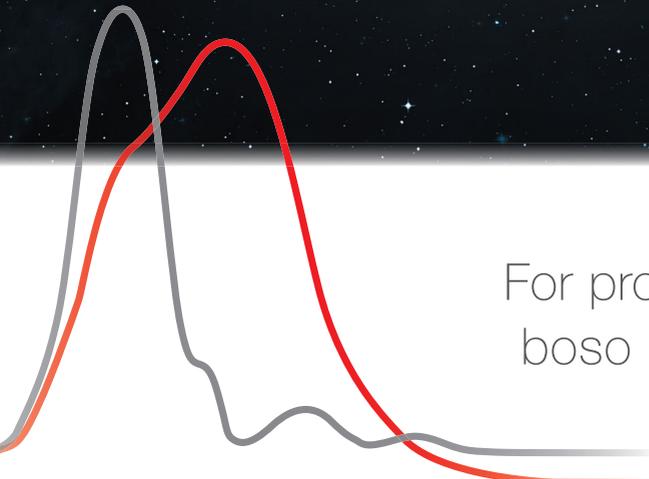


BOSCH
+SOHN
NEW boso

CENTRAL BLOOD PRESSURE

THE EVOLUTION
OF PRECISE
BLOOD PRESSURE
MEASUREMENT



For professional use with
boso profil-manager XD

boso - Your partner for health

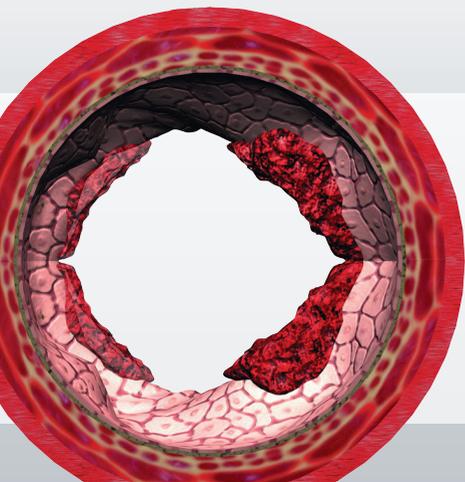
The human being is as old as its blood vessels

A person's health and fitness essentially depend on the condition of their blood vessels. The condition of the arteries is closely linked to life expectancy and quality of life, especially with increasing age.

The arteries stiffen with age, especially the aorta. The aorta dilates by about 10 % with one heartbeat in youth, whereas this pulsatile dilation in muscular arteries is only about 2-3 % in later life. This elasticity decreases according to age, but also individually with regard to the risk factors. The age-related degenerative changes are therefore particularly pronounced in the aorta and also in the carotid and femoral arteries.¹

In addition to age, there are other important factors that may pose a risk for arterial stiffness:¹

- Physiological changes/low physical activity
- Genetic disposition to high blood pressure, diabetes, heart attack
- Cardiovascular risk factors such as obesity, smoking, hypertension, fatty metabolism disorder, diabetes
- Cardiovascular diseases (heart attack, stroke, heart failure)
- Other factors, e.g. renal failure



That is why conventional diagnostics are often insufficient. Additional pulse wave and central blood pressure analyses are essential in determining personal risk and prognosis in terms of life expectancy and quality of life.

Pulse wave analysis

The difference between central and peripheral blood pressure cannot be predicted from peripheral blood pressure values alone, but is related to several factors.¹

With **pulse wave analysis** as a non-invasive method, the essential parameters can be easily determined nowadays.²

✓ Calculation of central blood pressure

Central blood pressure is considered an important predictor of cardiovascular damage and complications and is more significant than peripheral blood pressure.³ It is located directly at the aorta and thus has a direct influence on the heart, kidneys and brain.

✓ Derivation of the augmentation index (AIx)

The pressure increase in the aorta caused by the reflected pressure wave is called augmentation pressure, its contribution to the pulse pressure is the augmentation index. This increases with age or the presence of risk factors and is also a risk or prognosis marker.⁴

✓ Determination of pulse wave velocity (PWV)

Another important predictor of changes in arterial vascular function is pulse wave velocity. The decisive parameter for pulse wave velocity is vascular elasticity. Thus, it has a great informative value, as a biomarker for the determination and assessment of arterial stiffness and cardiovascular disease.^{1, 5}

¹ Baulmann, J., Arterielle Gefäßsteifigkeit und Pulswellenanalyse. 2010

² Vlachopoulos C et al.: Prediction of cardiovascular events and all-cause mortality with central hemodynamics: a systematic review and meta-analysis. Eur Heart J 2010; 31: 1865–71

³ Schillaci, G. et al., Central Blood Pressure. Getting to the heart of the matter. Journal of Hypertension. 2010. 28:237–239

⁴ Guidelines for the management of arterial hypertension of the European Society of Hypertension (ESH) and the European Society of Cardiology (ESC). ESH/ESC Task Force. Journal of Hypertension 2018, 31: 1925–38

⁵ DeGAG – Gesellschaft für arterielle Gefäßsteifigkeit Deutschland-Österreich-Schweiz e.V.

The boso system solution

The boso 2-4-1 concept!

2 blood pressure monitors, 4 measuring methods, 1 application software

2

Easy and quick to use as well as precise and reliable measurements with two clinically validated blood pressure monitors - boso **TM-2450** and boso **ABI-system 100**

4



- 24-hour blood pressure measurement¹
- Determination of central blood pressure¹
- Atherosclerosis pAD Initial diagnosis²
- Determination of the pulse wave speed²

1

Evaluation of all collected measurement data (graphs, diagrams, charts, patient printout) of both devices, quickly and clearly, with the application software **boso profil-manager XD**

ABPM Guidelines

ABPM software

boso profil-manager XD

The boso TM-2450 and the boso profil-manager XD software comply with the practical ABPM Guidelines of the European Society of Hypertension in the following points:



Detailed evaluation

- Essential clinical report (one page)
- Standardized display of all blood pressure measurements (with day and night display and delimited target pressure ranges)
- Display of average systolic and diastolic blood pressure + heart rate
- Night-time blood pressure drop (%) for systolic and diastolic blood pressure
- Summary statistics for time-weighted averages of systolic and diastolic blood pressure and heart rate for the 24-hour period, daytime(awake) and night-time (asleep), with standard deviations and number of valid blood pressure readings
- Possibility to detect and display false measurements (artefacts)



Fulfils optional requirements

- Possibility to display heart rate and mean blood pressure
- Comparison of repeated ABPM recordings
- Possibility to host data centrally

PROFIL-MANAGER XD

¹ measurement with boso TM-2450

² measurement with boso ABI-system 100

ABI = Ankle Brachial Index

pAD = Peripheral Arterial Disease

boso TM-2450

For performing precise 24h
blood pressure measurements
with simple operation



20.5 % smaller
22.5 % lighter
33 % quieter¹



- Fulfils the practical **ABPM Guidelines** of the ESH/ESC: Clinically validated², activity and rest phase detection, detection and documentation of arrhythmias, artefacts and other events
- Intelligent automatic inflation for measurement without re-inflation
- Factors influencing blood pressure behavior
- Extremely low pumping noise level for a disturbance-free sleep phase



Clinically validated according to DIN EN ISO 81060-2



Cuffs | robust and drop-proof



600 measurements with 1 x set of batteries



Climate-neutral packaging



Varta Premium Batteries Recycled from 11% recycled material

24-hour measurement

The new generation



Optional central blood pressure³

NEW



Optional augmentation index³

AVAILABLE SOON



Optional PWV measurement³

AVAILABLE SOON

Scope of supply

- 1 Measurement device
- 1 Cuff size M
(13 x 62 | 20 - 31 | washable, latex-free)
- 1 Cuff size L
(16 x 68 | 28 - 38 | washable, latex-free)
- Optional cuffs:
S (10 x 38 | 15 - 22), XL (17 x 76 | 36 - 50)
- 1 Hip bag with detachable carrying strap and belt
- 1 Battery charger
- 2 Battery sets, each with two batteries
(Green Label)
- 1 USB connection cable
- 1 boso profil-manager XD software
- 1 Instruction manual
- 1 Medical devices book
- 1 Warranty certificate
- 1 Carrying case made of sustainable cardboard



¹ Compared with the predecessor model boso TM-2430 PC 2

² Guidelines for the management of arterial hypertension of the European Society of Hypertension (ESH) and the European Society of Cardiology (ESC). ESH/ESC Task Force. Journal of Hypertension 2018, 31: 1925-38

³ Evaluation via software boso profil-manager XD

boso ABI-system 100



An ABI value < 0.9 indicates PAD with a sensitivity of up to 95 % compared to the angiogram and conversely excludes the disease with almost 100 % specificity.¹

With the ABI measurement system, boso closes an important gap in the secondary prevention of cardiovascular events.

The boso ABI system determines the ABI more easily, more quickly and more precisely than conventional measuring methods. These are more time-consuming and require experience.

- This means routine checks can be performed on every patient for early detection of PAD. PWV measurement is optional.
- PWV measurement is the measurement of pulse wave velocity to determine arterial vascular stiffness.²

Free info on atherosclerosis
on the GP database
www.deximed.de/pavk



The (ABI - Ankle Brachial Index) has the greatest predictive power for stroke, myocardial infarction and mortality.¹

The measurement



- in 1 Minute
- Simple and easy to delegate
- precise and clinically validated



Scope of supply

- 1 Measuring device
- 2 Nylon arm cuffs (22 - 42 cm), incl. tube
- 2 Nylon leg cuffs (18 - 38 cm), incl. tube
- 1 Power supply unit
- 1 USB connection cable
- 1 boso profil-manager XD software
- 1 Instruction manual
- 1 Medical devices book
- 1 Warranty certificate
- 1 Carrying case made of sustainable cardboard

PAD initial diagnosis

Your benefits with the ABI-system 100



Covers a wide range of patients



Important for cardiovascular diagnosis



Measurement value tracking



Optional PWV measurement³



Optional central blood pressure³ AVAILABLE SOON



Optional augmentation index³ AVAILABLE SOON



Made in Germany



Clinically validated



Cuffs | robust and drop-proof



Climate-neutral packaging

PWV – Pulse Wave Velocity

¹ Diehm C, Schuster A, Allenberg H, et al. High prevalence of peripheral arterial disease and comorbidity in 6,880 primary care patients: cross sectional study. *Atherosclerosis* 2004; 172:95 – 105.

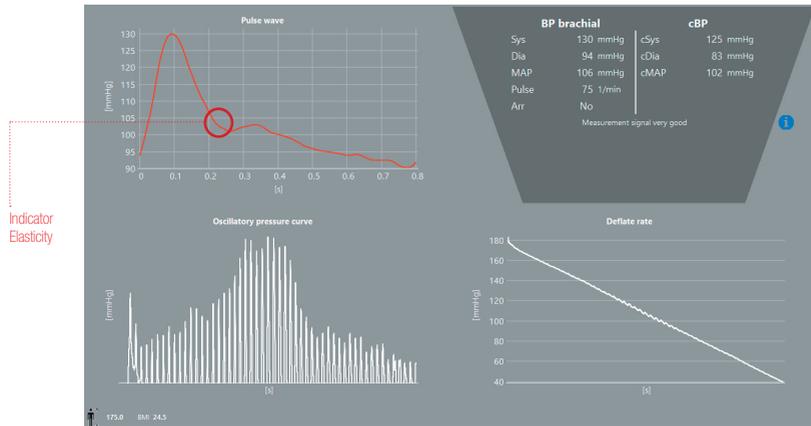
² DeGAG – Gesellschaft für Arterielle Gefäßsteifigkeit Deutschland-Österreich-Schweiz e.V.

³ Evaluation via software boso profil-manager XD

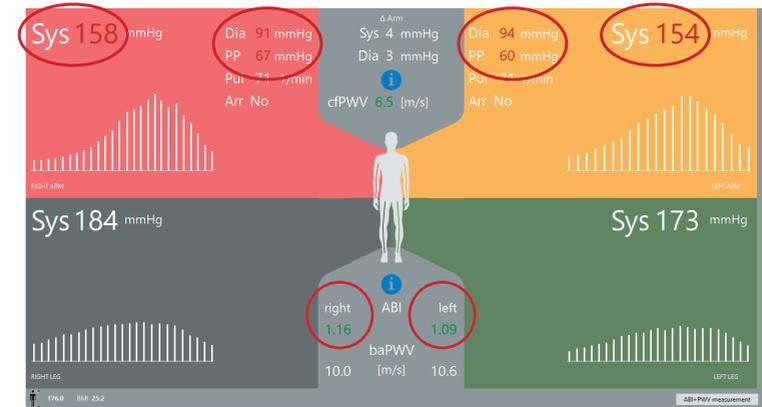
Practical case studies



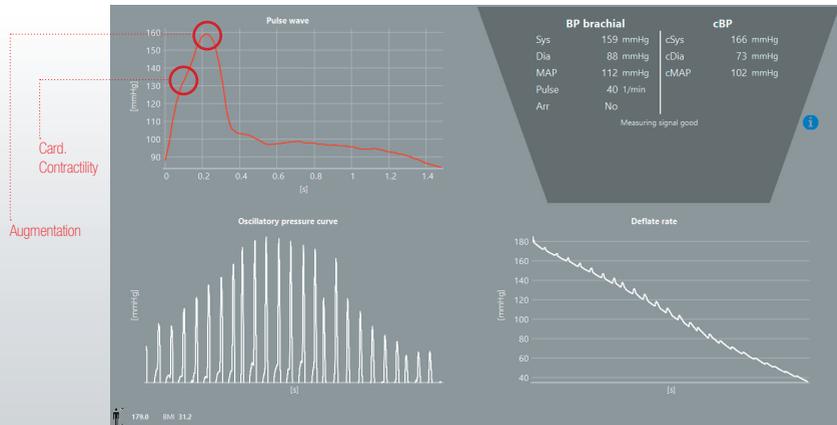
✓ Elastic arterial vascular system



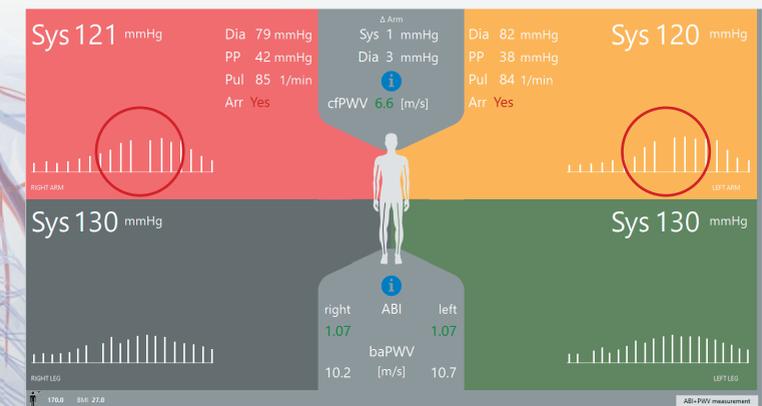
✓ Hypertension | ABI > 0.9 (no PAD)



✓ Stiffened arterial vascular system



✓ Arrhythmia, e.g. possible extrasystole





96 %

of all German doctors, practitioners and consultants **are convinced** and work with blood pressure monitors from boso.
(API study by GfK 01/2016)

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