Critical Reviews in Food Science and Nutrition

Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/bfsn20

Symposium Overview: Do We All Eat Breakfast and is it Important?

Marcello Giovannini a, Carlo Agostoni b & Raanan Shamir c d

a Department of Pediatrics, San Paolo Hospital, University of Milan, Italy
b Department of Maternal and Pediatric Sciences, Fondazione IRCCS Cà Granda-Ospedale Maggiore Policlinico, University of Milan, Italy
c Institute of Gastroenterology, Nutrition and Liver Diseases, Schneider Children's Medical Center of Israel, Petach-Tikva, Israel
d Sackler faculty of Medicine, Tel-Aviv University, Tel-Aviv, Israel

Published online: 28 Jan 2010.

To cite this article: Marcello Giovannini , Carlo Agostoni & Raanan Shamir (2010) Symposium Overview: Do We All Eat Breakfast and is it Important?, Critical Reviews in Food Science and Nutrition, 50:2, 97-99, DOI: 10.1080/10408390903467373

To link to this article: http://dx.doi.org/10.1080/10408390903467373

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the “Content”) contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden. Terms & Conditions of access and use can be found at http://www.tandfonline.com/page/terms-and-conditions
Symposium Overview: Do We All Eat Breakfast and is it Important?

MARCELLO GIOVANNINI,1 CARLO AGOSTONI,2 and RAANAN SHAMIR3

1Department of Pediatrics, San Paolo Hospital, University of Milan, Italy
2Department of Maternal and Pediatric Sciences, Fondazione IRCCS Cà Granda–Ospedale Maggiore Policlinico, University of Milan, Italy
3Institute of Gastroenterology, Nutrition and Liver Diseases, Schneider Children’s Medical Center of Israel Petach-Tikva, Israel, Sackler faculty of Medicine, Tel-Aviv University, Tel-Aviv, Israel

Besides genetic and environmental factors, the breakfast meal and the frequency in which it is eaten may influence appetite control, dietary intake and composition, and chronic disease risk. Breakfast skipping may lead to up-regulation of appetite, possibly leading to weight gain over time and deleterious changes in risk factors for diabetes and cardiovascular disease. Breakfast skipping has also been linked to poorer overall diet quality. Regular breakfast consumption, on the other hand, may reduce the risk of chronic diseases due to the potential impact on the composition of the overall diet, and is also associated with improved learning abilities and better school performance in children. Considering the trend to skip, or to have nutritionally inadequate breakfast, suggestions to promote and support breakfast in children and adolescents will be considered.

Keywords Breakfast, breakfast skipping, dietary balance, prevention

BREAKFAST: PREVENTIVE AND BENEFICIAL ROLES

The increased prevalence of obesity in the last decades has turned obesity into the most frequent nutritional disorder in developed countries (Daniels et al., 2005).

Genetic and environmental factors determine the risk of being overweight in a predisposed subject. However, environmental factors (including energy and food intake, psychosocial aspects, eating and physical activity habits) have a larger impact on the increase of obesity prevalence (Moreno and Rodriguez, 2007; Rodriguez and Moreno, 2006).

During these decades of rising obesity prevalence, physical activity among children and adolescents has declined, while time spent in sedentary activities such as watching television and playing computer games has increased (Daniels et al., 2005). In parallel, in nationally representative samples of US children and adolescents, breakfast consumption declined from 1965 to 1991 (Siega-Riz et al., 1998), an alarming situation, since eating breakfast is associated with higher overall dietary quality, and frequency of daily meals has been shown to be inversely associated with the prevalence of being overweight (Toschke et al., 2005).

Obese children eat less energy at breakfast, miss breakfast more frequently, and consume a higher percentage of energy at dinner (Moreno and Rodriguez, 2007). The co-occurrence of decline in the frequency of eating breakfast and the emergence of the obesity epidemic, raised scientific interest in the possible causal role of breakfast in weight control and related disease risks (Timlin and Pereira, 2007). Intriguing lines of research that may have broad public health application include the evaluation of the breakfast meal and the frequency in which it is eaten in driving such important factors as appetite control, dietary quality, and chronic disease risk. Furthermore, eating breakfast or not, and the composition of breakfast cannot be separated from environmental factors such as when is the breakfast eaten, time allocated to breakfast, and societal factors such as eating alone. In the case of dinner, for instance, more favorable dietary patterns and balances have been found in the case of family dinner (Gillman et al., 2000). Accordingly, it may be derived that regular family meals give parents the opportunity to monitor and limit children’s intake of unbalanced food, and to serve as role

Presented as part of the invited workshop “Overall dietary balance for good nutrition in children: the relevance of breakfast” given at the 2008 MilanoPedia- tria meeting, November 22, 2008, in Milan, Italy. The workshop was sponsored by Soremartec Italia Srl. Its contents are solely the responsibility of the authors. The Symposium was chaired by Marcello Giovannini and Raanan Shamir. Address correspondence to: Carlo Agostoni, MD, Department of Maternal and Pediatric Sciences, Fondazione IRCCS Cà Granda–Ospedale Maggiore Policlinico, University of Milan, Via della Commenda, 9, I–20122 Milano, Italy. E-mail: carlo.agostoni@unimi.it
models for healthy eating behavior. Therefore, for a number of behavioral and physiological reasons, the breakfast meal may be of unique importance. In exploring the significance of breakfast, it is important to find an acceptable and unifying definition for breakfast. It has been suggested that breakfast is defined as the first meal of the day, eaten before or at the start of daily activities within 2 hours of waking, typically no later than 10:00 am, and of a calorie level between 20% and 35% of total daily energy needs (Timlin and Pereira, 2007).

There are a number of physiological mechanisms whereby breakfast skipping may lead to up-regulation of appetite, possibly leading to weight gain over time and deleterious changes in risk factors for diabetes and cardiovascular disease. Also, breakfast skipping has been linked to poorer overall dietary quality. Clinical studies in humans have consistently found that increased meal frequency induces changes in metabolism that may improve risk factors for chronic disease (Farshchi et al., 2004; Farshchi et al., 2005). In addition, increased meal frequency reduce appetite and energy intake (Speechly and Buffenstein, 1999; Speechly et al., 1999). These metabolic modifications could be explained from different factors, mainly related to breakfast composition, namely high-carbohydrate, low-glycemic index, and fiber-rich foods. Physiologic changes observed with increased meal frequency and regular breakfast consumption can lead to increased satiety and reduced energy intake. Therefore, individuals who consume breakfast regularly may be at reduced risk for chronic diseases (Pereira et al., 1998; Liese et al., 2003).

Another important general pathway through which regular breakfast consumption may reduce the risk of chronic diseases is its potential impact on the composition of the overall diet. Numerous observational studies showed that regular breakfast eaters have higher diet quality (increased intake of fiber, calcium, vitamins A and C, riboflavin, zinc, iron and decreased intake of calories, fat and cholesterol) relative to breakfast skippers (Nicklas et al., 1998; Kleemola et al., 1999). Accordingly, regular breakfast consumption is associated with improved diet quality and better food choices throughout the day.

For children, breakfast consumption has also been associated with learning and better school performance (Pollitt and Mathews, 1988; Vaisman et al., 1996; Murphy et al., 1998). The importance of breakfast for academic achievement is reflected in the effects of breakfast on cognitive performance (Dye et al., 2000). Skipping breakfast detrimentally affects problem solving, short-term memory, attention, and episodic memory in children (Pollitt et al., 1983; Vaisman et al., 1996; Wesnes et al., 2003). Although the exact reasons for these effects are not fully understood, likely mechanisms include glucose uptake in the brain which differ as a result of the rates at which each breakfast is metabolized.

As indicated earlier, breakfast consumption in the past 25 years has declined for children and adolescents in the United States (Siega-Riz et al., 1998). The risk, however, is not similar across all age groups, since there is a greater decline in eating breakfast in the adolescent age group than for any other age group. Indeed, descriptive results indicated a decline in breakfast consumption between 1965 and 1991, particularly for older adolescents aged 15–18 years; the rates for boys and girls declined from 90% and 84%, respectively, in 1965 to 75% and 65%, respectively, in 1991.

In three successive surveys in France (1993, 1995, 1997), carried out in samples of 1,000 children, aged 9–11 years, breakfast was eaten by 97% of children but, over the three surveys, the reported breakfasts contained only one dairy food, one cereal food, and one fruit or juice (Bellisle and Rolland-Cachera, 2007). Italian data show a similar trend (Bellitali et al., 1996) with 10% children aged 6–11 years usually skipping breakfast, 45% having unbalanced and inadequate breakfast meals. Moreover, food consumed during breakfast had a limited repertoire: milk with coffee was the preferred breakfast for adolescents, sometimes with biscuits, and other foods (like jam and yogurt) were poorly consumed.

The papers presented in this workshop will discuss the role of an overall dietary balance, consider current paediatric eating habits and explore the scientific data available. One of the aims of this workshop was to define areas of needed research on breakfast definition, the relationship between breakfast consumption and dietary habits, metabolic consequences, and the relationship between breakfast consumption and positive health outcomes. Finally, considering the trend to skip, or to have nutritionally inadequate breakfast, suggestions for the promotion and support of breakfast in children and adolescents will be discussed.

REFERENCES


