

# Feeding and Social Behaviours Change with Onset of Metritis

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Metritis is common in the days after calving and can reduce milk production and reproductive performance. Early identification of metritic animals may improve the welfare of affected dairy cows and for the economic viability of the farm. The aim of this study was to identify measures of feeding and social behaviours recorded with an automated monitoring system that can be useful in the early detection of metritis. Healthy Holstein cows were enrolled in the study 3 wk before calving, and behaviours were recorded using an electronic feeding system. Metritis was diagnosed based on vaginal discharge assessed every 3 d until 21 d after calving. Twenty-one primiparous and 12 multiparous cows were diagnosed with metritis at 6 d after calving with no other health conditions. Each sick cow was matched with a randomly selected healthy cow of the same parity. In the 5 days leading up to clinical diagnosis, metritic primiparous cows ate less (metritic:  $24.9 \pm 0.98$  kg; healthy:  $28.2 \pm 1.0$  kg) and had fewer visits to the feed bunk (metritic:  $59.7 \pm 3.4$ ; healthy:  $69.9 \pm 3.6$ ) compared to healthy primiparous cows. No differences were found between healthy and metritic cows for time spent feeding, feeding rate and number of meals per day. Healthy and metritic cows did not differ in exploratory feed sampling, as measured by the number of feed bins visited within a meal. Metritic cows were more likely to be competitively removed from the feedbunk by another cow (proportion of feeder visits ending in a competitive replacement; metritic  $0.21 \pm 0.009$  vs. healthy  $0.18 \pm 0.009$ ); this difference was driven by the multiparous cows (metritic  $0.23 \pm 0.015$  vs. healthy  $0.16 \pm 0.014$ ). Social rank index was lower in metritic multiparous compared to healthy multiparous cows (metritic:  $0.47 \pm 0.04$ ; healthy:  $0.57 \pm 0.03$ ). This research shows that feeding and social behaviours may be useful for the early identification of metritis in dairy cows.

**Implications:** Cows at risk to become metritic can be identified by changes in feeding and social behaviour leading up to diagnosis; this study illustrates how automatic collection of behaviour can be used as an on-farm tool for early identification of disease.