**EQUINE SKELETAL SYSTEM**

The skeletal system is the framework for the horse's body.

The skeleton needs the muscles to provide the movement of the body. The skeleton also provides protection for the vital organs in the horse.

The skeleton is made up of bones. These bones are held together by ligaments at a junction called a joint. Muscles are attached to the bone by the tendons.

### BONES

A tough membrane called the periosteum covers and protects the bones. It also provides a place for the joint capsules, ligaments and tendons to attach.

Cartilage is found on the end of the bones in the joints to act as a shock absorber and to reduce friction.

The skull (horse's head) consists of 34 bones.

The horse's spine consists of 7 cervical (neck) vertebrae, usually 18 thoracic (connected to the rib cage) vertebrae, usually 5 (sometimes 6) lumbar vertebrae, 5 fused sacral vertebrae called the sacrum, and 18 (this number can vary) coccygeal vertebrae make up the tail.

The ribcage is usually 18 pair of ribs coming from the thoracic vertebrae. The curve around the organs to meet at the breastbone - called a sternum.

The front legs consist of the shoulder blade (scapula), humerus, radius, 8 carpal bones that make up the knee, cannon, splint bones, long and short pastern bones, and the coffin bone in the foot. The front legs carry the majority of the weight of the horse - usually at least 60 percent.

The hind legs consist of the pelvis (ilium, ischium, pubis), femur, tibia and fibula, 7 tarsus bones make up the hock, cannon and splint bones, long and short pastern bones and the coffin bone.

It is interesting to note that the horse has a patella in the stifle like a person has a knee cap. It is actually the stifle that is like a person's knee. What most people refer to as the knee in a horse is actually more like it's wrist - as is the hock like an ankle.

### JOINTS

A joint is where two bones meet - any two bones - not just the ones you normally would think of as a joint. So, there is a joint between each vertebrae in your horse's spine. This is something to remember for when we get to the lesson in equine energy techniques.

The ends of the bones in a joint are lined with cartilage. As mentioned earlier, this cartilage is needed for shock absorption as well as to make smooth movement.

The joint capsule is sealed by a synovial membrane. This membrane produces a viscous, lubricating fluid called synovial fluid.
LIGAMENTS

A ligament is a band of connective tissue used to connect one bone to another bone. They are made of a collagen fiber. Collagen is a fibrous protein found in connective tissue.

Ligaments have a limited blood supply. This is why a ligament will take so long to heal when it has been injured.

Ligaments are there for support and do not supply much movement. If a ligament is overstretched repeatedly, it may lose up to 25 percent of its strength. This is one reason why equine chiropractic treatment should not be overused.