76: THE SKELETAL SYSTEM

Finally, we get to name the bones! You probably already know some of these names. We are just going to label the major bones of the body, not every bone. If you want to know the names of smaller bones (or the names of the parts of the bones, as every lump and bump has a name) you can easily search the Internet and find them.

Scientists think of the skeleton as having two parts. The **axial** *(AX-ee-el)* skeleton consists of the skull, the spine and the ribcage. The **appendicular** *(ap-en-DIK-u-lar)* skeleton refers to the arms and legs. ("Appendage" means something that sticks off something else.)

The arms hang from the "pectoral girdle," which is a framework made by the **clavicle** (collarbone) and the **scapula** (shoulder blade). Right where the clavicle and the scapula meet at the shoulder, there is a smooth, cup-shaped depression that forms a "socket" for the smooth head of the **humerus** (upper arm bone). This type of joint is called a ball-and-socket joint and we'll look at it again in the next lesson. Below the humerus we find two bones, the **ulna** and the **radius**. Both of these bones are connected to the wrist, which is made of a clump of 8 bones called **carpals**. (Connective tissue keeps all these lumpy bones in place, of course.) The longest bones of the hand, found in the palm and in the thickest part of your thumb, are called the **metacarpals**. The bones of the fingers are called **phalanges** *(fal-AN-geez)*. The phalanges that are closer to the metacarpals are called the **proximal** phalanges. ("Proxi" means "close.") The phalanges at the tips are called the **distal** phalanges. ("Distal" means "distant.") The distal phalanges are the ones that are the farthest away from the wrist.) The ones in the middle are called the middle phalanges. The thumb does not have a middle phalange.

The legs are hung from the "pelvic girdle," which is made of the **coxal bones** and the sacrum. The wide back part of the coxal bone is called the **ilium** (not to be confused with the ileum). The ilium is the bone that we feel when we put our hands to our hips. The frontal part of the coxal bone is called the **pubis**. The bottom of the coxal bone is called the **ischium** (ISS-key-um) and this is the part of the bone we sit on. The two coxal bones are joined in the back by the sacrum, and in the front by a piece of fibrocartilage called the **pubic symphysis** *(SIM-fuh-sis)*.

The rounded top of the **femur** fits perfectly into a bowl-shaped depression in the **coxal bone**. This joint is a ball-and-socket joint, just like the shoulder joint. The bottom of the femur is attached (at the knee) to two smaller bones called the **tibia** and the **fibula**. The bone on the front of the knee (the knee cap) is called the **patella**.

Right under the tibia and fibula you find the 7 tarsal bones. The top tarsal bone is called the **talus** *(TAY-lus)*. The tarsal that forms the heel is called the **calcaneus** *(cal-KANE-ee-us)*. The foot has long bones similar to the metacarpals in the hand. These long foot bones are called the **metatarsals**. The bones of the toes are called the **phalanges**, just like the finger bones.

The names of the bones of the skull are very similar to the names of the lobes of the brains. For example, the **frontal** bone covers the frontal lobe. Thus, we also have the **temporal** bone, the **parietal** bone and the **occipital** bone. You may already know that the correct name for the jaw bone is the **mandible**. We met the **sphenoid** bone and the **ethmoid** bone in lesson 60. (The sphenoid is that butterfly shaped bone on the bottom of the skull. The ethmoid is in the sinuses.) The bone that holds the top row of teeth is the **maxilla**. The **nasal** bone connects the two maxilla bones and forms the top part of the nose. The **zygomatic** bone is the framework for your cheek. The top part of this bone, under the outside of the eye, is called the **zygomatic arch**.

The spine is made of 33 vertebrae. The top 7 vertebrae are called the **cervical vertebrae** and they form the neck. The first cervical vertebra, right under the skull, is the **atlas**. (In Greek mythology, Atlas was the god who held the earth (or the celestial sphere) on his shoulders. If you imagine your skull to be a globe, then your atlas is Atlas.) Your atlas isn't like any of the other vertebrae. It has a special shape that fits with the skull on top and with the second cervical vertebra below it, called the **axis**. The atlas is the bone that allows you to nod your head up and down and tip it side to side, and the axis allows you to look left and right. Working together, these two bones allow you to move your head in any direction. (As an important side note, if these two bones get knocked out of alignment, they can pinch the nerves coming out of your brain stem and cause quite a variety of health issues, such as headaches, digestive disturbances, neurological problems with arms or legs, brain problems like depression or "brain fog," and even (in a few documented cases) nervous system diseases such as MS. Most chiropractors don't deal with these two vertebrae. Special chiropractors, called upper cervical chiropractors, make precise measurements of the misalignment and tap the bones back into place. (If you've had head or neck injury get your atlas checked and spare yourself future problems.) The rest of the cervical vertebrae are simply known by their numbers: C3, C4, C5, C6, and C7.

The next 12 vertebrae are called the **thoracic vertebrae**. These are the vertebrae that are attached to your ribs. You have twelve pairs of ribs and ten of these pairs are fastened to the vertebrae in the back and the sternum bone in the front. The two bottom pairs of ribs, number 11 and number 12, are called "floating ribs" because they don't attach to the sternum, only to the spinal vertebrae in the back. None of the thoracic vertebrae have special names. They are called T1, T2, T3, etc.

Below the 12 thoracic vertebrae are 5 **lumbar vertebrae**. The nerves that come out of the lumbars go into the organs in the lower part of the torso, such as bladder and rectum, and down into the legs. Numbers are used for the lumbars: L1, L2, L3, etc.

Between all the vertebrae you find thick pads made of dense fibrocartilage. This padding allows the vertebrae to move around a bit, but hopefully not slip out of place too much.

Below L5 we have the **sacrum** *(SAY-crum)*. The sacrum looks like one piece but is actually 5 vertebrae that are fused together. The sacrum sits between the two coxal bones that form the hips. The last tiny bit of the spine is called the **coccyx** (KOK-siks) and it appears to be 4 tiny vertebrae fused together. The common name for the coccyx is the "tail bone." The word coccyx comes from the Greek word for the cuckoo. The namers of this bone thought that the coccyx resembled the beak of this bird.