**Supplementary Table 1 Cross-sectional associations between nutrient intakes (nutrient risk variable) and EWGSOP defined sarcopenia**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Model 1****OR (95% Cl)** | **Model 2****OR (95% Cl)** | **Model 3****OR (95% Cl)** | **Model 4****OR (95% Cl)** |
| **Sarcopenia** | **Sarcopenia**  | **Sarcopenia**  | **Sarcopenia**  |
| Nutrient risk variable(Meeting ≤9 nutrients)Reference category: Meeting≥10 nutrients | 1.43 (0.86, 2.38);p = 0.17 | 1.40 (0.84, 2.34);p = 0.19 | 1.34 (0.77, 2.34);p = 0.30 | 1.44 (0.72, 2.87);p = 0.30 |

OR: Odds Ratios; CI: Confidence Interval

Reference category: Non-sarcopenia

Model 1: unadjusted; model 2: adjusted by age; model 3: adjusted by same variables as model 2 plus body mass index, marital status, living arrangement, income, smoking status, MMSE score, alcohol intake, SRH, meal service, able to shop for groceries, meal preparation, no of comorbidities and PASE; model 4: adjusted by same variables as model 3 plus energy.

**Supplementary Table 2 Cross-sectional associations between nutrient intakes (nutrient risk variable) and EWGSOP2 defined sarcopenia**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Model 1****OR (95% Cl)** | **Model 2****OR (95% Cl)** | **Model 3****OR (95% Cl)** | **Model 4****OR (95% Cl)** |
| **Probable****Sarcopenia** | **Sarcopenia** | **Severe****Sarcopenia** | **Probable****Sarcopenia** | **Sarcopenia** | **Severe****Sarcopenia** | **Probable****Sarcopenia** | **Sarcopenia** | **Severe****Sarcopenia** | **Probable****Sarcopenia** | **Sarcopenia** | **Severe****Sarcopenia** |
| Nutrient risk variable(Meeting ≤9 nutrients ) Reference category: Meeting≥10 nutrients | 1.26 (0.79, 2.01)p=0.33 | 1.30 (0.78, 2.16) p=0.31 | 1.30 (0.61, 2.79)p=0.50 | 1.26 (0.79, 2.02)P=0.33 | 1.27 (0.75 2.16)P=0.38 | 1.14(0.50,2.57)P=0.76 | 1.25(0.75, 2.08)p= 0.39 | 1.29(0.72, 2.30)p=0.40 | 1.12(0.44,2.85)p=0.81 | 1.13(0.60, 2.16)p=0.70 | 0.97(0.47, 2.01)p=0.93 | 0.61(0.19, 1.96)p=0.41 |

OR: Odds Ratios; CI: Confidence Interval

Reference category: non-sarcopenia

Model 1: unadjusted; model 2: adjusted by age; model 3: adjusted by same variables as model 2 plus body mass index, marital status, living arrangement, income, smoking status, MMSE score, alcohol intake, SRH, meal service, able to shop for groceries, meal preparation, no of comorbidities and PASE; model 4: adjusted by same variables as model 3 plus energy.

**Supplementary Table 3 Associations between nutrient intakes (nutrient risk variable) and sarcopenia variables**

|  |  |  |  |
| --- | --- | --- | --- |
| Sarcopenia variables | Model 1 | Model 2 | Model 4 |
| β | P | β | P | β | P |
| Grip strength | 0.11 | 0.71 | 0.21 | 0.07 | 0.026 | 0.90 |
| Walking speed | 0.04 | 0.32 | 0.005 | 0.08 | -0.001 | 0.82 |
| ALM | 0.46 | 0.34 | 0.13 | 0.80 | 0.010 | 0.89 |
| ALM/Weight | -0.041 | 0.13 | -0.033 | 0.22 | -0.148 | 0.008 |
| ALM/Height | 0.28 | 0.03 | 0.26 | 0.04 | 0.89 | 0.15 |
| ALM/Height2 | 1.08 | 0.12 | 1.43 | 0.06 | 2.44 | 0.13 |
| ALM/BMI | 0.009 | <0.0001 | 0.008 | <0.0001 | 0.010 | <0.0001 |

Model 1: unadjusted; model 2: adjusted by age; model 3: adjusted by same variables as model 2 plus body mass index, marital status, living arrangement, income, smoking status, MMSE score, alcohol intake, SRH, meal service, able to shop for groceries, meal preparation, no of comorbidities, PASE and energy

**Supplementary Table 4 Associations between nutrient intakes (nutrient risk variable) and sarcopenia variables**

|  |  |  |  |
| --- | --- | --- | --- |
| Sarcopenia variables | Model 1 | Model 2 | Model 4 |
| OR (95% CI) | P | OR (95% CI) | P | OR (95% CI) | P |
| Grip strength<26 kg | 1.22(0.86, 1.73) | 0.26 | 1.08 (0.75, 1.57) | 0.67 | 1.22(0.69, 2.17) | 0.49 |
| Grip strength<30 kg | 1.23 (0.87, 1.73) | 0.24 | 1.12 (0.78, 1.60) | 0.54 | 1.00 (0.57, 1.76) | 0.99 |
| Grip strength <27 kg | 1.20 (0.85, 1.68) | 0.31 | 1.06 (0.74, 1.52) | 0.76 | 1.21 (0.69, 2.14) | 0.50 |
| Walking speed<0.8m/s | 0.04 | 0.32 | 0.005 | 0.08 | 1.11(0.64, 1.92) | 0.70 |
| Combine slowness and weaknessNot weak and not slow (Reference)Weakness and slownessNot weak but slow Weak but not slow  | 1.001.01 (0.94, 1.08)1.09 (0.43, 2.76)1.27 (0.76, 2.14) | 0.820.860.36 | 1.001.31 (0.82, 2.09)1.05 (0.62, 1.78)1.10 (0.51, 2.35) | 0.270.860.81 | 1.001.97(0.83, 4.65)1.83 (0.80, 4.17)2.82(0.84, 9.45) | 0.120.150.09 |
| ALM/ Height2<7.25 kg/m2 | 1.22 (0.88, 1.69) | 0.24 | 1.15 (0.84, 1.57) | 0.38 | 1.14 (0.71, 1.82) | 0.59 |
| ALM/Height2<7.00 kg/m2 | 1.22 (0.90, 1.66) | 0.21 | 1.15(0.82, 1.60) | 0.42 | 1.23 (0.75, 2.01) | 0.42 |
| ALM/BMI <0.789 | 2.16 (1.58, 2.94) | <0.0001 | 2.13 (1.56, 2.91) | <0.0001 | 1.88 (1.16, 3.05) | 0.01 |

Model 1: unadjusted; model 2: adjusted by age; model 3: adjusted by same variables as model 2 plus body mass index, marital status, living arrangement, income, smoking status, MMSE score, alcohol intake, SRH, meal service, able to shop for groceries, meal preparation, no of comorbidities, PASE and energy

**Supplementary Table 5 Associations between individual nutrient intakes and the FNIH defined sarcopenia**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Model 1a****OR (95% Cl)** | **Model 2b****OR (95% Cl)** | **Model 3c****OR (95% Cl)** | **Model 4d****OR (95% Cl)** |
| **Sarcopenia**  |
| **Dietary fibre** **Reference category: Highest Quartile≥119.15g/d** | 1.00 | 1.00 | 1.00 | 1.00 |
| **3rd Quartile****99.90–119.14g/d** | 0.95 (0.48, 1.86)p=0.88 | 0.91 (0.46, 1.80)p=0.78 | 1.28 (0.66, 2.49)p=0.47 | 0.62 (0.28, 1.36)p=0.23 |
| **2nd Quartile****83.94–99.89g/d** | 0.88 (0.44, 1.74)p=0.71 | 0.86 (0.43, 1.73)p=0.67 | 0.82 (0.39, 1.73)p=0.60 | 0.48 (0.21, 1.36)p=0.08 |
| **Lowest Quartile****≤83.93g/d** | 1.89 (1.04, 3.44)p=0.04 | 1.63 (0.88, 3.01)p=0.12 | 0.83 (0.40, 1.75)p=0.63 | 0.59 (0.27, 1.27)p=0.18 |
| **P for trend** | 0.04 | 0.14 | 0.42 | 0.32 |
| **Riboflavin****Reference category: Highest Quartile≥2.84mg/d** | 1.00 | 1.00 | 1.00 | 1.00 |
| **3rd Quartile****2.18–2.83mg/d** | 1.50 (0.72, 3.15)p=0.28 | 1.51 (0.71, 3.21)p=0.29 | 1.37(0.61, 3.06)p=0.45 | 1.06 (0.46, 2.44)p=0.90 |
| **2nd Quartile****1.68–2.17mg/d** | 2.29 (1.15, 4.57)p=0.02 | 2.36 (1.17, 4.77)p=0.02 | 2.15 (0.96, 4.64)p=0.06 | 1.44 (0.63, 3.25)p=0.39 |
| **Lowest quartile****≤1.67mg/d** | 2.13 (1.05, 4.30)p=0.04 | 2.32 (1.13, 4.76)p=0.02 | 2.05 (0.94, 4.60)p=0.07 | 1.09 (0.44, 2.71)p =0.86 |
| **P for trend** | 0.08 | 0.06 | 0.08 | 0.36 |
| **Folate****Reference category: Highest Quartile≥495.63µg/d** | 1.00 | 1.00 | 1.00 | 1.00 |
| **3rd Quartile****386.92–495.62 µg/d** | 1.40 (0.67, 2.93)p=0.38 | 1.36 (0.64, 2.90)p=0.42 | 1.26 (0.57, 2.81) p=0.57 | 1.10 (0.46, 2.64)p=0.83 |
| **2nd Quartile****294.88 –** **386.91 µg /d** | 2.17 (1.08, 4.35)p=0.03 | 2.14 (1.05, 4.35)p=0.04 | 1.90 (0.88, 4.08)p=0.10 | 1.28 (0.48, 2.41)p=0.86 |
| **Lowest quartile****≤** **294.87 µg /d** | 2.46 (1.23, 4.92)p=0.01 | 2.40 (1.18, 4.88)p=0.02 | 1.96 (0.90, 4.24)p=0.09 | 1.10 (0.46, 2.64)p=0.83 |
| **P for trend** | 0.04 | 0.06 | 0.43 | 0.94 |
| **Total vitamin A equivalent Highest quartile****≥ 1363.73 µg/d****n= 91** | 1.00 | 1.00 | 1.00 | 1.00 |
| **3rd quartile****989.09-1363.72 µg/d****n=87** | 0.60 (0.29, 1.28)p=0.19 | 0.59 (0.27, 1.26)p=0.17 | 0.49 (0.22, 1.13)p=0.09 | 0.87 (0.41, 1.82)p=0.70 |
| **2nd quartile****734.13-989.08 µg/d****n=77** | 1.20 (0.64, 2.28)p=0.57 | 1.21 (0.63, 2.33)p=0.57 | 1.18 (0.58, 2.30)p=0.66 | 0.91 (0.43, 1.91)p=0.80 |
| **Lowest quartile****< 734.12 µg/d****n=75** | 1.61 (0.94, 2.77)p=0.08 | 1.76 (0.95, 3.25)p=0.07 | 1.45 (73, 2.88)p= 0.29 | 0.72 (0.26, 2.03)p=0.54 |
| **P for trend** | 0.09 | 0.07 | 0.10 | 0.28 |
| **Vitamin E****Highest quartile ≥ 13.51 mg/d**  | 1.00 | 1.00 | 1.00 | 1.00 |
| **3rd quartile****9.80-13.49 mg/d****n=84** | 0.78 (0.37, 1.67)p= 0.53 | 0.76 (0.37, 1.56)p=0.45 | 0.81 (0.38, 1.76)p=0.60 | 0.74 (0.31, 1.76)p=0.24 |
|  **2nd quartile****7.09-9.79 mg/d****n=77** | 1.07 (0.53, 2.16)p=0.86 | 1.17 (0.61, 2.26)p=0.64 | 1.13 (0.55, 2.31)p= 0.74 | 0.65 (0.29, 1.45)p=-.29 |
| **Lowest quartile****<7.07 mg/d****n=70** | 1.69 (0.87, 3.31)p= 0.12 | 1.55 (0.83, 2.88)p=0.17 | 1.70 (0.86, 3.35)p=0.12 | 0.62(0.28, 1.38)p= 0.50 |
| **P for trend** | 0.11 | 0.20 | 0.11 | 0.48 |
| **Vitamin C Highest quartile****≥ 156.07 mg/d****n=93** | 1.00 | 1.00 | 1.00 | 1.00 |
| **3rd quartile****107.36-156.06 mg/d****n=83** | 0.69 (0.34, 1.42)p=0.31 | 1.06 (0.99, 1.13)p= 0.09 | 1.89 (0.84, 4.25)p= 0.13 | 0.93 (0.45, 1.91)p=0.84 |
|  **2nd quartile****74.40-107.35 mg/d****n=88** | 1.18 (0.62, 2.26)p= 0.61 | 1.87 (1.12, 4.86)p=0.11 | 1.78 (0.76, 4.16)p=0.18 | 1.75 (0.91, 3.35)p=0.09 |
| **Lowest quartile****< 74.39 mg/d****n=65** | 1.09 (0.31, 3.94)p=0.88 | 1.30 (0.72, 2.35)p=0.38 | 2.07 (0.93, 4.62)p= 0.08 | 1.26 (0.64, 2.47)p=0.51 |
| **P for trend** | 0.02 | 0.07 | 0.12 | 0.21 |
| **Iron****Reference category: Highest Quartile****≥** **16.01mg/d** | 1.00 | 1.00 | 1.00 | 1.00 |
| **3rd Quartile****12.92 –** **16.00 mg/d** | 1.35 (0.66, 2.77)p=0.42 | 1.28 (0.61, 2.66) | 1.21 (0.55, 2.65)p= 0.64 | 0.98 (0.44,2.20)p=0.96 |
|  **2nd Quartile****10.54 –** **12.91 mg/d** | 1.69 (0.84, 3.41)p=0.14 | 1.58 (0.77, 3.22P | 1.44 (0.66, 3.14) p= 0.36 | 0.99 (0.44, 2.23)p=0.99 |
| **Lowest quartile****<** **10.53mg/d** | 2.38 (1.22, 4.65)p=0.01 | 2.18 (1.10, 4.31)p=0.03 | 1.74 (0.83, 3.68)p=0.14 | 0.86 (0.36, 2.06)p=0.73 |
| **P for trend** | 0.06 | 0.12 | 0.42 | 0.92 |
| **Zinc** **Highest quartile****≥ 16.75 mg/d****n=81** | 1.00 | 1.00 | 1.00 | 1.00 |
| **3rd quartile****13.32- 16.74 mg/d****n=85** | 0.94 (0.46, 1.90)p= 0.86 | 0.86 (0.42, 1.77)p=0.68 | 0.79 (0.36, 1,71)p=0.55 | 0.58 (0.26, 1.31)p= 0.19 |
|  **2nd quartile****11.01- 13.31 mg/d****n=88** | 1.17 (0.60, 2.31)p=0.65 | 1.14 (0.57, 2.28)p=0.71 | 1.05 (0.50, 2.22)p=0.89 | 0.66 (0.29, 1.48)p=0.66 |
| **Lowest quartile****<11.00mg/d** | 1.27 (0.71, 2.26)p=0.43 | 1.81 (0.95, 3.45)p=0.07 | 1.70 (0.86, 3.39)p=0.13 | 0.79 (0.33, 1.85)p=0.58 |
| **P for trend** Reference category: Non-sarcopenia was used as the reference category.Model: 1 unadjusted; model 2: adjusted by age; model 3: adjusted by same variables as model 2 plus body mass index, marital status, living arrangement, income, smoking status, MMSE score, alcohol intake, SRH, meal service, able to shop for groceries, meal preparation, no of comorbidities and PASE; model 4: adjusted by same variables as model 3 plus energy. | 0.03 | 0.09 | 0.23 | 0.38 |