

Health Monitor GMON

„INDICATE Health Risks – RATE professionally – REACT prophylactically”

Explanation to Register Vital Values / Blood Pressure



Blood pressure is the force exerted by the blood on the walls of the arteries and veins and is generally indicated in mmHg.

A distinction is made between systolic pressure as the maximum blood pressure in the vessel (peak pressure during the contraction phase of the heart chambers) and diastolic pressure as the minimum pressure (measurement of long-term loading of the vessels). Both values are needed in order to obtain detailed information about blood pressure.



Arterial hypertension (high blood pressure) is of great significance in terms of health. It is an important risk factor in terms of vascular system disorders where diseases of the vessels supplying the heart and brain represent life-threatening secondary diseases. High blood pressure over an extended period is responsible for coronary disease and chronic heart failure and for the occurrence of chronic liver failure and peripheral blood circulation problems. Consequently, knowledge of the potential causes of **hypertension** is important.



To identify the average blood pressure in the vascular system the mean arterial blood pressure is indicated (MAP).

MAP = diast. blood pressure + (syst. blood pressure – diast. blood pressure) / 3

For further identification of the quality and flexibility of the arteries the pulse pressure (PP) is to observe. The difference between systolic and diastolic blood pressure is an important indication for the elasticity of the aorta and all the other main arteries, which transport the blood from the heart to the organs.

PP = syst. blood pressure – diast. blood pressure

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



[\(A\)](#) Ranges of Blood Pressure, male (systolic, diastolic, MAP, PP)

[\(B\)](#) Ranges of Blood Pressure, female (systolic, diastolic, MAP, PP)



Leitlinien für die Prävention, Erkennung, Diagnostik und Therapie der arteriellen Hypertonie der Deutschen Liga zur Bekämpfung des hohen Blutdruckes e.V. (Deutsche Hochdruckliga) AWMF-Leitlinien-Register Nr. 046/001.

WHO - ISH Guidelines Subcommittee (1999): International Society of Hypertension Guidelines for the Management of Hypertension. Journal of Hypertension 17 (2).



diastolic: <Greek 'diastole' –'expansion'> expansion of the chambers in the heart, the chambers are refilled with blood and the pressure in the vessels falls. This pressure reading is provided essentially on the basis of the pressure in the aorta.

systolic: <Greek 'systole' – 'contracting'> contracting of the chambers in the heart, the blood is pushed out and higher systolic blood pressure occurs in the vessels.

hypertension: <Greek 'hypertonos' – 'above a certain pressure or tension'> blood pressure readings above normal range – constant hypertension is a dangerous condition and needs treatment.

hypotension: <Greek. hypotonos - below a certain pressure or tension'> blood pressure readings below normal range –hypotension is not a disease, but it is accompanied with impairments such as dizziness or fainting.



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(A) Ranges of Blood Pressure, male (in mmHg):

| Classification | Traffic light colour | systolic BP | diastolic BP | MAP | PP |
|----------------|----------------------|-------------|--------------|------------|----------|
| very low | red | up to 80 | up to 60 | up to 65 | |
| low | yellow | 80 to 110 | 60 to 70 | 65 to 85 | |
| good | green | 110 to 140 | 70 to 90 | 85 to 110 | up to 50 |
| high | yellow | 140 to 160 | 90 to 100 | 110 to 120 | 50 to 65 |
| very high | red | over 160 | over 100 | over 120 | over 65 |

If systolic and diastolic blood pressure fall into different categories the higher category should apply.

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(B) Ranges of Blood Pressure, female (in mmHg):

| Classification | Traffic light colour | systolic BP | diastolic BP | MAP | PP |
|----------------|----------------------|-------------|--------------|------------|----------|
| very low | red | up to 70 | up to 50 | up to 55 | |
| low | yellow | 70 to 100 | 50 to 60 | 55 to 85 | |
| good | green | 100 to 140 | 60 to 90 | 85 to 110 | up to 50 |
| high | yellow | 140 to 160 | 90 to 100 | 110 to 120 | 50 to 65 |
| very high | red | over 160 | over 100 | over 120 | over 65 |

If systolic and diastolic blood pressure fall into different categories the higher category should apply.

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