



The power of protein in petfood for dogs

According to Dr. Joseph Wakshlag, more recent nutrition research into other sporting breeds like agility and event dogs, detection dogs and hunting dogs is lacking, and little research has been done in the past 10 years that examined nutrition, protein and its role in animal athleticism.

Feeding dogs with primarily animal-based protein sources can not only maintain an active animal, but reverse age-related changes in senior dogs while enhancing the health of all dogs.

BY Jessica Taylor

AMINO ACIDS ARE the building blocks of proteins, and proteins are the building blocks of life, according to the *Textbook of Veterinary Physiological Chemistry* (2004). “Proteins in your pet’s body (and our bodies) are key to various critical functions,” further explains Lily Ock, DVM, associate veterinarian for Banfield Pet Hospital. “For example, proteins serve as catalysts, transport other molecules, act as storage units of vital elements, major components of the immune system which defends the body against illness, make up muscle fibers and provide structural support. Some proteins are synthesized in your pet’s body by amino acids, while others must be provided by your pet’s diet.”

PROTEIN HAS MANY functions in a companion animal’s body but is best known for supplying amino acids to build hair, skin, nails, muscles, tendons, ligaments and cartilage. Protein also plays a primary role in hormone and enzyme production. The protein in petfoods can be supplied by animal sources, plant sources or a combination of the two. Common animal-based protein sources used in

petfood include chicken, lamb, fish meal and beef, while common plant-based protein sources include corn-gluten meal and soybean meal.

IN THE PAST five years, there has certainly been an uptick of protein-first or protein-only petfoods, often marketed as “grain-free” or “wolf diet” by their packaging. Dog treats, too, have followed this trend by proclaiming 100% of certain protein sources on their labels and little to absolutely nothing else making up the treat. One example is One Rewards by Hillside Farms, whose freeze-dried, one-ingredient treats include chicken breast, duck breast, chicken liver and white fish in their lineup.

The Association of American Feed Control Officials (AAFCO) has established that dog foods should provide 22% DM protein for growth and at least 18% DM protein for maintenance. “Feeding a healthy dog above the recommended protein amount will not result in true toxicity,” says Ock. “Healthy dogs will be able to metabolize and excrete the excess.”

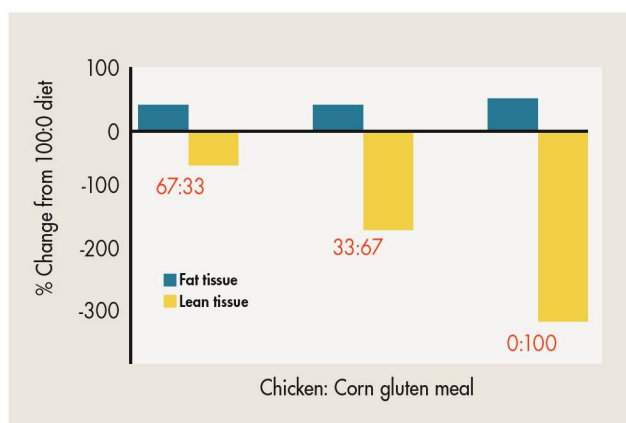
Recent studies by the Iams Co. examined how the type of protein in a diet affected body composition of adult and senior dogs (see Figure 2). Adult and senior dogs were fed diets with varying amounts of protein from chicken and corn gluten meal, and their body composition (muscle versus fat tissue) was analyzed. In addition, levels of key blood and muscle proteins were measured.

Compared with dogs fed a diet with 100% chicken protein, dogs fed diets with decreasing levels of chicken and increasing levels of corn gluten meal had:

- ✓ Decreased lean tissue;
- ✓ Increased body fat; and
- ✓ Decreased levels of blood proteins routinely used as markers of superior nutritional status.

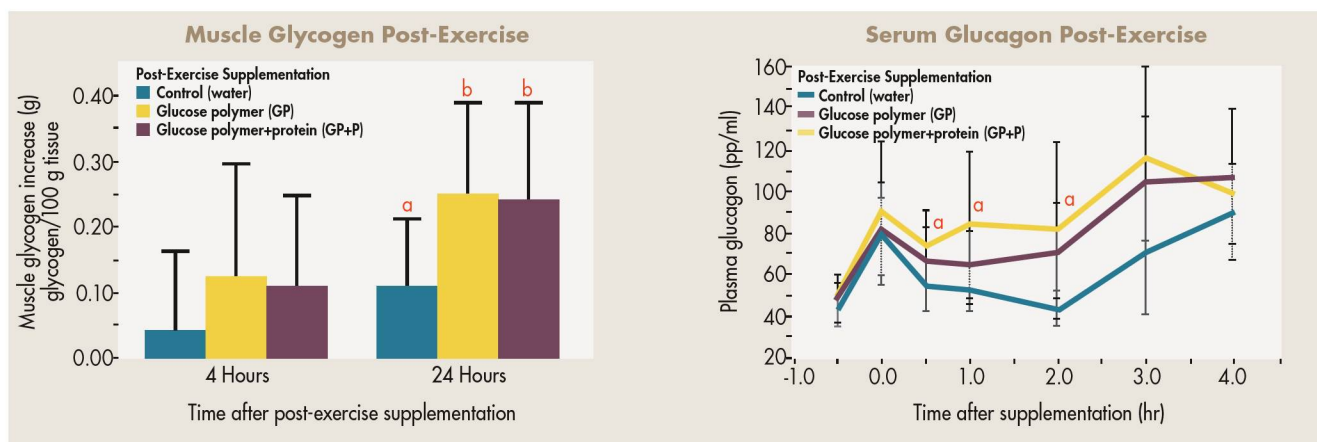
This was independent of the overall dietary protein level (12 or 28%), which was also examined in each of

FIGURE 2. DECREASING DIETARY CHICKEN-PROTEIN CAUSES INCREASED FAT AND DECREASED LEAN TISSUES



Compared with dogs fed a diet with 100% chicken protein, dogs fed diets with decreasing levels of chicken and increasing levels of corn gluten meal had decreased lean tissue, increased body fat and decreased levels of blood proteins. The Iams Co.

FIGURE 1. EFFECTS OF POST-EXERCISE SUPPLEMENTS ON GLYCOGEN REPLETION IN CANINE SKELETAL MUSCLE



In a crossover design study, dogs ran for 30 minutes at 21 km/hr at 2% incline and achieved about 50% glycogen reduction. Joseph J. Wakshlag DVM, PhD, DACVn, DACVSMR

PROTEIN

the four test groups.

As dogs age, body composition and muscle-specific proteins decline. Therefore, another study looked at the differences between feeding senior dogs a

32%-protein chicken-based diet, a 32%-protein chicken and corn gluten meal diet, or a 16%-protein chicken-based diet. Senior dogs fed the 32%-chicken protein, chicken-based diet had better

body composition and a muscle-specific protein pattern identical to that in healthy young adult dogs. However, those results were not seen in either of the other two diets. The Iams Co. concluded that feeding diets with primarily animal-based protein sources:

- ✓ Helps maintain muscle mass in dogs;
- ✓ Helps reverse some age-related changes in skeletal muscles in senior dogs; and
- ✓ Can help enhance long-term health and well-being of adult and senior dogs.

IN HIS PETFOOD FORUM 2014 presentation, "Nutrition and the Working Canine," Joseph J. Wakshlag, DVM,



Dog treat brands like Hillside Farms and its One Rewards dog treats emphasize the maintenance and enhancing health benefits of the protein in its product.

PhD, addresses active dogs and their relationship to protein specifically. He points out that nutrition research in working dogs in the past has focused primarily on sprinting Greyhounds and endurance sled dogs like Huskies and

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PROTEIN Malamutes. More recent investigation into other sporting breeds like agility and event dogs, detection dogs and hunting dogs is lacking, and little research has been done in the past 10 years that examined nutrition and its role in animal athleticism.

One study on endurance and sprinting dogs in particular focused on dietary protein and its unique ability to maintain musculoskeletal integrity, appropriate total protein, albumin and red blood cell status (Figure 1, p. 29). The hematocrit and serum albumin tend to decrease with training and racing, which appears to be a result of the overtraining syndrome in endurance dogs, Wakshlag explains. Adequate protein intake may be helpful in improving this condition.

The new age of working dogs

➔Active, sporting, working—whatever term you use to describe dogs that do a specific job like running, hunting, sniffing or jumping, really means that they are a canine that requires a very specific diet to maintain their rigorous lifestyle. Dr. Joseph J. Wakshlag explains the importance of protein, carbohydrates, fat and supplements for these athletic animals in his Petfood Forum 2014 presentation, now available for download:

www.petfoodindustry.com/PFFWakshlag.

Studies examining protein consumption and its role in maintaining red blood cell counts and hematocrit in training sled dogs have hypothesized that approximately 24%–30% of the metabolizable energy (ME) should come from highly digestible animal protein sources. Similarly, in sprinting dogs, around 24% of the ME should come from high-quality protein sources such as lamb, beef and chicken, with some studies suggesting that more may be harmful to performance. ■

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