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# Preliminary field study on saddle pressure distribution in healthy horses

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# Introduction

75% of horses are ridden with an ill-fitting saddle

- ▶ Back pain
- ▶ Poor performance
- ▶ Lameness
- ▶ Behaviour problems

Primary causes:

- ▶ Asymmetry of the saddle
- ▶ Cushions that are too hard
- ▶ Caudally located centre of balance



# Objectives

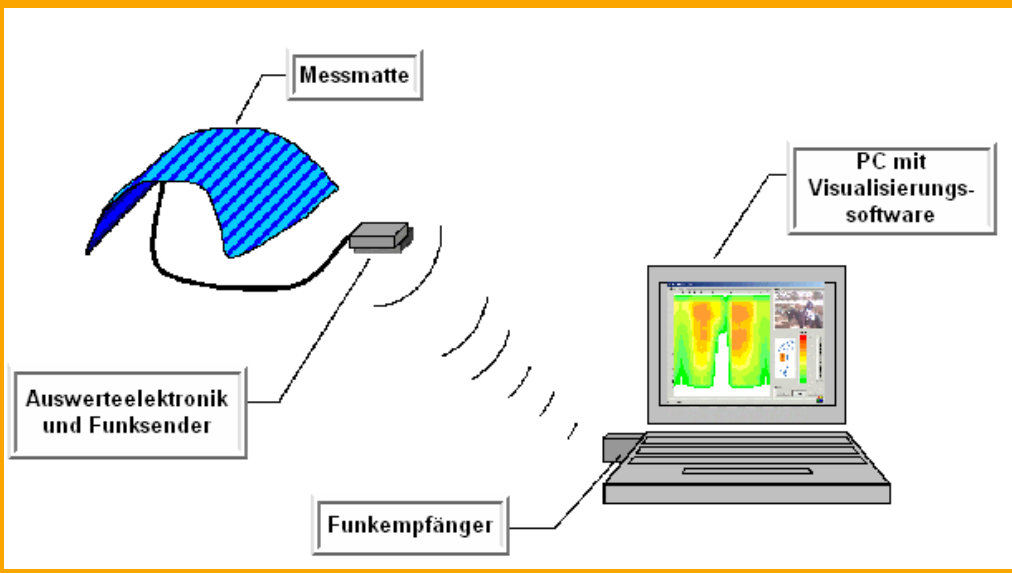


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# Objectives of the study

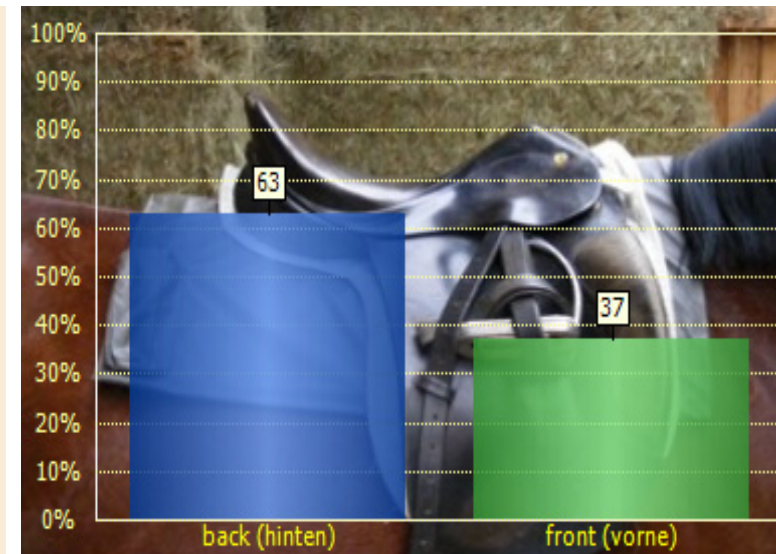
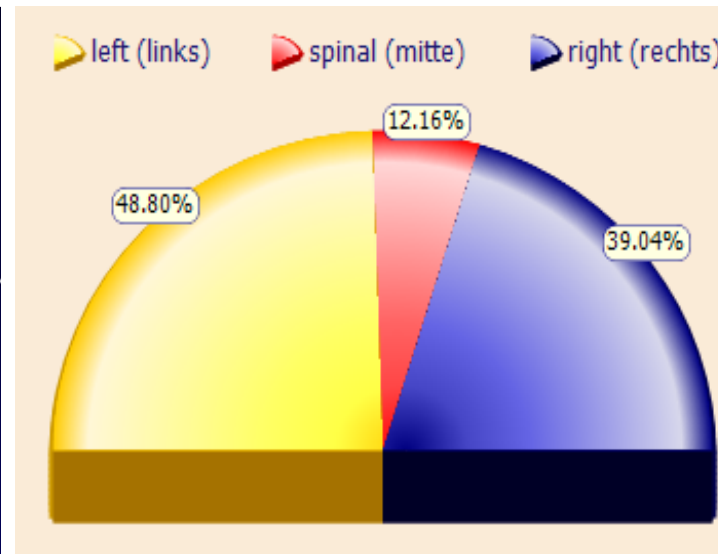
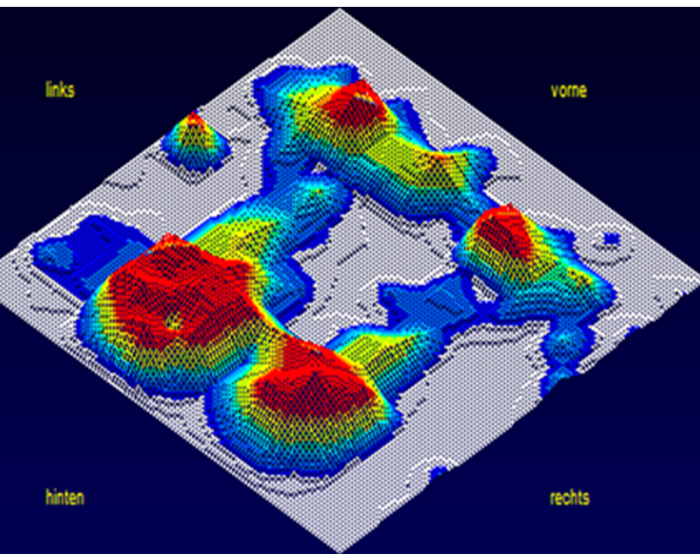
- Evaluate how saddle pressure is distributed in a **normal horse population** and whether or not the pressure pad used is suitable to give **reliable information** on saddle fit.
- **Influence** of breed, type of saddle, type of saddle pad, discipline, withers- and back conformation on saddle pressure distribution was investigated.

# Materials and Methods



# Materials und Methods

<b>Sample:</b>	40 Horses (19 Mares, 21 Geldings)
<b>Age:</b>	5 – 22 Years (Mean 11.5 years)
<b>Breed:</b>	Warmblood, XX, Arabian, Small Horses, Heavy Breeds
<b>Discipline:</b>	Leisure, Show Jumping, Dressage
<b>Measurement:</b>	Straight line at rest, walk and trot (Satteltester®)
<b>Back categories:</b>	Front-Back, Left-Right, Spinal
<b>Statistical analysis:</b>	Boxplots, One-way ANOVA



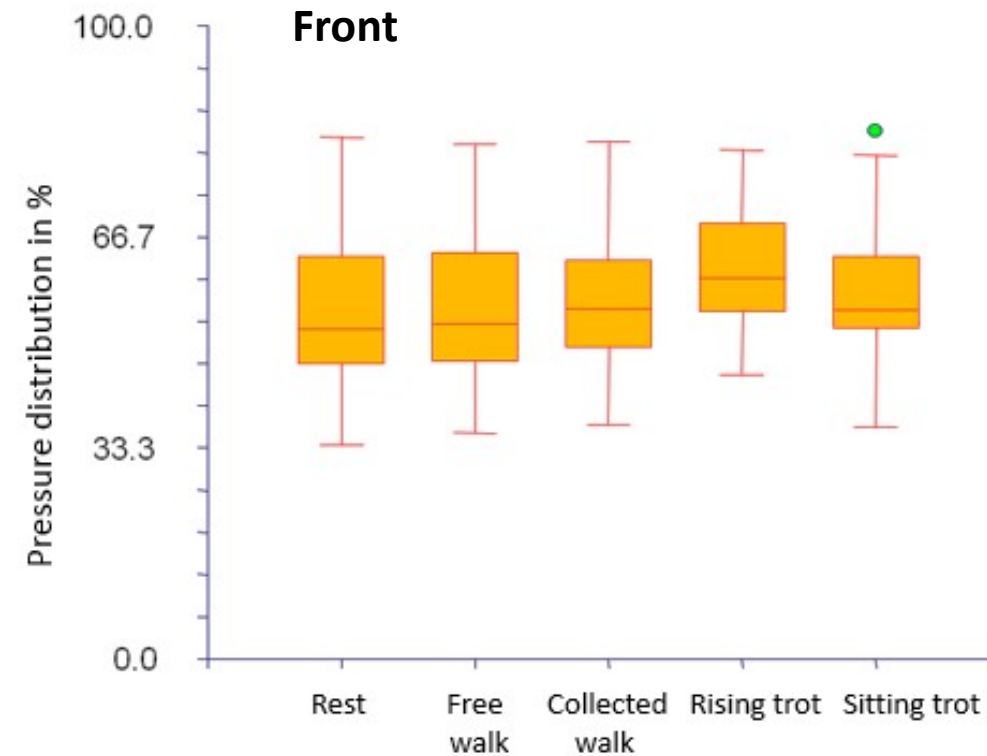
# Results I

Front-Back  
Left-Right  
Spinal



# «Front - Back»

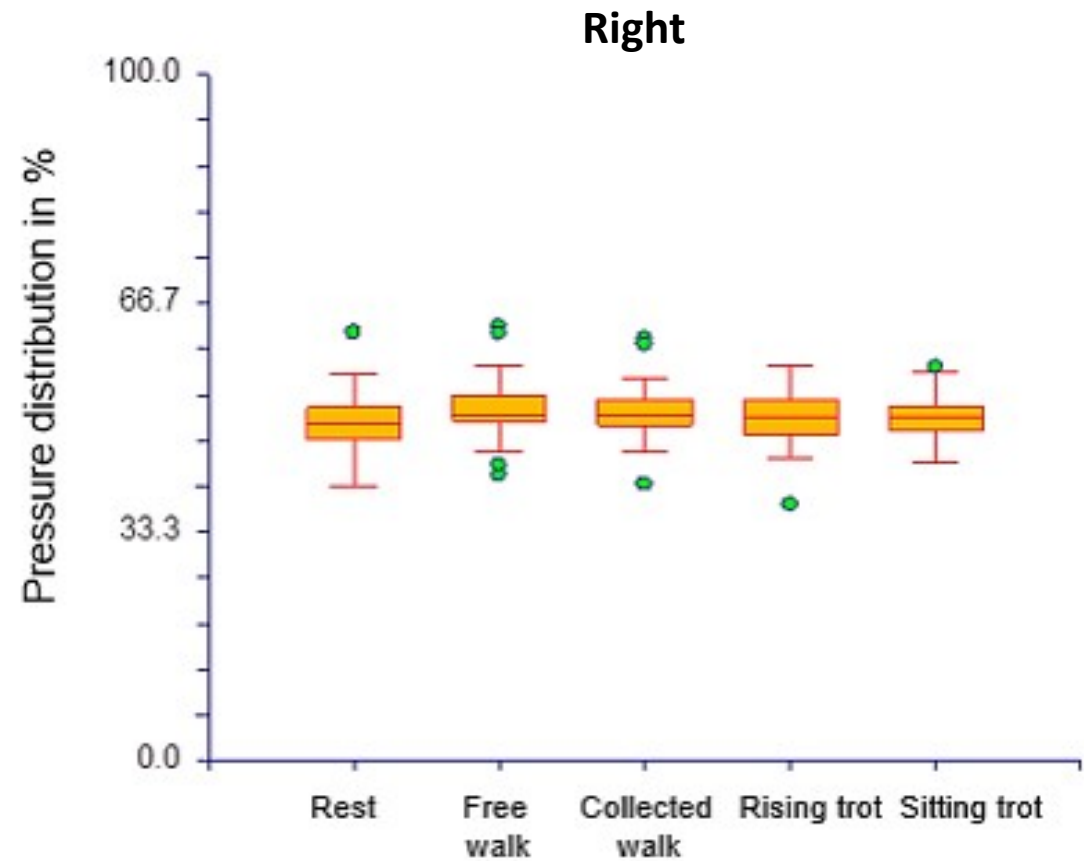
- **Increase** of the pressure with the gait (Latif et al. 2010)
- Higher values in front than in the lumbar region (Nyikos et al. 2005)
- 62-65% in front can be seen as normal
- **Maximum value** «front» up to 85% and «back» up to 65%





## «Right - Left»

- Close distribution around 50% (normal range)
- Deviation of 55%

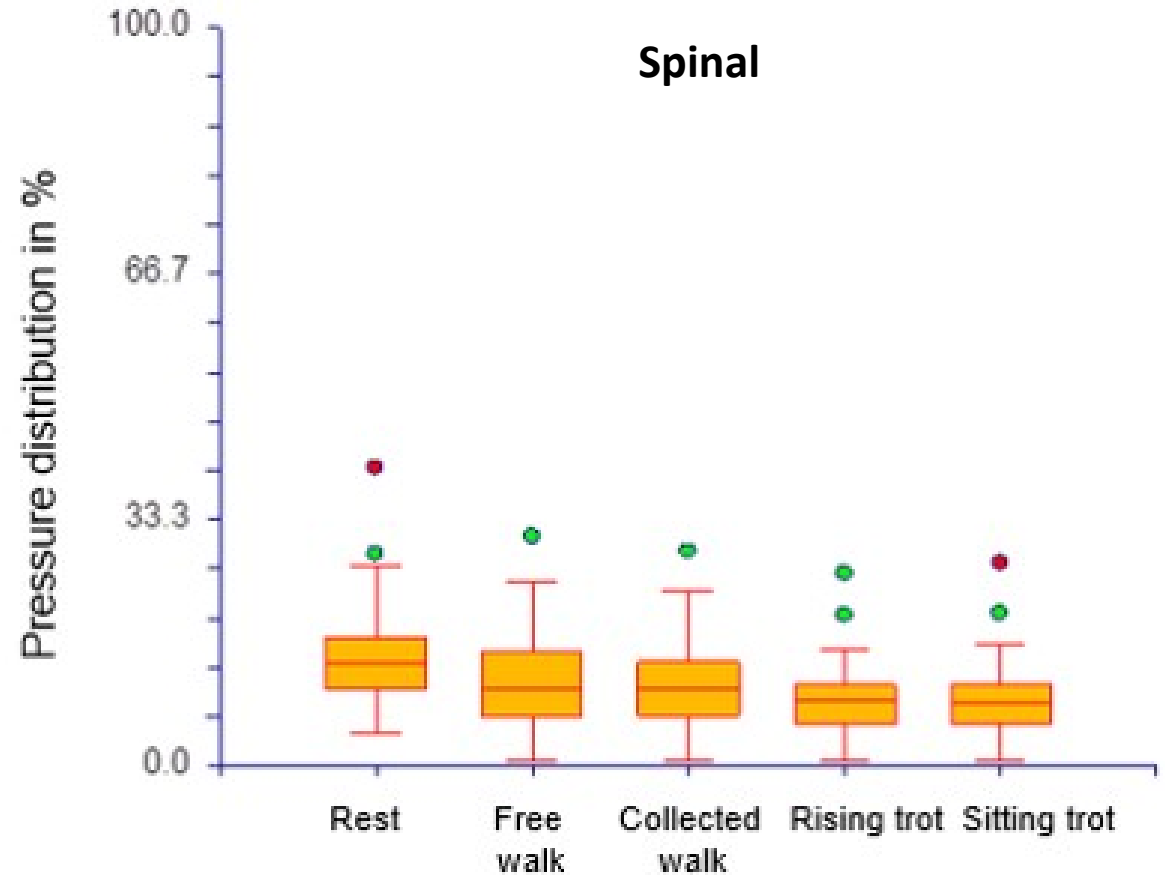


# «Spinal»

Spinal pressure **diminish** with the gait

**No pressure (0%)** on the spine

Mean of the study is at 11.5%

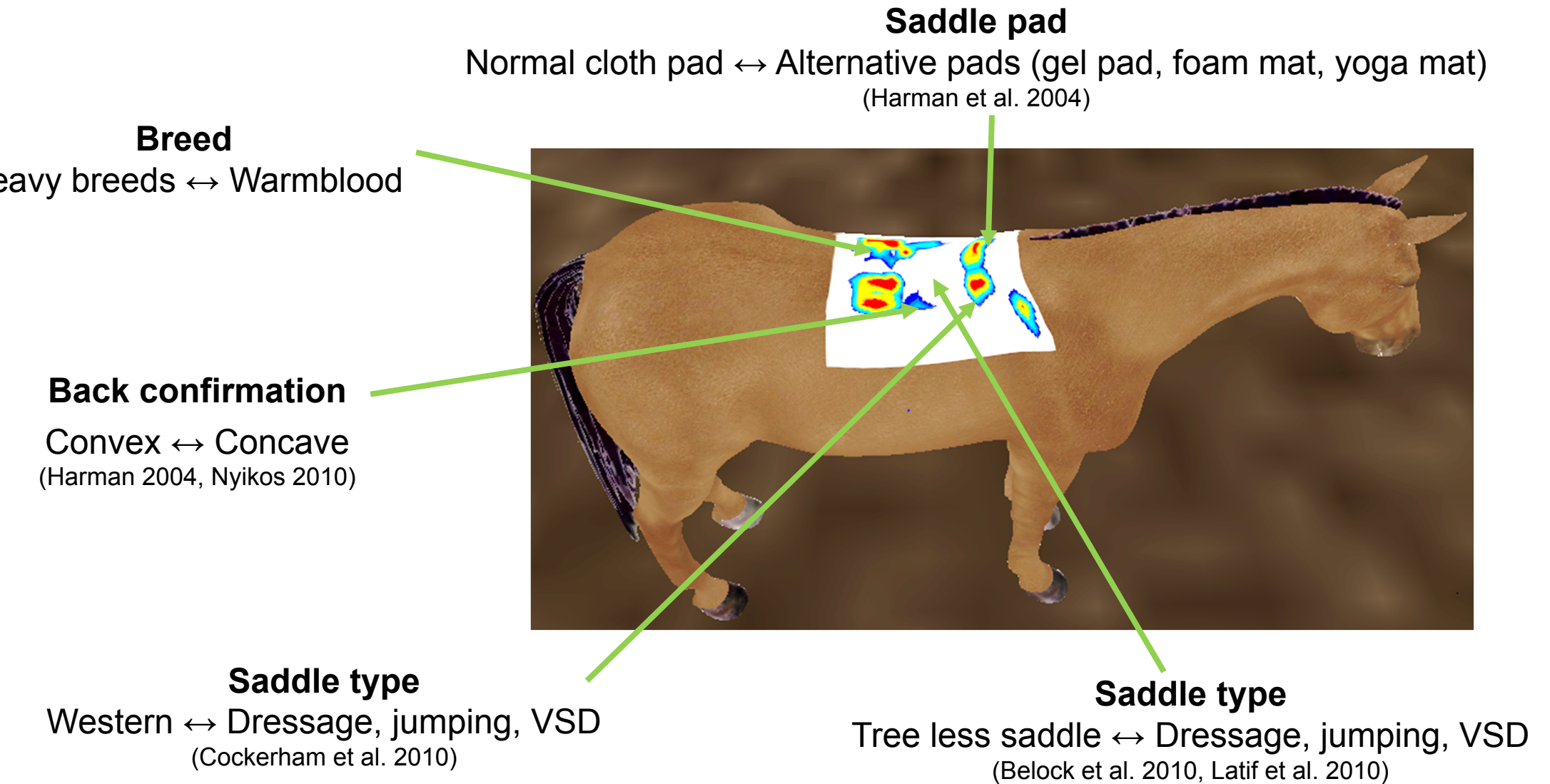


# Results II

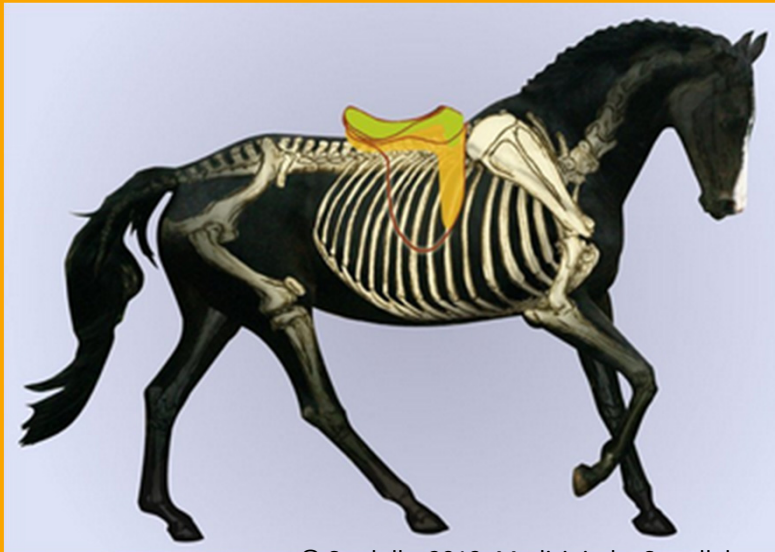
Influence of the factors



# Influence of the factors



# Conclusion



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# Conclusion

Study provides **preliminary** data recorded in the field

- interpretation

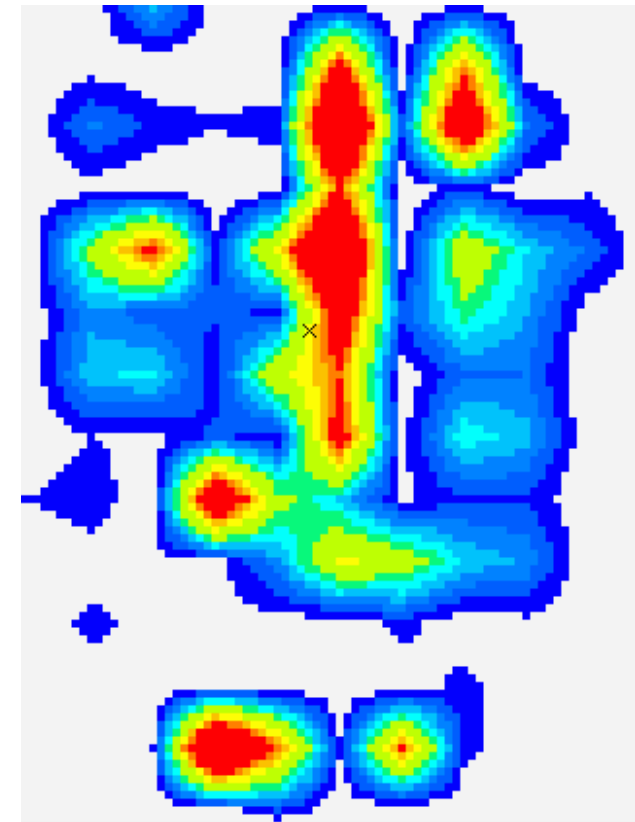
Small part of a **larger evaluation**

- **interaction** between saddle, horse and rider

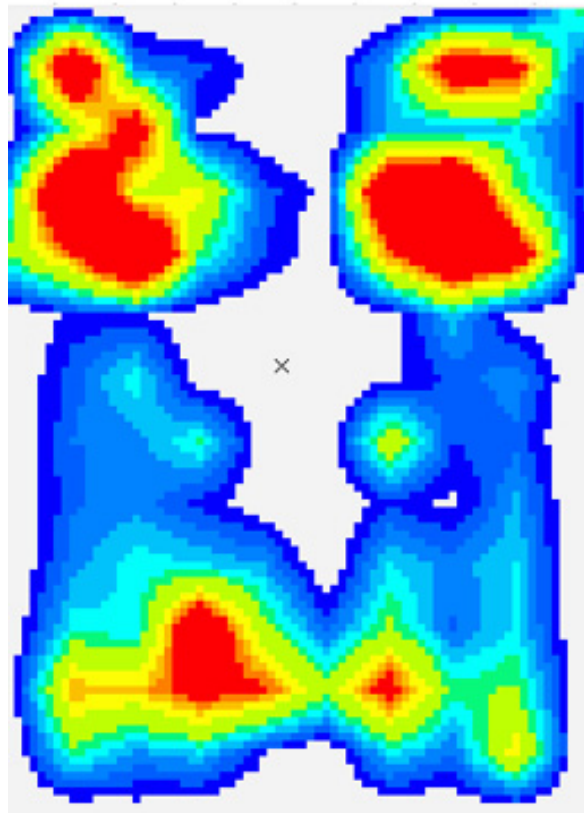
Future studies should include larger numbers of horses, assess repeatability and the influence of the rider



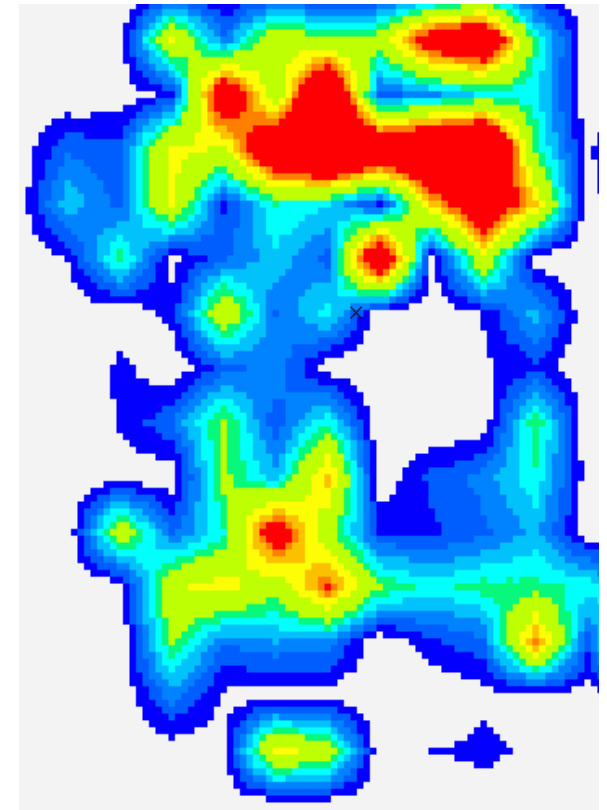
# Questions



Tree less saddle



Horse with back problems



Horse with alternative saddle pad

Thank you!

# Fergus

BY JEAN ABERNETHY

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