Pilates and Stretching FOR HORSES

This month's article from ***Horses Inside Out by Sports and Remedial Therapist Gillian Higgins*** *includes an extract from her book 'How Your Horse Moves', available from www.HorsesInsideOut.com*

Muscle Make Up

There are three types of muscle found within the body:

- **cardiac,** which is specific to the heart and cannot be consciously controlled
- **smooth,** which is also involuntary and plays a part in the circulatory and digestive systems
- **skeletal,** which produces movement, maintains posture, and stabilizes joints. This muscle type is under conscious control although it will contract involuntarily as a reflex response.

More about skeletal muscle

Skeletal muscles come in all shapes and sizes. They respond to motor nerve impulses, are highly elastic, and have strong contractile power. Muscles have a fleshy 'belly' comprising thousands of muscle fibres intertwined with connective tissue called fascia. Muscle fibres decrease towards the ends of a muscle, reducing its circumference until only the longitudinally arranged collagen fibres remain in the form of a tendon. This attaches to the bone via a tough fibrous membrane known as the periosteum. Muscles are attached to, and therefore move the skeleton by passing over joints.

The points at which the skeletal muscles attach to the bones via the tendons are known as:

- the point of origin – nearest to the body centre
- the point of insertion – furthest away from the body centre.

Skeletal muscles – up close

Muscles consist of fibres made up of many thousands of individual muscle cells that run parallel to each other. The fibres are bound together in bundles, called fascicles, by very thin layers of connective fascia.

Within each fibre are thousands of smaller threads known as myofibrils, which give the muscle its ability to lengthen and shorten.

Within the myofibrils are millions of minute bands known as sarcomeres, which comprise myofilaments made up of proteins. Actin produces thin myofilaments and myosin produces thick ones. These are responsible for muscle contraction. They slide over one another when the muscles contract thereby shortening it. They slide back to their original position as the muscle relaxes.

Very simply, muscles convert chemical energy into movement.

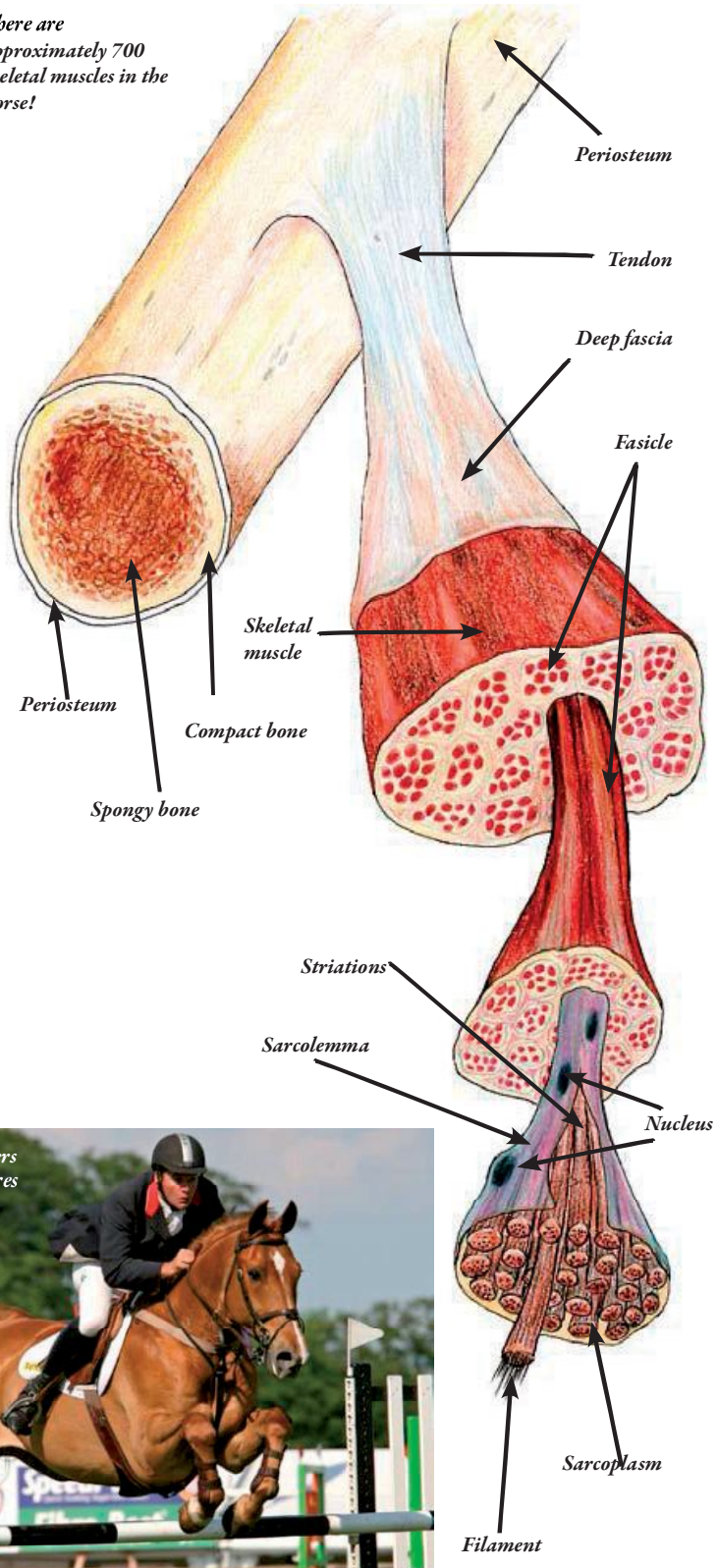
Skeletal muscle fibres come in different types.

These are inherited, so although you can train to get the best from your horse, you cannot actually change them. In other words you cannot change a cob into a racehorse any more than you can change a weight lifter into a long distance runner!

The muscle types are:

- slow twitch that produce energy slowly over a long period. They work aerobically, requiring oxygen to create energy. Horses with a predominance of these types of muscle fibres are less likely to fatigue and are good for endurance
- fast twitch that are physically larger than slow twitch fibres. They work anaerobically producing small amounts of energy quickly and explosively but they tire out easily.

There are approximately 700 skeletal muscles in the horse!



Endurance horses have a predominance of slow twitch fibres.

In show jumpers fast twitch fibres predominate.

Horses Inside Out - Conference 2014

Understanding the structure, composition, complexity and strength of a horse's back is critical to his usefulness, ability to perform, and well-being. Equitation problems, poor performance, discomfort or challenging behavioural issues can all be back related and, as all structures in the equine body are interdependent the cause of back problems can be diverse and seemingly unrelated. This conference aims to provide a deeper understanding into the complexity of back related issues and shed some light onto training the back sympathetically and effectively.

Saturday and Sunday 22nd/23rd February 2014

For prices, more information and an application form see advert or Ring Shirley on 0115 921 2648