

Health Monitor GMON

„INDICATE Health Risks – RATE professionally – REACT prophylactically”

Explanation to Register Body Measures / Waist



The waist is generally the most narrow part of the body between breast and hip. Women find the waist about 2-3cm above the navel. The waist position of men can be above or beneath the navel.

The Waist-Hip-Ratio (WHR) refers to the proportions of fat distributed around the torso.

$$\text{WHR} = (\text{Waist circumference in cm}) / (\text{Hip circumference in cm})$$

The Waist-Height-Ratio (WHtR) refers to the proportions of fat distributed around the torso, too.

$$\text{WHtR} = (\text{Waist circumference in cm}) / (\text{body height in cm})$$

Changes in waist circumference are assigned with signal colours in the [graphic depiction](#) to display the qualitative changes in health risks.



The waist circumference (also called belly circumference) itself can be an important parameter for calculating the healthy risk. It presented by android fat distribution is classed as being higher since fatty tissue in the abdominal area is clearly more metabolically active than subcutaneous fat. Depending on whether the fat is predominantly subcutaneous in the hip and thigh area (gynoid or peripheral fat distribution) or abdominal (android or central fat distribution) reference is made to 'pear' and 'apple' shapes for simplicity.



In the case of a BMI over 25 the waist circumference should always be measured!



- [\(A\)](#) Ranges of waist circumferences
- [\(B\)](#) Ranges of WHR
- [\(C\)](#) Ranges of WHtR



Lean ME, Han TS, Morrison CE. Waist circumference as a measure for indicating need for weight management. Brit Med J 311 (1995) 158-161.



abdominal: <lat. 'abdomen' – 'stomach', 'belly'>: relating to the stomach
subcutaneous: <lat. 'sub' – 'underneath'; 'cutis' – 'skin'>: fatty tissue lying underneath the skin



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general operation instruction, using goals values, other relevant parameters for health

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(A) Ranges for waist circumference

Classification	Traffic light colour	Men	Women
good	green	up to 94 cm	up to 80 cm
increased	yellow	94 cm to 102 cm	80 cm to 88 cm
high	red	over 102 cm	over 88 cm

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(B) Ranges for WHR

Classification	Traffic light colour	Men	Women
low	yellow	under 0.50	under 0.40
good	green	0.50 to 1.00	0.40 to 0.85
increased	yellow	1.00 to 1.15	0.85 to 1.00
high	red	over 1.15	over 1.00

(C) Ranges for WHtR

Classification	Traffic light colour	less than 15 years	15 to 40 years	41 to 50 years	more than 50 years
low	yellow	under 0,34	under 0,40	under 0,45	under 0,50
good	green	0,34 to 0,45	0,40 to 0,50	0,45 to 0,55	0,50 to 0,60
increased	yellow	0,46 to 0,51	0,51 to 0,56	0,56 to 0,61	0,61 to 0,66
high	red	over 0,51	over 0,56	over 0,61	over 0,66

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