- Bones

How does a fractured bone heal?

Bones are the most robust structures in the body, four times tonger than concrete. But accidental falls can cause fractures. How does a bone then heal?

Science Illustrated · 4 Jan 2024 · 18

Even though bone tissue is four times stronger than concrete, most people will face an accident in their lifetime where one or more bones will fracture.

When a hospital's emergency unit receives a patient with a potential bone fracture, an X-ray is performed so that the doctor can determine the exact position and nature of the fracture.

The next step is to reposition the fracture ends correctly in relation to each other. This ensures that as little new tissue as possible needs to be formed, speeding the repair to reunite the bone ends, while also ensuring that the bone does not end up crooked.

The fracture ends must be held securely in place until the bones have healed. This is often done by applying a plaster cast or splint, which also relieves pain, as it prevents the fractured bone ends from moving and damaging surrounding tissue and nerves.

In complicated cases, it may be necessary to fix the fracture ends with metal wire, nails or screws, which require surgery to attach.

As a rule of thumb, it takes twice as long for a fracture in the lower half of the body to heal (16 weeks) as for one in the upper half (8 weeks). However, fractures generally heal twice as quickly in children, while the process becomes slower in the elderly.

Fractured bones become stronger

A fractured bone often means weeks or months in a cast, but subsequently, the healed fracture is often the strongest part of the bone.