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REAM-AND-RUN ARTHROPLASTY

The Ream and Run procedure can restore comfort and function to the arthritic shoulder. In this procedure the arthritic ball is replaced by a smooth metal ball fixed to the arm bone (humerus) by a stem that fits within it. The bone of the arthritic socket is reamed to the desired shape and the raw bone surface is allowed to heal while the patient gently exercises the shoulder. During the period of recovery a biological surface forms on this surface. This procedure avoids the possible risks and limitations associated with a plastic socket replacement. Success requires technical excellence of the surgery and a steadfast commitment by the patient to a specified exercise program until a desired range of motion can be maintained comfortably.

What Is Shoulder Arthritis?

Shoulder arthritis is a condition in which degeneration, injury, inflammation or previous surgery destroys the normally smooth cartilage on the ball (humeral head) and socket (glenoid).

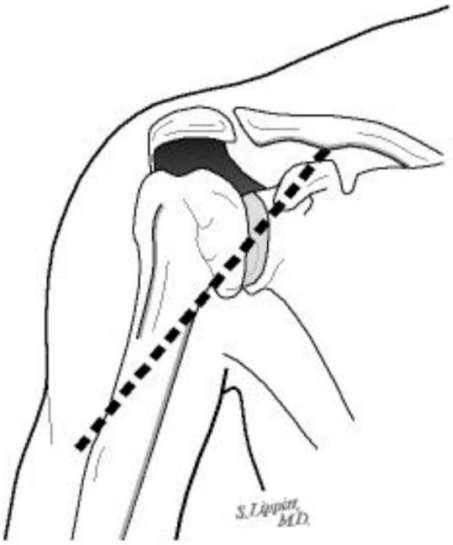
How Is Shoulder Arthritis Diagnosed?

Carefully standardized X-rays reveal the loss of the space between the humeral head and glenoid that is normally occupied by cartilage, leaving bone on bone contact. CT scans and MRI studies can be helpful in providing additional information about bone quality and the soft tissues surrounding the shoulder joint in preparation for surgery.

Normal Shoulder X-ray Shoulder with arthritis

How Is a Ream and Run arthroplasty Performed?

After a general or regional anesthetic, this procedure is performed through an incision between the deltoid and the pectoralis major muscles on the front of the shoulder. It includes release of adhesions and contractures and removal of bone spurs that may block range of motion. Our team of surgeons, anesthesiologists, and surgical assistants usually perform this procedure in less than two hours. In a Ream and Run, instead of implanting a plastic socket, the bone of the socket is shaped with a reamer so that a smooth concavity results. The arthritic surface of the ball is replaced with a metal ball with a stem that is press fit down the inside of the arm bone (humerus) so that only the smooth surface extends from the bone.



What Happens To The Raw Bone Surface Left After The Reaming Of The Glenoid?

Laboratory studies have shown that the reamed socket (glenoid) can heal over with a smooth fibrocartilagenous surface over time (at ~ 6 months)

What Are The Keys To Success Of A Ream and Run?

Success requires technical excellence of the surgery and a steadfast commitment by the patient to the exercise program until the desired range of motion can be achieved comfortably. Attaining and maintaining at least 150 degrees of forward elevation is critical to the success of this procedure. Patients point out that the recovery is progressive – often the shoulder continues to improve as long as two years after surgery.

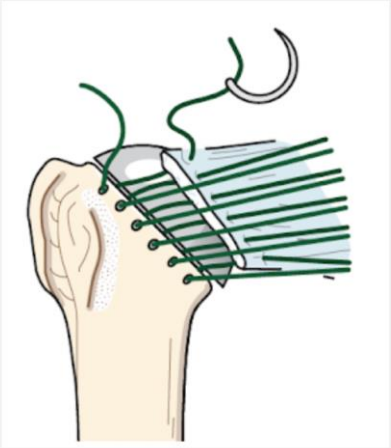
Who Should Consider A Ream And Run?

Surgery for shoulder arthritis should only be considered when the arthritis is limiting the quality of the patient's life and after a trial of physical therapy and mild analgesics to determine if non-operative management is sufficiently helpful. Severe arthritis is usually best managed by a joint replacement, either a total shoulder or a ream and run. The Ream and Run procedure is considered by those who are strongly motivated to put in substantial time and effort in the rehabilitation process to assure that proper healing occurs and who recognize that the pain relief and range of motion achieved with this procedure may not match that of a conventional total shoulder replacement. The ideal patient is healthy, active, and committed to work diligently to achieve a shoulder reconstruction that does not require plastic and bone cement.

What is the Rehabilitation Process After Surgery?

Arthritic shoulders are stiff. Although a major goal of the surgery is to relieve this stiffness by release of scar tissue, it may recur during the recovery process. In order for proper healing to occur, the patient must attain and maintain the 150 degree range of forward elevation achieved at surgery. Achieving this range of motion within the first few days of the procedure is critical to the success of this procedure. For the first 6 weeks of the recovery phase, the focus of rehabilitation is on maintaining this range of flexion. We avoid stretching in other directions so as to avoid disrupting the healing of the subscapularis tendon (see below). Thirty to sixty minutes of aerobic exercise a day (stair climber, treadmill, brisk walking, stationary bike, etc.) has proven a very helpful part of the recovery process.

Strengthening exercises are avoided during the first 6 weeks so as not to stress the subscapularis tendon repair before it heals back to the bone (see below). Later on, once the shoulder is comfortable and flexible, strengthening exercises and additional activities are started. Some patients prefer to carry out the rehabilitation program themselves. Others prefer to work with a physical therapist who understands the total shoulder rehabilitation process.



Once A Shoulder With A Ream and Run Has Successfully Completed The Rehabilitation Program, What Activities Are Permissible?

Once the shoulder has a nearly full range of motion, strength and comfort, we impose no limitation on the activities it can perform.

What Problems Can Complicate A Ream and Run And How Can They Be Avoided?

Like all surgeries, the total shoulder arthroplasty can be complicated by infection, nerve or blood vessel injury, fracture, instability, component loosening, and anesthetic complications. Tearing of the subscapularis tendon prior to its healing can occur with forceful external rotation of the shoulder or pushing/pulling in the first 6 weeks after surgery. The most common cause of failure in the short term is stiffness of the shoulder caused by failure to complete the rehabilitation exercises