

# Beef Quality Assurance

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## Injection Sites and Techniques

To lessen injection-site defects in economically important cuts of beef, the preferred site for all subcutaneous (SQ) or intramuscular (IM) injections is the neck region. It is particularly important to use the neck region with IM products, because even the shoulder chuck primal contains value-added cuts that should be protected. SQ injections are made just under the skin but not into the muscle tissue and IM injections are made directly into muscle tissue of the neck, as shown in Figure 1. The side of the neck is the best area to make injections. Absorption of the drug is more rapid in the muscle than under the skin because of the good blood supply to muscle tissue. Whenever possible, choose products formulated and labeled for SQ rather than IM injection. Proper needle sizes for each injection type are reflected in Table 1.

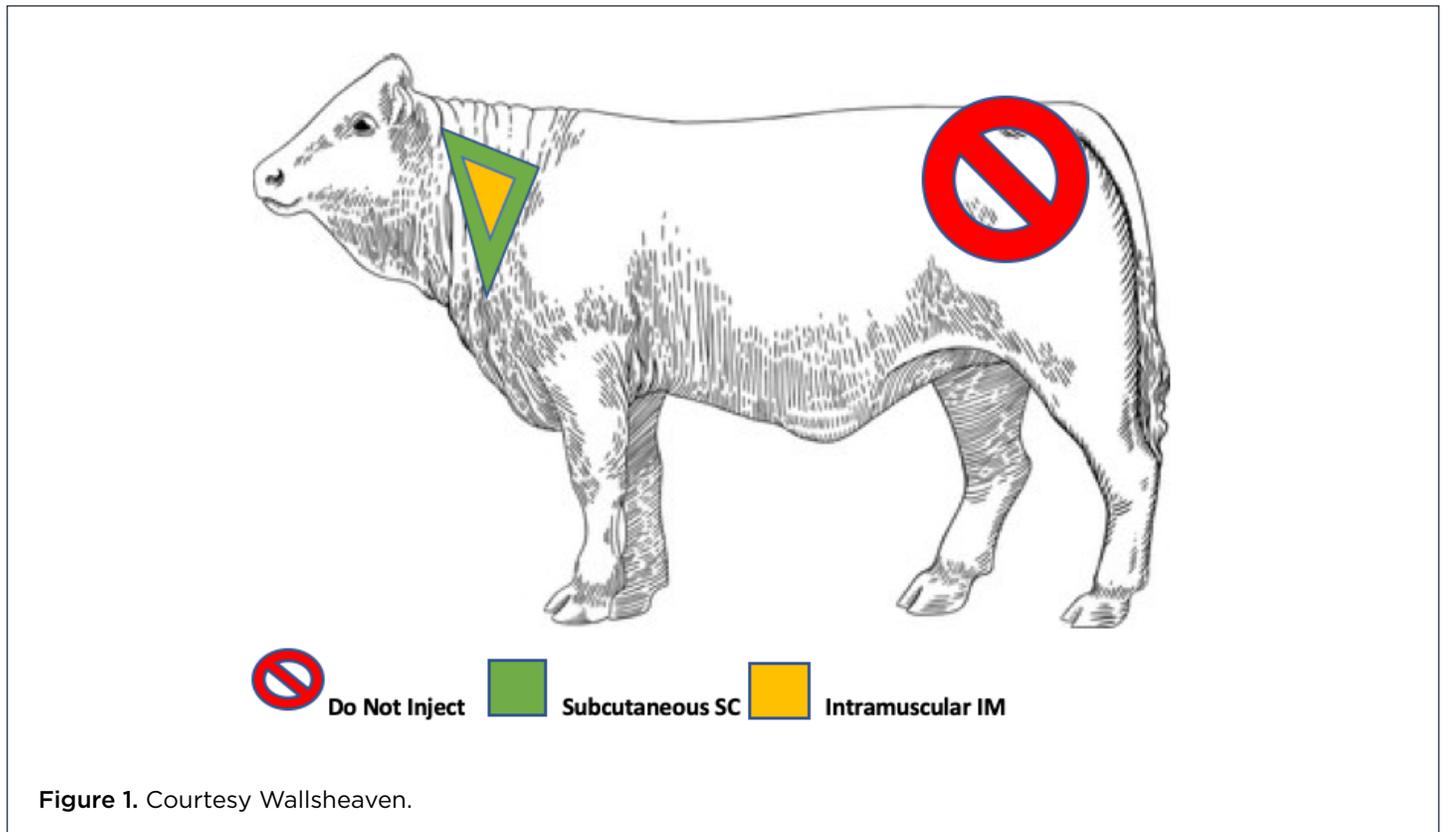


Figure 1. Courtesy Wallsheaven.

Table 1.

Route of Administration									
Injectable Viscosity	Subcutaneous (SQ) ½ to ¾ inch needle			Intramuscular (IM) 1 to 1 ½ inch needle			Intravenous (IV) 1 to 1 ½ inch needle		
	Cattle Weight			Cattle Weight			Cattle Weight		
	Less than 300 lbs.	300 - 700 lbs.	More than 700 lbs.	Less than 300 lbs.	300 - 700 lbs.	More than 700 lbs.	Less than 300 lbs.	300 - 700 lbs.	More than 700 lbs.
<b>Thin</b> <i>Example:</i> Vaccines	20 - 18 Gauge	18 Gauge	18 Gauge	20 - 18 Gauge	18 Gauge	18 - 16 Gauge	18 Gauge	16 Gauge	16 - 14 Gauge
<b>Thick</b> <i>Example:</i> LA 300 Exceed	18 - 16 Gauge	18 - 16 Gauge	16 Gauge	18 Gauge	16 Gauge	16 Gauge	16 Gauge	16 - 14 Gauge	16 - 14 Gauge

**Choose the right needle based on the size of the cattle. Use the smallest practical size to adequately complete the injection and avoid bending.**

Several animal health products are now approved to be injected into the ear of cattle. This location is excellent from a Beef Quality Assurance (BQA) perspective as ears are removed at harvest and do not enter the food chain. The ear must be clean to avoid infection, and producers should take care to avoid blood vessels. Read product labels carefully. See Figure 2 for an example of an ear injection technique.

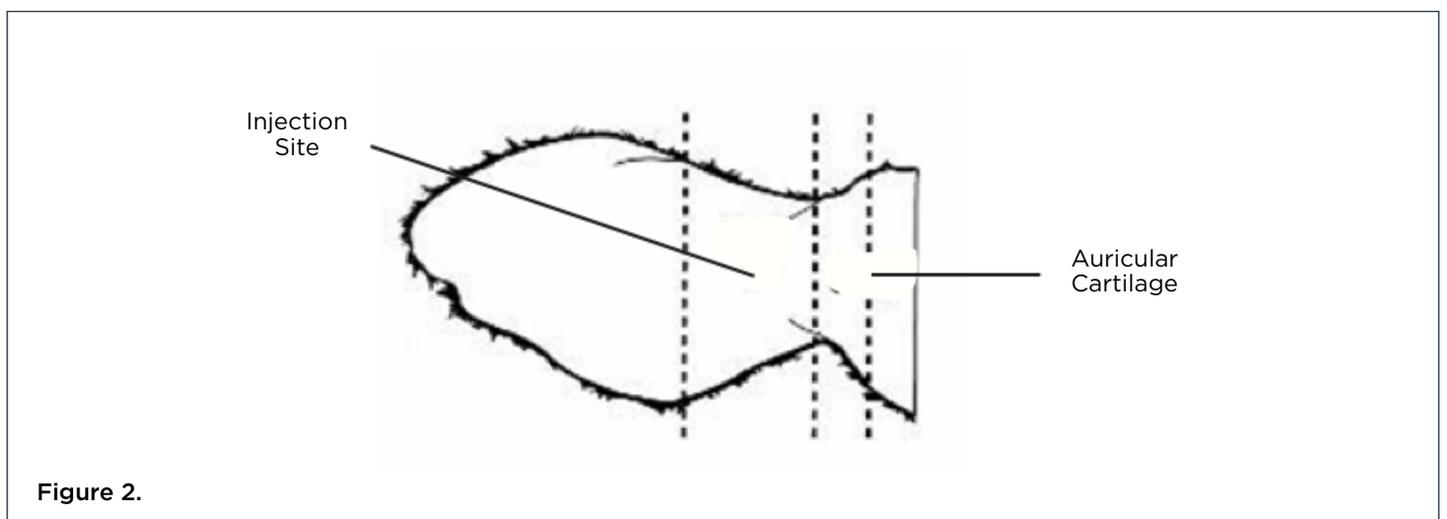
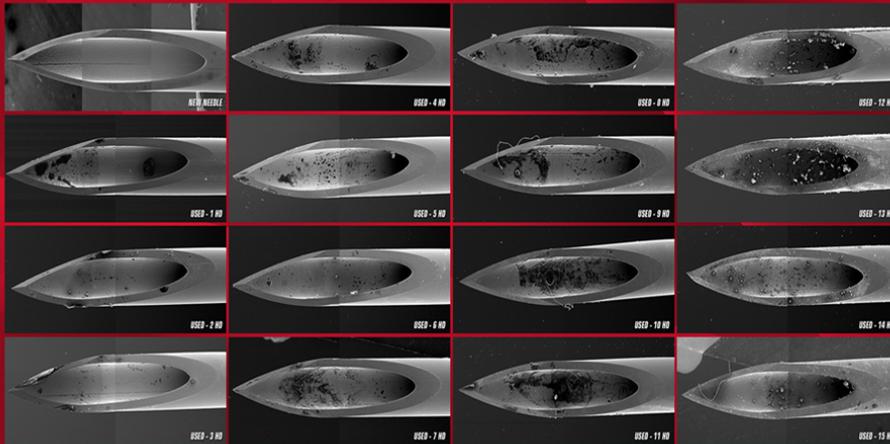


Figure 2.

## How often do you replace your needles?



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This picture is from a study conducted to evaluate needles after multiple uses. The needles were used and then a picture was taken with a scanning electron microscope. Even though the needles were not burred, it is evident that after only one use, the needle is contaminated and will serve as a contaminant if used for an injection or introduced into a medication container.

Image courtesy Progressive Cattleman.

## Injection Reference Chart

### A. Correct Injection Techniques

Injectable products should always be measured accurately and administered according to the manufacturer's label recommendations. Check the syringe for proper adjustment and proper needle placement. Prior to injection, ensure the animal is properly restrained. Using proper restraints when injecting cattle can help to avoid accidents.

- Note: A broken needle is an emergency as it will migrate farther into the tissues. Under no circumstances should animals with broken needles be sold or sent to a packer.

To greatly reduce swelling and/or abscessation at the injection site:

- Always use single-use sterile needles.
- Inject into clean and dry areas.
- Prevent contamination by not using the same needle to inject multiple animals and removing medication from multidose vials.

Injection site selection is an important management decision in preventing blemishes to valuable cuts of meat. Consult your veterinarian about potential injection sites and techniques.

### B. Injection Types

Intramuscular (IM) injections deposit the drug into the muscle. Inject only into clean, dry, well-muscled areas where there is no danger of striking bone or internal organs.

- Use a 16-to-20-gauge needle depending on product viscosity
- Needle length should be 1-1.5 inches long
- Inject no more than 10 cc per injection site, as too much drug in one area can cause muscle damage.

Subcutaneous (SQ) injections deposit the drug under the skin. Inject only into clean, dry areas of loose skin, sliding the needle under the skin and away from the site of skin puncture before injecting.

- Use a 16-18 gauge needle depending on product viscosity
- Needle length should be 3/4 to 1 inch long, using 3/4 inch-long needle if a tent technique is not used.
- Inject no more than 10 cc per injection site.
- Separate injection sites by at least four inches.

### **Needle Use and Handling General Guidelines**

Always select a clean, dry injection site. Single-use needles are recommended in order to reduce the spread of blood-borne diseases. Keep the contents of the vaccine bottle sterile and do not store a syringe and needle in the top of a bottle. Once a needle has been used, do not put it back into the vaccine bottle or use it for anything else. Keep transfer needles in a closed container when at chute-side and boil and place in a clean, marked container after use.

### **Changing Needles**

To prevent the spread of known blood-borne infectious diseases, use a new needle for each animal. Change any needle that is bent, or becomes contaminated (manure, dirt or chemicals).

### **Proper Disposal of Sharps for Producers**

To properly dispose of sharps, place the sharp in a thick plastic container such as a washing detergent bottle. When full, cap the container, wrap the cap with duct tape and write "do not recycle" on the container. Treat the container as solid waste.

Beef Quality Assurance is a national program that raises consumer confidence through offering proper management techniques and a commitment to quality within every segment of the beef industry.

For more information, including videos, manuals and training opportunities visit your county Extension office.





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