



FOOD FOR THOUGHT

LIFESTYLE CHANGES TO MANAGE TYPE 2 DIABETES: MAKING SENSE OF NEW RESEARCH

Type 2 diabetes, or non-insulin-dependent diabetes, was traditionally known as “adult onset diabetes,” since it often appeared in older adults. But now this type of diabetes is affecting many younger adults—and even children—at alarming rates. In fact, the occurrence of type 2 diabetes continues to escalate all over the world. The disease currently affects approximately 135 million people and it is estimated that by 2025, this number will increase to 300 million people (1).

Although the occurrence of type 2 diabetes is on the rise, research is promising as it shows that small dietary and physical activity changes can substantially decrease the risk of diabetes. Furthermore, research shows that dietary and lifestyle changes such as more exercise can help people who have already developed type 2 diabetes.

Prevalence of Diabetes Around the World (2)

Country	Prevalence (2000)	Projected Prevalence (2025)
Russian Federation	9.0%	11.4%
Mexico	8.1%	12.3%
Italy	7.8%	10.0%
United States	7.6%	8.9%
Canada (3)	4.8-5.8%	N/A
Germany	2.2%	2.8%
France	2.1%	2.6%
United Kingdom	2.1%	2.5%

Peanuts May Prevent Type 2 Diabetes

Research from the Nurses' Health Study at the Harvard School of Public Health adds to the body of scientific evidence advocating dietary changes to prevent chronic disease. The study reveals that the consumption of a full serving (1 ounce) of peanuts or other nuts five or more times a week is associated with a 27% reduced risk of developing type 2 diabetes in women (4). Similarly, eating a half serving (1 tablespoon) of peanut butter five or more times a week resulted in a 21% reduced risk of developing the disease (4). The researchers were careful to account for known risk factors for type 2 diabetes such as age, obesity, family history of diabetes, physical activity, smoking, and dietary factors, and peanut and peanut butter consumption protects independently of these.

This association between consuming peanut butter, peanuts and other nuts and type 2 diabetes risk reduction is linear—that is, the highest frequency of consumption provides the greatest protective effect. Study participants who ate peanuts one to four times a week also reduced their risk, but the reduction was much greater when peanuts were consumed five or more times per week (4). A “daily dose” of a small amount of peanuts or peanut butter seems to be the key.

Effect of Peanut/Nut Consumption on Risk of Type 2 Diabetes (4)

Peanut/Nut Consumption	Change in Risk
1-4 servings (1 ounce)/week	16%
≥5 servings (1 ounce)/week	27%

Effect of Peanut Butter Consumption on Risk of Type 2 Diabetes (4)

Peanut Butter Consumption	Change in Risk
1-4 half-servings (1 tablespoon)/week	9%
≥5 half-servings (1 tablespoon)/week	21%

The Harvard researchers concluded, “Our findings suggest potential benefits of higher nut and peanut butter consumption in lowering the risk of type 2 diabetes in women. To avoid increasing caloric intake, regular nut consumption can be recommended as a replacement for consumption of refined grain products or red or processed meats” (4).

In the past, concerns regarding the fat content of nuts and peanut butter often have colored health professionals' attitudes towards these foods. On the concern about weight gain, a recent study showed that frequent nut-eaters do not have higher body weights than non-nut-eaters (5). This may be because

nuts curb hunger, subsequently leading to decreased food intake throughout the day.

The Ongoing Debate: Fat versus Carbohydrate

There is still debate surrounding how much fat versus carbohydrate people should consume, despite the continuing emergence of scientific data on the subject. For years, a low-fat, high-carbohydrate diet was recommended to prevent chronic disease. More recently, research supports a moderate-fat diet (25 to 35% of total calories, provided most of the fat is unsaturated) (6), which may be beneficial for both diabetes management and cardiovascular disease prevention.

Several studies have shown that a higher intake of both monounsaturated (MUFA) and polyunsaturated fat (PUFA) improves the body’s ability to use insulin, thereby potentially decreasing the risk of diabetes (7,8). Conversely, a higher intake of saturated fat and trans fat adversely affects glucose metabolism and decreases the body’s ability to use insulin to lower blood sugar levels (8,9). Strong research also exists to support decreasing trans fatty acids in the diet to prevent cardiovascular disease, which often develops in people with diabetes (10).

International Guidelines for the Nutritional Management of Diabetes

Based on the available scientific evidence, various guidelines have been developed for the nutritional management of diabetes. The following table contains a summary of recommendations from several different countries (11).

Organization	Recommendation	Explanation
American Diabetes Association (2002)	60-70% CHO + MUFA; 15-20% protein (PRO); < 7% SAT; ~ 10% PUFA	Share the calories between MUFA and CHO, while decreasing SAT; No differentiation between types of CHO.
The Canadian Diabetes Association (2000) and Diabetes Australia (2001)	<u>Canadian Diabetes Association:</u> 50-60% CHO; 15% PRO; ≤ 30% total fat; ≤10 SAT low GI <u>Diabetes Australia:</u> high CHO; <30% fat; low GI	A high-CHO, low-fat, and low-SAT diet; Emphasize CHO with a low GI and high-fiber content.

European Association for the Study of Diabetes (2000)	45-60% CHO; 10-20% PRO; 25-35% total fat; also 60-70% CHO + MUFA	A combination of the two recommendations above.
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CHART KEY:

CHO	Carbohydrate
MUFA	Monounsaturated fatty acids
SAT	Saturated fatty acids
PRO	Protein
GI	Glycemic Index

Peanuts Offer Good Balance of Nutrients for People with Diabetes

Peanuts and peanut butter fit well into diets that are consistent with the current guidelines for diabetes management. They can also be an important part of a diet to control blood sugar and prevent cardiovascular disease.

- Peanuts contain mostly “good,” unsaturated fat. They contain a small amount of "saturated fat" (about two grams per one-ounce serving) and no trans fat, the two "bad" kinds of fat (12).
- Peanuts are high in plant protein and can be used to replace animal sources of protein that are higher in saturated fat such as red meat. Peanuts are also rich in arginine, a key amino acid for maintaining healthy blood vessels.
- Peanuts are relatively low in carbohydrates (six grams per one ounce of peanuts).
- Peanuts contain fiber and magnesium, both of which increase the body's ability to use insulin and have been inversely associated with risk of type 2 diabetes (4,13).

Role of the Glycemic Index and Glycemic Load in Diabetes Management

Another area of study related to diabetes and diet involves the glycemic index (GI), which is a relative scale that ranks carbohydrate foods according to how quickly they are absorbed into the body and subsequently elevate blood sugar. The GI of a food may be affected by many variables such as each individual's response, the nutritional profile of the previous meal eaten, and the nutritional profile of the meal (e.g., a carbohydrate meal versus a balanced meal with carbohydrate, fiber, fat and protein) (14).

Glycemic load (GL) is similar to the GI, but takes into account the amount of carbohydrate in a standard serving size of food. Therefore, GL is seen as the better measure when examining foods in the context of an overall healthy diet (14).

Research has shown that eating a low glycemic load diet may help prevent diabetes (15), although more studies are needed. Peanuts have a low GI and can form part of a low GL diet, in part because of the balance of healthful unsaturated fat, protein, fiber, and their low carbohydrate content.

Glycemic Index and Glycemic Load of Common Foods (14,16)

Food	Glycemic Index	Glycemic Load
<i>Peanuts</i>	14	0.7
Lentils	29	5.7
Apple	36	8.1
White Bread	70	21
Water Crackers	74	N/A
Pretzels	89	N/A
Instant White Rice	91	24.8

Eating Peanuts: An Easy Lifestyle Change to Prevent and Manage Diabetes

Research suggests it is possible to reduce the risk of developing type 2 diabetes by making dietary and other lifestyle adjustments. Furthermore, it is becoming evident that the type of fat—that is, the “good” unsaturated fat found in peanuts—is an important factor in preventing and managing type 2 diabetes as well as cardiovascular disease, which is a disease often associated with diabetes.

It is easy to incorporate a small portion of peanut butter or peanuts into a healthy diet each day.

- Start your day with hot or cold cereal and add chopped nuts and dried fruit.
- Spread peanut butter instead of butter or jam on toast.
- Snack on peanuts instead of chips or crackers to satisfy your afternoon hunger.

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