Understanding the relationship between injuries and lameness in dairy cows

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What this research is about
- Injuries and lameness are both common across the dairy industry, but there is very little research addressing the link between them.

Objectives
1. Determine if there is an association between hock & knee injuries AND lameness in dairy cattle
2. If there is an association, do injuries cause an abnormal gait, OR does lameness lead to more injuries.

What the researchers did
- November 2017-November 2018 at the Elora Dairy Research Centre
- Working with the hoof trimmer, assessed cows monthly that were:
  - entering the lactating herd
  - 120-160 Days in Milk
  - Follow-up of previously lame cows
- Used the proAction Animal Care Assessment scoring system

Researchers 48 hours before trim
- Assess hocks, knees, necks, body condition, and lameness on ALL lactating cows

Researchers weekly
- Hoof trimmer
  - Presence or absence of hoof lesions (e.g. digital dermatitis, sole ulcer)

What we’ve found so far...
Of 368 cows assessed, 33% had lameness events over the 12-months

Injuries ARE associated with lameness
- Cows with both hocks injured are **4 times** more likely to be lame than cows without hock injuries
- Cows with hoof lesions are **4 times** more likely to be lame than cows without hoof lesions

Next steps...which came first?

What you need to know
Lameness is associated with hock and knee injuries, however, whether one causes the other is still under investigation. In understanding the relationship between injuries and lameness, industry stakeholders (dairy producers, veterinarians, hoof trimmers and advisors) can work together to decrease the prevalence of injuries and lameness across the Canadian dairy industry, and ensure that producers are compliant with proAction.

Research impact
- Under the Canadian dairy assurance program called proAction, mandatory Animal Care Assessments are taking place on all dairy farms across the country.
  - Producers with unacceptably high levels of lameness and/or injuries to hocks & knees are required to take corrective action and will be subjected to re-assessment.

To develop appropriate corrective action plans and thereby decrease the levels of lameness and injuries, we must understand all of the potential risk factors and relationships.

- This research provides evidence that at least some of the observed lameness may be due to hock or knee injuries, so measures that are implemented to mitigate injuries may also decrease the prevalence of lameness on Canadian dairy farms.