

Oscillometric ankle-arm measurement

Country of origin | Switzerland

Health problem addressed

Peripheral artery disease (PAD) is on the rise in developing countries due to an increase in diabetes mellitus. PAD increases cardiovascular risk and is associated with chronic venous ulcers.

Product description

The device is an automated oscillometric blood pressure monitor designed for clinical use. The device allows for screening of three major cardiovascular risks: PAD, AF, and hypertension. It is equipped with two cuffs for simultaneous double arm measurements and ankle brachial index (ABI) assessment, both of which are recommended screening methods for detection of peripheral arterial disease (PAD). The ABI is automatically calculated by the device. The device can also be used as a regular clinical blood pressure monitor. Since it is also equipped with an atrial fibrillation (AF) detection system, it automatically screens for AF during routine blood pressure measurement.



Developer's claims of products benefits

The procedure to test for PAD is commonly performed with Doppler which requires skill, is liable to observer bias and is time consuming. This device is easy to use, the procedure is conducted faster and is less liable to observer bias. The device can also be used with minimal training.

Suitability for low-resource settings

The device is portable and can also be used as a regular blood pressure monitor. Because of its relative low price and multiple configurations (with and without software), it is suitable to be used in small hospitals or healthcare centers. Once fully charged, many measurements can be taken making the device portable and easy to travel with (e.g. to screen in small villages). The device can diagnose PAD, hypertension and atrial fibrillation in a small amount of time. Only limited training is required.

Operating steps

First, a patient is measured simultaneously at both arms in the supine position to determine the arm with the highest BP. Thereafter, a cuff is placed around the arm and ankle to perform the ankle-arm measurement simultaneously. The ankle-cuff is then placed on the other ankle and the procedure repeated.

Regulatory status

The device is both FDA approved and CE marked.

Future work and challenges

Challenges include making doctors and nurses aware that this device is an automated oscillometric device that can reliably assess ABI, convincing them that general use of this device will improve awareness of peripheral artery disease, and convincing them that cardiovascular screening will lead to the prevention of cardiovascular disease and reduce overall healthcare costs.

Use and maintenance

User: Physician, nurse, technician

Training: Can be conducted in 20 minutes by the organization/company providing the device

Maintenance: None

Environment of use

Settings: Rural, urban settings, primary (health post, health center), secondary (general hospital), tertiary (specialized hospital)

Requirements: The device can work on a rechargeable battery, but also with electricity. When the user has access to a PC, the device can be controlled from the PC and a report produced. The device can be used with and without the PC software which is included free of charge. Ambient temperature for device storage and use should be between 10 and 40 degrees Celsius.

Product specifications

Dimensions (mm): 200 x 125 x 90

Weight (kg): 1.1 (including batteries)

Consumables: None

Life time: 5 years

Shelf life: 10 years

Retail Price (USD): 1100

Other features: Software use, mobile, portable, capital equipment

Year of commercialization: 2008

Currently sold in: Canada, Netherlands, Spain, United Kingdom, United States, and some countries in Asia