Children's Nutrition Research Center

Nutrition & Your Child

CHILDREN'S NUTRITION RESEARCH CENTER • 1100 BATES • HOUSTON, TEXAS 77030 • NO. 2, 2002

FORTIFIED CEREALS CAN HELP FILL CALCIUM GAP

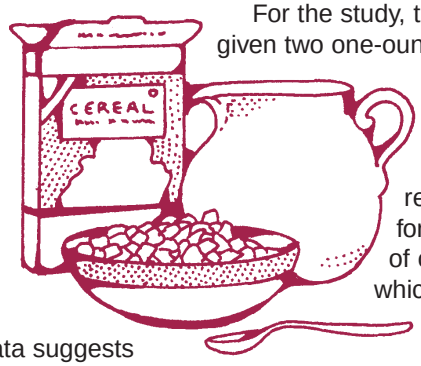
Getting more calcium into on-the-go kids could be easier than you think.

In a study involving 27 6-to 9-year-old children, CNRC researchers found that ready-to-eat cereals fortified with a moderate amount of calcium can help kids meet their calcium needs without interfering with the absorption of iron.

"Simply adding calcium to a food product is not enough," said Dr. Steven Abrams, Professor of Pediatrics at Baylor College of Medicine and a CNRC mineral researcher.

"It is also essential to ensure that the added calcium is actually absorbed and does not interfere with the absorption of other key nutrients present in the food."

Adequate calcium intake in childhood is thought to be essential for reducing the risk for bone fractures among children and osteoporosis later in life. However, government data suggests that only about half of all children in the study's age group consume the recommended amount.



For the study, the children were given two one-ounce servings of calcium-fortified ready-to-eat cereal per day for 14 days. Half the children received cereal fortified with 156 mg. of calcium per ounce, which is about half the amount of calcium present in eight ounces of milk. The others were given a non-fortified cereal that contained 39 mg. of calcium per ounce. The children ate one serving of the cereal at breakfast with milk, the other as an afternoon snack without milk. During the last three days of the study, the children stayed at the CNRC, where they maintained their cereal regime but otherwise ate identical meals. Special "tracers", baked into the cereal by General Mills for the study, enabled Abrams to measure the total amount of calcium and iron each of the children absorbed.

(Continued on page 3)

NEW STUDY INVESTIGATES 'BIRTH' OF FOOD PREFERENCES

A new CNRC study designed to discover just how early in life eating behaviors emerge could one day help new parents raise healthier eaters.

The Babies First pilot study, conducted by CNRC behavioral nutritionist Dr. Jennifer Fisher, is currently recruiting 44 pairs of Houston-area new mothers and their 3- to 12-month-old breast-fed or formula-fed babies. The study requires a single short visit to the CNRC and provides a $50 gift certificate to compensate mothers for their time and cooperation.

"Babies begin life consuming a single food, either breast milk or infant formula. But, by one year of age, their diets tend to be very similar to that of adults," said Fisher, who is also an assistant Professor of Pediatrics at Baylor College of Medicine.

"With this study, we hope to begin to discover the behavioral factors that influence this amazing progression."

Fisher became interested in working with mothers and babies at the CNRC following years of studying differences in food preferences and eating behaviors among 4- and 5-year-old preschoolers at Penn State University.

"It is generally assumed that eating behaviors like food preferences are established in early childhood," she said. "Yet, I believe it's unlikely that younger children or even infants all have similar eating behaviors until they become preschoolers, when like magic, noticeable differences suddenly appear."

In her new CNRC study, Fisher will monitor how babies' food preferences and food intake, as well as other eating behaviors, change during the first year of life, and how these factors relate to growth.

"I believe that this study could help fill an important gap in our understanding of how children's food preferences and behaviors like "picky eating" versus "healthy eating" develop," she said.

Houston-area new mothers interested in participating in Dr. Fisher's new Babies First study are encouraged to call the study's recruitment hotline: (713) 798-6740.❖

INSIDE THIS ISSUE

VOLUNTEERS

Houston-area volunteers are needed to participate in the following studies.

Transportation/parking available. For more information, visit the CNRC website: www.bcm.tmc.edu/cnrc/volunteer.htm

New! Babies First Study

Breastfed and bottle-fed infants, 2 to 11 months of age, and their mothers are needed for a study on infant eating patterns, food preferences and growth. Stipend. Call the study's recruitment hotline at 713-798-6740.

Iron Absorption Study

Children 3 to 5 years of age are needed for a new study determining whether iron is better absorbed when consumed with apple or orange juice. Stipend. Call Dr. Malika Shah, 713-798-7166.

Metabolism Studies

Normal-weight children, ages 6 to 9 and 13 to 17; normal weight, healthy adults, ages 18 to 35; and overweight teens, ages 13 to 16, are needed for metabolism studies. Stipend. Call Andrea, 713-798-7083.

Boy Scouts Achievement Badge Programs

Boy Scouts, ages 11 to 14, are invited to help shape two new programs. Contact Ivan, 713-798-6781 or Ariella, 713-798-7140, or visit http://www.bcm.tmc.edu/cnrc/boyscouts/

BoneMax

Boys and girls, ages 9 to 12, are needed for a one-year calcium-metabolism study. Stipend. Contact Keli, 713-798-7085 or Holly, 713-798-7166.

Viva La Familia

Hispanic families with children 4 to 18 years of age are needed for a study aimed at understanding the factors causing childhood obesity. Stipend. Contact Marilyn, 713-798-7002.

Breastfeeding Study

Pregnant women in their last trimester who plan to breastfeed for at least three months and new mothers currently breastfeeding infants between 2 weeks and 2 months of age are needed for a study of breast-milk sugar production. Stipend. Call Andrea, 713-798-7083.

Biological Diversity of Growth

Any child up to 22 years of age who has previously participated in CNRC studies involving body composition measurements, and Hispanic, African-American and Caucasian young adults, 19 to 22 years of age, are needed for a study on growth. Stipend. Call Marilyn, 713-798-7002.❖

DEVELOPING COUNTRIES GET HELP IN SOLVING NUTRITIONAL PROBLEMS

Health officials in developing countries are getting a boost in their efforts to battle high rates of iron and zinc deficiencies from CNRC researchers.

"Globally, nutritional deficiencies are a factor in over half the deaths in young children," said Dr. Steven Abrams, Professor of Pediatrics at Baylor College of Medicine and a CNRC mineral researcher. "The single most common nutritional problem is iron deficiency, which affects more than half of the children in many developing countries."

"We're trying to help the physicians and scientists in developing countries determine what will improve iron absorption in their children, and avoid the long-term consequences that result from deficiencies," he said.

The effects of iron and zinc deficiencies are far-reaching. Iron deficiency can lead to anemia, long-term developmental problems, and poor school performance. A lack of zinc can cause an increased risk of infection and slow growth.

Abrams, along with Dr. David Hilmers and Dr. Ian Griffin, both Assistant professors of pediatrics at Baylor, are currently working with researchers in 10 countries on iron and zinc deficiency studies.

The team provides assistance and training to health officials in these countries in the design of studies and analysis of data.

"We believe strongly that all the studies should be primarily done by the experts in those countries," Abrams said. "We want to help them develop the techniques necessary to do these studies."

The researchers travel to countries in Latin America, South America, Africa and Asia to help set up the studies. In addition, they provide training for scientists from those countries who travel to the United States to study at the CNRC.

According to Abrams, deficiencies in iron and zinc are worse in developing countries because of the low consumption of meat and fortified foods. And, even when foods in these countries are fortified, the added minerals are not always easily absorbed. The form of supplementation, as well as the presence food components that can block absorption, are factors that must be considered, he said.

The Baylor team advises health officials on how to determine which forms of the supplemental iron and zinc are best absorbed, and which will be most cost-effective.

"In developing countries, we must not only look at what works best, but what is most affordable," said Abrams. "If it costs too much, it won't be used."❖

YOU CAN HELP MAKE CHILDREN HEALTHIER

Nearly 5,000 Houston-area children and family members have helped improve the nutritional well being of the world's children by participating in CNRC studies—and you can to!

To learn more,
call 713-798-7002 or see:
http://www.bmc.tmc.edu/cnrc/volunteer.htm

CHOLESTEROL LEVELS EQUALLY IMPORTANT IN CHILDREN

Ignoring the cholesterol levels of children could put them at risk for heart disease later in life, according to a study by CNRC researchers.

Healthy habits need to begin as early as preschool. —Dr. Teresa Nicklas

"Children have the same issues with cholesterol as adults," said Dr. Theresa Nicklas, a professor of pediatrics at Baylor College of Medicine.

"The cholesterol levels they have as children could play a role in their health as adults."

Though the link between diet and blood cholesterol has been widely studied in adult populations, little research has focused on this relationship during childhood.

Nicklas and her colleagues followed 1,182 third-graders for two years. The food intake of the children was recorded and serum lipid measurements were made at the beginning and again at the follow-up in the fifth grade.

The study results, published recently in the Journal of the American Dietetic Association, showed that the effect of diet on serum lipids in children is similar to that observed in adults. Total fat and saturated fat were positively associated with total cholesterol.

"We clearly need to promote healthier lifestyles earlier in life," Nicklas said. "The growing problem of obesity in children is evidence of that."

Healthy habits need to begin as early as preschool, she said. In the context of healthy cholesterol levels, Nicklas recommends that parents pay attention to three specific areas in their family diet: reducing the amount of fat, particularly saturated fat, in the diet; increasing the consumption of fruits and vegetables and encouraging an active lifestyle.

"Children can be given a healthier diet and still get all the nutrients they need," Nicklas said. "After age 2, there's no problem with switching to a low-fat milk as long as the children are getting a balanced diet."

Another important factor in introducing healthier eating habits early is in establishing habits that will last to adulthood "It's easier to learn healthy habits when you're young than to try to change established habits later on," Nicklas said.❖

TIPS HELP FAMILIES CUT HEART DISEASE RISK

- Decrease portion sizes of high-fat foods like French fries.
- Eat more whole grains, fruits and vegetables.
- Use leaner cuts of meats (white meat of poultry without skin; fish; round or loin cuts of beef; loin cut of pork).
- Eat more "vegetarian" entrees that feature non-meat sources of protein like beans, dried peas and lentils.
- Choose low-fat (1%) or nonfat milk, cheese and other dairy products.
- Cut down on the use of added fats like butter, margarine, mayonnaise, and salad dressing or use low-fat alternatives.

Because fat contains essential nutrients needed for proper growth and development, nutritionists do not recommend restricting the fat intake of a child under 2 years of age. For children over 2 years, using low-fat and fat-free dairy products can help keep dietary fat at the recommended 30 percent of total daily calories. So, read the label and know what you are buying.

For more information on how to help your family tackle unhealthy habits and eat more fruits and vegetables, see the Fall 1999 and Summer 2000 back issues of Nutrition & Your Child (available on our website. See: http://www.bcm.tmc.edu/cnrc/fall99.htm and http://www.bcm.tmc.edu/cnrc/sum00.htm)

KID-FRIENDLY FORTIFIED CEREALS CAN HELP FILL CALCIUM GAP *(Continued from page 1)*

"All the children absorbed about the same amount of iron per day, but those who ate the fortified cereal also absorbed about 50 milligrams more calcium, " Abrams said. Fifty milligrams is about the same amount of calcium children absorb from four ounces of milk.

According to Abrams, finding no effect on iron absorption was important.

"Increasing the amount of one nutrient in the diet can sometimes work against the absorption of others," he said.

"It's clear that many kids could benefit from having other foods that they enjoy and will eat on a regular basis enriched with calcium," said Abrams.

"Calcium-fortified ready-to-eat cereal, which already makes a significant contribution to the overall nutritional quality of many children's diets, is one of those options."❖

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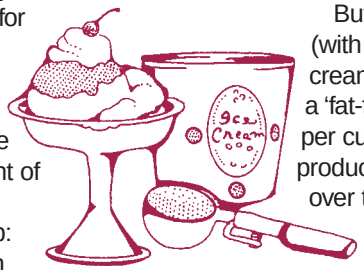
Nutrition Tidbits

Q **Is ice cream a good choice for a child's dessert?**

A Frozen dairy desserts are a great treat and a good source of energy and calcium for children and many adults. However, parents might want to keep an eye on the calorie and fat content of the treats they serve.



Here's the scoop: Although most frozen dairy desserts contain about 20 percent of the daily-recommended value for calcium in one cup, the calorie counts can be dramatically different. 'Regular' ice cream has approximately 16 to 20 grams of fat and about 300 to 350 calories per cup. But choose a 'premium' brands loaded with "goodies" like nuts and chocolate chunks, and you'll be getting nearly twice the fat—and calories—per cup.

But before opting for 'lite' ice cream (with half that amount of fat), low-fat ice cream (about 6 grams of fat per cup), or a 'fat-free' version (about 1 gram of fat per cup), keep in mind that these products might not save many calories over the 'regular' version.

To keep calories under control while enjoying frozen treats, look for "no sugar added" varieties, read food labels and keep a lid on the portion sizes you serve.❖

Find hundreds of articles on topics ranging from breastfeeding to vegetarian teens, links to great food and nutrition web sites and back issues of *Nutrition & Your Child* on the CNRC website. Go to:
http://www.bcm.tmc.edu/cnrc/consumer_news.htm

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URL: http//www.bcm.tmc.edu/cnrc/

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