

## Relationship between Multivitamin/Mineral Supplement Use and Presence of Metabolic Syndrome Biomarkers among College Students

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**Objectives:** The purpose of this cross-sectional study is to examine the relationship between frequency of multivitamin/mineral supplement (MVM) usage and presence of biomarkers for metabolic syndrome (MetS) among college students.

**Methods:** Data were collected between 2012-2015 via ongoing college health survey at a mid-size, northeastern university. Demographic information and MVM use by college students 18-24 years of age (n=1,926) was reported via online survey; MetS biomarkers (elevated blood pressure, abdominal obesity, low HDL-cholesterol, elevated glucose, and elevated triglycerides) were collected via physical assessment in the fasted state. Proportional differences between men and women were evaluated via chi-square analyses; mean differences were evaluated via ANCOVA with sex, age, measured BMI, year of data collection, semester, academic major, and average daily kcalories serving as covariates.

**Results:** Mean age of students was  $18.8 \pm 1.0$  years; 69% were female. Overall, 54% of students reported no MVM usage, 22% reported usage 1-5 per week, and 24% reported daily [6+ times/week] usage. Females were more likely than males to report more daily usage of MVM (26 vs. 20%,  $p < .05$ ). More than half (51.2%) of students had no biomarkers for MetS, 34.6% had 1 biomarker of MetS, 11.2% had 2 biomarkers, and 3.0% had 3 biomarkers of MetS. Men were more likely than women to have 2 or more MetS biomarkers (19.1 vs. 12.3%,  $p < .01$ ). Mean number of MetS biomarkers was  $0.68 \pm 0.8$ ; no significant differences in number of MetS biomarkers were observed according to the frequency of MVM usage.

**Conclusions:** No relationship between the use of MVM and presence of biomarkers for MetS among college students was observed. These findings do not support the use of MVM to reduce cardiovascular disease risk among young adults.