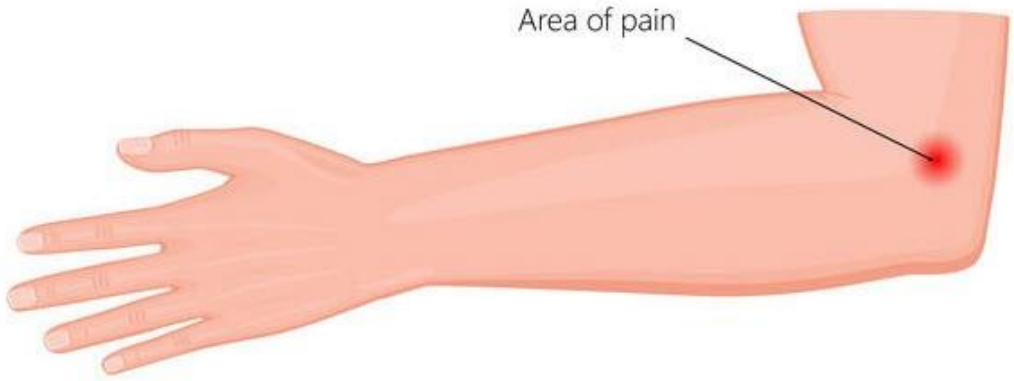
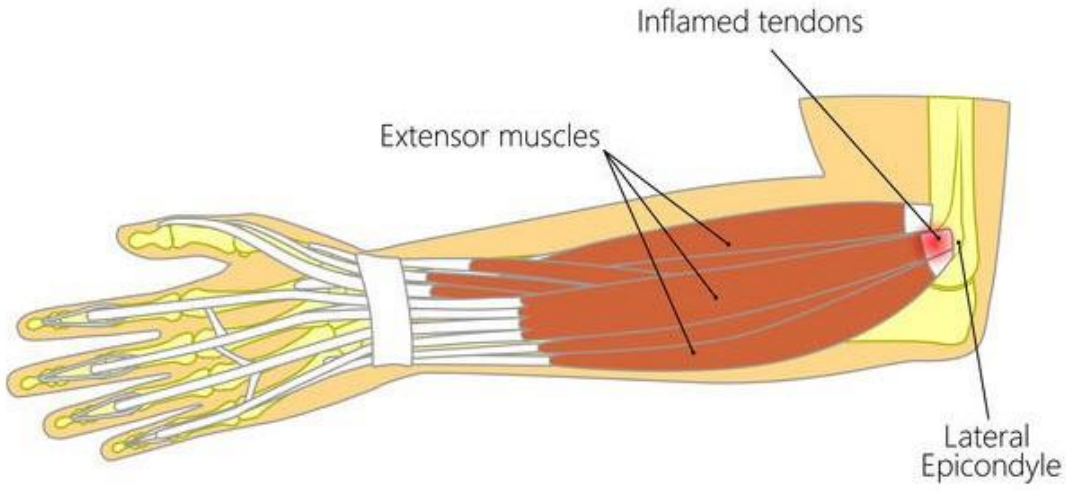
Lateral Epicondylitis Repair
(Tennis Elbow)





Ascension Providence

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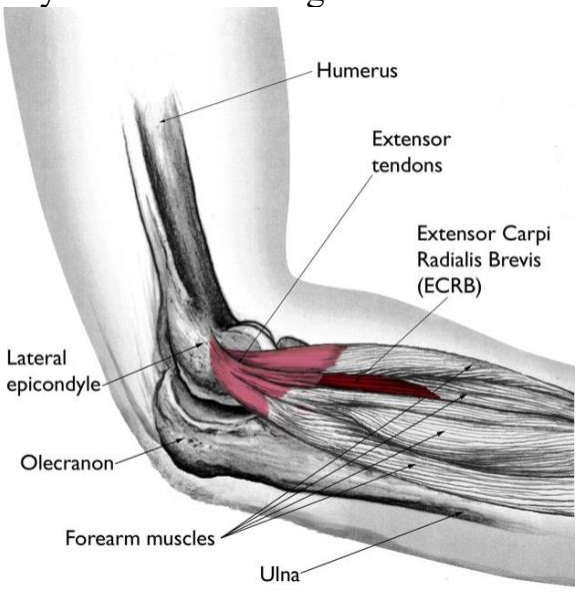
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Introduction

This booklet will provide a general guide to the common indications for tennis elbow surgical repair, what to expect from surgery, the significant risks, and the recovery process. If you have any specific questions, they should be addressed with your surgeon.

Normal Elbow Joint & Tendons

The elbow joint is a hinge joint that is made up of three bones: the humerus, the radius, and the ulna. The elbow joint is held together by muscles, ligaments, and tendons. The humerus has bony bumps on the bottom of it called epicondyles. Several muscles of the forearm are attached to the epicondyles. The lateral side of the elbow's bony bump is called the lateral epicondyle. This area involves your forearm's muscles and tendons, which are responsible for extension of your wrist and fingers.



Tennis Elbow

Lateral epicondylitis (tennis elbow) is the most common painful condition of the elbow. Inflammation and pain occur on the outer side of the elbow where muscles and tendons attach to the bone. The structures involved are the muscles or tendons of the forearm that extend your wrist. This occurs not only in tennis players but also in anyone who performs repeated resisted motions of the wrist. Without proper intervention, this may develop into a chronic, recurrent problem.

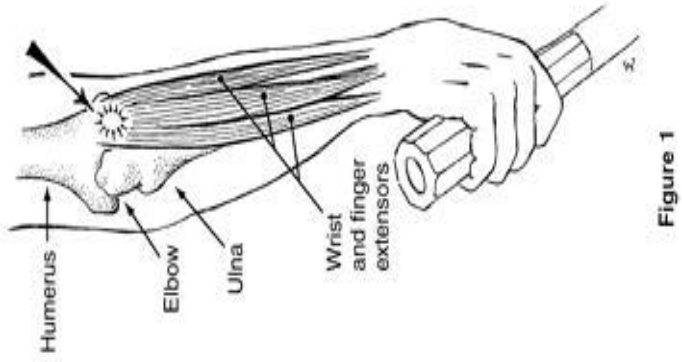


Figure 1

Common Symptoms

- Pain and tenderness on the outer side of the elbow
- Pain or weakness with gripping activities
- Pain with twisting motions of the wrist (playing tennis, using a screwdriver, opening a door or a jar)
- Pain with lifting objects, including a coffee cup

Causes

- Chronic repetitive stress and strain to the muscles and tendons that attach the forearm muscles to the elbow
- Sudden change in activity level or intensity
- Incorrect grip
- Incorrect hitting position or technique (usually backhand; leading with the elbow)
- Using a racket that is too heavy

General Treatment Considerations

Initial treatment consists of medications and ice to relieve pain, stretching and strengthening exercises, and modification of the activity that initially caused the problem.

These can all be carried out at home for acute cases. Chronic cases often require referral to a physical therapist or athletic trainer for further evaluation and treatment. A counterforce (tennis elbow) brace may be recommended to reduce the forces to the damaged tendon. A splint to immobilize the wrist may be useful early. If symptoms persist, an injection of cortisone, injection of plasma rich platelets (PRP) and anesthetics or surgical intervention may be required.

Platelet-Rich Plasma (PRP) Injections

PRP injection are a concentration of your own platelets that use your body's healing system to heal injured joints, tendons, ligaments, and muscles. PRP injections have shown a reduction in pain and improved functions in patients who have chronic tendinosis conditions such as tennis elbow. PRP injections release growth factors that stimulates and increase the number of reparative cells your body produces. PRP injections can reduce the needed for anti-inflammatories or stronger medications like narcotics. An additional advantage to PRP injections is that side effects are very limited because your body will not reject the injection since they are created from your own blood.

When getting a PRP injection, a nurse will take your own blood and run it through a centrifuge to concentrate the platelets. The doctor will then inject the activated platelets into your injured tissue. Sometimes the doctor will use ultrasound imaging to guide the injection.

Indications for Tennis Elbow Repair

- If a patient has failed 6 months of nonoperative treatment, including nonsteroidal anti-inflammatory medication, physical therapy, forearm braces, and/or single or multiple local injections of corti- costeroid, PRP and anesthetic.
- MRI results show that there are no associated intraarticular abnormalities.

What to Bring to the Surgery Center

- Remember to bring your sling for the surgeon to put on post-op
- Do not bring your medication from home. It is important to have a list with the appropriate dosages. This will be requested from you at the time of registration.
- Clothes that are soft and loose fitting. Bring pants with elastic waistbands, such as gym pants.

Your Surgery Center Stay

You will be provided a check in time for the surgery center by our scheduler. It is important to read and follow these instructions:

- You should stop all medicines that have a potential to cause bleeding. The most common medicines that fall into this category include aspirin (stop 14 days before surgery), anti-inflammatories (such as Advil, Motrin, Naprosyn) (stop 7 days before surgery) and blood thinners such as Plavix and Coumadin (ask your doctor when to stop these).
- Supplements: In general, you should discontinue all herbal and over-the-counter supplements one week before surgery. Some supplements affect bleeding tendencies and may cause problems with wound healing. You should take 500mg of Vitamin C per day from the time surgery is scheduled until 1 month after surgery. Vitamin C helps with healing and prevents bleeding at surgery.

- The day before surgery, do not eat or drink anything after **midnight**. Having an empty stomach before you receiving the anesthetic helps prevent nausea, vomiting and other complications during and after anesthesia.
- Take a shower or bath the evening or morning before surgery. This will help decrease bacteria on your skin.
- Make sure to get a good night's rest 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 blood pressure, temperature, pulse, respiration rate.
- The anesthesiologist will discuss the type of anesthesia being used.
- You will be asked to go to the restroom and empty your bladder.
- You will be asked to remove all jewelry, dentures, and contact lenses.
- An intravenous (IV) line will be started before surgery
- You will be taking back to the operating room on a stretcher by your nurse who will be with you the whole time.

Anesthesia

The surgery is performed under general anesthetic. For this surgery an axillary nerve block will be used to help prevent pain.

Tennis Elbow Repair Surgery

This is an outpatient surgery that is done with axillary block anesthesia. A linear incision is made proximal to the lateral epicondyle. An incision is made through the extensor aponeurosis. The extensor carpi radialis brevis is revealed when the extensor carpi radialis longus is medially retracted. All granulation tissue is removed. The lateral epicondyle will be cleaned to remove any fibrous tissue and to provide a surface for extensor reattachment. A hole is drilled into the lateral epicondyle, where the anchor will be secured. The extensor tendon will be repaired with an absorbable suture. The skin will be closed with an absorbable suture and steri-strips.

Risk Associated with Surgery

Potential risks with any surgery include pain, bleeding, infection, damage to surrounding structures like nerves or blood vessels, failure to heal or cure, need for additional procedures, and any medical, anesthetic complication, loss of limb or death. Obviously, we try to minimize these risks with good technique. For this specific surgery, risks include lateral elbow instability, radial nerve damage, and wrist weakness with extension.

What to Expect After Surgery

After surgery, you will be moved into the Post-Anesthesia Care Unit (PACU). Your surgeon will speak to your family and let them know how surgery went. The PACU is important because they manage nausea and pain as you wake up from anesthesia. The nurses will monitor your vital signs, alertness, pain, or comfort level and need for medication.

The PACU as a variety of equipment so you may notice that the room is brightly lit, or noises seem louder than usual. Its normal to receive oxygen through a facemask as you awaken. If you feel cold, blankets are available to keep you comfortable.

It is normal to feel pain or discomfort after surgery. Tell the nurse if you are having pain or discomfort. When you have pain, the nurse will ask you to rate your pain on a scale of 0 to 10: O= no pain, 10= worst pain. 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 surgery center or hospital.
The average length of stay in the PACU is one hour. If there is an extended delay, your relative may check with the staff. When the anesthesiologist decides you are ready to leave, your family member will be notified, and you will be transported to your car via wheelchair.

Discharge Summary
You will follow up with your doctor in 5-10 days after your surgery. It is important to make sure you keep your dressing clean. You can remove your dressings after 48 hours. Please leave the steri-strips on the incision and cover them with a waterproof band-aid. If desired, you may wrap with an ace bandage wrap. After Surgery your arm will be placed in a sling. On day 1 there will be active elbow range of motion exercises. You will increase your active arc of motion daily, in the goal of having full elbow extension by day 10 of post-operation. At follow up appointment the sling will be discontinued, sutures will be removed, and a splint will be placed on the wrist. This splint allows for you to increase your use of your arm, while protecting the tendon repair. You may do daily living activities, such as writing or using the computer, but refrain from lifting or carrying with this arm. At the 6-week post-operation follow up, the splint will be discontinued for daily living activities but will be needed for prolonged computer time or carrying heavy items.

Results of Tennis Elbow Repair Surgery
After surgery, 94% of patients returned to their previous level of activity around 4 months. After surgery, 95% of patients report having a reduction in pain at their follow-up.

Return to Sports
If full range of motion and strength has been achieved postoperatively, then you will be permitted at 12 weeks to return to sports, such as tennis and golf.

When to Contact Your Surgeon
- Drainage or odor from the incision
- Fever: temperature above 100.4 F° or 38 C° for two days
- Increased pain that is unrelieved with pain medications
- Sudden, severe elbow pain or arm pain
- Increased redness around the incision(s)
- Increased swelling at the incision(s)
- Numbness or tingling of the arm or hand
- Changes in color and temperature of the arm
- Change in motion ability

Common Terms
Anesthesia: partial or complete loss of consciousness or sensation
Anesthesiologist: a physician who specializes in administering anesthesia
Intravenous: into a vein
Granulation Tissue: vascularized tissue that is formed as chronic inflammation evolves

Active Arc of Motion: range of motion that can be achieved when opposing muscles contract and relax, resulting in joint movement

Physical Therapy

From days 0-10 you will be focused on range of motion exercises to gain full extension of elbow by post-op day 10. From 2 weeks to 6 weeks, you will continue to focus on range of motion and stretching exercises. At 6 weeks you will begin a six-week course of physical therapy will focus on strengthening wrist extension, flexion, pronation, and supination will be started.

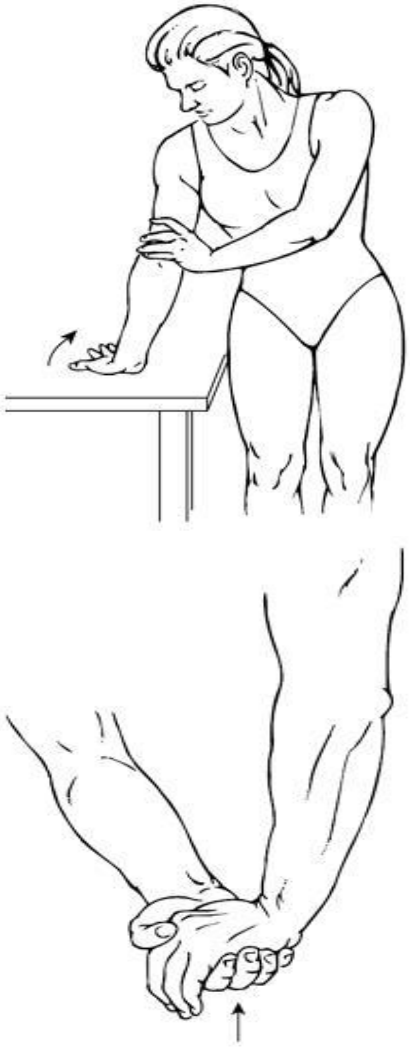
<u>Range of Motion and Stretching exercises</u>

- Flexible tissue is more tolerant of the stresses placed on it during activities
- Each stretch should be held for 20 to 30 seconds
- A gentle stretching sensation should be felt, but it should not hurt.

1. Wrist Flexion:



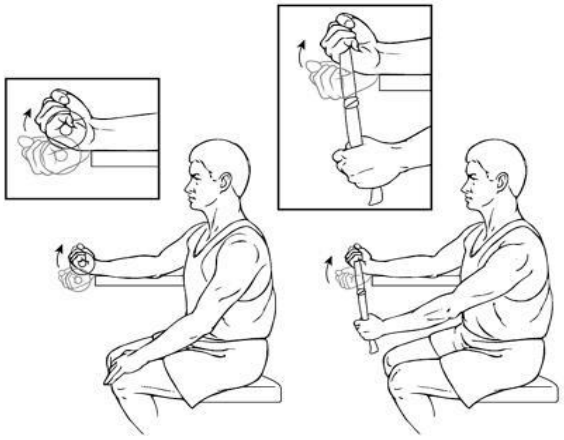
2. Wrist Extension:



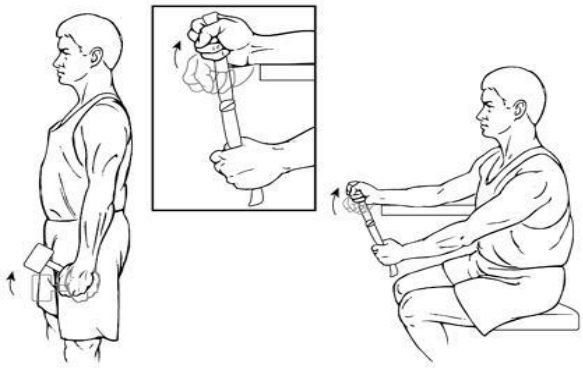
Strengthening Exercises

- Strong muscles with good endurance tolerate stress better
- Do the exercises as initially prescribed by your doctor or physical therapist. Progress ***slowly*** with each exercise, gradually increasing the number of repetitions and weight used under their guidance

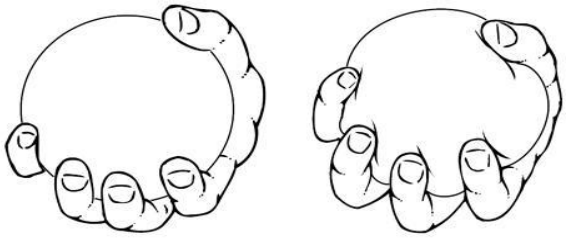
1. Wrist Flexors



2. Wrist, Radial Deviation



3. Grip



4. Elbow Extension Isometric



5. Supination



6. Protonation



Chad Stephen Conner, MD



Dr. Conner specializes in sports medicine and arthroscopic and reconstructive surgery of the shoulder, hip, knee, and ankle.

Dr. Conner grew up in Dallas, Texas and attended Lake Highlands High School. Beginning at age 5 he practiced gymnastics and went on to compete for the University of Minnesota gymnastics team in Minneapolis, Minnesota.

He attended The University of Texas Medical Branch for his medical school training and subsequent orthopedic surgery residency training. Following this, Dr. Conner completed a fellowship at the Southern California Orthopedic Institute. There he specialized in sports medicine, arthroscopy, and reconstructive surgery of the shoulder, hip, knee, and ankle. He helped care for athletes from the high school level to the professional level. His training also included specialization in shoulder replacement surgery and reverse total shoulder replacement.

Dr. Conner currently practices at the Waco Orthopedic & Sports Medicine Clinic in Waco, Texas. He is a team physician for Reicher Catholic High School and Live Oak Classical School and provides a free student-athlete Saturday sports clinic during football season. He is a member of the Arthroscopy Association of North America, the American Orthopedic Society for Sports Medicine, and the American Academy of Orthopedic Surgeons. He is board certified in orthopedic surgery by the American Board of Orthopedic Surgery with a subspecialty certification in orthopedic sports medicine.

He has done extensive research on treatment of massive rotator cuff tears, ACL reconstruction, hip arthroscopy and ankle arthroscopy. He is also involved in teaching hip arthroscopy as an associate master instructor at the Arthroscopy Learning Center in Chicago, IL. With Baylor University, he gives lectures for student classes and is involved in the Baylor Health Science Studies and Exercise Physiology internship programs mentoring students interested in orthopedic surgery.

Dr. Conner also volunteers at a community outreach organization called Mission Waco, which strives to provide Christian-based holistic, relationship-based programs that empower the poor and marginalized and was named Business of the Year by Mission Waco for 2013. He leads a monthly orthopedic and rehabilitation clinic at Mission Waco's free health clinic and has partnered with the hospitals to provide surgical care as well.

Outside of the office, Dr. Conner enjoys his wife and 3 boys, church, work outs, wakeboarding, and the outdoors.

NOTES

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