

## ETT™ TO IMPROVE MUSCLE PERFORMANCE

February 2017

### Two points to address

- 1) By maintaining the athlete with ETT™ and adding WG Transeva current to the muscle/ Psoas Group, the muscle is more receptive to training
- 2) By maintaining the correct movement of muscle and nerves through the Psoas Group, the athlete is less likely to get injured

**The Psoas Group** – In the human and equine this is a core muscle group.

Between the last rib and the pelvis, the human lumbar spine is most vulnerable to weakness. Core support of anterior region through the abdominals is augmented by support through the psoas group along the spine. The Psoas group attaches the legs to the pelvis by an insertion into the femur. The muscles run along the inside of the pelvic girdle and attach the pelvis to the lumbar and thoracic spine. On the athletic front they are the most important muscles for stabilizing stance and engaging movement. If the function of the Psoas Group is impaired in the slightest way, there is unbalanced force on gluteals, hamstrings/quadriceps and calves when the athlete exerts. The balance and correct Tetonic\* state of muscles is fundamental to consistent, top athletic performance (Figure 1).

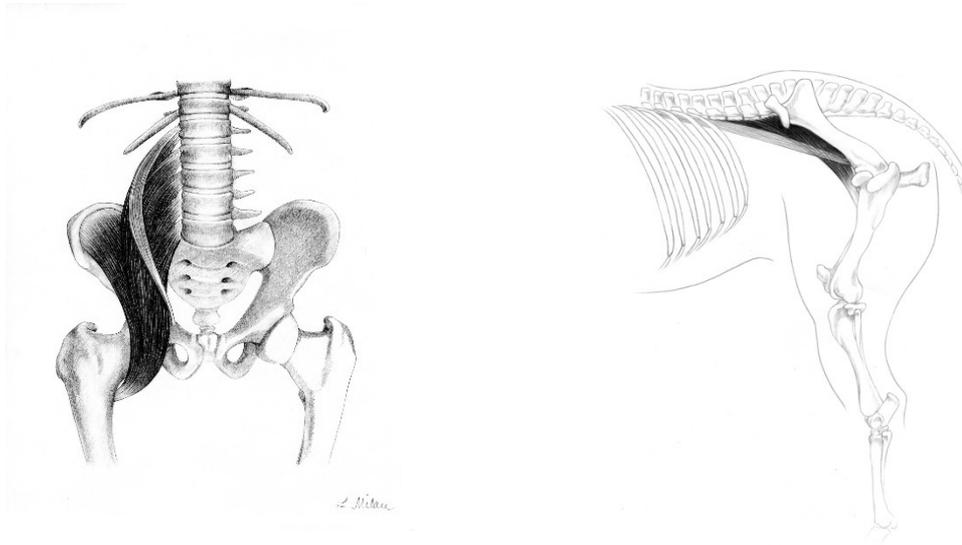


Figure 1 The human and equine Psoas Group in situ (Drawings courtesy of Beth Shaw)

In many cases the signs of an injury/ weakness to the Psoas Group are not so apparent. Because the muscles are not obvious, the signs are more subtle and often frequently confused with other injuries in the athlete's body. This can be frustrating as the symptoms linger, negatively affecting an athlete's performance and behavior. The majority of lower back pain starts with restrictions in the Psoas Group.

When the Psoas Group is balanced there is less pressure on the lumbar vertebrae and surrounding tissue and the major nerves extending from the lumbar area have the opportunity to function

correctly all the way to the foot/or hoof. The muscles of the leg therefore have a greater chance of operating optimally for longer at high levels of athletic competition.

### **Why is ETT™ important in the training of the top athlete?**

The action of ETT™ can be likened to a grader on the road down to the farm gate. With repeated use, there is displacement of dirt, shale, and rocks on the road surface. When the grader has beendown the road and cleaned the road surface, there is a smoother progression to the gate at the end of the farm road. The end point (the motor endplate) is the gate to the muscle's activation. ETT™ is making the neuron more receptive to the signal from the CNS. It is clearing and preparing the path for the neurotransmission of the electrical signal to conduct from the brain. It is then receptive to the normal loading and activation of the muscle, and is prepared in advance for work.

### **The Psoas Group and nerve involvement**

The Sciatic Nerve originates in the lower spine from the sacroiliac region. This sacral plexus serves the tibial and fibula nerves, the terminal branches of which innervate the gastrocnemius (the calf). Hence muscle restraint in the lower back, can impinge the nerve, affecting the operation of lower leg

The Iliacus and Psoas Major (the Iliopsoas) are directly in contact with the femoral nerve that originates from the second, third and fourth lumbar vertebrae (Figure 2). The femoral nerve feeds the quadriceps femoris (consisting of the rectus femoris, vastus intermedius, vastus medius, vastus lateralis). If the Tetonic state of the Iliopsoas muscles is not correct, it will affect the functioning of the femoral nerve and therefore that of the quadriceps. Medially, the femoral nerve divides into the saphenous nerve running down the leg and under the knee to the meniscus. This scenario can explain pain felt in the knee if the nerve is not functioning optimally.

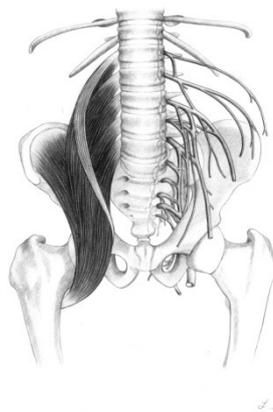


Figure 2 The Iliopsoas muscle group (human right) and the corresponding nerve innervation (human left) of the human lower back and pelvic girdle. (Drawing courtesy of Beth Shaw)

The muscular system is a unique machine in how it is able to compensate. Where there are biomechanical weaknesses, the fascia is able to change, causing a change in the transfer of energy. The balance of work between the muscles may also change. This compromise does translate to a risk of the athlete not maximizing his full athletic potential.

*In both the equine athlete and the human athlete, it is essential that the pelvic girdle (psoas group) stay on line in its movement and function. Over 15 years of treating top race horses in preparation for the Durban July has emphasized this significantly. In fact, a psoas triangle can be defined in the horse between the last three ribs, the sacroiliac region and the lesser trochanter of the femur. By providing energy into that triangle through ETT™, the receptivity and preparedness of the muscle for work is increased. Correct muscle is built and symmetry in the hindquarter follows (#myfavoritebottom). With nerve and muscle efficiency enhanced through ETT™, a Tetonic state is easier to achieve in the muscle, and the athlete can use less effort to create movement, and hence delay fatigue.*

### **Volume Action Potential**

*The initiation of an action potential by the central nervous system is effected in the muscle through permeability changes in the plasma membrane. Depolarization and repolarization occur with the help of Na<sup>+</sup> and K<sup>+</sup> ion pumps which create potential differences. The nerve impulse is this depolarization wave. (See our clip for a novel means of demonstrating this <https://youtu.be/-JHMv5LJus>). ETT™ enhances potential differences in nerve conduction, and thereby adds strength to the action potential. In turn, this relates to the integrity of the nerve conduction (grading the road) by making sure that the road is used and the gate is reached.*

### **Why is ETT™ different from other modalities that also use an electric pulse?**

*The advantage ETT™ has over other electrotherapeutic modalities is the mobile hand-piece of the WG Transeva (Figure 3). The mobile hand piece allows the ETT™ practitioner to evaluate the Tetonic state of the muscle through its length, to establish weakness, restriction or poor movement within the muscles. The pulse and the intensity of the electrical signal can be adjusted in each locality to effect change in the dynamic movement of the muscle. While other equipment such as the TENS machine, H-wave and therapeutic ultrasound have shown good results in relieving pain, possibly through localized analgesia, none of these modalities are directed at the source of the pain, or are directed at developing the correct movement of each muscle fiber.*

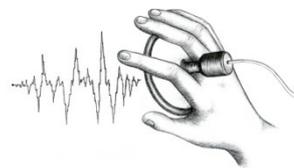


Figure 3 WG Transeva mobile hand piece

*The mobile hand piece, the improvement in nerve conductivity, the psoas triangle, and the knowledge and anatomical training of the ETT™ practitioner contribute to the consistent and persistent success of the ETT™. In human or equine athletes, creating an on-line, conductive relationship between the efferent nerves and the musculo-skeletal system significantly improve, maintain and promote top athletic performance.*

**Glossary of terms:**

**ETT:** *Equine Transeva Technique, a technique of re-establishing correct muscle movement and function*

**WG Transeva:** *Winks Greene (WG) Transeva, originally the “Strong Box.” The “Strong Box” was developed by Sir Charles Strong in 1939. The Strong Box developed into the Transeva. He was later knighted by the Queen of England for his development and success with the Transeva. Through her career, Winks Greene made modification to the Transeva and called it the WG Transeva. To learn more about the WG Transeva please go to [www.BethShaw-ETT.com](http://www.BethShaw-ETT.com), articles, “WG Transeva’s position in the modern world and its effect on the equine”*

**\*Tetonic:** *te-ton-ic: adj.; character of muscle fibre function which encompasses its contractibility, irritability, elasticity and tone.*

**Action Potential:** *The change in electric potential associated with the passage of an impulse along the membrane of a muscle or nerve cell*

**CNS:** *central nervous system*

**Motor endplate:** *The large and complex terminal formation by which the axon of the motor neuron establishes synaptic contact with a striated muscle fibre*

\*\*\* A huge thank you to Dr. Marion Young at BSET Academy for her input and encouragement to put my thoughts on paper. Thank you.

*“Words and ideas can change the world” – Robin Williams*