



PulseTrace PCA 2™

Cardiovascular monitoring at your finger tip

“A man is as old as his artery”*

This ‘next generation’ CareFusion PulseTrace™ (Cat. No. PT2000) is designed for use in clinical practice, to aid early detection, treatment, and management of hypertension, coronary arterial disease, target organ damage and endothelial dysfunction.

Arterial Stiffness Measurement

The PulseTrace PCA 2™ estimates large artery stiffness from the pulse waveform obtained at the finger (digital volume pulse: DVP) with an infra-red sensor (photo-plethysmography). It is extremely easy to use, operator independent and is very well accepted as a routine measurement by the patient.

The speed at which the pulse travels along the arterial tree is directly related to arterial stiffness. Measuring the time it takes for the pulse waves to travel through the arterial system provides a simple but accurate way of measuring arterial stiffness. The shape of the volume waveform in the finger is directly related to the time it takes for the pulse waves to travel through the arterial tree.

This very important observation is used by the CareFusion PulseTrace™ and makes it a powerful noninvasive tool for the assessment of vascular changes.

*Thomas Sydenham, a 17th century physician



Features

PulseTrace PCA 2™

- High definition colour touch-screen
- Fast, quiet printer with easy load paper
- Self contained and highly portable
- Battery/mains with 4hrs battery life
- Complete with all accessories in a sturdy case
- Normal range displayed for subjects age and vascular age estimate
- ‘Spot-check’ and automated x3 test protocol
- Body Mass Index calculation
- Direct connection to selected external HP printers
- Large 2000 test memory
- PC software for uploading, managing and printing results with customisable print out formats with ‘export’ utility



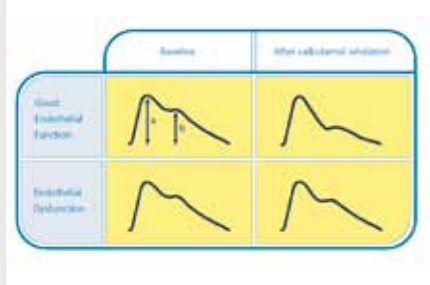


Figure 1. Effect of salbutamol inhalation on a subject with good endothelial function (top) and endothelial dysfunction (bottom).

The reduction of RI in response to salbutamol is less in subjects with endothelial dysfunction.

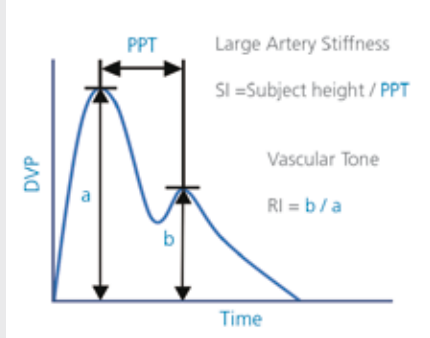


Figure 2. The DVP waveform is independent of local changes of the vasculature but determined by large artery stiffness (estimated by SI) and vascular tone (estimated by RI). SI is highly correlated with PWV, as shown below, and RI is determined by the systemic vascular tone.

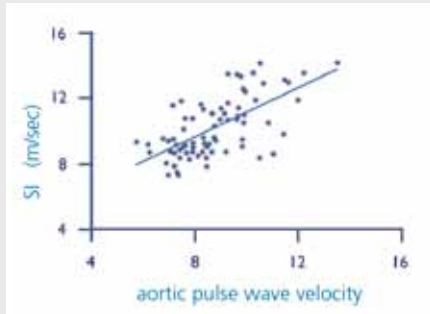


Figure 3. The large artery stiffness parameter SI, from the DVP waveform correlates with the 'gold standard' arterial stiffness parameter: aortic pulse wave velocity.

Endothelial Function Measurement

The DVP waveform is also very sensitive to the vascular tone of the whole arterial tree. PulseTrace PCA 2™ automatically analyses the finger pulse to determine a measure of arterial stiffness and a measure of vascular tone. The change in the DVP waveform in response to an endothelial dependant vasodilator such as salbutamol (albuterol) can be used to assess endothelium function. Salbutamol can be administered using an inhaler making this a very simple test to perform in the clinic or at the bedside.



Large icon based main menu



Touch screen keyboard



On screen help

The Clinical Value of Arterial Stiffness

- Arterial stiffness is an independent predictor of cardiovascular risk.
- Arterial stiffness is a measure of target organ damage in untreated hypertension
- Arterial stiffness is significantly associated with the presence of coronary artery calcium

PulseTrace PCA 2™

Measurements	<p>Number of valid waveforms and total waveforms detected.</p> <p>Time from systolic inflection point (if present) or first peak to second peak or inflection point (PPT)</p> <p>Stiffness Index (SI) defined as the subjects height divided by PPT (only displayed if subjects height has been entered)</p> <p>Reflection Index (RI) defined as the height of the second peak or inflection point divided by the height of the first peak.</p> <p>Heart Rate</p>
Test Modes	'Spot-check' and automated x3 test protocol

Predicted Values	Normal SI range for subject age – Various depending on national preference Vascular age estimate
Tests Per Session	Up to 10 complete tests can be stored per measurement session
Storage	>2000 tests including the waveform can be stored
Display	Touch screen graphic colour LCD 240x160 pixels
Battery Pack/Life	Rechargeable NIMH 8.4V 1000mA-hours / 4 hours or more on a full charge
Dimensions/Weight	25.5 x 12.0 x 3.5cm / 630g.
Environment	Complies with directive EN60601-1-2 electromagnetic compatibility

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