
Weight - measured

Important note: This is an archived metadata standard from the AIHW Knowledgebase. For current metadata standards and related information please access METeOR, the AIHW's Metadata Online Registry at <http://meteor.aihw.gov.au>

Identifying and Definitional Attributes

Data Dictionary:	NHDD	
Knowledgebase ID:	000365	Version number: 2
Metadata type:	DATA ELEMENT	
Registration Authority:	NHIMG	Admin status: SUPERSEDED
		Effective date: 01-MAR-05
Definition:	A person's measured weight (body mass). In order to ensure consistency in measurement, the measurement protocol described under Collection methods should be used.	
Context:	Public health and health care: Weight is an overall measure of body size that does not distinguish between fat and muscle. Weight is an indicator of nutritional and health status. Low pre-pregnancy weight is an indicator of poorer gestational outcome in women (Kramer 1988). Low weight is also associated with osteoporosis. In general, change in weight in adults is of interest because it is an indicator of changing health status, and in children as it indicates changing health status and growth and development. It enables the calculation of body mass index (BMI) which requires the measurement of height and weight for adults as well as sex and date of birth for children and adolescents.	

Relational and Representational Attributes

Datatype:	Numeric	
Representational form:	QUANTITATIVE VALUE	
Representation layout:	NNN.N	
Minimum Size:	4	
Maximum Size:	5	
Data Domain:	999.9	Not able to be collected
	NOVAL	Measurement of weight in kilograms to one decimal place
Guide For Use:	If measured weight is not able to be collected, code 999.9	

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.

Measurement protocol:

Weight: measured is a continuous variable measured to the nearest 0.1 kg.

Equipment used should be described and reported. Scales should have a resolution of at least 0.1kg and should have the capacity to weigh up to at least 200 kg. Measurement intervals and labels should be clearly readable under all conditions of use of the instrument. Scales should be capable of being calibrated across the entire range of measurements. Precision error should be no more than 0.1kg. Scales should be calibrated on each day of use. Manufacturers' guidelines should be followed with regard to the transportation of the scales.

Adults and children who can stand:

The subject stands over the centre of the weighing instrument, with the body weight evenly distributed between both feet.

Heavy jewellery should be removed and pockets emptied. Light indoor clothing can be worn, excluding shoes, belts, and sweater. Any variations from light indoor clothing (e.g. heavy clothing, such as kaftans or coats worn because of cultural practices) should be noted on the data collection form.

Adjustments for non-standard clothing (i.e. other than light indoor clothing) should only be made in the data checking / cleaning stage prior to data analysis.

If the subject has had one or more limbs amputated, record this on the data collection form and weigh them as they are.

If they are wearing an artificial limb, record this on the data collection form but do not ask them to remove it. Similarly, if they are not wearing the limb, record this but do not ask them to put it on.

The measurement is recorded to the nearest 0.1 kg. If the scales do not have a digital readout, take a repeat measurement. If the two measurements disagree by more than 0.5 kg, then 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 weight 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 kg. If so, rounding should be to the nearest even digit to reduce systematic over reporting (Armitage and Berry 1994). For example, a mean value of 72.25 kg would be rounded to 72.2 kg, while a mean value of 72.35 kg would be rounded to 72.4 kg.

Infants:

Birth weight and gender should be recorded with gestational age. During infancy a levelled pan scale with a bean and movable weights or digital scales capable of measuring to two decimal places of a kilogram are acceptable. Birth weight should be determined within 12 hours of birth. The infant, with or without a nappy or diaper is placed on the scales so that the weight is distributed equally about the centre of the pan. When the infant is lying or suspended quietly, weight is recorded to the nearest 10 grams. If the nappy or diaper is worn, its weight is subtracted from the observed weight ie reference data for infants are based on nude weights.

Validation and quality control measures:

If practical, equipment should be checked daily using one or more objects of known weight in the range to be measured. It is recommended that the scale be calibrated at the extremes and in the mid range of the expected weight of the population being studied.

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 of weight, on the same subjects, under standard conditions after a short time interval.

The standard deviation of replicate measurements (technical error of measurement) between observers should not exceed 0.5 kg and be less than 0.5 kg within observers.

Extreme values at the lower and upper end of the distribution of measured height 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.

Related metadata: supersedes previous data element Adult weight - measured version 1
is used in conjunction with Creatinine serum - measured version 1
is used in the calculation of Body mass index version 2

Administrative Attributes

Source Document: The measurement protocol described below is that recommended by the World Health Organization (WHO Expert Committee 1995).

Source Organisation: World Health Organization (see comments)

Comments: This data element applies to persons of all ages . It 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 data elements currently exist for Sex, Date of birth, Country of birth, Indigenous status and smoking. Data elements are being developed for physical activity.

Presentation of data:

Means and 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 some reporting purposes, it may be desirable to present weight data in categories. It is recommended that 5 kg groupings are used for this purpose. Weight data should not be rounded before categorisation. The following categories may be appropriate for describing the weights of Australian men, women, children and

adolescents, although the range will depend on the population.

Wt < 10 kg

10 kg = Wt < 15 kg

15 kg = Wt < 20 kg

... in 5 kg categories

135 kg = Wt < 140 kg

Wt => 140 kg

Source organisation:

WHO and the consortium to develop standard methods for the collection and collation of anthropometric data in children as part of the National Food and Nutrition Monitoring and Surveillance Project, funded by the Commonwealth Department of Health and Ageing.

NDSS Diabetes (clinical):

Following Principles of Care and Guidelines for the Clinical Management of Diabetes Mellitus, BMI should be below 27 kg / m² for men and women. For adults who suffer from diabetes, the recommendation is to measure weight and calculate BMI on the initial visit and then measure weight every 3 months. If the patient is on a weight reduction program, weight is to be measured more frequently.

Strong evidence exists that weight loss reduces blood pressure in both overweight hypertensive and non-hypertensive individuals; reduces serum triglycerides and increases high-density lipoprotein (HDL)-cholesterol; and generally produces some reduction in total serum cholesterol and low-density lipoprotein (LDL)-cholesterol. The risk of developing diabetes rises continuously with increasing obesity (DHAC & AIHW 1999:13). An increased central distribution of body fat (when fatness is concentrated in the abdomen) also appears to be associated more often with Type 2 diabetes (Bishop et al. 1998:430-1).

Weight loss reduces blood glucose levels in overweight and obese persons with and without diabetes; and weight loss also reduces blood glucose levels and HbA1c in some patients with type 2 diabetes. Although there have been no prospective trials to show changes in mortality with weight loss in obese patients, reductions in risk factors would suggest that development of type 2 diabetes and CVD would be reduced with weight loss.

References:

Clinical Guidelines on the Identification, Evaluation and Treatment of Overweight and Obesity in Adults (US National Heart, Lung and Blood Institute (NHLBI) in cooperation with the National Institute of Diabetes and Digestive and Kidney Diseases).

Chronic Diseases and Associated Risk Factors in Australia 2001 (AIHW).

Data Element Links

Information Model Entities linked to this Data Element

NHIM	Physical characteristic
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Data Agreements which include this Data Element

DSS - Cardiovascular disease (clinical)	From 01-Jan-03 to
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DSS - Diabetes (clinical)	From 01-Jan-03 to
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