

VASCASSIST[®]



iSYMED
Innovations in Medical Care

iSYMED has been a competent partner for oscillometric blood pressure technologies and for automatic recording of treatment data since 1994.

Especially in the field of nephrology and dialysis thousands of users rely daily on our innovative products, with which we “keep our finger on the pulse” of modern development.

Efficient PAD diagnosis by fully automated measurement of the Ankle-Brachial Index (ABI)

The **Ankle-Brachial Index**, (ABI), is considered to be an extremely reliable indicator for symptomatic and asymptomatic peripheral arterial occlusive disease (PAD) and is excellently suitable as parameter for preventive PAD checkups.

If VascAssist® is used to determine the ABI automatically using oscillometric arm and ankle measurements, then the procedure is

significantly simpler than the conventional Doppler method, which needs to be performed by an experienced practitioner.

A complete measurement, which to date occupies the medical practitioner for about 15 minutes, can be performed by assistant staff using VascAssist® in an average of 3 minutes.



VASCASSIST® Time-saving, cost-effective arteriosclerosis screening

Reliable early diagnosis of symptomatic and asymptomatic occlusive diseases

By regular control of the ABI, vascular occlusions can be identified before symptoms appear in the affected patients.

With an angiogram sensitivity of approx. 95 % and specificity of almost 100 %, the ABI is ideally suitable as diagnostic parameter for preventive PAD checkups. As PAD is a marker illness for stroke and coronary, early identification during screenings can prolong life [1].

In view of the simple procedure, the high reliability of the results, the approx. 20 % prevalence of PAD in the older section of the population and the high follow-on costs of ischemic incidents, regular preventive

medical checkups are extremely meaningful, especially in the fields of angiology, nephrology, gynecology and general medicine [2] [3].

Measurement is performed on all limbs automatically with four simultaneously applied blood pressure cuffs. Using our Semi-Synchronous Technology (patent applied for) and a special oscillometric method optimized for ankle measurement, screenings become possible with very low investment costs.

Measurement of pulse wave velocity

In addition to the ABI, the pulse wave velocity can automatically be oscillometrically determined with VascAssist® at the reference points upper arm and ankle (**b**rachial **a**nkle **P**ulse **W**ave **V**elocity, baPWV).

This is performed very easily in comparison to conventional procedures.

In this way the user is provided with an additional significant parameter for the evaluation of arteriosclerotic changes [4].

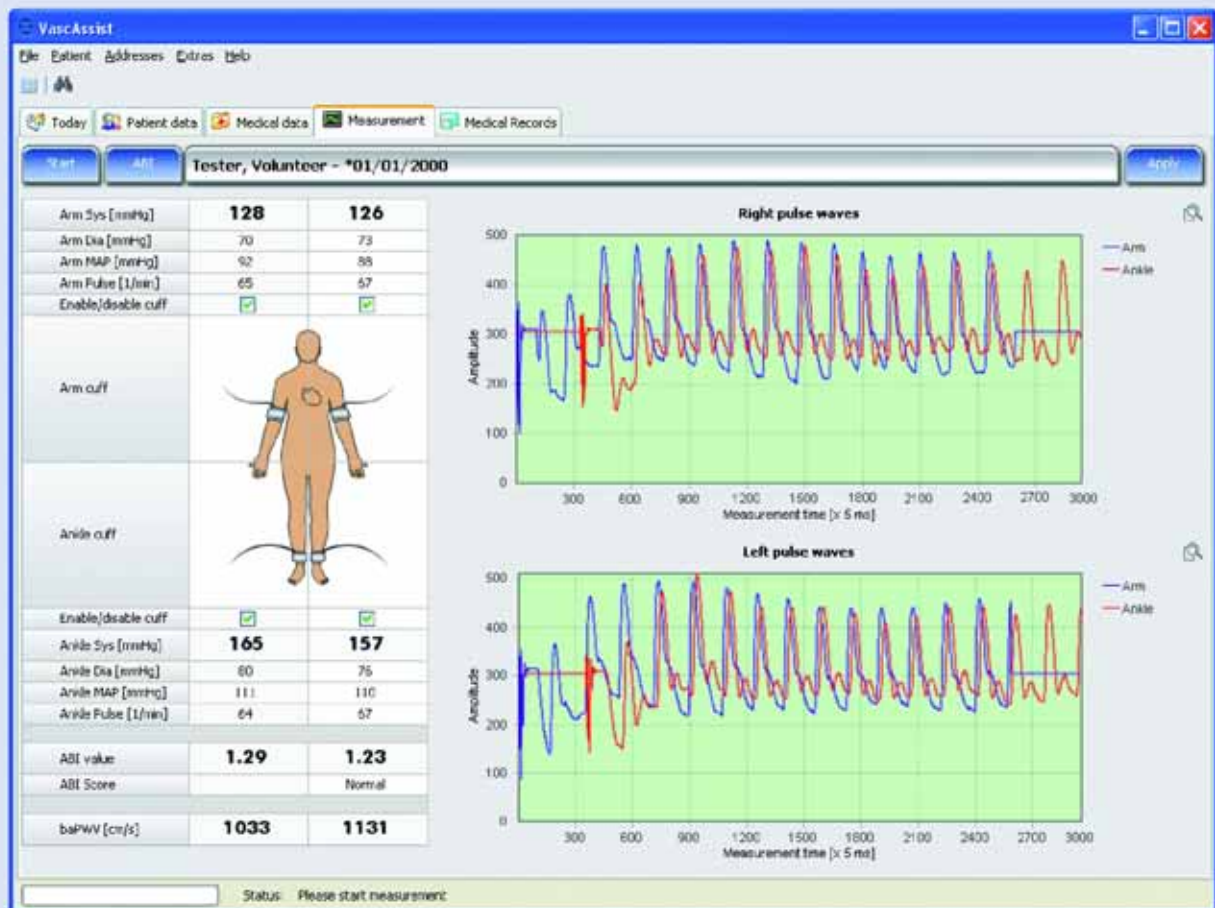
PC software for visualization and archiving

With additional software further analyses are possible, such as

- graphical display of pulse waves
- recording of the trends of ABI, blood pressure and pulse wave velocity

- display of these trends on a time scale
- estimation of the cardiovascular risk score (PROCAM, Framingham, etc.)

Due to its open structure, the software can also be connected to existing clinical data processing systems.



Application

Firstly four blood pressure cuffs are attached to both arms and ankles of the patient. If necessary, individual limbs can be excluded from the measurement, e.g. for an amputee or for a patient with vascular access.

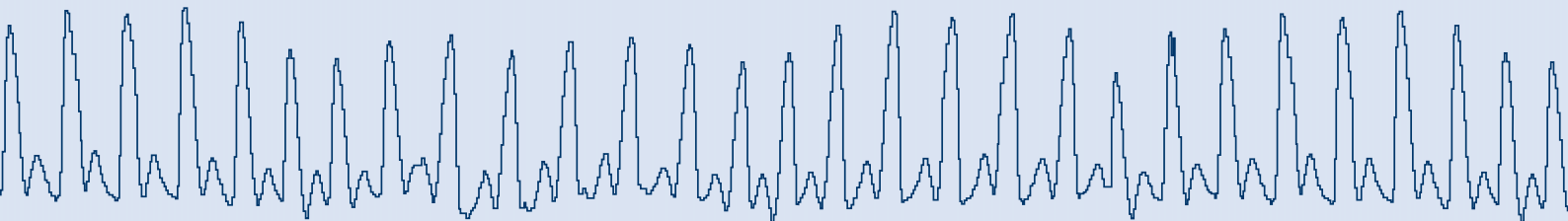
The measurement is started by pressing a single button. After approx. 1 – 2 minutes the appliance shows automatically the ABI values for the right and left sides without further action by the user being needed.

The procedure is uncomplicated and the measurement can be performed by assistant personnel.

The complex ankle measurement with an ultrasonic Doppler probe, usually performed by a practiced physician, can be dispensed with. The physician can concentrate on the evaluation of the results and on the diagnosis.



VASCASSIST® Neither sonography nor application of gel necessary



References:

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2. Belch JF, Topol EJ, Agnelli G, et al.: Critical Issues in Peripheral Arterial Disease Detection and Management: A Call to Action. *Arch Intern Med* 2003; 163: 884-892
3. Wattanakit K, Folsom AR, Selvin E et al.: Kidney function and risk of peripheral arterial disease: results from the atherosclerosis risk in communities (ARIC) study. *J Am Soc Nephrol* 2007; Epub ahead of print
4. Khoshdel A, Carney S, Nair B, Gillies A: Better Management of Cardiovascular Diseases by Pulse Wave Velocity - Combining Clinical Practice with Clinical Research using Evidence-Based Medicine. *Clinical Medicine & Research* 2007, 5 (1): 45-52



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