REHABILITATION

Distal radius Fractures

The radius is one of the two bones in the forearm, the other being the ulna. The distal part of the radius is the end nearest your wrist. This part of the radius is commonly broken. A small break at the end tip of the ulna often accompanies this injury.

Normal wrist x-ray

Broken distal radius

Fixed distal radius

These fractures are normally treated by immobilisation with a removable splint or plaster cast for approximately four weeks, depending on the position and severity of the fracture.

If the bones have moved significantly out of position, then you may have needed to have the fracture manipulated or corrected with surgery. It is normal to experience stiffness and swelling after a fracture and it must be noted that the removal of the cast or dressing is only the start of your recovery.

Common problems

A percentage of our patients notice an increase in thumb pain after a distal radius fracture. However, this should settle with time. It is important to keep the thumb moving, but not to over-stress it with repetitive pinching/gripping and twisting activities.

Discomfort in the wrist on the side of the little finger is also common, particularly if you were also diagnosed with an ulna fracture. There is a ligament complex within this area which may have also been injured alongside the fracture. Normally, this does not require any treatment, but it can take months for this discomfort to settle. If this is a particular problem for you, please discuss your symptoms further with your hand therapist or consultant.

Some numbness or a mild pins and needles sensation may also accompany your injury. This is due to the fact that the nerves may have been aggravated at the point of injury or with the following swelling. This should settle over the following months, but if you feel that the symptoms are becoming more frequent, affecting your hand function and/or becoming increasingly painful, then please contact the department to discuss your symptoms.

Very occasionally, patients with a distal radius fracture develop a rupture (tear) in the long tendon that lifts the tip of the thumb up (extensor pollicis longus). This is a nuisance and patients often decide to have a tendon transfer to restore this function.

Post fracture you may notice that your wrist may have a slightly different appearance. These changes are normally cosmetic in nature, but these changes should not affect your regaining functional use of your wrist.

Sussex Hand Surgery

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Distal radius Fractures

Typical time scales

0-6 weeks

Focus on regaining movement in your hand and wrist. You can use your hand and wrist for light function. If in a splint, this can be removed for exercises. Aim to stop wearing the wrist splint completely by 6 weeks post injury.

6 weeks

Begin weight bearing and aim to increase wrist dexterity.

8 weeks

You can gradually increase the amount you lift and start to strengthen your wrist. You can now start completing strengthening exercises.

12 weeks

No restrictions on activity. Your bone is strong enough to return to contact sports and lift heavy weights. It must be noted that the soft tissue and muscles are still recovering, so your wrist is unlikely to feel completely normal at this stage.

12 weeks +

It is normal to have some mild ongoing swelling, morning stiffness and occasional aches and pains with new or heavy activity.

1 year

It can take up to a year until your wrist completely recovered from this injury.

Driving

You are allowed to drive when you have full control of the car and can complete all emergency procedures. If you want to drive with your splint on, we would suggest you contact your insurance company.

Key elements within your recovery

Swelling

Swelling is a common problem post fracture. Controlling your swelling can promote recovery of normal hand function. Elevating your hand regularly throughout the day can help to drain away the fluid. Whilst your hand is raised, try rapidly making a fist 5-10 times. Stroking your hand/wrist can also help to move the swelling. This can be completed using long firm strokes starting from the fingertips in a downward direction towards your elbow. Another option is to apply an ice pack to the area.

Scar

If you have had surgery, you will also be advised to complete regular scar massage. Apply a deep circular massage with firm pressure 6 times daily for approximately 3 minutes to the scar and the surrounding area. You may also use a gentle non-perfumed moisturiser. If your scar feels very sensitive, regular touch will also help to calm this down. Exposing the area to different textures, i.e. sleeves of clothing, will help the wrist adapt to normal stimulus.

Light function

As soon as your cast/dressings are removed, it is important to start to use your injured hand in normal day-to-day activities. You can complete all normal light functional activities such as washing and drying up, getting dressed and using a keyboard. The more you use your wrist and try to regain normal function, the quicker it will recover.

Grip

Regaining finger movement is also a key focus of early stages. We would advise you to regularly complete the finger exercises with a focus on achieving a full fist and fully straightening your fingers. Alongside these specific exercises, whenever you grip hold of household objects such a toothbrushes, cutlery or hairbrushes, you should attempt to close your fingers fully around the diameter.

Splint

You may have been provided with a splint after your injury e.g. a Futura splint (pictured). We would advise that you gradually start weaning off this in order to strengthen your wrist. Initially, stop wearing the splint at home or when in low risk areas, and then aim to stop wearing your splint at night and when out in public spaces.

Home exercise programme

It is important to complete the exercises provided by your hand therapist/consultant. The aim is for you to recover your range of movement (ROM) and strength post injury. Evidence has shown that regular completion of exercises will improve your outcome post fracture.

Heat

To assist regaining your movement, you may use heat prior to completion of exercises. For example, you may complete your exercises in the shower, or place a hot water bottle/warmed towel on the wrist 5-10 minutes before.

Pain

It is normal to have some level of discomfort post fracture. This is not an indication of a new injury or that you have unsettled the fracture. We would suggest that you work to the level of an unpleasant stretch. On a pain scale, we would suggest this to be around 5 out of 10 discomfort – this discomfort should settle down quickly on completion of the activity (within 30 minutes). If you are regularly experiencing significant pain, or for a significant period post exercise, please discuss your symptoms further with your hand therapist or consultant.

REHABILITATION

Distal radius Fractures

Wrist rehabilitation exercises

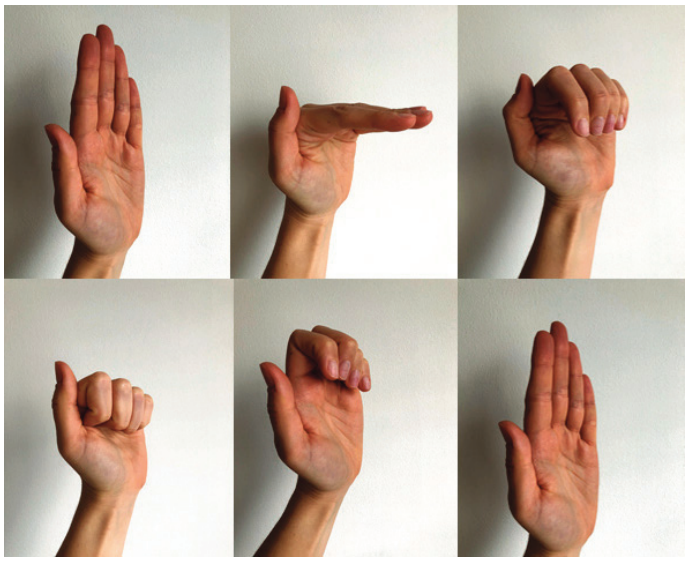
Stage 1

This stage starts immediately after your injury and lasts until you come out of your plaster cast (if treated with no surgery) or until you come out of your bandages (if treated with an operation).

Finger exercises

Tendon gliding

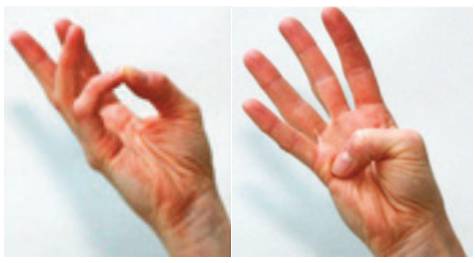
Complete the sequence of finger exercises. Increase the stretch into each position, using the other hand to assist the movement if the fingers feel stiff. *Repeat 5 times*



Thumb exercises

Thumb opposition

Touch the tip of each finger in turn with the tip of the thumb then move the tip of the thumb down the length of the little finger to its base. *Repeat 5 times*

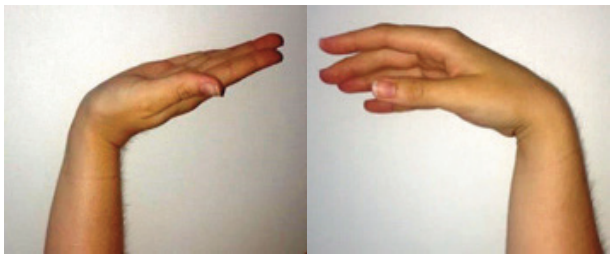


Stage 2

This stage starts when you come out of your plaster cast (if treated with no surgery) or when you come out of your bandages (if treated with an operation). Continue with the exercises from Stage 1 and now add the following routine to increase the flexibility of your wrist and hand. During this stage you should not be lifting or carrying anything heavier than a cup of tea ie don't put heavy weight through your wrist and hand.

Active extension and flexion

Bend the wrist backwards (extension) until you feel tightness. Hold the stretch for the count of 10-15 seconds. Then bend your wrist forwards (flexion) until you feel tightness.
Hold the stretch for the count of 10 -15 seconds. Repeat 5 -10 times.



Active supination and pronation

Keeping your elbow tucked into your side, rotate your forearm so the palm of your hand faces upwards (supination) and then rotate your forearm in the opposite direction (pronation).
Hold each stretch for the count of 10 -15 seconds in each direction. Repeat 5 -10 times.

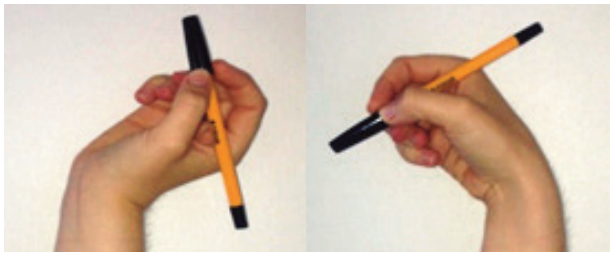
continued...

REHABILITATION

Distal radius Fractures

Dart throwers motion

Rest your elbow on a table. Hold onto a pen with a light grip. Pretend you are going to throw the pen like a dart by bending your wrist back in the direction of your thumb, and then move your wrist forward towards your little finger. *Repeat 5 -10 times*.

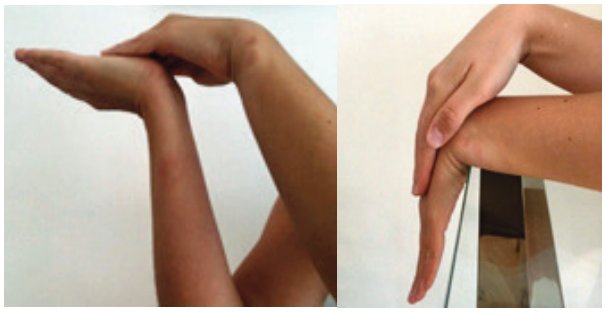


The following exercises focus on increasing your movement further. You will be using your other hand to assist the stretch. We would suggest you are guided by your discomfort – gently pushing into each movement holding the position at the point of stretch.

Passive extension and flexion

Bend the wrist backwards (extension) until you feel tightness. Then use your other hand to push into the movement. Hold this for 30 seconds. Bend the wrist forwards (flexion) until you feel tightness. Then use your other hand to push into the movement.

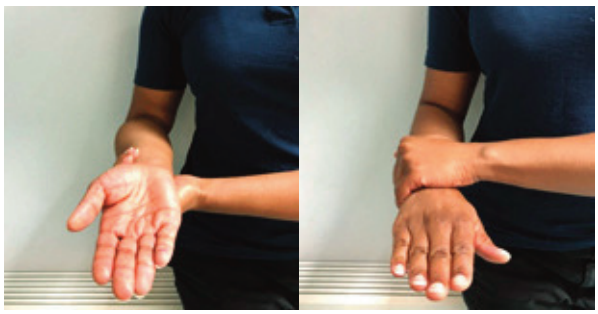
Hold this for 30 seconds. You may find it easier to complete this exercise with your hand over the side of a table. Repeat 2 times.



Passive pronation and supination

Keep your elbow tucked into your side. Rotate your forearm so the palm of your hand faces upwards (supination) and then downwards (pronation). Use your other hand to gently push your wrist further into each position.

Hold each stretch for the count of 30 seconds in each direction. Repeat 2 times.



Prayer stretch

Place both hands together with your elbows bent (as though praying), ensuring your palms are touching. Slowly bring your hands down the centre of your body - maintaining contact at the palms throughout.

Hold for a count of 30 seconds. Repeat 2 times.

continued...

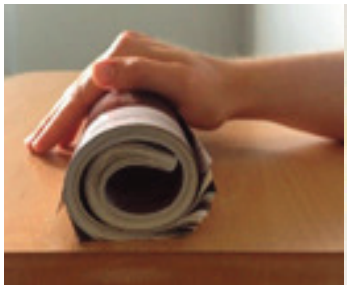
REHABILITATION

Distal radius Fractures

These exercises are designed to increase your ability to perform day-to-day tasks and control objects.

Rolling an object

Rest your hand and wrist on an uneven surface such as a ball, rolled magazine, cushion or water bottle. Without leaning through the object, roll your hand and wrist over it slowly and smoothly. If using a cushion or a ball, try to control your movements in a circular pattern or try to write your name.

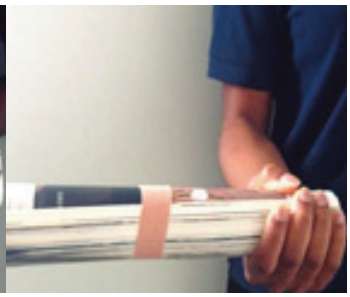



Control of forearm rotation

Start with your elbow tucked into your side, your palm is facing upwards and your chosen weight in your hand (e.g. a rolled up magazine as shown in the pictures).

Move your hand slowly and smoothly so that your palm is facing downwards. Then slowly return to the starting position. Make sure you keep your elbow tucked into your side throughout the exercise.

Repeat 5 times.

Stage 3

The following exercises are designed to help increase the stability and strength of your wrist. You should be able to start at around 6 weeks after your injury.

Weight-bearing on a table

While standing, place your hand flat on a table. Lean through the table with 25%, 50%, 75% or 100% or your weight, building up gradually over time.

Hold the position for 5 – 10 seconds.

Weight-bearing on a wall

When happy weight bearing onto a table, you can progress to weight bearing on a wall.

Face a wall and stand a little further away than an arm's length away with your feet shoulder width apart. Lift your arms and place your palms flat against the wall at shoulder width apart. Lean into the wall increasing your weight as you feel comfortable to do so.

Hold the position for 3-5 seconds.

continued...

REHABILITATION

Distal radius Fractures

Weight-bearing on the floor

When happy with weight bearing onto a wall, you can progress onto the floor, if relevant to you.

While kneeling on the floor place your palms flat on the floor in front of you. Lean into the floor increasing your weight as you are able to tolerate.

Isometric blocking exercises

Flexion

Rest your forearm on the table, palm up. Bend (flex) wrist. With your unaffected hand, gently push down on your hand and resist this force so that your wrist doesn't move. *Hold for 3-5 seconds, then relax.*

Extension

Rest your forearm on the table, palm down. Bend wrist back (extension). With your unaffected hand, gently push down on your hand and resist this force so that your wrist doesn't move. *Hold for 3-5 seconds, then relax.*

Pronation

Bend your elbow to 90 degrees and tuck it into your side with your thumb pointing to the ceiling. Start to rotate your forearm so your palm is facing down (pronation). Place your unaffected hand under your wrist, and gently block the twist. Aim to resist this force so that your wrist doesn't move.

Hold for 3-5 seconds and then relax.

Supination

Bend your elbow to 90 degrees and tuck it into your side with your thumb pointing to the ceiling. Start to rotate your forearm so your palm is facing up (supination). Place your unaffected hand on the back of your wrist, and gently block the twist. Aim to resist this force so that your wrist doesn't move.

Hold for 3-5 seconds and then relax.

continued...

REHABILITATION

Distal radius Fractures

Stage 4

You should start these exercises at around 8 weeks after your injury. These exercises aim to build up the strength of your wrist and your ability to bear weight with that arm. If you don't have a set of bar bells you can use easy to hold household objects of various weights to do the exercises with.

When choosing the correct weight, you should be able to lift the weight 10 times and then your wrist should feel tired. You may need different weights for different exercises. To make the exercises harder you can increase your weight and / or complete extra sets of 10 (up to 3).

Tip: Strengthening exercises should be completed every other day.

Flexion

Hold on to your chosen weight. Begin with your forearm resting on a table palm up, ensuring your wrist is off the edge of the table. Slowly bend (flex) your wrist upwards. Hold for a count of 5 seconds and then slowly lower your wrist.

Repeat this movement 10 times.

Extension

Hold on to your chosen weight. Begin with your forearm resting on a table palm down, ensuring your wrist is off the edge of the table. Slowly bend (extend) your wrist towards you. Hold for a count of 5 seconds and slowly lower your wrist.

Repeat this movement 10 times.

Wrist deviators

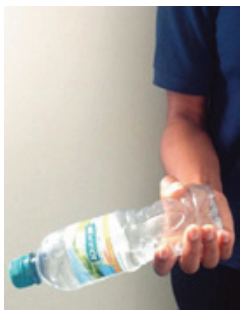
Hold on to your chosen weight. Start with your thumb pointing towards the ceiling. Bend your wrist up towards you and hold for a count of 5. Then slowly lower your wrist.

Repeat this movement 10 times.

Weighted supination and pronation

Start with your elbow tucked into your side, your palm facing upwards and your chosen weight in your hand. Move your hand slowly and smoothly so that your palm is facing downwards. Slowly return to the starting position.

Repeat 5 times. Make sure you keep your elbow tucked in your side throughout the exercise.



Sussex Hand Surgery

REHABILITATION

Distal radius Fractures

Glossary of terms

Active	An exercise that uses a person's own muscle to achieve the movement.
Backslab	A slab of plaster that does not completely encircle the limb and is used for injuries which have resulted in a large amount of swelling. It is secured with a bandage to accommodate the swelling.
Extension	The act of extending, lengthening or stretching out.
Flexion	The act of bending a limb.
Fracture	The breaking of a bone.
Passive	An exercise where the limb is held into a movement by another force - i.e. the other hand.
Plaster cast	A bandage stiffened and moulded to the shape of a limb that is broken. Used to support and protect.
Pronation	Rotation of the hand or forearm, the surface of the palm facing downward.
Splint	Rigid material used to immobilise a fractured or dislocated bone, or to maintain any part of the body in a fixed position. Usually removable.
Supination	Rotation of the hand or forearm, surface of the palm facing upward.

Useful links

NHS website: Osteoporosis
www.nhs.uk/conditions/osteoporosis/

Royal Osteoporosis society
www.theros.org.uk

National Osteoporosis Guideline Group – UK
https://www.nogg.org.uk/full-guideline

Educational video links

Below you will find a series of educational videos for you to view which you may find helpful.

Please type the links into your web browser or, if viewing this document electronically, click on the links and you will be taken directly to the videos.

Distal Radius Fracture - Acceptable alignment at 4 weeks.
https://vimeo.com/500518600

Distal Radius Fracture - Post-surgery - 4 weeks
https://vimeo.com/500502698

Distal Radius Fracture - 6 weeks
https://vimeo.com/500520728

Distal Radius Fracture - 8 weeks
https://vimeo.com/500524265

These notes are intended as a guide and some of the details may vary depending on your individual circumstance and at the discretion of your surgeon.

Sussex Hand Surgery

REHABILITATION
Distal radius Fractures

REHABILITATION

Distal radius Fractures

Hand Therapy Service contact details

If you have any concerns, please contact us.

Tel: 01273 696955 Ext. 64116

Email: uhsussex.handservicereferrals@nhs.net

Messages will be checked regularly throughout the working week.

If you have any urgent concerns outside of the working week, please contact your local out of hours GP or Accident and Emergency department.

You can use the following grid to record your progress through the exercise regime if you wish.

Exercises				
Finger and thumb exercises				
Active wrist movement				
Wrist stretches				
Rolling				
Turning an object				
Strengthening exercises - Isometric				
Strengthening with weights				
Swelling				
Elevation and ice				
Massage				
Glove				
Putty				
Fist				
Weight-bearing				
Table				
Wall				
Floor				
Function				
Light function				
Increase load				
Scar				
Massage				
Textures				

Fragility fractures and osteoporosis

What is a Fragility Fracture?

A fragility fracture is a broken bone caused by a fall from a standing height or less. Common sites of injury include the wrist (distal radius), shoulder (proximal humerus) hip (proximal femur) and spine (vertebrae).

What causes a Fragility Fracture?

Bones are normally strong and do not break after a fall from standing height or less, but as we get older, our bone become weaker making this more likely.

Osteoporosis and other bone conditions can increase the affects of age and mean that a broken bone after a fall is even more likely to occur.

What happens next?

If you are over the age of 50 and have sustained a fracture of your wrist (distal radius), shoulder (proximal humerus) hip (proximal femur) and spine (vertebrae) after a fall from a standing height or less, you would benefit from a bone health assessment, with or without a falls assessment.

This may involve answering questions about your age, height and weight, gender, whether you have certain related medical conditions or are taking steroids. You may also be ask about your use of cigarettes and alcohol.

You may be asked to have a bone density scan (DEXA) as part of this assessment.

If you are found to have osteoporosis or be at significant risk of another fragility fracture, you may be offered medical treatment.

What can I do to prevent further fragility fractures?

There are some simple things you can do to look after your bone health;

- Follow a healthy, balanced diet and including food rich in calcium (minimum 700mg daily) and vitamin D (at least 10 micrograms/day).
- Consider taking a daily supplement containing 10 micrograms of vitamin D.
- Reduce your alcohol intake to no more than 14 units per week.
- Stop smoking.
- Do regular weight-bearing exercise.
- Take the time to respond to follow-up questionnaires about your bone health and falls treatment.
- Make a routine/non urgent appointment with your GP to discuss your bone health and any need for ongoing investigation or treatment.