

Barren environments increase 'wakeful' inactivity in veal calves

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Inactivity is a vastly understudied behavioural category, which may reflect both positive and negative affective states, or a lack thereof, in domesticated, captive animals. Increased inactivity in barren-housed animals, in combination with an increased interest in stimuli, was previously suggested as an indicator of boredom in captive mink. The aim of this study was to further our understanding of inactive behaviours and associated affective states in intensively raised calves fed different diets. Holstein-Friesian veal calves (n=200) were housed in enriched or barren environments: (1) imposed/restricted diet vs free choice (*experiment [EXP] 1*); (2) no additional straw vs *ad libitum* straw (*EXP2*); (3) low vs high solid feed (*EXP2*); (4) bucket vs automated dispenser for milk replacer feeding (*EXP2*). Inactive behaviours (*EXP1*: lie, idle, sleep; *EXP2*: lie idle, stand idle, sleep) and stereotyped behaviours (tongue playing, object manipulation) were recorded at two ages (*EXP1*: 12 and 26 wk; *EXP2*: 15 and 24 wk) using instantaneous scan sampling. In *EXP2*, latency to touch a novel object was recorded at 15 and 24 wk. Calves in all enriched environments showed less stereotyped behaviours ($P<0.05$). No differences in inactivity were found between calves with a restricted or free choice diet (% total scans for idle: 34.8 vs 33.4), however, calves from the other barren environments, showed more lying idle at 24 wk of age ($P<0.05$) (% total scans; straw: 31.4 vs 23.1; solid feed: 33.0 vs 23.8; milk replacer method: 30.7 vs 23.2). No differences in latency to touch the novel object were found. Therefore, although barren environments were generally associated with more stereotyped behaviour and 'wakeful' inactivity (sleep was not different), suggesting worse welfare, we were unable to conclude that this inactivity was potentially an indicator of boredom, or any other affective state for that matter.