

Quinn on Nutrition: Incomplete proteins

August 9 2019, by Barbara Quinn



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Q: Thanks for your very informative column on the nutritional value of beans. One of the things you said was that beans are high in protein. Many years ago I read that beans were an incomplete protein, so you

should eat them with corn, and then the two together made a complete protein.

Some time later I read that you didn't have to eat them at the same meal; if you had one of them at one meal, and the other at a different meal the same day, that still made a complete [protein](#).

Does either of these ideas hold in current thinking, or are beans now considered a complete protein?

- Thanks, Ann F.

Good questions, Ann. Beans are incomplete proteins because they are low in one key amino acid (amino acids are used by the body to build protein) called methionine. Cereal grains—including corn, rice and wheat—are high in methionine yet lack another amino [acid](#) found in beans.

So if you eat beans with a grain such as corn or rice, your body gets all the essential amino acids it needs to build quality protein. It's almost romantic ... two incomplete proteins become complete when they get together.

And it's also true that we don't necessarily have to eat these complementary proteins at the same meal to get the benefit. What's most important, especially for vegetarians, is to eat a variety of foods throughout the day. Our bodies are smart enough to pick and choose the [essential amino acids](#) they need—even if they aren't provided at the same time.

On the other hand, animal-based foods such as eggs, milk, cheese, fish, poultry and meat are "complete" protein foods because they provide all the essential [amino acids](#) to build protein in the body. Let's say you have

eggs for breakfast and a bowl of beans for lunch. Your body can use the complete protein (eggs) to enhance the protein quality of the beans, even if they are eaten at different times.

Beans may vary in flavor, size, color and shape, yet their high nutrient content is remarkably similar, says Susan Raatz, Ph.D. Research Nutritionist for the USDA Human Nutrition Research Center. One bean, however, stands out as the only complete protein in the plant world...soy.

And don't be afraid of the carbohydrates in beans; almost half their carbs are in the form of dietary fiber. Because of this, beans are considered a low glycemic food—they don't tend to spike blood sugars (unless you eat the whole pot). One cup of cooked [beans](#), for example, provides more than half the dietary fiber we need for the whole day.

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