

Ingredients Cats Need to Survive

Take the CatChannel quiz and see how much you know about feline nutrition.

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How savvy are you about feline nutrition? Do you know which nutrients are necessary in a cat's diet to achieve optimal health? Take our quiz to test your smarts about cat-food ingredients, and learn a little about feline nutrition along the way.

1. Which of the following nutrient group is the least important to optimal feline health?
 - a. Proteins and amino acids
 - b. Fats and fatty acids
 - c. Carbohydrates
 - d. Vitamins and minerals
 - e. Water
2. Cats require 22 amino acids (the "building blocks" that make up proteins) to maintain proper health. A cat is able to manufacture 11 of these amino acids in its body, through metabolism of proteins or carbohydrates. The remaining 11, known as _____, must be provided in the diet.
 - a. Omega 6 fatty acids
 - b. Lipids
 - c. Omega 3 fatty acids
 - d. Essential amino acids
3. True or false: Protein can be found in both animal- and plant-based food sources. However animal-based proteins are considered "complete" and plant-based proteins are "incomplete."
4. The amino acid taurine is a dietary essential for cats and can be found abundantly in all of the following except:
 - a. Poultry
 - b. Fish
 - c. Grains
 - d. Eggs
 - e. Dairy products
5. True or false: Cats need Vitamin A in their diet to help regulate the absorption of calcium and phosphorus — two minerals necessary for the proper development of bones and teeth.
6. Which of these is not considered a nutrient?
 - a. Fats
 - b. Proteins
 - c. Minerals
 - d. Fiber
 - e. Vitamins
7. The measure of the total mineral content of a particular cat food is called _____.
 - a. Biotin
 - b. Ash
 - c. Choline
 - d. Inorganic residue
8. Vitamins A, D, E and K are all _____ vitamins.
 - a. Essential
 - b. Nonessential
 - c. Water-soluble
 - d. Fat-soluble

9. Calcium and phosphorus are essential to build strong bones and teeth in your cat, but they don't do the job alone. Which of the following nutrients enhances calcium's and phosphorus' efforts?
- Magnesium
 - Selenium
 - Vitamin D
 - Vitamin K
10. True or false: Fats are an important part of a cat's diet.
11. Beet pulp, rice bran, corn bran and cellulose are a good source of _____ and are often found in "light" cat diets to decrease the calorie absorption in the food.
- Starches
 - Carbohydrates
 - Fiber
 - Plant-based proteins
12. Vitamins are essential to your cat's life. Some of the necessary vitamins come from your cat's food; others are synthesized within the cat's body. Vitamins perform all of the functions below except:
- Act as antioxidants, aiding in the body's resistance to disease.
 - Allow salt and other electrolytes to pass through the body
 - Act as mediators for cell regulation and tissue growth
 - Convert mineral elements into structural components of bones and teeth
 - Aid in the body's metabolic activities
 - Support the body's enzyme systems
13. True or false: The best source of calcium for cats is milk.
14. What is the term for the type of dietary fat that is liquid at room temperature?
- Saturated fats
 - Arachidonic acid
 - Lipids
 - Unsaturated fats
15. Which of the following is considered an "incomplete" protein source for cats?
- Tuna
 - Lamb
 - Eggs
 - Soybean meal
 - Chicken by-product meal
16. True or false: Certain amino acids and fatty acids are called "essential" because your cat's body is able to make them on its own.
17. Which of the following is/are known for its/their anti-oxidant qualities?
- Vitamin A
 - The "B" family of vitamins
 - Vitamins C and E
 - Vitamin D
 - Vitamin K
18. Animal fat is a good source of _____ for your cat.
- Arachidonic acid
 - Calcium
 - Linoleic acid
 - Vitamin D
19. True or false: Cats lack the metabolic or enzymatic pathways necessary to utilize the plant-based proteins found in grains, nuts, vegetables and legumes.
20. Sunflower, safflower, flaxseed and fish oils are all good sources of _____.

- a. Vitamin K
- b. Glycogen
- c. Fatty acids
- d. Potassium

21. Are niacin (a B vitamin), arginine (an amino acid), taurine and arachidonic acid essential or nonessential nutrients for cats?
22. True or false: A cat could never have too high of a vitamin content in its diet.
23. True or false: By-products in cat food are always something to avoid.
24. True or false: Although cats are descended from desert animals, water is still one of the most important nutrients for them and something they should have access to at all times.
25. Cats need only a trace amount of minerals in their diet. These come from what sources?
- a. Animals only
 - b. Plants only
 - c. Both animal and plant food sources
 - d. Disintegrated rocks and minerals

Answers

1. c — carbohydrates. Cats are “obligate,” or “true,” carnivores, meaning they are designed to get most of their essential nutrients (vitamins, minerals, fatty acids and amino acids) from animal matter rather than plants. Carbohydrates (which are derived from plant sources) are not a necessary part of their diet. Still, most cat foods do contain some carbohydrates, typically grains or legumes. Cats can digest a small amount and do fine. Carbohydrates can be a good source of energy and fiber, which aids in fecal elimination.
2. d — essential amino acids. These include arginine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, valine and taurine. Deficiencies in any of these can cause serious health problems.
3. True. The proteins found in meat, poultry, fish and eggs are “complete” because they contain all of the essential amino acids cats need. The plant-based proteins found in grains, nuts, vegetables and legumes contain only some or just trace amounts of the essential amino acids. Cats are designed to eat primarily complete protein foods.
4. c — grains. Plant-based products such as grains contain only trace amounts of taurine.
5. False. It is Vitamin D that facilitates absorption of calcium and phosphorus.
6. d — fiber. Nutritionists do not classify it as a nutrient, since it is neither digested nor absorbed by the body.
7. b — ash. This is the amount of mineral deposit that remains in a sample of food after it is burned in the laboratory for two hours. Ash contains the essential minerals in a cat’s diet, such as phosphorus, potassium, manganese, magnesium, sodium and calcium. It needs to be in the right balance though. Ash content that is too high may cause urinary tract problems.
8. d — fat soluble. These are found in animal sources. The other category of vitamins — those that are water soluble — are found in liver, fish, eggs and grains. Water-soluble vitamins pass quickly through the cat’s body, while fat-soluble vitamins are stored in the body for longer periods of time.
9. c — Vitamin D. Cats get their Vitamin D when they eat a vitamin-fortified commercial diet, and it is also produced in the skin when they are exposed to sunlight. Vitamin D helps regulate the absorption of calcium and phosphorus into your cat’s body to ensure that enough of the two minerals are deposited into the teeth and bones.
10. True. Dietary fats (or “lipids”) meet two critical needs in a cat’s diet. One, they provide a concentrated source of energy — more than twice as much per gram compared to proteins or carbohydrates. Secondly, they supply essential fatty acids, which are necessary for healthy skin and fur, along with good cell structure and function.

11. c — fiber. While there are not high levels of it in standard cat diets, some manufacturers add extra fiber in their “light” or weight-management diets to aid in the elimination of calories through the digestive tract.
12. b. This is a role of water.
13. False. Cats lack the enzyme lactase, which is necessary to digest lactose (the sugar found in milk), making them lactose intolerant. Giving a cat milk can lead to gastrointestinal upsets. The best source of calcium for cats is a complete and balanced commercial cat food that is fortified with all the essential vitamins and minerals a cat needs — including calcium.
14. d — unsaturated fats. They are found mostly in vegetable sources and include olive, canola and corn oils. Saturated fats, on the other hand, are found primarily in animal sources. (There are some vegetable fats that are saturated though, such as coconut oil, which is solid at room temperature.)
15. d — soybean meal. When essential amino acids are missing or present in very reduced amounts, the ingredient is considered an “incomplete protein source.” Plant-based food sources are considered incomplete protein sources. Meats, poultry, fish and eggs, on the other hand, have complete amino acid profiles and the best types of protein to feed to cats.
16. False. Essential amino acids and fatty acids are those your cat must consume in its diet. However, your cat’s body is able to manufacture nonessential amino acids and fatty acids inside its body.
17. c — Vitamins C and E. Many cat-food manufacturers are now adding Vitamin E to their diets to decrease levels of oxidative stress or amounts of peroxides and free radicals that can damage cells and tissues. As far as the other vitamins: Vitamin A is for skin; B vitamins are for healthy muscles, skin and blood; vitamin D is for healthy bones and teeth; and Vitamin K is known as the blood-clotting vitamin.
18. a — arachidonic acid. This is an omega-6 fatty acid, which is an essential nutrient in your cat’s diet. Dogs, people and other omnivores need arachidonic acid, too, but they are able to get it from plant sources, converting the linoleic acid (another omega-6 fatty acid) found in vegetable oils to arachidonic acid. The cat body can’t do this. Cats must derive their arachidonic acid from animal fat, which is another reason why they need to eat a meat-based diet.
19. True. Cats are better able to process the more complete, animal-based protein sources (meat, poultry, fish, eggs).
20. c — fatty acids. These are specific types of polyunsaturated fats. They are essential for the proper functioning of many of the cat’s body systems, including the integumentary (skin and coat), circulatory, reproductive and immune systems.
21. Essential. These are nutrients cats can only get if they eat animal tissue (from prey animals or meat-based commercial cat food). Cats are not able to manufacture these nutrients in their bodies. Nonessential nutrients, however, can be synthesized inside the cat’s body.
22. False. Too many vitamins in the diet can cause a slew of problems for cats, including fatigue, muscle weakness, abdominal bloating, vomiting and diarrhea. Most high-quality, commercially made cat diets contain balanced levels of vitamins adequate to meet the cat’s needs. If a cat is given vitamin supplements on the side, there can be vitamin excesses, and all the potential problems associated with that.
23. False. The cat’s gastrointestinal system is specialized to digest entire animals. That includes the “extra parts” derived from slaughtered animals, such as the liver, lungs, spleen, brain, blood, bone and other so-called by-products. Of course, some by-products, like beaks and hooves, are very low quality, nondigestible protein sources, and these should be avoided.
24. True. Water is especially important for cats that are on dry diets (which generally contain only 10 percent moisture, compared to 70 percent-80 percent moisture for most canned foods). However, even cats on a total canned-food diet need a constant source of water. Water is important for regulation of body temperature, elimination of waste, digestion of food and good kidney health.
25. c — both animal and plant food sources. Most of the mineral sources in commercial cat foods come from bone and meat meals. However, many of the grains and legumes used in cat food contain trace amounts of phosphorus, magnesium, iron, potassium, etc., (plants absorb these inorganic substances from the water and soil), and these add to the

food's mineral content as well.

How you scored

Give yourself one point for each correct answer in this challenging quiz, and then tally up the total.

20-25: Impressive score! Give yourself a pat on the back. You know your nutrition, and probably you and your cat are both eating a healthy diet.

10-19: You're right in the middle of the bell curve. You know something about the most important ingredients to look for on a pet-food label, but you're not exactly a nutrition expert.

9 or below: Chances are, science was not your favorite subject in high school. You might want to re-read the questions and answers in this quiz to try to understand what you didn't get correct. Everyone should understand at least the basics of good nutrition — for their pet's sake and for themselves!

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