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Shoulder Replacement Surgery

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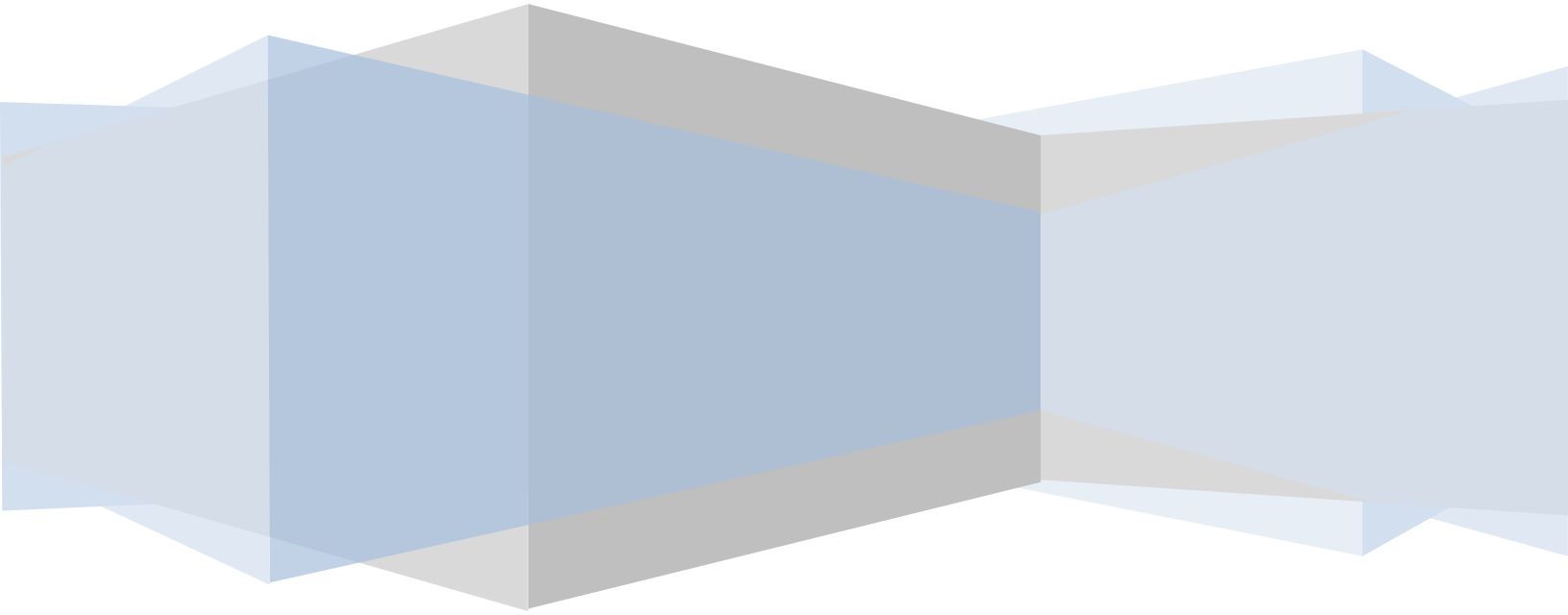
With special thanks to Dr. Joseph Burns from Southern California Orthopedic Institute.



SHOULDER REPLACEMENT SURGERY

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Introduction

Many people know someone with an artificial knee or hip joint. Less common, but just as successful in relieving joint pain, is a shoulder replacement (arthroplasty). This procedure may be recommended if arthritis or degenerative joint disease makes your shoulder stiff and painful or if the upper arm bone is fractured so badly that tissue death may result.

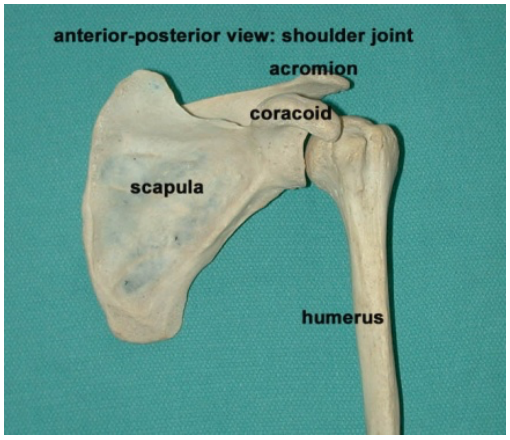
This booklet will help provide answers to the questions you may have about a shoulder replacement (arthroplasty). It contains information about what to expect before, during and after your hospitalization. You will learn about the hospital routines, the people who will assist in your recovery, and the changes in your lifestyle.

The nursing staff, physicians and other healthcare team members are available to answer your questions or concerns. There is a Word List on page 21 that explains terms that may be new to you.

The Shoulder Joint

Joints are areas where bones connect and motion occurs. The shoulder joint is one of the most complex joints in the body. It is a ball and socket joint with greater range of motion than any other joint. Most shoulder movement occurs where the head or top of the humerus (ball) fits into the glenoid cavity of the scapula (socket).

Three joints form your shoulder, working in unison, they allow you to move your arm. The largest joint and the one most often affected by arthritis is the glenohumeral joint. Most of your shoulder movement occurs here. When you have arthritis a significant amount of stiffness leads to a restricted motion and much pain with attempted motion.



How Arthritis Affects Your Shoulder

Arthritis is a form of joint disorder that involves inflammation of one or more joints. There are over 100 different forms of arthritis. Various types of arthritis can affect your Shoulder. The most common types Include:

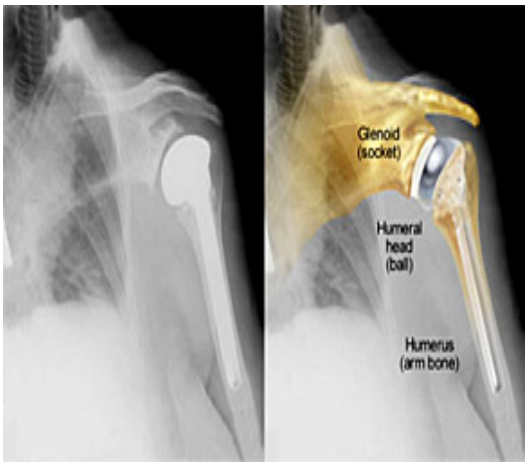
- **Osteoarthritis:** Osteoarthritis usually affects the shoulder of the arm you use the most. It causes severe pain and sometimes causes extreme loss of motion in your shoulder.
- **Rheumatoid arthritis**: Rheumatoid arthritis isn't as common in the shoulder as it is in other large joints, such as your knees and hips. But when it does occur, rheumatoid arthritis often causes pain and weakness in both shoulders.
- **Rotator cuff tears and arthritis:** Sometimes arthritis damages your shoulder joint enough to cause tears in your rotator cuff, the muscles that surround your shoulder joint and help you move your arm. This is most common with rheumatoid arthritis, but occurs in other types of arthritis as well. Rotator cuff tears that go unrepaired can also lead to arthritis.
- **Other types of arthritis:** If you have other types of arthritis in your shoulder, such as post-traumatic arthritis and avascular necrosis, surgery may help improve pain and loss of motion.

Below, you can see how the arthritic shoulder differs from the normal. The head is not round and there is no space between the humerus (ball) and the glenoid (socket).

In the arthritic shoulder there is very little, if any, space between the glenoid and humerus and in some cases very large bone spurs develop leading to a decreased motion.

Indications for Surgery

There are several indications for shoulder replacement, but chronic (ongoing) shoulder pain or loss of movement is the most common reasons for shoulder replacement surgery (arthroplasty). If you've tried medications and exercises for your shoulder and haven't had much luck, you're probably thinking about surgery. Although joint replacement isn't the only surgical procedure available, it is the most common one for shoulder arthritis.



Total joint replacement can increase the range of motion in your shoulder, making it easier to move your arm. It also often improves strength and reduces pain in your shoulder. In most situations, the range of motion can be returned to approximately 75% of normal. Most importantly (and this is the main reason to have the surgery) a significant amount of your pain will be eliminated by the surgery.

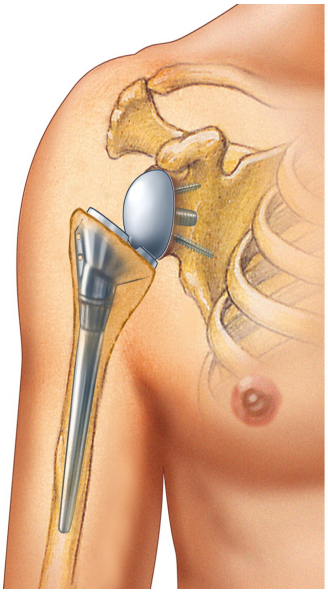
Total Shoulder Replacement Surgery

You have decided to proceed with a total shoulder replacement. During surgery, the surgeon and assistants will remove damaged parts of your shoulder and replace them with artificial parts or components called prostheses. Your surgeon will choose the prosthetic parts that are best for you. All of the devices that are used in the shoulder are made of metal and a durable plastic material for the glenoid portion. The diagrams and x-rays to the right show what the device looks like and where it will be located in your shoulder.

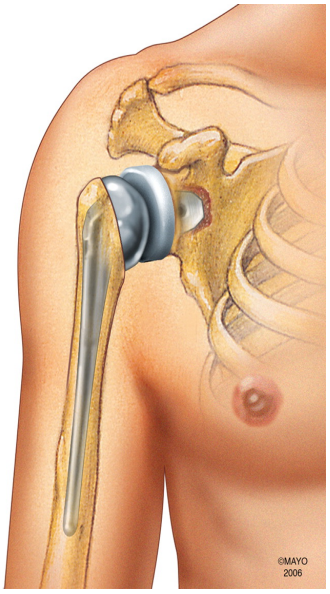
The ultimate question most people have is, "how long does it last?" This is a great question, but unfortunately it varies from person to person. In most of the studies that are available that have followed patients over a number of years, 85% of the shoulders are functioning well at an average of 12-15 years. However, this is just an average and individual results vary depending on your age and activity level. In general, the younger and more active you are, the more likely the device will potentially have earlier problems as a result of the mileage that it experiences.

Reverse Total Shoulder

In some cases, there is significant arthritis in the joint, but there is also a tear of the rotator cuff that is too large to repair. In those cases, a different type of replacement is necessary. This is called a Reverse Replacement. The reason it is called a "reverse" is because the ball and socket are inverted from the normal. (See figures to the right). The reason this device is necessary is because the muscles that rotate the shoulder bone (the rotator cuff) are no longer connected. By changing the orientation of the ball and socket, the deltoid muscle is now able to move the shoulder and improve your function.



Reverse Total Shoulder



Standard Total Shoulder

While there is great potential for improvement with this device, there are also more potential problems. The device is more constraining to the joint so that there are more stresses experienced by your remaining normal bone. What that means is that the device can fail at a higher rate than regular total shoulder replacement. In general, these devices are reserved for older patients (older than 70 years of age), although occasionally a younger patient is a candidate as a result of a severe combination of arthritis and a rotator cuff tear that is irreparable. There are other reasons to need a reverse shoulder replacement as well including severe fractures of the shoulder.

Preparing Yourself and Your Home Before Surgery

Recovery is a gradual process and will take time after surgery. Plan for your return home before you enter the hospital. Most patients return home the day after surgery.

- Ask your spouse, children or friends if they can assist you with shoulder exercises for after leaving the hospital.
- Before surgery, it may be helpful to practice daily activities not using your arm that will be affected by surgery.

If you are interested in assistance from a home healthcare agency or public health nurse it may be helpful to select the agency Before surgery.
Most of the time, your insurance will cover the cost of home health care for a few days (7-10) after surgery. It can be arranged that you have a nursing assistant come to your house and help with day-to-day things you may need as well as help with physical therapy exercises.

- Anticipate temporary changes to your activity level.
- Plan to leave your home clean and in order.
- To prevent falling, remove throw rugs and excess clutter from traffic paths.
- Place a sturdy armchair in your living room near a table so that magazines, hobby supplies, remote, telephone (cordless is good) or other items you want can be reached.
- Rearrange your kitchen so that often-used utensils are easily accessed. Place them at a height so that you do not need to bend or reach to get them.
- Prepare some meals in advance and freeze them.
- If possible, ask your mail carrier to deliver to your door.

What To Bring To The Hospital

- Remember to bring your sling!
- Leave your valuables at home. Any rings shoulder be removed, especially from the side where the surgery will take place.
- Do not bring your medicines that you usually take. It is important to have a list with the appropriate dosages. This will be requested from you at the time of registration at the hospital.
- Comfortable, non-skid walking or athletic shoes. Elastic laces are available, eliminating the need to tie your shoes. Athletic shoes are available with hook and loop fasteners. Another option is slip-on shoes or slippers.
- A warm, knee-length bathrobe that opens in front.
- Clothes that are soft and loose fitting. Women can bring pants with elastic waistbands and sleeveless tops to make things easier. For men, elastic pants and loose shirts with/without buttons are easiest.

Preparation for Surgery

You and your surgeon will decide when you should be admitted to the hospital. It is important to follow these instructions:

- You should stop all medicines that have a potential to cause bleeding days before surgery. The most common medicines that fall into this category include: Aspirin, antinflammatories (such as Advil, Motrin, Naprosyn) and Coumadin.
- Supplements: In general, you should discontinue all herbal and over-the-counter supplements one week before surgery. You may continue multivitamins, but nothing else. Some supplements affect bleeding tendencies and may cause problems with wound healing.
- Before surgery, do not eat or drink anything after midnight. Your stomach must be empty before you receive the anesthetic. This helps prevent nausea, vomiting and other complications during and after anesthesia.
- Take a shower or bath the evening before surgery. This will help decrease the amount of bacteria on your skin.
- A good night's rest is important before surgery.
- Do not wear makeup the morning of surgery.
- Take only the medication your physician or nurse tells you to take on the morning of your surgery. (with a small sip of water)

Morning of Surgery

- After admission, the nursing staff will take your temperature, pulse, respiration rate and blood pressure.
- Anti-embolism or support stockings may be provided to promote circulation to the legs.
- An intravenous (IV) line will be started before surgery.
- You will receive a dose of antibiotics before surgery.

Going to Surgery

- You will be asked to empty your bladder.
- Remove all jewelry (including rings), dentures, contact lenses and nail polish.
- You may wear your glasses/hearing aid if necessary temporarily.
- Relatives and friends will be given instructions on where to wait.
- A surgical orderly will take you to the preoperative waiting area.
- The affected arm and shoulder may be scrubbed and shaved to prepare for surgery.
- The anesthesiologist will discuss the type of anesthesia to be used.

What To Expect After Surgery

After surgery, you will be moved to the Post-Anesthesia Care Unit (PACU). Your relative will be told when you are in the PACU. One of the most important functions of the PACU is to manage pain and nausea as you awaken from anesthesia. Nurses will monitor your vital signs, alertness, pain or comfort levels and need for medications.

In the PACU, you may notice a variety of equipment. The room is brightly lit and as you awaken the noises may seem louder than usual. If you feel cold, blankets are available. It is normal to receive oxygen through a facemask.

The average length of stay in the PACU is one to two hours. If there is an extended delay, your relative may check with the nursing staff. When the anesthesiologist decides you are ready to leave the PACU, a surgical nurse or a surgical orderly will take you back to your room.

The First 24 Hours

After you return to your room, your blood pressure, pulse, color, warmth movement and sensation will be checked frequently. The nurse also will check the bandage on your shoulder. Report any soreness, numbness or tingling in your arm or fingers to the nurse.

You may be given fluids intravenously (IV) for about one to two days after surgery. Tell your nurse if you have any pain or notice redness around the IV site.

Once you can tolerate liquids and your nurse can hear bowel sounds, you will be able to eat solid foods.

You will be given an antibiotic through your IV for about 24 hours. Antibiotics are given to prevent infection.

One small plastic suction drainage tube may be used to draw excess blood and fluid from the area around your incision. The drainage tube usually is removed 24 to 48 hrs after surgery IF used at all.

Oxygen may be given through a face mask or nasal prongs to soothe your throat, to help you breathe easier and to loosen secretions in your lungs. The oxygen equipment can be removed for periods of time.

Coughing and Deep Breathing

You should be encouraged to cough and deep breathe frequently for the first few days after surgery. To help you cough, take slow, deep breaths. Breathe in through your nose and concentrate on fully expanding your chest. Breathe out through your mouth and concentrate on feeling your chest sink downward and inward. Then, take a second breath in the same manner. Now take a third breath. This time hold your breath for a moment. Then cough vigorously. As you cough, concentrate on forcing all the air out of your chest. Repeat this exercise two more times.

Circulation Aids

Circulation aids promote the return of blood to the heart and decrease your chance of developing a blood clot while you are less active after surgery.

Support stockings (TEDs) are one type of circulation aid. If prescribed, wear them to surgery and throughout your hospital stay. Your stockings will be removed on a regular basis to air your skin.

Exercise

Exercising your legs after surgery is one way to promote blood flow and decrease your chance of developing a blood clot.
To exercise your feet:

- Push your toes toward the end of the bed.
- Pull your toes up toward the head of the bed.
- Relax.
- Repeat 10 times every hour you are awake.

To exercise your legs:

- Lie on your back.
- Tighten the muscle on top of your thigh by pressing your knee down towards the bed.
- Hold for five seconds.
- Relax.
- Repeat 10 times on each leg every hour you are awake.

Sling Questions

Your arm will be placed in a sling following surgery (see below). You may be given the sling at your preoperative visit, in which case you should bring it with you to surgery.

Following surgery, you can take the sling off while you are in bed and sitting in your room. NO active shoulder motion is allowed at this stage. Avoid rotating your hand away from your body. When sitting or lying down, it is important to keep a small pillow or folded blanket under your elbow and behind your arm to prevent the arm from falling back and straining the area of your operation. It is encouraged that you wear your sling while you are walking around or in an environment where your arm may be placed at risk, such as in crowded places until your doctor allows you remove it.

You should **always** wear the sling to bed until instructed. Your surgeon will clear you from the sling when appropriate and comfortable to go without it. However, some patients find that their arm becomes slightly more painful and/or tired towards the end of the day for a couple of weeks after that. In these situations, the sling should still be used during those times, but for short portions of the day.

Pain

It is normal to feel pain or discomfort after surgery. Tell the nurse if you are be having pain or discomfort. When you have pain, your nurse will ask you to rate your pain on a scale of zero to ten (0=no pain, 10=worst pain imaginable). Your pain may not be totally relieved. However, pain medication can be given to make you more comfortable. Tell your nurse if you experience any other discomfort. If you suspect the pain medication is causing any nausea or other symptoms, let your nurse know. There are many different medicines that are used for pain control and these are all available to you while you are in the hospital.

Ice will also be applied to help reduce swelling and discomfort around your incision. Tell your nurse if your arm gets too cold or if there are any changes in the sensation of your extremity.

Ice Therapy

In some cases, your doctor will prescribe a CryoCuff device that circulates ice water through a mechanical device that is attached to a shoulder-specific wrap. This will depend on whether or not your insurance will cover the cost of the device. The specific devices vary and you will receive a different instruction manual that is specific to your device directly from the company that provides the machine.

If you do not receive a device, please use ice or pre-made ice packs to help with post-operative pain and swelling.

If you use the device, you can certainly keep it on your shoulder as much as is comfortable, especially for the first week following surgery. Good times to apply the device include any time the pain begins to increase, following your daily ice routine and before bedtime to limit some of the pain that often occurs while in bed.

Cold Therapy Unit (not to be used with wrist strap- use provided sling for this)

Activity While You Are in the Hospital

While you are in the hospital, healthcare providers will help you perform self-care activities.

Self-care allows you to remain as responsible and as independent as possible. While in the hospital, you will learn how to care for yourself before you return home. Your participation in physical therapy is vital to increase your independence.

You should be able to get out of bed and into a chair the day after surgery. It is encouraged that you get out of bed at least for all of your meals. The nurse or caregiver will help you out of bed. Initially, a trapeze may be used as an assistive device to help you move in and out of bed. Eventually you will be taught how to get in and out of bed by yourself. You will be able to walk to the bathroom with assistance the day after surgery.

Your health care team members will:

- Answer your questions.
- Follow your special healthcare plan.
- Encourage your participation in your hospital care.
- Show your family ways to take part in your care.
- This may include learning dressing changes, incision care, applying stockings and using assistive devices correctly.
- Teach you ways to provide self-care.
- Help you plan for the day you leave the hospital.
- Assist with care when you are unable to do it yourself.

Physical Therapy

After surgery, you will begin your shoulder exercise program that was will be prescribed for you. A formal physical therapy program should start within the first 10 days of the surgical procedure. You will be given a prescription for therapy at your office appointment so that you can set up your rehabilitation.

At your first appointment a physical therapist will examine you. Physical therapists are trained professionals in rehabilitation. With direction from your surgeon, they will determine an exercise program for you.

To increase your comfort during exercise, you may want to talk with your nurse or therapist about taking pain medication 30 to 45 minutes prior to your physical therapy sessions. Your physical therapy program will include "passive" and "active" exercises for your affected arm. Your therapist will gently perform "passive" exercises with your shoulder. In these exercises you relax and the therapist carries the weight of the arm through various movements. He or she also will teach you "active" exercises (those you can do by yourself) for your elbow, wrist and hand. NO "active" shoulder yet. Your therapist will check your daily progress and will keep your surgeon informed.

If possible, a member of your family or a friend should accompany you to some physical therapy sessions to learn the exercises you should do at home. Your friend or family member will practice these exercises at your sessions, under the supervision of the physical therapist. The therapist will give you and your relative or friend verbal and written instructions on how to assist you with these exercises.

Discharge Instructions: In addition to below, **see detailed instruction** sheet provided by Dr. Ayzenberg at the time of discharge from the hospital.

What if I need help at home?

Your healthcare team will help you and your family plan your home care. If needed, the nurse may suggest resources to help you and your family after leaving the hospital.

Wound Care

Your wound care will have sterile dressing placed at the time of surgery. Most of the time the dressing is left in place for three days. Since most patients go home before then, you can take the dressing off on day three. There may be small paper strips that are adherent to your skin once the dressing is removed. These should stay in place until they fall off on their own. Most of the time this occurs within ten days to two weeks from surgery. When the wound is typically dry you are now able to shower and wet the wound without problems. You should not submerge the wound either in bath or pool until the strips fall off.

It is not unusual to experience a fair amount of bruising and discoloration that can extend down the arm and hand and occasionally into the chest and breast area. This is normal and will go away over a period of ten days to two weeks.

Please note: your dressing may be different than what is described above (see discharge sheet)

Activity at Home

Everyone's progress is different after this surgery. Listed are guidelines to follow. Follow all specific instructions from your surgeon, nurse and physical therapists. The following guidelines may be of benefit:

The following are the basic guidelines and restrictions:

- Use your sling as directed. It will provide stability for the shoulder and allow the shoulder and the soft tissues to heal and regain normal strength.
- Use your hand for gentle activities directly in front of you. You may bend the elbow, wrist and hand but be careful with shoulder motion. In general, tabletop activities such as eating, writing and computer work are alright to do.
- No lifting or holding weight until given permission by the surgeon. No heavy housework such as vacuuming. Some housework can be done with the unaffected arm. At the appropriate follow-up appointment your surgeon may permit you to start lifting up to five pounds mid-rehab.
- No heavy lifting (>15lb for TSA. >25lb for RTSA) for the rest of your life.
- Increase your activity only as your surgeon has directed. It may take four months to one year before you regain optimum function and strength of your arm.
- Do not put weight on your hand, arm or shoulder by pushing, pulling or leaning. Avoid rotating your hand away from your body, until allowed by your surgeon.

Exercises

In most cases, shoulder exercises will be taught to you by your surgeon and/or your physical therapist while you are in the hospital. These should become a regular routine in your day, once you are at home. In general, performing these simple exercises should be done three times per day for five minutes. They should start the day after surgery. These help you maintain the function of the affected joint as well as in unaffected joints. The exercises should not be painful in any way. If you begin to develop increasing pain following this simple routine, rest for the rest of the day and restart the exercises the next day. You will not lose any ground by resting and resuming exercises when you are pain-free.

Driving

You should not drive until you have completely stopped using the postoperative narcotic medications. If there are any questions, you should wait until you see the surgeon at your postoperative visit. Check your automotive insurance company's instructions for restrictions following surgery of a limb.

Sexual Activity

You may resume sexual activity after your follow-up appointments, depending on the extent of your surgery. During sexual activity, it is important that your shoulder does not rotate or twist. Keep your arm at your side. It is suggested that you lie on your back. Feel free to discuss sexual activity with your surgeon, nurse or therapist.

Diet

Follow an eating plan to achieve and maintain a healthy body weight for the rest of your life. Maintaining a healthy weight will help avoid straining your new joint. Eat a variety of foods to maintain a nutritionally balanced diet. This means including foods from all food groups on a daily basis. Wound healing depends on a well-balanced diet.
Constipation can occur as a side effect of pain medication and as a result of decreased activity after surgery. Eat high fiber foods such as fresh fruits and vegetables and whole grains to help prevent constipation. Drink six to eight glasses of water daily unless instructed otherwise. Ask a dietitian your general nutrition questions. They may provide instructions for a special diet if recommended by your surgeon.

Pain Control

You may experience shoulder discomfort for several weeks or more after surgery. Medication will be prescribed for the short term that will include a narcotic medication such as codeine or hydrocodone. Use this medication as instructed to help you complete your exercises effectively and increase your activity. As soon as you can, decrease your prescribed pain medication use. Do not take aspirin or ibuprofen if you take an anti-coagulant (blood thinner).
If you choose to use acetaminophen (Tylenol) do not exceed 12 regular or eight extra-strength pills in a 24 hr period.

Ice, not heat!

According to your physician's instructions, for six weeks after surgery:

Apply ice to your shoulder before and after exercise to reduce pain and swelling. Do not put a heating pad on the joint as heat will increase swelling in the joint, especially early weeks after surgery.

Wound Care

Your wound has stitches that are deep under your skin and may not need to be removed. The paper strips or mesh solidly attached to your skin should stay in place for about ten days. After 7 days, no dressing is required unless your wound shows signs of drainage. If you are more comfortable with a dressing it is fine to cover it with a sterile dressing. After the incision appears completely healed, you can begin immersing your wound in water (4+weeks). Prior, you may shower, but not take a bath unless your shoulder stays out of the water. Avoid prolonged sun exposure. Too much sun may cause permanent irregular pigmentation changes to the incision.

Bathing

At least 2 days after surgery
You may shower and wet the wound.

Pat the incision dry after washing it with water or after you shower.
Make sure to wash under your **armpit** and dry it thoroughly. Place dry padding or a washcloth in your armpit to help absorb moisture.
Use only roll-on or stick deodorants. Avoid sprays, powders and perfumes that might hinder the healing of your incision.

Alert Future Physicians and Dentists

You must always protect this new part of body from infection. Expect to take an antibiotic before and after any invasive procedure to help protect the new joint from the possibility of infection.
Always notify your physician and dentist that you have a shoulder replacement joint. If you are going to have any of the following procedures, you may need to take an antibiotic:

- Dental work
- Urinary catheterization
- Surgery of any kind
- Proctoscopy
- Colonscopy
- Any procedure where an instrument or tube is inserted into your body.

Recommended Antibiotics For Dental Procedures: Amoxicillin 2.0 g orally 1 hour before the procedure.
For Genitourinary and Gastrointestinal Procedures: Amoxicillin 2.0 g orally 1 hour prior to procedure.

Allergic to penicillin:

You can take Clindamycin 600 mg orally 1 hour before the procedure.

When To Contact The Surgeon

- Drainage or odor from the incision.
- Fever (temperature above 100.4 degrees F or 38 degrees C for two days).
- Increased pain unrelieved with pain medication.
- Increased swelling at the incision
- A bulge that can be felt at the shoulder.
- Arm or shoulder pain, tenderness or swelling.
- Numbness or tingling of the arm.
- Change in arm length.
- Change in motion ability.
- A urinary tract infection, bronchitis or any other type of infection.

Follow –up Appointments

Your surgeon will have you return for a follow-up examination to be sure your shoulder has healed properly. This is usually within two weeks of your surgery. An appointment can be set for you at the time of your preoperative visit.

At the time of the appointment, x-rays will be obtained to show you your new joint!

Following the initial appointment you will need to be seen approximately 6 weeks postoperatively, then at 12 weeks postoperatively. If everything is going well at that point, then you will be asked to follow-up on a yearly basis to obtain an x-ray and make sure all of the components are working properly.

Return to Work

The decision to return to work is made depending on your job requirements. In most occupations that involve office and/or computer work, you may be able to return within seven days. The return at this point will not be normal and you may not be able to work all day, but you will certainly be able to be productive. Unrestricted (except weight limit) abilities with regards to office work will occur by about 6 weeks.

If your job requires significant manual labor and lifting, the return will not occur completely until approximately three months following surgery. Even after three months, there may be significant restrictions applied, including permanent restrictions of 15-25lb maximum lifting.

Return to Sports

The first six weeks following surgery should be reserved for restoring your range of motion under the guidance of a physical therapist. You may resume running at 6 weeks if you are comfortable but in some cases it will be uncomfortable to run for several more weeks. The use of a stationary bicycle is appropriate in the first few days. Return to light weight lifting and swimming should be delayed until six weeks postoperatively, at which time your range of motion will allow these activities.

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More intense sports and activities are delayed until 4-6 months postoperatively. This includes sports such as golf, tennis, waterskiing etc. Essentially any sport requiring higher impact to the shoulder should be delayed until this time. Keep in mind higher risk activities may risk Injury to your new shoulder just as they may Injure a normal shoulder. Also, keep in mind the more heavy-duty the activity, the earlier the shoulder may wear with time.

Word List

Active range of motion – Joint movement occurring with active muscle contraction

Anesthesia – Partial or complete loss of sensation or consciousness

Anesthesiologist – A physician who specializes in administering anesthesia

Antibiotic – A medication that prevents growth of or kills bacteria

Anti-embolism – To help prevent a blood clot

Arthroplasty – Surgical formation or restoration of a joint

Sling – Cloth support to carry the weight of the arm

Glenoid cavity – The socket into which the head of the humerus fits to enable movement of the shoulder

Humerus – The long bone of the upper arm

Intravenous – Into the vein

Passive range of motion – Joint movement without muscle contraction

Prosthesis – An artificial substitute for a missing body part

Rehabilitation – Treatment and education that leads to regaining function

Scapula – The flat, triangular bone in the back of the shoulder commonly Known as the shoulder blade

Treatments Available at Our Practice:

- Total Shoulder Replacement
- Reverse Total Shoulder Replacement
- Partial Shoulder Replacement
- Shoulder Resurfacing

- 3D Patient-Specific instrumentation and guided surgery.

Please visit our website at **www.markayzenberg.com** for more information.

MARK AYZENBERG, MD, FAAOS

Fellowship Trained in Sports Medicine, Arthroscopy and Reconstructive Surgery

Board-Certified

"My priority is to return my patients as quickly as possible to activities that fulfill them in their daily lives, using the least invasive techniques available, the highest quality of surgery, and a supportive bedside manner."

Undergraduate
University of Pennsylvania, Philadelphia, PA
Bachelor of Arts, *cum laude with honors*, Biology

Medical School
Geisinger Commonwealth School of Medicine, Scranton, PA
Doctor of Medicine, *Highest Honors, First in Class (Academic Marks)*

Residency
Einstein Healthcare Network in Philadelphia, PA

Fellowship
Southern California Orthopedic Institute (SCOI), Sports, Arthroscopy and Reconstructive Surgery

Mark Ayzenberg, MD, FAAOS is a Board-Certified Orthopaedic Surgeon specializing in Sports Medicine, Arthroscopy, and Reconstructive Surgery. His practice focuses on minimally invasive (arthroscopic "key- hole") surgery of the shoulder, knee, hip, and ankle, as well as total joint replacements of the shoulder. He also routinely treats general orthopaedic trauma, including complex dislocations and fractures.

Dr. Ayzenberg is a specialist in all shoulder arthroscopic procedures, including rotator cuff repair, instability surgery and complex reconstructive surgery such as superior capsular reconstruction and dermal allograft reconstruction. He is an expert in joint-sparing surgery to avoid shoulder replacements whenever possible. In patients with advanced shoulder arthritis that may not

be improved with arthroscopic surgery, Dr. Ayzenberg utilizes patient-specific technology and computer planning guidance to perform a shoulder replacement tailored to each patient's unique anatomy and needs.

Dr. Ayzenberg also treats knee injuries, such as ACL (anterior cruciate ligament) and other ligamentous injuries, and performs meniscus surgery and cartilage restoration. For all of these surgeries, he employs minimally invasive arthroscopic surgery as well, whenever possible. When a patient has advanced arthritis that cannot be treated with arthroscopy, Dr. Ayzenberg provides options to avoid joint replacement whenever possible, including utilization of platelet-rich-plasma (PRP), and other orthobiologics.

For patients with conditions of the hip and ankle that can be treated with a minimally invasive approach, Dr. Ayzenberg specializes in hip arthroscopy for femoroacetabular impingement and labral tears of the hip, as well as ankle arthroscopy for cartilage restoration, instability and impingement of the ankle.

Dr. Ayzenberg graduated cum laude with a Bachelor of Arts degree in Biology from the University of Pennsylvania in Philadelphia. He then completed medical school at Geisinger Commonwealth School of Medicine in Scranton, PA as a Doctor of Medicine and graduated with highest honors, at the top of the class.

Dr. Ayzenberg trained at the prestigious Sports, Arthroscopy and Reconstructive Surgery fellowship at the Southern California Orthopedic Institute (SCOI). Prior to his fellowship, Ayzenberg completed his residency at the Einstein Healthcare Network in Philadelphia, where he served as Academic Chief Resident. He has an active interest in advancing the field of Sports Orthopedic Surgery and has dozens of scientific publications, several of which have been presented at national orthopaedic meetings.

Dr. Ayzenberg is experienced in the care of professional athletes, having served as a team physician for the Philadelphia Wings Professional Lacrosse Team.

Dr. Ayzenberg holds medical licenses in Pennsylvania and New Jersey. He is fluent in Russian and can speak basic Spanish.

Advances in Minimally Invasive Orthopaedic Surgery

Orthopaedic Surgery has been advancing rapidly over the last few decades. Arguably, the fastest evolving field is that of Arthroscopy. This technique utilized magnified cameras and specialized instruments to perform increasingly complex joint surgery through tiny (approximately 5-10 millimeter) incisions, which results in faster recovery, fewer complications and often allows patients to go home the same day of surgery. Dr. Ayzenberg is an expert in this technically demanding field and has had the rare opportunity to train under some of the pioneers and current world leaders of arthroscopic Surgery. While many orthopaedic surgeons perform basic arthroscopy, few perform advanced state-of-the-art arthroscopic surgery of all major joints. Dr. Ayzenberg offers a comprehensive and minimally invasive approach to your shoulder, knee, hip and ankle problems.