

Researchers strive to increase awareness of forgotten essential nutrient

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A group of researchers at the University of Alberta hopes to draw attention to what has become a forgotten essential nutrient.

[Choline](#), a nutrient found in foods such as egg yolks, [liver](#) and soybeans, does not appear to be high on anyone's list of eating priorities, say Jonathan Curtis, Catherine [Field](#) and René Jacobs, and this is something they want to change.

"It's gone off the radar," said Field, a researcher in nutrition and metabolism in the Department of Agricultural Food and Nutritional Science. "It's not being taught in schools as being an important nutrient, so our dietitians and health professionals don't think about it."

Part of the reason choline has been overlooked, says Field, is because it is produced naturally in the liver. But people can't produce enough to reap the positive benefits the nutrient offers.

Though choline is not as heavily studied as other nutrients, the limited human and animal research published suggests adequate choline intake is important for fetal development, memory function and prevention of liver and muscle damage.

"Choline has many different biological functions related to healthy development and it plays a role in preventing various diseases," said Jacobs, a biochemist who has studied choline metabolism for the past decade.

Despite its apparent health benefits, few Albertans seem to be getting enough choline in their diets, the researchers have found.

"Our preliminary dietary studies clearly show an insufficient choline intake compared to the recommended levels," said Curtis, an analytical chemist and project leader for ongoing choline research at the university.

According to the Institute of Medicine, women should consume 425 milligrams of choline per day—the equivalent of almost four whole eggs. This value is higher for men and pregnant women.

In an ongoing study looking at the nutrition of pregnant women in Edmonton and Calgary, few study participants are meeting the adequate intake for choline and only one of the first 600 women surveyed reported taking a supplement that contained the nutrient.

This statistic is surprising, says Field, given that 97 per cent of women reported consuming at least one supplement.

"Nobody's taking it," Field said. "If there was information out there on choline, we'd see a lot more of it in this group we had."

But even if people are aware of choline's health benefits, they will have a hard time finding a supplement to help them meet the recommended adequate intakes.

Field says when she went searching for a supplement containing the type of choline found in eggs for study purposes, she couldn't find one in any Canadian health food store or even on the Internet. She eventually had to ask Curtis and his lab group to make one.

And making choline supplements could be next on the agenda if research like that which is happening at the U of A continues to point to the importance of choline for health.

In a continuing animal study, Field and her team are looking at the effects of choline during lactation—a nutritionally critical period, but one not well studied.

"It's the most nutritionally stressful period for a woman," Field said. "Her nutritional needs are far

greater than during pregnancy because she has to produce milk, an important source of choline, for this growing infant."

New mother rats were fed diets with varying amounts of choline. The amount they consumed appeared to influence the health of their pups.

"The pups that were fed from the moms who didn't have the choline in the diet survived didn't grow as well," Field said. "If there's a decrease in growth, or not a normal rate of growth, that has large implications for later health."

And those implications are now under the microscope as researchers examine the grown pups, looking at immune-system health and brain development.

Current funding for choline research projects will end in the spring of 2012. The research crew is applying for more grants this summer so they can establish appropriate choline intake levels and work towards making a choline supplement.

Provided by University of Alberta

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