Health Monitor GMON

„INDICATE Health Risks – RATE professionally – REACT prophylactically"

Explanation to Register Body Values / Phase Angle

The phase angle is a physical quantity, which results from the feature of metabolic active cells to influence the alternating current as a capacitor by the cell membrane. The unit of the phase angle is ° (angular grade).

The phase angle allows statements about the condition of cells and thereby about the health condition of the whole body. Intact cells have a stable membrane potential and a high phase angle. In contrast damaged cells have a low phase angle. The metabolic inactive cells are not considered by the phase angle. That's why the phase angle is a general quantity for the cell density and proportional to the body cell mass.

The phase angle increases by improvement of the nutrition condition and fitness level. First of all it reflects an optimal supply of the cells with nutrients and reacts to all kind of malnutrition. Sports promote the phase angle, however the value changes very slowly. An over-training can damage the cell membrane similarly as several noxious effects, so that the phase angle decreases. A reduction of phase angle can also refer to accumulation of body water.

The phase angle is influenced by the daily variability of the body water. Changes of phase angle are only identifiable in the trend of long-term repeated measurements.

(A) Classification according to gender.

Bosy-Westphal A et al. Phase Angle From Bioelectrical Impedance Analysis: Population Reference Values by Age, Sex, and Body Mass Index. Journal of Parenteral and Enteral Nutrition. Vol. 30 (2006) 4: 309-316.
Di Vincenzo O, Marra M, Scalfi L. Bioelectrical impedance phase angle in sport: a systematic review. Journal of the International Society of Sports Nutrition. Vol 16 (2019) 49.
Tomczak J. Körperanalysen: Die bioelektrische Impedanzanalyse BIA. In: F.I.T. Wissenschaftsmagazin der Deutschen Sporthochschule Köln. Band 1. ALPHA Informationsgesellschaft mbH, 2003, S. 34–40.

Malnutrition: Underfeeding, undernourishment.

Noxious effects: Substances or conditions, which perform a hurtful outcome on the organism, for example infections, intertoxications, stress.

Overview about GMON modules
general operation instruction, using target values, other relevant parameters for health

Index of GMON program

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Classification

Classification	Traffic light colour	Men	Women
very low	red	< 5.0°	< 4.5°
low	yellow	5.0° - 6.0°	4.5° - 5.5°
good	green	> 6.0°	> 5.5°

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