

## What is a Reverse Total Shoulder Replacement?

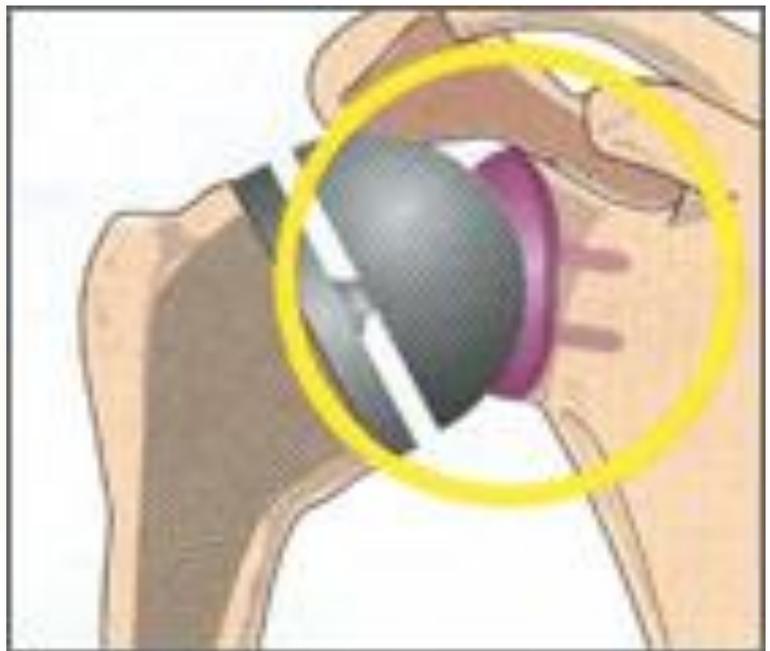
Total Shoulder Replacement is an effective surgical option to alleviate shoulder pain and restore arm and muscle function. Most patients having traditional shoulder replacement surgery suffer from severe arthritis, but have a healthy rotator cuff muscle group. The rotator cuff muscle group is comprised of four muscles that allow normal shoulder motion, strength and power.

Patients whom suffer from shoulder joint arthritis with a good rotator cuff are excellent candidates for the traditional Total Shoulder Replacement surgical technique. However, patients with severe shoulder arthritis coupled with a severe rotator cuff tear that is beyond repair are not good candidates for the traditional Total Shoulder Replacement surgical technique. The rotator cuff muscle group is needed to provide proper motion, stability and function with the Total Shoulder Replacement. Without the rotator cuff musculature, the traditional procedure will not produce beneficial gains in pain relief and/or function level.

However, there is an option for shoulder replacement surgery designed specifically for these cases. The technique is called "Reverse Total Shoulder Replacement". This technique recruits the deltoid muscle of the shoulder to provide function rather than the rotator cuff muscle group. For patients with good deltoid strength that are suffering from severe shoulder arthritis and non-repairable rotator cuff tears, this procedure is a good fit.

## Shoulder Anatomy

Our shoulders are primarily ball and socket joints where the top of the upper arm bone (humerus) is the ball and the shoulder blade (scapula) is the socket. In the standard Total Shoulder Replacement the ball is replaced with a metal ball component and a plastic socket replaces the socket in the shoulder blade. The new components are held in place with either acrylic bone cement or are coated with a surface onto which bone can grow.



Total Replacement

The Reverse Total Shoulder Replacement surgical procedure changes the ball into a socket in the upper arm bone and the shoulder blade changes from the socket to the ball.

The strength needed to provide shoulder motion and function is allowed to occur via the deltoid muscle when the ball and socket components are reversed. By reversing the components, surgeons are able to change the center of rotation which allows limited movement to occur using only the deltoid muscle rather than the muscles of the rotator cuff.



**Reverse Total Shoulder Replacement**

Picture courtesy of Peninsula Regional Medical Center:

<http://www.peninsula.org/prmc/communications/reverse.cfm>

### **Ideal Candidates**

Because the Federal Drug Administration approved its use only several years ago, experience with this type of replacement in the United States is limited. European surgeons, however, have been implanting this type of replacement for over ten years, and results in general have been excellent. Most of the recommendations that we provide, therefore, are based upon data generated in Europe. Early data suggests that this replacement does not last as long as a traditional total shoulder replacement. Studies performed in Europe indicate that the failure rate may increase between 7 and 10 years after surgery. For this reason, we tend to recommend it only for older, less active individuals, ideally near 70 years of age. In younger, more active individuals, the risk of early failure is higher. Nevertheless, certain younger individuals, depending upon the circumstances, may be appropriate for the reverse total shoulder replacement.

The longevity of the replacement is directly related to how "hard" the shoulder is used post-operatively. The intent with replacement is to provide a shoulder that is capable of performing standard activities of daily living with minimal discomfort. With this type of replacement, return to sports, manual labor and other high-demand activities is not the goal.

### **After the Surgery**

For the first four weeks after surgery it is important to keep your shoulder relatively immobilized in a sling that is provided at the time of the operation. After four weeks, your doctor will write therapy orders for you to see a physical therapist who will instruct you in a specific Reverse Prosthesis physical therapy protocol which will start with Codman or pendulum exercises. Most patients report good pain relief by 3 - 6 weeks post-operatively, and return of good shoulder function by 3 - 6 months post-operatively.