The following articles are being published in the January 2019 issue of *The Journal of Nutrition*, a publication of the American Society for Nutrition. Summaries of the selected articles appear below; the full text of each article is available by clicking on the links listed. Manuscripts published in *The Journal of Nutrition* are embargoed until the article appears online either as in press (Articles in Press) or as a final version. The embargoes for the following articles have expired.

**Strategies to improve bone health among Hispanic adults: where do we go next?**

**Can skipping breakfast increase risk of type 2 diabetes?**

**Personalizing intake of individual saturated fatty acid: odd or even?**
Strategies to improve bone health among Hispanic adults: where do we go next?

A healthy, balanced diet is important for overall good health, but certain nutrients, such as protein, calcium, vitamin D, potassium, phosphorus, magnesium, and zinc, are particularly important for healthy bones. Inadequate intakes of these nutrients increase the risk of bone loss and subsequent risk of osteoporosis, a condition characterized by low bone mineral density. Because dairy foods provide more of these bone-benefiting nutrients per calorie than any other food, consumption of dairy foods has been shown to be positively related to bone mineral density and reduced bone loss over time among a narrow sample of non-Hispanic whites. Although Puerto Rican adults (the second-highest represented subgroup of Hispanics in the United States) have a higher prevalence of osteoporosis and vitamin D deficiency than non-Hispanic whites, the impact of dietary choices on bone health in this population is poorly understood. Findings from a recent study conducted by Drs. Kelsey Mangano, Katherine Tucker, and Sabrina Noel (University of Massachusetts-Lowell) and published in the January 2019 issue of *The Journal of Nutrition*, reveal a unique dietary pattern that may detrimentally affect bone health.

To test their hypothesis, a total of 904 participants from the Boston Puerto Rican Osteoporosis Study provided diet information using a culturally tailored food-frequency questionnaire. For this study, dairy food groups included milk, yogurt, fluid dairy (milk + yogurt), cheese, cream and dessert dairy. Bone mineral density was measured using dual-energy X-ray absorptiometry, and vitamin D status was defined as sufficient or insufficient using a standard blood test.

The researchers found that higher intakes of modified dairy (milk + yogurt + cheese) and milk alone were significantly associated with higher bone mineral density. However, when compared by vitamin D status, total dairy, fluid dairy (milk + yogurt), and milk intake were significantly related to higher bone mineral density only among those with vitamin D sufficiency. Calcium and vitamin D intakes from all foods were lower than in the Dietary Guidelines, whereas protein intakes were higher compared with other adult populations. The scientists concluded that this unique dietary pattern may detrimentally affect bone health, because dietary protein intakes appear to be protective only under conditions of adequate calcium intake. Potential interventions to improve bone health should include dairy products in combination with public health messages to improve vitamin D sufficiency. Future studies should confirm these findings as well as assess culturally acceptable strategies to improve bone health among Hispanic adults.


For More Information To contact the corresponding author, Kelsey Mangano, please send an e-mail to kelsey_mangano@uml.edu
Can skipping breakfast increase risk of type 2 diabetes?

The prevalence of type 2 diabetes has been dramatically increasing worldwide and is a major health concern. Many well-known lifestyle factors are associated with increased risk of type 2 diabetes; now, a recent study published in the January 2019 issue of *The Journal of Nutrition* suggests that skipping breakfast should be added to the list. Although previous studies have demonstrated an association between breakfast skipping and type 2 diabetes, this lifestyle choice was treated as a dichotomous variable. A research team led by Dr. Aurélie Ballon from the German Diabetes Center hypothesized that not only is there an association between breakfast skipping and type 2 diabetes, but this relation presents in a consistent dose-response manner.

Data for this study were obtained by a systematic review and meta-analysis of 6 prospective cohort studies on breakfast skipping and risk of type 2 diabetes in adults. Breakfast skipping was analyzed as a continuous variable in order to determine whether the risk increased with increased frequency of breakfast skipping (i.e. a dose-response). The influence of body mass index on the association between breakfast skipping and risk of type 2 diabetes was also considered in the final analysis.

Nonlinear dose-response meta-analysis indicated that risk of type 2 diabetes increased with every additional day of breakfast skipping, reaching a plateau at 4–5 days a week. No further increase in risk of type 2 diabetes was observed after 5 days of breakfast skipping per week. This association was partly mediated by obesity, but a positive association persisted after adjustment for obesity, suggesting that other factors might also influence this association. The researchers concluded, “future studies should also focus on breakfast quality.” In other words, would consuming an unhealthy breakfast be better than skipping breakfast altogether?


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**For More Information** To contact the corresponding author, Dr. Sabrina Schlesinger, please send an e-mail to sabrina.schlesinger@ddz.uni-duesseldorf.de

To contact the author of the corresponding commentary, Dr. Rania Mekary, please send an email to rmekary@hsp.harvard.edu
Personalizing intake of individual saturated fatty acid: odd or even?

Not all saturated fatty acids are created equal. That is, saturated fatty acids come in many different chemical configurations. Although some saturated fatty acids consist of many carbon atoms bonded together, others contain just a few. In addition, most saturated fatty acids consist of an even number of carbon atoms, yet some have an odd number. Seemingly, these slight variations in chemical structures can have differential effects on health. Previous studies have observed that some saturated fatty acids are inversely associated with cardiovascular disease risk, whereas others are not. Although dietary guidelines of many countries recommend limiting the intake of saturated fatty acids to < 10% of total energy, not all studies have observed a direct link. Whether subtypes of saturated fatty acids differentially affect health and cardiovascular disease risk requires further investigation. In a recent study published in the January 2019 issue of The Journal of Nutrition, Dr. Yu Zhang (Zhejiang University, China) and colleagues assessed the associations of individual saturated fatty acid intakes with total mortality in a Chinese nationwide population.

This prospective analysis included 7888 women and 6495 men, aged >20 years, from the China Health and Nutrition Survey (1989–2011). Saturated fatty acid intake was calculated based on 3 consecutive 24-hour dietary recalls with a weighing technique in every survey year, in which subjects reported their food consumption. Nutrient intake was calculated through use of the Chinese Food Composition Table, which contains data on the contents of 35 individual fatty acids in foods, including 15 saturated fatty acids. Total energy intake was also calculated.

A total of 1011 deaths were documented with a median of 14 years of follow-up. Total saturated fatty acids and even-chain saturated fatty acids were associated with higher total mortality in women, whereas intake of odd-chain fatty acids was related to lower total mortality in both sexes. Associations of saturated fatty acid intake with total mortality depended on specific saturated fatty acid subtypes and sexes in the Chinese population. Overall, these findings suggest greater consumption of odd-chain saturated fatty acids for both sexes, fewer even-chain saturated fatty acids for women, and more medium-chain fatty acids for men. These recommendations can be personalized to help formulate fat-rich foods in daily diets.

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For More Information To contact the corresponding author, Yu Zhang, please send an e-mail to y_zhang@zju.edu.cn