

# Consumption of Dairy Products is Associated with a Lower Incidence of Metabolic Syndrome

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Metabolic syndrome is a condition characterized by the presence of at least three metabolic abnormalities, including central obesity, high blood pressure and impaired glucose and lipid metabolism, which are risk factors for cardiovascular disease. Data from a nine-year prospective study in France found that a higher consumption of dairy products and calcium was associated with a lower incidence of metabolic syndrome, type 2 diabetes (T2D) and abnormal levels of fasting blood glucose. The study also found that cheese consumption was significantly associated with a reduced risk of metabolic syndrome.

Data from previous observational studies conducted in various populations, including the U.S., indicated that dairy foods as well as calcium had been associated with a reduced incidence of metabolic syndrome. The present study evaluated the relationship between dairy products and the nine-year cumulative incidence of metabolic syndrome, impaired fasting glycemia (IFG) and/or T2D in 3,435 men and women enrolled in the Epidemiological Study on the Insulin Resistance Syndrome in France. Two groups of dairy products were defined: 1) cheese or 2) milk and other dairy products (except cheese). Intake of dairy foods and calcium was assessed using a food frequency questionnaire administered at the beginning of the study and again at three years.

## Results:

- After adjusting for confounding variables (including body mass index [BMI]), a higher consumption of dairy products other than cheese, the consumption of cheese alone and the calcium density (amount of calcium/1,000 calories) of the diet each were associated with a significantly lower incidence of metabolic syndrome.
- Similarly, after adjusting for confounding variables (including BMI) a higher consumption of dairy products other than cheese and the calcium density of the diet were associated with a significantly lower incidence of IFG/T2D.
- Consumption of dairy products other than cheese, cheese alone and the calcium density of the diet were associated with a lower nine-year diastolic blood pressure and with lower BMI gain over time.
- Higher cheese intake and the calcium density of the diet were associated with lower triglyceride levels and a lower nine-year increase in waist circumference.
- Dairy intake was associated with lower HDL levels in men; however, it decreased HDL to a lesser degree over time in the highest vs. lowest level of intake. Similarly, even though dairy raised average BMI, it did so to a lesser degree over time in the high vs. low dairy group.

The results of this study add to the overall body of science showing associations between dairy products and reduced risk of metabolic syndrome, T2D and cardiovascular disease. While additional research is needed, this study supports the importance of consuming the recommended amounts of dairy foods for optimal health.

## References:

1. Fumeron F, Lamri A, Khalil CA, et al. Dairy consumption and the incidence of hyperglycemia and the metabolic syndrome. *Diabetes Care*. 2011;34:813-817.
2. Wylie-Rosett J. Dairy products and metabolic risk factors: How much do we know? *Diabetes Care*. 2011;34:1064-1065.