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| Paper Category: | 9. Nutrition |
| Paper Title: (Arial Font; 14 Pt Size) | Dietary amino acid intake, sleep duration, and future cognitive impairment of Japanese adults 60 years of age or older: A community-based longitudinal study |
| Abstract Body: (Arial Font; 12Pt Size) | <ul style="list-style-type: none"> • Background • Objectives • Method • Results • Discussions and Conclusions |

(Maximum word limit - 300 words)

Background: Sleep duration and amino acid (AA) intake have both been reported to be associated with cognitive function.

Objectives: To determine the effect of AA intake on the association between sleep duration and cognitive impairment.

Method: Data of 623 community-dwelling adults 60–83 years of age without cognitive impairment at baseline (2002–2004) was analyzed. Cognitive impairment was defined as a Mini-Mental State Examination (MMSE) score ≤ 27 . Sleep duration was assessed using a self-report questionnaire. AA intake was assessed using 3-day dietary records. Participants were classified into short (≤ 6 h), moderate (7–8 h), and long (> 8 h) sleep groups according to their baseline sleep duration, and according to sex-stratified quartiles (Q) based on the intake of 19 AAs (Q1, low intake group; Q2-Q4, middle to high intake group). Odds ratios (ORs) for cognitive impairment of sleep groups were estimated. Furthermore, ORs for cognitive impairment with low AA intake were estimated for each sleep group. These associations were determined using the generalized estimating equations after adjusting for confounders such as sleep aid use and MMSE score at baseline.

Results: The mean follow-up period was 6.9 ± 2.1 years. ORs and 95% confidence intervals (CIs) for cognitive impairment of the short, moderate, and long sleep groups were 0.8 (0.5-1.4), reference, and 1.4 (1.1-1.9), respectively. In the long sleep group, significant associations were observed between cognitive impairment and low intake of cystine, proline, and serine (OR [95% CI]: 2.2 [1.2-4.1], 1.9 [1.1-3.2], and 2.2 [1.1-4.3], respectively). Intake levels (mg/day) of male and female participants, in the low intake group were as follows: cystine, ≤ 1038.6 and ≤ 864.0 ; proline, ≤ 3739.4 and ≤ 3295.1 ; and serine, ≤ 3207.4 and ≤ 2685.9 , respectively.

Discussions and Conclusions: Older community-dwellers who sleep longer durations are more likely to experience cognitive decline. Attention should be focused on low intake of cystine, proline, and serine.

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