The Relationship between Calcium Intake and Body Fat

**What is this research about?**

More than half of the population in North America is considered overweight or obese. Consequently, there has been substantial research dedicated to new and improved methods for weight management.

Many studies have focused on the potential link between high calcium intake and low body fat. Previous research has not demonstrated a clear relationship. While this study does not present conclusive evidence, it does provide an observational perspective that suggests an association between high calcium consumption and low body fat.

**What you need to know:**

This study demonstrated a potential link between high calcium intakes and low body and truncal fat percentages. Because of the cross-sectional study design, the researchers cannot conclude that high consumption of calcium necessarily equates with low body fat. Other factors, such as dietary fibre intake, need to be considered in addition to calcium intake.

**How can you use this research?**

**General Public (young adults):** This study shows that increased calcium intake may have health benefits beyond bone health. This research shows a connection between high calcium intakes and low body and truncal fat percentages. With this knowledge, it is suggested that young adults consume at least 1500 mg per day in total, from a variety of sources including dairy, and plant-based calcium such as broccoli and almonds.

**Health providers & public health:** A calcium intake of 1500 mg per day could aid in weight management. Some preliminary evidence in this area suggests that decreased calcium intake stimulates the production of body fat while inhibiting the metabolism of fat. Further studies are required to garner an improved understanding of the processes involved.
What did the researchers do?
The study included 197 primarily Caucasian men and women between 18 and 28 years of age, ranging from normal weight to obese. The participants’ total body and truncal fat percentages were measured using dual-energy x-ray absorptiometry (DXA). Total body fat mass was defined as fat found anywhere on the body, while truncal fat was fat within the core, excluding arms, legs, neck and head. Participants completed a questionnaire inquiring about calcium intake, including frequency, source and serving size. Researchers then estimated how much calcium participants consumed based on the questionnaire.

Calcium sources were separated into five categories for this study:
- dairy products (milk, cheese, and yogurt)
- non-dairy dietary calcium
- dietary calcium (including dairy products)
- supplemental calcium
- total calcium (all dietary and supplemental calcium combined)

Participants also rated their weekly physical activity level on a scale from low to high on an additional questionnaire.

What did the researchers find?
Young adults with higher intakes of dietary and total calcium had a lower total body and truncal fat percentage than those with lower calcium intakes.

This relationship was regardless of gender, and remained after accounting for any differences in physical activity. There was a threshold value of calcium intake, of approximately 1500 mg/day, above which lower body fat was observed.

About the Researchers:
Megan Skinner is currently a Registered Dietitian. At the time of writing the manuscript, she was enrolled in the Applied Human Nutrition program at the University of Guelph, and was completing an undergraduate thesis under the supervision of senior author, A. Buchholz.

Dr. Andrea C. Buchholz and Dr. Janis Randall Simpson are Associate Professors with the Department of Family Relations and Applied Human Nutrition at University of Guelph. This manuscript has been accepted for publication in the Journal of the American College Nutrition. abuchhol@uoguelph.ca

Keywords:
Body fat, truncal fat, body composition, calcium, dairy, adults, obesity.

Cite this work:

This summary is a project of the Institute for Community Engaged Scholarship (ICES) at the University of Guelph, with project partners: the Business Development Office (BDO), SPARK Program at the University of Guelph, and Knowledge Mobilization Unit at York University. This project is part of the Pan-Canadian Research Impact Network. http://csahs.uoguelph.ca/pps/Clear_Research

This work is licensed under the Creative Commons Attribution-NoDerivs 3.0 Unported