Raw Feeding for IBD Cats

Healing Can Happen!

Balanced Raw Recipe with Nutritional Analysis

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Updated October 6, 2016

PLEASE NOTE: **AAFCO (U.S. agency) or FEDIAF (European agency) provide minimum nutrient guidelines that have built-in "safety margins" with minimum recommendations that are up to 1.25x the known or extrapolated actual needs of cats (and dogs)** (*Nutrient Requirements of Dogs and Cats*, 2006, p. 194) because the guidelines are meant for commercial food manufacturers, and the bioavailability in pet food may be poor due to ingredients used (e.g. cats – obligate carnivores – trying to derive protein from grains) and the extreme processing of many of those ingredients. (Another example, 90% of thiamine can be lost in processing. ("AAFCO METHODS FOR SUBSTANTIATING NUTRITIONAL ADEQUACY OF DOG AND CAT FOODS," Proposed Revisions Edited per Comments for 2014 Official Publication, p. 5).

Nutrient Requirements of Dogs and Cats (2006), published by the National Research Council of the National Academies, is the basis of the AAFCO and FEDIAF nutrient recommendations. The nutrient requirement guidelines are based on known science: but for some nutrients, the guidelines are based on extrapolations of known needs in other animals (e.g. pigs), because the studies in cats simply do not exist.

The bulk of the *Nutrient Requirements of Dogs and Cats (2006)* is a review of what science is known, and how processing affects the nutrient availability. The bottom-line is that a commercial food with the worst ingredients, most processing, and highest heat-treatment still has to keep a cat alive – so the "balanced and complete" guidelines have to provide a large margin of safety to account for all of the factors that will impact the bioavailability of nutrients to the cat. The guidelines must, by definition, address the weakest link.

In feeding raw, we are ideally modeling what a cat would naturally eat. We are providing it fresh with the absolute minimum of processing and we are using truly human-grade ingredients. So it really makes no sense to hold a raw diet to the same bar as highly-processed, heat-treated foods, often created with species-inappropriate ingredients and/or sub-par ingredients. But many people, when taking the first steps into feeding raw, are very nervous about ensuring their kitties get "all they need." It has been drilled into us that this is complicated. It is not.

For those that feel more comfortable providing a diet that meets AAFCO or FEDIAF nutrient guidelines, this is to assure you – it is not difficult to make yourself. The recipe used that resulted in the analysis on the following page is included in this file.

Please note, this analysis was conducted using a private program perfected over years, using nutrient data from the USDA database. This analysis uses release sr26.

Note: Vitamin K in the analysis is lower than AAFCO and FEDIAF guidelines. Use of synthetic vitamin K (menadione) is very controversial, due to its potential as a carcinogen. But Vitamin K is manufactured by the animal in the colon, and as per AAFCO guidelines, Vitamin K does not need to be added unless the diet contains more than 25% fish on a dry matter basis. ("AAFCO METHODS FOR SUBSTANTIATING NUTRITIONAL ADEQUACY OF DOG AND CAT FOODS," Proposed Revisions Edited per Comments for 2014 Official Publication, p. 15).

Nutrient Analysis of Recipe Included in this File

Note by Analysis Author: The nutrient levels defined by AAFCO and FEDIAF are minimum recommended allowances for ***commercial*** pet foods, **not actual minimum requirements OR optimal intake levels**.

NOTES

- The nutrient guidelines against which the recipe is analyzed is for **ADULT CATS**. Fresh bone or freeze-dried bone (calcium hydroxyapatite) – even bone meal – must be used for kittens when making food at home.
- The recipe analyzed is fed as chunks in 1.5 ounce meals, three times a day.
- As this is a supplemented diet, grinding will not reduce the nutrient values to below minimums. The recipe can be ground, supplements added, and the meals portioned and frozen.
- This particular diet included a rotation of primarily chicken thigh, chicken breast, chicken gizzards, turkey thigh, turkey breast and rabbit meats, complimented by one meal a week each of beef, lamb, venison, and pork. It is not necessary to use all of these proteins, but it IS important to use at least three different proteins in some kind of rotation when fed long term. Dark meats are more nutrient dense than light meats (they also contain more taurine) – but light meats contain more methionine, important for kitties with FLUTD (synthetic methionine is added by many manufacturers of prescription diets targeting the proper urine pH, as methionine acts as a urine acidifier). A balance of the two (dark and light meats) is best. The varying protein rotation need not be done each meal, each day, or even each week. But a minimum of three different proteins in rotation for long term feeding is ideal, and it does not *need* to include red meats, of which some cats are intolerant.
- The nutrient composition is not materially changed by excluding any particular protein. The copper rises when beef liver is used.
- For this particular analysis, the cat does not eat organs (not even freeze dried liver), so cod liver oil is used in place of liver or freeze dried liver. Clearly, the substitution meets the cat's dietary need. It is not ideal. The recipe includes liver and kidney, but notes the possible substitutions.
- For this particular analysis, the cat does not eat bone-in meals, so eggshell calcium is used in place of bone. Eggshell or calcium carbonate unless properly managed – beyond the scope of this recipe and analysis - does not meet the phosphorus need of growing kittens, please see the first bullet point, above.

Nutrient Analysis[a,b]

total weight (g): 1007.2)	servings: 7	kcal/serving: 167	kcal/kg: 1160
total weight (lbs): 2.2	serving size: 0.3 lb	kcal/oz: 33	kcal/kg DM: 4530

	FEDIAF Adult Cat amt/kg DM				AAFCO Adult Cat amt/kg DM			
		min	max	units		min	max	units
Macro					**Macro**			
Protein AF	20			%	Protein AF	20		%
Fat AF	4			%	Fat AF	4		%
Carbs AF	0			%	Carbs AF	0		%
Water	74			%	Water	74		%
Protein DM	776	250		g/kg DM	Protein DM	78	26	% DM
Fat DM	168	9		g/kg DM	Fat DM	17	9	% DM
Carbs DM	0			g/kg DM	Carbs DM	0		% DM
Minerals					**Minerals**			
Calcium	8.90	5.9		g/kg DM	Calcium	0.89	0.6	% DM
Phosphorus	7.68	5		g/kg DM	Phosphorus	0.77	0.5	% DM
Ca:P	1.2:1				Ca:P	1.2:1		
Potassium	11.04	6		g/kg DM	Potassium	1.10	0.6	% DM
Sodium	2.98	0.8	18	g/kg DM	Sodium	0.30	0.2	% DM
Magnesium	0.96	0.04		g/kg DM	Magnesium	0.10	0.04	% DM
Zinc	102	75	600	mg/kg DM	Zinc	102	75	2000 mg/kg DM
Iodine	0.53	0.5		mg/kg DM	Iodine	0.53	0.35	mg/kg DM
Selenium	0.85	0.3		mg/kg DM	Selenium	0.85	0.1	mg/kg DM
Iron	81	80		mg/kg DM	Iron	81	80	mg/kg DM
Copper	5	5		mg/kg DM	Copper	5	5	mg/kg DM
Manganese	12.07	5		mg/kg DM	Manganese	12.07	7.5	mg/kg DM
Fats					**Fats**			
LA	24	5		g/kg DM	LA	2	0.5	% DM
AA	5796	60		mg/kg DM	AA	1	0.02	% DM
GLA	0			g	GLA	0		g
ALA	0			g	ALA	0		g
EPA	2			g	EPA	2		g
DHA	2			g	DHA	2		g
DPA	0			g	DPA	0		g
Total n6	8			g	Total n6	8		g
Total n3	5			g	Total n3	5		g
n6:n3	2:1				n6:n3	2:1		
n6:(n3 - ALA)	2:1				n6:(n3 - ALA)	2:1		
Vitamins					**Vitamins**			
Vitamin A	36307	3333	400000	IU/kg DM	Vitamin A	36307	5000	750000 IU/kg DM
Vitamin D	5743	250	30000	IU/kg DM	Vitamin D	5743	500	10000 IU/kg DM
Vitamin K	0.02	0.1		mg/kg DM	Vitamin K	0.02	0.1	mg/kg DM
Vitamin E	224	38		IU/kg DM	Vitamin E	224	30	IU/kg DM
Thiamin	23	5.6		mg/kg DM	Thiamin	23	5	mg/kg DM
Riboflavin	27	4		mg/kg DM	Riboflavin	27	4	mg/kg DM
Pantothenic acid	55	5.8		mg/kg DM	Pantothenic acid	55	5	mg/kg DM
Niacin	260	40		mg/kg DM	Niacin	260	60	mg/kg DM
Vitamin B6	34	2.5		mg/kg DM	Vitamin B6	34	4	mg/kg DM
Folic acid	0.87	0.8		mg/kg DM	Folic acid	0.87	0.8	mg/kg DM
Vitamin B12	15.22	0.023		mg/kg DM	Vitamin B12	15.22	0.02	mg/kg DM
Choline	3191	2400		mg/kg DM	Choline	3191	2400	mg/kg DM
Amino Acids					**Amino Acids**			
Arginine	44.6	10		g/kg DM	Arginine	4.5	1.04	% DM
Histidine	23.2	3		g/kg DM	Histidine	2.3	0.31	% DM
Isoleucine	31.1	4.9		g/kg DM	Isoleucine	3.1	0.52	% DM
Leucine	55.9	11.7		g/kg DM	Leucine	5.6	1.25	% DM
Lysine	61.6	3.4		g/kg DM	Lysine	6.2	0.83	% DM
Methionine	18.0	1.7		g/kg DM	Methionine	1.8	0.62	1.5 % DM
Methionine & Cystine	25.9	3.4		g/kg DM	Methionine & Cystine	2.6		% DM
Phenylalanine	27.3	4.6		g/kg DM	Phenylalanine	2.7	0.42	% DM
Phenylalanine & Tyrosine	51.5	17.5		g/kg DM	Phenylalanine & Tyrosine	5.1		% DM
Taurine	5.2	2		g/kg DM	Taurine	0.5	0.2	% DM
Tyrosine	24.1			g/kg DM	Tyrosine	2.4	0.88	% DM
Threonine	30.0	6		g/kg DM	Threonine	3.0	0.73	% DM
Trytophan	7.4	1.5		g/kg DM	Trytophan	0.7	0.16	% DM
Valine	33.4	5.9		g/kg DM	Valine	3.3	0.62	% DM

[a] Analysis data from USDA National Nutrient Database Release sr26.

[b] The minimum nutrient levels in the tables are minimum recommended allowances for commercial pet food, not minimum requirements or optimal intake levels.

To Feed as Chunks, not Ground

When fed as chunks,

- Oils are squeezed on to the food: 1 capsule of salmon oil and 1 capsule of the cod liver oil (if using in place of liver) daily. If feeding liver, do NOT use cod liver oil.
- The dry ingredients (the vitamin supplement and the eggshell powder) are sprinkled on the meat at meal time: 1/32 teaspoon of finely ground eggshell powder per ounce of food fed and a scant 1/64th teaspoon of vitamin supplement. If using mini measuring spoons, 1/32nd teaspoon is the "smidgen," and 1/64th is the "drop."
- One-quarter egg yolk is fed four times a week as a "treat" (meaning not a meal). The cat doesn't like it: I mix with water and sprinkle with a freeze-dried meat treat, such as salmon, cod, or chicken breast. But the egg yolk is an essential part of the balanced diet, however you feed it, whenever you feed it.

The Recipe – can be ground, all supplements added, portioned and frozen.

It is recommended if grinding and mixing that all dry supplements be added to a jar and shaken well prior to mixing into the ground food. Add water as needed to ensure the supplements are as evenly distributed as possible.

If feeding as chunks, these amounts equate to 1.5 ounce meals fed three times a day. Totals are per week. "Chunks" can be as large or small as kitty will eat. It is best to smart with chopped or bite-sized pieces. Long and thin is better than squares. Then slowly increase the width, so kitty can learn to rip and tear. Do not feed the organs all at one meal when using chunks, most cats will vomit. Portion them into several meals over the course of the week, and feed with meat.

28 oz of boneless protein (chicken, turkey, pork, rabbit, beef, whatever: if chicken, best if half without skin, half with skin. This analysis was conducted with no skin). This diet is improved nutritionally by replacing 6 ounces of heart for meat. This analysis was conducted without heart (which is high in taurine). Most cats love heart, and this 6 ounces of heart, if feeding chunks, not ground, can be fed as 4 single meals of heart weekly).

3.2 oz of some kind of liver. † **See kidney, below.** Beef liver is higher in copper than other liver sources. Most use chicken liver as it is easiest to source. If feeding as chunks, the liver should be broken up into smaller portions over several meals (*SUBSTITUTION OPTIONS: If feeding chunks, freeze-dried liver can be used in place of fresh. Use this calculator to determine how much to provide. For ground recipes, 7 softgels of Nature's Bounty Norwegian Cod Liver Oil can be substituted for liver. The cod liver oil can also be used if feeding chunks. Use 1 capsule of this cod liver oil daily squeezed onto food (or pill the cat with it). This analysis was conducted with cod liver oil used in place of liver. Use ONE option: either fresh liver, freeze-dried liver, OR cod liver oil).

1.6 oz of some kind of kidney. † **If using kidney, reduce liver to 1.6 ounces**. Beef kidney is typically easiest to source. Due to the small quantity needed if feeding only a few cats, if making ground, the kidney can be portioned for batches, frozen, and then thawed as needed to make the batch of food (which can also be portioned and frozen, then thawed as needed for feeding).

1 teaspoon (6.1 grams) of finely eggshell powder **OR** 26 capsules of NOW calcium hydroxyapatite (freeze-dried bone). If adding on a per meal basis (feeding chunks), use 1/32 teaspoon of finely ground eggshell powder per ounce of food **OR** 3/4 capsule of NOW calcium hydroxyapatite per ounce of food). For kittens, the calcium hydroxyapatite MUST be used instead of eggshell.

7 capsules of 500mg salmon oil (If feeding meals as chunks, add one capsule daily to a meal). PLEASE SEE THE NOTE ON VITAMIN D, below.

1/2 teaspoon of vitamin supplement (below). (If feeding as chunks, sprinkle on 1/64th teaspoon of vitamin supplement per ounce of food).

1 large egg yolk. (If feeding meals as chunks, feed egg yolk separately as a treat **or** add to one meal a week if kitty will eat it that way **or** beak it up into smaller portions over the course of a week).

If using liver and kidney, not cod liver oil, traditional PMR includes one sardine (fresh frozen OR tinned in water with no salt) fed as a treat once or twice a week. This analysis was conducted without sardine.

A note on Gelatin. This is optional if not feeding bone. It functions to replace an important component of cartilage: collagen. Collagen (gelatin) is 10% - 11% L-glutamine, an amino acid that helps heal leaky gut (L-glutamine helps regulate the tight junctions in the intestines. "Tight junctions" are the technical name for those places of intestinal permeability where nutrients pass into the bloodstream for nutrient utilization by the body). If you're using eggshell, consider also using gelatin. In feeding eggshell, we're providing magnesium in the correct proportion, and similar trace minerals as fresh whole bone – but we are not providing collagen. Use a natural or "organic" gelatin. Use the same measure as the eggshell (1/2 teaspoon per pound (450g); 1/32nd teaspoon per ounce (28g)). Some recipes recommend 2x as much gelatin/collagen as eggshell. You can safely double the amount of gelatin vs the amount of eggshell. You can also provide bone broth daily instead of supplementing with gelatin / collagen.

....and just scale up for larger batches.

Vitamin Supplement

50 capsules of NOW 1,000mg taurine
20 tablets of NOW standardized kelp (150mcg)
10 capsules of Blue Bonnet or Twinlabs chelated manganese (10mg)
5 capsules of NOW dry vitamin E (400iu)
2 capsules Natural Factors Hi-Potency B-complex
*****Vitamin D

*****Vitamin D: If you are using 500mg of salmon, anchovy, or sardine oil daily, you do **not** need to include D. If you are using krill oil or green lipped mussel as the source of omega 3s, it is best to include vitamin D in the supplement: 20 NOW 1,000iu dry vitamin D capsules. Increase the amount of supplement used to a slightly rounded 1/64th teaspoon per ounce. Yes, organs are a healthy source of vitamin D in the diet. And yes, it is true that cats are not known to have a "high" requirement of vitamin D. But in humans, the importance of vitamin D and the understanding of its many functions is changing, and it is clear a "vitamin D deficiency" cannot necessarily be measured directly. Importantly, in cats, low levels of vitamin D are associated with IBD and intestinal lymphoma. Further, a study conducted in the UK found that cats admitted to the ER for ANY reason

were more likely to return home alive if they had higher levels of circulating vitamin D. This is why we think ensuring vitamin D is VERY important, and one sardine a week is not enough.

Add all capsules and tablets (you can include the gel caps) to a clean coffee grinder. Grind (pulsing) until well mixed and finely ground. Let settle for 10 – 15 minutes or you will have a dust cloud when you open the grinder. Store in a glass jar.