No evidence of increased stress levels of service dogs, signal dogs and therapy dogs in comparison to family dogs without special tasks

Ludwig Huber

with Sandra Mliner, Simone Bruckner, Rupert Palme & Karl Weissenbacher

Messerli Research Institute

Department of Interdisciplinary Life Sciences

University of Veterinary Medicine, Vienna (Vetmeduni Vienna)

Service dogs

- support people with motor disabilities
- work together with their owners on a daily basis
- are confronted with sometimes challenging tasks

https://www.verywellhealth.com

Signal dogs

- for diabetic people
- perceive and signal changes of the human metabolism such as hyper- and hypo-glycemia
- they are on constant alert
- they can do this even before humans perceive any symptoms

https://www.verywellhealth.com

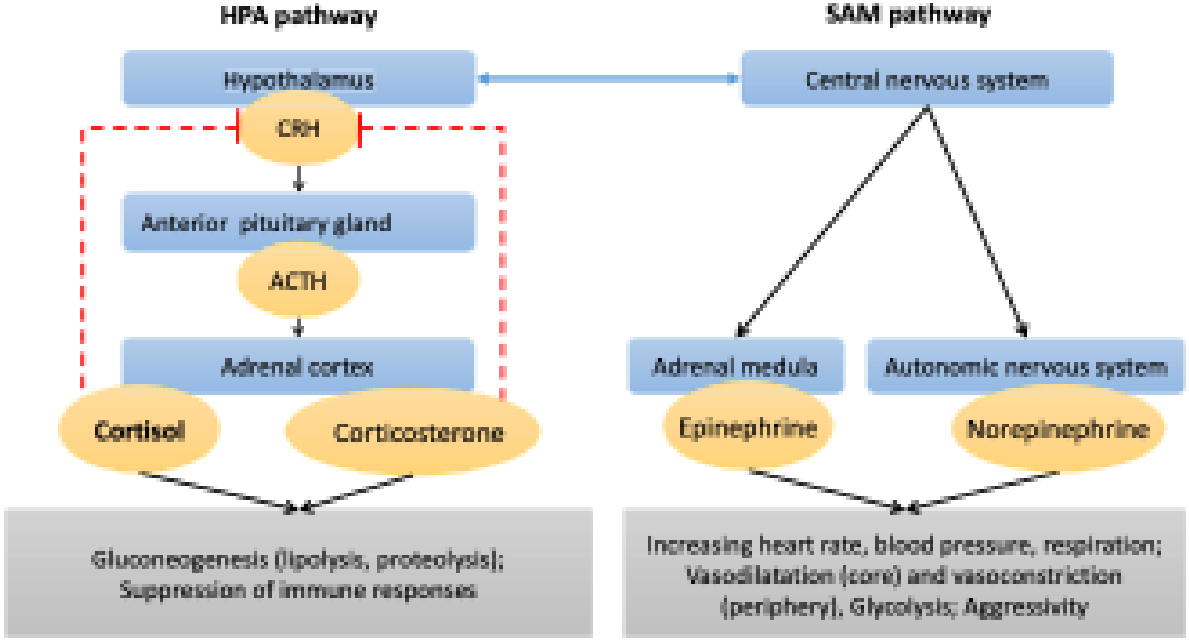
Therapy dogs

- get deployed specifically to get in contact with different types of people
- provide help with their presence one or two times a week

https://www.verywellhealth.com

Stress pathways

2 basic physiological pathways involved in the response to stress



Salivary cortisol concentrations have been well correlated with plasma cortisol concentrations in dogs

Chmelíková et al. (202) *Domest Anim Endocrinol*

Research question

- increasing number of research projects about the **methods** and the **benefits** of various kinds of **assistance dogs** for humans
- we still suffer from a lack of knowledge about the **well-being** and **challenges** for the **dogs** themselves
- stress may eventually lead to chronical diseases in these dogs
- **so how do they differ from family dogs in this regard?**

Methods

Subjects

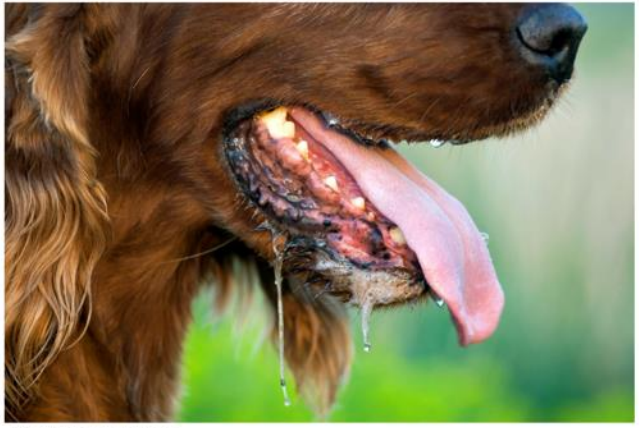
- 9 signal dogs
- 8 therapy dogs
- 8 family dogs
- 14 service dogs
- Age: 1.5–7 yrs old

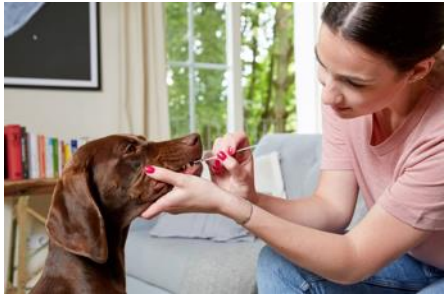
Saliva sampling:

- at home
- 7 cons. days 3 x
- morning, noon and evening
- using cotton wool rolls (Salivette®)
- 1 min on the inside of the cheek
- dogs allowed to see food (treat)
- no food 1 h before

Analysis

- samples stored at –18°C
- analysis with EIA immunoassay



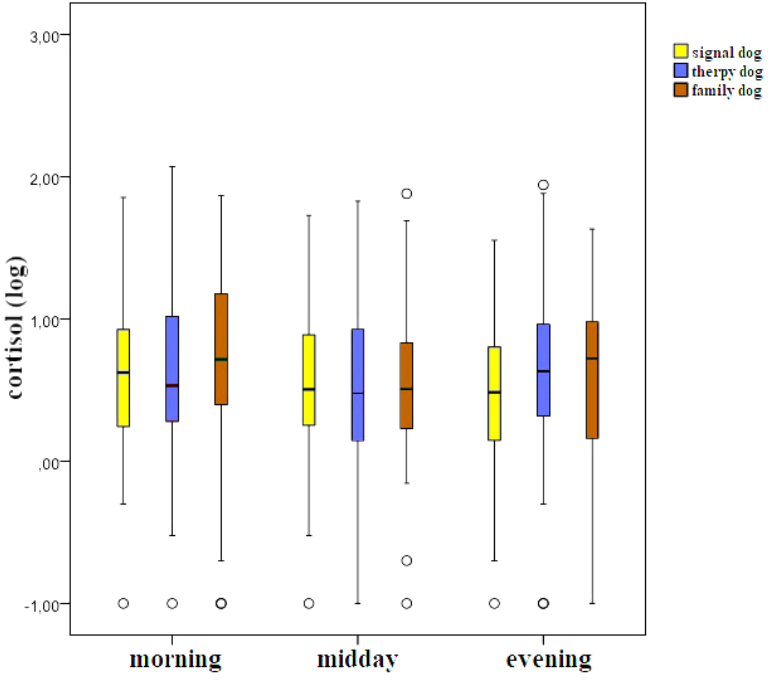


https://www.mein-haustier.de/

Bruckner (2019), Mliner (2024) Diploma thesis. Vetmeduni Vienna

Results

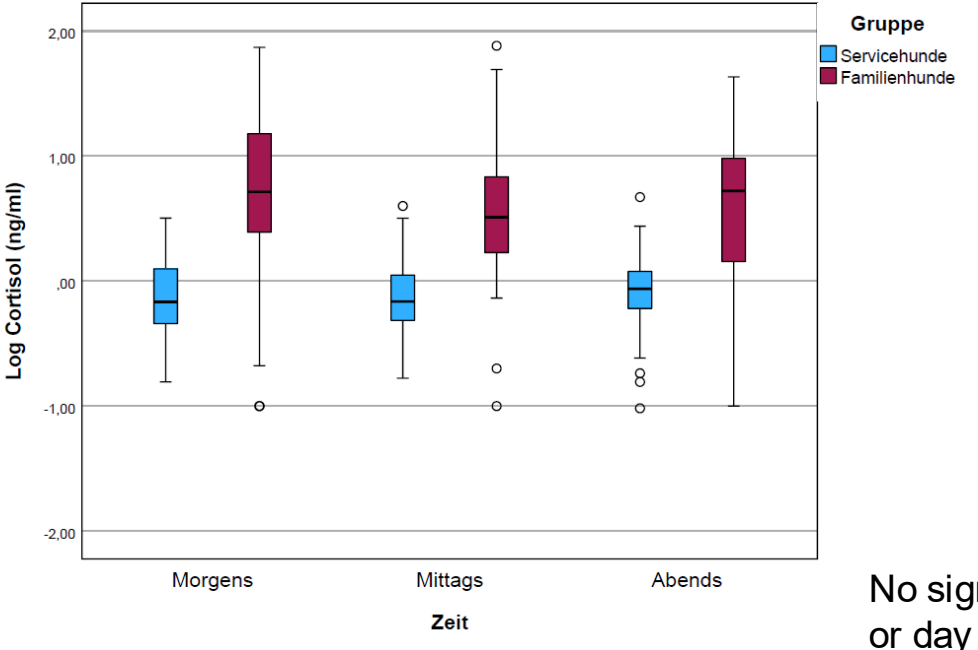
Signal, therapy and family dogs (without special tasks) have similar cortisol levels in their saliva (p = 0.353).



Bruckner (2019) Diploma thesis. Vetmeduni Vienna

Results

Family dogs without special tasks have significantly higher cortisol levels in their saliva than service dogs (F = 173.5, $p < 0{,}001$).



No sign. effect of day (F = 0.57, $p = 0.75$) or day time (F = 0.45, p = 0.64).

Mliner (2024) Diploma thesis. Vetmeduni Vienna

Discussion

- **Service dogs** have significantly lower cortisol levels in their saliva than family dogs without special tasks.
- This fits with the results of assistance dogs for post-traumatic stress disorder (see the next talk by **Karoline Gerwisch** et al.).
- But no significant differences between **signal dogs**, **therapy dogs** and family dogs.
- We need to be careful when interpreting these results.
- Variance due to individual, environmental and character traits of the dogs.

Discussion

- Assistance dogs are very **well trained** and **accustomed** to their tasks and perhaps experience less stress than family dogs without specific duties.
    - They have been trained to work with humans and confronted with a wide variety of scenarios that they may encounter in the course of their lives.
- A certain **routine** and regular daily schedule has become established in the dogs' lives.
- A close **bond** between humans and animals could be associated with a strong sense of trust and a corresponding reduction in stress.

Limitations

- Sample volumes were too small for adequate analysis.
- Inaccurate sampling by dog owners.
- Samples were not taken on exactly the same days.
- Some values for family dogs were unusually high.
- Small sample size (low number of dogs tested).
- Measurement of cortisol levels in saliva, urine, faeces, hair or blood may differ.
- A recent study found that salivary and serum cortisol are poorly correlated in puppies and adult dogs (Ferrans et al. 2025).

Take home message

The regulated daily routine of assistance dogs and a strong trust between them and their human partner seem to make them less stressed than previously assumed.