

## **Dietary Quality among U.S. Adults with Diabetes, Osteoarthritis, and Rheumatoid Arthritis: Age-Specific Associations from NHANES 2011-2022**

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**Abstract :** Limited research has examined the variations in dietary quality among U.S. adults diagnosed with chronic conditions like diabetes mellitus (DM), osteoarthritis (OA), and rheumatoid arthritis (RA), particularly across different age groups. Understanding how diet differs in relation to these conditions is crucial to developing targeted nutritional interventions. This cross-sectional study analyzed data from adult participants in the National Health and Nutrition Examination Survey (NHANES) between 2011 and 2021. Dietary quality was measured using the Healthy Eating Index (HEI)-2015 scores, encompassing both total and component scores for different dietary factors. Self-reported disease statuses for DM, OA, and RA were obtained, with age groups stratified into younger adults (20-59 years, n = 10,050) and older adults (60 years and older, n = 5,200). Logistic regression models, adjusted for demographic factors like sex, race/ethnicity, education, income, weight status, physical activity, and smoking, were used to examine the relationship between disease status and dietary quality, accounting for NHANES' complex survey design. Among younger adults, 8% had DM, 10% had OA, and 4% had RA. Among older adults, 22% had DM, 35% had OA, and 7% had RA. The results showed a consistent association between excess added sugar intake and DM in both age groups. In younger adults, excess sodium intake was also linked to DM, while low seafood and plant protein intake was associated with a higher prevalence of RA. Among older adults, a poor overall dietary pattern was strongly associated with RA, while OA showed varying associations depending on the intake of specific nutrients like fiber and saturated fats. The dietary quality of U.S. adults with DM, OA, and RA varies significantly by age group and disease type. Younger adults with these conditions demonstrated more specific dietary inadequacies, such as high sodium and low protein intake, while older adults exhibited a broader pattern of poor dietary quality, particularly in relation to RA. These findings suggest that personalized nutritional strategies are needed to address the unique dietary challenges faced by individuals with chronic conditions in different age groups.

**Keywords :** dietary, diabetes, osteoarthritis, rheumatoid arthritis, logistic regression

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