If meat plants had Glass Walls...

AMERICAN MEAT INSTITUTE

…what would happen?

That question is often raised, especially by those who oppose meat consumption. They theorize that glass walls would prompt the public to become vegetarians. Experience indicates that's just not the case. In fact, the more common reaction among those who visit meat plants is something like, "That wasn't as bad as I thought." "The process was cleaner and quieter than I thought it would be." "The animals were so calm and I didn't expect that."

The fact is, meat packing plants don't have glass walls for good reason: because livestock are visual thinkers who are easily frightened by visual distractions, like lots of visitors. They can even become distracted or frightened by something as simple as a coat on a rail, a shadow on a wall or a hose on the ground. These are some of the many interesting facts you'll learn about in this brochure, created in partnership with animal welfare expert Dr. Temple Grandin, professor of animal behavior at Colorado State University. Dr. Grandin is working with the U.S. meat industry to help explain how meat packing plants work in terms that make sense to those who have never seen them before.

People have consumed meat since the beginning of time. Only in the last two centuries have animals been processed in plants, sometimes called "abattoirs." While some people today romanticize the on-farm processing of livestock that took place decades ago, the fact is, modern processing in plants are designed to process animals without delay while still accommodating natural animal behavior.

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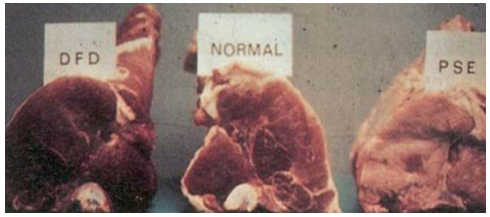
Federal U.S. Department of Agriculture inspectors also supervise the humane treatment of livestock in plants and ensure that they follow federal humane slaughter rules. In fact, these inspectors have the authority to suspend plant operations if they observe violations of federal rules.

Why is a low stress environment and calm handling so important?

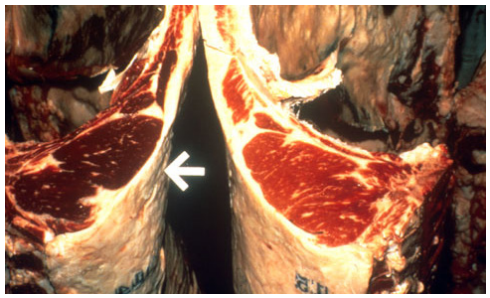
Low-stress environments and calm handling are important for many reasons. Just as people don't enjoy being stressed, neither do livestock. Recognizing this, people who handle and process livestock show livestock respect by handling them calmly and with dignity up to the end of their lives.

Stress causes animals to emit adrenalin, which reduces the quality of the meat.

In addition, handling livestock in a stressful manner shortly before slaughter reduces the quality of the meat they produce and the value the plant receives for meat or that the producer receives for his animals.



Stress can cause quality defects in meat, like pale soft exudative pork, known as "PSE pork," shown above, or dark colored beef known as a "dark cutter" shown below. When these quality defects occur, the meat is of lower value and sometimes is discarded.



Rough handling of a live animal also can cause a bruise, like the one on this pork loin above, that must be trimmed away. Calm handling is better for livestock – and quality.

Getting to a plant

Even the most optimal transportation can be a stressful event for livestock. In the U.S., most livestock arrive at plants in specially designed trailers that keep them safe and secure. These trailers also have vents that can be opened or closed to permit air flow based upon outside temperatures.

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Because transportation can be stressful, it is important to load and unload livestock calmly and quietly. Once livestock arrive at plants, they are placed in pens, rested for several hours and given fresh water before they enter a plant for processing. Livestock held at the plants for more than 24 hours, which is somewhat unusual, must receive feed, as well.

Moving animals according to their instincts

To keep animals calm, experts like Dr. Temple Grandin say it is essential to work with – not against – their natural instincts. Livestock are curious animals, and they like to return to where they started. By designing chutes that feature a curved, serpentine design, livestock will move forward easily as they seek to peek around the curve and to return to their starting points.

Livestock are calmly moved in small groups out of barns and onto special trailers (shown below) with panels that can be opened and closed to increase or decrease air flow depending on the weather.

Meat plants use non-slip flooring, like the scored concrete depicted here, to ensure livestock have firm footing that prevents falls in all kinds of weather.

Pigs, in particular, like to move in groups. Alley ways in plants are designed to allow them to walk as groups until the very end when they enter a single file chute.

Sheep like to follow the leader in "pied piper" fashion. Sheep plants often use specially trained "lead sheep" that are trained to walk through chutes as others follow.

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Lead sheep are removed prior to stunning through an "escape door" and repeat the process over and over – a behavior they are genetically "wired" to perform and one that creates the least stressful experience for the other sheep.

Livestock are curious animals that often will peek around a corner. They also like to return to where they started. Curved chutes like these, common in today's meat plants, prompt livestock to move forward easily with little pushing or prodding.

Sheep have a natural "follow the leader" instinct. Many sheep plants use trained "lead sheep" to lead lambs up chutes. Lead sheep are often marked with color, rope or a bell around the neck so they are not mistaken as animals that should be processed. Trained lead sheep are highly valued and they move lambs and sheep in a calm manner that is considered very humane. Photos: Ruth Woiwode

Driving Tools

Tools that help prompt animals to walk forward and move in certain directions are commonly used and are often called "driving tools."

Many people may have heard of electric prods. They are long sticks that can administer lite shocks that will make livestock move forward. Recent research shows that electric prods can cause livestock to become agitated and stressed. While prods may be needed on some limited occasions, Dr. Grandin and other animal behaviorists have found that there are many low-stress substitutes, like a simple paddle with rattling beads inside. Often, the paddle need not touch the animal. The site and sound of a paddle held at the right point in the animal's vision will cause it to move forward. Other low stress driving tools include flags, whiffle bats with beads inside and even sticks with grocery bags attached to the end that make an audible crinkling sound.

Plants today strive to use low-stress driving tools, like the black plastic flag on the left, that acts as a visual barrier, or the rattle paddle on the right, that makes a noise. Paddles also may be used to tap livestock gently when needed to prompt them forward.

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Pigs are held in meat plants in large groups pens, where they may rest and get a drink of water before they are processed. In this photo, you can see flags used to guide pigs.

Eliminating Distractions

Plants strive to eliminate visual distractions that can frighten or distract livestock and hinder their movement, like a hose in a walkway, a dangling chain, or a coat on a rail, as depicted above.

One of the biggest obstacles to calm handling is distractions, which cause animals to balk and refuse to move. A white coat on a rail has high contrast and it attracts the animal's attention and may stop movement. A hose in a walkway can appear like a snake in the eyes or a steer. A sunspot or shadow also can be frightening. A hissing sound from a machine may sound threatening. And air blowing in livestock's faces may cause livestock to balk. That is why it is so important, according to Dr. Grandin, to try to understand the plant from an animal's perspective.

Solid, smooth walls free from coats, hanging chains or flapping plastic can make an enormous difference in the willingness of livestock to move forward. Livestock also prefer to move from dark to light, which is why plants strive to avoid walkways that look like dark tunnels because animals may balk and refuse to enter. This is also why the proverbial "glass walls" would actually be the most inhumane way to construct a plant because it would induce fear among livestock who would see movement all around them.

Ensuring Animal Health

Only healthy animals may be processed for food. Federal rules require that veterinarians inspect all livestock before they are processed to ensure that they are not sick or diseased. Animals that cannot walk due to illness or injury are given special care and inspection by veterinarians, who determine whether they have an illness or condition that requires them to be euthanized and not enter the food supply or whether they have a condition like a broken ankle that requires prompt stunning to minimize suffering, but still may be processed for food.

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Stunning

Under federal rules, all livestock must be unconscious when they are processed into meat. The only exception to this rule is when livestock are processed under religious rules like Kosher and Halal, which prohibit stunning, but use careful procedures to ensure adequate welfare. (See Religious Slaughter, Page 10).

Different stunning methods are used depending upon the species. Beef plants most commonly use captive bolt guns to make an animal unconscious. These guns drive a steel bolt into the brain. This tool has the same effect as a large caliber firearm. Many pig plants use CO_2 stunning. When this method is used, pigs walk into steel baskets (called "gondolas") in small groups and are lowered into chambers where CO_2 gas functions like a permanent anesthesia. Other pig and sheep plants use electrical stunning, in which electrodes are applied to the head and neck of pigs and a pulse of electricity is applied to cause instantaneous unconsciousness.

All of these methods have been studied carefully and are accepted worldwide as humane methods.

After the animals are made unconscious through stunning, a cut is made to their necks to allow blood to drain. At this point, the animals are dead and "dressing" procedures, like hide removal, may begin.

Captive bolt stunners are used commonly with cattle to stun them instantly so they feel no pain when they are slaughtered.

Many pork plants use CO_2 stunning systems that permanently anesthetize pigs before slaughter. The pigs in this photo are stepping into a "gondola" that will lower them into a CO_2 chamber.

When pigs emerge from the chamber, they are floppy and do no respond to any stimuli, which ensures they will feel no pain when processing begins.

The AMI Audit

Since 1997, plants have used an audit developed by Temple Grandin, Ph.D., professor of animal science at Colorado State University and the world's leading expert on animal welfare in slaughter plants. This audit uses numeric criteria to measure welfare. For example, plants watch 100 animals and count how many fall, how often they vocalize and how accurately the stunner is placed as a measure of good welfare practices. Operating under the principle that "you manage what you measure," plants typically perform weekly self-audits and undergo annual third party audits by outside firms. Since the audit was developed by Grandin and AMI, it has become a requirement for doing business with many restaurant and retail stores and is accepted globally as "the" standard for animal welfare in the meat industry. The audit is public and free and may be accessed at www.AnimalHandling.org. Video auditing is also becoming more common in meat and poultry plants. Some systems transmit video only within a plant and the videos are reviewed by plant management. Other systems transmit video to an outside firm that audits remotely, tracks trends and alerts plants when they detect problems. Both systems are useful in ensuring welfare.

Humane handling of livestock at meat packing plants is ethically appropriate, creates happier, safer workplaces and even offers distinct meat quality benefits.

Based upon surveys of its members, AMI estimates that more than 90 percent of livestock are handled in plants according to the principles embodied in the AMI guidelines and audit. Data collected by Dr. Grandin show that the guidelines and audit program have prompted measurable improvements in plants since the late 1990s. That data may be viewed at www.Grandin.com

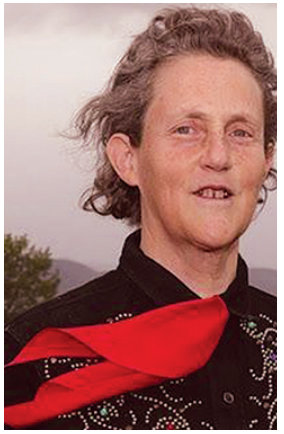
Ongoing Education

The industry offers an annual Animal Care & Handling Conference for the Food Industry that is essential in maintaining a high level of knowledge and professionalism among those who handle animals in meat and poultry plants. The conference is typically held each October in Kansas City, and Dr. Grandin is one of the major instructors. In addition, videos are available from the American Meat Institute Foundation to conduct ongoing animal handling training in plants.

Closing Thoughts

Humane handling of livestock at meat packing plants is ethically appropriate, creates happier, safer workplaces and even offers distinct meat quality benefits. Many incentives exist to do the right thing, and that's what the industry strives to do every day that livestock are in our care.

Qs and As with Temple Grandin, Ph.D.



Do livestock know they are being slaughtered?

This is the question I am most commonly asked and I can say that when slaughter is done properly, they have no idea what is happening. I've observed livestock in vaccination chutes and in plants. Their behavior is exactly the same. If they knew they were going to be slaughtered, we would expect to see different reactions but we don't.

Are small plants more humane in their treatment of livestock?

This is a very common question. Size is truly irrelevant in humane handling. It is a management commitment to animal welfare principles that determines the humane treatment of livestock in meat plants.

Is one form of stunning more humane than another?

All forms of commercial stunning done properly using well-maintained equipment are humane. Maintenance of equipment so that it works properly is critical to good animal welfare. More information may be found on www.AnimalHandling.org and www.Grandin.com

Why can't the public walk through meat plants?

It is essential to minimize activity in plants because activity can distract and agitate livestock. Visitors also can introduce germs and cause other bio-security problems. That is why the meat industry has agreed to allow cameras to shoot what plants look like on the inside. This gives you a picture of how a typical plant would appear.

Why not just do a live video feed to the internet from all plants? Wouldn't that help?

Giving the public direct access to observe slaughter without narration or context isn't really going to help them understand slaughter any more than a live, un-narrated feed of open heart surgery helps the public understand cardiac care. I was happy to participate in creating two videos that show the beef and pork slaughter process with some context and explanation. They are available on www.animalhandling.org or on YouTube/MeatNewsNetwork.

Because Kosher and Halal slaughter does not permit stunning, is it humane?

Done right, Kosher and Halal slaughter is acceptable from an animal welfare standpoint. It requires more attention to details of the procedure compared to conventional slaughter. The animal's throat is cut with a long sharp knife. Since restraint of the animal for Kosher or Halal slaughter has an exemption from the Humane Slaughter Act, some small plants still use highly stressful methods of restraint such as suspending the conscious animal by one leg. The large plants have stopped doing this, which has greatly improved animal welfare. Go to www.grandin.com for more information.

Can on-farm slaughter be done humanely?

Yes, it can be, but limited equipment and facilities can make it more difficult, especially with larger livestock like cattle. On-farm slaughter requires that the person who performs the slaughter has received training, be very skilled and takes his role very, very seriously. It's just easier to perform slaughter quickly and painlessly when you have the equipment that plants commonly have. That does not mean it can't be done humanely on farm.

Doesn't a plant benefit by forcing animals to move quickly so they can process more in a day?

Driving livestock too hard and causing them stress will create quality defects in meat like bruises in beef and soft mushy pork or tough beef. Bruises must be trimmed away and result in lost profits. Agitated animals that are driven too hard also can create worker safety issues. Plants 'get' this for the most part. Yes, there may be exceptions, but for the most part, plants recognize the importance of calm livestock handling.

Is animal welfare in the meat industry getting better or worse?

My data show dramatic improvements in welfare since I started measuring and auditing in 1996. There is an increasing demand from foodservice and retail customers and from the public at large. In addition, there is a growing understanding of the benefits of good welfare practices. Together, these factors have helped improve how livestock are handled and slaughtered. I have three scientific journal articles on welfare auditing at meat plants, and assessment of stress in animals and they are available free online. *(See references below.)*

How do I know that a plant abides by the guidelines and audits that you have written?

It should be reassuring to know that 50 percent of cattle and 20 percent of pigs are processed in plants that use my designs. More than 90 percent of cattle and pigs are processed in plants which are audited using the *AMI Animal Care & Handling Guidelines and Audit Guide* that I wrote. Surveys show that very few plants don't use these principles today. And if you are still concerned, contact you meat supplier or your retail store and just ask.

T. Grandin 2012. Developing measures to audit welfare of cattle and pigs at slaughter, Animal Welfare, Vol. 21, pp. 351-356. This paper shows improvements that have occurred from 1996 through 2010.

T. Grandin. 2012. Auditing animal welfare and making practical improvements in beef, pork, and sheep slaughter plants, Animal Welfare Vol. 21 (Supl. 2) pp. 29-34.

T. Grandin. 1997. Assessment of stress during handling and transport, Journal of Animal Science, Vol. 75, pp. 249-257.

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