Adult height - 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:	000362	Version number:	1
Metadata type:	DATA ELEMENT		
Registration Authority:	NHIMG	Admin status:	SUPERSEDED
		Effective date:	01-JAN-03

Definition: A person's measured height.

Adult height: measured is a continuous variable measured to the nearest 0.1 cm.

In order to ensure consistency in measurement, the measurement protocol described under Data Collection Methods should be used.

Context: Public health and health care.

Stature is a major indicator of general body size and of bone length. It is important in screening for disease or malnutrition, and in the interpretation of weight (Lohman et al. 1988). Shortness is known to be a predictor of all cause mortality, coronary heart disease mortality in middle aged men, and of less favourable gestational outcomes in women (Marmot et al. 1984, Kramer 1988).

Its main use is to enable the calculation of Adult body mass index which requires the measurement of height and weight.

Relational and Representational Attributes

Datatype:	Numeric
Representational form:	QUANTITATIVE VALUE
Representation layout:	NNN.N
Minimum Size:	3
Maximum Size:	4

Guide For Use: If measured height is not able to be collected, code 999.9.

Collection Methods: Measurement protocol:

The measurement of height requires a vertical metric rule, a horizontal headboard, and a non-compressible flat even surface on which the subject stands. The equipment may be fixed or portable, and should be described and reported.

The graduations on the metric rule should be at 0.1 cm intervals, and the metric rule should have the capacity to measure up to at least 210 cm. Measurement intervals and labels should be clearly readable under all conditions of use of the instrument.

Apparatus that allows height to be measured while the subject stands on a platform scale is not recommended.

The subject should be measured without shoes (i.e. is barefoot or wears thin socks) and wears little clothing so that the positioning of the body can be seen. Anything that may affect or interfere with the measurement should be noted on the data collection form (e.g. hairstyles and accessories, or physical problems).

The subject stands with weight distributed evenly on both feet, heels together, and the head positioned so that the line of vision is at right angles to the body. The correct position for the head is in the Frankfort horizontal plane (Norton et al. 1996). The arms hang freely by the sides. The head, back, buttocks and heels are positioned vertically so that the buttocks and the heels are in contact with the vertical board.

To obtain a consistent measure, the subject is asked to inhale deeply and stretch to their fullest height. The measurer applies gentle upward pressure through the mastoid processes to maintain a fully erect position when the measurement is taken. Ensure that the head remains positioned so that the line of vision is at right angles to the body, and the heels remain in contact with the base board.

The movable headboard is brought onto the top of the head with sufficient pressure to compress the hair.

The measurement is recorded to the nearest 0.1 cm. Take a repeat measurement. If the two measurements disagree by more than 0.5 cm, 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- and, where relevant, inter-observer errors to be assessed. The subject's measured height 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 and Berry 1994). For example, a mean value of 172.25 cm would be rounded to 172.2 cm, while a mean value of 172.35 cm would be rounded to 172.4 cm.

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 and Indigenous Status. Data elements are being developed for physical activity and smoking.

Validation and quality control measures:

All equipment, whether fixed or portable should be checked prior to each measurement session to ensure that both the headboard and floor (or footboard) are at 90 degrees to the vertical rule. With some types of portable anthropometer it is necessary to check the correct alignment of the headboard, during each measurement, by means of a spirit level.

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 height, 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 5 mm and be less than 5 mm 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: is used in the calculation of Adult body mass index version 1
has been superseded by Height - measured version 2

Administrative Attributes

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

Source Organisation: International Society for the Advancement of Kinanthropometry and the World Health Organization. (See also Comments)

Comments: Submitting organisation: The Expert Working Group on Data Standards for Indicators of Body Fatness in Australian Adults through the National Centre for Monitoring Cardiovascular Disease, Australian Institute of Health and Welfare. Date of submission: October 1997

Responsible organisation: National Health Data Committee (NHDC) / National Centre for Monitoring Cardiovascular Disease, Australian Institute of Health and Welfare

This data element applies to persons aged 18 years or older. It is recommended for use in population surveys and health care settings.

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. 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 height data in categories. It is recommended that 5 cm groupings are used

for this purpose. Height data should not be rounded before categorisation. The following categories may be appropriate for describing the heights of Australian men and women, although the range will depend on the population. The World Health Organization's range for height is 140-190 cm.

Ht <140 cm
140 cm = Ht < 145 cm
145 cm = Ht < 150 cm
... in 5 cm categories
185 cm = Ht < 190 cm
Ht = 190 cm

Data Element Links

Information Model Entities linked to this Data Element

NHIM	Physical characteristic

Data Agreements which include this Data Element