

How Bones Grow Article

When you were a baby, you had tiny hands, tiny feet and tiny everything! Slowly, as you grew older, everything became a bit bigger, including your bones.

At birth, a baby's body has about 300 bones. These eventually fuse (grow together) to form the 206 bones that adults have. Some baby bones are made entirely of a special material called **cartilage** (say: **kar**-tel-ij). Other baby bones are partly made of cartilage. This cartilage is soft and flexible. During childhood, as you grow, the cartilage grows and is slowly replaced by bone, with help from calcium.

By the time you are about 25 years old, this process is complete. After this point, no more growth occurs—the bones are as big as they will ever be. All of these bones make up a skeleton that is both very strong and very light.

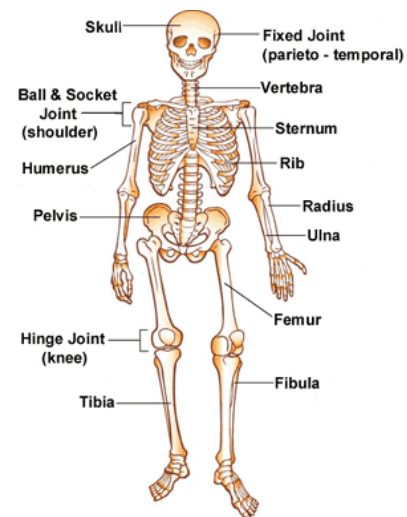
Your Spine

Your spine is one part of the skeleton that is easy to check out: Reach around to the center of your back and feel its bumps under your fingers.

The spine lets you twist and bend, and it holds your body upright. It also protects the spinal cord, a large bundle of nerves that sends information from your brain to the rest of your body. The spine is special because it is not made of one or even two bones: It's made of 26 bones in all! These bones are called **vertebrae** (say: **ver**-tuh-bray) and each is shaped like a ring.

The different types of vertebrae in the spine each perform a different kind of job:

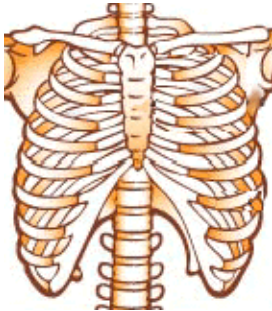
- ❖ At the top, the first seven vertebrae are called the **cervical** (say: **sir**-vih-kul) vertebrae. These bones are in the back of your neck, just below your brain, and they support your head and neck. Your head is pretty heavy, so it is lucky to have help from the cervical vertebrae!
- ❖ Below the cervical vertebrae are the **thoracic** (say: tuh-**ras**-ick) vertebrae—a total of 12. These bones anchor your ribs in place. Below the thoracic vertebrae are five **lumbar** (say: **lum**-bar) vertebrae. Beneath the lumbar vertebrae is the **sacrum** (say: **say**-krum), which is composed of five vertebrae that are fused together to form a single bone.
- ❖ Finally, all the way at the bottom of the spine is the **coccyx** (say: **cok**-siks), which is one bone made of four fused vertebrae. The bottom sections of the spine are important when it comes to bearing weight and giving you a good center of gravity. So when you pick up a heavy backpack,



the lumbar vertebrae, sacrum, and coccyx give you the power. When you dance, skip, and even walk, these parts help keep you balanced.

Between each vertebra (the name for just one of the vertebrae) are small **disks** made of cartilage. These disks keep the vertebrae from rubbing against one another, and they also act as your spine's natural shock absorbers. When you jump in the air, or twist while slamming a dunk, the disks give your vertebrae the cushioning they need.

Your Ribs



Your heart, lungs and liver are all very important, and luckily you've got ribs to keep them safe. Ribs act like a cage of bones around your chest. It is easy to feel the bottom of this cage by running your fingers along the sides and front of your body, a few inches below your heart. If you breathe in deeply, you can easily feel your ribs right in the front of your body, too. Some skinny kids can even see a few of their ribs right through the skin.

Your ribs come in pairs, and the left and right sides of each pair are exactly the same. Most people have 12 pairs of ribs, but some people are born with one or more extra ribs, and other people have one fewer pair.

All 12 pairs of ribs attach in the back to the spine, where they are held in place by the thoracic vertebrae. The first seven pairs of ribs attach in the front to the **sternum** (say: **stur-num**), a strong bone in the center of your chest that holds those ribs in place. The remaining sets of ribs do not attach to the sternum directly. The next three pairs are held on with cartilage to the ribs above them.

The very last two sets of ribs are called floating ribs because they are not connected to the sternum or the ribs above them. But don't worry, these ribs can never float away. Like the rest of the ribs, they are securely attached to the spine in the back

Your Skull

Your skull protects the most important part of all—the brain. You can feel your skull by pushing on your head, especially in the back a few inches above your neck. The skull is actually composed of different bones. Some of these bones protect your brain, while others make up the structure of your face. If you touch beneath your eyes, you can feel the ridge of the bone that forms the hole where your eye sits.

And although you cannot see it, the smallest bone in your entire body is also in your head. The stirrup bone behind your eardrum is only .1 to .13 inches (2.5 to 3.3 millimeters) long! Want to know something else? Your lower jawbone is the only bone in your head you can move. It opens and closes so you can talk and chew food.

Your skull is pretty cool, but has changed since you were a baby. All babies are born with spaces between the bones in their skulls. This permits the bones to move, close up and even overlap as the

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baby goes through the birth canal. As a baby grows, the space between the bones slowly closes up and disappears, and special joints called **sutures** (say: **soo**-churs) connect the bones.

Your Legs

Your legs are attached to a circular group of bones called your **pelvis**. The pelvis is a bowl-shaped structure that supports the spine. It is composed of the two large hip bones in front, and the sacrum and the coccyx behind. The pelvis acts as a tough ring of protection around parts of the digestive system, parts of the urinary system and parts of the reproductive system.

Your leg bones are very large and strong in order to help support the weight of your body. The bone that goes from your pelvis to your knee is called the **femur** (say: **fee**-mur), and it is the longest bone in your body. At the knee, a triangular-shaped bone called the **patella** (say: puh-**tel**-luh), or kneecap, protects the knee joint. Below the knee are two other leg bones: the **tibia** (say: **tih**-bee-uh) and the **fibula** (say: **fi**h-byuh-luh). Like the three bones in the arm, the three leg bones are wider at the ends than in the middle, which gives them strength.

Taking Care of Bones

Your bones help you out every day so make sure you take care of them. Here are some tips:

Protect your skull bones (and your brain inside!) by wearing a helmet for bike riding and other sports. When you use a skateboard, skates or a scooter, be sure to add wrist supports and elbow and knee pads. If you have a crash, you will be glad your bones were protected!

If you play sports like football, soccer, lacrosse or ice hockey, always wear all the right equipment. And never play on a trampoline. Many kids end up with broken bones from jumping on them. Broken bones can eventually heal, but it takes a long time and is not much fun while you wait.

Strengthen your skeleton by drinking milk and eating other dairy products (like cheese and yogurt). They all contain calcium, which helps bones harden and become strong.

Be active! Another way to strengthen your bones is through exercise like running, jumping, dancing, and playing sports.

Source: KidsHealth from Nemours at <http://m.kidshealth.org/kid/htbw/bones.html>