Consistent Mental Health Benefits Show by High-Potassium Diets

Researchers investigated the relationship between the intake of minerals such as calcium, zinc, and iron, and the incidence of depression among adults in the United States and Korea.

They found that Korean adults with higher intakes of potassium and sodium were less likely to experience depression, with phosphorus showing a borderline association, a finding similar to that of American adults with higher intakes of potassium and zinc, with iron showing borderline significance.

Study

In this cross-sectional analysis, researchers utilized data from nationally representative health and nutrition surveys in both countries, employing multistage, stratified sampling. Korean adults aged 19 and above and American adults aged 18 and above who completed depression screening were included, excluding those who were pregnant, under depression treatment, or with missing key data.

The final sample included 12,996 Koreans and 9,547 Americans. People with a depression score of 10 or over were considered to be depressed. Dietary mineral intake (calcium, zinc, iron, magnesium, phosphorus, sodium, and potassium) was estimated from 24-hour dietary recalls, using national food composition databases.

Covariates included demographics, socioeconomic factors, body mass index (BMI), lifestyle habits, comorbidities, and total energy intake. Associations between mineral intake and depression were assessed using multivariable logistic regression, adjusting for potential confounders. Survey-specific sampling weights ensured national representativeness.

Results

In the Korean sample, 4.1% of 12,996 participants had depression, while in the American sample, 6.2% of 9,547 participants were affected.

In both countries, individuals with depression were more often female, had lower income and education levels, were more likely to live alone, and showed higher depression screening scores, smoking rates, diabetes prevalence, and comorbidity scores.

Regular exercise was less common in the U.S. depression group. Mineral intake was generally lower among those with depression, except for calcium, which did not follow this pattern.

Multivariable-adjusted analyses showed that in Korea, higher sodium and potassium intakes were significantly associated with lower odds of depression, with phosphorus showing borderline significance.

In the U.S., potassium and zinc were significantly associated, and iron showed borderline significance. Restricted cubic spline analysis indicated that intakes below certain thresholds were linked to higher depression risk.

Subgroup analysis revealed population- and group-specific patterns: For example, sodium was protective among Korean men, potassium among older Americans, and zinc among non-obese Americans. Additional subgroup findings included significant associations for phosphorus among Korean females, potassium, iron, and zinc among U.S. males, and sodium among Koreans aged ≤65 years.

Some minerals were associated with depression in one sex or BMI category but not the other. Potassium was the only mineral consistently linked to lower depression risk in both countries, highlighting its potential universal relevance for mental health. Notably, magnesium and calcium showed no significant associations with depression in either population.

Conclusion

This study found inverse associations between certain minerals and depression, with patterns differing between Korea and the U.S. Potassium consistently showed protective effects in both populations, while sodium was significant in Korea, phosphorus showed borderline significance in Korea, and iron showed borderline significance, and zinc was substantial in the U.S.

These differences may reflect variations in average intake, dietary sources, and nutrient bioavailability, such as substantially higher sodium intake in Korea from fermented vegetables, soups, and stews, or greater bioavailable heme iron and zinc from red meat in the U.S.. In contrast, Korean diets feature more plant-based and seafood sources with lower nutrient bioavailability.

Strengths include large, nationally representative datasets from two culturally distinct countries, the examination of seven minerals, and subgroup analyses revealing demographic and lifestyle influences.

Limitations involve the cross-sectional design, preventing causal inference, possible reverse causation, reliance on 24-hour recall, which may be particularly inaccurate, especially due to depression-related memory impairment, and the use of self-reported depression measures that can be subject to bias.

Overall, the findings suggest that dietary mineral intake could be integrated into mental health strategies. Longitudinal studies are needed to confirm causality and clarify mechanisms linking minerals to depression risk.

Source:

https://www.news-medical.net/news/20250812/High-potassium-diets-show-consistent-mental-health-benefits.aspx