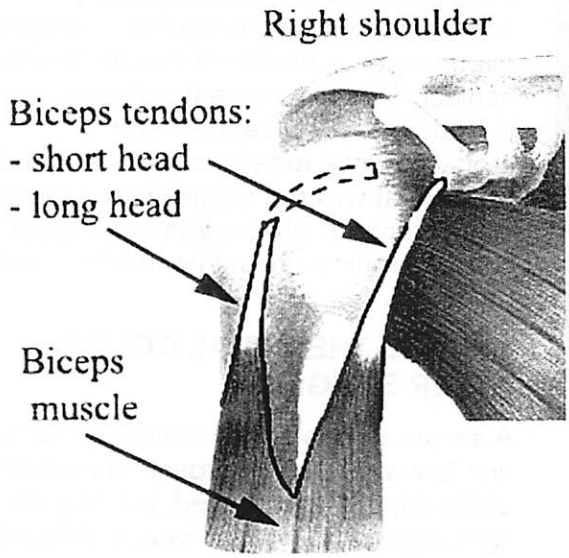
WHAT IS THE BICEPS TENDON?

The tendon of the long head of the biceps is a cord-like structure, which is located in the front of the shoulder. It originates from the top of the shoulder socket (the glenoid) and exits the joint through a bony trough (the biceps groove). Below the shoulder, this tendon becomes the long head of the biceps muscle. The short head of the biceps is a continuation of the conjoined tendon, which originates from a bony hook (the coracoid) at the front of the shoulder blade. Thus the biceps muscle, which functions to bend the elbow and rotate the forearm, has two anchor points in the shoulder region. A *rupture always involves the long head*, and never the short head.



WHO GETS BICEPS TENDON INJURIES?

In general, these injuries occur more frequently as we become older. As we age, our tendons lose their elasticity and slowly become stiffer and more "brittle." The blood supply that nourishes the tendon also diminishes with age. The "degenerative" processes may be more pronounced in sedentary individuals, but may be lessened with proper and regular exercise. The well-conditioned individual, however, is not immune from biceps tendon injuries as over-training can also harm an otherwise healthy tendon.

HOW DO BICEPS TENDON INJURIES OCCUR?

As mentioned above, age, inactivity, or over-activity can weaken a tendon, which may lead to injury due to the decreased ability to endure repetitive motions and sudden loads. Some individuals develop bone spurs in their biceps grooves or under the top of their shoulder blades (the acromion) which can lead to wear and tear of their tendons. This is why biceps ruptures are often present with chronic rotator cuff tendinitis/bursitis.

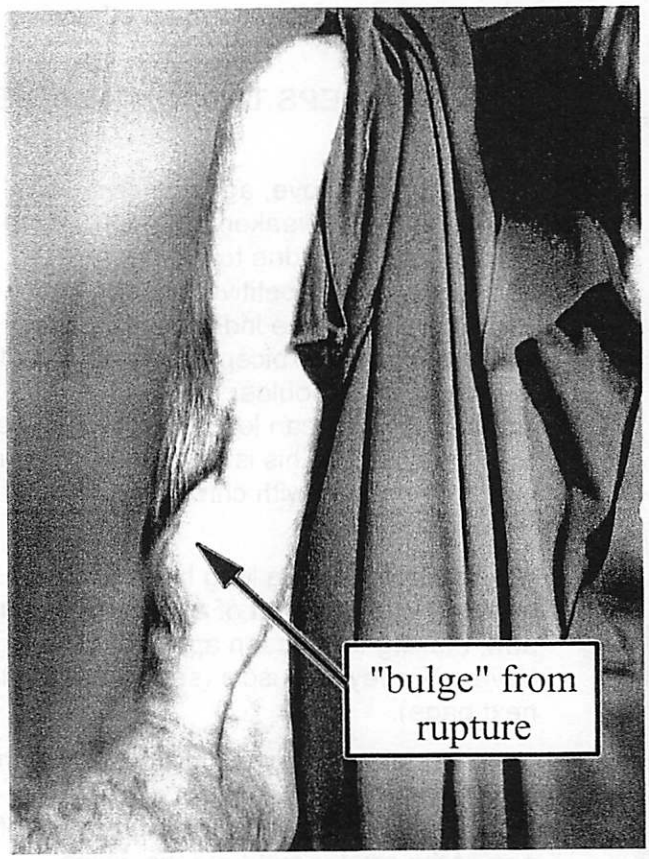
The appearance of a long head of the biceps ruptures is that of a bulge in the mid-arm, making the person appear as if they have a "Popeye" muscle (see picture on the next page).

A less frequent injury is a dislocation of the biceps tendon from its groove. This is usually seen in combination with a tear of one of the rotator cuff tendons which normally helps hold the biceps tendon in its groove. The biceps tendon can also be injured at its attachment site on top of the glenoid. This usually involves an avulsion, where the tendon is pulled off the bone and rendered unstable.

WHAT HAPPENS TO THE TENDON WHEN IT IS INJURED?

If the tendon or its sheath (which encases the tendon) is irritated, it becomes inflamed, resulting in pain and swelling. This condition is called "tendinitis." Mild injuries can also result in microscopic tearing of individual

tendon fibers. As the severity of an injury increases, larger tears can occur to the point where the tendon is partially torn or even completely **ruptured**. If a rupture occurs, the long head will usually fall toward the elbow, resulting in the previously mentioned appearance. Biceps muscle function usually remains nearly normal because of its dual attachment at the shoulder.



Biceps tears at the elbow – the other end of the muscle – are far less common but more debilitating because only one tendon is present. Surgical treatment is almost always recommended for these injuries.

HOW ARE BICEPS TENDON INJURIES TREATED?

Initially, rest, ice, and gentle anti-inflammatory medications are all that is usually needed. Sometimes an injection with a strong anti-inflammatory medication such as cortisone is needed to control the pain and swelling. In most cases, both the pain and the other symptoms completely resolve over time. Severe cases that fail to improve may require surgical treatment.

WHAT DOES SURGERY INVOLVE?

Surgical treatment depends on the nature and extent of damage to the tendon. If only a small portion of the tendon is damaged, a simple arthroscopic shaving (debridement) of the torn fibers may be all that is needed. If a significant portion is involved, a biceps tenodesis may need to be performed. This is done by arthroscopically removing the torn tendon stump from inside the shoulder joint and then, through a small skin incision, attaching the remaining tendon to the bone in the upper arm (humerus). If the tendon has been partially avulsed from its origin on the top of the glenoid (S.L.A.P. lesion – *superior labrum anterior posterior*), causing pain, it can be arthroscopically reattached using miniature screws and sutures

If the biceps tendon is ***completely ruptured***, causing the muscle to bulge in the upper arm, treatment can be "benign neglect" or a surgical reattachment (tenodesis). Few people need a reattachment – **most are pain-free and functional without surgery** for a complete biceps rupture, while partial tears often cause chronic pain and benefit from surgical treatment.

WHAT IS THE USUAL COURSE AFTER SURGERY?

A simple sling is all that is needed for the first few weeks after surgery. Immediate use of the hand is encouraged, but only for very light objects. Four to six weeks of healing is required before a gradual return to moderate or heavy lifting. Desk work and light-duty can usually be resumed within the first week or two. Return to heavy labor usually takes 2 to 4 months.