

**Table S1 Tertiles of fat-soluble micronutrients and oxidative stress markers**

| <b>Biomarker</b>                      | <b>T1</b> | <b>T2</b>   | <b>T3</b> |
|---------------------------------------|-----------|-------------|-----------|
| <b>Vitamin D<sub>3</sub></b> , nmol/L | < 33.77   | 33.77-55.57 | > 55.57   |
| <b>Retinol</b> , μmol/L               | < 1.64    | 1.64-2.04   | > 2.04    |
| <b>α-Tocopherol</b> , μmol/L          | < 25.62   | 25.62-31.88 | > 31.88   |
| <b>γ-Tocopherol</b> , μmol/L          | < 0.98    | 0.98-1.44   | > 1.44    |
| <b>α-Carotene</b> , μmol/L            | < 0.077   | 0.077-0.194 | > 0.194   |
| <b>β-Carotene</b> , μmol/L            | < 0.303   | 0.303-0.617 | > 0.617   |
| <b>Lycopene</b> , μmol/L              | < 0.270   | 0.270-0.543 | > 0.543   |
| <b>Lutein/Zeaxanthin</b> , μmol/L     | < 0.267   | 0.267-0.402 | > 0.402   |
| <b>β-Cryptoxanthin</b> , μmol/L       | < 0.136   | 0.136-0.314 | > 0.314   |
| <b>Protein Carbonyls</b> , nmol/mg    | < 0.239   | 0.239-0.334 | > 0.334   |
| <b>3-Nitrotyrosine</b> , pmol/mg      | < 5.99    | 5.99-10.10  | > 10.11   |

T1, lowest tertile; T2, middle tertile and T3, highest tertile.

### **Associations of vitamins D<sub>3</sub>, A, E, carotenoids and biomarkers of oxidative stress with frailty status in the FRAILOMIC initiative**

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