

# Breakfast in the United States: Food and nutrient intakes in relation to diet quality in National Health and Examination Survey 2011-2014. A study from the International Breakfast Research Initiative

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### Background

Breakfasts that provide more nutrients than calories can be viewed as nutrient-rich meals. Eating breakfast has been associated with a higher daily intake of essential nutrients in both children and adults. Skipping breakfast has been associated with a lower intake of essential nutrients which has been linked to negative health outcomes. Identifying breakfast patterns associated with the highest quality diets for children and adults worldwide continues to be a topic of interest for healthcare providers and consumers.

### Objective

To assess the contribution of the US breakfast on the daily intake of energy and essential nutrients in both children and adults and to apply these results to development of nutrient-rich breakfast guidelines.

### Methods

This study evaluated data from the first day of dietary intakes in the 2011-2012 and 2013-2014 National Health and Nutrition Examination Surveys (NHANES). Data included a total of 14,488 subjects: children (ages 6-12 years; n=2,511), adolescents (ages 13-17 years; n=1,546), adults (ages 18-54 years; n=6,594) and older adults (ages ≥55 years; n=3,837).

### Results

- In total, 82% of children and 80.3% of adults ate breakfast on the first day of the NHANES survey. By age categories, younger children and older adults were most likely to eat breakfast (87.5%). Only 3 out of 4 adolescents and young adults consumed breakfast.

- For all groups, breakfast accounted for approximately 20% of daily energy intake, slightly less than 20% of daily protein and total fat requirements, 20% of fiber and saturated fatty acids, and 25% of total sugars.
- In all groups, breakfast provided substantially more than 20% of the daily intake for magnesium, potassium, phosphorus, niacin, vitamin C, zinc, calcium, thiamin, vitamin B<sub>6</sub>, iron, folate, riboflavin, vitamin A, vitamin B<sub>12</sub>, and retinol, and over 40% of the daily intake for vitamin D.
- For children, typical breakfast foods were milk, baked goods and sweets. Among children, the optimal breakfast patterns were characterized by higher intakes of whole grain cereals, and more milk and yogurt.
- Adult breakfast food choices included coffee/tea, sweets, fats and white bread. Among adults, the optimal breakfast patterns were characterized by higher intakes of citrus fruit, whole fruit and juice, soy, nuts and legumes.

### Conclusion

Breakfast is considered a nutrient-dense meal providing 20% of daily calorie and protein requirements along with essential vitamins and minerals. Even though the typical US breakfast provided more nutrients than calories, there is room for improvement in breakfast quality.

The complete study may be accessed at: <https://pubmed.ncbi.nlm.nih.gov/30200424/>