

# Plain Language Summary

## Distal Radius Fractures

### Background

This plain language summary provides an overview for the treatment of distal radius fractures, or simply a broken wrist.

Your wrist is made of eight small bones, known as the carpal bones, and the ends of two long bones, the radius, and the ulna. The radius bone, located on the thumb side of your lower arm, allows you to rotate and bend your wrist joint.

### What is a Distal Radius Fracture?

The part of the radius bone near your wrist is called the distal end. When the radius bone breaks near the wrist, it is called a distal radius fracture. Fractures to this bone commonly occur by falling from standing. Older women who have weak bones (osteoporosis) have a higher risk of breaking their wrist when they fall or trip and land on their outstretched hand. Distal radius fractures can also happen during a forceful fall while biking, skiing, or playing contact sports. Motor vehicle accidents are another cause of this type of fracture.

The distal radius is one of the most commonly broken bones in your arm. Two general kinds of distal radius fractures are those that do not go into the wrist joint (extraarticular) and those fractures that extend into the joint surface and disrupt the cartilage surface of the joint (intraarticular).

### How are distal radius fractures diagnosed?

Your doctor will examine your injury. This exam may include measuring your pain and tenderness by gently moving your hand or wrist, as well as looking for swelling and bruising. Obvious signs such as a bent wrist are a good clue that your wrist may be broken. Additionally, x-rays from several different angles will most likely be taken. If your bone breaks through the skin, it is called an open fracture.

### What is the treatment for a distal radius fracture?

Treatment for your broken wrist may vary, depending upon a lot of factors, including what the x-rays shows, your age, health, and activity levels (including your work-related activities and hobbies). These factors, and their importance to you are all factored into the discussion on how to treat your fracture.

Occasionally, the fracture (broken bone) will be not cause the bones to shift, and your arm and wrist will usually heal in a cast. However, when the bones shift with the break they sometimes need to be put back into place (realignment), it is called a reduction.

There are two types of methods used for reduction. The first type is a closed reduction, meaning your orthopaedic surgeon will, while using something such as anesthesia or a numbing block on your arm to alleviate the pain, move your bones back into place without the need to make an incision. Sometimes realignment can be done in the operating room with pins placed through the skin to hold the bones in place. Following realignment, your arm will most likely be splinted for several weeks prior to casting. Additionally, you may need to have x-rays taken of your wrist and arm to see if the bones are healing correctly. Limited evidence shows that there is no difference in patient reported outcomes by taking multiple x-rays after your treatment. Studies indicate that unless an issue such as an increase in pain occurs, additional x-rays may not be needed after a couple of weeks after treatment is started. If x-rays show that the bones did not move, your lower arm and wrist will then need to be casted. As the swelling goes down, your cast may become loose, and need to be replaced as it needs to be tightened to properly support the broken bones. The cast will be removed about six weeks after the fracture happened.

The second type of treatment for a distal radius fracture is called an open reduction, which means you will need an operation. The doctor will need to surgically cut the skin and move the bones back into their proper place so they can heal. The surgeon may need to use metal rods, pins, plates, or screws (this is called fixation) to hold the bone together. Fixation can be either inside the arm (internal) or outside the arm (external).

To assist with fixation, the surgeon may also use arthroscopic assistance. Arthroscopy is a surgical procedure to assist in diagnosing and treating joint problems. When using this procedure, the surgeon will make small incisions, which are less

than a half-inch long, through your skin in locations on your wrist and hand. A small camera, which is approximately the size of a straw, is inserted into the incisions, and allows the surgeon to see inside the joint. Three dimensional images of the joint are shown through the camera onto a monitor. Watching the monitor, the surgeon moves the camera through the joint, and may correct problems within the hand and wrist. However, moderate evidence supports not using arthroscopy during fixation, as there are no differences in patient reported outcomes when this procedure is used during surgery.

Depending upon what procedure is used, your arm may need to be splinted, and then casted. X-rays will also need to be taken to ensure proper healing is taking place. Moderate strength evidence shows that adults under the age of 65 benefit from operative treatments as it leads to improved patient outcomes. However, strong evidence shows that patients over the age of 65 may not benefit from this type of treatment, and closed reduction and casting may be better for this age group.

#### **What happens following treatment for a distal radius fracture?**

Following a distal radius fracture, you may have pain and wrist

stiffness for 6-12 months. Your surgeon will provide you with guidance that may help reduce this pain. Things, such as holding your arm up over your heart and using ice, will help with the swelling, and over-the-counter medications such as Advil or Motrin (ibuprofen), and Tylenol (acetaminophens) may help with your pain. Your surgeon may prescribe a combination of alternating both Tylenol and Motrin, as it may more effectively control your pain.

If you had surgery to repair your broken wrist, your wound will need to be kept clean and dry until its healed. Casts and splints will also need to be kept dry. Following the removal of your cast, you may need physical therapy to improve the motion and function of your wrist. This will be determined by your doctor. If your doctor and you determine that physical therapy will be beneficial, limited evidence shows that there is no difference in overall outcomes between a home exercise program and supervised hand therapy.