Investigating the impact of a new saddle pad (Jason) on the saddle pressure on the horse

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Most performance problems with horses are horse-related, rider-related, or saddle-related. Most riders do not think about the saddle when a horse develops performance problems. There are around 350.000 horses trained with a saddle in the Netherlands (Gunnink, 2017). Every horse under saddle can have performance issues, of which 75% will be the consequences of an ill-fitting saddle, according to Harman (1994). These ill-fitted saddles put pressure on the back of the horse (which creates performance problems such as lameness, local or tissue damage and asymmetry). Because of the ever-changing back of the horse, it is not possible to have a permanently well-fitted saddle. The horse gives signs of these problems, for instance, in behavior differences. These problems will influence the movement and, therefore, the welfare of the horse in a negative way. Horse riders already use many different saddle pads, but their horses can still experience these problems.

Last year the placement took place by Deron B.V, a specialist in pressure reducing foam in the human medical health care market. The unique foam shows pressure reduction, so a link was made between pressure from the saddle and the pressure-reducing foam of Deron. That is why this research investigated whether the medical foam of Deron B.V. reduces saddle pressure during riding to provide more comfort for the horse and rider and which shape and place this foam should take to produce the optimal result.

This research was divided into three phases:

1. The development of the "Jason" pad. A selection was made about which foam, shape and place must be used to have the optimum result.

2. An experiment with the Medilogic saddle mat, to test whether the newly developed saddle pad Jason, lowers the pressure on the horse's back, measured in 15 horse-rider combinations, using the usual equipment and the Jason for comparison. The horse-rider combination walked for 30 seconds to the left, 30 seconds straight and 30 seconds to the right, both with and without Jason.

3. A questionnaire about the experience of riding with Jason.

Since high stiffness, a net density of more than 60 kPa, a tensile strength higher than 170 kPa and an elongation at break higher than 120% is the best under the saddle, the Visco SAF 60120 and Visco SAF 65180 were determined to be the most suitable foams for Jason. It is important to have a high stiffness in kPa, because of the temperature differences under the saddle.

From a practical perspective, for optimal results, the best place and shape for the foam under the saddle is 51 cm long, 20 cm frontside and 16 cm backside. After measuring 15 horse-rider combinations, the mean pressure was found to be 0.99 N/cm2 under the saddle using standard equipment. The mean pressure is 0.75 N/cm2 under the saddle using Jason. There is a significant difference in pressure on the horse's back between using Jason and the usual equipment. The newly developed pad, Jason, was found to reduce pressure under the saddle in comparison with the usual equipment. This should prevent performance problems and enhance the welfare of the horses.

Before Jason is placed on the market, more tests, such as gait analysis, should analyze whether the movement of the horse improves with the continued use of Jason.