Sports Activity After Shoulder Replacement:
A Discussion with Columbia Orthopedics Sports Medicine Specialists

Interviewer:

Christopher S. Ahmad, MD
is Chief of Sport Medicine at Columbia University’s Department of Orthopedic Surgery. He is also Head Team Physician for the New York Yankees, the Rockland Boulders, the New York City Football Club of Major League Soccer, and several high schools throughout Manhattan and New Jersey. Additionally, Dr. Ahmad is a member of Major League Baseball’s Team Physician Association and an Advisor on the MLB’s Pitch Smart Program.

Interviewee:

Shoulder joint replacement surgery is one of the most successful procedures to improve quality of life, relieve pain, improve function, preserve an independent lifestyle, and contribute to psychological and social well-being. Given the good track record of this procedure, many patients undergoing shoulder replacement expect to participate in athletic activities after their replacement. Athletic activity increases the forces across the shoulder replacement that may increase socket wear, loosen the bone-implant fixation, and reduce the longevity of the replacement. However, there is little evidence to guide patients on the appropriate activity level after shoulder replacement.

Dr. Christopher Ahmad sat down with Dr. Charles Jobin, an orthopedic shoulder & elbow surgeon at NewYork-Presbyterian/Columbia University Medical Center, to discuss sports activity after shoulder replacement.

Ahmad: Do your patients have high expectations regarding their ability to return to sports?

Jobin: Many of my adult athletes with shoulder arthritis cannot perform at their desired level prior to surgery. They have managed their symptoms by altering their swing, throw, or workout routine.

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Once the pain, loss of motion, and poor physical performance begins affecting every day tasks they often are ready for orthopedic care. Despite the steady functional decline that is common with shoulder arthritis, young adult athletes have very high expectations to return to their peak level of performance after surgery.

**Ahmad: What are your general recommendations for participation in sports after shoulder joint replacement?**

**Jobin:** I counsel most all of my patients who undergo shoulder joint replacement that returning to sports is a realistic goal after surgery, but that the real benefits of surgery are the reliable relief of pain and improvement in daily activities. I take a common-sense approach and think it is reasonable to perform recreational activities like tennis, golf, fishing, swimming, light weight-lifting, but I discourage ultra-high impact activities like boxing, shotgun shooting, or heavy power-lifting. My experience is, and most studies demonstrate, that a return to sporting activities is possible in most patients after shoulder replacement but that general health and activity level before surgery are the strongest predictors of a successful return. In other words, patients who exercise routinely before surgery commonly return to high-level sports after shoulder replacement surgery.

**Ahmad: Does sports participation after shoulder replacement affect the longevity of the replacement?**

**Jobin:** While no studies have demonstrated cause and effect, it is generally understood that excessive or ultra-high impact activities will jeopardize the longevity of the shoulder replacement by loosening and wearing thin the socket component. It is not known how much activity is too much but I typically encourage a return to moderate sports and light-weights with high-repetition, but I discourage high-force and high-impact activities like water skiing, contact sports, or powerlifting.

**Ahmad: Do you use specialized surgical techniques for young active athletes undergoing shoulder replacement?**

**Jobin:** I tailor each shoulder joint replacement to the individual patient. Younger adult athletes who need shoulder replacement benefit from implants that resurface only the diseased area of shoulder joint cartilage, often this includes a partial replacement of the ball. (Image 1) If the shoulder joint is completely diseased then implants are used that minimize unnecessary bone removal with short stems (Image 2). Ideal shoulder implants for athletes allow bone ingrowth into the metal for improved durability without the use of cement, and preservation of the socket bone to withstand the increased forces of sport activities. These younger adults athletes also benefit from robust repair techniques of the muscles and tendons that are entered during the replacement surgery.

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**Image 1: Partial Resurfacing of Humeral Head Focal Cartilage Loss**

**Image 2: Total Shoulder Replacement with Bone Preserving Short Stem Implant**
Ahmad: Please provide an example of a patient who returned to high level sports after shoulder replacement?

Jobin: I have numerous patients who returned to sporting activities, but one comes to mind who returned to mixed martial arts. He was a young man with terrible shoulder arthritis and 3 months after replacement surgery he was back training, lifting light weights, and had regained his flexibility. No longer was he crippled by pain after workouts or sparring, his stiffness went away, and he was back on the martial arts mat competing.

Ahmad: What research are you doing to improve shoulder replacements in athletes?

Jobin: I am currently looking into factors that cause early socket component loosening which is especially important to the younger adult athlete who is concerned about shoulder replacement durability. Another one of my studies looks into the success of bone preserving short stem shoulder implants. Bone preservation is likely important in the younger patient who may require revision surgery decades in the future. Finally I am studying the success of reconstructing the anatomic relationships of the muscles, tendons, and joint biomechanics to optimize function after shoulder replacement. I utilize patient specific templating software to ensure that the replacement can and will be properly placed during surgery. (IMAGE 3)

Image 3: Modeling Shoulder Replacement Prior to Surgery to Ensure Proper Fit

Ahmad: What can be done for shoulder replacement that has worn out from years of use?

Jobin: Fixing a failed shoulder replacement is a complex problem. Often times the replacement components have loosened or the rotator cuff has torn leading to shoulder pain and dysfunction. These problems usually require another surgery for re-implanting new components or changing the type of replacement to a Reverse Replacement to accommodate the irreparably torn rotator cuff. I have extensive
experience in revision shoulder replacement for these exact problems. (IMAGE 4) While the results of a second or third shoulder replacement are never as good as the first shoulder replacement, my patients do exceedingly well and are able to get back to the activities that they enjoy. Many of my patients who require a second replacement for a failed initial replacement are the most thankful and appreciative of the ability to get back to their activities.

Image 4: Revision Shoulder Replacement for Failed Initial Replacement.