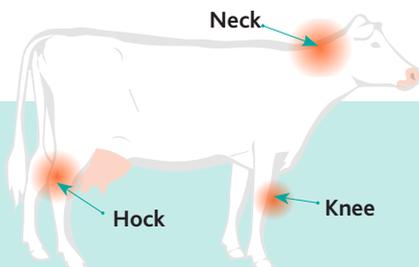


Hock, Knee & Neck Injuries

Information Document



Hock, knee and neck injuries in dairy cattle refer generally to instances of broken skin, swelling and/or hair loss in these regions.

These injuries compromise cow comfort and negatively impact your cow's productivity and longevity.

In fact, depending on their severity, these injuries can reduce cow mobility, dry matter intake, and milk production, and even impair reproduction. Preventing injuries to your cows will:

- Improve cow health and comfort
- Improve productivity
- Improve lying time
- Reduce cow treatment costs
- Lower cow and producer stress
- Increase cow longevity
- Improve cow health and comfort

Identifying injuries in your herd

Each type of injury can be assessed and scored using charts that have been developed and validated by researchers. These scoring systems specifically focus on assessing the region of interest (hocks, knees, neck) for hair loss, swelling and broken skin and use a numbered scale to identify the severity of the injury. Assessing these animal-based measures gives us a better understanding of the impact of the housing environment on each cow in the herd.

What is causing injuries in your herd?

Some of the most important factors contributing to injuries to dairy cattle are:

Stall design

Improper dimensions (too short, too narrow), improper positioning of rail, loop and dividers and insufficient number of stalls are all factors that contribute to inadequate lying time and an increase in injuries.

Stall base

Hard stall bases without sufficient bedding (e.g. concrete platforms, hard rubber mats) contribute to inadequate lying time and increased injuries.

Stall bedding

The frequency, quantity, cleanliness, and the moisture of the bedding, are all important contributors to lying times and the occurrence of injuries.

Animal handling

Cows that are stressed, rushed and/or otherwise improperly handled are at higher risk of injury.

Limited Pasture Access

Cows in housed environments have more injuries than those with access to pasture or exercise yards.



Early identification of injuries ensures you can take early and appropriate corrective actions to improve cow comfort and lessen the costs of injury.

Remember, proAction® requires that you evaluate the milking herd for hock, knee and neck injuries (as part of the cattle assessments), keep records of the results and take corrective actions if herd scores are in the yellow or red zones.

(Animal Care Validation no. 15; Code of Practice sections 1.1.2, 1.4, 1.6).

proAction

Hocks

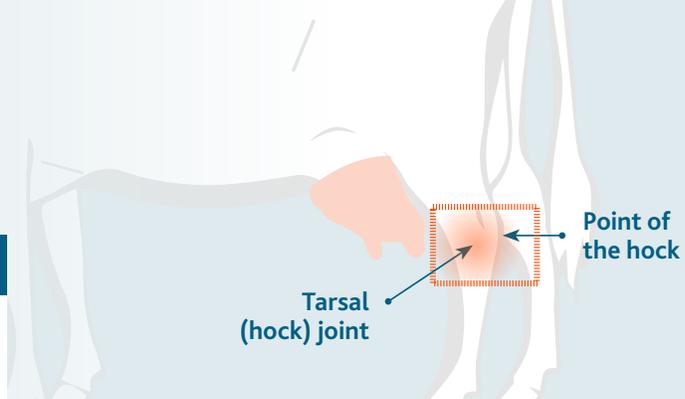
Hock injuries are an indicator of:

- Poor stall design (e.g. stalls too short);
- How abrasive the stall/resting surface is.

Hair loss, swelling and lesions on the hocks typically result from repeated exposure to abrasive stall surfaces, which are not well bedded. Lesions can become infected, resulting in swelling, pain and potentially lameness.

You should assess each cow's hocks while they are in the parlour, at the feed bunk or in their stalls. Score the outer side (tarsal joint; area within the orange box) of the left and right hock of each cow using the following scoring system:

Score	Swelling	Broken Skin/Lesion	Hair Loss
0	None	None	Minor, if at all
1	No or minor swelling (< 1 cm) may be present	None	Bald area present
2*	Medium swelling may be present (1 – 2.5 cm)	May be present	Bald area may be present
3*	Major swelling (> 2.5 cm)	May be present	Bald area may be present



**In order to receive a score of 2 or 3, at least one of either swelling or broken skin must be observed.*



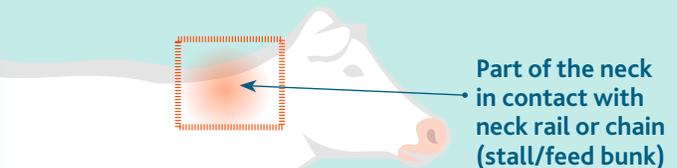
Neck

Neck injuries are an indicator of:

- Poor feed bunk design;
- Neck rail and/or chain are at the incorrect height/length, preventing comfortable access to feed.

Hair loss, swelling and lesions on the neck typically result from repeated exposure to rubbing or hitting against the neck rail or feed bunk rail due to improper positioning, or as a result of feed not being within easy reach for cows.

You should assess each cow's neck while they are at the feed bunk or in their stall. Score only the neck crest (ears to withers; area within the orange box) using the following scoring system:



Score	Swelling	Broken Skin/Lesion	Hair Loss
0	None	None	Minor, if at all
1	None	None	Bald area present
2*	May be present	May be present	Bald area may be present

Knees

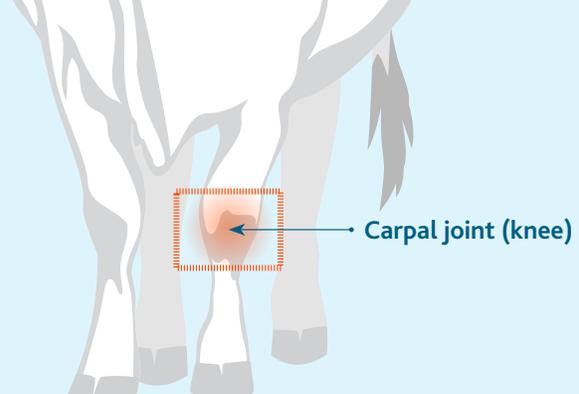
Knee injuries are an indicator of:

- Poor stall design (e.g. stalls too short);
- Poor Maintenance.

Hair loss, swelling and lesions on the knees typically result from repeated exposure to a hard stall floor, which is not well bedded, from improper rail positioning, or from falls. Lesions can become infected, resulting in swelling, pain and potentially lameness.

You should assess each cow's knees while she is at the feed bunk or in her stall. Score the front (carpal joint; area within the orange box) of the left and right knee of each cow using the following scoring system:

	Swelling	Broken Skin/Lesion	Hair Loss
0	None	None	Minor, if at all
1	None	None	Bald area present
	Minor to medium swelling may be present (< 2.5 cm) swelling	May be present	Bald area may be present
	Major swelling (> 2.5 cm)	May be present	Bald area may be present



**In order to receive a score of 2 or 3, at least one of either swelling or broken skin must be observed.*



Lesions can become infected, resulting in swelling, pain and potentially lameness.

PREVENTION, DETECTION & CONTROL

		TYPE OF CORRECTIVE ACTION	DESCRIPTION (Relevant section of the <i>Dairy Cattle Code of Practice</i>)
HOUSING & ENVIRONMENT	Access to Pasture or Exercise Yard		Cows with access to pasture or an exercise yard have fewer feet and leg problems. Strategic access to pasture or exercise yards for some groups of cattle may be useful where there is a high risk for of injury (Section 1.9).
	Flooring & Traction		Floors need to be soft to lessen impact and stress on cows' feet and legs, and to prevent slips and falls. Rubber flooring and mats are recommended. Insert rubber flooring in high traffic areas (cross-over alleys, holding areas, feed alleys) to help keep costs low and still provide adequate flooring in key areas. Concrete flooring should be surfaced in a way that minimizes slipping and excessive foot wear (Section 1.9).
	Number of Stalls		Overcrowding has been shown to reduce lying time and milk production (Section 1.5). As per proAction®, dry cattle and lactating cattle housing must provide adequate stocking densities. (Free Stall: less than 1.2 mature cows per usable stall. Bedded-pack pens: provide 11 m ² (120 ft ²) per mature Holstein cow.
	Stall Size		Measure adult cows (hip height and hip width) and design stalls to accommodate the cows you have. Obtain stall dimension and design recommendations from your herd advisor. Generally, wider stalls improve lying time, reduce perching and prevent lameness; longer stalls allow enough open space for the cow to lunge and easily stand up and lie down; neck rails and brisket boards should be positioned to prevent obstruction of normal resting behaviours (Sections 1.1.2, 1.4).
	Stall Base		Concrete platforms require a cushion for a resting surface. Stall bases that are soft and provide traction, thermal insulation and low risk of abrasion are ideal. Providing a good quantity of clean, dry bedding is the best management practice regardless of stall base type (Section 1.1.2).
	Stall Bedding (quantity)		As per proAction®, all stalls must have bedding. Add sufficient bedding (at least 5 cm or 2 inches) to provide a clean, dry and soft lying surface. Well-bedded stalls (deep, loose and soft) encourage cows to lie more than 10 hours per day and reduce the abrasiveness of the stall base, even when mattresses are present (Section 1.1.2).
	Stall Bedding (quality)		Remove manure, urine and replace soiled bedding at least twice daily to keep the entire stall surface covered with 5 cm (2 inches) of clean, dry and soft bedding (Section 1.1.2).
	Bunk Space		Allow enough bunk space for all cows to eat at once and continuously throughout the day (Section 1.2.2).
	Electric Trainers (Tie-Stall)		Ensure electric trainers are properly placed so that they do not touch cows when they are standing undisturbed in their stalls and when eating (Section 3.14).
MANAGEMENT	Handling		Encourage cows to move forward, but at their own pace. Slow and steady is always best in the long term. Eliminate fear and stress due to negative interactions; handle quietly and gently (Section 4.1).
	Assessment		Learn how to assess injuries on your own farm. This will help you target those who need special attention and treatment. Observe cows when in head gates, or after encouraging them to get up in their stall. Visit www.dairyresearch.ca/cow-comfort.php#self for more information on how to perform these assessments.
	Treatment		Injured cattle may require medical treatment and/or to be housed separately to recover. Consult your herd veterinarian for specific treatment recommendations. Addressing injuries early improves treatment response, helps lessen costs and maintains productivity.
	Monitor		Routinely monitor those cows that have been identified with and/or treated for injuries to assess severity and response to treatment over time.
	Corrective Actions		Changes to the cow's environment may be required to ensure proper recovery from and prevention of injuries. Identify potential causes of injuries occurring in your herd and plan, implement and evaluate corrective actions (in consultation with your herd advisor/veterinarian) to prevent future injuries.
	Record Keeping		Keep individual cow health records to help understand the pattern of injury occurrence in your herd, the impact of injuries and whether you are meeting your goals. Tabulating which cows are injured and when, the type of treatment and response etc. will help you benchmark for continuous improvement.
SERVICE	Veterinarian		Consult your veterinarian to assess your herd issues with injuries and set up preventive and therapeutic treatment protocols as needed. You should work together with your herd veterinarian on your injury issues.
	Other Advisors		Where applicable, consult with other herd advisors and consultants (hoof trimmer, nutritionist, extension personnel, other consultants) to obtain advice and resources regarding risks associated with your facility's design and management.
	Staff		Communicate with your staff to make sure injured cows are a priority for attention and that the herd's protocols are being carried out consistently and accurately (Sections 3.9, 4.1).