



Nutrition for Family Living

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July, 2005 Topics

Breakfast-Is it the most important meal of the day for children and adolescents?
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Breakfast-Is it the most important meal of the day for children and adolescents¹?

By Heather Harvey

A recent review article in the May issue of the *Journal of the American Dietetic Association* looked at whether or not data exist to support the time-honored statement that breakfast is the most important meal of the day. After reviewing 47 studies on a variety of outcomes related to eating breakfast in children and adolescents, the researchers found substantial support for encouraging young people to eat breakfast each morning.

Overall, breakfast consumption declined in children and adolescents from 1965 to 1991. The decline ranged from 5% to 20%, depending on which age group was considered. In addition, breakfast consumption decreases as children age. In a nationally representative sample, the majority of children under the age of 8 ate something for breakfast, while 30% of 15-18 year olds skipped breakfast on the day of the study. However, when you look at the percentage of adolescents who do not eat breakfast daily, this number increases to 59%. Evidence suggests that girls and children from lower income homes tend to skip breakfast more often than boys and children from higher income homes. Children and adolescents that skip breakfast tend to practice other less-healthy behaviors as well, such as smoking, infrequent exercise and dieting. There are a variety of reasons why children skip breakfast including lack of hunger, time, food and attempts at weight loss.

Eating breakfast is generally associated with improved diet quality for children and adolescents. Those who eat breakfast have higher daily energy intakes compared to children who skip breakfast. It appears as though children that do not eat breakfast are not able to make up the calories missed at breakfast over the course of the day. Not surprisingly, children who eat breakfast have higher intakes of carbohydrates, protein, fiber, and fat, although the percent of calories that come from fat is lower in children consuming breakfast. By consuming breakfast, children are more likely to meet nutrient recommendations, especially for calcium, iron, zinc, riboflavin and vitamins A and C. Again, children not eating breakfast are unable to make up for these nutrient deficits over the course of the day.

Among the most commonly consumed breakfast foods are ready-to-eat cereals, milk and various breads. Ready-to-eat cereals play an important role in children's and adolescents' diets, both in terms of calories and nutrient intake. This is because most ready-to-eat cereals are fortified with a variety of nutrients. Children who consumer ready-to-eat cereals tend to have better quality diets and some studies have shown improved biochemical markers such as lower cholesterol levels.

¹ Throughout this article the term children will be used to signify both children and adolescents. When the term adolescents is used on its own, this refers only to children in their teenage years.



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Children and adolescents consuming ready-to-eat cereals also had higher intakes of sugars compared to children consuming low amounts or no ready-to-eat cereal.

There has been much discussion of the relationship of breakfast consumption to weight, in both adults and children. Studies in children on this topic are mostly cross-sectional and only offer a snapshot in time of a situation. Only one study has looked at breakfast consumption related to weight over time in children. A number of cross-sectional studies documented that overweight children skipped breakfast more frequently than normal or underweight children, especially in females. Fewer studies were able to show a relationship between breakfast skipping and body mass index, although there were some that documented this association. Interestingly, the difference in weight between breakfast skippers and breakfast eaters does not appear to be related to calorie intake. As mentioned previously, breakfast skippers tend to consume fewer calories over the course of the day than breakfast eaters. In adolescents, the relationship may be due to breakfast skippers participating in less physical activity compared to breakfast eaters. In the single study that looked at breakfast eating and weight over time, it found that overweight children who skipped breakfast tended to lose weight, while normal weight children who skipped breakfast tended to gain weight.

Another area of research is the relationship of breakfast to academic achievement and cognitive functioning in children. Eating breakfast appears to be of greatest benefit to cognitive skills that include memory function. Eating breakfast does not appear to have as large an effect, if any, on tasks that involve problem solving, listening, comprehension or concentration. This however, does not apply to children who are undernourished. In undernourished children, consuming breakfast has a greater impact on cognitive functioning in the short-term than in adequately nourished children. Eating breakfast also improves psychosocial functioning in children and test scores. School breakfast decreases absenteeism and tardiness in schools as well.

Implications for Extension Educators: Breakfast at home or school can be promoted during educational sessions as part of an overall healthy lifestyle. Children and adolescents typically have diets that are low in fruits, vegetables and fiber. Breakfast offers an ideal opportunity to encourage children to consume fruit, vegetables and whole grains, through the consumption of ready-to-eat cereals, breads and juice or fruit. In addition, adolescents often have low calcium consumption. Encouraging breakfast is an ideal way to promote another serving of milk through eating ready-to-eat cereal, yogurt, cheese or a milk-based smoothie. Many adults and adolescents say they do not have time for breakfast, helping these participants to identify quick and easy breakfast ideas that are rich in whole grains, fruits and milk would be a valuable teaching topic.

Reference :

Rampersaud GC et al. Breakfast Habits, Nutritional Status, Body Weight, and Academic Performance in Children and Adolescents. *Journal of the American Dietetic Association* 2005;105:743-60.



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When it comes to variety, more is better -- sometimes!

By Susan Nitzke

The Dietary Guidelines and the new *MyPyramid* food guidance system encourage variety, but within limits.

- The first of nine major messages in the 2005 Dietary Guidelines Advisory Committee report recommends that Americans “Consume a variety of foods within and among the basic food groups while staying within energy needs.”
- The first Key Recommendation of the Dietary Guidelines document is to “Consume a variety of nutrient-dense foods and beverages within and among the basic food groups while choosing foods that limit the intake of saturated and trans fats, cholesterol, added sugars, salt and alcohol.”
- In *MyPyramid*, variety is symbolized by the 6 color bands representing the 5 food groups of the Pyramid and oils. This illustrates that foods from all groups are needed each day for good health.
- The Education Framework of the *MyPyramid* Food Guidance System has four overarching themes - - variety (eat foods from all food groups and subgroups), proportionality, moderation and activity.
- *MyPyramid* includes a recommendation to “vary your protein choices by selecting more fish, dry beans or peas, and nuts to provide a variety of nutrients in the diet (e.g., essential fatty acids and vitamin E) while keeping saturated fat and cholesterol intake low.
- Variety is encouraged for vegetables in the Dietary Guidelines and *MyPyramid*, with weekly recommendations for 5 vegetable subgroups.
- Choosing a variety of vegetables and fruits each day is a key concept in the *MyPyramid* framework for educators.
- In the “Tips for Eating Healthy when Eating Out” section of *MyPyramid*, there is a recommendation that implies limiting variety and quantity by ordering from the menu instead of heading for the “all-you-can-eat” buffet.

New Research: A phenomenon called “sensory-specific satiety” helps explain the need to limit variety, especially for foods high in fat and sugar. Sensory-specific satiety is said to occur when food with a specific flavor becomes less tasty after the first few bites. Conversely, having lots of foods with different tastes for a meal may lead a person to overeat.

Researchers from Rhode Island, Minnesota and Colorado used data from the National Weight Control Registry to find out whether people who are successful at maintaining weight loss restrict the variety of their food choices. They used data from 2,237 weight loss maintainers who had lost an average of 32 pounds and maintained a weight loss of at least 30 pounds for an average of 6 years. Their study showed that successful weight loss maintainers consume a diet with limited overall variety. Furthermore, weight loss maintainers tend to have the greatest amount of variety in the lower-fat food groups (grains, fruits and vegetables) and less variety when it comes to eating foods high in fats, oils, and sweets.

To learn more, the researchers compared variety between weight loss maintainers from the Registry and 96 people who had recently lost weight during a 6-month treatment program. Variety was lower in the diets of Registry participants than in the recent weight losers and this was true in all the Food Guide Pyramid food groups. The study shows that reducing overall dietary variety may help maintain lower levels of energy (calorie) intake, helping people keep weight off after losing weight.



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Implications for Extension Educators: In some circumstances, the general recommendation to eat a variety of foods can be taken too far. Variety can help increase the overall quality of the diet (eating different types of vegetables instead of mainly potatoes, for example). However, when faced with a variety of foods that are high in sugars and fats, such as one might encounter at a buffet or smorgasbord, variety can encourage a person to eat more than they would otherwise. That is why it is important to teach the concept of variety in the context of encouraging healthy food choices.

Reference:

Raynor HA, Jeffery RW, Phelan S, Hill JO, and Wing RR. Amount of food group variety consumed in the diet and long-term weight loss maintenance. *Obesity Research* 2005;13:883.



The ABCs of Behavior Modification for Obesity

By Rebecca Surles and Sherry Tanumihardjo

Background: The underlying premise of a behavioral approach to weight loss is the analysis of the behavioral causes. This is often called the ABCs of behavior which are illustrated below:



Antecedents → Behavior ← Consequences
(A) (B) (C)

The antecedents are the preceding events that lead up to the behavior. In other words, antecedent cues exist in the environment leading to the multiple causes of obesity. The consequences are the reinforcements that influence the behaviors. Behaviorists propose that by changing the antecedents and consequences, it is possible to change behavior.

Behavior is like a chain and one behavior, linked to another, can contribute to an overeating episode. Behavioral therapy by professionals aims to find the individual's problematic behavior and treat it. What appears to be an unexpected dietary lapse can be traced to a series of small decisions and behaviors (the links of the chain). An analysis of the behavioral chain can reveal where the individual can intervene by using behavioral strategies in the future to prevent unwanted eating or encourage more physical activity. For example, the individual may change the antecedents by not bringing cookies into the house or at least storing them out of sight to reduce impulse eating. Or they may choose to purchase fruit or vegetables in place of the cookies. Often after overeating, an individual may feel upset and therefore continue the behavior. If such an episode occurs, however, one could change the consequences by going for a walk instead of continuing to overeat.

Behavior intervention: The terms behavior and lifestyle modification are often used interchangeably. Lifestyle modification refers to a set of principles and techniques for changing diet and exercise. The first step in behavioral intervention is to identify the specific behaviors to be modified. For weight loss, the key behaviors targeted are those related to energy balance, i.e., increasing energy output and at the same time reducing or maintaining energy intake. An example of a specific behavioral modification to shift energy balance, would be to ride a bike instead of taking the bus to work everyday while maintaining everything else constant. In changing behaviors it is also helpful to set specific goals. A specific short-term goal could be to consume no more than 1400 kcal/day for two months by choosing foods that you usually eat, but reducing portion sizes or added fat and sugar. Short-term goals are usually more effective and attainable than long-term goals. Behaviors are often shaped by setting easier goals initially and then increasing the goal as you progress. A key strategy in the behavioral treatment of obesity recommended by behaviorists is to observe and record eating- and activity-related behavior, which is a technique known as self-monitoring. This includes the type and amount of food, number of calories, grams of fat, minutes exercised, and perhaps calories burned. Environment is a known factor that influences an individual's behavior. By manipulating the environment to change behavior, people can restructure their personal environment to decrease cues for inappropriate food consumption and increase cues for appropriate diet and exercise.



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When attempting to make permanent lifestyle changes, people face many obstacles. Thus, problem solving skills are helpful.

- **Problem solving includes individually identifying and overcoming problems by:**
 - identifying a specific problem that is hindering weight loss efforts
 - generating as many solutions as possible to the problem
 - evaluating the possible solutions and selecting one
 - implementing the solution
 - evaluating the outcome and repeating the problem-solving process if necessary

Points to ponder: Problems are a normal part of managing our weight, but they can be dealt with effectively. For example, ask yourself what is the particular problem facing you right now? What is your goal in this situation? What are the likely short- and long-term consequences of each of your options? What solution plans are you going to try and how will you know if it works? Behaviorists believe the greater the range of possible solutions you consider, the greater your chances of developing an effective solution. As individuals we can prepare and plan for lapses or slips in the weight-loss process. We can anticipate problematic situations (the antecedents) that might result in overeating (the behavior) and develop specific strategies for overcoming these lapses (consequences). Having a plan to deal with a single slip or lapse could ward off the development of a full-blown relapse.

Implications for Extension Educators: While we do not perform behavioral treatment, one of the underlying working principles for the Wisconsin Nutrition Education Program is that “participants will improve eating and physical activity behaviors in accordance with the Dietary Guidelines for Americans” realizing “that change in behavior involves a series of stages or steps.” As we begin to incorporate the 2005 Dietary Guidelines into our teaching and daily living, keep in mind that change in behavior often does not happen over night.

References:

Wadden, T.A. and Butryn, M.L. Behavioral treatment of obesity. *Endocrinol. Metab. Clin. N. Am.* 32: 981-1003, 2003.

Wing, R.R., Gorin, A., and Tate, D. Strategies for changing eating and exercise behavior. In: *Present Knowledge in Nutrition*, 8th Edition, ILSI Press 2001.

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