

## **Treeless vs. Conventional Saddles: Back Pressure Evaluated**

by: Christa Lesté-Lasserre • November 23 2011 • Article # 19191

Treeless saddles are often said to be more "natural," more comfortable for riders and/or horses, or more universally fitting for all equine back shapes and rider seats. But according to a leading equitation scientist, the tree still seems to serve a very important purpose: regulating pressure distribution.

"What you can see with the treeless saddle is a very definite concentration of pressure right underneath the rider's seat bones," said Hilary Clayton, BVMS, PhD, Dipl. ACVSMR, MRCVS, Mary Anne McPhail Dressage Chair in Equine Sports Medicine at Michigan State University, during the presentation of her study at the 2011 International Society for Equitation Science (ISES) Conference, held Oct. 26-29 in Hooge Mierde, The Netherlands. However, that's not the case with a well-fitted conventional saddle, which pressure mats reveal applies much more even pressure with lower peak forces across the horse's back, she said.

"That suggests that the tree is indeed doing what it's supposed to do, in terms of spreading the force over a larger area of the horse's back," she said.

In her study Clayton fitted eight purebred Arabian horses with [pressure mats](#) under their saddles and had them ridden at a slow, sitting trot in a straight line by the same, experienced rider. The rider rode each horse once with a treeless saddle and once with a conventional English saddle custom-fitted to an Arabian horse. The saddles weighed exactly the same, and the rider rode without stirrups.

What Clayton and her colleagues found was that the conventional saddle was much more effective in spreading out the pressure on the horse's back caused by the rider's weight, Clayton said. Generally the treeless saddles resulted in higher peak pressures, and more sensors detected significant pressure levels (higher than 11 kilopascals--a number that's significant in the appearance of clinical signs of back pain and injury, according to Clayton)--meaning a larger number of high individual pressure points.

"For the conventional saddle the loading was approximately equal across all thirds (of the saddle from front to back), whereas for the treeless saddle we had a

very definite concentration of loading in the middle third (where the rider sits)," Clayton said.

Pressure would be even higher with a heavier rider (the study rider weighed 125 pounds) and at faster gaits, she said.

Even so, conventional saddles are not necessarily ideal, according to Clayton. "The tree is a somewhat rigid structure, and the fact that it is rigid means there is need for the tree to fit correctly both to the horse and to the rider," she said. "A lot of riders have become very frustrated because it has become difficult to find a tree that does fit comfortably on both the horse and the rider."

Thus it's important to ensure your saddle fits your horse and isn't causing him back pain, and a saddle fitter or experienced horseman can assist in this task.

It would be interesting to see in further studies if a treeless saddle might still be an improvement over a poorly fitted conventional saddle, Clayton said. Additional studies should also test different kinds of treeless saddles.