**Projektbeskrivelse**

Videncenter for Dyrevelfærd

2025

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| **1. Projektnummer:**  |

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| **2. Projekttitel:** What does a happy ridden horse look like? – Positive welfare indicators as a means to improving welfare of riding horses |

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| **3. Projektleder**: Irena Czycholl, Associate Professor for Animal Welfare and Behaviour, KU  |

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| **4. Følgeperson i Fødevarestyrelsen**: Birgitte Vindahl Ibenforth, 7227 6920, bivol@fvst.dk |

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| **5. Formål med projektet:** Can a horse actually enjoy being ridden and is there from an animal welfare perspective something positive in this kind of human-horse interaction? While scientists largely agree on undesirable behaviours (e.g. conflict behaviours) in the ridden horse, up to now studies focusing on positive behaviours and indicators of positive welfare are rare. Therefore, in this study we aim to identify potential behaviours related to positive welfare in ridden horses. Therewith, we will make a first step towards guiding the ongoing public debate on how horseback riding in the future should develop (instead of just pinpointing how it should not look like). We hypothesize that:*If behavioural signs of positive welfare can be identified in ridden horses, these signs will be absent in horses that show a high frequency of conflict /pain-related behaviour.* |

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| **6. Projektets baggrund, relevans og perspektiv** (herunder eventuelt den politiske relevans/kontekst)**:** The public is becoming more and more critical of horseback riding, as clearly shown by the public outreach of recent scandals in competition sports. Research has clearly shown that sports can be detrimental to horse welfare, e.g. linked to pain and stress as shown, amongst others, by conflict behaviours expressed. These include, for example, uneven gait, tail swishing, mouth opening and head tossing. Some clear indicators of harsh riding and suffering have also been implemented as unacceptable in competition situations such as visible blood leading to disqualification. On the other hand, horse owners and riders argue that they do everything possible to assure a good welfare state of their horses. Hence, instead of focusing on what bad riding looks like and thus what kind of riding should not be tolerated anymore in the future, the key question is actually what a ridden horse in a positive affective state looks like. Scientists have failed to answer this question up to now, because they have lacked the ability to measure positive welfare in horses and cannot yet scientifically document that riding actually does include positive experiences for the horses. A focus on the assessment of positive horse welfare in the ridden horse is therefore necessary. Moreover, there currently are no guidelines about how exactly positively perceived riding should look like from the horses’ viewpoint. The absence of negative signs does not automatically imply positive welfare. Very few studies have tried to look into positive animal welfare in the ridden horse and knowledge of this thus remains very limited.When reviewing the literature, some potential indicators of positive welfare in the ridden horse can be identified (Hall et al., 2013; Stomp et al., 2018; Sénèque et al., 2019; Ruet et al., 2020), but no extensive studies on the validity and reliability of these indicators have been published to date. Some studies have used ear position as a sign of positive welfare during riding (Ruet et al., 2020; Luke et al., 2022). Ruet et al. (2020) furthermore used the indicator “rider’s seat” during trot as an indirect indicator of muscle tension. Furthermore, Qualitative Behavior Assessment, a methodology that aims to quantify the expressive quality of animals’ body language (Wemelsfelder et al., 2001), has been applied in different contexts in relation to the ridden horse (Fleming et al., 2013; Ruet et al., 2020; Jaramillo et al., 2023). As highlighted,indicators of positive welfare have not been validated to a sufficient degree (Mellor and Beausoleil, 2015), and measuring many of the indicators remains challenging, especially in terms of practical implementation outside of scientific purposes. So-called iceberg indicators, i.e. indicators with specific importance within the measurement of welfare may be helpful, as shown in farm animal welfare assessment. The present study will therefore concentrate on the evaluation of positive animal welfare in standardized riding situations alongside with known and validated indicators of negative welfare (stress-related). The datasets generated in the project will be used to assess criterion validity of the identified potential indicators of positive welfare (following the hypothesis that the less indicators of negative welfare are seen, the more indicators of positive welfare are seen and vice versa and that indicators measuring aspects of positive welfare should be positively correlated with each other). Moreover, using such a relatively large number of indicators measuring different aspects of welfare (i.e. negative and positive) allows to use statistical methodologies to estimate latent variables (in this case of welfare). This can be used to test for construct validity and potentially the identification of iceberg indicators. This study will be a starting point to understand what a ridden horse that experiences positive welfare should actually look like. This is important for everyone involved in human-horse interactions and for society in general, as societal concerns have led to the current polarized debates. This study is therefore of interest to all stakeholders worldwide, as a first contribution toward better understanding horses in riding with regard to positive welfare. This study is intended to be part of a larger research focus on positive animal welfare in horses within the Danish Companion Animal Welfare Centre. |

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| **7. Arbejdsplan for projektet:** (redegørelse for materialer og metoder i projektet samt realistisk tidsplan) Existing video data of ridden horses in a standardized test situation, that have already been screened for conflict, stress and pain related behaviours will be screened again with a focus on positive welfare indicators. The video data includes 30 horses in a standard riding situation as well as videos of competitions at different levels and with different breeds at clip my horse. Altogether, in this way, 100 riding sequences will be observed using continuous sampling. This will create a large joint dataset with multiple different indicators related to negative, but also positive aspects of welfare in the ridden horse. This data will then be analysed for associations among each other. This will allow a first insight about criterion validity of each included indicator. Thereafter, the dataset will be explored by constructing a partial least squares model. This is a methodology derived from social sciences that allows to estimate so-called latent variables, i.e. variables that cannot be measured directly. In this case, welfare in the ridden horse is the latent variable that is made up of negative and positive experiences as assessed by negative and positive welfare indicators. The methodology allows for estimation of the importance of the assessed indicators on the latent variable (based in the variance) and therewith potentially for the identification of indicators with special importance (so-called iceberg indicators). The exact setup, e.g. ethogram used, exact number and type of videos, may be adjusted at project start, depending on results and potential funding of and for other projects within this research area.After initial information about this research project and setting up information about the project on the webpage of the Danish Centre for Companion Animal Welfare, the final ethogram for potential positive welfare indicators in the ridden horse will be developed by an updated thorough literature search and tested in pre-trials. Thereafter, the video material will be observed by continuous sampling. This will be then followed by the statistical analysis as described and preparation of a scientific manuscript. The final stage of the project is saved for dissemination of the research results, which will moreover continue also after project end by implementation in the research focus about positive animal welfare in horses of the Danish Centre for Companion Animal Welfare.**Tidsplan:**

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|  | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 |
| Final ethogram development |  |  |  |  |  |  |  |  |  |  |
| Video observations |  |  |  |  |  |  |  |  |  |  |
| Statistical analysis |  |  |  |  |  |  |  |  |  |  |
| Scientific publication |  |  |  |  |  |  |  |  |  |  |
| Dissemination |  |  |  |  |  |  |  |  |  |  |

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| **8. Deltagere i projektet:** (herunder evt. eksterne projektdeltagere)Irena Czycholl – associate professor, University of CopenhagenJanne Winther Christensen – associate professor, Aarhus University |

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| **9. Kommunikationsplan:** (deltagelse i konferencer, videnskabelige publikationer, populærvidenskabelige publikationer, plan for offentliggørelse af projektets resultater)Study results will be published in one scientific publication, which will be published gold open access to ensure broad accessibility worldwide. The project group always puts a high emphasis on scientific outreach, i.e., making the scientific results and their implicationsavailable and understandable to the broader public. In a national context, the Danish Centre for Companion Animal Welfare will help with this, ensuring information about the project at all stages is available on both the Danish and English homepages, and providing good and easily understandable and accessible information about the implications of the results. Moreover, both project partners have a broad outreach and good contacts to the horse sector especially in Denmark and Germany, but also worldwide.Both partners have participated in the past in panel debates, both for scientists and the broader public, on relevant animal welfare topics and have always seeked dialogue with politicians and stakeholders. The project group will also use newsletters to reach out to stakeholders and actors within the horse industry (e.g., horse breeding organizations, studbooks, horse sports organizers, animal welfare organizations). Moreover, the project partners have good contact with journalists from horse magazines such as Ridehesten, Cavallo and The Horse, which are very popular among horse owners. In addition, information about the results will be disseminated via blogs aimed at horse owners in Denmark as well as English and German-speaking countries and via social media. Within the Danish Centre for Companion Animal Welfare, the aim is currently to establish a research focus around positive animal welfare in human-horse interactions, and this study aims to be an important part of this initiative. The project will therefore receive great attention at internal meetings and beyond due to the involvement of scientists and stakeholders. As this study naturally has its limitations, further studies are planned to build on the yielded insights so that outreach can well be expected for many years to come, even after the project has officially ended. To assure this dissemination of research results, some extra time for both project partners is allocated specifically to this point. The measurable project deliverables will be:- At least one scientific peer-reviewed publications (gold open access) in a relevant journal (e.g., Applied Animal Behaviour Science, Journal of Equine Veterinary Sciences, Animal Welfare)- Information about the project and project results on the homepage of the Danish Centre forCompanion Animal Welfare- Dissemination via blogs and social media- At least two popular scientific contributions in horse magazines- At least two podcasts or radio reports |

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| **10. Budget:** (Lønmåneder, udgifter til drift, udgifter til apparatur, overhead-bidrag på 44%)A total of 480.672 DKK is applied for. This sum is made up of personal costs for Janne and an unnamed research assistant (taking the main role in final development of the ethogram and the video analysis) and Irena (taking the main role in statistical analysis, interpretation of results and writing a scientific manuscript). Both will moreover use time for dissemination of the results and popular scientific contribution to assure a larger outreach of the scientific findings. This is moreover supported by cofounding through the Danish Centre for Companion Animal Welfare – here, this project will be under the umbrella of a larger research focus around positive welfare in horses which is currently under development. This collaboration also assures implementation and dissemination of the results of this project after this project officially ends. Hence, it is applied for:2 personal months for Irena Czycholl (131000 DKK) *(University of Copenhagen)*1 personal months for Janne Winther Christensen (71200 DKK) *(Aarhus University)*2 personal months for a research assistant (86600 DKK) *(Aarhus University)*Travel (between Aarhus and Copenhagen, conference visit (15000 DKK) *(University of Copenhagen)*Materials/consumables (payment for clipmyhorse access, SmartPLS) (5000 DKK) *(Aarhus University)*Equipment (external harddrives for video data) (5000 DKK) *(Aarhus University)* Publications, outreach (20.000 DKK) *(University of Copenhagen)*Overhead 44%Total sum: 480.672*Aarhus University: 241.632 DKK**University of Copenhagen: 239.040 DKK* |

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| **11. Projektets startdato:** 01.03.2025 **Projektets slutdato:** 31.12.2025 |