**Standing up helps prevent Type 2 diabetes**

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University of Leicester researchers reveal how light movement can reduce blood sugar and insulin levels

Women who have an inactive daily routine and are at high risk of Type 2 diabetes can help prevent the condition by regularly standing up or walking for five minutes at a time, a new study has found.

Currently, those at risk of the condition are advised to engage in moderate-to-vigorous physical activity (MVPA) for at least 150 minutes per week. But research published in Diabetes Care, The journal of the American Diabetes Association, suggests thatbreaking up prolonged periods of sitting regularly with five minutes bouts of light movement every 30 minutes significantly reduces blood sugar and insulin levels.

The findings of the study carried out at the Leicester Diabetes Centre demonstrate the importance of incorporating breaks in prolonged sitting into otherwise sedentary lifestyles.

It was led by University of Leicester researchers working for the NIHR Leicester-Loughborough Diet, Lifestyle and Physical Activity Biomedical Research Unit (BRU).

The research set out to determine whether breaking up periods of sitting with regular standing or short walks improved sugar levels across the course of the day and to see whether these observations persisted into the next day in women at high risk of Type 2 diabetes.

The study involved 22 overweight/obese individuals who were randomly assigned to the following conditions*; prolonged, continuous sitting (7.5 hours) or prolonged sitting broken up with either standing or walking at a self-perceived light-intensity (for five minutes every 30 minutes). Standardised breakfast and lunch meals were provided. The following day, all participants returned to undergo the sitting protocol (7.5 hours).*

The researchers observed that interrupting periods of prolonged sitting with five minutes of standing every 30 minutes elicited similar changes to sugar and insulin levels following breakfast and lunch as breaking up sitting with identical periods of self-perceived light-intensity walking. Compared with uninterrupted sitting, standing reduced the rise in sugar levels by 34 per cent (compared with a 28 per cent reduction for walking) and the rise in insulin concentrations by 20 per cent (37 per cent for walking) on the day of the intervention. Moreover, the observations for sugar (standing and walking) and insulin (walking only) persisted into the next day.

Lead researcher Dr Joseph Henson concluded: “Breaking up prolonged sitting with five minute bouts of standing or walking at a self-perceived light intensity significantly reduced sugar and insulin responses in women at high risk of Type 2 diabetes.

“This simple, behavioural approach could inform future public health interventions aimed at improving the metabolic profile of women at a high risk of Type 2 diabetes. As standing and walking are behaviourally more common than MVPA these findings may provide appealing interventional targets in the promotion of metabolic health.”

The Leicester Diabetes Centre is an international centre of excellence in diabetes research, education and innovation led by Professor Melanie Davies and Professor Kamlesh Khunti. Hosted at Leicester General Hospital, the centre is a partnership between the University Hospitals of Leicester NHS Trust and the University of Leicester.

BRUs are focused on translational clinical research, taking new ideas from the laboratory bench to the patient’s bedside to improve health. The Leicester and the Leicester-Loughborough BRU is a national centre of excellence in diet, lifestyle and physical activity. It harnesses the power of experimental science to explore and develop ways to help prevent and treat chronic disease.

The study ‘Breaking Up Prolonged Sitting With Standing or Walking Attenuates the Postprandial Metabolic Response in Postmenopausal Women: A Randomized Acute Study’ is available at:[**http://care.diabetesjournals.org/content/early/2015/11/29/dc15-1240.full.pdf+html**](http://care.diabetesjournals.org/content/early/2015/11/29/dc15-1240.full.pdf+html).