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The association of riders' physical fitness with riding performance

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Aim

- To investigate the association of the physical fitness of the rider (PF) with the riding performance (RP).

Objectives

- Poor RP can be caused by medical issues of the horse, inadequate equipment or deficiencies in the training.[a]
- The most neglected factor in current research is the rider itself.[b]

Methods

- Participants: 115 Swiss riders
- PF: Balance, endurance, flexibility, reaction time, speed, strength, and symmetry were assessed
- RP: Based on a video recorded riding test individual RP was rated by two national riding judges (RJ).
- Statistics: A linear model for RP that included the domains of PF and potential confounders was fitted to the data.

Results

- The best possible and least complex model is shown in the equation 1.
- Association of PF with RP:
  - Positive: Endurance, strength, and symmetry
  - Negative: Flexibility
  - No association: Balance, speed, reaction time
  - Explained variance of PF in RP: 19.1%
  - Significant effects of the fitted model and its coefficient ($p < 0.05$; exception: symmetry)

Summary box

- Endurance, flexibility, strength, and symmetry are associated with RP.
- Balance, reaction time, and speed are not associated with RP.
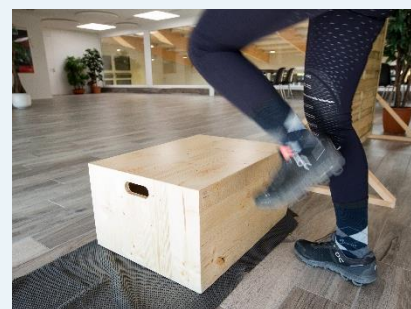- Further predictors of RP would have been sought outside the rider.

Fig. 1-4: © Vetsuisse – Fakultät, UZH / Michelle Aimée Oesch

Equation 1: Fitted model

$$RP_i = 219.68 + 0.518 * endurance_i - 0.613 * flexibility_i + 0.433 * strength_i - 0.369 * symmetry_i$$

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References

a) Zimmermann, 2012. doi:10.1111/j.2042-3306.2011.00373.x
b) Greve, 2013. doi:10.1016/j.tvjl.2012.10.020