

HEAPING HELPINGS ENCOURAGE OVEREATING

Parents who avoid piling oversized portions on children's plates could be helping their pint-size diners avoid super-sized appetites and whopper waistlines.

A recent study by CNRC behavioral nutrition scientist Dr. Jennifer Fisher has found that portion size can affect how much some kids eat.

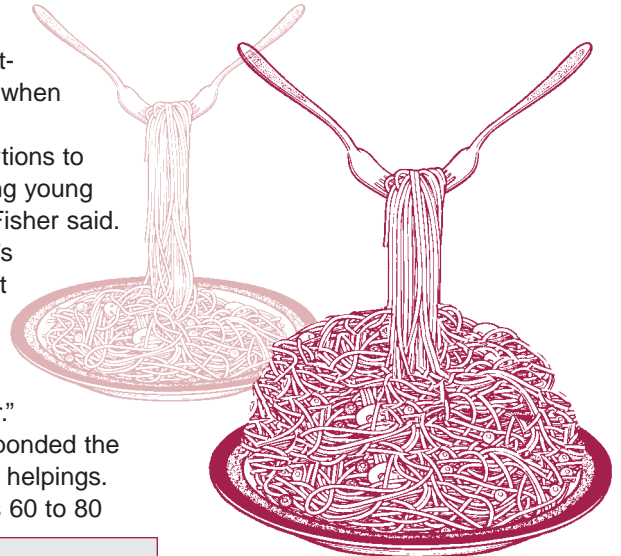
"Preschoolers in our study ate an average of 25 percent more macaroni and cheese when the lunchtime serving was doubled," Fisher said.

Since eating more mac-and-cheese didn't curb the youngsters' appetites for other foods, Fisher found

that the average lunchtime calorie counts jumped a belt-busting 15 percent on days when the entree was super-sized.

"The power of large portions to encourage overeating among young children is a warning flag," Fisher said. "Because not only do today's families eat out and take-out more often than in the past, but restaurant, beverage and snack food portions keep getting bigger."

Yet, not all children responded the same when served heaping helpings. While some ate as much as 60 to 80



MAKING PLANTS MORE NUTRITIOUS

Understanding why some plants like spinach store much of their calcium in a crystalline form could help scientists develop more nutritious varieties for vegetable-munching humans.

"Spinach has plenty of calcium, but it is tied up in calcium oxalate crystals that humans can't digest," said Dr. Paul Nakata, a USDA plant biologist who investigates calcium bioavailability at the CNRC.

According to Nakata, one cup of cooked spinach contains 244 milligrams of calcium. But because most of the calcium is in calcium-oxalate crystals, humans absorb a mere 12 milligrams (five percent).

"On the other hand, because turnip greens are nearly crystal-free, they are an excellent source of calcium," Nakata said. One cup of cooked turnip greens provide about the same amount of calcium as a cup of cow's milk.

To unlock the mystery of calcium oxalate crystal formation and function, Nakata is studying a small, fast-growing plant called *Medicago truncatula*. His lab has inspected thousands of genetic variations of this simple plant, which like spinach, normally stores much of its calcium in crystals.

"These genetic variations look nearly identical to the naked eye," Nakata said. "But when inspected under a microscope, there are strikingly differences. Some have leaf cells packed with calcium oxalate crystals, while others are nearly crystal-free. And, in some plants the crystals appear nearly square, while in others, they are rectangular or diamond shaped."

By studying plants with different crystal structures and content, Nakata hopes to determine whether calcium oxalate crystals play an important role

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percent more when portions were super-sized, others ate about the same amount regardless of the portion size served.

"We don't know why some children were more susceptible to large portions," she said. "However, the children most responsive to large portions were also those who con-

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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! Boy Scout Achievement Badge Programs

Houston-area Boy Scouts, 11 to 14 years of age, are needed to help shape two new programs that use the internet. Contact Ivan, 713-798-6781 or Ariella, 713-798-7140, or visit <http://www.bcm.tmc.edu/cnrc/boyscouts/>

BoneMax

Boys and girls, 9 to 12 years of age, are needed for a one-year calcium-metabolism study. Body composition analysis and stipend. Contact Keli, 713-798-7085 or Holly, 713-798-7166.

Infant Formula Study

Healthy, 6- to 10-week-old formula-fed infants needed for a, two-week study. All formula needed during the study plus and additional 3-month supply provided. Contact Keli, 713-798-7085 or Melissa, 713-798-7125.

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.

Sugar Metabolism Study

Overweight teens, 13 to 16 years of age, and normal-weight children, 6 to 9 and 13 to 17 years of age, are needed for a study on sugar metabolism. Stipend. Call Andrea, 713-798-7083. ❖

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

RESEARCH UPDATE:

Feeding Premies for Optimal Intestinal Growth

Premature infants who must rely on intravenous feedings to survive might benefit from receiving more of their early nutrition orally via tube feedings, according to a recent CNRC study.

“Newborn premies usually start receiving small amounts of oral tube feedings within days of life to help stimulate intestinal growth and development,” said CNRC researcher, Dr. Douglas Burrin. “But until now there has been little research to determine the optimum starting point for these feedings.”

Burrin studied the effect of varying levels of oral versus intravenous feedings on the intestinal growth of newborn piglets, whose gastrointestinal development and function are similar to that of human infants. He discovered that the piglets’ intestinal tissues did not significantly increase in size, protein content or weight—all measures of growth—until oral feedings provided 40 percent of their total nutritional needs. The usual oral feeding starting point for premature infants is 10 to 15 percent of total nutritional needs.

“Intestinal growth is just one factor that doctors who work with newborn premature infants must consider when determining how much nutrition will be given orally,” Burrin said. “But, we believe our research lays the groundwork for clinical studies that determine whether some premature infants would benefit from higher levels of early oral feedings.”

Because certain nutrients, such as amino acids, play a key role in intestinal growth, Burrin is now defining the optimal nutrient mix and amounts to promote intestinal growth and function in his piglets. ❖

Plant Nutrition *(Continued from page 1)*

in helping plants adapt to stressful growing conditions or fend off attacks by pathogens and insects. He is also conducting studies to identify genes that control crystal formation.

“Since the plants that don’t make crystals appear to thrive and be as healthy as those that do, we should be able to breed out or remove this characteristic from *Medicago truncatula*,” Nakata said. “If successful, we can then turn our attention toward making calcium oxalate-containing vegetables like spinach a better source of calcium for humans.” ❖

RAISING A HEALTHY EATER

“Serving over-sized portions, just like tightly policing what children eat, can hinder a child’s ability to develop healthy eating habits, said CNRC behavioral nutrition scientist, Dr. Jennifer Fisher. To help kids avoid developing portion distortion, she offers parents these tips:

Encourage portion-wise table manners:

- > Be a role model for your child. Make sure your own portions aren’t too hefty.
- > Resign from the “clean plate” club. Allow children to stop eating when they are no longer hungry.
- > Allow children to serve themselves whenever possible. Encourage small “first portions,” reassuring children that they can have “seconds” if still hungry.
- > Encourage children to eat slowly and take “small bites.”

Dodge dining-out downfalls:

- > Limit eating out to one to two times a week.
- > Avoid the “super-size” syndrome. Keep fast-food orders “regular” or “small,” suggesting a healthy dessert like low-fat ice cream or frozen yogurt to those whose hunger persists. Also downsize take-out and snack-food purchases.
- > Go family-style. When dining out or ordering take-out, buy just one or two entrees to be placed in the center of the table for sharing. Round out meals with extra vegetables and salads.

Opt for learning opportunities:

- > Take time during shopping excursions to teach older children how to interpret portion-size information on food labels.
- > Insist that snacks be eaten from a small plate or bowl. Outlaw eating any food directly from the original box, bag or carton.
- > Encourage family member to use the Food Guide Pyramid and visual cues to guide their food choices and portion sizes. ❖

VISUAL AIDS MAKE ‘PORTION’ SENSE

Confused about what a half-cup serving of vegetables or three ounces of meat looks like? The following visual cues can help you develop “portion” sense.

Visual Cue	Approx. Size	Food
Woman’s Fist or a Baseball	1 cup	Green salad*, frozen yogurt*, medium piece of fruit* or a baked potato*
Rounded Handful	1/2 cup	Cut fruit*, cooked vegetables*, pasta*, rice*
Golf Ball or Large Egg	1/4 c.	Dried fruit* (e.g., raisins)*
Cassette Tape	3 oz.	Meat*, Poultry*
Checkbook	3 oz.	Grilled Fish*
6 Dice	1-1/2 oz.	Natural cheese*
Other Cues:		
Rounded Handful	1 oz.	Pretzels or Snack Food
Thumb Tip	1 tbsp.	Mayonnaise
1 Dice	1 tsp.	Margarine

*Equal to one serving from the Food Guide Pyramid. To learn more about the Food Guide Pyramid, see <http://www.nal.usda.gov/fnic/fpyr/pyramid.html>
Source: U.S. Department of Agriculture and the American Dietetic Association

DO YOU SUFFER ‘PORTION DISTORTION?’

If you think food portions are bigger than they used to be, you’re right. Take a look at how “typical” restaurant portion sizes have grown over the past 20 years or so:**

Food	Portion Was	Is Now
Soda	6 oz.	20 oz.
Bagels	3-inch diameter	5+ inches
Chips	1 oz. bag	1.75 oz. “grab” bag
Pasta	2 c.	4+ c.
Hamburger	2.5 oz. patty + bun	4 oz. patty + bun
Fries	2 oz.	5 oz.
Restaurant Dinner Plate	10 in. diameter	12-1/2 in.

**Before blaming your local restaurateur for your family’s growing waistlines, take an honest look at how you “value” dining out experiences. According to the National Restaurant Association’s Dinner Decision Making study, most consumers rank portion size as one of the 10 “hallmarks of a great place.”

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sumed the greatest amount of snack foods in the absence of hunger during another phase of the study. We also found that overeaters tended to consume their extra calories not by eating faster, but by taking bigger bites.”

According to Fisher, the study findings suggest a link between an increased susceptibility to external eating cues like super-sized portions and a diminished ability to recognize or respond to internal satiety cues.

“Interestingly, we also found that large portions seem to lose the power to promote overeating when children are allowed to serve themselves,” Fisher said. When the super-sized entrees were in serving bowls instead of piled on children’s plates, the amount the children served themselves and ate mirrored the amount they typically consumed on days when “single-size” entrees were served.

“Young children are not immune to the power of large portions,” she said. “But, simple mealtime strategies like encouraging “small bites” and serving family-style meals can help kids avoid the temptation to overeat.” ❖

Editor’s note: Fisher presented her findings, which were part of a research project at Penn State University, at the North American Association for the Study of Obesity meeting in October.

To learn more about raising a healthy eater, see our resource list at: <http://www.bmc.tmc.edu/cnrc/healthyeating.html>

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Baylor College of Medicine
USDA/ARS Children's Nutrition Research Center
Office of Public Affairs
One Baylor Plaza, Room 176B
Houston, Texas 77030

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CALLING ALL HOUSTON-AREA BOY SCOUTS!

Boy scouts, 11 to 14 years of age, could earn a new achievement badge using the Internet as part of two exciting new programs.

Developed to help encourage healthy eating and physical activity among Houston-area Boy Scouts, the *5-A-Day* or *Physical Activity Achievement Badge* programs are currently recruiting Scouts and their parents to participate in one-hour focus groups. Scouts and parents will be asked to talk about what boys like to eat and the physical activities they like to do.

"Getting scouts and their parents to talk about what matters to them is key to planning programs that can actually help the scouts adopt healthier behaviors," said Dr. Tom Baranowski, a CNRC behavioral scientist and Baylor professor of pediatrics.

The program is also recruiting Boy Scout Troops and Troop Leaders interested in "test driving" the pilot program in Spring 2002. To learn more, contact Ivan at 713-798-6781 or Ariella at 713-798-7140, or visit <http://www.bcm.tmc.edu/cnrc/boyscouts> ❖

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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