Body mass index, lean mass, and body fat percentage as mediators of the relationship between milk consumption and bone health in young adults

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Identifying environmental factors that influence bone health is crucial for developing effective intervention strategies that maximize peak bone mass. The aim of this study was to estimate the relationship between milk consumption and bone mineral density (BMD) in young adults, and to examine whether this relationship is mediated by body mass index (BMI) and total lean and fat mass. A cross-sectional study involving college students (n = 239) from a Spanish public university was performed. Data on milk consumption and anthropometric and body composition variables were collected. The Pearson correlation coefficients among total body BMD, body composition variables, and milk consumption ranged from ?0.111 to ?1.171, most of them statistically significant ($p < 0.05$). The ANCOVA (analysis of covariance) models showed that those with higher regular milk consumption had less total body BMD than those with lower regular milk consumption ($p < 0.05$), even after controlling for different sets of confounders. In the mediation analysis, BMI and lean and fat mass turned out to act as full mediators of the relationship between regular milk consumption and total body BMD (z = ?1.7148, ?1.3208, and ?1.8549, respectively; p ? 0.05). In conclusion, milk consumption, per se, does not seem to have a direct effect on bone development, because its association seems to be fully mediated by body composition variables in young adults.

Body composition

Bone health

Bone mineral density

College students

Dairy products

Milk intake

Weight status

adult

analysis of covariance

article

body fat

body mass

bone density

bone development

college student

controlled study

correlation coefficient

cross-sectional study

fat mass

female

human

human experiment

major clinical study

male

whole milk

young adult

adipose tissue

adolescent

aging

animal

body composition

bone density

diet

drug effect

middle aged

milk

Adipose Tissue

Adolescent

Adult

Aging

Animals

Body Composition

Body Mass Index

Bone Density

Diet Surveys

Female

Humans

Male

Middle Aged

Milk

Young Adult