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# Adult body mass index - classification

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**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: 000368                      Version number: 1  
Metadata type: DATA ELEMENT  
Registration Authority: NHIMG                      Admin status: SUPERSEDED  
Effective date: 01-JAN-03  
Definition: The category of weight deficit or excess.  
Context: Public health and health care.

BMI is used as an indicator of both underweight and, overweight and obesity, in sedentary Western adults. On a population basis there is a strong association between BMI and health risk.

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## *Relational and Representational Attributes*

Datatype: Numeric  
Representational form: CODE  
Representation layout: N  
Minimum Size: 1  
Maximum Size: 1  
Data Domain: 1                      Grade 3 thinness (BMI < 16.00)  
2                      Grade 2 thinness (BMI 16.00-16.99)  
3                      Grade 1 thinness (BMI 17.00-18.49)  
4                      Normal range (BMI 18.50-19.99)  
5                      (BMI 20.00-24.99)  
6                      Grade 1 overweight (BMI 25.00-29.99)  
7                      Grade 2 overweight (BMI 30.00-39.99)  
8                      Grade 3 overweight (BMI > or = 40.00)  
NOVAL                      (WHO Expert Committee 1995; NHMRC 1984, 1985)

Collection Methods: 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.

Standard definitions of overweight and obesity in terms of BMI are used to derive age-specific and age-adjusted indicators of overweight and obesity for reporting progress towards National Health Goals and Targets.

Related metadata: is used in conjunction with Adult body mass index version 1 has been superseded by Body mass index - classification version 2

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### *Administrative Attributes*

Source Document: 'Physical status: the use and interpretation of anthropometry' (WHO Expert Committee 1995)

Source Organisation: World Health Organization (see also Comments)

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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.

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

There are, however, 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.

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

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associated with excess morbidity and mortality from conditions such as hypertension, unfavourable blood lipid concentrations, diabetes mellitus, coronary heart disease, some cancers, gall bladder disease, and osteoarthritis. It may also lead to social and economic disadvantage as well as psychosocial problems. It is a major public health issue in most industrialised societies.

Overweight and obesity, as defined by NHMRC guidelines for the interpretation of BMI (NHMRC 1984, 1985), are exceedingly common in Australia and their prevalence is increasing. The direct economic cost of obesity (BMI = 30) to Australia was estimated to be over \$500 million in 1992-93 (NHMRC 1997).

Thinness (low BMI) is also an indicator of health risk, often being associated with general illness, anorexia, cigarette smoking, drug addiction and alcoholism. Low BMI is consistently associated with increased risk of osteoporosis and fractures in the elderly.

The WHO may revise this classification to:

- 1 Grade 3 thinness (BMI < 16.00)
- 2 Grade 2 thinness (BMI 16.00 16.99)
- 3 Grade 1 thinness (BMI 17.00 18.49)
- 4 Normal range (BMI 18.50 24.99)
- 5 Overweight (BMI 25.00 29.99)
- 6 Obesity Grade 1 (BMI 30.00 34.99)
- 7 Obesity Grade 2 (BMI 35.00 44.99)
- 8 Obesity Grade 3 (BMI = 45.00)

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:

Methods used to establish cut-off points for overweight have been arbitrary and, as a result, cut-off points vary between countries. The data are derived mainly from studies of mortality and morbidity risk performed in people living in western Europe or the United States of America, and cut-off points for BMI as an indicator of adiposity and risk in populations who differ in body build and genetic disposition are likely to vary. Caution is required in relation to BMI cut-off points when used for different ethnic groups because of limited outcome data for some ethnic groups, e.g. Aboriginal and Torres Strait Islander peoples. Further, the cut-off points for adults should not be used for children.

