## **Autoimmunity in Dogs**

Drs. Foster & Smith Educational Staff

A normal <u>immune system</u> reacts when the body identifies a foreign protein such as proteins on the outside of bacteria. This foreign material which invokes the immune response is called an antigen. The body can react to the antigen by producing protein molecules (antibodies) which bind to the antigen. In addition to antibodies, various cells are activated in an immune response and either directly kill the foreign agent such as a bacteria, or release chemicals which help in the destruction.

In autoimmunity, the immune system has lost the ability to distinguish between foreign antigens and its own tissues. The prefix 'auto' means 'self,' so autoimmunity describes an immune system that destroys portions of its own body. It views its own normal tissues as foreign antigens and attempts to destroy them. An example is autoimmune hemolytic anemia in dogs. In this instance the dog's immune system erroneously perceives its own red blood cells as abnormal. It destroys them causing the dog to become anemic or low in red blood cells. Another example is pemphigus foliaceus, a skin disease in dogs which often affects the head and feet. In this instance, the dog's immune system erroneously perceives its own cells in the skin as abnormal. Rheumatoid arthritis is yet another disease which appears to have autoimmune components to the disease process as well.