

Body mass index – Young and Mid-aged

Body mass index (BMI) is calculated as reported weight (kg) divided by the square of reported height (metres).

Categories

Conventionally BMI is categorised according to risk of morbidity. Prior to 2004 the Australian National Health and Medical Research Council (NHMRC)¹ recommended 4 categories while the World Health Organisation (WHO)² recommended 6, although there is some overlap between these classification systems (Table 5). Subsequently the NHMRC have adopted the WHO classification.³

Table 5 BMI categories recommended by the Australian NHMRC and the World Health Organisation

Classification	Range for BMI	
NHMRC prior to 2004³		
Underweight	< 20	
Healthy weight	20 to 25	
Overweight	> 25 to 30	
Obese	> 30	
WHO⁴		
Underweight	< 18.5	Risk of co-morbidities Low (but the risk of other clinical problems is increased)
Normal range	18.5 – 24.99	Average
Overweight:	≥ 25.00	
- Pre-obese	- 25.00 - 29.99	Increased
- Obese class I	- 30.00 - 34.99	Moderate
- Obese class II	- 35.00 - 39.99	Severe
- Obese class III	- ≥ 40.00	Very severe

Analysis of BMI should be informed by the following notes from the WHO.

- Recommendations are based on the relationship between BMI and mortality, are independent of age and apply to both men and women.
- BMI may not be associated with the same level of adiposity in different populations.
- The cut-points reflect a simplistic relationship between BMI and the risk of co-morbidity, which can also be affected by factors such as diet, ethnicity and physical activity.
- The risks associated with BMI begin at 25 and are continuous and graded.
- Interpretation of risk categories may vary between populations.
- Both BMI and a measure of fat distribution (such as waist circumference) are important in calculating the risk of co-morbidities.

Although some publications from the first survey of the Younger ALSWH cohort have used WHO category⁴, the ALSWH data sets distributed prior to October 2005 contained only the NHMRC classification, mainly because of the relatively small number of women meeting the WHO criteria for underweight. At the first survey 10.3%, 1.8% and 3.3% of the younger, mid age and older women respectively had a BMI of less than 18.5 while 26.9%, 7.1% and 8.6% had BMI less than 20. In August 2006 the decision was taken not to include categories for BMI in the ALSWH data

sets, but to provide this information to data users and allow them to select the classification system most appropriate to their needs.

References

1. National Health and Medical Research Council. *Acting on Australia's Weight: a strategic plan for the prevention of overweight and obesity*. Canberra: *Australian Government Publishing Service*, 1997.
2. WHO Consultation on Obesity (1999: Geneva, Switzerland) *Obesity: preventing and managing the global epidemic: report of a WHO consultation*. (WHO technical report series; 894)
3. *Clinical Practice Guidelines for the Management of Overweight and Obesity in Adults* (endorsed Sep 2003, updated March 2004) – page 44 – accessed at <http://www.health.gov.au/internet/wcms/publishing.nsf/Content/obesityguidelines-guidelines-adults.htm> on 18 November 2005
4. Brown WJ, Mishra G, Kenardy J, Dobson A. Relationships between body mass index and well-being in young Australian women. *International Journal of Obesity* 2000; 24: 1360-1368