



Safe Dairy Cattle Handling For Women



United States Department of Agriculture
National Institute of Food and Agriculture



PennState Extension

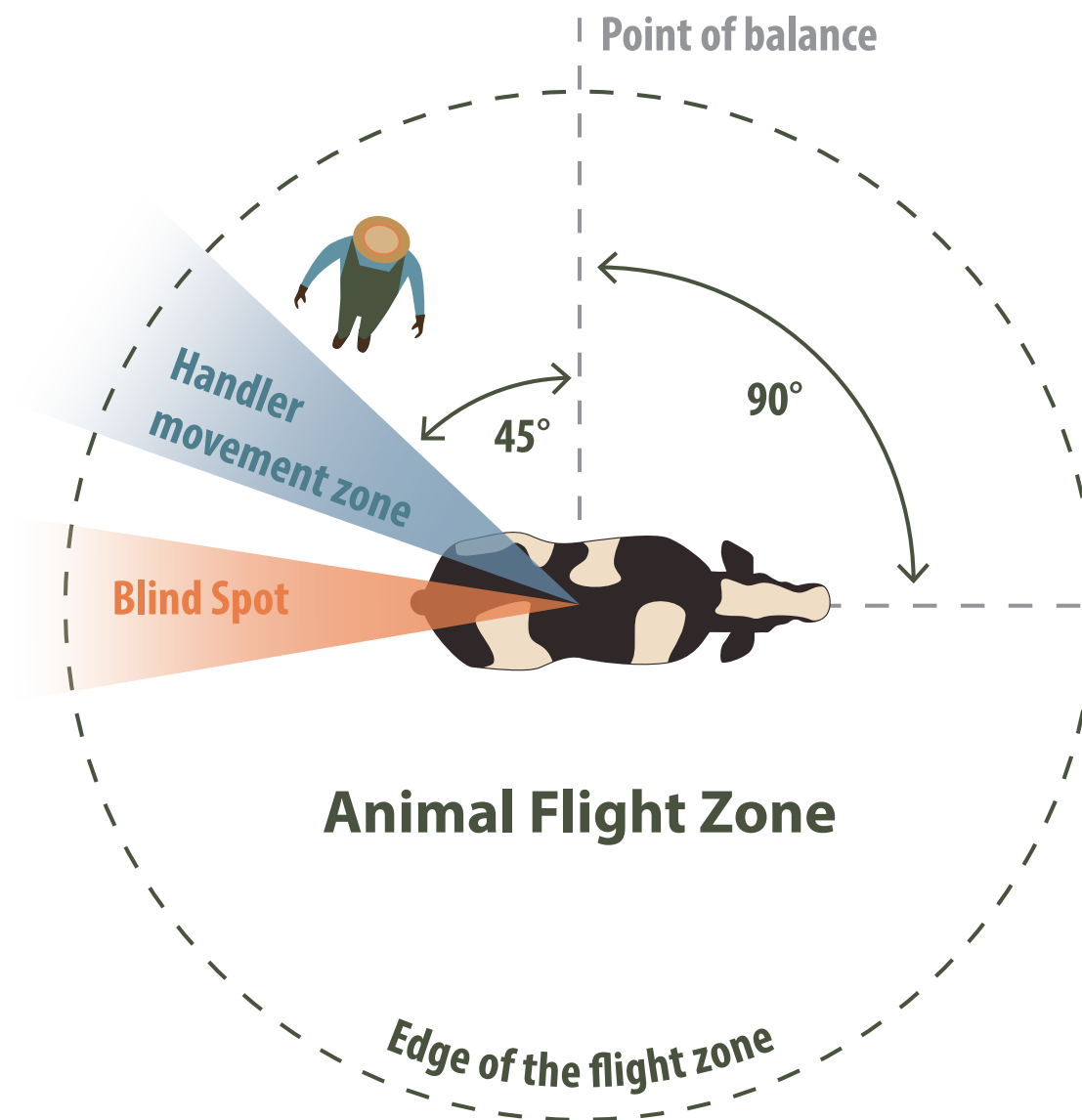
Cattle have panoramic vision which allows them to see in all directions (approximately 300°) without moving their heads. Their only blind spot is directly behind them. Compared to a cow's vision, a human's vision is about 180° with a much larger blind spot. Even though a cow's field of vision is good, cattle have very poor depth perception and limited vertical vision. For cattle to determine depth, they must stop and put their heads down. What you perceive as a simple shadow, cattle may perceive as a deep ditch. Remember that an unfamiliar item such as a white paper cup, a shadow, or a shirt hanging on a post can cause cattle to balk and affect their movement. To account for these characteristics and to maintain proper herd flow, it is recommended to use a curved, solidly enclosed, well-lit working facility with a uniform color.

Cattle are creatures of habit with strong territorial instincts and a developed sense of "homeland," evidenced by well-worn paths between pastures, buildings, and feeding areas. This instinct is one reason why cattle may be hesitant to go into unfamiliar areas. Cattle hear differently than humans. They hear both low-volume and high-frequency sounds better than humans do, but they have difficulty locating the source of a sound. This may cause them to startle easily, potentially leading to a flight response with resulting structural damage and physical damage to themselves or workers.

Flight or Comfort Zone

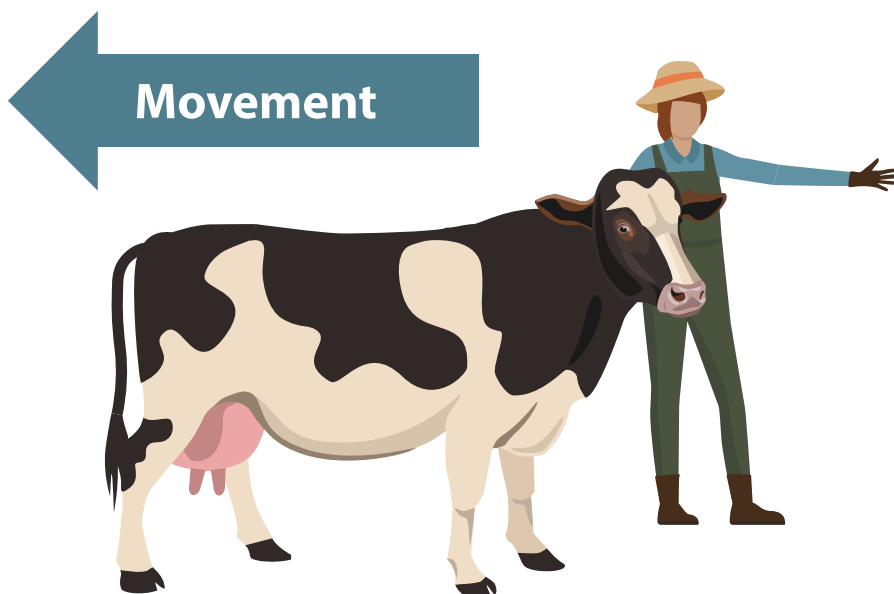
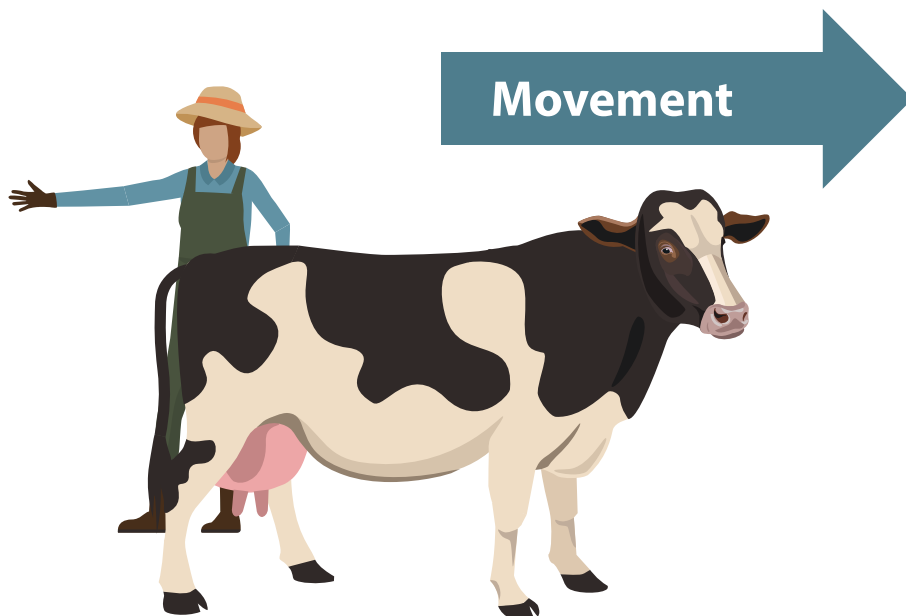
To safely move cattle, you must understand their "flight or comfort zone"—that is, their personal space. When you enter an animal's personal space, their tendency is to move away. The size of an animal's flight zone is dependent upon its fearfulness or docility, your approach, and the animal's state of excitement. A docile animal's flight zone may be 5 feet, but the flight zone for a range animal could be up to 300 feet. Work at the edge of the flight zone at approximately 45° to 60° behind the animal's shoulder to reduce the risk of causing the animal to panic. An animal's point of balance is typically located at its shoulder, so if you need to move an animal forward, you should be behind the point of balance. If you need to move the animal backward, position yourself in front of its point of balance. Stay to the side and

Click the diagram below to view the Upper Midwest Agricultural Safety and Health Center video, *Working with the Pressure Zone*.



never walk directly behind or in front of the animal. By understanding the flight zone and point of balance, you can move cattle more easily, efficiently, and with less risk of injury.

To learn more about the characteristics and movement of dairy cattle, watch the following videos by the Upper Midwest Agricultural Safety and Health Center: <http://umash.umn.edu/dairy-handling/>. They have also developed lesson plans to accompany the videos and help producers better understand the content. Access the lesson plans at the following link: <http://umash.umn.edu/wp-content/uploads/2019/01/UMASH-Stockmanship-Lesson-Plans.pdf>.



Click the diagram above to view the Upper Midwest Agricultural Safety and Health Center video, *Moving Cows More Effectively*.

The High Plains Intermountain Center for Agricultural Health and Safety provides resource videos about working with dairy cattle and various aspects of the dairy industry. Visit their website at: <http://csu-cvmbs.colostate.edu/academics/erhs/agricultural-health-and-safety/Pages/dairy-videos.aspx>. Their videos provide training on human and animal safety; outside animal care; milk barn safety; feeding and other safety issues; general and outside worker safety; milker and calf caretaker safety.

The National Farmers Union video promotes good habits for you and your workers when handling livestock:

<https://youtu.be/xh2-uwlWARA>

The Southwest Center for Agricultural Health, Injury Prevention, and Education has developed the following materials to help individuals better understand working with dairy cattle.

- Video — Right from the Start: Dairy Cows – Part 1
<https://youtu.be/57VbdEJUH6A>
- Video — Right from the Start: Dairy Cows – Part 2
<https://youtu.be/E7sFo9HNO3k>
- Video — Right from the Start: Safety Basics
https://youtu.be/_TZNsqW-Htg
- PowerPoint Presentation — https://www.uthct.edu/d/SWAg%20Center/SWAGC_2_Right_From_the_Start-Dairy_Cattle.pdf.
- Quiz — https://www.uthct.edu/d/SWAg%20Center/SWAGC_4_Dairy_Cattle_Quiz.pdf

Chutes and Alleyways

Cattle tend to follow each other, so they need to be able to see the next animal in front of them, but should not be able to see activity outside of the working facility. Farmers and ranchers need safe access to restrained cattle for reasons such as inoculations, medical treatment, and artificial insemination. A chute is the structure that catches and holds an animal still. A squeeze chute is more costly than just a head gate, but it provides the worker with more control over the animal. It may be a squeeze chute that has side swing-out gates with a head-gate to stop and catch an animal, or some chutes are equipped with hydraulics.

Chutes are usually 6–9 feet long, and may include a palpation cage. The primary function of a cage is to allow handlers to get behind an animal without climbing gates or fences. Palpation cage doors may also be used to prevent cattle from backing out of the chute, block the next animal coming up the alley as well as protect the person entering.

Alleyways should be solid with sloped sides to reduce distractions and shadowing, which may cause an animal to balk. When designing an alleyway, note that it should be approximately 20 feet long for smaller operations and up to 30–50 feet for larger operations. Ideally, an alleyway's width can be adjusted, with the size of the livestock, from 18–30 inches. Having the proper alley length will allow cattle to see the animal ahead of them, creating a constant flow of cattle up the alley and into the chute. When using alleyways, note that the recommendation is to use mounted backstops rather than the insertion of pipes through the sides of the chute. Non-secured components can be hazardous to workers.

Safety First

Workers should be familiar with the beef quality assurance standards and procedures. Everyone must know about possible pinch points on chutes and the potential dangers of handles that open and close the headgate, sides, and tailgates. Inspect rope-and-pulley devices and replace any rope that is fraying. Any moving part of the chute or alleyway system should be greased/lubricated as needed.

When using electrical equipment in the chute area, use ground-fault circuit interrupters and moisture-proof electrical outlets to prevent electric shock that have been laboratory tested and approved by a recognized agency such as Underwriters Laboratory (UL).

Holding Pens

Proper space, an adequate number of sorting pens, sorting gates, and animal flow are keys to a good holding pen, and minimize potential hazards to workers. The recommended space for cattle is at least 20 square feet per head for mature cattle. If the pen is too small, the handler may be in the cattle's flight zone, resulting in a potential increased risk to the handler. Problems also arise if the pen is too large, as it becomes difficult to move and direct the cattle.

All pens should have a 14-inch-wide pass-through in the corners for workers to escape, should the animals become agitated or the workers feel endangered. Assess your holding pens and place gates in a way that promotes animal movement between areas to reduce the need for handlers to enter the area to encourage cattle movement. Efficient animal movement reduces the amount of time that workers need to be in direct contact with the animals, therefore decreasing the potential for injury.

Crowding Pen

When using a crowding pen or tub, depending on the size of the pen and cattle, keep the group size to five or fewer animals; this will allow the cattle ample turning space. If you have a lone animal that refuses to move, bring it in with a different group of animals to reduce the risk of it becoming spooked or agitated. A circular crowding area with totally enclosed sides and crowding gate facilitates animal flow and promotes worker safety.

Avoid overcrowding, as it may restrict cattle movement, and alleyway blockage, which necessitates a handler entering the pen to move the animals. Moving animals efficiently through gates can reduce the risk of a bottleneck effect, thereby decreasing the need for a worker to enter the area and regain cattle movement.

Another option for avoiding direct animal contact is to situate a catwalk around the outside of the crowding pen, about 36 inches below the top of the fence. Such a catwalk allows the worker to maneuver cattle toward the chute without direct animal contact.

ATV Usage around Cattle

Handling and moving cattle can be done from horseback, on foot, or with the use of an all-terrain vehicle (ATV). The best case scenario is to train your cattle to come to you, rather than chase them down. If using an ATV, scan ahead and to the side for obstacles, uneven terrain, vehicles, people and animals. Reduce your speed. Pay attention to hazards such as guy wires and barbed wire fences; they are low profile and difficult to see. When gathering livestock, the ATV rider often

concentrates more on the animals than on the terrain. Failure to watch changing terrain or to look for unexpected obstacles can lead to a serious injury. Loose wire lying in a pasture, in brush, or on vines can pull feet from footrests, resulting in an injury. Tall grass in pastures can hide such obstacles as holes, stumps, and rocks from a rider's view.

For safety, it is essential to keep the ATV in good condition. Perform a pre-trip inspection before riding the ATV and institute a preventive maintenance program. Be aware of the turning and maneuvering space needed for the ATV. Visit <https://ag-safety.extension.org/atv-safety-for-agricultural-producers/> to be directed to the article titled "ATV Safety for Agricultural Producers" to learn about the appropriate personal protective equipment (PPE) for ATV operation, ATV maintenance, and safe operating procedures.

Introduce the ATV slowly to the herd. Their first experiences should be positively associated with a handling activity such as feeding. Many people do not realize that an animal's behavior during handling is affected by previous experiences. Placing the ATV in a field or pen will attract the animals and allow the animals to approach and sniff. Understanding the concepts of flight zone and point of balance described earlier will enable you to use the ATV to handle livestock safely.

Rough handling can cause unnecessary stress to livestock and can cause them to become more wild than cattle that are handled calmly. Individual animals within a herd may have an excitable temperament and spook or become agitated more quickly than other more docile cattle. Animals with an excitable temperament make it more difficult to work or move an entire herd, and should be culled because of increased risk of injury to other animals or handlers.

Additional Safety Recommendations

- Depending on the activity, wear appropriate PPE, which may include safety glasses, gloves, long pants and steel-toed shoes or boots.
- Use basic hygiene and sanitation practices, such as hand washing, when working around animals to reduce the risk of acquiring diseases such as leptospirosis, rabies, brucellosis, salmonellosis, or ringworm.
- Keep the herd together to reduce your risk of a hazardous encounter with an animal frightened due to separation from the herd.
- Gates should be hung approximately 6–8 inches from the ground so that they can swing freely.
- To decrease the risk of a fall injury, wear slip-resistant footwear. When pouring concrete in the chute and alleyway, roughen the concrete to create a non-slip surface or spread sand over existing surfaces.

Sources

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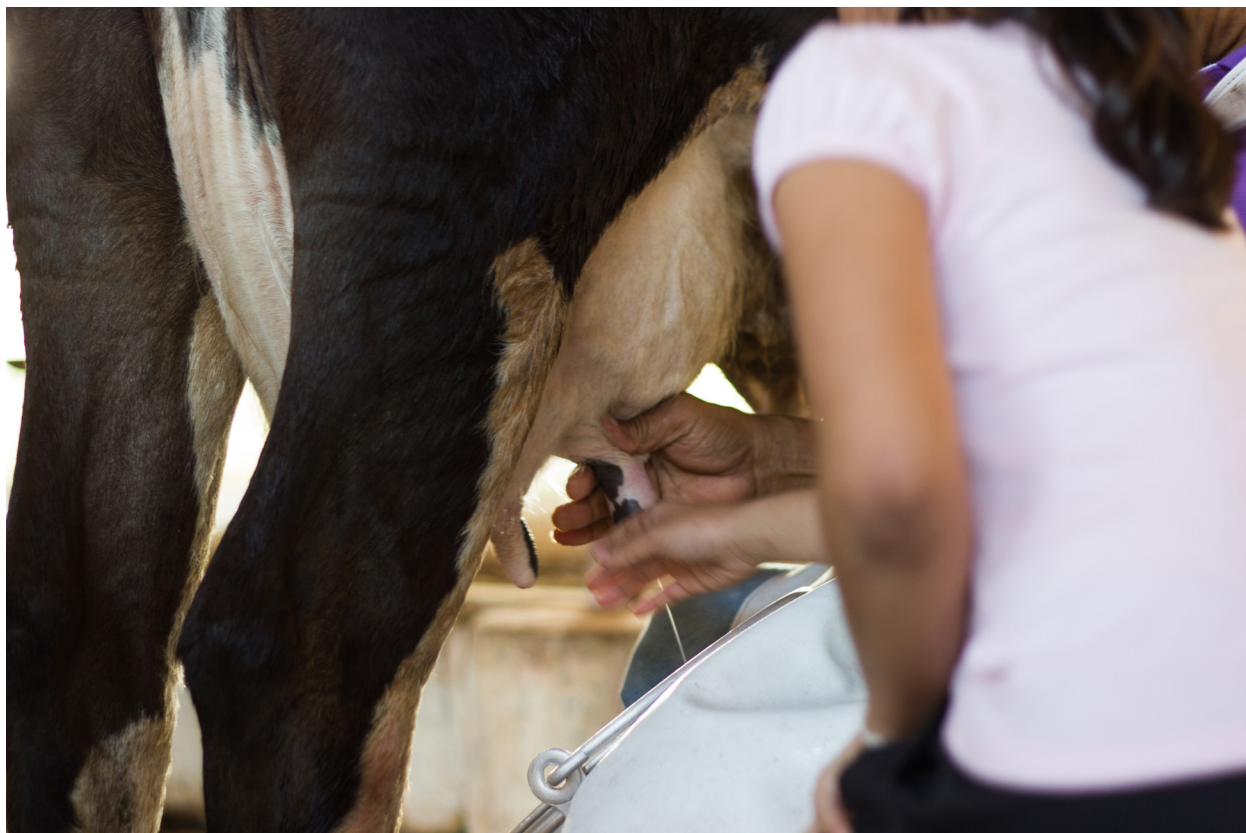
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For additional resources, visit:

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**21st Century Management:
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For additional resources, visit:

21st Century Management: Enhancing
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[https://www.usda.gov/our-agency/
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