

# BPLab®



## EXPERT-LEVEL MEDICAL DEVICES

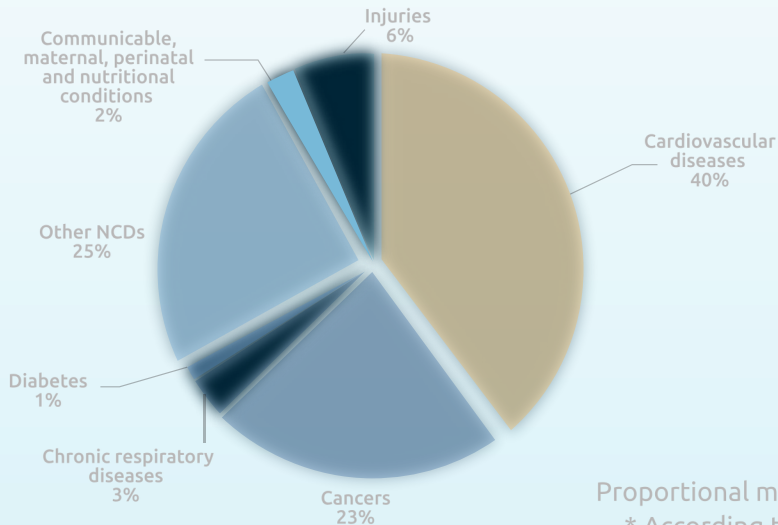
**MEDITRANS**   
Official Partner



- 24-hour ABPM
- Holter ECG
- ABI-system



# Hypertension is the silent killer N°1



Proportional mortality  
\* According to WHO

## Why ABPM is a solution?

24-hour ABPM test is the most accurate method for hypertension detection and drug therapy control.

- ▶ Recognized as a compulsory method in the current guidelines of international cardiology scientific societies: ESH, ESC, BIHS, NICE, ISC, AHA;
- ▶ Reimbursed by insurance companies as a compulsory diagnostic method;
- ▶ Supported by state policies as prevention of cardio-vascular risks is more manageable and cost-effective than treatment and recovery after CV-events.

## Why choose BPLab®?

- ▶ 30 years in the market
- ▶ Own R&D and production
- ▶ Certified for international markets
- ▶ Products always available in stock
- ▶ High quality for competitive price
- ▶ Extended service life
- ▶ Well-tuned customer support



## Features:

- ▶ **Powerful compressor**  
(fast inflation of big-size cuffs);
- ▶ Patient-friendly BP measurement algorithm;
- ▶ Power supply: 2 AA rechargeable or alkaline batteries;
- ▶ High-capacity storage: up to 999 BP measurements;
- ▶ Monitoring duration: up to 6 days.



# BPlab Compact 2

## Features:

- ▶ **Small size and light weight;**
- ▶ **Manual programming, 4 pre-installed measurement plans;**
- ▶ 3 connection protocols: USB, SD-card, Bluetooth;
- ▶ Colour display;
- ▶ Easy implementation into a 24-hour Holter ECG software;
- ▶ OEM solution for 24-hour Holter ECG manufacturers.





## Confirmed accuracy in 5 groups of patients



ISO 81060-2:2018+Amd.1:2020 in general population	Pass
ISO 81060-2:2018+Amd.1:2020 in pediatric population	Pass
ISO 81060-2:2018+Amd.1:2020 in patients with atrial fibrillation	Pass
ISO 81060-2:2018+Amd.1:2020 in patients with diabetes mellitus	Pass
BHS in general population	A/A grade
BHS in pregnant women	A/A grade
BHS in pediatric population	A/A grade
ESH in general population	Pass
ESH in pregnant women	Pass

Enlisted in BIHS, STRIDE BP and Medaval websites as recommended.



The first ever 24-hour ABPM system with the confirmed accuracy of oscillometric blood pressure measurements in patients with atrial fibrillation.

## Smart algorithm

- ▶ Adaptive inflation includes evaluation step, which helps to prevent overinflation
- ▶ Motion artefact protection due to stepwise decompression
- ▶ Accurate measurement even in patients with arrhythmias (including atrial fibrillation)
- ▶ Embedded actigraph registers patient's activity and rest cycles including sleep time
- ▶ Body position sensor detects patient's upright or supine posture and initiates an extra measurement

## Measurement quality control

- ▶ Quick artefact detection can be performed due to stored oscillometric records.



# We care about patient's comfort

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Constant measuring may irritate patients and provoke blood pressure increase. We did our best to make the measuring process comfortable and low-disturbing. Hence, patients' life quality is kept at the same level and true-to-life measurement results are obtained.



Minimum measurement time due to fast decompression



Single extra measurement in case of an artefact



Quiet operation



Night measurements do not influence the quality of sleep - proven by somnologists



## Cuff size matters!

- + The use of wrong sized cuff may lead to BP measurement deviation up to 20 mmHg
- + 6 sizes of washable latex-free cuffs available
- + 100% cotton cuff covers

**Vasotens® Technology** is a modern technology of pulse wave assessment by oscillometry. It is presented in the form of PC-based software, and as a cloud-based service online.

Vasotens® Technology is an open platform that can be applicable with third BP measuring devices and software. We are remaining open for cooperation.

**BPLab Vasotens® system is a unique diagnostic system which combines assessment of central aortic pressure, arterial stiffness and cardiac function parameters with traditional blood pressure monitoring.**

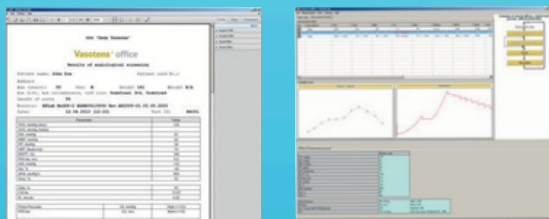
Central systolic arterial pressure and pulse wave velocity are enlisted in 2018 ESC/ESH Clinical Practice Guidelines for the Management of Arterial Hypertension as increased CV risk factors and in 2024 ESC Guidelines for the management of elevated blood pressure and hypertension.

## Fields of application:

- ▶ Hypertension mediated organ damage
- ▶ Isolated systolic hypertension in youth
- ▶ Spurious hypertension
- ▶ Drug therapy control

## Vasotens Office

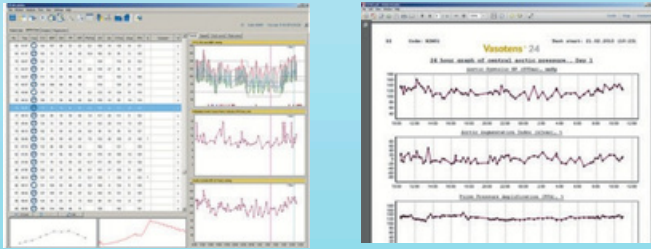
In-office measurements with the use of Vasotens Office® software are performed for preliminary stratification of cardiovascular risks in hypertension patients, and also to confirm masked hypertension in youth and to perform a therapy control of the drugs that primarily have an impact on central blood pressure. While measuring, a 24-hour ABPM device operates as an in-office device, it is permanently connected to the PC which performs a measurement control.



Technically, 24-hour pulse wave analysis is performed in the same way as oscillometric 24-hour blood pressure test with no additional inflation step.

The device can be programmed for 24-48 hours or more. BPLabWin® software is used for a standard interpretation of 24-hour ABPM test results, and Vasotens24® activated by the dongle key and the registration data is applied for a 24-hour pulse wave analysis.

It is also possible to use the telemedicine platform: [www.tholomeus.net](http://www.tholomeus.net) and / or the cloud-based service SaaS “Vasotens®”.



## Parameters obtained with the use of Vasotens 24 / Vasotens® Office:

### Arterial stiffness:

- ▶ Reflected Wave Transit Time
- ▶ Estimated Pulse Wave Velocity
- ▶ Peripheral Augmentation Index
- ▶ Aortic Augmentation Index

### Cardiac Function:

- ▶ Ejection Duration
- ▶ Aortic (dP/dt) max
- ▶ Central Systolic Area
- ▶ Central Diastolic Area
- ▶ SEVR

### Central Aortic Pressure:

- ▶ Aortic Systolic BP
- ▶ Aortic Diastolic BP
- ▶ Aortic Mean BP
- ▶ Pulse Pressure Amplification



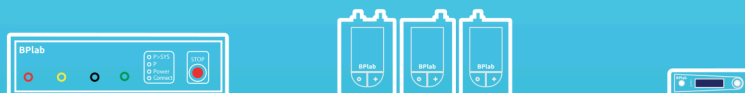


The new **multi-cuff BPlab Angio system** enables a simultaneous measurement of arterial blood pressure both in the upper and lower limbs with the registration of pulse waves. The recorded sphygmograms are processed and analyzed by Vasotens Office+ software.

**Ankle Brachial Index** is a pivotal measurement for diagnosing Peripheral Artery Disease, coronary artery disease, lower limb wound aetiology. Undertaking ABI measurement is the first step to identify if a patient needs vascular investigation and treatment

BPlab Angio measurement requires minimal training and can be performed by nurses and operators. **BPlab Angio system is intended for early and periodic screening, preventive medical examination and employees' medical check-up.**

**Features to be released: an unattended mode and a tilt test.**



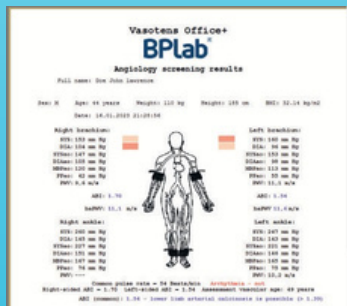
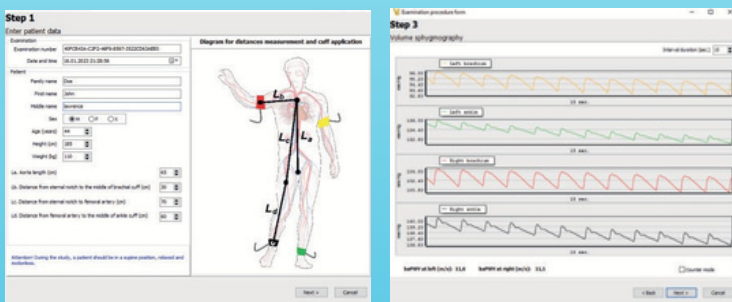
# Measurement and assessment of:

- + Ankle-brachial index (ABI);\*
- + Arterial blood pressure both in arms and legs;
- + Central blood pressure (SYSao, DIAao, MBPao);\*
- + Ejection duration;
- + Aortic dP/Dt max;
- + BP asymmetry (IAD, ILD, BP Balance);
- + Pulse pressure amplification (PPA);
- + Directly measured pulse wave velocity (PWV brachial-ankle / aortic / carotid-femoral);\*
- + Augmentation index (Aix peripheral / Aix aortic).
- + Estimated Vascular age



\*already enlisted in 2018 ESC/ESH and ESC 2024 Clinical practice guidelines

## Vasotens Office+ (PC and mobile software are available)



# BPLab in multi-center clinical studies and IIS

**AAA Study** — Advanced Approach to Arterial Stiffness. International Society for Vascular Health, Paris.

**The EuRhythDia study** — Impact of light therapy on rotating night shift workers. University Medical Center Hambur-Eppendorf, Hamburg.

**HOMAGE** — Bioprofiling Response to Mineralocorticoid Receptor Antagonists for the Prevention of Heart Failure. Inserm, Paris; London School of Hygiene and Tropical Medicine.

 **VASOTENS Registry** — International Registry for Ambulatory Blood Pressure and Arterial Stiffness Telemonitoring. Italian Institute of Telemedicine, Varese.

## BPStat – Perfect solution for bulk data tabulation

Experience the method, the possibilities of which are so promising, that every researcher could only dream about!

While working with big data sets, you can easily forget about fraud and human factor!

**BPStat® software** enables the tabulation and the data preparation for thousands of blood pressure measurement records. The program allows to select a wide range of 24-hour ABPM tests performed by BPLab® device and choose the parameters to be assessed in the summary table.

As a result, a user receives a report, which can be easily exported into the required software (e.g. MS Excel). Mean values, variability and other parameters of central and peripheral pressure, and arterial stiffness can be represented both as a single line for each patient, and in the form of multiline arrays.

This software will be duly appreciated by statisticians who are engaged in 24-hour analysis of blood pressure and pulse wave parameters: anyone from PhD-student in a small clinic to SAS-developers in big CROs.

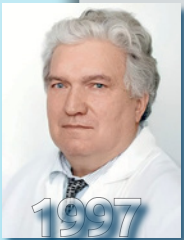




**Dr. Nikolay Korotkoff** invents the Korotkoff sounds method which becomes the gold standard of BP measurement all over the world.



**Prof. Nikolay Savitzky** introduces the device for pulse waves recording and offers tacho-oscillographic method for BP determination.



**Prof. Anatoly Rogoza** presents a concept of a new generation ABPM with oscillometric records storage which enhances the measurement quality control.

**BPlab**<sup>®</sup>  
**Vasotens**  
**2000**

**BPlab company** implements the idea of Prof. Rogoza and launches series manufacturing of the world's first 24-hour pulse wave analysis monitor with assessment of central BP, arterial stiffness and cardiac function parameters.

