

New health-economic model shows benefits of boosting dietary calcium intake

November 13 2012

European researchers have published a study which analyses the health economics of increased dairy foods and related reduction in risk of osteoporotic fractures in the population aged over 50.

The study was based on a new analytical model that links nutrition and [fracture risk](#), and [health economics](#). It was based on data from the Netherlands, France and Sweden, countries which have varying levels of dairy product intake in the population.

Study co-author Professor René Rizzoli, Professor of Medicine and Head of the Division of Bone Disease at the University Hospitals of Geneva, said, "Despite the fact that the effects of foods on health are recognized, there are no accepted and proven methodologies to assess the health-economic impacts of foods on the general population. Although this model may be further refined, it does provide a straightforward and easy-to-use method to assess the health-economic impact of food products on health, well-being and costs."

The publication 'Dairy foods and Osteoporosis: An example of Assessing the Health–Economic Impact of Food Products' has been published online in the scientific journal *Osteoporosis International*.

Calcium is contained in different types of foods (including in certain fish and greens), however around 60 to 70% of daily calcium intake in Western Countries is derived from dairy products. In addition to calcium, dairy products also provide a large variety of [essential nutrients](#)

such as minerals, vitamins and proteins that, along with vitamin D, are also beneficial to bone health.

Low dietary intake of calcium has been associated with decreased [bone density](#) and increased risk of osteoporosis, a disease where bone becomes less dense and prone to fracture. Fractures are a costly public health burden, resulting in increased mortality, disability, pain and loss of health-related quality of life. In terms of health-[economic burden](#), hip fractures in particular result in huge expenditures for hospitalization, rehabilitation, and long-term nursing care.

The researchers calculated the number of disability-adjusted life years (DALYS) lost due to hip fractures associated with low nutritional calcium intake and the number of hip fractures that could potentially be prevented each year with intake of additional dairy products. The benefits were highest in France with 2023 prevented hip fractures, followed by Sweden (455) and the Netherlands (132). This represents a substantial health cost savings of approximately 129 million, 34 million and 6 million Euros in these countries, respectively.

"Our study likely underestimates the potential cost savings of increased dietary calcium in that it relies on existing figures for the senior population and does not take into account the long-term benefits to the younger generation," said Rizzoli.

He added, "Adequate nutritional intake and regular exercise during childhood and adolescence, both necessary for the development of peak bone mass, may contribute to bone strength and reduce the risk of osteoporosis and fractures later in life."

More information: Lötters FJB, Lenoir-Wijnkoop I, Fardellone P, Rizzoli R, Rocher E, Poley M.J. Dairy foods and Osteoporosis: An example of Assessing the Health–Economic Impact of Food Products.

Osteoporosis Int (online June 2012). www.springerlink.com/content/m.../fulltext.pdf?MUD=MP

Provided by International Osteoporosis Foundation

Citation: New health-economic model shows benefits of boosting dietary calcium intake (2012, November 13) retrieved 6 May 2024 from <https://medicalxpress.com/news/2012-11-health-economic-benefits-boosting-dietary-calcium.html>

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