

Immunizations (or vaccines) are intended to stimulate the immune system so as to protect the animal from the infectious agent. However, this stimulation may cause some minor symptoms. Your pet may react to immunizations in ways that range from soreness at the site of injection to mild fever to allergic reactions, which can range from mild to severe.

- **Mild.** Mild reactions include fever, sluggishness, and loss of appetite. Mild reactions usually resolve without treatment.
- **Moderate.** Urticaria is a moderate vascular reaction of the skin marked by hives or wheals and rapid swelling and redness of the lips, around the eyes, and in the neck region. It is usually extremely itchy. Urticaria may progress to anaphylaxis, which is considered life-threatening. Urticaria is the most common reaction in dogs.
- **Severe.** The most severe reaction is anaphylaxis, a sudden, severe allergic response that produces breathing difficulties, collapse and possible death. Symptoms usually include sudden onset of vomiting, diarrhea, staggering, rapid drop in blood pressure, swelling of the larynx leading to airway obstruction (and inability to breathe), seizures and cardiovascular collapse or death. This reaction is life-threatening for your dog.

Both anaphylaxis and urticaria are reactions that are triggered by antibodies that the immune system has made to some portion of the vaccine and usually requires at least one previous exposure to the vaccine. The antibodies cause inflammatory cells like basophils and mast cells to release substances that cause the allergic reaction. The impact on the dog may be life threatening but if treated successfully the prognosis for long-term health is good. Mild reactions usually resolve without treatment.