Person—waist circumference (measured), total centimetres NN[N].N

Exported from METEOR (AIHW's Metadata Online Registry)

Person—waist circumference (measured), total centimetres NN[N].N

Identifying and definitional attributes

Metadata item type:	Data Element
Short name:	Waist circumference (measured)
METEOR identifier:	270129
Registration status:	Health, Standard 01/03/2005
Definition:	A person's waist circumference measured in centimetres.
Data Element Concept:	Person—waist circumference
Value Domain:	Total centimetres NN[N].N

Value domain attributes

Representational attributes

Representation class:	Total	
Data type:	Number	
Format:	NN[N].N	
Maximum character length:	4	
	Value	**Meaning**
Supplementary values:	999.9	Not measured
Unit of measure:	Centimetre (cm)	

Data element attributes

Collection and usage attributes

Collection methods:

The collection of anthropometric measurements, particularly in those who are overweight or obese or who are concerned about their weight, should be performed with great sensitivity, and without drawing attention to an individual's weight.

The measurement protocol described below is that recommended by the World Health Organization (WHO Expert Committee 1995) which was adapted from Lohman et al. (1988) and the International Society for the Advancement of Kinanthropometry as described by Norton et al. (1996).

In order to ensure consistency in measurement, the following measurement protocol should be used.

Measurement protocol:

The measurement of waist circumference requires a narrow (7 mm wide), flexible, inelastic tape measure. The kind of tape used should be described and reported. The graduations on the tape measure should be at 0.1 cm intervals and the tape should have the capacity to measure up to 200 cm. Measurement intervals and labels should be clearly readable under all conditions of use of the tape measure.

The subject should remove any belts and heavy outer clothing. Measurement of waist circumference should be taken over at most one layer of light clothing. Ideally the measure is made directly over the skin.

The subject stands comfortably with weight evenly distributed on both feet, and the feet separated about 25-30 cm. The arms should hang loosely at the sides. Posture can affect waist circumference. The measurement is taken midway between the inferior margin of the last rib and the crest of the ilium, in the mid-axillary plane. Each landmark should be palpated and marked, and the midpoint determined with a tape measure and marked.

The circumference is measured with an inelastic tape maintained in a horizontal plane, at the end of normal expiration. The tape is snug, but does not compress underlying soft tissues. The measurer is positioned by the side of the subject to read the tape. To ensure contiguity of the two parts of the tape from which the circumference is to be determined, the cross-handed technique of measurement, as described by Norton et al. (1996), should be used. Ideally an assistant will check the position of the tape on the opposite side of the subject's body.

The measurement is recorded at the end of a normal expiration to the nearest 0.1 cm. Take a repeat measurement and record it to the nearest 0.1 cm. If the two measurements disagree by more than 1 cm, take a third measurement. All raw measurements should be recorded on the data collection form. If practical, it is preferable to enter the raw data into the database as this enables intra-observer and, where relevant, inter-observer errors to be assessed. The subject's measured waist circumference is subsequently calculated as the mean of the two observations, or the mean of the two closest measurements if a third is taken, and recorded on the form. If only a mean value is entered into the database then the data collection forms should be retained.

It may be necessary to round the mean value to the nearest 0.1 cm. If so, rounding should be to the nearest even digit to reduce systematic over-reporting (Armitage & Berry 1994). For example, a mean value of 72.25 cm would be rounded to 72.2 cm, while a mean value of 72.35 cm would be rounded to 72.4 cm.

Validation and quality control measures:

Steel tapes should be checked against a 1 metre engineer's rule every 12 months. If tapes other than steel are used they should be checked daily against a steel rule.

Within- and, if relevant, between-observer variability should be reported. They can be assessed by the same (within -) or different (between-) observers repeating the measurement, on the same subjects, under standard conditions after a short time interval. The standard deviation of replicate measurements (technical error of measurement (Pederson & Gore 1996) between observers should not exceed 2% and be less than 1.5% within observers.

Extreme values at the lower and upper end of the distribution of measured waist circumference should be checked both during data collection and after data entry. Individuals should not be excluded on the basis of true biological difference.

Last-digit preference, and preference or avoidance of certain values, should be analysed in the total sample and (if relevant) by observer, survey site and over time if the survey period is long.

Comments:

This metadata item is recommended for use in population surveys and health care settings.

It is recommended that in population surveys, sociodemographic data including ethnicity should be collected, as well as other risk factors including physiological status (e.g. pregnancy), physical activity, smoking and alcohol consumption. Summary statistics may need to be adjusted for these variables.

National health metadata items currently exist for sex, date of birth, country of birth, Indigenous status and smoking. Metadata items are being developed for physical activity.

Presentation of data:

Means, 95% confidence intervals, medians and centiles should be reported to one decimal place. Where the sample permits, population estimates should be presented by sex and 5-year age groups. However 5-year age groups are not generally suitable for children and adolescents. Estimates based on sample surveys may need to take into account sampling weights.

For consistency with conventional practice, and for current comparability with international data sets, recommended centiles are 5, 10, 15, 25, 50, 75, 85, 90 and 95. To estimate the 5th and 95th centiles, a sample size of at least 200 is recommended for each group for which the centiles are being specified.

For reporting purposes, it may be desirable to present waist circumference in categories. It is recommended that 5-cm groupings are used for this purpose. Waist circumference should not be rounded before categorisation. The following categories may be appropriate for describing the waist circumferences of Australian men, women children and adolescents, although the range will depend on the population.

Waist < 35 cm

35 cm = Waist < 40 cm

40 cm = Waist < 45 cm

... in 5 cm categories

105 cm = Waist < 110 cm

Waist => 110 cm

Source and reference attributes

Submitting organisation: World Health Organization International Society for the Advancement of Kinanthropometry

Relational attributes

Related metadata references:

Is used in the formation of Adult—waist-to-hip ratio, N.NN
Health, Standard 01/03/2005

Is re-engineered from Waist circumference - measured, version 2, DE, NHDD, NHIMG, Superseded 01/03/2005.pdf (26.0 KB)
No registration status

Implementation in Data Set Specifications:

Cardiovascular disease (clinical) DSS
Health, Superseded 15/02/2006

Cardiovascular disease (clinical) DSS
Health, Superseded 04/07/2007

Cardiovascular disease (clinical) DSS
Health, Superseded 22/12/2009

Cardiovascular disease (clinical) DSS
Health, Superseded 01/09/2012

Cardiovascular disease (clinical) NBPDS
Health, Superseded 17/10/2018

Cardiovascular disease (clinical) NBPDS
Health, Standard 17/10/2018