

# BEHAVIORAL AND PHYSIOLOGICAL INDICATORS TO EVALUATE THE WELFARE OF BOTTLENOSE DOLPHINS IN CAPTIVITY

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## INTRODUCTION

60 countries → 2.000 cetaceans in captivity, species *Delphinidae*.  
UE → Spain: 98 dolphins, 2 beluga whales and 6 killer whales.

Are the dolphins in captivity having a good quality of life?  
Which indicators do we use to evaluate it?

## OBJECTIVES

Study which are the existing behavioural and physiological indicators to evaluate their wellness.

## WELFARE EVALUATION

### PHYSIOLOGICAL INDICATORS

Stress → HPA axis → hypothalamus (CRH) → pituitary gland → ACTH in plasma → adrenal gland → **CORTISOL** + catecholamines

✦ Cortisol → ✖ Stress

Analyzed by blood plasma, **saliva**, urine and stool

### PERFORMANCE INDICATORS

#### Food consumption

- Loss of appetite
- Vomiting
- Foreign body ingestion

#### Self-injurious behaviour

- Friction
- Teeth wear

#### Stereotypes

## DISCUSSION

Inability to develop natural behaviours

Abnormal and pathological behaviour

Stress symptoms camouflaged

Normal behaviour vs abnormal ones

## CONCLUSION

Is captivity better than freedom? **NO** for the whole specie.