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*Cumulative experience, age-class, sex and season affect the behavioural responses of European badgers (*Meles meles*) to handling and sedation*

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Abstract

*The restraint and sedation of wild animals has welfare implications, thus animal handling procedures should be well-informed and optimised to adhere to welfare standards. Furthermore, it is important that handling procedures should not cause future trap avoidance. This is of particular pertinence to European badgers (*Meles meles*), subject to extensive cage-trapping, relating to bovine tuberculosis epidemiology. We examined 4,288 capture/recapture events for 856 individual badgers, occurring between May 1999–September 2011, recording initial observed behaviour and reaction provoked by injection, on a scale ranging from still (0) to distressed/aggressive (3). Eighty-seven percent of adults and 76% of cubs were still (0) when approached initially and 75% of adults and 62% of cubs remained still when injected. Cubs exhibited significantly higher behavioural responses than adults, while female adults scored higher provoked scores than males. Importantly, the initial behaviour of an individual dictated its provoked response. Previous experience of capture was associated with lower subsequent behavioural response scores, while naïve badgers were most prone to score highly. Individuals first caught as cubs scored lower initial responses than those first caught as adults. Lower initial responses occurred in spring and summer and higher responses were associated with lice infestation. Behavioural criteria have potential to inform and optimise welfare in badger capture operations. This contributes to techniques allowing simple, non-invasive assessment of how wild animals in general respond to temporary restraint, where the psychological perception acts as the precursor to physiological stress.*

Keywords: *animal welfare, badger, behavioural response, injection, restraint, sedation*