

***The Relationship Between Chromium and Vitamin C Intake and Fasting Blood
Glucose Levels in Patients with Type II Diabetes Mellitus at the Internal
Medicine Clinic of RSU Kaliwates***

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ABSTRACT

Diabetes mellitus is a chronic metabolic disease characterized by hyperglycemia caused by impaired insulin secretion, insulin action, or both. The prevalence of type II diabetes mellitus continues to increase globally and nationally. Blood glucose control in diabetic patients is influenced not only by pharmacological therapy but also by micronutrient intake such as chromium and vitamin C, which play an important role in glucose metabolism and insulin sensitivity. This study aimed to determine the relationship between chromium and vitamin C intake and fasting blood glucose levels in patients with type II diabetes mellitus at the Internal Medicine Clinic of Kaliwates General Hospital. This study used a quantitative analytic observational method with a cross-sectional design conducted from January to March 2026 at Kaliwates General Hospital, Jember. There are 83 research respondents, outpatients with type II diabetes mellitus who met the inclusion and exclusion criteria. Data on chromium and vitamin C intake were obtained through interviews using a Semi-Quantitative Food Frequency Questionnaire (SQ-FFQ), while fasting blood glucose data were collected from patients' medical records. Data analysis was performed using the Spearman correlation test. The results showed that the median fasting blood glucose level of respondents was 123 mg/dL (85–215 mg/dL), the median chromium intake was 7.4 µg/day, and the median vitamin C intake was 175.5 mg/day. Statistical analysis showed that there was no significant relationship between chromium intake and fasting blood glucose levels ($p = 0,727$) and no significant relationship between vitamin C intake and fasting blood glucose levels ($p = 0,916$) among patients with type II diabetes mellitus. In conclusion, chromium and vitamin C intake were not significantly associated with fasting blood glucose levels in patients with type II diabetes mellitus at the Internal Medicine Clinic of Kaliwates General Hospital. Further studies are recommended to consider other factors such as dietary adherence, physical activity, and antidiabetic medication use.

Keywords: *type II diabetes mellitus, chromium, vitamin C, fasting blood glucose*