

# Use of a Local Anaesthetic to Validate Two Measures of Lameness in Dairy Cows.

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To validate two possible measures for detecting lameness in dairy cows, we gait scored lame and healthy lactating Holstein cows (n=12) while walking and measured the percent (and variability) of weight placed on each leg while standing, before and after injections of a local anaesthetic into the leg judged as most responsible for the lameness.

Before injection, healthy cows had lower gait scores and placed their weight more evenly among their four legs than did lame cows. Lame cows placed less weight on the injured leg and placed more weight on the contralateral leg than did healthy cows. Furthermore, the variability in weight applied to the injured and the contralateral leg was much higher for lame cows than for healthy cows, suggesting more frequent shifting of weight.

After lidocaine injections, gait scores of healthy cows remained more-or-less constant, while gait scores of lame cows were reduced over 15 min. Furthermore, the percent of weight applied to the injured leg and the variability in weight applied to the injured and contralateral legs was reduced.

**Implications:** The system of gait scoring and the measure of weight applied to each leg were both able to detect lame cows and were both sensitive to local anaesthetic, indicating some degree of validity. The responses of lame cows to the anaesthetic show that lameness is painful.