EXECUTIVE SUMMARY

Since the release of the 2010 Dietary Guidelines for Americans (DGA), observational research has been published that indicates higher consumption of dairy foods (including milk, cheese and yogurt) may help reduce the risk of type 2 diabetes (T2D) in a variety of populations. Emerging research has also identified a potential benefit of milkfat-containing foods on T2D risk. The body of observational research on this topic points to a need to begin clinical research to help understand the mechanisms underlying the observed relationships. The current body of research reinforces the importance of meeting the DGA recommendations of 3 servings of low-fat or fat-free dairy foods (e.g., milk, cheese or yogurt) each day for Americans ages 9 years and older.

TYPE 2 DIABETES HAS HIGH PUBLIC HEALTH COSTS

Diabetes affects nearly 26 million Americans ages 20 years and older. Each year, one million people receive a new diagnosis of diabetes, and T2D accounts for 90 to 95% of all diagnosed cases. Genetic and environmental factors influence the development of T2D, and it is well accepted that diet and lifestyle behaviors play a role in disease progression. Many people with T2D can control their blood glucose by taking prescribed oral medication, losing excess weight and following a healthy physical activity program and meal plan. A healthy eating pattern is the foundation for T2D prevention, treatment and management, and research shows that higher consumption of dairy foods (including milk, cheese and yogurt) has been associated with a reduced risk for T2D.

ACCUMULATING EVIDENCE SUPPORTS A BENEFICIAL EFFECT OF DAIRY FOODS IN REDUCING T2D RISK

The DGA identifies factors such as poor diet and physical inactivity as key contributors to the epidemics of overweight, obesity and several diet-related chronic diseases. The 2010 DGA also states that “Moderate evidence…indicates that intake of milk and milk products is associated with a reduced risk of...type 2 diabetes...” New research on this topic has explored the effects of dairy food consumption on T2D via two meta-analyses and 11 prospective cohort studies. Results from the majority of these studies continue to support the association between higher dairy food consumption and a reduced risk for T2D in a range of population groups, providing further support for consuming 3 daily servings of low-fat or fat-free dairy foods (e.g., milk, cheese or yogurt) by Americans 9 years and older.
META-ANALYSES SHOW DECREASED RISK OF T2D WITH HIGHER DAIRY FOOD CONSUMPTION

In a 2013 meta-analysis examining data collected in 17 cohort studies, the researchers found that higher consumption of total dairy foods, low-fat dairy foods and cheese was associated with a lower risk of T2D. Significant associations were also found for higher consumption of yogurt, low-fat or fat-free milk and cheese, compared to lower consumption. These associations were further supported through dose-response analysis showing T2D risk was reduced by 7% for every 400 g of total dairy products per day. In a smaller meta-analysis of seven cohort studies, higher daily consumption of dairy products, in particular low-fat dairy, was associated with a reduced risk of T2D. These authors reported a 14% reduced risk of T2D associated with highest versus lowest dairy food consumption. Dose-response analysis found that adding one serving of dairy per day reduced T2D risk by 5%, and adding one serving of low-fat dairy reduced risk by 10%.

PROSPECTIVE COHORT STUDIES FIND BENEFICIAL OR NO EFFECT OF DAIRY FOODS ON T2D RISK FACTORS

Two large prospective studies conducted in the U.S. found higher consumption of dairy foods was associated with reduced risk for T2D. A study of 82,076 postmenopausal women from the Women’s Health Initiative Observational Study in the U.S. found that low-fat dairy food consumption reduced risk for T2D by 40 to 50% in the upper quintiles compared with the lowest quintile. Yogurt consumption had the strongest association. A study of 37,038 U.S. women who had been tracked since adolescence found that higher dairy food consumption during adolescence was associated with a lower risk of T2D in later adulthood. Prospective studies conducted in other countries have found beneficial or neutral effects of total dairy food consumption, or specific dairy groups such as low-fat dairy, cheese or yogurt, on T2D risk. These findings were observed in a range of population cohorts including European men and women in eight different countries (n=340,234), Japanese middle-aged and older adults (n=59,796) (effect was observed in women only), and cohorts in Britain, Denmark, France and Australia.

MILKFAT IS ASSOCIATED WITH IMPROVED T2D BIOMARKERS AND REDUCED T2D INCIDENCE IN PROSPECTIVE COHORT STUDIES

Emerging research has found specific benefits associated with consumption of milkfat-containing foods. Two recent prospective studies found that individuals with the highest plasma levels of trans-palmitoleate, a biomarker for milkfat intake, had a 48% and 62% lower incidence of T2D, lower insulin resistance, and other metabolic benefits compared to those with the lowest plasma levels. The researchers suggested that dairy fat or trans-palmitoleic acid may be related to the observed benefits of dairy foods on T2D.