**Supplementary Table 1. Cut-off points for waits circumference worldwide**

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| --- | --- | --- | --- |
| **Organisation** | **Population** | **Men** | **Women** |
| ATP III | United States | ≥102 cm | ≥88 cm |
| WHO | Caucasian | ≥102 cm | ≥88 cm |
|  | Asian | ≥90cm | ≥80 cm |
| IDF | Europid | ≥94 cm | ≥80 cm |
|  | Asian | ≥90cm | ≥80 cm |
|  | Ethnic central and South American  | ≥90cm | ≥80 cm |

**Adapted from Alberti et al.**

ATP III: National Cholesterol Education Program Adult Treatment Panel III; WHO: World Health Organization; IDF: International Diabetes Federation.

**Supplementary Table 2. Cohort characteristics by sex**

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| --- | --- | --- |
|  | **Women** | **Men** |
| Total, n | 4,873 | 3,309 |
| Age (years), mean (SD) | 49.0 (18.8) | 47.5 (19.0) |
| Waist circumference (cm), mean (SD) | 90.9 (13.8) | 94.2 (12.3) |
| SBP (mm Hg), mean (SD) | 128.2 (44.9) | 134.8 (35.9) |
| DBP (mm Hg), mean (SD) | 76.8 (42.3) | 81.2 (32.2) |
| Fasting glucose (mmol/L), mean (SD) | 5.4 (1.9) | 5.5 (1.8) |
| HDL cholesterol (mmol/L), mean (SD) | 2.7 (0.7) | 2.4 (0.7) |
| Serum triglycerides (mmol/L), mean (SD) | 7.5 (4.7) | 8.7 (6.7) |

SBP: Systolic Blood Pressure; DBP: Diastolic Blood Pressure.

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**Supplementary Figure 1. Probability density function (PDF) and empirical cumulative density function (ECDF) for males (A1 and A2) and females (B1 and B2).**

Figures A1 and B1 show the basic descriptive statistic of the bootstrapping analyses. PDFs are not normally distributed and in consequence, mean (92.6 cm for men and 88.4 cm for women) and mode (93.4 cm for men and 89.0 cm for women) values are not the same (Figures A1 and B1).

Figures A2 and B2 represent the probability of having a cut-off point according to the WHO/IDF (90.0 ± 1.0 and 80.0 ± 1.0 cm) and the ATP III (102.0 ± 1.0 and 88.0 ± 1.0 cm).

**Supplementary Figure 2. ROC analyses for waist circumference in the definition of MetS by sex and age**

Figure A1 and A2 show the optimal cut-off point for men under and above 60 years, respectively, in Chile. Figure B1 and B2 show the same information for women.

MetS was defined as the presence of ≥2 of the following conditions: triglycerides ≥1.7 mmol/L; HDL cholesterol: <1.3 mmol/L in women and <1.0 mmol/L in men; SBP ≥130 mm Hg and/or DBP ≥85 mm Hg; fasting glucose ≥5.6 mmol/L or current treatment for diabetes.

AUC: Area Under the Curve; ROC: Receiver Operating Characteristic.