THE FOREVER Dog

SURPRISING NEW SCIENCE TO HELP YOUR CANINE COMPANION LIVE YOUNGER, HEALTHIER, AND LONGER

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with Kristin Loberg

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FIRST EDITION

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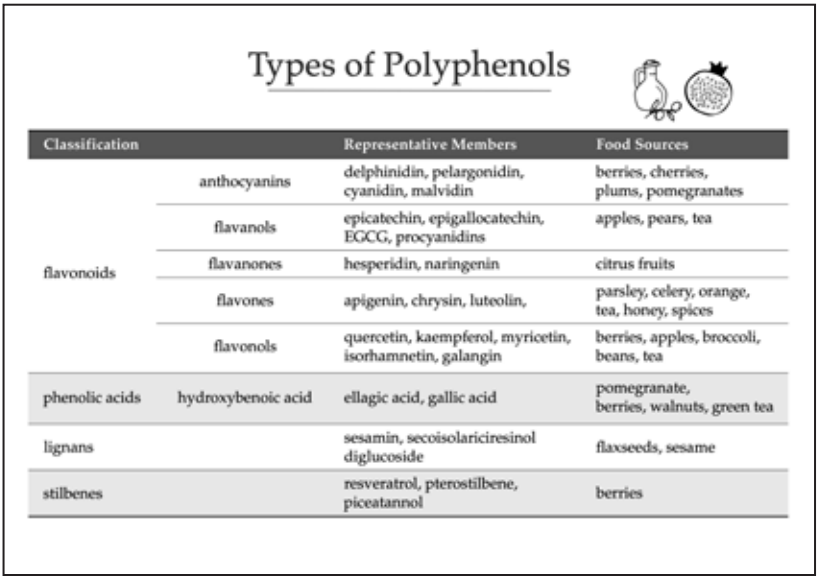
Dietary Habits for a Long and Healthy Life

Building a Better Bowl

Core Longevity Toppers (CLTs): Superfoods You Can Share with Your Dog on a Daily Basis



Types of Polyphenols

Classification		Representative Members	Food Sources
flavonoids	anthocyanins	delphinidin, pelargonidin, cyanidin, malvidin	berries, cherries, plums, pomegranates
	flavanols	epicatechin, epigallocatechin, EGCG, procyanidins	apples, pears, tea
	flavanones	hesperidin, naringenin	citrus fruits
	flavones	apigenin, chrysin, luteolin,	parsley, celery, orange, tea, honey, spices
	flavonols	quercetin, kaempferol, myricetin, isorhamnetin, galangin	berries, apples, broccoli, beans, tea
phenolic acids	hydroxybenoic acid	ellagic acid, gallic acid	pomegranate, berries, walnuts, green tea
lignans		sesamin, secoisolariciresinol diglucoside	flaxseeds, sesame
stilbenes		resveratrol, pterostilbene, piceatannol	berries

LONGEVITY JUNKIE MEDICINAL MUSHROOM BROTH

Add 1 cup fresh (or ½ cup dried) chopped mushrooms and 2 cups pure water (or Longevity Junkie Homemade Bone Broth) to a pot. Grate ½ teaspoon fresh ginger and turmeric root into broth, if desired. Simmer for 20 minutes, and let cool. Puree mixture until smooth, pour into ice cube tray, and freeze. Pop out one portion (1 ounce) for every 10 pounds of body weight, thaw, and mix into food for an instant ergo boost.

Grab-and-Go Treats:
The Doggie Dictionary of Fresh Pharma

ANTIOXIDANT RICH	
vitamin C filled	bell peppers
capsanthin filled	red bell peppers
anthocyanin rich	blueberries, blackberries, and raspberries
beta-carotene rich	cantaloupe
naringenin filled	cherry tomatoes
punicalagin loaded	pomegranate seeds
polyacetylene loaded	carrots
apigenin loaded	peas
sulforaphane rich	broccoli

ANTI-INFLAMMATORY	
bromelain filled	pineapple
omega-3 dense	sardines (except for dogs requiring a low-purine diet)
quercetin rich	cranberries (not for finicky dogs)
cucurbitacin rich	cucumbers

SUPERFOOD CALIBER	
choline filled	hard-boiled eggs
glutathione filled	button mushrooms
manganese rich	coconut meat (or dried, unsweetened coconut chips)
vitamin E rich	raw sunflower seeds (sprout them and other microgreens for a chlorophyll-rich upgrade from grass!)
magnesium filled	raw pumpkin seeds (feed all seeds one at a time for perfectly sized training treats, up to 1/4 teaspoon for every ten pounds of body weight, spread throughout the day)
selenium rich	Brazil nuts (chop up one a day for you and your big dog, or share one with smaller dogs)
folate filled	green beans
fisetin filled	strawberries
indole-3-carbinol rich	kale (or homemade kale chips)
isothiocyanate loaded	cauliflower

DETOX DELIGHTS	
apigenin loaded	celery
anethole filled	fennel
fucoidin rich	nori (and other seaweeds)
betaine filled	beetroot (except for dogs with oxalate issues)

FOR GUTS AND GLORY	
prebiotic rich	jicama, green bananas, sunchokes, asparagus, pumpkin (great filling for food-enrichment toys and food puzzles)
actinidin rich	kiwi
pectin rich	apples
papain rich	papaya

LONGEVITY JUNKIE HOMEMADE BONE BROTH

This bone broth recipe is different than traditional recipes, which can be high in histamines that can negatively affect some dogs.

Cover a free-range, organic, whole chicken (or leftover carcass or raw soup bones of your choice) with pure filtered water, and add:

½ cup chopped fresh cilantro (effective at binding heavy metals)

½ cup chopped fresh parsley (a natural blood detoxifier)

½ cup chopped fresh medicinal mushrooms (providing glutathione, spermidine, ergo, and beta-glucans)

½ cup cruciferous veggies, such as broccoli, cabbage, or brussels sprouts (these foods have the high sulfur content needed for liver detoxification)

4 cloves raw garlic, chopped (the high sulfur content stimulates production of glutathione for liver detoxification)

1 tablespoon unfiltered, raw apple cider vinegar

1 teaspoon Himalayan salt

Cover and simmer 4 hours. Turn off stove. Add 4 tea bags, if desired. Steep tea in broth for 10 minutes, then discard tea bags. Remove any remaining meat from bones and discard bones. Puree remaining meat, veggies, and liquid until a smooth, gravy consistency. Freeze in individual portions (ice cube trays work well). Remove portion (most standard trays are one ounce/portion, or two tablespoons; use a cube for every ten pounds of body weight) and let thaw to room temperature or reheat to warm the broth prior to adding it to your dog's food.

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Personalized Meals as Medicine

Pet Food Homework and Fresher Percentages for a Durable Dog

Getting Started with Food Changes

Adulteration Math

Fresh, flash-processed foods have been manipulated (adulterated) fewer times and with no to low heat. Why is this critically important? The enemies of nutrition are time, heat, and oxygen (which causes oxidation, leading to rancidity). With dog food, heat is the most pervasive offender. Heat negatively impacts the level of nutrients in the food; each time the ingredients are heated, more nutrients are lost. There is no publicly available research on the extent of nutrient depletion through ultra-processing on a brand-by-brand basis. However, *lots* of synthetic vitamins and minerals are added back in to account for profound nutrient loss during processing, which provides insight into just how devoid and nutritionally depleted the end

products are. We've pulled an example of nutrient losses from the human literature to demonstrate what happens to a few nutrients after *one* heat process. Look at the "reheat" values for an idea of what happens after three additional reheats in an average bag of dry dog food.

Typical Maximum Nutrient Losses (as compared to raw food)					
Vitamins	Freeze	Dry	Cook	Cook+Drain	Reheat
Vitamin A	5%	50%	25%	35%	10%
Vitamin C	30%	80%	50%	75%	50%
Thiamin	5%	30%	55%	70%	40%
Vitamin B12	0%	0%	45%	50%	45%
Folate	5%	50%	70%	75%	30%
Zinc	0%	0%	25%	25%	0%
Copper	10%	0%	40%	45%	0%

Homemade, Store-Bought, or Hybrid Meal Plans

Synthetic-Free Homemade

HOMEMADE BEEF DINNER
FOR ADULT DOGS

5 pounds	(2.27 kg)	Extra lean ground beef, poached or raw
2 pounds	(900g)	Beef liver, poached or raw
1 pound	(454g)	Asparagus, finely chopped
4 ounces	(114g)	Spinach, finely chopped
2 ounces	(57g)	Raw sunflower seeds, ground
2 ounces	(57g)	Raw hempseeds, shelled
	(25g)	Calcium carbonate (from your local healthfood store)
	(15g)	Cod Liver Oil
	(5g)	Ground ginger powder
	(5g)	Kelp powder

HOMEMADE TURKEY DINNER

FOR ADULT DOGS WITH DIY SUPPLEMENTS

5 pounds	(2270g)	85% Lean ground turkey, raw or cooked
2 pounds	(908g)	Beef liver, raw or poached
1 pound	(454g)	Brussel Sprouts, finely chopped
1 pound	(454g)	Green Beans, finely chopped
8 ounces	(227g)	Endive, finely chopped

Supplements to add in from the health food store:

1.8 ounces	(50g)	Salmon Oil
	(25g)	Calcium carbonate
	(1200IU)	Vitamin D supplement
	(200IU)	Vitamin E supplement
	(2500mg)	Potassium supplement
	(600mg)	Magnesium citrate supplement
	(10mg)	Manganese supplement
	(120mg)	Zinc supplement
	(2520mcg)	Iodine supplement

DIY HOMEMADE DIET SUPPORT

Choose ready-to-download nutritionally complete recipes:

- www.foreverdog.com (free!)
- www.planetpaws.ca
- www.animaldietformulator.com (its app helps you easily construct your own meals)
- www.freshfoodconsultants.org (links to many professionals and websites that offer ready-to-print nutritionally complete meals)

Design your own meals (choose your ingredients) with an all-in-one supplement powder:

- www.balanceit.com
- www.mealmixfordogs.com

Work with a veterinary nutritionist to formulate custom cooked diets around your dog's specific medical issues or health concerns:

- www.acvn.org
- www.petdiets.com

Work with a fresh-food consultant to create custom raw or cooked nutritionally complete recipes for your pets:

- www.freshfoodconsultants.org

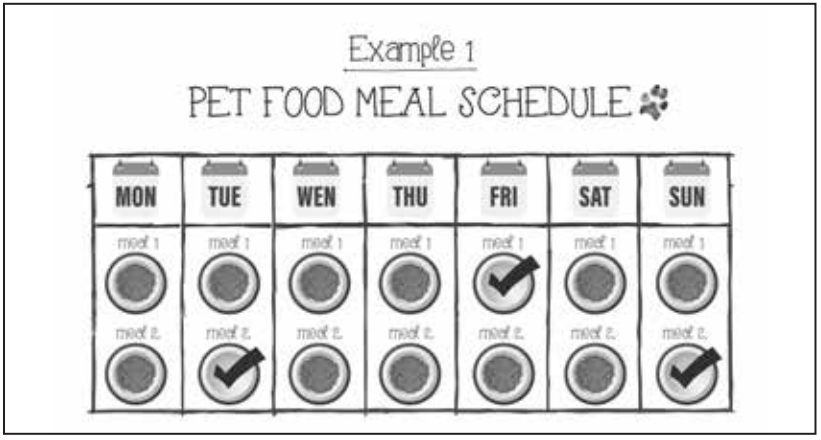
Buy dog food formulation software and do the whole thing yourself:

- www.animaldietformulator.com (AAFCO and FEDIAF nutrition guidelines)

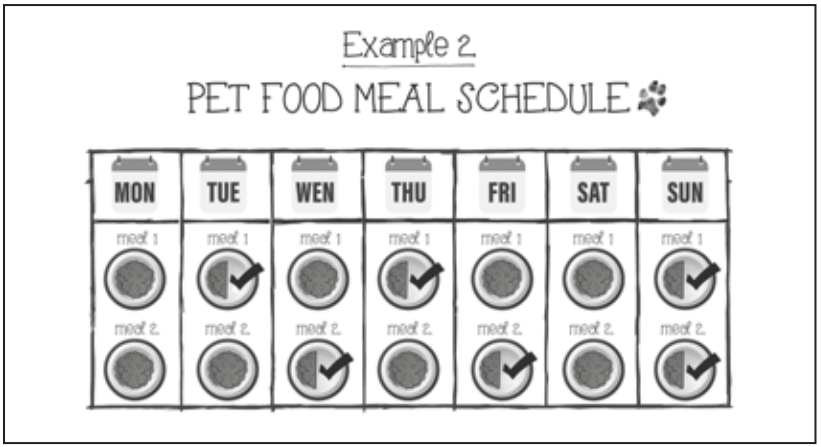
- www.petdietdesiger.com (NRC nutrition guidelines)

Choose Your Fresh Percent: 25 Percent, 50 Percent, or 100 Percent Upgraded Bowls

The first example of a Forever Dog Meal Plan is a 100 percent fresher food meal swap three times a week, maybe a homemade meal on your shortest workdays. The remaining meals (noted by check marks) have up to 10 percent CLTs mixed in to provide superfood fuel.



The second example is a 50 percent fresher food swap for six of fourteen weekly meals. Some of those six hybrid bowls may be 50 percent raw food and 50 percent kibble, or 50 percent freeze-dried and 50 percent gently cooked. As you can imagine, the possibilities for mixing and matching are endless. The meals are topped off with CLTs.



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Putting the OGS into DOGS

Fitness Guidelines and Controlling for Genetic and Environmental Impacts

Minimize Environmental Stress and Reduce the Chemical Load

DIY PEST SPRITZ

1 teaspoon (5 ml) neem oil (from the health food store or your favorite high-quality essential oil manufacturer)

1 teaspoon (5 ml) vanilla extract (from your kitchen cupboard; this helps the neem oil last longer)

1 cup (237 ml) witch hazel (which helps the neem oil disperse in the solution)

¼ cup (60 ml) aloe vera gel (to help keep the mixture from separating)

Add all ingredients to a spray bottle and shake vigorously until mixed well. Immediately spritz over dog (avoid eyes!). Repeat every four hours while outdoors. Shake well prior to each use.

Always flea comb your dog after being outside to remove any creepy crawlies (remember, no pesticides or natural deterrents are 100 percent effective). For maximum potency, make a fresh batch every two weeks.

DIY PEST COLLARS

10 drops lemon eucalyptus oil (purchase all these oils from your favorite high-quality essential oil manufacturer)

10 drops geranium oil

5 drops lavender oil

5 drops cedar oil

Mix oils together and apply five drops to a cloth bandanna (or cloth collar); let your dog wear the bandanna while outdoors. Remove bandanna after your outdoor excursion. Reapply five more drops to bandanna daily, before you spend time outside. Again, always flea comb your dog after being outside to remove any creepy crawlies.

Note: Don't use these products if your dog has sensitivities to any of these ingredients.

Appendix

Testing Recommendations

Annual exams are important for health. Because dogs age much faster than humans, starting mid-life, I see many of my patients every six months to make sure we are updating their wellness protocols as aging (or a new symptom) occurs. Wellness is a dynamic process that requires ongoing modifications to a patient's diet and personalized health strategies to achieve our goal of maximizing health span. In addition to a complete physical examination, basic lab work (including complete blood count [CBC] and blood chemistry profile), fecal parasite test, and urinalysis are important components of your dog's annual exam. There are some additional diagnostics that can be useful in determining health status and how well your dog is aging. They can further help you stay ahead of any fomenting illness or disease in your pet:

- **Vitamin D test**—Dogs and cats can't make vitamin D from sunlight, so they must get it from their diet. Unfortunately, the synthetic vitamin D used in many commercial pet foods can be difficult for some pets to absorb, and unless impeccably balanced, many homemade diets are deficient in vitamin D. Vitamin D testing is an add-on to routine blood work, but you can ask your veterinarian to include it. Low vitamin D levels negatively impact your dog in many ways, including compromising their immune response.
- **Dysbiosis test**—More than 70 percent of the immune system is located in the gut, and many pets suffer from gut-related disorders that create malabsorption, maldigestion, and, ultimately, a weakened and dysfunctional immune system. Identifying and addressing a leaky or dysbiotic gut is critically important in reestablishing good health, especially in debilitated, chronically ill, and aging pets.
- **C-reactive protein (CRP)**—This is one of the most sensitive markers of systemic inflammation in dogs, and now vets can complete this test right in the hospital.

- **Cardiac biomarkers (brain natriuretic peptide; BNP)**: A simple blood test can measure substances the heart releases when the organ is damaged or stressed. It's a great screening test for myocarditis, cardiomyopathies, and heart failure.
- **A1c:** Originally used as a tool to monitor diabetes, human biohackers, metabolomics researchers, and functional medicine practitioners started using A1c as a marker of metabolic health about a decade ago. A1c is actually an advanced glycation end product (AGE); it's a measurement of how much hemoglobin (a protein that carries your oxygen) is covered in sugar (glycated). The higher your A1c, the more inflammation, glycation, and metabolic stress you have. Same for your dog.
- **A combined tick-borne and heartworm illness test:** Gone are the days of a simple heartworm test in many places around the world, including North America. Ticks are everywhere and harbor potentially fatal diseases that are much more common than heartworm. Lyme and other tick-borne diseases are quietly becoming an epidemic in dogs and people in certain areas. Ask your veterinarian for the SNAP 4Dx Plus (from Idexx Labs) or the AccuPlex4 test (Antech Diagnostics) that screen for heartworm, Lyme disease, and two strains each of *Ehrlichia* and *Anaplasma*. If your dog tests positive on one of these screening tests for Lyme disease, it means he's been exposed. **It doesn't mean he has Lyme disease.** In fact, research shows most dogs' immune systems do exactly what they're supposed to do and mount an immune response to the bacteria and eliminate it. But in about 10 percent of cases, dogs become infected and can't clear the spirochete. These dogs need to be identified and treated in a timely manner, before symptoms start. The test that differentiates Lyme exposure from Lyme infection/disease is called a Quantitative C6 (QC6) blood test. Do not let your vet prescribe antibiotics until the QC6 demonstrates your dog is currently positive for Lyme infection. If you use antibiotics for any reason, make sure you focus on the microbiome-building protocols in this book. One of these simple blood tests to screen for tick-borne diseases is recommended every six to twelve months (depending on how rampant these diseases are in your area and the potency and frequency of flea and tick pesticides applied). If you are using all-natural preventives, test more frequently; they're not as effective as the hard-core pesticides (but also not as toxic). If you're

using prescription flea and tick medications from your vet, do an AccuPlex4 or SNAP 4DX Plus every year, and detox!

Note: wwww.foreverdog.com has more info on innovative biomarkers, wellness diagnostics, tests, and labs.

Nutritional Analysis for Beef Meal

Grams	Pounds	Ounces	Percent	Ingredient
2,270.0	5.00	80.00	58.07%	beef, ground, 93% lean, 7% fat, crumbles, cooked, pan-browned
908.0	2.00	32.00	23.23%	beef liver, cooked, braised
454.0	1.00	16.00	11.61%	asparagus, raw
113.5	0.25	4.00	2.90%	spinach, raw
56.8	0.13	2.00	1.45%	sunflower seed kernels, dried,
56.8	0.13	2.00	1.45%	hempseed
25.0	0.06	0.88	0.64%	calcium carbonate
15.0	0.03	0.53	0.38%	cod liver oil, Carlson, 400IU / tsp
5.0	0.01	0.18	0.13%	ginger, ground
5.0	0.01	0.18	0.13%	kelp meal, seaweed Tidal Organics
3,909	**8.61**	**137.76**	**100.00%**	

MACRONUTRIENT ANALYSIS Atwater Standard			
Composition	**as formulated**	**DM**	**% kcal**
Protein	25%	66%	54%
Fat	9%	23%	42%
Ash	2%	6%	
Moisture	63%		
Fiber	1%	2%	
Net Carbs	2%	4%	3%
Sugars (limited data)	0%	1%	1%
Starch (limited data)	0%	0%	0%
Total			100%

Macronutrient Information	
total kcal in recipe	**7,098**
kcal / oz	**52**
kcal per pound	**824**
kcal / day	**342**
recipe makes, # of days	**20.7**
kcal / kg	**1,817**
kcal per kg DM	**4,863**
grams to feed per day	**188**
ounces to feed per day	**6.6**

Desired Weight		10.0 Lbs 4.5 Kg							40.0 18.2				
Activity Level, FEDIAF 2016	**k Factor**	**kcal / day**	**oz/day**	**g/day**	**% of wt**	**cpp**	**cpkg**	**unit/d**	**kcal / day**	**oz/day**	**g/day**	**% of wt**	**cpp**
Adult													
Resting energy	70	218	4.2	120	2.6%	21.8	47.9	3.8	616	12.0	339	1.9%	15.4
Adult – Indoor sedentary	85	265	5.1	146	3.2%	26.5	58.2	4.7	748	14.5	412	2.3%	18.7
Adult – Less Active	95	296	5.7	163	3.6%	29.6	65.1	5.2	836	16.2	460	2.5%	20.9
Adult – Active	110	342	6.6	188	4.2%	34.2	75.3	6.0	969	18.8	533	2.9%	24.2
Adult - More Active	125	389	7.6	214	4.7%	38.9	85.6	6.9	1,101	21.4	606	3.3%	27.5
Adult - Very Active	150	467	9.1	257	5.7%	46.7	102.7	8.2	1,321	25.6	727	4.0%	33.0
Adult - Working Dog	175	545	10.6	300	6.6%	54.5	119.9	9.6	1,541	29.9	848	4.7%	38.5
Adult - Sled Dog	860	2,677	52.0	1,473	32.5%	267.7	589.0	47.2	7,572	147.0	4,167	23.0%	189.3

Minerals	AAFCO 2017 - Adult – Active				Daily Amt
	Unit	minimums	maximums	Recipe	
Ca	g	1.25	6.25/4.5	1.67	0.54
P	g	1.00		1.66	0.57
Ca: P ratio	:1	1:1	2:1	1 : 1	
K	g	1.50		2.27	0.78
Na	g	0.20		0.41	0.14
Mg	g	0.15		0.22	0.08
Cl (no USDA data)	g	0.30		0.01	0.00
Fe	mg	10.00		21.81	7.47
Cu	mg	1.83		19.02	6.51
Mn	mg	1.25		1.59	0.54
Zn	mg	20.00		30.74	10.53
I (no USDA data)	mg	0.25	2.75	0.475	0.16
Se	mg	0.08	0.50	0.124	0.04

Vitamins	AAFCO 2017 - Adult – Active				Daily Amt
	Unit	minimums	maximums	Recipe	
Vit A	IU	1,250.00	62,500	42940.13	14,704
Vit D	IU	125.00	750	252.63	87
Vit E	IU	12.50		12.90	4
Thiamine, B1	mg	0.56		0.73	0.3
Riboflavin, B2	mg	1.30		5.24	1.8
Niacin, B3	mg	3.40		46.56	15.9
Pantothenic Acid,B5	mg	3.00		11.95	4.1
B6 (Pyridoxine)	mg	0.38		2.91	1
Vit B12	mg	0.01		0.099	0.034
Folate	mg	0.05		0.432	0.148
Choline	mg	340.00		860.95	295

FATS	AAFCO 2017 - Adult – Active			per 1000 kcal	Daily Amt
	Unit	minimums	maximums	Recipe	
Total	g	13.80	82.5	47.06	16.11
Saturated	g			15.89	5.44
Monounsaturated	g			15.19	5.20
Polyunsaturated	g			7.11	2.43
LA	g	2.80	16.30	5.12	1.75
ALA	g			0.65	0.22
AA	g			0.44	0.15
EPA + DHA	g			0.41	0.14
EPA	g			0.18	0.06
DPA	g			0.09	0.03
DHA	g			0.23	0.08
omega-6/omega-3	:1		30:1	5.25	

Amino Acids	AAFCO 2017 - Adult – Active			per 1000 kcal	Daily Amt
	Unit	minimums	maximums	Recipe	
Total protein	g	45.00		135.74	46.48
Tryptophan	g	0.40		0.99	0.34
Threonine	g	1.20		5.26	1.80
Isoleucine	g	0.95		5.98	2.05
Leucine	g	1.70		10.84	3.71
Lysine	g	1.58		10.69	3.66
Methionine	g	0.83		3.40	1.17
Methionine - cystine	g	1.63		5.08	1.74
Phenylalanine	g	1.13		5.69	1.95
Phenylalanine - tyrosi	g	1.85		10.06	3.44
Valine	g	1.23		6.97	2.39
Arginine	g	1.28		9.09	3.11

Red-shaded areas (if any) do not meet dog growth > of EU, AAFCO.

Nutritional Analysis for Turkey Meal with Supplements

Turkey Dog Food Recipe

animaldiet FORMULATOR

RECIPE INGREDIENTS

Item	Grams	Pounds	Ounces	Percent
turkey, ground, 85% lean, 15% ft, pan-broiled, crumbles	2,270.00	5.00	80.07	51.23%
beef liver, cooked, braised	908.00	2.00	32.03	20.49%
Brussels Sprouts, Cooked, Boiled, Drained W/O Salt	454.00	1.00	16.01	10.25%
Beans, Snap, Green, Frozen, All Styles, Unprepared	454.00	1.00	16.01	10.25%
Endive, Raw,	227.00	0.50	8.01	5.12%
Salmon Oil, Wild Slmn Oil Blend, Omega Alpha	50.00	0.11	1.76	1.13%
Calcium Carbonate	25.00	0.06	0.88	0.56%
Vitamin D3, 400IU/G	3.00	0.01	0.11	0.07%
Potassium Solaray, 99 Mg/Cap, 1 G= 1 Cap	25.00	0.06	0.88	0.56%
Magnesium Citrate, 200 Mg / Tablet 1 G = 1 Tablet	3.00	0.01	0.11	0.07%
Manganese Chelate --10 Mg	1.00	0.00	0.04	0.02%
Zinc -- Nature'S Made, 30Mg Tablet	4.00	0.01	0.14	0.09%
Iodine, Whole Foods, 360 Mcg/Cap	7.00	0.02	0.25	0.16%
Vitamin E 400 IU, 1gm = 1 cap, Bluebonnet	0.13	0.00	0.00	0.00%
Total	**4,431.13**	**9.77**	**156.30**	**100.00%**

MACRONUTRIENT ANALYSIS

Nutrient content of natural foods vary, sometimes significantly. Use the nutrient content numbers as approximations only.

Composition	As Formulated	DM	% kcal
Protein	19.33%	54.01%	39.78%
Fat	11.23%	31.36%	56.1%
Ash	2.52%	7.05%	
Moisture	64.2%		
Fiber	0.71%	1.99%	
Net Carbs	2%	5.59%	4.12%
Sugars (limited data)	0.24%	0.67%	0.49%
Starch (limited data)	0.16%	0.44%	0.32%
Total			**100%**

MACRONUTRIENT INFORMATION

total kcal in recipe	7,538.38
kcal / oz	48.23
kcal per pound	771.67
kcal / day	2,068.33
recipe makes, # of days	3.64
kcal / kg	1,701.20
kcal per kg DM	2,108.97
Amount to Feed per Day (gm)	1,215.80
Amount to Feed per Day (oz)	42.89
keto ratio (g fat/ (g protein + g net carb))	0.53

MINERALS

	Unit	Min	Max	Recipe	Daily Amt
Ca	g	1.25	0.00	1.54	3.19
P	g	1.00	4.00	1.45	3.00
Ca: P	ratio	1 : 1	2 : 1	1.06 : 1	
K	g	1.25	0.00	1.79	3.70
Na	g	0.25	0.00	0.37	0.77
Mg	g	0.18	0.00	0.22	0.45
Cl (no USDA data)	g	0.38	0.00	0.00	0.00
Fe	mg	9.00	0.00	15.33	31.71
Cu	mg	1.80	0.00	17.85	36.92
Mn	mg	1.44	0.00	2.16	4.47
Zn	mg	18.00	71.00	33.62	69.53
I (no USDA data)	mg	0.26	0.00	0.33	0.69
Se	mg	0.08	0.14	0.15	0.32

VITAMINS

	Unit	Min	Max	Recipe	Daily Amt
Vit A	IU	1,515.00	100,000.00	39,965.19	82,661.27
Vit C	mg	0.00	0.00	12.02	24.85
Vit D	IU	138.00	568.00	242.30	501.16
Vit E	IU	9.00	0.00	9.00	18.62
Thiamine, B1	mg	0.54	0.00	0.62	1.29
Riboflavin, B2	mg	1.50	0.00	5.03	10.41
Niacin, B3	mg	4.09	0.00	45.14	93.37
Pantothenic Acid,B5	mg	3.55	0.00	13.10	27.10
B6 (Pyridoxine)	mg	0.36	0.00	2.75	5.70
Vit B12	mg	0.01	0.00	0.09	0.19
Folic Acid	mg	0.07	0.00	0.41	0.86
Choline	mg	409.00	0.00	749.15	1,549.50
Vit K1 (minimal data)	mg	0.00	0.00	158.03	326.87
Biotin (minmal data)	mg	0.00	0.00	0.00	0.00

AMINO ACIDS

	Unit	Min	Max	Recipe	Daily Amt
Total protein	g	45.00	0.00	113.65	235.07
Tryptophan	g	0.43	0.00	1.32	2.72
Threonine	g	1.30	0.00	5.00	10.34
Isoleucine	g	1.15	0.00	5.08	10.51
Leucine	g	2.05	0.00	9.56	19.78
Lysine	g	1.05	0.00	9.55	19.76
Methionine	g	1.00	0.00	3.16	6.54
Methionine - cystine	g	1.91	0.00	4.61	9.53
Phenylalanine	g	1.35	0.00	4.83	9.99
Phenylalanine - tyrosine	g	2.23	0.00	8.91	18.43
Valine	g	1.48	0.00	5.70	11.80
Arginine	g	1.30	0.00	7.65	15.83
Histidine	g	0.58	0.00	3.33	6.89
Purines	mg	0.00	0.00	0.00	0.00
Taurine	g	0.00	0.00	0.02	0.05

FATS

	Unit	Min	Max	Recipe	Daily Amt
Total	g	13.75	0.00	66.00	136.52
Saturated	g	0.00	0.00	15.85	32.79
Monounsaturated	g	0.00	0.00	19.03	39.35
Polyunsaturated	g	0.00	0.00	15.42	31.90
LA	g	3.27	0.00	12.96	26.80
ALA	g	0.00	0.00	0.76	1.56
AA	g	0.00	0.00	0.69	1.42
EPA + DHA	g	0.00	0.00	2.12	4.38
EPA	g	0.00	0.00	1.28	2.64
DPA	g	0.00	0.00	0.04	0.08
DHA	g	0.00	0.00	0.84	1.74
omega-6/omega-3	ratio			4.75 : 1	

Twenty Questions to Ask a Prospective Breeder

GENETIC AND HEALTH SCREENING TESTS

1. Have all of the currently appropriate DNA tests for the breed been conducted on the dam (mom)? (Find a list by breed at www.dogwellnet.com.)
2. Have all of the currently appropriate DNA tests for the breed been conducted on the sire (dad)?
3. What were the results of the Orthopedic Foundation for Animals (OFA) hip dysplasia (or PennHip), elbow, and patella screening results for both parents?
4. For affected breeds, when were the dam's and sire's thyroid results last registered with the OFA thyroid database?
5. If indicated for breed, have the dam's and sire's eyes been evaluated by an ophthalmologist and results reported to Companion Animal Eye Registry (CERF) or OFA?
6. Are there any breed-related issues the breeder is trying to address/rectify/improve through mating this pair?

EPIGENETICS

7. What percentage of the dam's and sire's diet is unprocessed or minimally processed food?
8. What are the dam's and sire's vaccine protocols?
9. Is the puppy's vaccination protocol determined by a nomograph (testing of the mom's antibody levels to determine what day vaccines will be effective for the puppies)?
10. How often are pesticides applied to the parents (topical or oral heartworm, flea, and tick medications)?

SOCIALIZATION, EARLY DEVELOPMENT, AND WELLNESS

11. What early socialization program (day 0–63) does the breeder institute prior to placing puppies in their new homes?
12. Does the breeding contract require that puppies be spayed or neutered by a certain age?

13. If yes, does the sterilization clause include options for vasectomy or hysterectomy?

14. Does the contract require you to attend training classes with your pup?

15. If appropriate for the breed, are puppies' eyes checked by a veterinary ophthalmologist between six and eight weeks of age?

16. Have the puppies had a basic checkup by the breeder's regular veterinarian prior to going to new homes, and at what age will puppies be released?

TRANSPARENCY

17. Will the breeder allow you to visit their home or facility (in person or via live video) and provide references for you to call?

18. In the event you cannot keep your puppy or things don't work out, will the breeder take the puppy back at any time?

19. Is the breeder (or someone in their network) available for support should you need it?

20. Will your puppy packet include all of the following?
    - Contract
    - AKC or applicable registration application or certificate if already registered
    - Other breed registry registration, if applicable (i.e., Australian Shepherd Club of America)
    - Litter pedigree
    - Copies of puppy eye exam findings, if applicable
    - Puppy general health summary from veterinarian (medical record from initial veterinary visit)
    - Dam health clearances, including copies of DNA results
    - Sire health clearances, including copies of DNA results
    - Photos of sire and dam
    - Educational resources (suggested feeding schedule, suggested vaccine protocols and suggested dates for antibody titers to ensure immunization occurred, training resources)

RAW BONE RULES

Eating crunchy granola doesn't remove plaque from your teeth, and feeding dogs crunchy treats doesn't remove plaque from their teeth, either. Yet people still believe dog biscuits "clean" their dog's teeth. They don't! This is a shameless marketing ploy. There are three ways to remove plaque from your dog's teeth: your vet can professionally clean them (this is the most effective way to get a clean mouth, but it usually involves anesthesia); you can brush them every night after dinner (which we're fans of); and you can encourage your dog to participate in the removal of plaque via the act of chewing (aka "mechanical abrasion"). When your dog chews on a raw recreational bone, especially a meaty one with cartilage and soft tissue still attached, his teeth get the equivalent of a good brushing and flossing, but he's doing the work, not you. One study found offering dogs raw bones removed the majority of plaque and tartar from the molars and the first and second premolars in less than *three days*! They're called recreational bones because dogs love to gnaw on them, but they aren't meant to be chewed up and swallowed. And they come with a long list of rules.

You should be able to find a selection of raw bones in the freezer section of your neighborhood independent pet store, with knowledgeable staff to help you choose the correct size bone for your dog. If you don't have a local independent pet store, you can find raw (not steamed, smoked, boiled, or baked) knucklebones at your local butcher shop or the meat counter of your supermarket (sometimes they're called soup bones and they're found in the refrigerated or frozen food section). When you get the bones home, store them in the freezer; thaw one at a time and offer to your dog. Generally speaking, knucklebones from large mammals (beef, bison, venison) are the safest options. Other tips:

- Match the bone size to your dog's head. There's really no such thing as a too-big bone, but there are definitely bones

that are too small for some dogs. Too-small bones can be choking hazards and can also cause significant oral trauma (including broken teeth).

- If your dog has had restorative dental work or crowns, or if your dog has fractured teeth or soft teeth (very old dogs), do not offer recreational bones.
- Always closely supervise your dog when he's working on a bone. Don't allow him to carry his prize off to a corner alone.
- In multidog households, separate your dogs before giving recreational bones, to keep the peace. This rule applies to casual canine friends and BFFs alike. Resource guarders should not be offered raw bones. Collect bones at the end of the chewing session (fifteen minutes is a good time frame, for starters).
- Bone marrow is fatty and can add to your pet's daily caloric intake. Dogs with pancreatitis shouldn't eat bone marrow. Too much marrow can also cause diarrhea in dogs with sensitive stomachs, so scoop out the marrow until your pet's GI tract has adapted to the higher-fat treat, or pace chewing sessions for shorter amounts of time, say fifteen minutes per day, initially. Another alternative for chunky dogs or dogs requiring lower-fat bones is to offer raw bones with the marrow already scooped out.
- Raw bones can make quite a mess as your dog gnaws on them. Many people offer them outdoors or on a surface that can be easily cleaned with hot, soapy water. Never offer cooked bones of any kind.

Additional Resources

Check www.foreverdog.com for current updates.

RESOURCES TO FIND A REHABILITATION PROFESSIONAL

- Graduates of the Canine Rehabilitation Institute: www.caninerehabinstitute.com/Find_A_Therapist.html
- Canadian Physiotherapy Association: www.physiotherapy.ca/divisions/animal-rehabilitation
- Online directory of the American Association of Rehabilitation Veterinarians: www.rehabvets.org/directory.lasso
- Graduates of the Canine Rehabilitation Certificate Program: www.utvetce.com/canine-rehab-ccrp/ccrp-practitioners

TRAINING AND BEHAVIOR RESOURCES

- Certification Council for Professional Dog Trainers (CCPDT): www.ccpdt.org
- International Association of Animal Behavior Consultants (IAABC): www.iaabc.org
- Karen Pryor Academy: www.karenpryoracademy.com
- Academy for Dog Trainers: www.academyfordogtrainers.com
- Pet Professional Guild: www.petprofessionalguild.com
- Fear Free Pets: www.fearfreepets.com
- American College of Veterinary Behaviorists: www.dacvb.org

EARLY PUPPY PROGRAMS

- Avidog: www.avidog.com
- Puppy Culture: www.shoppuppyculture.com
- Enriched Puppy Protocol: https://suzanneclothier.com/events/enriched-puppy-protocol/
- Puppy Prodigies: www.puppyprodigies.org

CONCIERGE WELLNESS SERVICES THAT EMBRACE FUNCTIONAL VETERINARY MEDICINE

- College of Integrative Veterinary Therapies: www.civtedu.org
- American Veterinary Chiropractic Association: www.animal chiropractic.org
- International Veterinary Chiropractic Association: www.ivca.de
- American College of Veterinary Botanical Medicine: www.acvbm .org
- Veterinary Botanical Medicine Association: www.vbma.org
- Veterinary Medical Aromatherapy Association: www.vmaa.vet
- American Academy of Veterinary Acupuncture: www.aava.org
- International Veterinary Acupuncture Society: www.ivas.org
- International Association of Animal Massage and Bodywork: www .iaamb.org
- American Holistic Veterinary Medical Association: www.ahvma.org
- Raw Feeding Veterinary Society: www.rfvs.info

"Supplemental Feeding" Dog Foods

All pet foods in the United States must make a nutritional claim on their packaging. If you live in Canada or other countries where there aren't label claim regulations, unfortunately, it's up to you to do your research to assess if the food you are buying is nutritionally adequate. In the United States, a label that reads "For supplemental or intermittent feeding" means the food is nutritionally incomplete—it's deficient in critical vitamins and minerals that must be supplied in the dog's diet but aren't supplied in that food. Regardless of where you live, if commercial pet food labels don't come with a statement of nutritional adequacy and the company can't provide a complete nutritional analysis (as compared to AAFCO, NRC, or FEDIAF), you should assume the food does not meet your dog's daily nutritional requirements. As long as you've considered processing temperature, purity, and sourcing of all the ingredients, these foods can be great dollops, treats, toppers, or short-term temporary diets for adult dogs (one out of seven or two out of fourteen meals). These incomplete diets are not meant to be fed consistently as a sole food source;

the problem is, they are. And they cause all sorts of roadblocks on a dog's path to longevity.

When dogs are deficient in critical vitamins and minerals that function as cofactors for key enzymatic reactions and facilitate the production of key proteins, the body does not function optimally on a cellular level, which leads to metabolic and physiologic stress, over time. Eventually, disease is inevitable. The problem is you can't see outward signs of these micronutrient deficiencies until your dog's body is so depleted there's no chance at the Guinness World Records in her future. People are so confused about what to feed, and these days often with serious economic constraints. We totally get it. This scenario has provided a ripe opportunity for pet food companies to offer a timely solution: much cheaper, fresher, unbalanced dog food (compared to many other raw or minimally processed brands that have intentionally created well-formulated, nutritionally complete, and therefore more expensive diets). For 3.0 super-knowledgeable pet parents who aren't afraid of math, some of the commercially available raw food "grinds" (a blend of meat, bone, and organ) or other cooked, dehydrated, or freeze-dried "base mixes" of meats and veggies provide a good option; these mixes can be a godsend on the wallet. These are fine to include as a topper or treat (less than 10 percent of your dog's calories for the day).

If you want to use these unbalanced dog food blends as a base for your dog's daily meals, you'll have to fill in all the blanks, nutritionally speaking. There are many micro-companies making small-batch dog foods that have the potential to be great food for your dog, if they're balanced by you (yes, with a calculator). Transparent companies have downloadable PDFs on their websites showing the lab nutritional analyses of their (incomplete) diets. This info can be plugged into a raw food spreadsheet to compare to current accepted nutritional standards (found at www.foreverdog.com) to determine what nutrients need to be added. Many 3.0 pet parents in our community do this. It's a fantastic way to feed balanced, fresh food on a shoestring budget. The cheapest way to feed a 100 percent human-grade, nutritionally optimal diet to your dog is to shop power sales, join a co-op, buy in bulk, and make food yourself following a nutritionally complete recipe, at home. This just isn't feasible for so many people we know.

If you attempt to balance unbalanced commercial dog food diets on your own, your dog is relying on you to identify not only what nutrients are missing but what amounts need to be added to at least meet his mini-

mum daily requirements. "Supplemental feeding" diets aren't bad; in fact, with astute evaluation and appropriate execution in the bowl, they can be *quite beneficial* for your wallet, depending on the intensity of processing and the quality of raw ingredients. But for this category of pet food, one thing matters more than anything: the ethics of the company. How transparent are they about sharing nutritional analysis test results for their products? This is a critical question we recommend asking prior to feeding these foods for any length of time (more than a CLT or an occasional light meal). There are "supplemental feeding" dog food brands (usually those that don't make any nutritional claim statement fall into this category) across most pet food categories, including lots of raw food brands and several gently cooked foods from micro-companies you can buy at farmers' markets, pet boutiques, big box stores, and online. You can probably already see what some minuses are with this category . . .

Most companies producing "prey model" grinds—"80/10/10" (meat/bone/organ) base mixes, raw food components, or "ancestral dog food"—don't supply a list of what ingredients or supplement amounts you'll need to add to nutritionally balance their unbalanced diets. Even worse, it can be hard to impossible even to get the raw data you need from their customer service department to attempt the calculations to fix the deficiencies. **Some companies selling you dog food won't provide information about what's in their food**. Scary, because either they don't know the nutritional profile of their food or they don't want you to know. In fact, some companies tout that if dog owners just rotate through all of their flavors or proteins, they'll meet minimum nutritional requirements over time, without ever providing proof of this being a viable way of meeting your dog's nutrient requirements. This makes veterinarians very angry because it's usually not true. **The problem with unknowingly rotating through a large variety of unbalanced diets is that your dog remains nutritionally deficient.** This is one of the biggest reasons we see animals eating less-processed, fresher, or raw foods do poorly: their diet is fresh. But deficient.

Be leery of feeding foods from companies offering vague nutrition recommendations to balance their product, such as "add kelp and omega-3s to balance our diets." "Rotation over time" (feeding a rotation of several different meats, bones, and organs) is another nutrition concept that drives vets crazy because very few people or companies can demonstrate they're actually meeting trace nutrient requirements in any capacity. This is a bigger problem than most people realize, and many vets are

already frustrated with their clients' experimenting with "alternative, nontraditional food categories" and veering away from ultra-processed, highly refined "food-like particles" (what fresh-feeding veterinarian Dr. Ian Billinghurst calls kibble). If you don't know in your heart that you can assure your dog is getting everything she needs, nutritionally, at least most of the time, feed these unformulated commercial diets a couple of times a week (two out of fourteen meals) or daily, as a Core Topper (10 percent of calories). Professionals in the directory at www.freshfoodconsultants.org can help you balance these products, or you can use the www.petdietdesigner.com spreadsheet.

Many 3.0 pet parents also master feeding homemade variations of raw meaty bone diets (RMBDs) or bones and raw food diets ("BARF," as you'll see online) that meet minimum nutritional requirements. This style of feeding involves blending together a variety of meats, bones, glands, and organs to mimic prey, and can be done successfully to avoid imbalances by using one of the many raw food–balancing spreadsheets available.

Notes

Our selected list of notes to accompany statements made in the book became a tome in itself due to the volume of sources and scientific literature we could have cited. We moved them online to www.foreverdog.com, where we can also keep them updated. For general statements made in the book, we trust you can find a wellspring of references and evidence yourself online with just a few taps of the keyboard, assuming you visit reputable sites that post fact-checked, credible information that's been vetted by experts. This is especially important when it comes to matters of health and medicine. The best medical journal search engines that do not require a subscription, many of which are listed in the notes include: pubmed.gov (an online archive of medical journal articles maintained by the United States National Institutes of Health's National Library of Medicine); sciencedirect.com and its sibling SpringerLink link.springer.com; the Cochrane Library at cochranelibrary.com; and Google Scholar at scholar.google.com, which is a great secondary search engine to use after your initial search. The databases accessed by these search engines include Embase (owned by Elsevier), Medline, and MedlinePlus and cover millions of peer-reviewed studies from around the world. We've done our best to include all the studies specifically highlighted and added more in places to round out conversations. Use the entries as launchpads for further inquiry, and don't forget to check out our website at www.foreverdog.com for updates.