

Waist circumference

The measurement of waist circumference provides information about the distribution of body fat and is a measure of risk for conditions such as coronary heart disease (CHD). It is now well known that people who carry their excess fat centrally (within the abdominal cavity) are more likely to suffer the consequences of being overweight.^{2,3}

Increased waist circumference is also associated with the Metabolic syndrome.

The Metabolic Syndrome

The WHO definition for **metabolic syndrome** is:

'Type 2 diabetes, impaired glucose tolerance or normal glucose tolerance with insulin resistance, together with two or more of the following:

1. *Elevated blood pressure*
2. *Abdominal obesity and/or BMI >30kg/m²*
3. *Low HDL cholesterol*
4. *High triglycerides*
5. *Microalbuminuria*

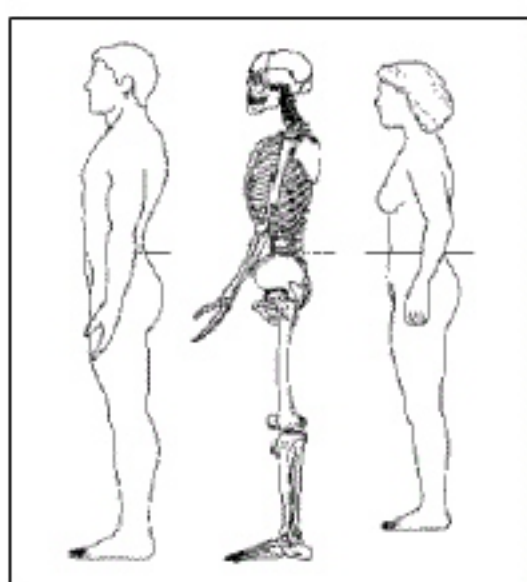
People with metabolic syndrome are at an increased risk of cardiovascular disease equivalent to people with frank type 2 diabetes.

Practitioners are likely to see metabolic syndrome on a frequent basis. It is estimated in America that 47 million people - about 1 in 4 adults (23%) - have metabolic syndrome. The incidence of metabolic syndrome in adults is comparable to that of hypertension (24%).⁴

Goals of treatment for metabolic syndrome have to be avoidance of progression to overt type 2 diabetes and avoidance of premature death due to cardiovascular disease achieved through lifestyle modification and the judicious use of drugs and in extreme cases surgery.

If measuring waist circumference, ensure that a tape of adequate length is available. The correct position for measuring waist circumference is midway between the upper hip bone and the uppermost border of the right iliac crest as shown in Figure 1. The tape should be placed around the abdomen at the level of this midway point and a reading taken when the tape is snug but does not compress the skin. In practice it may be difficult for very overweight patients to accurately palpate those bony landmarks in which case placing the tape at the level of the belly button is recommended.

Figure 1: Measuring tape position for waist circumference



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The waist circumference measurement for men and women at which there is an increased relative risk is defined as follows.⁵

	Increased Risk	Substantially increased risk
Men	>=94 cm	>=102 cm
Women	>=80 cm	>=88 cm

In some populations, waist circumference may be a better indicator of risk than BMI e.g. in persons of Asian descent.^{6,7} As mentioned previously, not only is there a physical difficulty in measuring waist circumference in very obese patients but in those with a BMI >35 kg/m², waist circumference has little added predictive power of disease risk.

In patients with a BMI in the region of 25–35 kg/m² incorporating measurements of waist circumference will provide additional information about risk and can be used as an additional measure of progress with weight loss.