AI tool recognizes serious ocular disease in horses

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Colloquially known as moon blindness, equine recurrent uveitis (ERU) is an inflammatory ocular disease in horses, which can lead to blindness or loss of the affected eye. It is one of the most common eye diseases in

horses and has a major economic impact. Correct and swift diagnosis is very important to minimize lasting damage.

A team led by Professor Anna May from the LMU Equine Clinic has developed and trained a deep learning tool that reliably recognizes the disease and can support veterinary doctors in the making of diagnoses, as the researchers report in a current study.

In an online survey, the researchers asked some 150 veterinarians to evaluate 40 photos. The pictures showed a mixture of healthy eyes, eyes with ERU, and eyes with other diseases. Working on the basis of image analyses, the deep learning tool was given the task of evaluating the same photos.

Subsequently, May compared the results of the veterinarians against those of the AI. She discovered that veterinary doctors specialized in horses interpreted the pictures correctly 76 percent of the time, while the remaining vets from small animal or mixed practices were right 67 percent of the time.

"With the deep learning tool, the probability of getting a correct answer was 93 percent," says May. "Although the differences were not statistically significant, they nonetheless show that the AI reliably recognizes an ERU and has great potential as a tool for supporting veterinary doctors."

The tool is web-app-based and simple to use. All you need is a smartphone. "It's not meant to replace veterinarians but it can help them reach the correct diagnosis. It is particularly valuable for less experienced professionals or for horse owners in regions where vets are few and far between," emphasizes May.

Through the early detection of ERU, affected horses can receive

appropriate treatment more quickly, which can be decisive in slowing down the progress of the disease and saving the afflicted eyes.

The work is published in the *Equine Veterinary Journal*.

More information: Annabel Scharre et al, Comparison of veterinarians and a deep learning tool in the diagnosis of equine ophthalmic diseases, *Equine Veterinary Journal* (2024). DOI: 10.1111/evj.14087

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