

DRY NEEDLING

for Equines

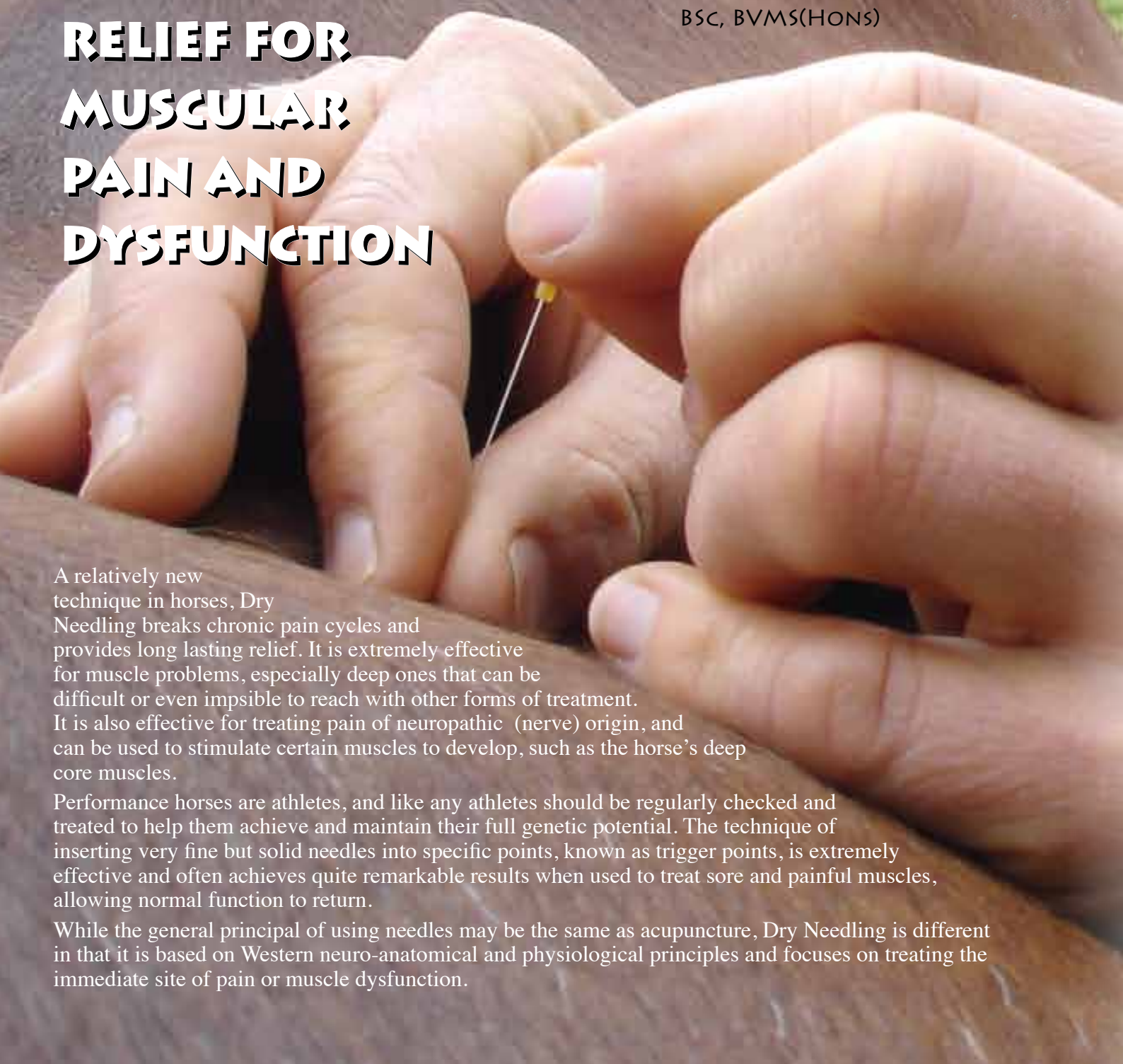
**EFFECTIVE,
NATURAL
RELIEF FOR
MUSCULAR
PAIN AND
DYSFUNCTION**

BY DR VICTORIA HAMILTON
BSC, BVMS(HONS)

A relatively new technique in horses, Dry Needling breaks chronic pain cycles and provides long lasting relief. It is extremely effective for muscle problems, especially deep ones that can be difficult or even impossible to reach with other forms of treatment. It is also effective for treating pain of neuropathic (nerve) origin, and can be used to stimulate certain muscles to develop, such as the horse's deep core muscles.

Performance horses are athletes, and like any athletes should be regularly checked and treated to help them achieve and maintain their full genetic potential. The technique of inserting very fine but solid needles into specific points, known as trigger points, is extremely effective and often achieves quite remarkable results when used to treat sore and painful muscles, allowing normal function to return.

While the general principal of using needles may be the same as acupuncture, Dry Needling is different in that it is based on Western neuro-anatomical and physiological principles and focuses on treating the immediate site of pain or muscle dysfunction.



HOW DOES IT WORK?

To understand how dry needling works it is important to learn about muscles, myofascial disease and myofascial trigger points.

There are three types of muscles in the body - skeletal muscle, smooth muscle and cardiac muscle. Skeletal muscle is used to maintain posture and for movement. Although some functions are under subconscious control, skeletal muscle may be consciously triggered to work and therefore is known as voluntary muscle. Smooth muscle, found within the walls of body organs and structures such as the oesophagus, bladder, ureters, urethra, blood vessels and bronchi and cardiac muscle (heart) are known as involuntary muscles as they are not under conscious control. Dry needling is only used on skeletal muscle so the remainder of this discussion is only referring to this type of muscle.

Healthy muscles relax and contract under nerve influence but when muscles are damaged for whatever reason, areas within them may stay in a fixed state of contraction or involuntary shortening. This can effectively cut off the blood supply to these small areas causing the cells to become even more irritated and triggering a vicious cycle of ongoing damage. These are called Myofascial Trigger Points (MTP's) and this is how they develop.

MTP's may be painful on any or all of the following- compression; stretching; overload; contraction

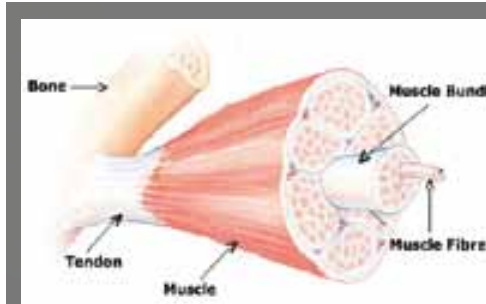
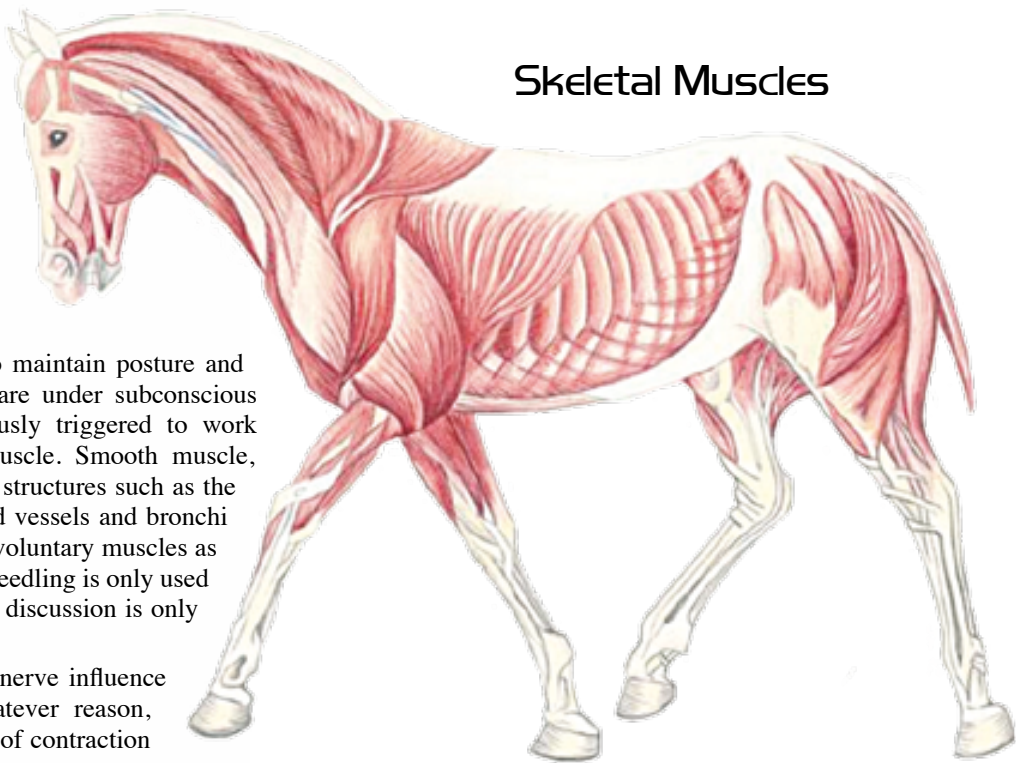
MTP's that are painful on compression are relatively easy to locate by feedback from applied pressure (palpation). Owners often find some of these points inadvertently when grooming a horse, saddling up or hosing off. This is why it is so important to take the time to notice any changes in behaviour and responses to pressure that are not typical for a horse when doing these activities.

Points that are painful on stretching, overload or contraction may be much more difficult to locate and this is where a thorough knowledge of the anatomy and biomechanics of the horse is essential. Sometimes the history offered by the owner helps in locating points, as does observing the horse both standing to assess its posture and while active, watching it move. MTP's that are painful on stretching may severely limit the horse's reach both laterally and also longitudinally. Some examples are horses that are unable to stretch long and low or are only able to stretch down so far and then quickly come back up as if something is hurting them. Often this is put down to loss of balance but there may well be an underlying reason.

Horses with MTP's that are painful on overload may work well up to a certain point but then when the difficulty of a particular exercise is increased they may 'hit a brick wall'. They just can't do it and may actually refuse or resist. An example is the horse that is happy to pirouette down to a certain size but then either breaks out of the canter or changes behind when asked to make it smaller. Often the horse is said to be lacking in strength but sometimes having MTP's that become sore when the workload on the muscle is too great can be a contributing factor.

MTP's that are painful on contraction will show varying signs depending on the muscles affected but a common one is a horse that is happy to work in a lower outline but shows marked resistance when asked to engage more and come up in front. For

Skeletal Muscles



Individual fibres are wrapped together to form muscle bundles. Muscle bundles are then wrapped together to form a muscle. Tiny tears in muscle fibres cause the development of stress points. Stress points can be found anywhere in the muscle.

sure, this may be due to a lack of preparation both leading up to the training session and also during the actual training session, or a lack of understanding or communication, but if this is not the case there will be a physical reason for the horse's reaction that needs to be identified and addressed.

Equine Myofascial Pain Syndrome (EMPS) is a persistent, painful condition affecting the muscles and the fascia that surrounds

Continued



Locating MTP's by feedback from applied pressure (palpation). Alternatively they are often found inadvertently, by owners, when grooming a horse, saddling up or hosing off.

HISTORY AND DEVELOPMENT

Although a relatively new technique in horses, Dry Needling has been used in humans since the 1940's. Dr Janet Travell, the personal physician of John F. Kennedy, was one of the founders of dry needling and a leading pioneer in the diagnosis and treatment of myofascial pain, which is pain associated with muscles and the connective tissue (fascia) surrounding them.

Myofascial pain comes from trigger points, which are hypersensitive, tightened spots that can occur in any muscle. In humans they are known to cause pain, tingling, burning, weakness and other symptoms and can also result in referred pain, which means they cause pain right where they are but also in other areas.

The concept of inserting needles into myofascial trigger points is the basis behind most Dry Needling, but like most procedures in the medical profession advances are continually being made.

One of the most noticeable newer techniques in Dry Needling was developed by Dr Chan Gunn CM, OBM in the 1980's. He believed that some muscle pain is neuropathic in origin, due to inflammation around spinal nerves and that in these cases, if only the trigger points in the affected muscles are treated, the pain will recur. However if additional needles are inserted into the paraspinal muscles (the muscles running next to and parallel to the spine) around where the nerves leave the spinal cord on their way to communicating with the muscles of the body, good results are obtained. This is the concept of Intra-Muscular Stimulation.

Superficial Dry Needling is a more recent version developed in 2005 by Peter Baldry where very shallow needles are inserted above the trigger points. This is very useful for areas where it is too dangerous to needle deeper for risk of damaging underlying structures.

Equine Dry Needling continued...

them due to the effects of MTP's. It is more common in horses than many people wish to accept and is often the hidden reason behind many poor performance and behavioural issues in a horse's career. It can also affect the horse's biomechanics or way of moving to the point that lower leg structures are put under abnormal wear and tear.

Many people have experienced muscle pain and recognise how limiting and debilitating it can be. The signs seen in EMPS are incredibly varied due to the facts that any skeletal muscle may be affected, one or multiple muscles may be affected at any one time and affected muscles may be painful, weak, stiff or a combination of all of these.

Additionally:

1) the signs seen may be directly related to the affected muscle(s) not working correctly and therefore not able to perform its job.

2) Indirectly related in that the affected muscles may be unable to relax and lengthen enough to allow other muscles in the body to function correctly. One of the best examples of this that most people have had firsthand experience with is when the back muscles of the horse are tight the horse is unable to engage its hindquarters.

3) Indirectly related by other muscles having to work harder to compensate for the reduced efficiency of the directly affected muscles.

WHAT DOES IT DO?

Inserting needles into myofascial trigger points mechanically stimulates them and directly treats the cause



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Dry Needling can also be effective in stimulating certain muscles to develop, such as the horse's deep core muscles.

of the pain by relaxing shortened muscle fibres. When the needle is inserted into a trigger point the muscle twitches. This is known as a localised twitch response and following this the muscle relaxes, allowing an increase in blood flow to the area, promoting healing and restoring normal function. Twitch responses are both therapeutic and diagnostic as healthy muscle will not elicit a twitch response. There are a number of different hypotheses as to exactly how dry needling affects the horse's body from a physiological point of view. It is most likely that it works by a combination of them all; from releasing endorphins (endogenous opiates), the body's own pain relieving chemicals, to local chemical reactions around the actual trigger points. The importance of the local twitch response has been scientifically proven and could explain the difference between success rates of various practitioners. It has been shown that following the local twitch response the altered pH and biochemical imbalance surrounding the trigger point normalise. These biochemicals are involved in inflammation and pain control so their normalisation is paramount for healing.

SIDE EFFECTS

The sterile needles are very fine and flexible and nothing is injected, hence the term 'dry' as no electricity is used. The needles bend if the horse contracts its muscles so do minimal damage even if the horse moves a little with a very long needle inserted.

Side effects are extremely rare but as with any medical procedure they are possible. The most common are the risk of infection or hitting a nerve or small blood vessel. Risk of infection is minimised by using a new, sterile needle for each insertion and not performing dry needling if there is any sign of skin infection. As the skin is being penetrated all horses must be up to date with their tetanus vaccination before treatments.

Occasionally the needle will either hit a nerve, or be very close to one, and the horse will react to a varying degree, in which case the needle is removed or redirected. This would only really happen in less than 0.5% of insertions and is no worse than when a hypodermic needle does the same. Mostly horses fall asleep during the needling so if they suddenly wake up or move it is a sign that the needle may have hit a nerve. Worse case scenarios they may lift a leg, flick their tail or semi-pigroot as if there is a fly biting them.

The Veterinary Surgeons Boards in each state will have a ruling regarding the status of Dry Needling and who may perform this procedure on animals. In WA it is considered to be an act of veterinary science so can only be administered by registered veterinary surgeons.

Continued

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Equine Dry Needling continued...



A thorough understanding of Equine Biomechanics is essential to the overall safety of the horse and success of the treatments.

SIGNS OF MYOFASCIAL PAIN IN HORSES



Practitioners must have an exceptional knowledge of anatomy to avoid inserting needles in dangerous places. Not all muscles are able to be treated by dry needling due to their close proximity to joint capsules, major nerves, vessels and body cavities and organs. Other muscles may require very sophisticated insertion techniques to position them accurately and safely between body landmarks.

In addition, a thorough understanding of Equine Biomechanics is essential to the overall success of the treatments. This is not only helpful to identify the most important areas to concentrate on but is invaluable when considering stimulating inactive muscles to develop.

With Dry Needling breaking chronic pain cycles and providing long lasting relief, the use of emerging techniques such as this, along with sound management and training practices, will assist horse owners in managing their performance horses.

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DRY NEEDLING TREATMENT

With all the different signs that may be apparent, quite a lot of detective work is required before the treatment begins! After a thorough history is taken, horses are examined statically to assess their posture and muscle development. A lot can be learnt from observing their preferred stance as well as noticing the balance and growth of their feet and signs of any lower leg wear and tear. The muscles are palpated to feel for any areas of pain or abnormal tone.

Horses are also examined in motion, in straight lines and on varying sized circles and turns. This is usually done in-hand but if there is a specific problem that the rider is concerned about they are also shown under saddle. If they are saddle horses then it is preferable to also see them ridden so the saddle and rider, as contributing factors to the overall picture, can be ruled in or out. This also helps when planning the rehabilitation program for the horse should one be required, as the level of the horse and ability of the rider is known.

When observing horses in motion it is not as simple as just looking to see if the horse is noticeably lame. Particular attention must be paid to the purity of each gait and to the straightness of the horse throughout each turn and on every line that it takes. Often I will briefly work the horse in hand myself to get a feel for what the horse is not understanding and what is actual stiffness when assessing its lateral range of motion. This also allows for discussion on some exercises that may be useful for the horse after the treatment.

Then the treatment of working systematically over the horse begins, feeling for taut bands and trigger points in the muscles. A range of needle lengths, from 2-10cm, and insertion techniques are used depending on the muscles being treated and obviously the size of the horse or pony. Once the needle is through the skin it is redirected as many times as required to deactivate all the trigger points in that area.

The majority of horses accept dry needling very well and sedation is rarely required. Even most horses considered needle shy for hypodermic injections are held just in a halter for the treatment. In fact once they have felt the release of the pain the change in their demeanour is amazing.

The effects of Dry Needling are immediately visible and palpable with the muscles looking fuller and feeling more relaxed and soft. Depending on the muscles treated, horses move freer and flow better through their whole body. Often only one treatment is required and most horses can return to work the next day.

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Review



HORSES, HEARTACHE AND HEALING book and e-book

by Elizabeth Denniss

This is a story of wild born horses, rescued from drought and certain death, which takes the reader on a firsthand journey to Outback Australia and then into another realm of healing, growth and personal development. In sharing her experiences - the joy, laughter and tears - the author explains how equine

facilitated learning offers unique therapeutic benefits to anyone blessed to have interaction with horses.

A beautifully presented, 136 page book featuring 55 colour photographs including work by internationally renowned equine photographer Bob Langrish and Australian based photographer Katherine Waddington.

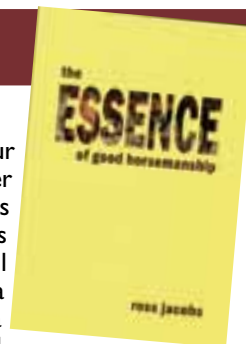
RRP: \$25 (paperback); \$30 (hardback); e-book \$15 Plus postage where applicable. **Available:** www.rafalifejourney.com

THE ESSENCE OF GOOD HORSEMANSHIP book

by Ross Jacobs

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All exercises are presented in a step-by-step easy to follow format with lots of clear diagrams. They are designed to develop the responsiveness, suppleness, balance and gymnastic ability of the horse whilst improving the communication of the rider. All this making for a more harmonious relationship between horse and rider. Reviewed by Margaret Connolly

RRP: \$33.38 **Available:** www.bookdepository.com



About the Author - Dr Victoria Hamilton

A veterinarian, coach and dressage competitor with a lifelong interest in Equine Biomechanics, Victoria has trained internationally in Dry Needling for horses and sees it as a intricate aspect of helping horses reach and maintain their potential.

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