

Report on "E Q U U S B L O C "TM Blanket
by Dr John D. Twidale
Equine Veterinarian M.A., Vet M.B., M.R.C.V.S.
Langley, B.C.

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INTRODUCTION :

EQUUSBLOC TM is a totally new concept in the relief of pain and tension in the horse. Working on the principle of electromagnetic shielding, the EQUUSBLOC fabric creates an energy field around the area to which it is applied - leg wrap or whole body blanket - which has a relaxing and healing effect on the body.

The electromagnetic field works in two ways -

- 1) it shields the body from external sources of radiation eg. power lines, electrical appliances, radio frequencies
- 2) probably more importantly it provides a channel for electrical potentials produced within the body by nerves and muscles to leave the body into an electrical energy field set up by the blanket.

THEORY :

Nerves and muscles work by the movement of electrically charged ions, particularly Sodium Na⁺ and Potassium K⁺ and Chloride Cl⁻, across cell membranes, causing minute electric impulses to pass along nerves to release a chemical substance which causes a muscle to contract.

In the normal healthy body nerves and muscles work smoothly in a coordinated sequence to effect movement without pain. However, when injury occurs there is mass confusion within the nerve transmission system, with sensory nerves sending pain messages to the central nervous system to limit the motor nerve activity and consequently the muscles go into spasm or prolonged tension to limit movement around the painful area. This can be visualized as too many conflicting messages jamming the telephone exchange. As long as the pain persists there is a constant flow of messages to and from the injured area causing chronic muscle spasm.

By applying EQUUSBLOC TM over this highly confused electrically active injured area the electrons now have a pathway to leave the body into an electromagnetic field, thereby breaking the vicious cycle of sensory pain leading to muscle spasm and further chronic pain.

MATERIALS : EQUUSBLOC™ is a woven fabric of tough nylon with minute threads of stainless steel interwoven in a precise grid pattern which provides total electrical conduction throughout the material. The material is light but strong and durable, and is easily tailored to sizes of leg wraps, partial body sheets or total body blankets, depending on the area of the horse to be treated.

METHOD : The injured area of the horse is covered with the EQUUSBLOC™ fabric, either as a leg wrap, partial body sheet eg. neck, shoulders, back or hips, or a total body blanket. The horse is left standing quietly in the stall or cross-ties for 30 to 60 minutes to gain full effect.

RESULTS : The horse will visibly relax within 10 minutes of wearing the full blanket. Under the blanket or under the partial body wraps it will feel warm to the touch within 10 minutes as radiated body heat is gathered under the fabric. Heart rate will fall by 10% to 20% as the horse relaxes and in some cases of nervous horses up to 50%. Electrocardiograph results show a longer time interval between beats and a stronger individual beat. Edema and swelling of the lower legs will be reduced after 60 minutes under leg wraps, probably due to improved blood circulation. The horse can be exercised immediately after removing the EQUUSBLOC™ fabric. It is not recommended to exercise while wearing the wraps, but they can be replaced for another 60 minutes after the horse has cooled out.

SUMMARY : EQUUSBLOC™ fabric shows a remarkable ability to relieve pain and tension in the horse within the first hour of use. Regular use before work will make the horse more relaxed, supple and willing to use himself to his full extension of movement. Regular use after work will prevent muscle stiffness and post-exertional edema in the tendons and lower legs.

EQUUSBLOC™ the fitness fabric of the future !!

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METHODOLOGY

Three geldings aged between 5 and 12 years, #1 Arabian, #2 Thoroughbred, #3 Warmblood, all in Dressage training, healthy and reasonably fit, were subjected to the following tests.

1. Resting, wearing Equusbloc blanket, blood tests for routine chemistry screen taken at 0, 30, 60 minutes with blanket.
2. Before work, after work, at 30 and 60 minutes wearing Equusbloc blanket after work.
3. As 2, but not wearing Equusbloc blanket after work.
4. Wearing Equusbloc blanket for 1 hour before work, bloods taken at 0, 60, after work, at 30 and 60 minutes wearing blanket after work.

RESULTS

The full results are shown in chart form for each horse.

The most significant change appears to be in CPK (creatinine phospho kinase), an enzyme found normally within the muscle cells and released into the blood during muscle activity. Serum CPK is used as an indicator of muscle work, high levels indicating overwork and muscle pain, and low levels after work indicating muscle fitness and suppleness.

The results of CPK after work when wearing the Equusbloc blanket are shown in graph form for each horse (Graph 1). While each horse has a different base level between 100 and 200 units (iU/L) depending on his stage of fitness, ALL HORSES SHOWED A LOWER LEVEL OF CPK AFTER 60 MINUTES OF WEARING EQUUSBLOC BLANKET.

It appears that Equusbloc blanket has the effect of relaxing tight muscles and thereby lowering the level of CPK muscle enzyme leaking into the blood serum from damaged or overworked muscle fibres.

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When Equusbloc blanket was worn for 1 hour before work, there was very little or no rise in CPK after work (Graph 2), indicating that the muscles were already loose and supple and not damaged by work. This could have great importance in the training of horses which start out stiff, or become muscle sore in the back or hind quarters, or those with a tendency to show "tying up" (muscle cramps) after work.

SUMMARY

In all 3 horses, when Equusbloc blanket was worn for 1 hour, there was a significant fall in serum CPK level of between 10% and 30%, sometimes after work greater than 50%.

For each horse, the decrease in CPK over 60 minutes was greater when wearing Equusbloc blanket than when not wearing it, after the same period of 30 minutes work.

HYPOTHESIS

It seems most likely that Farabloc, as an electrically conductive fabric, can relieve pain and muscle spasm by allowing negatively charged ions to leave the body into the fabric, instead of building up within the body waiting to be neutralized by biochemical changes by the natural defences of the body.

DISCUSSION

Horses wearing "Equusbloc" blanket after work show visible signs of relaxation, as indicated by dropping of the head and neck, ears and eyelids, to a state of sleepiness or hypnosis similar to a mild sedative injection. This relaxation does not occur when a plain cotton blanket of similar weight and warmth is worn after work.

Measurements of serum chemistry show small declines in calcium and magnesium levels but the most remarkable change is the decline in CPK muscle enzyme. Since this enzyme in horse serum is normally taken as an indicator of muscle cell damage and muscle pain, a decline in CPK in the serum can be taken as a return of muscle cells to normal function and a relief of muscle cramps and pain.

One surprising result, and perhaps the most beneficial use of "Equusbloc", was that when the blanket was worn for 1 hour before work, the horse did not show the expected rise in serum CPK after work, indicating that the muscle cells were relaxed and functioning better by pre-conditioning use of "Equusbloc" blanket.

The mode of action of "Equusbloc" is still open to question and opinion. As an electrically conductive fabric it probably induces an electromagnetic field around the body (or the limb for a local wrap) similar to a Faradic cage, or a coil around a magnet. When electrical energy is generated within the body (by muscle activity, spasm, cramp, stiffness, or by nerve activity, chronic pain), this energy normally passes along the sensory nerves to the spinal cord and to the brain, indicating pain. When wearing the "Equusbloc" fabric, this energy can pass out of the body into the electromagnetic field of the blanket like an electrical ground or sink, thereby dissipating the energy which would otherwise travel up the sensory nerves as "pain".

Dr. J.D. Twidale
M.A., Vet. M.B., M.R.C.V.S.
Equine Veterinarian

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