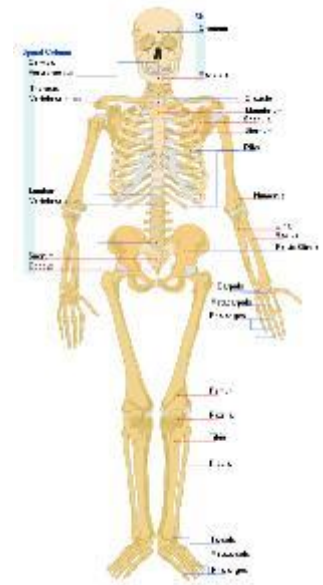


Science for Kids

Bones and the Human Skeleton



Skeletal System

All the bones in the human body together are called the skeletal system. The skeletal system provides strength and rigidity to our body so we don't just flop around like jellyfish. We have 206 bones in our body. Each bone has a function. Some bones offer protection to softer more fragile parts of body. For example, the skull protects the brain and the rib cage protects our heart and lungs. Other bones, like bones in our legs and arms, help us to move around by providing support for our muscles.

The skeletal system includes more than just bones. It also includes tendons, ligaments, and cartilage. Tendons attach our bones to muscles so we can move around. Ligaments attach bones to other bones.

What are bones made of?

Around 70 percent of your bones are not living tissue, but hard minerals like calcium. The outside of the bone is called the cortical bone. It's hard, smooth, and solid. Inside the cortical bone is a porous, spongy bone material called the trabecular or cancellous bone. This bone is lighter allowing for the bone itself to be lighter and easier for us to move around. It also allows room for blood vessels and makes our bones slightly bendable. This way our bones won't break so easily. At the center of bones is a softer substance called marrow.

Bone Marrow

There are two types of bone marrow, yellow and red. Yellow bone marrow is mostly fat cells. Red marrow is important because this is where our body produces red and white blood cells. When we are born, all of our bones have red marrow. By the time we are adults about half of our bones have red marrow.

Joints

Our bones come together and connect at special places called joints. Your knees and elbows are joints, for example. Many joints have a large range of movement and are called ball and socket joints. The shoulder and hip are ball and socket joints. Joints have a

smooth, durable material called cartilage. Cartilage, together with fluid, allows bones to rub against each other smoothly and not wear out.

How do broken bones heal?

Your body can heal broken bones all on its own. Of course, a doctor will help it along, making sure that the bone heals straight and properly using a cast or sling. A broken bone will heal in stages. When it first breaks there will be blood around it and it will form a sort of scab over the broken portions. Next, tougher tissue will start to grow over the broken area called collagen. The collagen, together with cartilage, will bridge the gap between the two sides of the break. This bridge will continue to transform and harden until the bone is healed. It can often take months for bones to heal back to normal. While the bone is healing, it can't take the stress of a normal bone, which is why people use crutches and slings to take the pressure off the bone while it's healing.

Fun facts about bones for kids

- The smallest bones are in the ear.
- Although your bones stop growing when you are around 20, they do constantly rebuild new bone cells.
- The spine is made up of 33 bones.
- Red bone marrow can produce around 5 billion red blood cells each day.
- Very few man made substances can come close to the lightness and strength of bones.
- If your body doesn't have enough calcium, it will take it from your bones making your bones weaker. A good reason to drink your milk!