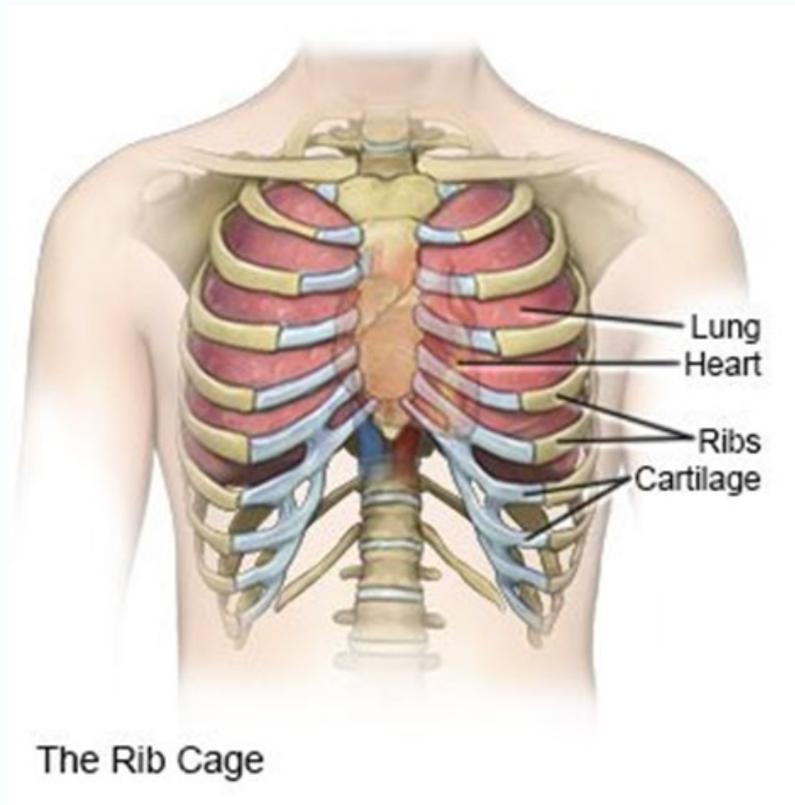


Fractures of the Ribs or Sternum



This information was compiled by
Trauma Services, Auckland City Hospital
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The human rib cage is part of the respiratory (breathing) system & covers the chest (or thoracic) area. The rib cage is flexible & moves up & down when you breathe. It is a strong frame onto which the muscles of the shoulder, chest, upper abdomen & back are attached. It protects the lungs, heart, & large blood vessels underneath. Other vital organs under the rib cage are the liver, kidneys, gallbladder, spleen, stomach, pancreas & parts of the bowel.



The bones of the rib cage are the 12 **bones of the thoracic spine**, the breast bone or **sternum** & 12 pairs of flat curved bones called **ribs**. The ribs are numbered 1 to 12, from the top to the bottom of the chest.

After leaving hospital

It is not unusual to experience more pain when you get home – you will be doing more normal activities rather than resting as you were in hospital. Discomfort from the injury will continue for some weeks but will steadily become less & less.

It is advisable to *see your GP within a week of going home*. He/she can monitor your progress & manage your gradual reduction in pain medicines as you improve. The GP & ACC can assist you in your return to work or if needed access further community supports.

REST..... PAIN MEDICINE.....ACTIVITY.....REST

You may feel quite tired when you first go home—plan a rest time during the day if that helps. Please keep doing the deep breathing & coughing exercises that you have been shown while you were in hospital. Going for a walk each day is the best way to increase your breathing ability & help prevent complications.

Some other suggestions:

- Use extra pillows for comfort when sleeping.
- Avoid sudden movements such as: stretching, lifting, pulling, pushing, or standing for long periods
- Eat well, drink plenty of water & exercise to help stop you getting constipated while you are on painkillers.

When can I drive or play sport again?

We advise you not to drive a car or motorbike, for at least 2 weeks after your injury. Your strength & the sudden movements may not cope with any defensive driving or emergency stops—due to the pain this might cause.

You should not participate in any aggressive or physically active sports or activities for at least 3 months or until cleared to do so by your GP.

Please contact your GP if you have increasing pain, new shortness of breath, or you feel increasingly unwell.

Getting ready for discharge

As your condition improves, the way you receive pain relief will gradually be adjusted so you are taking tablets which you can safely manage yourself at home.

Agreement on discharge between you & your medical team, will be when:

You are on a stable amount of pain medicine taken by mouth.



You can get in & out of a flat bed comfortably & on your own



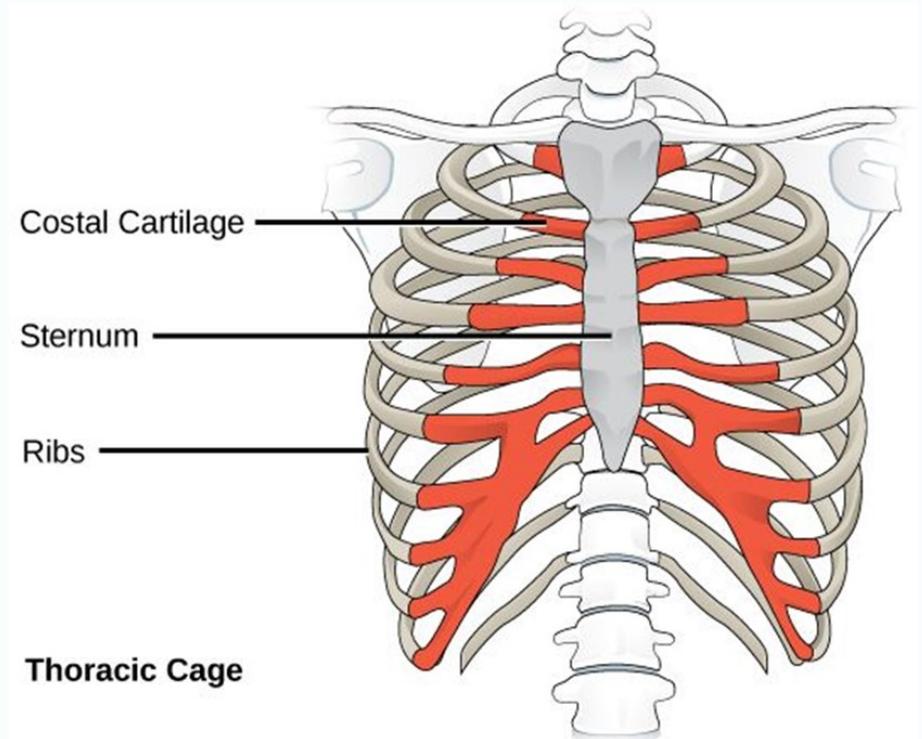
You are walking short distances on the ward regularly without help



You can manage your own personal hygiene



In the front, cartilage tissue joins the upper ribs (No 1 - 7) to the sternum. Ribs 8 - 10, are more loosely attached & ribs 11 & 12, are only attached by cartilage to each other. At the back, all the ribs fit snugly against the spinal bones & are attached to the spine with ligaments. In-between every rib on both sides are muscles, nerves & a blood supply.



The **sternum** (or breast bone) is a flat bone between the ribs, just below the throat area, & is made up of three parts called the manubrium, body & the xiphoid process.

The first ribs on both sides at the front are attached to the manubrium. Both second ribs attach to where the manubrium & body join. Ribs 3-7 attach onto the body section of the sternum.

Fractures of the Ribs or Sternum (or both)

A chest x-ray or chest CT scan will show if you have broken your ribs or sternum.



A rib fracture is a break in one or more of the ribs. There may be one break in several ribs or many breaks in the same rib, or both. The middle ribs are the ones most often broken.

Fractures can happen after a strong direct blow to the chest. This may be from a road crash, a fall, an assault, or a crush injury.

The sternum can be either cracked or broken by a blow to the chest e.g from hitting the steering wheel or against a seat belt in a crash.

About 10% of all people who fracture their ribs, will have broken at least one rib.

In people over the age of 65, a fall is the most common reason for injury to the ribs.



Sometimes after an injury, the rib cage may be painful, but no fractures are seen on an x-ray. These are called clinical rib fractures & are treated in the same as broken ribs.

Healthcare staff who you may meet during your stay in our hospital

Nursing & Medical staff – will monitor you & support your recovery & arrange any investigations (xrays &/or blood tests).

Trauma Nurse Specialist - will ensure your care is co-ordinated, especially if you have other injuries. They can give you & your whanau extra advice while in hospital, assist in planning for a safe discharge & support you with any initial ACC queries.

Acute Pain service –can assist in managing your pain if needed.

Physiotherapist – to assess & monitor your progress with deep breathing & coughing exercises & mobility to prevent complications.

Social worker – available for support, arranging community support services & counselling should you require them. Please ask.

Maori & Pacifica support —please ask if you wish this service to visit

Older Persons Health doctor—will visit you if you are 75 years or over

Health Psychologist— available for counselling. Please ask the ward staff if you need this service.

If you have any questions—Please ask our team

Rib Fixation surgery:

In some patients where the severely broken ribs interfere with breathing & control of pain, a repair of the rib bones can be done. This is a planned operation & will be discussed with you, if this is the best option for your recovery.

After surgery, It is expected that you should be able return to the ward, however some patients may need a short stay in the High Dependency unit. After surgery you can expect to have 1 or 2 chest drains for a short time & good pain relief, to help your recovery.



Treatment

The goal of your treatment is to be pain-free enough, so that you can cough, deep breathe, move comfortably, to prevent any complications.

Chest infections are avoidable.

The ability to move & keep moving is very important. Getting out of bed & going for a walk as soon as possible, is vital. This may also depend on whether other injuries are present or not.

But if you are able to - go for a walk 2 or 3 times a day.

This goal is achieved by you & your hospital team, with **regular pain relief**, medical & nursing care & physiotherapist help.

Breathing exercises

Practise this every 1-2 hours while you are awake, it will help you recover

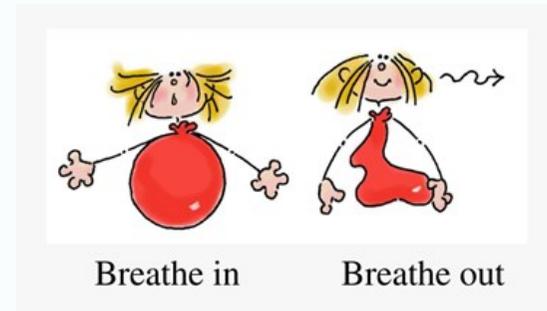
Take a deep breath in—right to the bottom of your lungs

Hold your breath counting slowly to 3

And relax

Do this 10 times.

Then support your chest where it is sore & give a big cough.



If you can't take a deep breath or cough properly —you need more pain relief to help you to do so.

Pain control in hospital

With fractured ribs or sternum, you will not really ever be completely pain free while in hospital. The aim is to be as comfortable as possible.

You will be given a variety of medicines to reduce the pain. Each works in a different way but also in combination with each other.

These are some examples:

- Regular medicine by mouth—to give a background level of pain control
- Medicine by mouth, **as you need it**. How often you have it is up to you. You will need to ask the nursing staff for *“extra pain relief” as soon as your pain starts to get worse*.
- If stronger pain relief is needed a PCA (Patient Controlled Analgesia) can be used. This is Intravenous (IV) medication controlled by you. You can then decide when & how often you need to use this.



Pain control continued.....

Other Options:

Another way to control pain from broken ribs can be with a local anaesthetic given at a set rate through a special pump.

There are two main types: a Regional block or an Epidural.

A regional block is a fine tube placed under the skin very close to the area where the ribs are broken. The pump is set to give a certain amount of local anaesthetic every few hours to numb the nerve ends.

An Epidural is local anaesthetic given through a fine tube placed near the spinal nerves. The pump is set to give a certain amount continuously to numb the nerve ends & reduce the pain.

Both a Regional block or an Epidural are put in by an Anaesthetist & will be discussed with you by the Acute Pain team, if this is the best treatment for your pain control.

