

Pre-pregnancy potato consumption and risk of gestational diabetes mellitus

Potatoes are the third most commonly consumed food crop in the world, after rice and wheat. In the United States, about 35% of women of reproductive age (that is, aged 19-50) consume potatoes daily, accounting for 8% of daily total energy intake. In Bangladesh, the potato is also very widely used and it is an important item of First Foods. The health effects of potatoes are inconclusive, and there have been longstanding debates on the appropriate placement of potatoes in dietary guidance. Nonetheless, the Dietary Guidelines for Americans continue to include potatoes in the vegetable food group and encourage consumption. Though potatoes are rich in vitamin C, potassium, dietary fiber, and some phytochemicals, unlike other vegetables they can have detrimental effects on glucose metabolism because they contain large amounts of rapidly absorbable starch. Indeed, several epidemiologic studies have linked higher potato consumption to increased concentrations of fasting plasma glucose, insulin resistance and an increased risk of type 2 diabetes mellitus.

Gestational diabetes mellitus (GDM) is a common complication of pregnancy characterized by glucose intolerance with onset or first recognition during pregnancy. GDM is not only associated with adverse perinatal outcomes, it is also related to increased long term cardiometabolic risk in both mothers and their offspring. It is therefore crucial to identify modifiable risk factors that could contribute to the prevention of GDM. Previous studies have found that a diet with a higher glycemic index is related to higher plasma glucose and HbA1c concentrations during pregnancy and could increase the risk of GDM. The association between consumption of potatoes, a commonly consumed food with a high glycemic index, and GDM risk, remains unknown.

In this large prospective cohort study that higher pre-pregnancy consumption of potatoes was significantly associated with a greater risk of gestational diabetes mellitus (GDM), even after adjustment for other major risk factors for GDM such as age, family history of diabetes, physical activity, overall diet quality, and BMI. That substitution of total potatoes with other vegetables, legumes, or whole grain foods was significantly associated with a lower risk of GDM.

Higher consumption of potatoes, in particular French fries, could be an indicator of a low quality diet. We therefore adjusted for quality of overall diet in our analysis. The associations with risk of GDM were moderately attenuated but remained significant after adjustment for overall diet quality. We observed similar results when we adjusted major food groups related to diabetes (that is, red meat, vegetable and fruit, and whole grain foods) and sugar sweetened beverages in place of overall diet quality score (appendix table A). These data suggest that the association between total potato consumption and risk of GDM could be independent of other dietary risk factors for GDM.

In summary, pre-pregnancy potato consumption was significantly and positively associated with the risk of incident GDM. Substitution of potatoes with other vegetables, legumes, or whole grain foods is associated with a lower risk of GDM.

Dr Shahjada Selim

Assistant Professor

Department of Endocrinology

Bangabandhu Sheikh Mujib Medical University, Dhaka,
Bangladesh

Cell: +880 1919000022

Chamber

Comfort Doctors' Chamber

165-166 Green Road, Dhaka Mobile:
01731956033, 01552468377, **01919000022**
Email: selimshahjada@gmail.com

© DR. SHAHJADA SELIM