The influence of body region on the deposition of cortisol in blubber of striped dolphins (*Stenella coeruleoalba*)

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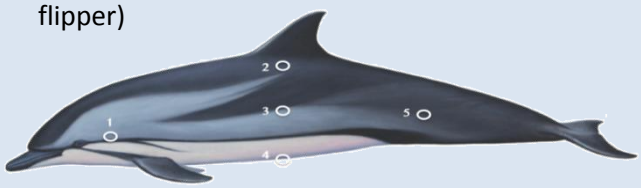
INTRODUCTION & OBJECTIVES

- Cortisol, the main glucocorticoid in dolphins, has been commonly used as an indicator of stress-response in wild animals
- In recent years, blubber has been demonstrated to be a good candidate tissue from which to extract steroid hormones. However, whether the cortisol levels in this tissue are influenced by the body location from which blubber is collected remains to be studied

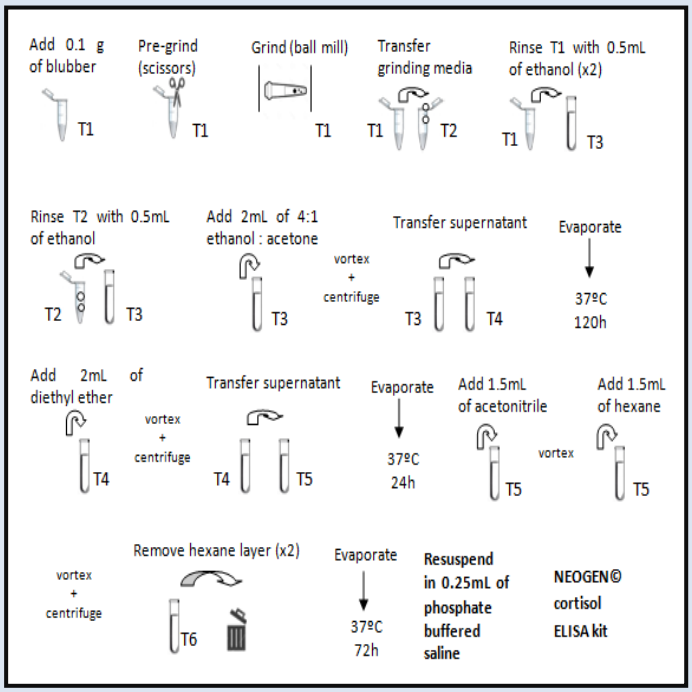
The aim of this study was to determine if blubber cortisol levels are effected by body region in *Stenella coeruleoalba*

MATERIAL & METHODS

- Individuals: N = 10
- Body regions: N = 5 (**cranial**[1] and **caudal**[5] areas in relation to the dorsal fin, and **dorsal**[2], **central**[3] and **ventral**[4] areas in relation to the pectoral flipper)



Blubber hormone extraction based on the methods of Kellar et al. 2015



CONCLUSIONS

This study demonstrated that cortisol levels do not vary with sampling location on the body suggesting that hormone concentrations are uniformly distributed throughout the whole body blubber

RESULTS

- ✓ No significant differences detected in the amount of lipid between body regions (Wilk's Lambda = 0.322, F (4,4) = 2,106, $p > 0.05$; Figure 1)
- ✓ No significant differences in blubber cortisol concentration were detected between body regions (Friedman test: $\chi 2$ (4) = 7.8, $p > 0,05$; Figure 2)
- ✓ The relationship between blubber cortisol concentrations and the amount of lipid was significant (Spearman test: $r = 0.30$, $p < 0.05$; Figure 3) and negative

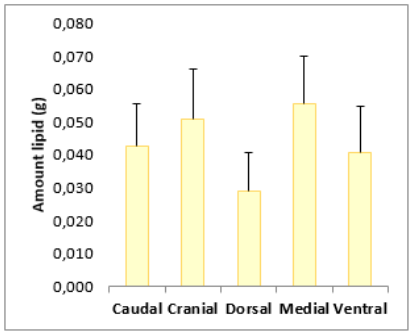


Figure 1. Chart of mean ± S.D. between the amount of lipid (g) and the body regions

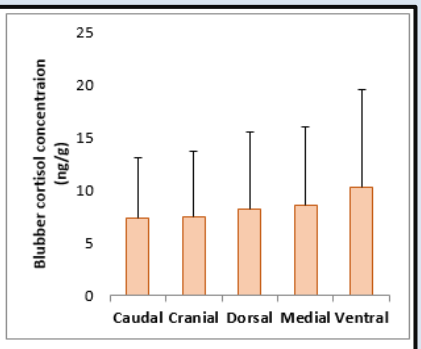


Figure 2. Chart of mean ± S.D. between the blubber cortisol concentration (ng/g) and the body regions

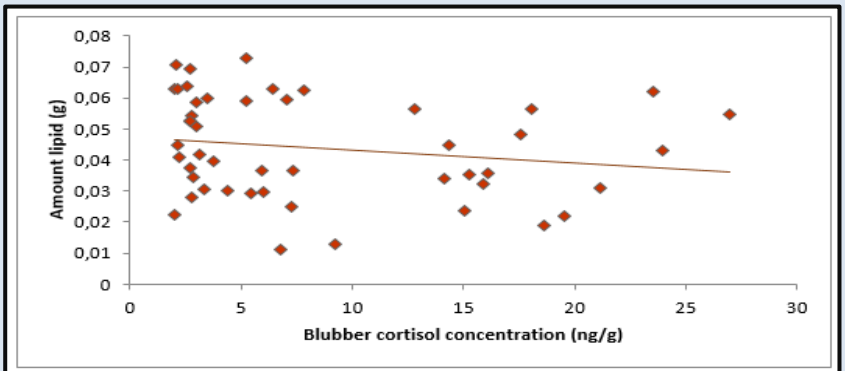


Figure 3. Chart of significant and negative correlation between the blubber cortisol concentration and the amount of lipid in unhealthy and healthy individuals

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