

Health and welfare information about your dog from Vetlexicon Canis.



Injecting your dog

Administration of medicine by injection is often referred to as giving drugs by the parenteral route. The other main means of administering treatment is via the mouth and digestive system - the oral route. Effective administration of medicine is a key part of most veterinary treatments and many medications are most effective when given by injection. Administration of medicine by injection is also essential for some drugs that are destroyed by acids in the stomach, eg insulin.

Injection routes

Injections can given into:

- muscle (intramuscular injection)
- tissue under the skin (subcutaneous injection)
- veins (intravenous injection)
- skin (intra dermal injection)
- body cavities, ie abdominal cavity (known as intraperitoneal injection) or thoracic cavity (known as intrapleural injection)

- bone (intraosseous injection).

Abbreviations are often used for injection routes, eg IM for intramuscular; SC or SQ for subcutaneous, and so on.

This factsheet will only consider the intramuscular and subcutaneous routes as these are the techniques most likely to be encountered by dog owners.

Clean techniques should always be used when administering injections. If the dog's coat is very dirty it should be washed and if necessary, clipped. An injection should never be administered through dirty or infected skin. The skin may be swabbed with alcohol at the injection site, though this is not always done for routine injections. Your veterinarian will advise if they think this is necessary.

Different formulations of injection are used for the different routes and it is particularly important not to accidentally administer an injection directly into the blood if it is not intended for intravenous use. This can accidentally happen with intramuscular injections if some simple precautions are not taken (see below).

Subcutaneous ('under the skin') injection

This is the route used for administration of most injections and vaccinations/boosters. Domestic animals have plenty of loose skin so it is very simple to lift a flap of skin and insert a needle into the subcutaneous tissue. There are very few important (or easily damaged) structures under the skin so this is a safe route of medicine administration; it is also usually quite painless. Owners can easily be taught to give injections in this way, eg owners of diabetic animals are taught how to administer insulin subcutaneously so that they can give regular injections to their pet at home. This route is not suitable for administration of irritant medications as they may cause severe skin reaction and damage.

Intramuscular ('into muscle') injection

Drugs given into muscles are absorbed very quickly because there is a good blood supply to muscle tissue. Injection into muscle is not without some risk since there are many important

structures, eg arteries, veins and nerves running through the muscle tissue. It is important to check that the needle has not accidentally been placed in a blood vessel (particularly an artery) in the muscle, before giving the injection.

Once the needle has been inserted into the muscle, gentle suction should be applied to the syringe to ensure that blood does not flow back into the needle. If blood does flow back, a different injection site should be chosen. This technique can also be used for subcutaneous injections, though penetration of a blood vessel is far less likely to occur here.

Appropriate sites for intramuscular injection are the quadriceps (muscle on the front of the thigh), lumbodorsal muscles (muscles either side of the lumbar spine) or the triceps muscle (behind the humerus (arm bone) in the front leg). The hamstrings (muscles at the back of the thigh) should generally be avoided due to the possibility of damage to the important sciatic nerve that runs in this area. Volumes of injection should not be more than 2-6 ml in dogs.

Intramuscular injections are more painful than subcutaneous ones. Good technique minimizes this but even so, many animals will react to the injection. A positive action for insertion of needles into muscles reduces muscle damage and pain and massaging the site after injection disperses the injection and may help to reduce pain. Use of a fine needle minimizes discomfort. Owners are not often called upon to give intramuscular injections but they may be asked to hold their pet while it receives one. Some drugs are specially formulated so that they are more slowly absorbed and can sit in the muscle, being absorbed gradually over many months and producing a long-acting effect (so called 'depot injections').

Other injection routes

The other injection routes mentioned above are mainly used in hospitalized animals and are given by those professionally trained to do so. These routes may be used for specific purposes - often because a very fast reaction to the drug being administered is sought, as in intravenous injections of anesthetics. Shaved or clipped areas on the dog's leg usually show where an intravenous injection has been given.

Another route quite commonly used is the intranasal one. Here, drops of a substance (usually a vaccine against kennel cough in dogs) are administered into one or both nostrils. The good blood supply here ensures that the drug is absorbed and creates local immunity against the organism that causes kennel cough.

What happens if I 'miss' with an injection?

This may happen when you are learning to give injections, especially when using the very fine ultra-sharp needles used for insulin administration. It is easy to penetrate two layers of skin so that the drug ends up on the dog's coat instead of under the skin. If you are absolutely sure the dog received no drug, it is safe to repeat the injection. If some may have been received, the safest course of action is to give no more. Contact your veterinarian for advice.

What do I do with used needles?

After use it is very important that needles have their protective caps securely replaced to prevent someone becoming injured. The used needles and syringes should then be carefully stored in a sealed container or 'sharps' box and returned to the veterinary practice for safe disposal.

Should I wear gloves when injecting?

Wearing disposable gloves is a useful measure for giving injections. Your veterinary practice may be able to order large boxes of these for you, which is more economical than buying from a pharmacy, etc. Some owners prefer not to wear gloves as they feel it is more awkward.

I accidentally pricked myself while giving my pet his injection. What should I do?

First cap the needle and syringe carefully and put it out of harm's way. Then thoroughly wash your finger with soap and water for 5 minutes, preferably using a soft nail brush on the affected area. Dry the skin and apply a bandage. You should contact both your veterinarian and your doctor for advice. Note that any lasting harm is very unlikely indeed.

Can I put my diabetic dog into boarding kennels?

You should contact the kennels well in advance. Reputable and experienced kennels can often cope with diabetic dogs, but full discussion with them and with your veterinarian is needed beforehand. Some veterinary practices will board diabetic animals while their owners are away if a suitable local kennels cannot be found.