

EVALUATION OF THE HUMAN-DOG INTERACTION THROUGH THE ANALYSIS OF OXYTOCIN AND CORTISOL IN SALIVA

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OBJECTIVES

To evaluate whether a positive human-dog interaction has effects on the well-being of both species, by measuring the hormones oxytocin and cortisol in **saliva** before and after the interaction.

Hypothesis: On the one hand, oxytocin tends to increase thanks to positive human-dog interaction, on the other hand, cortisol also increases in dogs as a result of the stimulation that the interaction itself entails while, in the case of humans, it decreases thanks to the anti-stress effect of oxytocin.

MATERIALS & METHODS

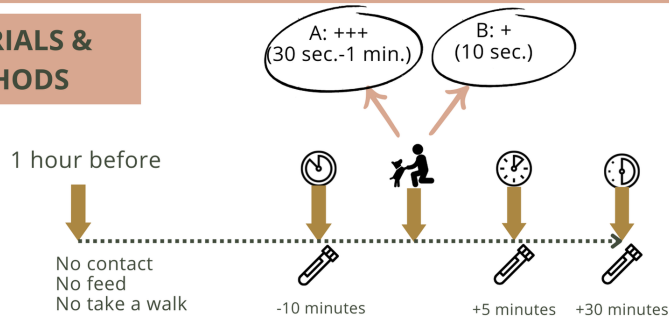


Figure 1. Description of the conditions for correct samples collection

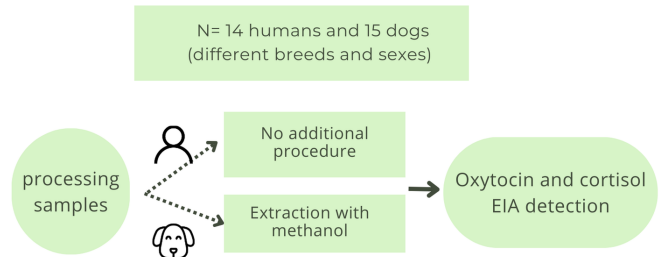


Figure 2. Laboratory procedure for the analysis of oxytocin and cortisol

RESULTS

CORTISOL

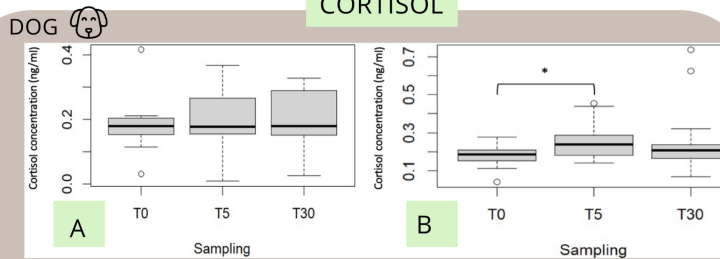


Figure 3. Cortisol concentration (ng/ml) in dogs by A and B interaction, according to saliva sampling in time T0 (10 minutes before interaction), T5 (5 minutes after interaction) and T30 (30 minutes after interaction)

OXYTOCIN

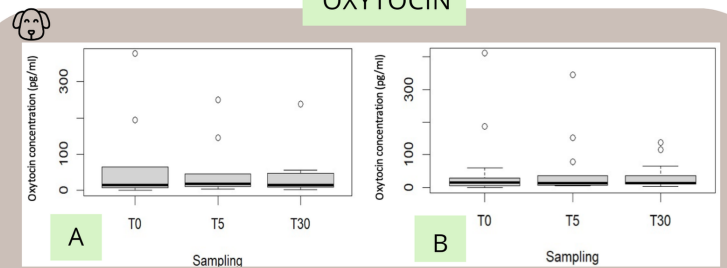


Figure 4. Oxytocin concentration (pg/ml) in dogs by A and B interaction, according to saliva sampling in time T0 (10 minutes before interaction), T5 (5 minutes after interaction) and T30 (30 minutes after interaction)

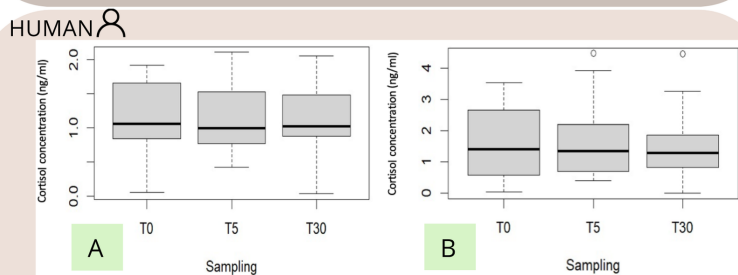


Figure 5. Cortisol concentration (ng/ml) in humans by A and B interaction, according to saliva sampling in time T0 (10 minutes before interaction), T5 (5 minutes after interaction) and T30 (30 minutes after interaction)

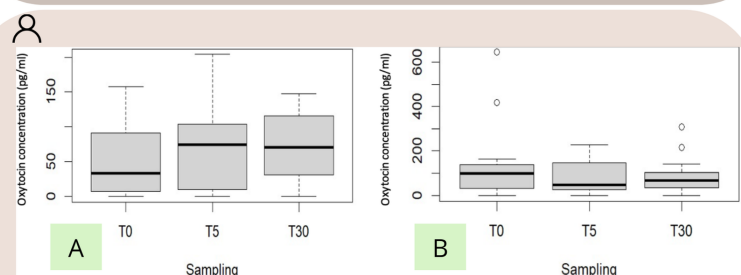


Figure 6. Oxytocin concentration (pg/ml) in humans by A and B interaction, according to saliva sampling in time T0 (10 minutes before interaction), T5 (5 minutes after interaction) and T30 (30 minutes after interaction)

Oxytocin and cortisol correlation in dogs

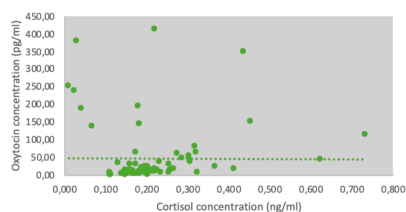


Figure 7. Correlation between oxytocin and cortisol in dogs ($\rho=0,344$ and $p=0,002$) and in humans ($\rho=0,245$ and $p=0,03$)

Oxytocin and cortisol correlation in humans

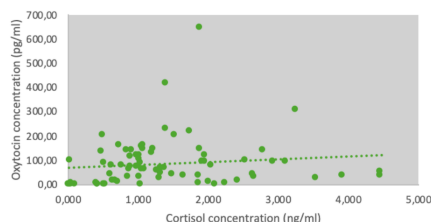


Figure 8. Correlation between oxytocin and cortisol in humans ($\rho=0,245$ and $p=0,03$)

DISCUSSION & CONCLUSION

A significant increase in cortisol in dogs is observed in B interaction, so there is an activation of HPA axis, like a physiologic response, because at T30 there is a tendency to decrease and return to the base levels.

The fact that oxytocin and cortisol do not increase together means that the hypothesis about an increase in cortisol without a negative connotation cannot be confirmed, although a moderate positive correlation has been observed between both hormones in dogs.

LIMITATIONS

- Number of samples A($n=39$)<B($n=45$)
- Very disparate oxytocin concentrations and a lot of outliers
- Different time slots for sample collection by participants
- Pressure from self-sampling could influence variation levels of hormones in humans