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Cat Tips

Researchers Studied Cats' Eating Behavior and You Won't Believe What They Found

Cat lovers worldwide already know it's a very rare cat that's not finicky — sometimes ridiculously so. But what's behind snubbing their nose at food routine? Scientists made some fascinating discoveries about that very question. Get the lowdown right here.

Reviewed by Dr. Becker

STORY AT-A-GLANCE

- Researchers have learned that given the option, cats will choose food that meets their nutritional needs over food that tastes or smells appealing
- Cats may initially opt for food that smells and tastes good, but over time, they learn to choose foods that meet their nutritional requirements
- Kitties often practice neophobia when it comes to their diets, meaning they shy away from new or unfamiliar foods
- Cats are also extremely sensitive to ingredients that may be tainted or rancid
- Given their preference for nutritionally complete foods that are also familiar and fresh, it's no wonder so many cat guardians see their pets as picky or finicky eaters

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If you're owned by a cat, you probably know first-hand what a "picky eater" looks like, unless you happen to share your home with that rarest of beasts, the not-at-all finicky feline.

Most cats, however, are quite particular about their diets, and researchers learned a few things about how domesticated kitties go about choosing the food they eat. They discovered that given the opportunity, cats learn to choose food based on its nutritional value, not on how it smells or tastes.

Cats at First Picked the Smelliest, Yummiest Food on the Menu

The researchers, a team that included scientists from the U.K. and Australia, set out to study macronutrient balancing in domestic cats. Specifically, they hoped to learn to what extent the smell, taste and texture of food influences what kitties choose to eat.[1]

Macronutrients (dietary carbohydrates, fats and proteins) are sources of energy for the body. Prior research has shown that wild herbivores, omnivores and **carnivores** (including cats) naturally forage or hunt for food that provides an ideal balance of macronutrients.

For their study, the scientists created three flavors of wet cat food with about the same protein-to-fat ratio. The foods had an oatmeal-like consistency. One was made with fish, another with rabbit and the third with orange flavoring.

The three diets were presented to a group of cats (male and female). Initially, all the kitties chose the foods in the following order:

1. The fish-flavored food
2. The food containing rabbit meat
3. The food with orange flavoring

It wasn't long, however, before things began to change.

With Experience, Cats Learn About the Nutritional Composition of Food

Over time, the cats' bodies provided feedback on the nutrient content of the foods, at which point they began choosing the diets that helped them meet their unique nutritional requirements for protein and fat.

> *"Cats initially selected food based on flavor preferences," lead study author Adrian Hewson-Hughes, Ph.D., explained to Seeker.com, "but after 'learning' (due to prior exposure) about the nutritional composition of the foods, cats selected foods to reach a particular target balance of protein and fat regardless of added flavors."*[2]

Some of the cats in the study began to eat more of the not-so-tasty orange-flavored food because it had the right protein-to-fat ratio as compared to the fish and rabbit-flavored foods, which didn't have the precise nutrient ratio the kitties instinctively knew they needed — a form of feline pharmacognosy, if you will.

Specifically, the cats' ideal protein-to-fat ratio was about 1 to 0.4, which means about 50% of their energy is derived from fat, and 50% from protein. The study authors concluded:

> *"... Macronutrient balancing is a powerful driver of food selection in cats and points to the ability to detect and respond to post-ingestive macronutrient signals that are distinct from sensory aspects contributing to the apparent palatability of foods."*[3]

Cats appear to receive signals from their bodies during and after eating that provide information about the quantity and quality of nutrition they are ingesting, and therefore, the type of food they need more of, or less of, in future meals.

Other Ways Nature Influences Your Cat's Eating Behavior

> *"Cats can display neophobia," says Hewson-Hughes. "This means they are unwilling to try a food that is new or different to their normal food, which may make them appear fussy."*[4]

There’s probably a very good reason why kitties aren’t keen to try new foods. Being obligate carnivores, cats evolved to eat a diet of primarily animal meat. Since eating a strange new critter in the wild could result in serious illness or worse, neophobia likely helps cats stay alive.

In addition, domestic kitties can recognize bitterness at the molecular level, which means they can detect rancidity with extreme accuracy. Four things to keep in mind for those of you who can’t seem to make Miss Kitty happy no matter what you feed her:

1. With each meal, she’s learning about the nutritional value of the food and whether she needs more or less of it. That could mean the food you've been giving her for weeks and that she initially seemed to love isn’t so enticing after a period of time.
2. If you’re offering a new type of food, she may be backing away from the bowl due to neophobia.
3. Her innate sensitivity to "off" ingredients in food may cause her to occasionally turn up her nose.
4. Think about the type of bowl you’re feeding her from and her environment at mealtime. Research shows these factors can dramatically alter a cat’s appetite and have nothing to do with the food itself.

When you consider all that's going on when your feline family member strolls up to her food bowl, is it any surprise she sometimes seems impossible to please?

A Word About Carbs in Cat Food

You'll note that carbohydrates, as one of the three main macronutrients, aren't even mentioned in the study results. The three foods the researchers formulated contained only negligible amounts of carbs, because cats aren't designed to process a lot of carbohydrates.

They have no taste receptors for sweet flavors, low rates of glucose uptake in the intestine, no salivary amylase to break down starches and reduced capacity of pancreatic amylase and intestinal disaccharidases. In other words, cats don't produce the enzymes required to digest carbohydrates.

The only carbs felines eat in the wild are pre-digested by prey animals. Many of the illnesses we see in cats today are attributable to carb-laden, biologically inappropriate commercial pet food formulas.

If your kitty's body is incapable of digesting a heavy carbohydrate load, and she's eating cat food with a high carb content, she's at increased risk for digestive disease and other serious conditions, like diabetes and pancreatitis related to eating a diet unfit for her species.

How to Keep Your Picky Eater Well-Nourished

The goal in feeding your cat a diet she can truly thrive on is to mimic her ancestral diet as closely as possible. That means a nutritionally balanced, fresh homemade diet. Since you never want to just wing it when preparing your pet's meals at home, it's critically important that you know your homemade diet is balanced. The great thing about homemade raw diets is you get to handpick the ingredients.

You know the quality of the meat you're using. With homemade food, you're in complete control of every ingredient that enters your kitty's body. And of course, raw food is just that. It's raw and unadulterated. It contains all of the enzymes and phytonutrients that are typically destroyed during food processing.

Sources and References

[1, 3] Journal of Experimental Biology 2011 214:1039-1051

[2, 4] Seeker, Science, June 15, 2016 (Archived)