



Elbow Replacement Surgery

John W. Hinchey, MD

The following information is a general overview of the process of elbow replacement surgery. We hope you find this informative and educational about the process you are about to undergo. Elbow Replacement surgery is not a “minor” surgery, and it is our belief the patient should be well educated and welcomed to ask questions. We hope this overview will help ease any anxiety in regards to surgery and serve as a guide to getting all your questions answered before and after surgery.

Remember, the following are only GENERAL guidelines and suggestions. Dr. Hinchey will give you specific instructions that should be followed at all times.

Overview

Elbow replacement surgery is performed due to damage of the native elbow from rheumatoid arthritis, osteoarthritis, instability, or trauma. The injury to the joint can make the elbow stiff, painful, and unable to carry out daily tasks. Elbow replacement surgery is a complicated procedure due to the many moving parts of the elbow which allow motion and control of your forearm. During your surgery, your elbow is replaced with metal implants, and a plastic hinge which are typically linked together. The implants are cemented into your arm bones. The overall goal of elbow replacement surgery is to restore function and provide pain relief.

Anatomy of the Native Elbow

The elbow is made up of 3 bones: the humerus (upper arm bone); the ulna (forearm bone on the pinky side); and the radius (the forearm bone on the thumb side). These 3 bones meet at the elbow to form a hinge, which allows you to bend and straighten your elbow, in addition they allow you to rotate your palm up and down. The ends of these bones are covered with a very smooth tissue called cartilage which allows them to glide along each other. The bones are held together by the surrounding ligaments, muscles, and tendons.

Typical Causes of Elbow Injury

Many conditions may cause pain, dysfunction, and injury to the elbow. A thorough history & examination, and radiographs (Xrays) by your physician can typically obtain the cause of your elbow dysfunction and pain. Examination typically reveals stiffness and roughness with motion, with or without instability. Xrays will typically show loss of the joint space between the ends of the bone, bone spurs, and possibly deformity.

Rheumatoid Arthritis

This is an “inflammatory arthritis” in which the lining around the joints, called the synovial membrane, becomes inflamed. This causes damage to the joint surface, which in turn causes



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pain, stiffness, and cartilage loss. Currently, most patients with Rheumatoid Arthritis are managed by a Rheumatologist with medications that can slow the progression of the disease and prevent severe injury to our joints.

Degenerative Joint Disease (Osteoarthritis)

This is the typical “wear and tear” arthritis which occurs from usage and is commonly age-related. As we use our elbow over time, the cartilage wears out between our bones and the cushion is lost. Eventually, the bones begin to rub on each other and the elbow becomes stiff and painful..

Post-Traumatic Arthritis

This is downstream effect of a severe injury to the elbow joint. This can be from a prior fracture (broken bone) around the elbow, a dislocation, a ligament injury, or a prior surgery. Stiffness and pain occur as the joint surface injury becomes more pronounced over time.

Instability

This is when a ligament which helps stabilize the elbow is injured or non-functional. When this occurs, the biomechanics of the elbow joint are abnormal which causes abnormal wear on the joint surface. Over time this creates lasting injury to the cartilage.

Fracture

Recently, elbow replacement has become an excellent option to treat severe fractures around the elbow. Commonly, these injuries are in an older population with weaker bone quality. This is only used when the broken pieces cannot reliably be put back together in the more traditional manner with plates and screws.

Preparation for Surgery

Elbow replacement surgery is typically an elective procedure, and therefore should be performed when your health is optimized to undergo a major surgery. Even if your elbow is planning to be replaced due to a severe fracture, there is time to be seen by your primary care doctor to make sure there are no major health issues which need to be addressed.

Medical

Typically you will be required to have a complete evaluation by your primary care physician prior to your planned surgery. Most likely, lab tests and an EKG for your heart will be done to ensure



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you are healthy enough to undergo an elbow replacement and to minimize the risks of general anesthesia. If you have chronic conditions, such as heart disease, you may be referred to a specialist before surgery for further evaluation. This is all done with your safety in mind to undergo surgery and the recovery process.

Medicines

Please ensure you have given your orthopaedic surgery, primary care doctor, and specialists, an updated and accurate list of medications you are on. This includes over the counter medications and supplements. Some of these medications need to be stopped ahead of time for general anesthesia safety, and to decrease the risks of bleeding and infection. If are any Rheumatologic medications, some of these need to be stopped 2-3 weeks ahead of time and re-started 2-3 weeks after your surgery. You will have been given a packet with a list of medication which need to be stopped prior to surgery. You may also have been given instructions by your physicians which should be followed also.

Home Set Up

Most patients return to their own home after shoulder surgery. Usually a “caregiver” is around during the day to assist with the needs of the patient.

Below are some things to think about, starting several weeks before surgery, to help with a comfortable transition home:

- Clean your home a week before surgery as it will be difficult to do so afterwards
- Remove clutter and loose rugs from the walkways to prevent falls
- Rearrange your bedroom (and other rooms) to allow extra room to maneuver as you will only have the use of one arm
- If your bedroom is on a second story, consider moving a bed to the first floor for easy access
- Place your remotes, magazines, books, computer, telephone and other items in an easily accessible location
- Rearrange your kitchen so that commonly used items are easily accessed
- Prepare and freeze meals which can be easily re-heated for meals
- If you wish, contact your religious or spiritual leader to visit you during your recovery

Many patients find it helpful to “practice” only having the use of one arm to assist with their understanding of the limitations after surgery.



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Preparing for Surgery

It is imperative that your stomach be empty before you receive anesthesia. This helps decrease the chances that any nausea, vomiting, and other anesthesia related problems arise.

This typically means **NOTHING TO EAT OR DRINK FOR 8 HOURS PRIOR to your surgery.** It is typically asked that you stop eating and drinking at MIDNIGHT the night before your surgery, even if your surgery is not planned until the afternoon. This seems harsh but allows the surgeon to do your surgery earlier if there is a cancellation before you. We understand that this is not a pleasant experience, but we appreciate your understanding.

****Take a shower (or bath) the night before AND the morning of surgery****

Bathing will help decrease the bacteria on your skin and helps reduce the chance of infections. You may have been given a special soap by the office to use the night before and day of your surgery. If you were not, then please use an antibacterial soap to bath with.

Packing for Surgery

Some items you may find useful while you are in the hospital are:

- Comfortable, non-skid shoes (remember shoe laces are difficult with only one hand to use!)
- Personal pajamas
- Loose fitting clothes with pockets
- Button down shirts
- Toiletries
- Books, magazines, cell phone/chargers
- A List of medications (prescription and over the counter), including vitamins or herbal medications you take. Include the entire dose and times you take them
- Money, credit cards
- ID Cards, Drivers' License
- Continuous Positive Airway Pressure (CPAP) machine or other special equipment

THE MORNING OF SURGERY

- Shower/Bath, as instructed, with the special soap
- Do **NOT** apply lotion, makeup, deodorant or perfumes after taking your shower/bath
- Do **NOT** shave your arm
- Remove all nail polish if possible
- Do **NOT** bring jewelry to the hospital



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- Give your wallet/purse to your “caregiver” who is with you at the hospital
- Wear eyeglasses instead of contacts
- Take ONLY the medications you are instructed to before surgery
- Arrive at the hospital **ON TIME!**
- **Remember:** you may be arriving 2-3 hours before your scheduled surgery time so that the hospital and surgical staff can get you checked in and ready for surgery

At The Hospital

Preop

When you arrive at the hospital you will check-in and they will begin the registration process. This requires you to have your ID cards, and insurance cards readily available. Once this is completed, then you will be taken to the pre-surgical area. This is where you will change into your hospital gown, and have your IV placed by the nursing staff. Dr. Hinchey, and the anesthesiology team, will meet you here prior to your surgery and review the surgical plan with you. This is where any last minute questions can be addressed, and your surgical consent is finalized. Once this final paperwork is completed, you will be brought into the operating room by the anesthesia and nursing teams, and your family will be taken to the waiting room.

Surgical Procedure

Once you are in the operating room, the typical surgery takes 2-3 hours. It starts with the anesthesia team will administer a general anesthetic which allows you to sleep through the entire surgery without remembering anything. In addition, a nerve block is typically performed to help with postoperative pain control. Your operative arm is then cleaned with special solutions to sterilize your skin.

An incision (cut) is then performed on the back of your elbow about 6-8 inches in length. The ulnar nerve, also known as the “funny bone nerve”, is located and moved out of the way for protection. Due to moving the ulnar nerve, your small finger may be numb for a little while after surgery. Once this is done, muscles are gently moved out of the way, and scar tissue and bone spurs are removed. The ends of the humerus (arm bone) and ulna (forearm bone) are prepared to have the metallic implants placed into them. The components are cemented into place with special bone cement and connected with a special hinge. The muscles are then repaired and the skin incision is then closed, typically with staples. A protective dressing and splint are applied. You are then awoken from general anesthesia and taken to the recovery room.



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Postop

After your surgery is completed and you have recovered, you will be transferred to your hospital room. We ask that you refrain from getting out of bed the day of surgery on your own. A nurse, therapist, or assistant may assist you to get out of bed. The helps reduce your risk of falling and sustaining an injury! When your surgeon, nurse, or therapist gives permission to get out of bed, you will be shown the proper way to do this using only your unaffected arm and other assistive devices.

While you are in in your bed we ask that you keep your arm elevated above your heart level to help with swelling control.

Recovery

The typical patient stays in the hospital for 1-2 nights. You will receive pain medication, in addition to antibiotics. You will begin to return to your regular diet, and are encouraged to get out of bed.

Pain Control

Immediately after surgery you may be a “numb” arm/hand as the anesthesia team may have provided you with a nerve “block” which helps control your pain. During this time, your arm feels like it is “asleep”. While your arm is asleep we begin to provide a multimodal pain regiment which consists of multiple medications aimed at controlling your pain. Typically this includes a combination of NSAIDs, gabapentin, Tylenol, and narcotics. We attempt to keep the narcotic dosing to a minimum, which helps avoid many side effects of the narcotic medications.

Patients should notify their surgeon ahead of time if they have had problems with pain control or pain medications previously.

Wound Management

For the first 24-48 hours your arm will be in a bulky splint which helps with soft tissue rest and swelling. Your incision is covered by a large bandaid type dressing under your splint. Typically your incision is closed with staples which will stay in until your wound is healed, which takes 2-3 weeks. The original bandaid will be removed between 5-7 at home, and then a new one will be placed on it. You should receive the second one prior to you leaving the hospital for home usage. As long as the bandaid dressing is sealed and in place you may shower, but you CANNOT



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soak your wound in a bath tub. We do not put any other ointments or creams on the incision at this time.

Rehab

Your dressing is typically debulked in the morning after surgery and you will most likely be shown range of motion exercises. These are important to do so that you regain your motion which was obtained during your surgery. It is important to work on bending and straightening your elbow, in addition to turning your palm up and down. You typically will be allowed to start re-incorporating your operative arm back in to daily activities such hair brushing, cloth changing, hygiene activities, and showering.

Long Term Outcomes

Patients who undergo a total elbow replacement can typically expect to experience less pain, with improved motion, function, stability, and strength after they have recovered. Activities of daily living are typically able to be done within the first week or 2 after surgery. Patients will experience improvement for up to 12-18 months.

Long Term Limitations

Patients are asked to avoid extremely strenuous activities as this can cause loosening, wear, or even fracture of their replaced joint. We typically advise patients to avoid lifting heavy loads, weights, or performing heavy resistance exercises, in addition to avoiding heavy impact activities such as hammering, chopping wood, contact sports or high intensity sports.

Complication

Unfortunately, as with all things in life, there is the potential for complications. Some of these are related to the surgery itself, and others may occur over time with usage. Your surgeon, and medical care team, take many precautions to lower the risk of experiencing a complication. Most complications can be successfully treated/managed. It is important to talk with your surgeon if you think you are experiencing a complication.

A few of the major complications are discussed here, but this is obviously not an inclusive list.



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Infection/Wound Complication

Infection and wound issues are potential complications of any surgery. With a joint replacement, such as an elbow replacement, the infection may occur in the superficial tissues around the wound or deeper around the joint itself. Most infections occur in the first couple of months after your surgery, but they can occur many years later.

Small wound based infections can typically be managed with some local wound care and oral antibiotics. If there is a concern there is a deeper infection, this typically involved more surgery to clean out the infection, possibly removing the implants, and antibiotics through an IV.

Implant Issues

Despite improvements in technology and implant design, implants may wear down over time and possibly loosen within the bones. The plastic hinge, known as a bushing, can slowly wear out and may need to be replaced at some point. Sometimes the components loosen within the bone and need to be replaced requiring a revision surgery.

Nerve Injury

There are many nerves around the elbow which control our elbow/wrist/hand motion, in addition to the sensation in our hand. In very rare cases, these nerves may be damaged during the procedure, but they typically improve with time and observation. During a revision surgery the risk of nerve injury is higher due to the amount of scar tissue around the nerves. Great care is taken throughout any surgery to prevent injury to a nerve.



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Additional Resources:

www.hincheyshoulderandelbow.com

www.orthoinfo.aaos.org/en/treatment/total-elbow-replcement

www.webmd.com/rheumatoid-arthritis/ebow-replacement-surgery

About Dr. John W. Hinchey

Dr John W. Hinchey attended The University of Texas Health Science Center at San Antonio (UTHSCSA) for both medical school and residency training. He continued his training with a specialized fellowship in Shoulder & Elbow Reconstruction, where he worked with world renowned surgeons at both UTHSCSA and the Mayo Clinic in Rochester, MN. He is board certified in Orthopaedic Surgery by the American Board of Orthopaedic Surgery, and is an associate member of the American Shoulder and Elbow Surgeon (ASES) association. Dr. Hinchey treats all orthopaedic injuries, and subspecializes in the treatment of shoulder and elbow issue.

Dr. Hinchey is in private practice in San Antonio, Texas, with Ortho San Antonio (www.ortho-sa.com). He is the Assistant Program Director for the Rockwood Shoulder and Elbow Fellowship, and holds a position of Adjunct Assistant Professor at UTHSCSA. He began his career with the Veterans' Health Care System, and for over five years provided top quality care to our Nation's veterans in a full time fashion as a staff orthopaedic surgeon at the Audie L. Murphy VA (ALMVA) Hospital in San Antonio, TX. He still serves as the Chief of the Shoulder and Elbow service at the ALMVA. He still takes time out of his private practice to return to the VA weekly and continue his care of our veterans.

He is a leader in orthopaedic organizations at local, state, and national levels. Dr. Hinchey is the Immediate Past President of the San Antonio Orthopaedic Society, former Treasurer for Bexar County Medical Society. At the state level, he is an active participant with the Texas Medical Association's House of Delegates and is a recent graduate of TMA's Leadership College. He is a member Texas Orthopaedic Association's Presidential Line, and active with their Leadership Council and Board of Directors. He also holds an elected position to the Texas Orthopaedic Political Action Committee (TOPAC) Board of Directors. Nationally, he was selected to be one of a handful of Texas representatives to the American Academy of Orthopaedic Surgeons' (AAOS) Board of Councilors and is proud to represent Texas orthopaedic surgeons at our Nation's capital. Recently, he was selected to join the AAOS Education Assessments and Examinations Committee.

In addition to his leadership roles, Dr. Hinchey is highly active in the education of residents and fellows. He has multiple contributions to the orthopaedic literature, including multiple textbook chapters,



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journal articles, self-assessment examinations and assists with many orthopaedic courses throughout each year.