

# Moderate-intensity walking timed just right might help protect against Type 2 diabetes

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A fifteen minute walk after each meal appears to help older people regulate blood sugar levels and could reduce their risk of developing type 2 diabetes, according to a new study by researchers at the George Washington University School of Public Health and Health Services (SPHHS). The study, published today in *Diabetes Care*, found that three short post-meal walks were as effective at reducing blood sugar over 24 hours as a 45-minute walk of the same easy-to-moderate pace. Moreover, post-meal walking was significantly more effective than a sustained walk at lowering blood sugar for up to three hours following the evening meal.

"These findings are good news for people in their 70s and 80s who may feel more capable of engaging in intermittent physical activity on a daily basis, especially if the short walks can be combined with running errands or walking the dog," said lead study author Loretta DiPietro, PhD, MPH, chair of the SPHHS Department of Exercise Science. "The muscle contractions connected with short walks were immediately effective in blunting the potentially damaging elevations in post-meal blood sugar commonly observed in [older people](#)," she said.

The findings, if confirmed by additional research, could lead to an inexpensive preventive strategy for a pre-diabetic condition that can over time develop into frank type 2 diabetes, she said. An estimated 79 million Americans have pre-diabetes but most have no idea they are at risk. Other studies have suggested weight loss and exercise can prevent type 2 diabetes but this is the first study to examine short bouts of physical activity timed around the risky period following meals—a time when blood sugar can rise rapidly and potentially cause damage.

DiPietro and her colleagues recruited ten people age 60 and older who were otherwise healthy but at risk of developing type 2 diabetes due to higher-

than-normal levels of fasting blood sugar and to insufficient levels of [physical activity](#). Older people may be particularly susceptible to impairments in blood sugar control after meals due to insulin resistance in the muscles and also due to a slow or low insulin secretion from the pancreas. Post-meal high blood sugar is a key risk factor in the progression from impaired glucose tolerance (pre-diabetes) to [type 2 diabetes](#) and cardiovascular disease, DiPietro said.

Participants completed three randomly-ordered exercise protocols spaced four weeks apart. Each protocol comprised a 48-hour stay in a whole-room calorimeter, with the first day serving as a control period. On the second day, participants engaged in either post-meal walking for 15 minutes after each meal or 45 minutes of sustained walking performed at 10:30 in the morning or at 4:30 in the afternoon. All walking was performed on a treadmill at an easy-to-moderate pace. Participants ate standardized meals and their blood sugar levels were measured continuously over each 48 hour stay.

The team observed that the most effective time to go for a post-meal walk was after the evening meal. The exaggerated rise in blood sugar after this meal—often the largest of the day—often lasts well into the night and early morning and this was curbed significantly as soon as the participants started to walk on the treadmill, DiPietro said.

Most people eat a big afternoon or evening meal and then take a nap or watch television. "That's the worst thing you can do," DiPietro said. "Let the food digest a bit and then get out and move," she says. A walk timed to follow the big evening meal is particularly important because this research suggests high post-dinner blood sugar is a strong determinant of excessive 24-hour glucose levels, DiPietro said.

The results of this study must be confirmed with larger trials that include more people, DiPietro

cautioned. Still this study monitored [blood sugar levels](#) continuously for 48-hour periods and controlled the environment carefully. The findings have tremendous public health importance in that they offer powerful evidence that smaller doses of exercise repeated several times per day have greater overall benefits to [blood sugar](#) control among older people than one large sustained dose—especially if those short bouts are timed just right.

Provided by George Washington University

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