

## **Essential Nutrients for Dogs**

NUTRIENT	DESCRIPTION / FUNCTION	KEY SOURCES
PROTEIN	Comprised of amino acids which are converted into energy and support metabolism and DNA formation. Complete diets must contain 10 essential amino acids.	* Meats
FAT	Comprised of fatty acids which are converted into energy and support health and condition of skin and coat.  Balance is critical - the right balance can resolve problems with itching, scratching, dry skin, dull coat, and hair loss, while too much can lead to a variety of health issues.	
Linoleic acid	Unsaturated Omega-6 should be at least 1% of total fat.	* Safflower Oil * Poultry * Brown Rice
Arachidonic acid	Saturated Omega-6 should be no more than 80% of total fat.	* Meats * Oils
Alpha-linolenic acid	Omega-3 should be ~ 15% of total fat.	* Fish Oils * Chicken * Brown Rice
WATER SOLUBLE VITAMINS	Excess amounts are easily flushed from the body and pose no risk of toxicity.	
Vitamin A	Contributes to vision and many other functions.	* Liver * Vegetables * Fruit
Vitamin B1	Thiamin helps convert nutrients into energy. (Raw fish may contain large amounts of thiaminase, an enzyme that destroys thiamin, so only cooked fish should be fed to dogs.)	* Vegetables * Cooked Fish * Meats
Vitamin B2	Riboflavin is essential for growth, muscle development, and healthy skin and coat.	* Meats * Organ Meats * Vegetables
Vitamin B3 Vitamin B5 Vitamin B6	Niacin helps enzymes to function properly. Pantothenic Acid helps to convert carbohydrates, fats and proteins into energy. Pyridoxine aids in processing of amino acids	* Meats * Vegetable
Vitamin B12 Folic Acid	Cyanocobalamin helps in the production of red blood cells.  Aids in production of red blood cells.	* Organ Meats * Meats"
Biotin	Promotes healthy skin and hair, growth, digestion, and muscle function. Raw egg whites contain avidin which destroys biotin and only cooked eggs should be fed to dogs.	* Beef Liver * Cooked Eggs"
Choline	Aids in development and maintenance of brain and liver cells	* Cooked Eggs * Chicken "* Beef Liver * Cooked Eggs" * Turkey * Poultry Liver

NUTRIENT	DESCRIPTION / FUNCTION	KEY SOURCES
FAT SOLUBLE VITAMINS	Stored in the liver, quantities should be controlled to avoid reaching toxic levels over time.	
Vitamin A	Contributes to vision and many other functions.	* Liver * Vegetables * Fruit
Vitamin D	Helps to regulate calcium and phosphorous levels required for bone development and nerve and muscle control	* Liver * Fish Oils
Vitamin E	Antioxidant aiding in cell development and metabolism of fats.	* Sunflower Oil * Liver * Fish Oils
MINERALS	Help development of bone and cartilage, muscles and nerves, regulation of blood chemistries, and production of hormones	
Calcium	Essential for teeth and bone formation, blood coagulation, and nerve and muscle function.  The level of calcium is critical – too little can result in poor bone development and weakened immune system, too much can contribute to skeletal problems including hip dysplasia.	* Ground Bones * Green Vegetables * Supplements
Phosphorus	Helps form structural framework of DNA, and is essential in formation of teeth and bone.	* Meats * Brown Rice * Potatoes/Yams * Vegetables
Potassium	Helps muscles and nerves to function, and balance fluids in the body.	* Potatoes/Yams * Brown Rice
Sodium	Helps carry cells throughout the body, including the removal of waste products	* Most Foods * Salt
Chloride	Helps to balance acid/alkali in the body, and aids in digestion	* Supplements
Magnesium	Helps in bone growth and production of protein	* Whole Grains * Fish
Iron	Helps to form hemoglobin, found in red blood cells.	* Liver * Meats * Whole Grains
Copper	Aids in bone development, absorption of iron, and production of red blood cells.	* Liver * Fish * Whole Grains
Manganese	Helps in the processing of protein and carbohydrates which produce energy and help to regulate metabolism.	* Whole Grains * Eggs * Vegetables
Zinc	Helps in development and maintenance of healthy skin and coat. Thinning coats or hair loss is frequently attributed to zinc deficiencies.	* Brown Rice * Meat
lodine	Aids in the functioning of the thyroid gland, which regulates growth and metabolism.	* Kelp * lodized Salt
Selenium	Antioxidant which works with vitamin E to protect cells.	* Meats * Whole Grains
FIBER	Regulate fluid in intestines to control both diarrhea and constipation, and helps prevent growth of harmful bacteria. Also reduces risk of colon cancer. Balance is critical - too much can irritate the intestinal system, too little can cause gas or loose stools, and lead to anal gland issues.	* Whole Grains * Vegetables
CARBOHYDRATES	Converted into energy and play a key role in the digestive process. Should not exceed 20% of the diet as fed. Higher levels can lead to a variety of health issues including obesity.	* Vegetables * Whole Grains * Fruits