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Initial evaluation of facial expressions and behaviours of harbour seal pups (*Phoca vitulina*) in response to tagging and microchipping

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Highlights:

- Very little research exists on species-specific indicators of pain in harbour seals
- Facial Action Units (FAUs) and behaviour can indicate pain in many species
- This study identified FAUs and behaviours that potentially indicate pain in seals

Abstract

There are no proven species-specific indicators of pain in harbour seals (*Phoca vitulina*). The analysis of facial expressions has proven to be a repeatable, accurate and valid method of identifying pain in multiple species, but facial expressions have not been examined in any species of pinniped. This study investigated whether harbour seals' facial expressions and other behaviours changed immediately after a potentially painful procedure.

Forty-seven pups (healthy, > 60 d old) at a rehabilitation facility were video-recorded during routine procedures of flipper tagging and microchipping, which are normally done without analgesia. Eight pups were used to generate an ethogram of the facial and behavioural changes seen, 19 pups to compare the behaviours before and after the procedures (Experiment 1), 10 pups in a cross-over experiment comparing responses to real and sham procedures

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