

Total Shoulder Surgery

Joint Replacement Center at **DMOS**

Welcome to the Joint Replacement Center at DMOS. With over forty years of total joint experience, DMOS was the first group of surgeons in Iowa to perform the total joint procedures.

Since the 1970's, while total joint techniques and methodologies have evolved and improved, one thing at DMOS has remained the same: the commitment to specialized, compassionate orthopaedic care for every patient.

As the largest and most comprehensive total joint center in Iowa, you can be assured that your surgeon and their colleagues' experience in the science and techniques of total joint replacement is at the forefront of exceptional care.

In addition to the thousands of total joints performed, DMOS surgeons have published hundreds of articles explaining and exploring the science of total joint replacements. As a result, the Joint Replacement Center at DMOS is second to none in the area.

We thank you for choosing DMOS and look forward to helping you gain mobility and get back to life with your total joint.



SHOULDER ARTHRITIS: QUESTIONS & ANSWERS

Question: What is shoulder arthritis?

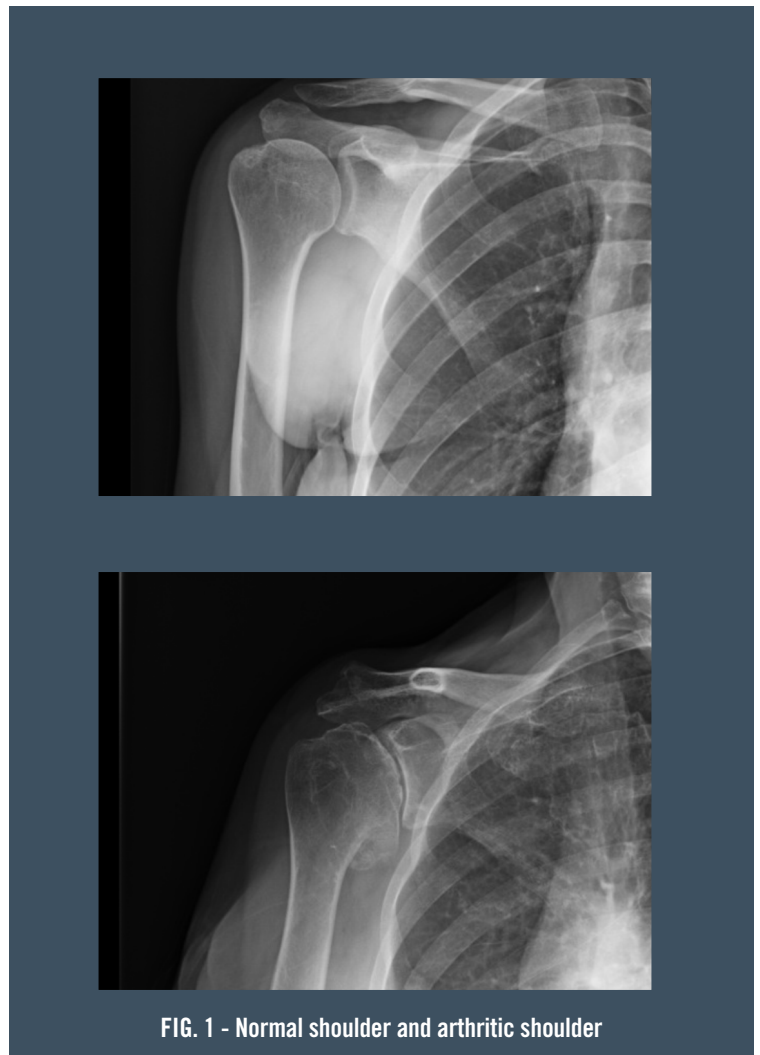
Answer: Arthritis is a wearing away of the smooth, slippery cartilage surface, which normally allows a joint to move without any friction (Fig. 1). The normal shoulder joint is shaped like a “ball-in-a-socket,” though the ball is larger than the socket. The large size of the ball (humeral head) relative to the socket (glenoid) allows the great range of motion, which we have in the shoulder. In an arthritic joint, the surfaces are rough and irregular, so there is increased friction (Fig. 1). In addition, normal cartilage forms a cushion on the ends of the bones, which allows a joint to move without painful pressure. Loss of this cushion results in bone pushing against bone, creating pain.

Shoulder arthritis is not as common as arthritis involving the knee and hip joints. This is because the forces across these lower extremity joints during walking are much greater than those to which the shoulder is exposed with simple daily activities. Therefore, people often tolerate shoulder arthritis for longer periods of time before they need treatment.

(PICTURE: FIG. 1, normal shoulder, and arthritic shoulder)

Question: What causes shoulder arthritis?

Answer: Shoulder arthritis can result from a variety of causes. A fracture of the shoulder or a history of recurrent dislocation may result in the development of shoulder arthritis. Shoulder arthritis can also occur without a known cause, and in these cases, it is termed primary osteoarthritis. Inflammatory conditions such as rheumatoid arthritis can affect the shoulder, and an unrecognized infection can also lead to shoulder arthritis. Finally, a condition known as avascular necrosis can develop after taking steroids for a period of time. In this situation, the humeral head (ball) collapses because the steroids cause death of the bone cells. This leads to an irregular joint surface and the development of arthritis.



Question: What does shoulder arthritis feel like?

Answer: Shoulder arthritis can often be tolerated with only minimal pain. Individuals will vary in the amount of discomfort they have. Some people will notice only mild, occasional aching with forceful activities, such as lifting. Others may have severe pain at night, which prevents them from sleeping on the painful shoulder. The pain is usually felt in the back of the shoulder, although it may be felt over the entire shoulder.

It is important to realize that other conditions must be ruled out before the diagnosis of shoulder arthritis is made. For example, in people over the age of 40 years, rotator cuff problems are more common than shoulder arthritis.

Question: What can be done to treat shoulder arthritis?

Answer: Treatments available include physical therapy, anti-inflammatory medications such as Advil, steroid injections into the joint, and modification of activities. In cases of severe pain and dysfunction, replacement of the worn out joint surfaces with an artificial joint can be very successful in relieving pain and improving function.

Question: How can physical therapy or steroid injections and anti-inflammatory medicines help?

Answer: Shoulder arthritis is often associated with stiffness of the shoulder. This stiffness occurs due to pain and inflammation. It can also be a significant cause of pain. Physical therapy modalities and treatments can reduce the pain, which limits motion. Physical therapy increases motion by stretching and strengthening the muscles around the joint. Anti-inflammatory medication or steroid injections can reduce the chemical inflammatory effects of arthritis, which causes wear and tear inside the joint. This can also reduce pain.

Question: When is replacement of the arthritic shoulder a reasonable treatment?

Answer: Total shoulder replacement is a reasonable alternative for people who have completely worn away the joint surfaces and are having pain. Pain at rest and pain that interferes with sleeping at night, despite taking anti-inflammatory medications, are reasons to proceed with shoulder replacement.

Question: How is the shoulder joint replaced and what does the artificial joint look like?

Answer: The artificial shoulder joint is made up of several parts. The part, which goes into the humerus and replaces the “ball,” looks like a metal ball on a metal stem. Since people come in different sizes, these artificial components also come in an assortment of sizes, which allows your surgeon to custom fit the joint replacement to you. The artificial replacement for the “cup” part of the joint looks like a curved piece of plastic. It is made of high-density polyethylene, which is a form of very strong plastic. It has a small stem, which allows it to be placed into the scapula and fixed in the bone (Fig. 3). The combination of a metal alloy ball-stem and a high-density plastic cup are the best attempt to artificially reconstruct the joint with durable components that have minimal friction. There is no significant reaction of the body to these artificial parts and rejection by the body is rarely a problem.

In some cases, the artificial parts are fixed into the bone by a special process that allows for the bone to grow into the artificial joint, holding it in place. In some cases, however, a special form of cement is used to fix each of the artificial parts onto the bone (Fig. 3).

The surgery is performed through an incision in the front of the shoulder, and goes between the muscles (Fig. 4). The worn-out and degenerated ends of the bones are removed and then replaced with the artificial joint.



FIG. 3 - Arthritic Shoulder Joint and Replacement



FIG. 4 - Incision for Shoulder Replacement

Question: What happens after surgery and how long would I have to stay in the hospital?

Answer: Following surgery, you are given strong narcotic medications by mouth or I.V. Physical therapy begins on the first day following surgery, based on the guidelines determined by your surgeon. Usually, the physical therapist starts with moving your operated arm for you in a passive motion. Over the course of the next several days, this therapy program advances and in most cases, you will be instructed how to perform therapy on your own. Most patients go home after 1 day and a sling is worn for about 4 weeks. After 4-6 weeks, you can usually start to actively move your shoulder on your own. Therapy progresses to include some strengthening exercises in addition to ongoing stretching. After about one month, many patients can manage activities, such as dressing themselves, eating, bathing, and other hygiene requirements. Recovery of strength and motion may take a year or more until the final end result is reached. Many patients regain sufficient motion and strength to participate in golf, tennis, and swimming. The final results depend greatly on how extensive the disease was to begin with.

Question: How successful is shoulder replacement surgery, and what are the risks of the surgery?

Answer: The most reliable and successful aspect of this type of surgery is pain relief. In a literature review of over 1,200 shoulder replacements, more than 90% of patients indicated that they had minimal or no pain when questioned at two years after surgery. Improvement of function is more variable since the amount of joint deformity and contracture of tissues around the joint determine the motion which you have after surgery. In patients with osteoarthritis, shoulder motion and function usually improve greatly after surgery, and many patients find that they are able to swing a golf club or tennis racquet quite effectively.

There are risks with shoulder replacement surgery though the incidence of problems is small. Risks include, problems with anesthesia, (generally rare, though patients should have a medical examination before surgery); infection (overall risk of less than 1%, and antibiotics are always given before, during, and after this surgery); fracture (there

is always a very small risk that the bones can fracture when fitting the artificial parts into the bones); nerve injury (very rare, but occasionally, a nerve may be stretched by retracting tissues to put in the artificial joint. When this occurs, it is usually temporary, similar to the sensation you feel when your hand goes to sleep from pressure on your ulnar “funny bone” nerve.)

Question: What is Rotator Cuff Arthropathy?

Answer: Rotator Cuff-Tear Arthropathy (CTA) is an arthritic condition that occurs when people have a large rotator cuff tear for an extended period of time. It is the combination of a massive rotator cuff tear and the collapse of the humeral head (ball). People with cuff-tear arthropathy may experience severe pain and very limited movement.



Question: What can be done for Rotator Cuff Arthropathy?

Answer: Partial Shoulder Replacement (Hemiarthroplasty): This operation is geared toward patients with an irreparable rotator cuff, who have disabling pain from abrasion of the humeral head against the arthritic socket and acromion bone. This surgery addresses the arthritis that has developed between the ball and the socket. Through an incision on the front of the shoulder, an artificial ball with a smooth round metal head is inserted onto a metal stem that fits in the canal of the humerus bone. This ball reduces the friction and abrasion against the arthritic socket and acromion from bone-on-bone contact. Unlike a total shoulder replacement, the socket is not replaced in cuff tear arthropathy because of a high risk of socket loosening.

Reverse Total Shoulder Replacement: The reverse prosthesis is also a possibility for patients with an irreparable rotator cuff tear. As the title describes, in this operation an artificial ball is placed against the socket and an artificial socket is used to replace the ball. This constrains the ball and socket so that dislocation does not occur due to the irreparable cuff tear. By reversing this relationship the deltoid muscle is able to elevate the arm in the absence of a rotator cuff. This operation requires that the socket has sufficient bone to place the prosthetic ball (Fig. 5).



FIG. 5

Question: How long does an artificial shoulder replacement last and are there any long-term problems to be concerned with?

Answer: Shoulder replacement surgery has been performed for over 25 years. Recently, there have been major improvements in the surgical technique and design of artificial joint prosthesis. The greatest concern is with loosening of the artificial parts over time. Studies have shown that the overall loosening rate is less than 1%, over 5-10 years. While it remains unknown how much of a problem loosening will be after 10, 20, and even 30 years, in most cases, we would expect the artificial part to last at least 10-20 years. If a revision surgery is necessary, these components are made with modular parts, which make replacement much easier than if the artificial part were a single device.

It is also important to remember that any minor surgical procedure, such as dental work, puts the artificial joint at risk of infection due to bacteria introduced into the blood stream during the procedure. Taking an antibiotic prior to any procedure or dental work will avoid this problem. You should contact your orthopaedic surgeon or let the dentist know about your artificial joint before having any procedure.

