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Going Raw - by Linda Aronson, **DVM**

Let me start by saying that as far as I am concerned there is no one right way to feed our Beardies, any more than there is a single right way to feed ourselves or our children. What follows are my own observations. I feed a raw diet because it works for me and my dogs (and cat); I think a lot of what is written about raw diets and commercial diets is questionable at best. Each of us needs to decide for ourselves, based on our life style and beliefs.

There have been several important “aha” moments that have led me to raw feeding.

1. In veterinary school, as all the raw feeders will tell you, courses on nutrition are taught by animal food company representatives. The feed companies give veterinary students free food for their animals, give them lots of books and other neat stuff if you take a kindergarten age appropriate test on “nutrition” – just remember who is sponsoring it kiddies. However, in my second year of veterinary school in our gastroenteric pathology class, we had some classes from Herbert van Kruningen DVM, PhD. He talked to us first about acute gastric dilatation and volvulus (aka bloat) the number 1 killer of giant and many large breeds of dogs – by his conservative estimation it affects at least 80,000 dogs a year. There is an identical disease in several other species including humans and monkeys. Dr. van Kruningen (Van Kruningen, et al. The influence of diet and feeding frequency on gastric function in the dog. J Am Anim Hosp Assoc 10:294-324, 1974) had linked the disease to bacterial fermentation of high carbohydrate commercial dog foods. The incidence was particularly high in dogs fed once vs. twice a day. The stomachs of dogs fed a commercial diet were substantially larger than those fed on a raw meat and bones diet, and bigger in dogs fed once a day vs. 2 or 3 times a day on commercial diets but not on raw diets. It takes a dog 15 hours to digest a kibble meal, but only 4 to 6 hours to digest one of meat and bones. He then studied the contents of the gastrointestinal tracts of wild canids that had died of natural causes in the national parks. As he said (please imagine German accent here), “not one of them had Purina dog chow.” Nor did they have any grains or soybeans. Similarly, monkeys and marmosets fed commercial pelleted diets were the ones that developed gastric dilatation (in humans beer, certain vegetables and soup have been incriminated). These diets also encourage over-growth of the bacterium *Clostridia perfringens* and this is thought to be a contributing factor. The worst diets are those that derive the majority of their protein from soybean meal and are high in fermentable carbohydrate – but basically to be formed into kibbles a diet must contain ~ 60% carbohydrate.
Question: Why are we advised not to feed ourselves and our children on highly processed diets and yet we are bad people killing our dogs if we feed them anything else? I’ll feed my dogs a commercial diet when the dog food company nutritionists feed themselves Eukanuba Maintenance Diet, and their offspring Hill’s Kiddie Chow. If I am capable of formulating a relatively balanced, healthy diet for myself and my human children, why am I suddenly incapable of doing the same for my dogs?
2. Why is it if every dog food is complete and balanced, that every month a new food is released which contains some essential new ingredient that every dog, or some significant number of dogs, absolutely has to have for tip top health? Doesn’t this imply that the earlier “complete” diet wasn’t as complete as we were led to believe? This reminds me of when I was a lot younger, and a friend introduced me to a natural brand of vitamins, that had been in production since before “vitamins” were known to exist. It has been made from natural ingredients, to supplement diets that might be lacking in fresh foods. With each new “vitamin” discovered, the manufacturer of the product would check, and it was in his supplement. The manufacturers of the chemically-derived multi-



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vitamins had to scurry around to add it into the mix. That's how I feel about raw feeding, it's already in there. I don't need to add it.

3. Many of the diseases we see in modern veterinary practice are either new or increasing in frequency. One of the rare instances where I push owners towards raw feeding is when their dog has inflammatory bowel disease (IBD). This is a modern disease. In humans a link has been found to improved hygiene. Over millennia humans evolved to coexist with an intestinal population of worms. Dr. Joel Weinstock's group at the University of Iowa has brought human IBD into complete remission by giving patients non pathogenic worm eggs. Worms grow in the intestines for a while, but long after they have cleared their system remission continues (Summers, R.W, et al.: *Trichuris Suis* Appears Safe and Effective in the Treatment of Inflammatory Bowel Disease: A Possible Example of Th2 Conditioning of the Mucosal Immune Response. *Am. J. Gastro.*, 98:2034-2041, 2003). In dogs, many on the verge of euthanasia for intractable IBD, switching to a raw diet has proven curative, giving these dogs' g/i tracts food they can handle. Other modern diseases that seem to be strongly linked to diet include: diabetes – type 2 diabetes and metabolic disorder have been reported in all species fed diets high in processed carbohydrates; allergies – not just food allergies, although grain allergy is prevalent, but allergies to other environmental allergens have been linked to grains; ear infections; kidney disease, and stones in the urinary system; deficiencies of important amino acids and their derivatives – lack of carnitine and taurine especially can lead to heart disease; periodontal disease and gingivitis – at one time dogs did not get cavities, now they do, and diseases of the teeth and gums can lead to systemic bacteremia and consequent heart and kidney disease; obesity. (That isn't to say raw fed dogs can't get too fat, but in making diets palatable dogs are encouraged to overeat, and the bags generally recommend you feed more than the dog needs.)

Debunking some myths and the Twinkie generation.

Unfortunately, there will be people who become evangelical in promoting diets of whatever type, and this seems to be particularly the case with raw feeding – both pro and anti. Dogs have not been wolves for millennia - even though their gene sequences differ by only 1-2% that is more than the difference between humans and chimpanzees. It is probably true that there has been no change in the gastrointestinal tract and physiology of the dog in the past 150 years since commercial diets began to appear, but dogs have lived on table scraps and hand-outs a lot longer than that. As long as dogs have tied their lot in with humans, they probably weren't getting the best of the available food, they got the leftovers. There have not been a lot of studies, but one of feral dogs in Italy and another of stray dogs in Maryland, found that these dogs were not hunting in the traditional sense, but raiding garbage dumps. Even dogs that team up and kill domestic livestock rarely eat the animals they kill. They have gone into a frenzy of killing, perhaps as a memory of times past, but have forgotten the purpose of the kill, to eat the prey. There may be exceptions, but dogs are no longer the hunters that wolves are and have adapted to eating whatever bones we throw them. On the other hand, there seems to be little difference between the digestive system of the modern dog and that of his wolf ancestors, so he can adapt very well to eating the same kind of diet. His intestines just aren't designed to extract optimal nutrition from a carbohydrate/grain based diet, which is why so much of the commercial diet passes through unchanged.

Commercial dog foods did indeed develop from a desire to use grain tailings rather than throwing them away, and to add animal fat, previously used in detergents when that role was usurped by phosphates. Then again, dogs have always eaten what we don't want. Human food at the time was not protected from adulteration, sand in the sugar and lead in the flour. It was a bad time all round, industrialization was hard on the diet of man and animals. Fresh meat carried a premium price and wasn't to be fed to animals. Now, realizing the willingness of the consumer to pay handsomely to feed his dog, canine nutrition is heavily researched, and new requirements are being found and



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addressed. Dead, drugged, diseased and down (4D) meat isn't going into premium commercial dog food, although it may still be fed raw to racing greyhounds, nor are dead dog and cat carcasses being used. There has been a radical change in the industry in recent years. I arrived in this country in 1975, and unquestioningly fed my dog kibble. In England our dogs had eaten canned dog food and leftovers from family meals. The first family dog I knew died when a cooked lamb chop bone perforated her intestine. I was not about to feed bones – I still wasn't aware of the difference between raw and cooked bones – usually only brittle cooked bones splinter into sharp points, and while I can't believe I never questioned why wild dogs seemed to be able to eat bones with impunity, either I didn't, or else I figured it culled quite a lot of them. Back around 1980 all canine illness suddenly was laid at the feet of the preservatives used to prevent fat in commercial food from going rancid. Ethoxyquin became a dirty word among dog owners. When my dog developed mammary cancer, I found the only preservative free food (Cornucopia) and fed her that. Low and behold, she has been given 6 weeks or less to live and lived three and a half more years. Increasingly sophisticated niche diets became available. I recently went into an upscale pet store with a friend about to open her own grooming, feed and supply store for a little research. I was amazed, appalled and fascinated by what I found. What I wasn't convinced of was that this was better for my dogs than what they were eating. Every effort was made to reproduce a raw diet, but the products were all cooked, kibbled or otherwise processed, and I was left wondering why we were trying to reinvent the wheel. Tapioca may be a root, but it's still carbohydrate – 29% - and fiber, with 1% or less of the recommended daily allowance of any other usable nutrient. I'm also wondering why we are feeding canned pheasant, kangaroo and buffalo, but I suppose if you can afford it, why not?

Feeding a balanced diet

We hear this phrase all the time, but what exactly does it mean? To me it means not feeding the same thing day in and day out. No one food can meet all a dog's nutritional needs so mix them up. I don't intend to write a detailed treatise on how to feed raw, I would recommend reading as much as you can on the subject from as many different authors as possible. I would advocate rotating different meats, fish (except raw Pacific salmon) and whole eggs – but they don't have to be exotic, whatever is available. While they may gross us out, fish heads and guts, and less desirable parts of carcass and anatomy are relished by dogs. Some organ meat (liver, tripe, kidney, heart – I'd avoid brain) is good, but be careful of feeding too much as it can be too rich and produce diarrhea, somewhere between 5 and 10% of the average meal is about right. Trachea is a good source of chondroitin which helps lubricate arthritic joints. Glucosamine levels are high in crab and shrimp shells. (Sulfur is lost from food when it is processed, dried, cooked or preserved. MSM – the third ingredient in the healthy joint triumvirate - serves as an important source of bio-available sulfur, but is rarely needed in raw fed dogs.)

Finding products that have been organically raised, free of antibiotics, pesticide treated fodder, etc. is a good idea as these substances accumulate in the body. Concentrate on meaty bones as opposed to muscle meat. Some people strongly oppose feeding fruit and vegetables to dogs. However, if you remember Dr. van Kruningen he did find berries, grass and other non animal based foodstuff in the intestinal tracts of wild canids – he also found insects, dung and some other stuff you might prefer not to contemplate – or add to your dog's diet. If you grow your own fruit and/or vegetables you've probably seen your dog harvest whatever takes his fancy. Do avoid grapes and raisins as well as green tomatoes and potatoes, and limit avocado. Otherwise a little is often appreciated by the dog, and can be used as a fiber filler to leave an obese dog feeling satiated while consuming fewer calories. Dogs past weaning usually do not tolerate dairy products well. They lose lactase the enzyme that breaks down milk sugar, and dairy may lead to diarrhea and colicky signs. You can give yogurt or kefir with live cultures if the dog is on antibiotics to restore healthy bacteria to the g/i tract, however, probiotics may be better tolerated.



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Supplementing the diet – whether raw or kibbled – is much debated, and is and of itself a major industry. I do believe a good source of Essential Fatty Acids (EFAs) especially omega 3 is very important. Beyond that I tend not to add anything unless a particular dog has a particular need. Remember too much can be as bad as too little. Some people do advocate adding kelp and alfalfa, and I can see benefits in doing so.

Concern about bacteria – especially *Salmonella* spp., *E.coli* and *Campylobacter jejuni* – keeps a lot of people from raw feeding their dogs. However, these organisms exist on the meat we prepare for our families, these and other pathogenic bacteria are present in commercial kibbles, on fruits and vegetables, and provided we take appropriate precautions – washing hands, surfaces and utensils carefully – they do not pose a particular risk to owners – special care must be exercised if immune compromised people are present in the home. Because bacteria multiply rapidly between 40 °F and 140 °F, freezing and refrigerating raw meat helps to reduce the bacterial content of the food. The rapid transit of the food through the dog's digestive system, and highly acid stomach secretions protect dogs from these illnesses, although again, if you have an immune compromised dog home prepared, cooked diets may be more appropriate.

How much to feed can also be a concern. Some beardies only eat what they need while others gorge, some can maintain their optimum weight apparently living on air, whereas others burn food off so fast they can require three or four times the amount to just stay at a good weight. In general, start with 1-2% of the dog's weight – usually about half the volume of kibble. Dogs generally drink less on raw diets as there is a high fluid content to the food. Kibble has to be hydrated, preferably before it is fed, but if not it will absorb fluids inside the dog. Poops tend to be small, white and crumble – much less offensive to clean up or step in.

It takes a while for some kibble fed dogs to adapt to a raw diet, and they may need to be coaxed at first to this strange new stuff. (Puppies take to it happily from the get-go.) There is a concern that bones can crack molars and this is legitimate. Dogs' teeth have become softer and more brittle on kibbled diets, and it can take three generations of raw feeding to restore their "wild" strength. Even then, bones can break teeth, nothing comes without a price. Dogs also choke to death on kibbles, greenies and rawhides. If you prefer to feed ground raw food – despite those who feel raw, whole carcasses are the only proper way to feed – you will remove that risk, and yet the teeth will become stronger and the tooth cleaning power of the diet is the same as with the whole bones. You do lose jaw exercise, however. Softer bones – poultry, neck bones – may also be safer for dogs that are new to the raw diet. If your dog is a gulper, hold onto the other end of the bone so he doesn't try to swallow it whole. (Removing competition from other dogs may go a long way to reduce these tendencies.)

So that is why I feed my dogs raw. It costs about the same as feeding a top quality kibble, but feeding dogs well is an expensive proposition, and few people reading this are buying their dog's food at the supermarket. It is messier than feeding dry food, but cleaning up after dogs on a kibbled diet is messier. One downside I have experienced a couple of times is dreaming that I too was eating raw, and waking up having been downing a raw hamburger or chewing on a raw chicken wing, can leave a less than pleasant taste in your mouth!

Whatever you feed your dog you should feel good about it, and your dog should be healthy and a good weight. That is success; however, you go about it. Diets should be tailored to the needs of the individual dog, and there will be considerable variation, something the pet food industry is just beginning to wake up to. No diet can protect your dog against every illness that may come his way, and some dogs could live exclusively on shoe leather and probably have long and disease free lives. We do the best we can with current knowledge. The more we can learn though, the better we will be able to feed our dogs.



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Here are some books where you will find more information (and divergent ideas) about feeding raw diets. It is by no means a complete list, just a place to start.

"Give Your Dog a Bone"; "Grow Your Pup With Bones" and "The BARF Diet" by Dr. Ian Billinghurst

"The Ultimate Diet: Natural Nutrition for Dogs and Cats." by Kymythy Schultze

"Raw Dog Food: Make It Easy For You And Your Dog." By Carina Beth MacDonald "Raw Meaty Bones" and

"Work Wonders. Feed Your Dog Raw Meaty Bones." By Tom Lonsdale

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