

Preventing Lameness in the Horse with Early Diagnosis

Extract from:

New Approaches for Diagnosis of Equine Joint Disease and Estimation of Risk and Severity

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New Techniques On The Horizon

Gene Chip Microarray

We have been working with an Australian company called Genetraks. Genetraks has developed a computer chip with 3,000 equine gene sequences on it. We have tested this gene chip technology with blood samples from horses developing osteoarthritis and have some significant gene expression changes. Ultimately, we feel that there will be a specific computer chip for different diseases, such as osteoarthritis or early subchondral bone damage, and will help us screen for the potential for injury.

Joint Modeling

This is a rather futuristic technique enabling computer modeling of all the forces on the tendons, bones, cartilage and ligaments of the joint. Modeling is a computer based mathematical representation of the skeleton, ligaments, and muscles used to calculate forces in muscles and joints. These forces would change with conformation or possibly with the way a horse normally goes. Ultimately we feel that once we have the legs of the horse completely modeled, that with the combination of CT, MRI, and visual examination, we can make predictions of early injury, as well as assessing the potential for a certain individual to injure themselves and possibly with shoeing changes, or conformation manipulation early in life, decrease the likelihood of this injury occurring.

Source: <http://csu-cvmb.colostate.edu/academics/clinsci/equine-orthopaedic-research-center/orthopaedic-topics/Pages/preventing-lameness.aspx>