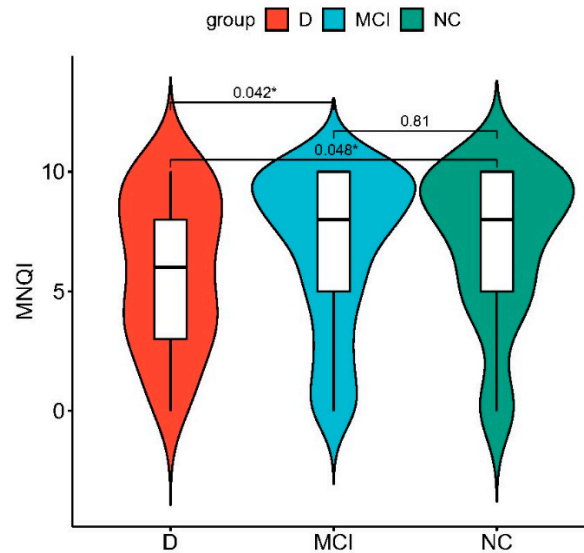


Supplementary materials

Supplementary Figure S1. Differences in MNQI among the D, MCI, and NC groups.



* $P < 0.05$, according to the Kruskal-Wallis test. Abbreviations: D, dementia; MCI, mild cognitive impairment; NC, Normal cognition; MNQI: methyl-donor nutritional quality index.

Supplementary Table S1. Demographic characteristics among the D, MCI and NC groups.

| Characteristics | D (n=45) | MCI (n=190) | NC (n=55) | P-value |
|---------------------------------|------------------|------------------|------------------|---------|
| Gender, male (%) | 13(28.9) | 55(28.9) | 19(34.5) | 0.716 |
| Age (years) $\bar{x} \pm s$ | 65.44 \pm 2.72 | 65.59 \pm 2.71 | 65.93 \pm 2.50 | 0.629 |
| Highest educational level (n) % | | | | |
| Primary school or below | 4(8.9) | 14(7.4) | 4(7.3) | 0.940 |
| Junior high or above | 41(91.1) | 176(92.6) | 51(92.7) | |
| Living alone or not (n) % | | | | |
| Yes | 6(13.3) | 12(6.3) | 7(12.7) | 0.170 |
| No | 39(86.7) | 178(93.7) | 48(87.3) | |
| BMI (n)% | | | | |
| Normal | 16(35.6) | 93(48.9) | 26(47.3) | 0.268 |
| Overweight or obese | 29(64.4) | 97(51.1) | 29(52.7) | |
| Chronic diseases history (n)% | | | | |
| Detected | 9(20) | 51(26.8) | 17(30.9) | 0.464 |
| Not detected | 36(80) | 139(73.2) | 38(69.1) | |

Differences in gender, highest educational level, living alone or not, BMI and Chronic diseases history between groups were examined by Pearson's chi-square test. Differences in age between groups were examined by the analysis of variance (ANOVA) test.

Supplementary Table S2. Evaluation of MDNs intake aged 60-64 years^a.

| MDNs | EAR | | RNI/AI | | UL |
|-----------------------------|------|--------|--------|--------|------|
| | Male | Female | Male | Female | |
| Protein(g) | 60 | 50 | 65 | 55 | — |
| Folate(ug DFE) ^b | 320 | 320 | 400 | 400 | 1000 |
| Folate(mg) | — | — | 450 | 380 | 3000 |
| Riboflavin(mg) | 1.2 | 1 | 1.4 | 1.2 | — |
| VB6(mg) | 1.3 | 1.3 | 1.6 | 1.6 | 55 |
| VB12(ug) | 2 | 2 | 2.4 | 2.4 | — |
| Zinc(mg) | 10.1 | 6.9 | 12 | 8.5 | 40 |

^a The population included in this study was in the age group of 60-70 years old, and the age group of 60-65 years old was referred to the data of the age group of 50-65 years old in the “Dietary Nutrient Reference Intake for Chinese Residents (2023)”;

^b Dietary folate equivalent (DFE,μg) = natural food source folate (μg) + 1.7*synthesized folic acid^c (DFE,μg);

^c Refers to synthesized folic acid only, not including natural food source folate.

Supplementary Table S3. Evaluation of MDNs intake aged 65-70 years^a.

| MDNS | EAR | | RNI/AI | | UL |
|-----------------------------|------|--------|--------|--------|------|
| | Male | Female | Male | Female | |
| Protein(g) | 60 | 50 | 72 | 62 | — |
| Folate(ug DFE) ^b | 320 | 320 | 400 | 400 | 1000 |
| Folate(mg) | — | — | 450 | 380 | 3000 |
| Riboflavin(mg) | 1.2 | 1 | 1.4 | 1.2 | — |
| VB6(mg) | 1.3 | 1.3 | 1.6 | 1.6 | 55 |
| VB12(ug) | 2 | 2 | 2.4 | 2.4 | — |
| Zinc(mg) | 10.1 | 6.9 | 12 | 8.5 | 40 |

^a The population included in this study was in the age group of 60-70 years old, and the age group of 65-70 years old was referred to the data of the age group of 65-75 years old in the “Dietary Nutrient Reference Intake for Chinese Residents (2023)”;

^b Dietary folate equivalent (DFE,μg) = natural food source folate (μg) + 1.7*synthesized folic acid^c (DFE,μg);

^c Refers to synthesized folic acid only, not including natural food source folate.

Classification criteria:

A MoCA score of 18 or lower was categorized as the dementia (D) group and the rest were dementia-free (DF) group. In the DF group, a score of 25 or lower was graded as MCI group and the rest as normal cognition (NC) group[1].

Reference

[1] Tian, J.; Xie, H.; Wang, L.; Wang, Y.; Wang, H.; Shi, J.; Qin, B.; Fan, D.; Ni, J.; Sun, Y.; The Alzheimer's Disease Committee (ADC) Guideline Group of China National Health Care Association for the Elderly. Chinese guideline for the diagnosis and treatment of Alzheimer's disease dementia(2020). Chin. J. Geriatr. **2021**, *40*, 269-283, doi:10.3760/cma.j.issn.0254-9026.2021.03.001.