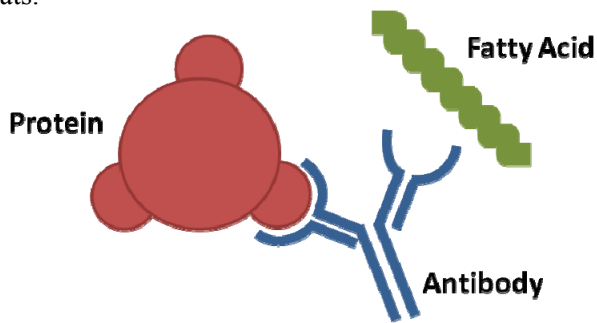




## ON FAT SOURCES & FOOD SENSITIVITIES

### What causes food sensitivities?

Most food sensitivities in dogs result when the immune system mistakenly identifies a food protein as a foreign substance and attacks as if it were a harmful pathogen. With repeated exposure, the body incrementally mounts defenses against this “foreign” protein, often resulting in gastrointestinal or dermatological signs. Food sensitivities can be associated with several ingredients but are most commonly associated with proteins. This is because the immune system primarily responds to proteins, and not other molecules, such as carbohydrates or fats.



Dogs show increased sensitivity to animal-based protein sources over plant-based protein sources, with dogs having the highest sensitivity to beef, dairy and wheat products.<sup>1</sup> A food sensitivity is not against an entire protein source like chicken or beef but to the structure within a specific protein, called an allergen. In dogs, specific food allergens that have been identified include chicken serum albumin, bovine IgG (cow’s milk, beef), ovine IgG (lamb), muscle phosphoglucomutase (beef, lamb) and Gly proteins 50 and 75 kDa (soy).<sup>2</sup> If a protein is broken down into fragments (e.g. hydrolyzed proteins), then the immune system can no longer recognize it, and it cannot cause food sensitivities.

### What are sources of protein in pet food?

On a pet food label, the primary sources of proteins are fairly easy to recognize. They include animal

sources such as meats and meat meals (e.g. chicken, chicken meal or chicken by-product meal), or concentrated vegetable proteins such as potato protein or pea protein. Plant proteins also include glutes (e.g. corn gluten meal, rice gluten or wheat gluten). However, there are many other ingredients that contain at least some protein which are not as obvious. These include grains, legumes, vegetables, or fruits, which contain smaller amounts of proteins than an ingredient that is primarily added as a protein source.

Fat sources, such as vegetable oils (e.g. soybean oil or sunflower oil) or purified animal fats (e.g. chicken fat) do not contain protein. Chicken fat is drained during the cooking of chicken meal, then goes through a series of purification processes, including screening, pressing and centrifugation to effectively remove protein and particulates. Similarly, vegetable oils go through a series of purification and refining steps to extract just the oil and remove all proteins and carbohydrates. The final products are nearly 100% fat.

### Do fat sources need to match protein sources in pet foods for food sensitivities?

Not necessarily. For highly purified sources of fat, such as chicken fat or soybean oil, these ingredients have minimal chances of aggravating a food allergy, even if the food sensitivity is to chicken or soy, because they do not contain protein.

Studies in humans have shown that persons with peanut allergies have been able to eat refined peanut oil without an allergic response, because all of the allergenic proteins have been removed.<sup>3</sup> Similar studies have not been performed in animals with food sensitivities, but it can be assumed purified fat sources will not aggravate food sensitivities because all protein allergens have been removed.

<sup>1</sup>Verlinden A, M Hesta, S Millet and GPJ Janssens. 2006. Food allergy in dogs and cats: a review. Crit Rev Food Sci Nutr. 46:259-273.  
<sup>2</sup>Roudebush P, WG Guilford, HA Jackson. 2006. Adverse reactions to food. In: Small Animal Clinical Nutrition, 5<sup>th</sup> Ed. P609-635.  
<sup>3</sup>Hourihane JOB, SJ Bedwani, TP Dean, JO Warner. 1997. Randomised, double blind, crossover challenge study of allergenicity of peanut oils in subjects allergic to peanuts. Brit Med J. 314:1084-1088.

**NUTRO® NATURAL CHOICE® Limited Ingredient Diets are formulated to minimize the likelihood of food sensitivities with a single animal protein source, highly digestible carbohydrate and sunflower oil and chicken fat for healthy skin and coat.**



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