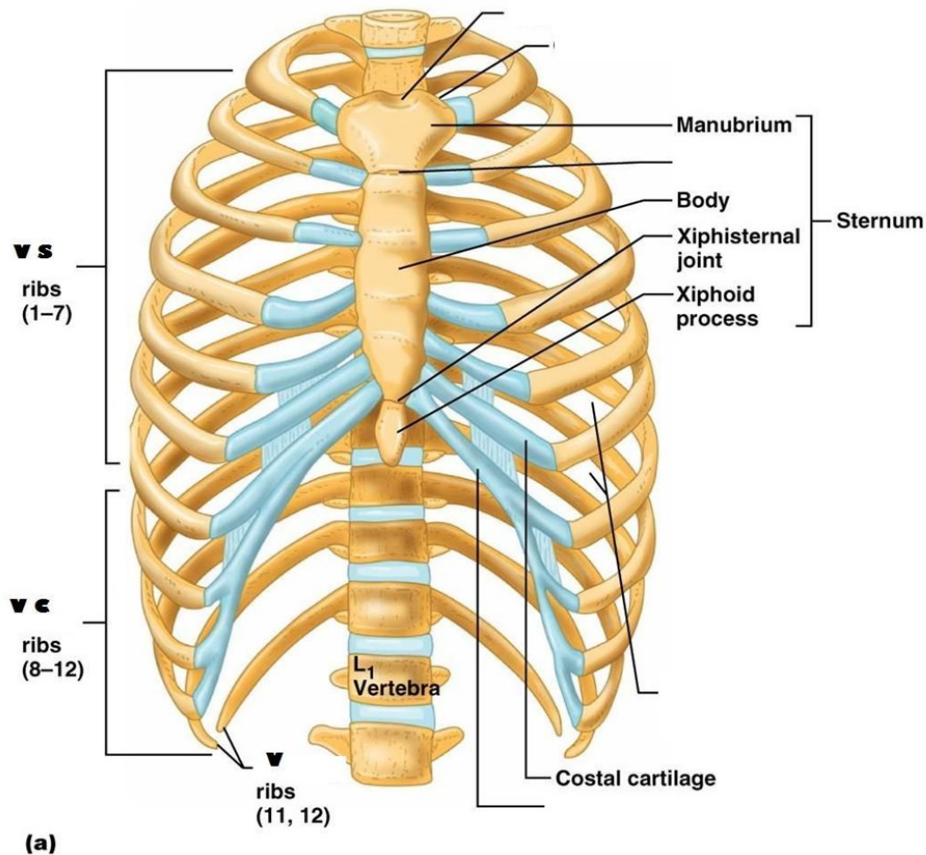


Fractures of the Ribs or Sternum



The human rib cage is of the part respiratory (breathing) system. It covers the chest (or thoracic) cavity. The rib cage is flexible & moves up & down when you are using your breathing muscles. One of the roles of the rib cage is to protect the organs underneath - lungs, heart, & large blood vessels. Other organs under the rib cage are the liver, gallbladder, spleen, kidneys, stomach, pancreas & parts of the bowel. It also provides a strong frame onto which the muscles of the shoulder, chest, upper abdomen & back, can attach.



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

People involved in your recovery

Nursing & Medical staff – will monitor your progress with regular checking of your vital signs, pain levels, & arrange any investigations (xrays &/or blood tests). They will also maintain treatments, & be there for you & your family, throughout your stay.

Trauma Nurse Specialist - to ensure co-ordinated care is achieved, especially if other injuries are present. To give you extra advice while in hospital & on discharge. To support you with ACC processes, if needed.

Acute pain service – will ensure that your pain is within an acceptable coping level for you & will prescribe the correct pain relief to allow you to breathe, cough & mobilise more easily.

Physiotherapist – will assist you with deep breathing & coughing exercises to prevent complications such as chest infections.

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

This information was compiled
Trauma Services, Auckland City Hospital
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At the back, all the ribs are attached to the spine with ligaments, & fit snugly against the spinal bones. In the front, cartilage tissue joins the upper ribs, numbers 1 - 7, to the sternum. Ribs numbered 8-12, are more loosely attached, & ribs 11 & 12, are not attached to any bones at the front. All ribs are also attached to each other with cartilage, & in-between each rib 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. These are 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 identify rib or sternum fractures.

A rib fracture is a break in one or more of the ribs of the rib cage. Sometimes there are many breaks in the same rib. The middle ribs are the most commonly broken ribs. Fractures can happen after direct blows to the chest such as: road crashes, a fall, assault, or crush injuries.

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

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

Sometimes the rib cage is painful, but no fractures seen on x-ray. These are called “clinical rib fractures” & are treated the same as broken ribs.

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.

Treatment

The goal of your treatment is to be sufficiently pain-free, so that you can cough, deep breathe & move comfortably, & to prevent any complications. Chest infections are avoidable, if you mobilise early & work with the physiotherapist.

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

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

Pain control

When you have 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.

Discomfort from the injury will continue for some weeks, even after you go home, but will steadily become less & less. In hospital you will be given a variety of medications to reduce the pain.

These are some examples:

- Regular medication by mouth. Taken regularly, these medicines form a background level of pain relief.
- Medication by mouth, as you need it. Doses can be adjusted to your needs.
- Patient controlled analgesia or PCA. Intravenous (IV) medication controlled by the patient. You decide when & how often you need to use this.

Advice for after discharge

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

1. You are on a stable amount of pain relieving medicines taken by mouth.
2. You are independent with personal hygiene, eg showering, bathroom, moving well - getting in & out of bed comfortably & walking short distances regularly on the ward.

It is advisable to see your GP within 2 weeks of discharge, so they can monitor your progress. They will assist you with your return to work, along with ACC.

REST..... ACTIVITY.....REST.....EXERCISE

You may feel quite tired when you first go home. This is normal & it is often useful to plan a rest time during the day. It is important that you continue the deep breathing & coughing exercises that you have been shown while you were in hospital. Walking each day is the best way to increase your breathing ability & prevent complications.

Some suggestions:

- Use extra pillows for comfort when sleeping.
- Avoid sudden movements such as : stretching, lifting, pulling, pushing, or standing for long periods

DRIVING THE CAR- we advise you not to drive a car or motorbike, for at least 3 weeks after your injury. Your strength & movement may not be up to coping with defensive driving or emergency stops – as well as normal driving. You should not participate in any aggressive or physically active sports or activities for at least 3 months.

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