

## Plain Language Summary

### The Management of Glenohumeral Joint Osteoarthritis



#### Background

This plain language summary provides an overview of the management of glenohumeral joint osteoarthritis.

#### What is glenohumeral joint osteoarthritis?

Glenohumeral joint osteoarthritis is a degenerative disease that affects the shoulder joint. The shoulder joint is a ball and socket joint; with the ball being the top of the arm bone (humerus bone), and the socket being the cup portion of the shoulder blade (scapula). Both the ball and the socket are lined with a strong and smooth substance (cartilage). Cartilage coats the end of the joint bones and cushions the surfaces to provide smooth movement of that bone, as well as acts as a shock absorber to reduce friction in that joint. Unfortunately, cartilage can be damaged by injury or overuse over time. This may result in osteoarthritis, where the

cartilage wears away and causes the humerus bone to rub directly against the scapula (bone-on-bone), resulting in pain, stiffness, swelling, and possible pain while sleeping.

#### How is glenohumeral joint osteoarthritis diagnosed?

Patients with glenohumeral joint osteoarthritis will have pain in the shoulder area of the body. This pain can increase with movement. Additionally, patients may experience a clicking noise and a decrease in range of motion. To assist with properly diagnosing you, your physician may perform a physical exam that includes testing your range of motion and pain points. Additionally, he/she may test you for muscle weakness. Your clinician may also order x-rays to evaluate the narrowing of space between the ball and socket, as decreased space is a sign of osteoarthritis. Your x-rays may also show bone spurs, which are known as osteophytes. These spurs often form where the two bones meet and may add to your pain and reduced range of motion. It may also be necessary to order additional imaging using either magnetic resonance imaging (MRI), a computerized tomography (CT) scan, or an ultrasound to view the muscles and tendons around the joint which are known as your rotator cuff.

#### What treatment options are available for glenohumeral joint osteoarthritis?

In the early stages, many non-surgical treatment options are available. Your physician may recommend modifications in activities that may cause you pain. Exercise or physical therapy may also be prescribed, as it may assist with reducing pain, and

restoring function. Your physician may recommend using over-the-counter medications, such as acetaminophen and nonsteroidal anti-inflammatory drugs (NSAIDs), as they may improve short-term pain, function, or both. If these options do not provide relief, an injection into the shoulder joint with corticosteroids may improve function and reduce pain for the short term. There is currently not enough evidence to recommend for or against the use of complementary and alternative medicines such as acupuncture, dry needling, cannabis, cannabidiol (CBD) oil, shark cartilage, glucosamine and chondroitin, cupping, and the use of a transcutaneous electrical nerve stimulation (TENS) unit. Hyaluronic acid injections are also another medication option, however; strong evidence supports that there is no benefit to the use of hyaluronic acid in the treatment of glenohumeral joint osteoarthritis.

When nonsurgical treatment options fail to provide adequate pain relief, a total shoulder replacement, or total shoulder arthroplasty (TSA) may be considered. During TSA, a ceramic or metal ball on a stem is inserted into the humerus, and a metal cup and a plastic or ceramic liner is surgically implanted into the scapula. This creates a new, smooth joint that reduces pain, and improves function. Additionally, due to certain circumstances such as an issue with your rotator cuff, your surgeon may consider a reverse TSA. This means that the ceramic or metal ball and the metal cup and plastic or ceramic liner simply switch sides.

Prior to surgery, your surgeon may need to have a conversation with you regarding risk factors that need to improve, such as poorly controlled diabetes, high blood pressure, mental health issues, substance abuse, tobacco use, opioid use, and malnutrition, and potentially delay surgery until these items can be properly addressed. Strong to

moderate evidence supports that these risk factors may lead to higher complications and poor patient-reported outcomes following TSA.

### **What can be expected following surgical treatment?**

Patients should experience significant reduction in pain and improved mobility following TSA. Many factors, including physical condition, activity level, personal anatomy, and adherence to instructions both prior to and following surgery will play an important part in your recovery. Most patients will be discharged within one to three days following surgery and go directly home. Instead of going directly home, under certain circumstances, a patient may be admitted to rehabilitation or nursing facility after being released from the hospital. Additionally, your physician may prescribe either formal or directed home physical therapy programs to regain strength and mobility of the new shoulder joint.

*This summary was written by the Committee on Healthcare Safety.*

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Additional resources for patients are available at **OrthoInfo.org**.