Is too much protein harmful?

Old wives tales about dry dog foods high in protein causing kidney disease run rampant both on and off the internet and many people deprive their dogs of what they crave most for fear of damaging their health.

Unfortunately the whole protein thing is not easily explained in just a few sentences, so bear with me if I ramble on for a while. I'll try to keep it as simple and straightforward as possible without going too much into scientific terms.

First of all, it is important that we understand that protein isn't only a nutrient - the amino acids it is made up of (think lego bricks forming a bigger structure) also serve as building blocks for body tissues, organs, enzymes, hormones, antibodies and so on - roughly half of the dry body mass of a dog consists of protein. Knowing this it is easy to understand that growing puppies need protein to build above mentioned body tissues, organs, enzymes, hormones, antibodies and both adults and growing puppies constantly need to replace and rebuild these as well. The body recycles amino acids to some extent, but part of them need to be replaced, just like you can't endlessly recycle paper or plastic.

Protein is processed in the liver and any waste materials are filtered and excreted by the kidneys. High quality protein does not generate large amounts of waste that needs to be removed from the body, but poor quality protein which is difficult to digest does and thus puts stress on the kidneys. The liver needs water to process protein and as a medium to carry waste products to the kidneys, where they are filtered out and most of the water is reabsorbed. The less concentrated the waste products in this primary filtrate are, the easier it is for the kidneys to do their filtering work - that's why it is unhealthy to feed dry food only and so critical that dogs eating mostly or exclusively dry food and dogs with liver disease get lots of extra

water. Dogs who eat mostly canned food or a home prepared diet automatically take in more moisture and do not need to compensate as much by drinking. Contrary to what many people think and pet food companies claim, dogs (and cats) do not know instinctively how much extra water they have to drink to make up for what is lacking in the dry food. This is why I so highly recommend that people always add water to the kibble at feeding time.

Now that we have the basics laid out, we can return to the protein in the food. Many people cite old, outdated research that claims high protein percentages in the food are harmful to dogs and do all kinds of damage, especially to the liver. Fact is that these studies were conducted by feeding dogs foods that were made from poor quality, hard to digest protein sources, such as soy, corn, byproducts, blood meal and so on. From my explanation above, you now already know that it is a question of protein quality that affects the kidneys. Consider a wolf in the wild, who will eat relatively little else but meat if they can help it - these animals don't get kidney diseases on the same scale domestic dogs do. Their protein comes in the form of quality muscle and organ meat though, not processed leftovers from human food processing. It also contains around 70% moisture, whereas most commercial dry foods contain a maximum of 10%. Dogs and other "dog like" animals (canids) evolved eating a diet that consists primarily of meat, fat and bones, which they have been eating for hundreds of thousands of years. Commercial foods, especially dry food, has only been widely available for the past 60 years and we are still learning how much damage certain aspects of it can do. Things have improved quite a bit from hitting rock bottom in the 70s and 80s, but the majority of pet food manufacturers still produce bad foods from poor quality ingredients.

Just to digress for a moment, when I went to the grocery storeyesterday, I saw that Purina Dog Chow was on sale, $8 for a 22 pound bag. That's a little over 36 cents per pound, including the profit the supermarket makes on it, cost for the pretty, colorful packaging,

advertising and all. On top of that, of course the manufacturer (Nestle/Purina) wants to make a profit too. How much do you think the food actually costs them just to make, without any profits? The answer is pennies per pound, which also reflects the ingredient quality. If I calculate a 40% profit margin for each the supermarket and the manufacturer, it comes to about 13 cents per pound. That's $260 per ton of food. Yikes.

Anyway, back to the protein. Protein in dog food can come from either plant or meat sources. Logically, plant sources are cheaper, especially considering that corn gluten meal, the most popular, cheap protein booster, is a byproduct of the human food processing industry, left over from making corn starch and corn syrup. It has a crude protein content of 60%, so theoretically even if your food recipe contained no other protein sources at all, you could make a food with a 20% crude protein content by mixing it 1:2 with some cheap carb source.

It is critical to stress that the term "crude protein" is used in the guaranteed analysis, which means there is no statement whatsoever as to its digestibility. Protein comes in many forms, even shoe leather, chicken feathers or cow hooves have a fairly high crude protein content, but the body is only able to extract and process very little of it, at the price of a lot of work and stress to do so.

Due to this labeling issue (only one of many, many others), the percentage of protein in a food by itself doesn't say anything at all. Ingredient lists are not 100% straightforward and truthful either, but at least you can somewhat gauge if there's even any quality protein in there at all.

Just to illustrate once again by example, let's say we have two foods which have the same percentages of protein, fat, carbohydrates, fiber and moisture. Food A contains 25% protein that is 60% digestible and food B contains 25% protein that is 85% digestible. That means of

food A the body is able to utilize 15% of the protein content, but of food B 21.25%. Logically, to meet the body's requirement of protein, you'd have to feed more of food A than of food B, and the body of the dog eating food B will have to work less to utilize it.

I guess in really simple terms you can compare it to the engine of a car and the type of fuel you use. Just because you use high octane gas in a car that doesn't need it, it's not going to do any damage, but if you use poor quality fuel, regardless whether it is high or low octane, there will be buildup in the engine that hampers performance and will eventually lead to damage.