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Drinking Milk While Strength Training Builds Stronger Bones

A new study published in the October issue of the Journal of the American Dietetic Association (JADA) found that adolescent boys who drank three servings of milk daily while participating in a standardized strength training program had significantly greater increases in bone density compared to those who drank juice.

In addition, the milk group had a better nutrient profile overall with significantly higher intakes of vitamin A, vitamin D, riboflavin, calcium and phosphorous.

"The increase in bone density was twice as great in boys who drank three servings of milk," said Jeff Volek, Ph.D., registered dietitian, assistant professor of kinesiology, University of Connecticut and one of the study's authors.

"These results are important because the teen years are the peak time for building strong bones and many teens don't get the milk and dairy foods they need."

The clinical trial looked at 28 boys, ages 13 to 17 years, over a 12-week period. The data showed that significant increases in whole body bone mineral density were seen as early as six weeks into the study. All participants in the study lost body fat while increasing lean body mass and muscle strength.

"This study is one of the first to look at the effects of adding milk to the diet rather than a retrospective analysis of food intake," said William Kraemer, Ph.D., professor of kinesiology, University of Connecticut and the principal investigator for the study. "The calcium and other nutrients in milk, together with the resistance training, accounted for the enhanced, positive impact on bone density and body composition."

Dairy foods provide three quarters of the calcium in the diets of children and adolescents. The daily recommended intake (DRI) for calcium in boys aged 12-18 years is 1,300 mg – the equivalent of four servings of milk, cheese or yogurt daily. Today, nearly seven out of 10 teenage boys don't get the calcium they need. In addition to its role in bone health, three servings a day of dairy foods may reduce the risk of chronic conditions such as hypertension, obesity and osteoporosis.

"This study reinforces the important role that dairy foods play in developing strong bones and healthy bodies," said Char Heer, registered dietitian, National Dairy Council. "Dairy foods are the best natural sources of calcium and provide a unique combination of nine essential nutrients. Parents and health professionals should encourage teens to enjoy three to four servings of delicious dairy a day, which is as easy as having a slice of cheese, a glass of flavored milk and a grab-and-go container of yogurt." Drinking milk in school is more important for children and adolescents than ever.

"If kids don't drink milk in school, it is unlikely they will get enough calcium," said Heer. "We have found that when milk is made available in newer plastic containers, served at colder temperatures, offered in a variety of flavors and available in convenient locations such as vending machines in school cafeterias, milk consumption among school age children and teens increases."