

5

Data Domain: 888.8 Unknown
999.9 Not reported
NOVAL Calculated ratio for body mass index

Guide For Use: Formula:

BMI = weight (kg) divided by height (m) squared.

Body mass index is a continuous variable.

Code body mass index to 99.99 or 99.9.

If any component necessary for its calculation (i.e. weight or height for adults and weight, height, sex or date of birth for children and adolescents) is unknown or has not been collected (i.e. is coded to 888.8, 999.9, 888, 999 or 9).

Collection Methods: *NN.NN for BMI calculated from measured height and weight.

**NN.N for BMI calculated from self-reported height and/or self-reported weight

BMI calculated from measured height and weight should be distinguished from BMI calculated from self-reported height and/or weight. When either self-reported height or self-reported weight is used in the calculation, BMI should be recorded as self-reported BMI. Self-reported or parentally reported height and weight for children and adolescents should be used cautiously if at all.

BMI should be derived after the data entry of weight and height. It should be stored on the raw data set as a continuous variable and should not be aggregated or rounded.

Related metadata: supersedes previous data element Adult body mass index version 1
is calculated using Weight - measured version 2
relates to the data element Date of birth version 4
is used in the derivation of Body mass index - classification version 2
is calculated using Height - measured version 2
is calculated using Height - self-reported version 2
relates to the data element Sex version 3
is calculated using Weight - self-reported version 2

Administrative Attributes

Source Document: Obesity: Preventing and Managing the Global Epidemic. Report of a WHO Consultation. 2000. World Health Organization.

Cole TJ, Bellizzi MC, Flegal KM, Bietz WH. Establishing a standard definition for child overweight and obesity worldwide: international survey. *British Medical Journal* 2000; 320: 1240-1243

Source Organisation: The World Health Organization and the consortium to develop an Australian standard definition of child/adolescent overweight and obesity; based at the Children's Hospital at Westmead on behalf of the Commonwealth Department of Health and Ageing.

Comments: This data element applies to persons aged 2 years or older. It is recommended for use in population surveys and health care settings for adults and population surveys only for children and adolescents. It is recommended that calculated BMI for children and adolescents be compared with a suitable growth reference such as the US Centers for Disease Control 2000 BMI- for-age chart be used for in health care settings such as hospitals, clinics and in general practice. A BMI greater than the 85th percentile would be classified as overweight, while a BMI greater than the 95th percentile would be classified as obese. These percentiles are arbitrary and do not relate to morbidity as the BMI cut-points do in adults.

BMI is relatively easy to determine, and has been validated against more direct measures of adiposity such as Magnetic Resonance Imaging and Dual X-ray Absorptiometry.

BMI is a low cost technique, with low respondent and investigator burden. In addition, it offers low inter-observer and intra-observer error, therefore offering good reliability.

Overweight and obesity, as defined by WHO for the interpretation of BMI (WHO 2000), are exceedingly common in Australia and their prevalence is increasing.

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, 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.

Body mass index can be calculated from measured height and weight, or self-reported height and weight, however for children and adolescents, self-reported or parentally reported data should be used cautiously if at all.

For adults, body mass index tends to be underestimated when based on self-reported, rather than measured, height and weight. This is due to the fact that, on average, height tends to be overestimated and weight tends to be underestimated when self-reported by respondents.

There are many individuals for whom BMI is an inappropriate measure of body fatness. These are individuals whose high body mass is due to excess muscle rather than fat (e.g. body builders or others in whom the level of physical activity promotes an increase in muscle mass); or in those with osteoporosis who will have a lower than usual BMI; or those who have a different body build (e.g. individuals with unusually long or short legs or a different body fat distribution) (WHO Expert Committee 1995).

This is particularly important when assessing individuals but should also be taken into account in interpreting data from populations in which there are sub-groups with genetic or environmental differences in body build, composition, skeletal proportions or body fat distribution. As such, both BMI and a measure of fat distribution (waist circumference or waist: hip ratio) are important in calculating the risk of obesity comorbidities.

Epidemiological research shows that there is a strong association between BMI and health risk. Excess adipose tissue in adults is

