

# Health Monitor GMON

„INDICATE Health Risks – RATE professionally – REACT prophylactically”

## Explanation to Register Body Measures / BMI



BMI (Body Mass Index) is calculated by dividing a person's body weight [in kg] by the square of their height [in m]:

$$\text{BMI [kg/m}^2\text{]} = (\text{weight in kg}) / (\text{height in m})^2$$

BMI has become an international indicator of overweight as it is easy to calculate and is currently one of the best indirect methods for calculating fat mass.



Carrying excess weight is not an illness in itself, but it has been proven that being overweight results in a clear risk of developing accompanying and secondary diseases. If overweight exceeds a certain level it is known as obesity, which is classified as a disease.



**BMI as the sole criterion indicating overweight and obesity is only informative up to a certain point!**

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



- (A) Classification referred to [WHO](#) [WHO 2000].
- (B) Classification according to age [Mensink 2005, Stevens 1998].
- (C) Asian classification referred to [JASSO](#) and [AOASO](#) [Nishida 2004].
- (D) Classification for China/Taiwan referred to Bureau of Health Promotion [BHP 2004].
- (E) Consensus Statement for Asian Indians [Munjal YP et al. 2008]
- (F) Classification for children and young people referred to Health Promotion Administration, Ministry of Health and Welfare, Taiwan.
- (G) Guidelines values for children and young people [Kromeyer 2011].



[BHP 2004] Bureau of Health Promotion. Health and Fitness: A Guidebook. March 2004 (2<sup>nd</sup> print).

[Kromeyer 2011] Kromeyer-Hauschild K et al. Perzentile für den Body Mass Index für das Kinder- und Jugendalter unter Heranziehung verschiedener deutscher Stichproben. Kinderheilkunde 149 (2001), 807-818.

[Mensink 2005] Mensink GBM, Lampert T, Bergmann E. Übergewicht und Adipositas in Deutschland 1984 - 2003. Bundesgesundheitsblatt 48 (2005) 1348-1356.

[Munjal YP et al. 2008] Consensus Statement for Diagnosis of Obesity, Abdominal Obesity and the Metabolic Syndrome for Asian Indians and Recommendations for Physical Activity, Medical and Surgical Management.

[Nishida 2004] Nishida C. Appropriate body-mass index for Asian populations and its implication for policy and intervention strategies. The Lancet; 363; 157-163.

[Stevens 1998] Stevens J et al. The effect of age on the association between body-mass index and mortality. New Engl J Med, Vol 338 (1998) 1-7.

[WHO 2000] Obesity: preventing and managing the global epidemic. WHO Technical Report Series 894, WHO, Genf 2000.



**Adiposity:** <lat. 'adipo-' 'fat', or 'pertaining to fat', 'obesity'> Obesity is characterized by excess weight and a BMI > 30.

**AOASO:** Asia-Oceania Association for the Study of Obesity

**JASSO:** Japan Society for the Study of Obesity

**WHO:** World Health Organisation



[Overview about GMON modules](#)

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

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### (A) Classification referred to WHO

Classification	Traffic light colour	BMI in kg/m <sup>2</sup>
Underweight	Yellow	up to 18.5
Normal weight	Green	from 18.5 to 25.0
Overweight	Yellow	from 25.0 to 30.0
Obese	Red	over 30.0

### (B) Classification according to age [in kg/m<sup>2</sup>]

Classification	Traffic light colour	19 - 24 years	25 - 34 years	35 - 44 years	45 - 54 years	44 - 65 years	> 65 years
Underweight	Yellow	< 19.0	< 20.0	< 21.0	< 22.0	< 23.0	< 24.0
Normal weight	Green	19.0-24.0	20.0-25.0	21.0-26.0	22.0-27.0	23.0-28.0	24.0-29.0
Overweight	Yellow	24.0-30.0	25.0-30.5	26.0-31.0	27.0-31.5	28.0-32.0	29.0-32.5
Obese	Red	> 30.0	> 30.5	> 31.0	> 31.5	> 32.0	> 32.5

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### (C) Asian classification referred to JASSO and AOASO

Classification (JASSO)	Traffic light colour	BMI in kg/m <sup>2</sup>	Classification (AOASO)	Traffic light colour	BMI in kg/m <sup>2</sup>
Underweight	yellow	up to 18.5	Underweight	yellow	up to 18.5
Normal weight	green	18.5 to 24.9	Normal weight	green	18,5 to 22.9
Obese I	yellow	25.0 to 29.9	Obese I	yellow	23.0 to 26.9
Obese II - IV	red	30.0 and more	Obese II - IV	red	27.0 and more

### (D) Classification referred to the Bureau of Health Promotion (China/Taiwan)

Classification	Traffic light colour	BMI in kg/m <sup>2</sup>
Underweight	Yellow	up to 18.5
Normal weight	Green	18.5 to 23.9
Overweight	Yellow	24.0 to 26.9
Obese	Red	27.0 and more

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### (E) Consensus Statement for Asian Indians

Classification	Traffic light colour	BMI in kg/m <sup>2</sup>
Underweight	Yellow	up to 18.0
Normal weight	Green	18.0 to 22.9
Overweight	Yellow	23.0 to 24.9
Obese	Red	25.0 and more

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**(F) Classification for children and young people referred to Health Promotion Administration, Ministry of Health and Welfare, Taiwan. [in kg/m<sup>2</sup>]**

Age (years)	Boys				Girls			
	Under-weight	Normal weight	Over-weight	Obese	Under-weight	Normal weight	Over-weight	Obese
Traffic light colour	yellow	green	yellow	red	yellow	green	yellow	red
0.0 – 0.5	<11.5	11.5-14.8	14.8-15.8	>15.8	<11.5	11.5-14.7	14.7-15.5	>15.5
0.5 – 1.0	<15.2	15.2-18.9	18.9-19.9	>19.9	<14.6	14.6-18.6	18.6-19.6	>19.6
1.0 – 1.5	<14.8	18.8-18.3	18.3-19.2	>19.2	<14.2	14.2-17.9	17.9-19.0	>19.0
1.5 – 2.0	<14.2	14.2-17.5	17.5-18.5	>18.5	<13.7	13.7-17.2	17.2-18.2	>18.2
2.0 – 2.5	<14.2	14.2-17.4	17.4-18.3	>18.3	<13.7	13.7-17.2	17.2-18.1	>18.1
2.5 – 3.0	<13.9	13.9-17.2	17.2-18.0	>18.0	<13.6	13.6-17.0	17.0-17.9	>17.9
3.0 – 3.5	<13.7	13.7-17.0	17.0-17.8	>17.8	<13.5	13.5-16.9	16.9-17.8	>17.8
3.5 – 4.0	<13.6	13.6-16.8	16.8-17.7	>17.7	<13.3	13.3-16.8	16.8-17.8	>17.8
4.0 – 4.5	<13.4	13.4-16.7	16.7-17.6	>17.6	<13.2	13.2-16.8	16.8-17.9	>17.9
4.5 – 5.0	<13.3	13.3-16.7	16.7-17.6	>17.6	<13.1	13.1-16.9	16.9-18.0	>18.0
5.0 – 5.5	<13.3	13.3-16.7	16.7-17.7	>17.7	<13.1	13.1-17.0	17.0-18.1	>18.1
5.5 – 6.0	<13.4	13.4-16.7	16.7-18.0	>18.0	<13.1	13.1-17.0	17.0-18.3	>18.3
6.0 – 6.5	<13.5	13.5-16.9	16.9-18.8	>18.5	<13.1	13.1-17.2	17.2-18.8	>18.8
6.5 – 7.0	<13.6	13.6-17.3	17.3-19.2	>19.2	<13.2	13.2-17.5	17.5-19.2	>19.2
7.0 – 7.5	<13.8	13.8-17.9	17.9-20.3	>20.3	<13.4	13.4-17.7	17.7-19.6	>19.6
7.5 – 8.0	<14.0	14.0-18.6	18.6-21.2	>21.2	<13.7	13.7-18.0	18.0-20.3	>20.3
8.0 – 8.5	<14.1	14.1-19.0	19.0-21.6	>21.6	<13.8	13.8-18.4	18.4-20.7	>20.7
8.5 – 9.0	< 14.2	14.2-19.3	19.3-22.0	>22.0	<13.9	13.9-18.8	18.8-21.0	>21.0
9.0 – 9.5	<14.3	14.3-19.5	19.5-22.3	>22.3	<14.0	14.0-19.1	19.1-21.3	>21.3
9.5 – 10.0	<14.4	14.4-19.7	19.7-22.5	>22.5	<14.1	14.1-19.3	19.3-21.6	>21.6
10.0 – 10.5	<14.5	14.5-20.0	20.0-22.7	>22.7	<14.3	14.3-19.7	19.7-22.0	>22.0
10.5 – 11.0	<14.6	14.6-20.3	20.3-22.9	>22.9	<14.4	14.4-20.1	20.1-22.3	>22.3
11.0 – 11.5	<14.8	14.8-20.7	20.7-23.2	>23.2	<14.7	14.7-20.5	20.5-22.7	>22.7
11.5 – 12.0	<15.0	15.0-21.0	21.0-23.5	>23.5	<14.9	14.9-20.9	20.9-23.1	>23.1
12.0 – 12.5	<15.2	15.2-21.3	21.3-23.9	>23.9	<15.2	15.2-21.3	21.3-23.5	>23.5
12.5 – 13.0	<15.4	15.4-21.5	21.5-24.2	>24.2	<15.4	15.4-21.6	21.6-23.9	>23.9
13.0 – 13.5	<15.7	15.7-21.9	21.9-24.5	>24.5	<15.7	15.7-21.9	21.9-24.3	>24.3
13.5 – 14.0	<16.0	16.0-22.2	22.2-24.8	>24.8	<16.0	16.0-22.2	22.2-24.6	>24.6
14.0 – 14.5	<16.3	16.3-22.5	22.5-25.0	>25.0	<16.3	16.3-22.5	22.5-24.9	>24.9
14.5 – 15.0	<16.6	16.6-22.7	22.7-25.2	>25.2	<16.5	16.5-22.7	22.7-25.1	>25.1
15.0 – 15.5	<16.9	16.9-22.9	22.9-25.4	>25.4	<16.7	16.7-22.7	22.7-25.2	>25.2
15.5 – 16.0	<17.2	17.2-23.1	23.1-25.5	>25.5	<16.9	16.9-22.7	22.7-25.3	>25.3
16.0 – 16.5	<17.4	17.4-23.3	23.3-25.6	>25.6	<17.1	17.1-22.7	22.7-25.3	>25.3
16.5 – 17.0	<17.6	17.6-23.4	23.4-25.6	>25.6	<17.2	17.2-22.7	22.7-25.3	>25.3
17.0 – 17.5	<17.8	17.8-23.5	23.5-25.6	>25.6	<17.3	17.3-22.7	22.7-25.3	>25.3
17.5 – 18.0	<18.0	18.0-23.6	23.6-25.6	>25.6	<17.3	17.3-22.7	22.7-25.3	>25.3

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## Explanation to Register Body Measures / BMI

**(G) Guideline values for children and young people [in kg/m<sup>2</sup>]**

<b>Classification (girls)</b>	<b>Traffic light colour</b>	<b>7 – 8 years</b>	<b>9 – 10 years</b>	<b>11 – 12 years</b>	<b>13 – 14 years</b>	<b>15 – 16 years</b>	<b>17 – 18 years</b>
Underweight	yellow	< 13.8	< 14.3	< 15.1	< 16.4	< 17.5	< 18.2
Normal weight	green	13.8-18.9	14.3-20.4	15.1-22.0	16.4-23.7	17.5-24.8	18.2-24.0
Overweight	yellow	18.9-20.9	20.4-23.0	22.0-25.0	23.7-26.7	24.8-27.6	24.0-27.8
Obese	red	> 20.9	> 23.0	> 25.0	> 26.7	> 27.6	> 27.8
<b>Classification (boys)</b>	<b>Traffic light colour</b>	<b>7 – 8 years</b>	<b>9 – 10 years</b>	<b>11 – 12 years</b>	<b>13 – 14 years</b>	<b>15 – 16 years</b>	<b>17 – 18 years</b>
Underweight	yellow	< 14.0	< 14.4	< 15.2	< 16.2	< 17.3	< 18.4
Normal weight	green	14.0-18.6	14.4-20.2	15.2-21.8	16.2-23.4	17.3-24.0	18.4-24.0
Overweight	yellow	18.6-20.6	20.2-22.8	21.8-25.0	23.4-26.6	24.0-27.8	24.0-28.6
Obese	red	> 20.6	> 22.8	> 25.0	> 26.6	> 27.8	> 28.6

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