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"Got Milk?": How Research Sparked the Birth & Death of the Famous American Campaign

In 1993 the California Milk Processor Board in collaboration with the advertising agency Goodby Silverstein & Partners and dairy farmers created the "Got Milk?" campaign. The message behind the campaign encouraged all Americans to increase their consumption of milk. The ad campaign was industrious at drawing many Americans in. Showing off their favorite celebrities and strongest athletes with the iconic milk mustache and creating the famous milk and cookies treat. This took the American consciousness by storm, thus, increasing the sale of milk nationwide. The logic behind the campaign was that by drinking more milk our bones would become stronger consequently making us healthier. This made sense considering that milk has a considerable supply of calcium and vitamin D. Recently, the sales of milk nationwide have experienced a major decrease. Even more, recent research has shown that the consumption of milk may not strengthen bones and in some studies, researchers have concluded that they may increase the chances of bone fractures and osteoporosis. Nevertheless, the relationship between milk consumption and bone strength remains a heated scientific debate with many mixed research findings.

It is known that low bone mineral density contributes to bone fractures and osteoporosis. Milk is nutrient-rich and supplies an abundance of vitamin D and calcium which is known to strengthen bones. Many scientists believe that increasing the consumption of milk will decrease

the likelihood of low bone mineral density which leads to diseases of the bones. This negative correlation was strongly supported by many research studies. In a 1994 study conducted by Soroko et al., researchers attempted to report the link between lifetime consumption of milk and bone mineral density in a cohort study of 581 post-menopausal white women. The study titled "Lifetime Milk Consumption and Bone Mineral Density in Older Women" concluded, "regular milk consumption in youth and adulthood is associated with better bone mineral density at cortical and trabecular sites in elderly women" (Soroko et al.).

Researchers hypothesized peak bone mass and prevention of osteoporosis would be present in their participants that reported a lifetime of milk consumption. This article examined bone mineral density at specific sites including hip, spine, trochanter, intertrochanter, and mid-radius. The study population included 581 60- to 79- year old white women from Rancho Bernardo, California. Researchers administered a standardized interview to assess smoking history, estrogen, thiazide use, alcohol consumption, and exercise. Also, a food-frequency questionnaire was given to assess the history of calcium supplementation and current dietary calcium intake. Lifetime milk consumption was self-reported in three states of life: adolescence, midlife, and older adulthood. A four-point Likert scale was used ranging from "rarely or never" to "3 or 4 glasses a day". Dual-energy x-ray absorptiometry and single-photon absorptiometry was used to calculate bone mineral density. Researchers used the Mantel-Haenszel test and analyses of covariance to assess linear trends in milk consumption category. Also, adjustments were made to minimize the confounding effects of age, BMI, postmenopausal years, smoking history, thiazide use, estrogen replacement therapy, exercise, and alcohol consumption. Their findings revealed that higher teenage milk intake was significantly associated with increased bone mineral density at the spine and mid-radius but not at the ultra-distal wrist. Higher milk

consumption in adulthood was significantly associated with increased bone mineral density at the mid-radius, spine, total hip, intertrochanter, and trochanter.

This research study has its strengths and weaknesses. First, childhood milk consumption was not assessed. Researchers began assessing milk consumption during adolescence which excluded many years of milk consumption which may have resulted in different findings. Second, considering that the study took place in the 1980s much of the participants' age group would have been children or adolescents during the great depression which would have meant that they may have had less milk consumption due to lower per capita milk consumption and addition to vitamin D to milk shortly after. The strength of this research study was that researchers used a qualitative study to assess their presuppositions. This is the perfect research method because they were looking at how milk affects a certain component of health over the long-term as opposed to trying to look at direct real-time effects. Also, researchers used valid statistical analyses such as the Mantel-Haenszel test which is used for stratified analyses in cohort studies to control for confounding variables. Furthermore, they controlled for other confounding variables by making adjustments to age, BMI, and other lifestyle factors as previously mentioned.

A meta-analysis compiled six cohort studies on milk intake and fracture risk. Researchers questioned whether a low intake of calcium can be used as a risk factor to predict the probability of fracture. This study which included various large-scale studies resulting in a combined population size of 39,563 men and women with a combined 152,000 person-years concluded something much different. Researchers found that "a low intake of milk (less than one glass of milk daily) was not associated with a significantly increased risk of any fracture, osteoporotic fracture, or hip fracture between men and women (Kanis et al.). Researchers used the Poisson

regression model to estimate the risk of fracture in each cohort within separate sexes. Bone mineral density was taken in all but one of the cohort studies at the femoral neck using DXA (dual-energy x-ray absorptiometry). The study measured bone mineral density at the distal forearm using a DTX-200 bone densitometer.

This study was useful due to its very large sample size from the 6 different cohort studies. The statistical method used was a Poisson regression model which is a type of regression analysis used which is primarily used in studies with a large amount of data. Considering the sample size this was a proper statistical method to use. This study had a slight shortcoming in that they only looked at fractures localized to the hip, neck, and distal forearm. Taking account of more body parts such as the spine may have produced more accurate results considering how common these types of osteoporotic fractures are.

The findings reported in this research is contrary to what most of the American population believes. It is fair to say that many research studies have found milk to be a beneficial source of vitamin D and calcium which helps strengthen bones. However, new research is producing findings that oppose this. Also, researchers are discovering its link to heart disease and prostate cancer. In an article published on the Cleveland clinic's website titled "Can Drinking Too Much Milk Make Your Bones More Brittle?" the author cited a study in which researchers found that "drinking too much milk- three or more glasses a day- was not only associated with mortality but also an increased risk of fracture and hip fracture. The mixed research about dairy milk has caused the dairy industry to plummet in sales. The "Got Milk?" campaign came to a stop in 2014. Nonetheless, more research is needed for people to make better conclusions on the efficacy of dairy milk since most of the findings on dairy milk and bone health seem to be associations as opposed to causation.

Work Cited

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