Breakfast—Good Nutrition Throughout Life

Is breakfast really the most important meal of the day? Or are the assumed benefits of breakfast cited so frequently they become ingrained in our beliefs with little thought about their scientific validity? This issue of Health Connections reviews some of the research on breakfast as a strategy to improve clients’ daily food patterns and choices.

Defining “Breakfast” and Potential Benefits

Although definitions of breakfast often vary in time of day, types of food or composition of the meal eaten, breakfast is a unique meal because it is the time when prolonged fasting ceases—hence its name “breaking the fast.” The proportion of people who report regularly eating breakfast has dropped over past decades among children, adolescents and adults, perhaps due in part to the misconception that skipping breakfast helps with weight control. The 2010 Dietary Guidelines for Americans was the first edition to include the specific recommendation to “eat a nutrient-dense breakfast” based on the Dietary Guidelines Advisory Committee’s (DGAC) review that breakfast has been associated with weight loss and weight loss maintenance, as well as improved nutrient intake. Individuals who consumed breakfast consistently had higher intakes of fiber; thiamin; niacin; riboflavin; folate; vitamins B6, B12, A and C; calcium; iron; magnesium; phosphorus; potassium and zinc. In addition, some research suggests an association with lower risk of a spectrum of metabolic conditions (described below).

Potential Consequences of Skipping Breakfast

Only a few of the studies conducted on skipping breakfast can be described here.

- According to the evidence-based review by the 2010 DGAC, moderate evidence suggests that children and adolescents who do not eat breakfast are at increased risk of overweight and obesity. With 12–34 percent of youth regularly skipping breakfast, it is important to emphasize breakfast habits among youth when behavioral patterns are developing. See also http://tinyurl.com/n7zyokn.

- Pilot studies in children and adults suggest that breakfast frequency (especially daily consumption) and quality (foods such as fiber and nutrient-rich whole grains, fruit and low-fat dairy) may be related to appetite and blood sugar control.

- In the Coronary Artery Risk Development in Young Adults (CARDIA) study, participants who reported eating breakfast daily gained significantly less weight over the 18-year follow-up. Those who reported eating breakfast every day had a significantly lower risk of an array of metabolic outcomes relative to their peers who

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infrequently or never ate breakfast, independent of adiposity and the overall quality of the dietary pattern.\(^3\)

- In a large, prospective study of health professionals, men who skipped breakfast had an increased risk of coronary heart disease compared with men who ate breakfast, perhaps mediated through a combination of the mechanistic pathways of obesity, hypertension, hypercholesterolemia and diabetes mellitus.\(^4\)

Although other observational studies have been conducted, additional clinical trials to support causality between breakfast eating and the many different health outcomes are needed.

### Breakfast Composition and Size

Other studies have investigated the effect of breakfast size and composition on health outcomes and food-related behavior.

- Daily breakfast, particularly one rich in protein, appears to improve satiety, reduce food motivation/reward, improve diet quality and lower intake of high-fat evening snacks in overweight/obese teen girls.\(^6\)

- Redistributing daily energy intake to a higher-calorie breakfast with a reduced intake at dinner was found beneficial for the management of obesity and helping with appetite, insulin resistance and metabolic syndrome in overweight and obese women.\(^7\)

- A large, high-protein breakfast was found to improve glycemic control, lower blood pressure, satisfy hunger and reduce need for T2D medications in overweight patients with T2D, as compared to a small, lower-protein breakfast.\(^8\)

In summary, the health implications of eating breakfast remain an active area of research that is needed to support specific recommendations on breakfast timing, frequency and composition. Most studies, however, support the benefits of consuming breakfast of adequate calorie and protein levels.

### References


### Sidebar

**Breakfast Benefits for Children**

(See also [http://tinyurl.com/lpl918b.](http://tinyurl.com/lpl918b.))

- Eating breakfast can lead to higher academic achievement and fewer behavioral problems in youth. Research continues to demonstrate the positive correlation between health and learning that is mutually reinforcing.\(^9\)

- The quality of foods children eat impacts cognition—poor nutrition is linked to absenteeism, hunger symptoms and psychosocial problems.\(^9\)

- School breakfast is a prime opportunity for children to obtain essential nutrients for growth and development. Breakfast in the classroom and grab ‘n’ go options are ways schools can improve student wellness. Encourage families to sign up for the school breakfast program if available. Federal guidelines require nutrient-rich choices like whole grains, fruit and fat-free milk/\(^{flavored}\) milk or 1 percent milk be served.
What is the current state of research on the benefits of breakfast?

There might be something protective about breakfast in that it may lower chronic disease risk, but most studies to date are observational and only establish association rather than causation. The strongest evidence for breakfast’s possible protective role is from studies where eating breakfast daily was associated with lower risk of developing T2D and metabolic risk factors for cardiovascular disease over time. However, breakfast is just one component of a healthy lifestyle. More randomized clinical trials and prospective studies will be needed to establish a causal role between breakfast and specific health outcomes.

Defining breakfast is core to such investigations. Is breakfast a cultural or physiological idea, defined by habit, timing and setting or by outcomes such as caloric contribution or nutrient quality—and do these have health status implications? Some working definitions have been proposed, but there is no single, universally agreed-upon or evidence-based definition. Most observational studies rely upon individual participants’ perception of breakfast rather than using a standardized definition across individuals. Based on current information, it may be that eating any time in the morning is key. However, until more research is done to better define parameters of what aspects of breakfast are most beneficial (e.g., amount of calories, macronutrient composition, timing) and how sleep quality and duration are intertwined with breakfast habits, we’ll continue to have a less than complete understanding of what specific advice to give regarding “eating breakfast.” Despite these problems, some advice can be given based on current knowledge (as discussed below).

How can health professionals frame the discussion around the benefits of breakfast?

There is great media attention given to the pattern and timing of eating throughout the day particularly as it relates to weight control. When working with clients, we can’t talk about breakfast in a vacuum; rather, we must address what’s eaten the rest of the day—the context of total calories is important. Breakfast won’t fix everything—it isn’t the silver bullet—but nutrition professionals can discuss breakfast as an opportunity to improve the quality of the total diet. Rather than trying to change a lot at one time, clients may find eating or improving breakfast choices a small, manageable step toward adopting a healthier lifestyle.

We should also give greater attention to the possibility of underreporting total energy intake. Individuals often underreport their energy intake relative to energy requirements, and this may be due to underreporting whole eating occasions (e.g., snacks), portions eaten or the fat and/or sugar content of foods. Underreporting of eating occasions may account for the observed inverse relation between eating frequency and weight; likewise, underreporting of breakfast may account for the inverse association between breakfast skipping and weight. Clients may be selectively underreporting the frequency of eating breakfast due perhaps to the stigma of eating less nutritious, energy-dense, nutrient-poor foods/beverages at that occasion. Alternatively, if they are skipping breakfast they may be trying to use it as a means to eat less, which often doesn’t work.

What are some other insights into breakfast eating behavior based on your research?

I am interested in how eating patterns may differ across personality types—why some people skip breakfast and others do not. Those who eat breakfast believe in its importance (which may be a cultural or generational carryover), believe it helps in weight management and eat breakfast for energy and/or because they are hungry. Those who skip breakfast (other than for time) claim not to be hungry—it is hard to eat if not physiologically hungry. Why aren’t they hungry? Do they eat large meals too late at night? Also, are they skipping breakfast because of sleeping in late? This calls into question how disrupted circadian rhythms can potentially affect time-of-day nutrient intake and metabolism. These complex interactions and habits may be difficult to change. That is why small steps are important.
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Practice Points

- Ask clients to describe breakfast in their own terms in order to customize solutions.
- Encourage clients to make nutrient-dense choices for breakfast. Any meal or snack should contain at least three food groups for balance: milk and milk products, vegetables, fruits, whole-grain breads and cereals, and/or meat and beans.
- When clients eat a large meal late at night, they may not be hungry—a cycle that is hard to break. Suggest a less filling, drinkable breakfast later in the morning that offers good nutrition (e.g., fruit-yogurt smoothie).
- Encourage clients to wake up slightly earlier to take advantage of the many benefits of breakfast, such as the opportunity to include the “under consumed foods” like low-fat dairy products, fruits, vegetables and whole grains.
- Protein is needed in regular amounts throughout the day (20–30g per meal), particularly for seniors to prevent sarcopenia and for athletes who are building muscle mass. Suggest yogurt, cottage cheese and string cheese as well as hard-cooked eggs, nuts and nut butters. See also http://tinyurl.com/ktrf5g4.
- Suggest homemade-to-go breakfast foods that can be prepared quickly, or the night before. For tips on breakfast made easy, see http://www.HealthyEating.org/Healthy-Eating/Meals-Recipes/Breakfast.aspx.
- For those who have time—older adults or empty nesters—encourage breakfast as an opportunity to connect with friends and family and share food traditions.