

## Histological characteristics of equine fasciae – a pilot study

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Marta Krasnodebska, MSc, Vibeke Sødring Elbrønd, PhD, Adrian Harrison, DPhil. Department of Veterinary Clinical and Animal Science, Faculty of Health and Medical Sciences, University of Copenhagen, Dyrøgevej 16, 1870 Frederiksberg C, Denmark. e-mail: [marta.krasnodebska.90@gmail.com](mailto:marta.krasnodebska.90@gmail.com), [yse@sund.ku.dk](mailto:yse@sund.ku.dk), [adh@sund.ku.dk](mailto:adh@sund.ku.dk)

**BACKGROUND:** A histological description of myofascial structures exists for humans (Stecco et al, 2008; 2009), but a well-documented anatomical and histological description of equine myofascial structures is lacking. The aim of this study is therefore, to provide a wider view on equine fasciae from both a functional and histo-anatomical perspective.

**METHODS:** Three horses of different age and breed were euthanized for unrelated reasons, and dissected. Tissue for histology was sampled from three regions, considered as important areas in relation to the dissected myofascial kinetic lines (Elbrønd and Schultz, 2014): 1) caudo-ventral region to the atlas wing; 2) cranio-ventral side of *tuber coxae*, 3) cranio-lateral to *tuber sacrale* (*fascia thoracolumbalis*), and fixed in neutral-buffered formalin immediately after sampling. The tissue was histologically processed in paraffin and stained with hematoxylin-eosin, Alcian Blue, Van Gieson and resorcein fuchsin.

**RESULTS:** The equine fascia was organized into distinct layers of collagen and scattered elastic fibers with visible differences in its arrangement. The superficial fascia layers were separated by continuous bands of areolar tissue comprising blood vessels and nerves. The profound fascia was arranged into oval shaped bundles of dense collagen fibers surrounded by parallel running collagen fibers. The thickness of the fascial layers varied between horses, and hyaluronic acid was found mainly in the deep fascia and epimysium.

**CONCLUSION:** It is concluded that equine fasciae reveals structural similarities, but also differences to human fasciae. The results most likely emphasize functional differences between the fascia of horses and humans.

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