

Press handout "CHIO Aachen Scientist Circle"

What are the aims of the "Scientist Circle"?

- The initiative focuses on the welfare of sport horses and brings together various equine experts and leading scientists from Germany, Belgium and Switzerland.
- The focus is on the protection of horses and the transparency and acceptance of equestrian sport in society.
- The central question: How do the sport horses feel at the CHIO Aachen international show event and what exactly do they need to ensure their welfare in the long term?

What is tested in this project and how?

- Analysis of movement, feeding, drinking and lying behaviour in the box using an AI-based camera system from ACARIS. The boxes of selected horses (see below) will be equipped with cameras and AI-based software will be used to analyse how the horses behave in the box.
- The cortisol level in the faeces of these horses is also analysed (cortisol is released during physical and psychological stress). At the CHIO Aachen, faecal samples are regularly taken.
- The results at the CHIO Aachen will be compared with the data collected from the participating horses in their home stables before the show.

What were the findings of the 2023 pilot study?

- The scientists are optimistic about the initial analyses. One positive observation was that although the horses spent longer in their stalls at the tournament in Aachen than at their home stables, they were kept busy and moved around a lot.
- The cortisol levels, which were measured during the horses' stay in Aachen, rose on the day of the competition, while the remaining days were at a fairly low level. The transport and training in Aachen therefore had no major impact on stress levels. Furthermore, after the competition at home, the horses quickly returned to their pre-competition levels.
- The cortisol samples at the 2023 show include four days at the home stable, the transport to Aachen, the training and competition on site, the transport back and the subsequent three days at home.
- **IMPORTANT:** These results are initial findings from the pilot study with four horses. It is not yet possible to make any well-founded, definitive statements or formulate any generally applicable conclusions.

What will change this year?

- More horses are taking part. In 2023, four riders and their horses took part in the pilot study; this year, eight riders will take part.
- The scope of the study will be expanded. In addition to monitoring with cameras and examining faecal samples and the horses' heart rate, the main stable air factors will also be determined using sensors.
- PhD student Leonie Krüger is directly involved in analysing the data.

Which riders are taking part in the CHIO 2024 Aachen?

- ACARIS cameras, cortisol samples & heart rate:
 - Carla Brunner (SUI)
 - Mick Haunhorst (GER)
 - Nadja Minder (SUI)
 - Capri-Marie Raum (GER)
 - Philip Ryan (SUI)
 - Andrina Suter (SUI)
 - Felix Vogg (SUI)
 - Isabell Werth (GER)

Which scientists and experts are involved in the project?

- Birgit Rosenberg, CHIO Aachen Sports Director
- Prof. Dr. Dirk Winter, Dean of Equine Studies at the Nürtingen-Geislingen University of Applied Sciences
- Dr. med. vet. Miriam Baumgartner, expert for horse husbandry, horse behaviour, animal and environmentally friendly husbandry methods for horses - Swiss National Stud Avenches, Agroscope
- PD Dr. Dominik Burger, expert in performance physiology and sports medicine - Swiss Institute of Equine Medicine ISME at the University of Bern in Avenches
- Prof. Dr med. vet. Konstanze Krueger-Farrouj, Professor of Equine Husbandry at the Nürtingen-Geislingen University of Applied Sciences
- Dr. rer. nat. Arne-Rasmus Dräger, expert in artificial intelligence and developer of AI-based camera systems for monitoring the health of horses
- Dr. Monica Venner, Privatdozentin at the TiHo Hannover, PhD, specialist veterinarian for horses, Dipl. ECEIM, FEI Permitted Treating Veterinarian
- Leonie Krüger, PhD student at the Nürtingen-Geislingen University of Applied Sciences and Arts
- Prof. Dr. Ralf Galuske, Lab - Biology - TU Darmstadt, focus: Systems Neurophysiology, Systems Neuroscience, interaction between brain areas, structure and function in the mammalian brain and in particular in the equine brain, systems neurophysiological investigations in a behavioural context

How long will the study continue at CHIO Aachen?

- The Scientist Circle on the topic of animal welfare is designed for the long term. Among other things, the monitoring by camera is to be supplemented with direct animal observation. In addition, the main stable air factors are also to be determined by sensory means in future.
- With around 30 to 40 horses over a total period of three years, it should be possible to make a well-founded statement.
- The scientists do not expect a final result in the traditional sense, as there will always be new factors that influence animal welfare and need to be analysed.

Have the veterinary office and the FEI been informed about the study?

- Yes. The Aachen Veterinary Office is very positive about the project at CHIO Aachen and is interested in the results.
- The FEI Veterinary Commission has been informed and welcomes the project.
- The NRW State Office for Nature, Environment and Consumer Protection (LANUV) has also been informed. The project has also been welcomed here.

Who can access the cameras at the CHIO Aachen?

- Experts & members of the "CHIO Aachen Scientist Circle"
- Viewing of the results for: Riders, grooms, team leaders and veterinarians