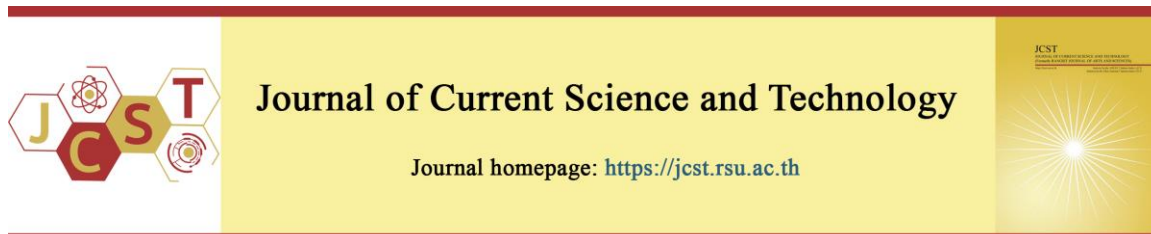


Cite this article: Trakulrungsi, C. (2023). Editor's Note: Soleus pushups and walking two to fifteen minutes after a meal boost metabolism and regulate blood glucose levels. *Journal of Current Science and Technology*, 13(1), i-iii. DOI:



Editor's Note:

Soleus push-ups and walking two to fifteen minutes after a meal boost metabolism and regulate blood glucose levels

Chatchai Trakulrungsi

Anatomy Unit, Department of Medical Sciences, Faculty of Science, Rangsit University,
Patumthani 12000, Thailand

E-mail: chatchai_tr@rsu.ac.th

Published online 2 February 2023

Diabetes is a leading cause of disease and death in the United States (National Health and Nutrition Examination Survey, 2015-2016). According to the National Diabetes Statistics Report (2020), among the overall US population, crude estimates for 2018 were: 34.2 million people of all ages—or 10.5% of the US population—had diabetes; 34.1 million adults aged 18 years or older—or 13.0% of all US adults—had diabetes; 7.3 million adults aged 18 years or older who met laboratory criteria for diabetes were not aware of or did not report having diabetes. This number represents 2.8% of all US adults and 21.4% of all US adults with diabetes. The percentage of adults with diabetes increased with age, reaching 26.8% among those aged 65 years or older.

Risk factors for diabetes-related complications include smoking (based on a self-report). Tobacco use was based on self-reported current cigarette smoking or serum cotinine level >10 ng/mL. The former cigarette smoker was based on both 1) no current tobacco use and 2) a history of smoking at least 100 cigarettes in a lifetime), overweight and obesity (body mass index of 25.0–29.9 kg/m² (overweight), 30.0–39.9 kg/m² (obesity), or 40.0 kg/m² or higher (extreme obesity) calculated from measured values of height and weight), physical inactivity (based on a self-report of less than 10 minutes per week of moderate or vigorous activity in each of the physical activity categories of work, leisure time, and transportation), high blood pressure (based on average measured systolic blood pressure of 140 mmHg or higher or the average diastolic blood pressure of 90 mmHg or higher or self-reported current use of prescription medication for high blood pressure), high cholesterol (was calculated as measured total cholesterol level minus HDL cholesterol level). A non-HDL cholesterol value of 130 mg/dL is roughly equivalent to an LDL level of 100 mg/dL, which indicates an increased risk of diabetes-related complications and eligibility for statin therapy), A1C (was classified based on measured glycated hemoglobin), with values higher than 9% indicating poor glycemic control (American Diabetes Association, 2019; Centers for Disease Control and Prevention. National Diabetes Statistics Report, 2020).

Hamilton, Hamilton, and Zderic, of the University of Houston, published a research article in *iScience* (Hamilton, M. T., Hamilton, D. G., & Zderic, T. W. (2022)). They discovered that the “Soleus push-ups” can boost metabolism and regulate blood glucose level more efficiently than the total body muscles exercises, weight loss, and intermittent fasting.

To do soleus push-ups is to sit on a chair, leg at 90 degrees to the floor, keep your toes, and your feet flat on the ground, and move your heels up and down continuously. You can do soleus push-ups for hours continuously without fatigue. Even while you are sitting down, it can speed up the metabolism and it can improve the rate of sugar leaving from the blood stream by 52% with 60% less insulin requirement. And this occurs two hours after ingesting sugar food. Soleus push-ups are more effective in oxidative metabolism than exercising, weight loss, and intermittent fasting. Oxidative metabolism is a process by which oxygen is used to burn things like blood sugar or fat (Hashmi, 2022; Modern Healthspan, 2022; University of Houston, 2022).

More than that, during soleus push-ups they found that the rate of fat metabolism actually doubled in the period between meals; and it also reduced the total level of fat in the blood (Hashmi, 2022; Modern Healthspan, 2022).

In doing muscle biopsy, what they found was that normally when we exercised glycogen was released from our muscles and glycogen wear out very quickly. The soleus muscle use very little glycogen. Instead, it uses glucose in the blood, and fat in the blood. So, as a result, it can continue doing its work for hours without fatigue. More interestingly, while we are sitting at work, at a dining room meal, we can do soleus push-ups without anybody knowing it.

Soleus is one of the calf muscles (the Triceps surae). It comprises only about 1% of the body weight. It contains predominantly slow twitch (Type I) fibers. The soleus muscle, can generate double or even triple the body oxidative metabolism. On the contrary, we have about some 600 muscles in the body. If we combine all the activity of all the muscles in the body, they can contribute to only about 15% of the whole body oxidative metabolic activity (Hashmi, 2022; Modern Healthspan, 2022; Hashmi, 2022).

In the new normal age, we have a tendency to sit way too much in a day. All sorts of common diseases like heart diseases, diabetes, and dementia are linked to sitting too much (University of Houston, 2022; Hashmi, 2022).

Dr. Mandell (2022) presented that every human being on earth have in common that we love to eat (motivationaldoc, 2022). We eat the wrong food or we eat too much. All that extra glucose that we are getting from our food may not all be getting into our cells. And that glucose molecules that are floating around in our blood stream eventually get turned into fat. That will make so many people around the world become overweight (motivationaldoc, 2022).

Walking after a meal helps clear your mind and aids in digestion. If you just walk 2 minutes after your meal, that will help a tremendous amount of glucose as it gets into muscles cells and our liver without utilizing much insulin at all. This means that we could be reversing insulin resistance as well as preventing us from gaining so much weight that eventually can lead to metabolic syndromes. The research study from sports medicine found that light walking after a meal in increments of as little as two to five minutes was significant in its ability to moderate blood sugar levels. It will still get benefit helping glucose get into the cells even without insulin as the muscles are contracting (motivationaldoc, 2022). Obviously, the more you walk after a meal even if it is up to fifteen minutes you are going to continue to get better changes of insulin sensitivity, better changes of glucose getting absorbed into the cells easier, and better changes of more positive outcomes of preventing insulin resistance and type 2 diabetes (motivationaldoc, 2022). Alternatively, just do more chores or something around the house where you are moving around and you will still reap those advantageous benefits (motivationaldoc, 2022).

Imagine that every day you do soleus push-ups while sitting at work and at the dining room table for hours and you walk two to fifteen minutes after a meal every time, what kind of benefits can you gain? Keep on doing these continuously. You will be healthy and free from obesity, type 2 diabetes, heart disease, and dementia.

References

- Centers for Disease Control and Prevention. National Diabetes Statistics Report, 2020. Atlanta, GA: Centers for Disease Control and Prevention, U.S. Dept of Health and Human Services; 2020.
- Hamilton, M. T., Hamilton, D. G., & Zderic, T. W. (2022). A potent physiological method to magnify and sustain soleus oxidative metabolism improves glucose and lipid regulation. *iScience*, 25(9), 16 September 2022, 104869. DOI: <https://doi.org/10.1016/j.isci.2022.104869>
- Hashmi, S. (2022). Soleus pushup: more effective than exercise, weight loss, and intermittent fasting? You Tube. <https://youtu.be/SnIZ8OV87ZE>
- Modern Healthspan. (2022). Simple Exercise To Reduce Glucose Up To 52%. You Tube. <https://youtu.be/bpmDn5xHXIM>
- motivationaldoc. (2022). How to Lower Your Blood Sugar in 2 Minutes! Dr. Mandell. You Tube. <https://youtu.be/fcJ4o8NDcaA>
- National Diabetes Statistics Report. (2020). Monitoring health for the SDGs Sustainable Development Goals. <https://www.who.int/publications/i/item/9789240051157>
- National Health and Nutrition Examination Survey. (2015-2016). 2015-2016 Data Documentation, Codebook, and Frequencies Plasma Fasting Glucose (GLU_I). First Published: June 2018. Last Revised: August 2020 https://wwwn.cdc.gov/Nchs/Nhanes/2015-2016/GLU_I.htm
- University of Houston. (2022). Discovery Unlocks Potential of 'Special' Muscle. You Tube. <https://youtu.be/yaK6TThRMdE>