



**Sylvia R. Karasu M.D.**  
*The Gravity of Weight*

## Controversy for Breakfast

Researchers investigate "the most important meal of the day."

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"The Breakfast," "Le Petit Dejeuner," by early 20th century French artist Henri Lebasque, private collection.  
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Frodo, Sam, Merry, and Pippin follow Aragorn to meet the elves in a scene from Peter Jackson's 2001 screen adaptation of J.R.R. Tolkien's *The Fellowship of the Ring*. Says Aragorn, "Gentlemen, we do not stop till nightfall." "What about breakfast?" asks Pip. "You've already had breakfast," replies Aragorn. "Yes, we had *one*, but what about second breakfast?" "Don't think he knows about second breakfast, Pip," says Merry. "What about elevenses, luncheon ... he knows about them, doesn't he?" "I wouldn't count on it."

Tolkien writes that hobbits typically eat six meals each day, three of which are eaten prior to lunch; references to breakfast occur throughout his books. Researchers, though, in recent years, are having a difficult enough time evaluating the value of eating one breakfast.

Historically, the Catholic Church condemned eating breakfast. Medieval scholars have interpreted "eating too early," one of 13th century Thomas Aquinas' ways to commit the sin of gluttony, as referring to breakfast (Anderson, *Breakfast: A History*, 2013). Initially, only children and low-status farmers and workmen ate breakfast. By the 17th century, though, still life breakfast scenes appeared in German and Dutch paintings, and by the middle of the 18th century, England and America were "basking in the glow of breakfast's golden age," with rooms set aside for the morning meal (Anderson, 2013). By the end of the 19th century, cookbooks included breakfast menus, French Impressionist artists depicted people eating breakfast, and John Harvey Kellogg had invented his flaked cereal. Against his protests, brother Will added sugar—changing the American "nutritional breakfast landscape" forever (Anderson, 2013). As fewer people sit down to eat breakfast or even eat it at home, breakfast may continue to evolve, with more "portable breakfast foods" a likely future (Spence, *International Journal of Gastronomy and Food Science*, 2017).

How breakfast, though, became the "most important meal of the day" is open to question and based more on anecdotal reports than science (Bonnet et al, *Obesity*, 2020). It may even reflect savvy marketing. Breakfast is big business, with global cereal sales alone, though falling somewhat in recent years (Spence, 2017) still in the billions (Kealey, *Breakfast is a Dangerous Meal*, 2016). Many companies, including McDonald's, hoping to cash in on the popularity of breakfast fare for the so-called "Breakfastarian"—offer typical breakfast foods all day (Spence, 2017). "Breakfast may or may not be the most important meal of the day, but it is certainly an important meal to investigate further" (Betts et al, *Proceedings of the Nutrition Society*, 2016).

Because we interact with food daily, though, we tend to have a sense of "widespread superficial familiarity" with nutrition, say Allison and his colleagues. (Brown et al, *Advances in Nutrition*,



"Breakfast Time," English School, 20th century, private collection.  
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2014). With so many sociological and psychological aspects to food, “expecting everyone to base all their food decisions on scientific evidence is naïve at best” (Brown et al, 2014). It is not surprising, then, that food and particularly breakfast for some reason, engender strong opinions, not only from the public but from researchers themselves. For example, "Breakfast is the most important meal of the day, *but only if you skip it*," says Kealey (2016).



Tom Wesselmann's "Still Life #30," 1963. Cereal remains a typical component of American breakfasts, years after Kellogg's original flaked cereal.  
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It was 20th-century nutritionist Adelle Davis who is credited with saying, “Eat breakfast like a king, lunch like a prince, and dinner like a pauper” (Kealey, 2016). The importance of eating breakfast received another boost from the long-term follow-up studies of those in the National Weight Control Registry (NWCR), begun in 1994 by Wing and Hill, to investigate techniques successful dieters use to maintain a weight loss of at least 10% for a year (and most, for considerably longer). Now including 10,000 (mostly white women), this non-randomized (with no control group) sample describes eating a low-calorie, low-fat diet, with consistent eating

patterns throughout the week and weekend, frequent self-weighing, and one hour of physical exercise daily. Importantly, 78% report eating breakfast every day (Wing and Phelan, *American Journal of Clinical Nutrition*, 2005).

Eating breakfast, then, became associated with and even perceived as causal for both weight loss and maintenance, when the NWCR was merely noting its “co-occurrence” (Brown, Bohan Brown, and Allison, *American Journal of Clinical Nutrition*, 2013). Here is an example where a strong inference distorts available evidence and produces a “patina” of causality, at least in some people's, including researchers', minds (Brown et al, *Letter-to-the-Editor, American Journal of Clinical Nutrition*, 2014).

Evaluating breakfast eating as it relates to weight, though, is surprisingly difficult. There is considerable heterogeneity among studies and not a consensus on how to define *breakfast*, even among randomized controlled studies (Bohan Brown et al, *F1000 Research*, 2020; Frank, *American Journal of Lifestyle Medicine*, 2009), an obvious major limitation in being able to make any public health recommendations (O’Neil et al, *Journal of the Academy of Nutrition and Dietetics*, 2014). Further, there is no consistency on what constitutes *breakfast eating* (e.g. variously defined by number of days/week; eating at specific hours of the day or at a specific time in relation to waking or physical activity; by the quality of the breakfast; by calorie count or percentage of daily energy; or even by the relationship of breakfast to the rest of eating that day) (O’Neil et al, 2014).



"Still Life with Bread," by French artist Bernard Buffet, 1982.  
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At least two studies defined *breakfast eaters* as those who ate breakfast four or more times a week (Schlundt et al, *American Journal of Clinical Nutrition*, 1992; Dhurandhar et al, *American Journal of Clinical Nutrition*, 2014). Another study of almost 15,000 men, women, and children, found about 20% of the U.S. population skips breakfast but of those who do consume it, there were as many as 12 different breakfast patterns. Here skipping

breakfast was defined by eating 50 or fewer calories (Drewnowski et al, *Nutrients*, 2018). Most recently, in their sophisticated systematic review and meta-analysis of ten randomized controlled trials (RCTs), investigators found there were major differences in the populations studied and the length of time (from 72 hours to 16 weeks) of each study (Bohan Brown et al, 2020). Some studies supply food, others allow subjects to choose, and some others did not even ask what foods their subjects were eating (Rong et al, *Journal of the American College of Cardiology*, 2019). Further, investigators have been inconsistent in their methods to gather data, but most have relied on self-report such as by recall or questionnaire, and most do not analyze data with respect to season, climate, medical condition, or even food availability (Frank, 2009).



Drawing of a hobbit with typical hairy feet that do not require shoes, as described in J.R.R. Tolkien's books. Hobbits typically eat six meals a day "when they can get them."  
Source: Wikimedia Commons/Creative Commons Attribution Share Alike 3.0 Unported. Artist Antoine Gledel.

*Bottom line:* Eating breakfast, as opposed to skipping breakfast, does not have a major effect on weight, but it may not be just skipping or eating, but specifically what is eaten in the context of physical activity and caloric count for the day. There is no consistent definition of *breakfast* or even *breakfast skipping*, with considerable heterogeneity in design among studies. Most studies are observational and cross-sectional; even the few that are randomized and controlled are not longer than four months. Eating breakfast, though, may be a marker for those who have a generally healthier lifestyle. My next post will continue with a breakfast theme, including a focus on chrononutrition, metabolic markers, and time-restricted eating.

## About the Author

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