**Supplementary material:** Nutrition transition in the North West Province of South Africa: results from the Prospective Urban and Rural Epidemiology (PURE-NWP-SA) cohort study, 2005 to 2010

**TABLE 1**

Nutrient recommendations used for evaluating intakes of this cohort

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Energy and Nutrients** | **MEN** | | | **WOMEN** | | | **Source** |
| **31 - 50 years** | **51 - 70 years** | **>70 years** | **31 - 50 years** | **51 - 70 years** | **>70 years** |
| Protein total (g) | 56 | 56 | 56 | 46 | 46 | 46 | AI |
| Cholesterol (mg) | <300 | <300 | <300 | <300 | <300 | <300 | SAFBDGs |
| Dietary fibre (g) | >25 | >25 | >25 | >25 | >25 | >25 | WHO |
| Calcium (mg) | 800 | 800 | 1000 | 800 | 1000 | 1000 | EAR |
| Iron (mg) | 6 | 6 | 6 | 8.1 | 5 | 5 | EAR |
| Magnesium (mg) | 350 | 350 | 350 | 265 | 265 | 265 | EAR |
| Phosphorus (mg) | 580 | 580 | 580 | 580 | 580 | 580 | EAR |
| Potassium (mg) | 4700 | 4700 | 4700 | 4700 | 4700 | 4700 | AI |
| Zinc (mg) | 9.4 | 9.4 | 9.4 | 6.8 | 6.8 | 6.8 | EAR |
| Copper (µg) | 700 | 700 | 700 | 700 | 700 | 700 | EAR |
| Manganese (µg) | 2300 | 2300 | 2300 | 1800 | 1800 | 1800 | AI |
| Vitamin A RE (µg) | 625 | 625 | 625 | 500 | 500 | 500 | EAR |
| Thiamine (mg) | 1 | 1 | 1 | 0.9 | 0.9 | 0.9 | EAR |
| Riboflavin (mg) | 1.1 | 1.1 | 1.1 | 0.9 | 0.9 | 0.9 | EAR |
| Niacin (mg) | 12 | 12 | 12 | 11 | 11 | 11 | EAR |
| Vitamin B6 (mg) | 1.1 | 1.4 | 1.4 | 1.1 | 1.3 | 1.3 | EAR |
| Folic acid (µg) | 320 | 320 | 320 | 320 | 320 | 320 | EAR |
| Vitamin B12 (µg) | 2 | 2 | 2 | 2 | 2 | 2 | EAR |
| Pantothenic acid (mg) | 5 | 5 | 5 | 5 | 5 | 5 | AI |
| Biotin (µg) | 30 | 30 | 30 | 30 | 30 | 30 | AI |
| Vitamin C (mg) | 75 | 75 | 75 | 60 | 60 | 60 | EAR |
| Vitamin D (µg) | 10 | 10 | 10 | 10 | 10 | 10 | EAR |
| Vitamin E (mg) | 12 | 12 | 12 | 12 | 12 | 12 | EAR |
| Alcohol (g)*a* | 20 | 20 | 20 | 10 | 10 | 10 |  |
| % of TE from total fat | ≤30 | ≤30 | ≤30 | ≤30 | ≤30 | ≤30 | SAFBDGs |
| % of TE from saturated fat | ≤10 | ≤10 | ≤10 | ≤10 | ≤10 | ≤10 | SAFBDGs |
| % of TE from polyunsaturated fat | 6-10 | 6-10 | 6-10 | 6-10 | 6-10 | 6-10 | SAFBDGs |
| % of TE from added sugar*b* | <10 | <10 | <10 | <10 | <10 | <10 | WHO / SAFBDGs |

EAR, Estimated average requirement (1),(2)

AI, Adequate intake (1),(2)

WHO, World Health Organization Recommendations (3)

SA FBDGs, South African Food-based dietary guidelines (4)

TE, total energy

*a* 1 drink = 10g alcohol

*b* Includes all sugars (mono and disaccharides) added to foods, drinks and jams and include table sugar, honey and syrups

**TABLE 3**

Nutrient intake, macronutrient distribution and nutrient density by to sex and rural/urban domicile of all participants in the PURE-NWP-SA study in 2005 (n=1858)*a*

| **Energy and nutrients** | **Men Rural (n=306)** | **Men Urban (n=389)** | **Women Rural (n= 584)** | **Women Urban (n=579)** |
| --- | --- | --- | --- | --- |
| Energy (MJ) | 6.8 (5.4 – 8.6)*b* | 9.5 (7.2 – 12.4) | 6.0 (4.9 – 7.5)*e* | 8.7 (6.3 – 11.5) |
| Total protein (g) | 43.3 (34 - 56.8)*b* | 70.5 (52.3 - 90.6) | 39.2 (31.2 - 49.3)*e* | 62.4 (46.4 - 84.9) |
| Plant protein (g) | 29.8 (22.6 - 38.3)*b* | 36.5 (26.9 - 46.9) | 26.4 (20.3 - 33)*e* | 30.7 (22.1 - 40) |
| Animal protein (g) | 11.9 (8 - 17.7)*b* | 29.2 (20.6 - 42.4) | 11.9 (7.2 - 17.9)*e* | 28.5 (20.7 - 39.7) |
| Total fat (g) | 30.5 (23.6 - 42.5)*b* | 60.8 (44.5 - 81.8) | 31.5 (22.9 - 41.7)*e* | 62.2 (43.9 - 86.8) |
| Saturated fat (g) | 6.7 (4.3 - 9.4)*b* | 14.7 (10.5 - 20.8) | 6.7 (4.4 - 9.7)*e* | 15.8 (10.8 - 22.3) |
| Monounsaturated fat (g) | 6.9 (4.6 - 10.1)*b* | 16.4 (11.8 - 24.2) | 7 (4.7 - 10.3)*e* | 17.7 (12 - 25.6) |
| Polyunsaturated fat (g) | 9.7 (7.2 - 13.8)*b* | 17.7 (12.2 - 24.5) | 10.3 (7 - 14.5)*e* | 17.9 (12.2 - 25.7) |
| Cholesterol (mg) | 108 (64 - 160)*b* | 246 (159 - 346) | 101 (59 - 157)*e* | 223 (147 - 330) |
| Total carbohydrate (g) | 249.7 (201.5 - 325.8)*b* | 323.7 (231.7 - 415.1) | 238.9 (188.2 - 292.9)*e* | 288.3 (201 - 369.5) |
| Added sugar (g) | 22.7 (15 - 31.7)*b* | 34.5 (21.3 - 55.1) | 23.9 (13.4 - 35.9)*e* | 39.7 (23.6 - 58.3) |
| Dietary fibre (g) | 18.6 (14 - 24.5)*b* | 25.7 (17.2 - 34.2) | 17.1 (13.7 - 21.5)*e* | 22.1 (14.5 - 30) |
| Calcium (mg) | 220 (147 - 315)*b* | 389 (288 - 556) | 196 (129 - 275)*e* | 392 (278 - 610) |
| Iron (mg) | 12.1 (9.2 - 15.4)*b* | 16.1 (11.2 - 21.5) | 11 (8.7 - 13.6)*e* | 13.3 (9.3 - 18.3) |
| Magnesium (mg) | 291 (209.5 - 438)*b* | 388 (284 - 526.2) | 233.2 (183.5 - 305.7)*e* | 323.3 (224.6 - 412.7) |
| Phosphorus (mg) | 794 (615 - 1098)*b* | 1108 (856 - 1454) | 680 (536 - 849)*e* | 978 (702 - 1330) |
| Potassium (mg) | 1358 (1041 - 1759)*b* | 2057 (1526 - 2765) | 1194 (982 - 1515)*e* | 2003 (1311 - 2586) |
| Zinc (mg) | 8.4 (6.7 - 10.9)*b* | 12.5 (8.9 - 17) | 7.6 (6.1 - 9.5)*e* | 10.4 (7.3 - 14.4) |
| Copper (mg) | 1 (0.8 - 1.4)*b* | 1.4 (1.1 - 1.9) | 1 (0.8 - 1.2)*e* | 1.3 (1 - 1.8) |
| Manganese (µg) | 1616 (992 - 3223)*b* | 2568 (1778 - 3730) | 1243 (765 - 1876)*e* | 2188 (1540 - 3076) |
| Vitamin A (µg) | 418.5 (274.2 - 653.5)*b* | 886.8 (553 - 1460.1) | 474.3 (323.1 - 720.4)*e* | 928 (528.2 - 1501.8) |
| Thiamine (mg) | 1.6 (1.2 - 2)*b* | 1.9 (1.3 - 2.7) | 1.4 (1.1 - 1.8) | 1.5 (1.1 - 2.2) |
| Riboflavin (mg) | 0.9 (0.6 - 1.4)*b* | 1.5 (1.1 - 2) | 0.7 (0.6 - 1)*e* | 1.4 (0.9 - 1.9) |
| Niacin (mg) | 11.8 (9.1 - 16.7)*b* | 17.8 (13.6 - 24) | 10.1 (8.1 - 13)*c* | 15.5 (10.9 - 21.5) |
| Vitamin B6 (mg) | 1.3 (0.9 - 1.6)*b* | 1.8 (1.2 - 2.6) | 1.1 (0.9 - 1.5)*e* | 1.5 (1 - 2.2) |
| Folate (µg) | 370.9 (261.8 - 463.6)*b* | 458.2 (324.2 - 636.4) | 331.5 (252.5 - 422.4)*e* | 370 (258.3 - 510.7) |
| Vitamin B12 (µg) | 1.6 (0.9 - 2.9)*b* | 4.7 (2.7 - 7.6) | 1.7 (0.9 - 3)*e* | 4.4 (2.3 - 7.5) |
| Pantothenic acid (mg) | 2.8 (2.1 - 3.7)*b* | 4.8 (3.6 - 6.3) | 2.6 (2 - 3.4)*e* | 4.5 (3.2 - 6) |
| Biotin (µg) | 24.2 (17.9 - 31.8)*b* | 46.5 (32.1 - 62.3) | 22.2 (16.9 - 31.3)*e* | 41.3 (28.5 - 55.7) |
| Vitamin C (mg) | 12 (7 - 16)*b* | 31 (19 - 56) | 13 (8 - 19)*e* | 38 (19 - 58) |
| Vitamin D (mg) | 1.6 (0.9 - 2.5)*b* | 3.1 (1.8 - 4.8) | 1.6 (0.8 - 2.6)*e* | 2.8 (1.6 - 4.5) |
| Vitamin E (mg) | 7.8 (4.8 - 11.2)*b* | 12.1 (7.9 - 16.7) | 8.2 (5.5 - 11.6)*e* | 12.4 (8.5 - 16.5) |
| Alcohol (g) | 3.9 (0 - 28.9) | 11.6 (0 - 26.7) | 0 (0 - 0) | 0 (0 - 11.6) |
| **Macronutrient distribution** |  |  |  |  |
| % of TE from protein | 10.7 (9.9 - 11.7)*b* | 12.3 (11.4 - 13.4) | 10.9 (9.9 - 12)*e* | 12.4 (11.3 - 13.6) |
| % of TE from animal protein | 3 (2 - 4.2)*b* | 5.4 (4.3 - 6.9) | 3.3 (2.1 - 4.8)*e* | 5.7 (4.5 - 7.3) |
| % of TE from plant protein | 7.6 (6.9 - 8.1)*b* | 6.5 (5.8 - 7.2) | 7.5 (6.7 - 8.1)*e* | 6.1 (5.3 - 6.8) |
| % of TE from total fat | 17.9 (13.8 - 22.5)*b* | 25.1 (21.3 - 28.6) | 20 (15.8 - 24.4)*e* | 28.2 (23.6 - 32.3) |
| % of TE from saturated fat | 3.8 (2.5 - 5.1)*b* | 6.1 (4.9 - 7.4) | 4.2 (2.9 - 5.7)*e* | 7 (5.7 - 8.6) |
| % of TE from monounsaturated fat | 3.8 (2.7 - 5.2)*b* | 7 (5.6 - 8.3) | 4.4 (3.1 - 5.9)*e* | 7.8 (6.3 - 9.7) |
| % of TE from polyunsaturated fat | 5.8 (4.1 - 7.7)*b* | 7.2 (5.7 - 8.8) | 6.5 (4.8 - 8.4)*e* | 8.1 (6.4 - 9.7) |
| T% of TE from total carbohydrate | 64.5 (58.2 - 70.6)*b* | 56.2 (52.2 - 60.8) | 66.9 (61.5 - 71.8)*e* | 55.7 (51 - 60.1) |
| % of TE from added sugar | 5.8 (3.1 - 8.4) | 6.5 (4.4 - 9) | 6.7 (3.8 - 10.3)*e* | 8 (5.8 - 10.5) |
| % of TE from alcohol | 2 (0 - 11.9) | 3.9 (0 - 8.2) | 0 (0 - 0) | 0 (0 - 3.7) |
| **Nutrient density** |  |  |  |  |
| Dietary fibre (g/4.2MJ) | 11.5 (8.9 - 13.7) | 10.9 (9.4 - 12.8) | 12 (9.8 - 14.1)*e* | 10.6 (9.1 - 12.2) |
| Iron (mg/4.2MJ) | 7.3 (6.6 - 8.5)*b* | 6.8 (6.1 - 7.7) | 7.7 (6.7 - 8.7)*e* | 6.5 (5.7 - 7.5) |
| Zinc (mg/4.2MJ) | 5.3 (4.8 - 5.7)*c* | 5.5 (5 - 6) | 5.3 (4.7 - 5.9)*e* | 5.1 (4.6 - 5.7) |
| Calcium (mg/4.2MJ) | 130.1 (101.5 - 163.9)*b* | 178.5 (140.4 - 225.9) | 125.8 (97 - 167.1)*e* | 201.2 (154.4 - 264.6) |
| Thiamine (mg/4.2MJ) | 0.9 (0.8 - 1.1)*b* | 0.8 (0.7 - 1) | 1 (0.8 - 1.1)*e* | 0.8 (0.6 - 0.9) |
| Riboflavin (mg/4.2MJ) | 0.6 (0.5 - 0.7)*b* | 0.7 (0.6 - 0.8) | 0.5 (0.4 - 0.6)*e* | 0.7 (0.5 - 0.8) |
| Niacin (mg/4.2MJ) | 7.5 (6.5 - 8.5)*d* | 7.8 (7.1 - 8.6) | 7.1 (6.3 - 8.1)*f* | 7.4 (6.6 - 8.6) |
| Vitamin C (mg/4.2MJ) | 6.7 (4.1 - 9.7)*b* | 14 (9.9 - 19.9) | 8.8 (5.8 - 12.6)*e* | 17.4 (12.3 - 23.9) |

*a* All values are medians (25th – 75th percentile)

*b* Significant difference between rural and urban men: *p<0.001*; c Significant different between rural and urban men *p=0.030*; d Significant different between rural and urban men p*=0.010; e* Significant difference between rural and urban women: *p<0.001*; f Significant different between rural and urban women *p=0.010*