

Amputation and Prosthetics for Dogs

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Amputation of a dog's limb is a difficult decision but is often needed to eliminate a painful or life threatening [condition](#). Severe [trauma](#), [cancer](#) or debilitating birth defects are all reasons for amputation to be considered.

How will amputation affect my dog?

Most dogs adapt well to the loss of a single limb. Dogs don't appear to experience any emotional sense of loss and most dogs are within a very short time able to walk run and even climb stairs. [Click here for one example of a dog that benefited from amputation.](#) The truth is that emotionally, amputation may hit you harder than your dog. The emotional trauma of amputation to the guardian is very real.

Prosthetic limb evolution from people to dogs

Prostheses have been utilized since the days of the Romans and Greeks¹. In recent years, even a mummy was found with a prosthetic toe made of wood and leather; the toe dates back to between 950 and 710 BC².

Over the years human prostheses were made out of wool and heavy metal sometimes formed into a shape for a particular process like holding a shield¹. One of the primary motivations for the development of modern prostheses has been war. Originally peg legs and metal hooks were the norm but after the First World War, concerted efforts were made to develop limbs with greater function and cosmetic esthetics¹.

Modern ultra-light, ultra strong metals and plastics along with the development of articulating joints have made it possible to produce light, cosmetic and functioning limbs that continue to evolve. No longer is amputation as difficult as it once was.

In Dogs, limb prostheses have not often been attempted in the past and when they were, they generally failed. **Part of this may be because of the way limbs are amputated from animals:**

- Front legs are generally amputated at or near the shoulder and rear legs are typically amputated at the hip or in the region of the mid thigh. [According to the American College of Veterinary Surgeons](#), "The most common location for removing a damaged or diseased limb in dogs and cats is up high where the limb meets the body. This is so that any remaining portion of the leg does not become a problem for the pet. Any portion of a limb that remains may become traumatized during daily activities or interfere with movement."

As I previously mentioned, dogs are also not emotionally invested in their appearance or function so little biomedical effort was expended in the past for creating canine prostheses.

Changes in thinking about prosthetics for dogs

In recent years some rehabilitation experts, including [Dogs in Motion Canine Rehabilitation](#), have recognized that there are short and long term consequences to dogs functioning on three limbs, including:

- Tissue breakdown
- Degenerative joint problems in remaining limbs

This can shorten life in dogs missing a limb.

Therefore, materials and techniques developed in human prosthetic design have now been applied to many more animals. **The website k-9orthotics.com provides an example of the kinds of advancements that have been made in the world of prosthetics for dogs:**

- "Prosthetics are made using thermosetting laminate plastic and closed cell thermo foams, providing an intimate fitting for optimal weight bearing comfort and functional use."

In the past, design and fabrication of prosthetics for animals was frequently a "one of" process wherein each limb was built and rebuilt and required a good deal of time. Now, recent developments using 3-D printers also allows for rapid design and redesign as well as production³. In the beginning, prosthetic limbs for dogs were a novelty but clearly things are changing.

Adapting to prosthetic limbs for dogs

With patience and work dogs can be taught to adapt to a new limb with a return to near normal function. Most dogs will tolerate an artificial limb, but they do need to be somewhat malleable. Once comfortably fitted, it becomes only a matter of time before the dog learns to walk.

Here's what you should keep in mind about prosthetics:

- Prosthetic limbs are not a success in all dogs. Probably the biggest factor will be the level of the amputation. Fitting a patient with a prosthesis necessitates at least half of the length of the lower limb have a chance of success.
- Having your dog wear a prosthetic requires a commitment from you. The limb must be checked at least daily for irritations. This level of observation will need to be regular, but it won't consume large amounts of time.
- If you are considering an amputation, have a discussion with your [veterinarian](#) and a canine prosthetics expert. Success will depend on a close working relationship among you, your veterinarian and an experienced prosthetist.

Questions to ask your veterinarian

- My dog had her front leg amputated a year ago. Could she still wear a prosthetic?
- How can I find a company to make a prosthetic for my dog?

If you have any questions or concerns, you should always visit or call your veterinarian -- they are your best resource to ensure the health and well-being of your pets.

Resources:

1. [Clements, Isaac P. "How Prosthetic Limbs Work." How Stuff Works. Web.](#)
2. [Lorenzi, Rossella. "Ancient Egyptian Fake Toes](#)

[Earliest Prosthetics : DNews." DNews. Discovery. 2 Oct. 2012. Web. 02 Feb. 2015.](#)

3. [Diep, Francie. "How 3-D Printing Made The Perfect Prosthetic Legs For Derby The Dog." Popular Science. 17 Dec. 2014. Web. 04 Feb. 2015.](#)