CONNEQT® Health



FDA CLEARED CE TGA

SphygmoCor® XCEL

Vascular Biometric Monitor

Comprehensive Central Hemodynamics and Arterial Stiffness Insights For Full Visibility Into Cardiovascular Health

The SphygmoCor XCEL measures central and brachial blood pressures, providing insights into cardiovascular function. Additionally, it assesses vascular biomarkers, offering a comprehensive understanding of arterial stiffness and health. These advanced physiological measurements enable early detection of potential cardiovascular issues, guiding targeted interventions for maintaining or improving overall cardiovascular health.

"New methods that assess arterial pressure and flow dynamics, beyond focus on conventional upper-arm blood pressure, are needed"

Lancet Commission on Hypertension

BETTER DATA, BETTER OUTCOMES

SphygmoCor XCEL enables noninvasive measurement of the central aortic pressure waveform and vascular biomarkers that are indicative of cardiovascular health.

These measurements are particularly valuable in understanding the dynamics of arterial health and the impact of various cardiovascular conditions on the arterial system. It is often used in clinical research, as well as in clinical practice for patients with hypertension, cardiovascular disease, or other conditions affecting arterial function.

Pulse Wave Analysis (PWA)

Pulse wave analysis involves analyzing the characteristics of the arterial pulse wave. It goes beyond traditional blood pressure measurements by providing valuable insights into the elasticity and compliance of arterial walls. These measurements (shown below) offer a more comprehensive understanding of vascular health and can aid in the early detection of cardiovascular risk.

Pulse wave analysis is widely used in cardiovascular research to investigate the impact of various interventions, medications, and diseases on arterial function. It contributes to a better understanding of the pathophysiology of cardiovascular conditions.

Pulse Wave Velocity (PWV)

Pulse wave velocity is the speed at which the arterial pulse travels through the circulatory system, specifically between two defined points, typically from the aorta to peripheral arteries. It serves as a key indicator of arterial stiffness, as stiffer arteries transmit the pulse wave more rapidly. Elevated PWV is associated with increased cardiovascular risk and is considered an independent predictor of adverse cardiovascular events.

Monitoring PWV is instrumental in assessing vascular aging and guiding interventions aimed at preserving or improving overall cardiovascular health.

Parameter Quick Reference

		XCEL	Automated BP Monitor
Heart Rate (HR)	The number of heart beats per minute and can indicate cardiac health and fitness levels.	✓	✓
Brachial Blood Pressure	The pressure of blood in the brachial artery in the upper arm, an indicator of cardiovascular health.	✓	✓
Central Blood Pressure (SP & DP)	The pressure of blood at the root of the aorta, providing a more accurate assessment of cardiovascular risk compared to brachial blood pressure alone.	✓	
Central Pulse Pressure (PP)	Pressure experienced by the major organs such as the brain, kidney, and liver.	✓	
Augmentation Pressure (AP)	The additional pressure exerted by the heart to overcome rigidity in the arterial wall, reflects both arterial stiffness and the extra workload on the heart.	✓	
Augmentation Index (AIx)	A % measurement of your heart's workload due to arterial stiffness.	✓	
Subendocardial Viability Ratio (SEVR)	The supply & demand of oxygenated blood to the myocardium.	✓	
Pulse Pressure Amplification (PPA)	The increase in amplitude of arterial pulse waves as they travel from central to peripheral arteries, providing insights into arterial stiffness and blood flow efficiency.	✓	
Pulse Wave Velocity (PWV)	The speed at which the arterial pulse travels through the circulatory system, a key indicator of arterial stiffness	✓	
SphygmoCor Reference Age	Estimates arterial age based on central pressure and arterial stiffness parameters, providing a reference for comparison with healthy individuals.	✓	

FOUNDED ON 40 YEARS HEMODYNAMICS STUDIES, VALIDATED BY 20+ YEARS OF RESEARCH, AND TRUSTED BY RESEARCHERS WORLDWIDE.

SphygmoCor® Technology

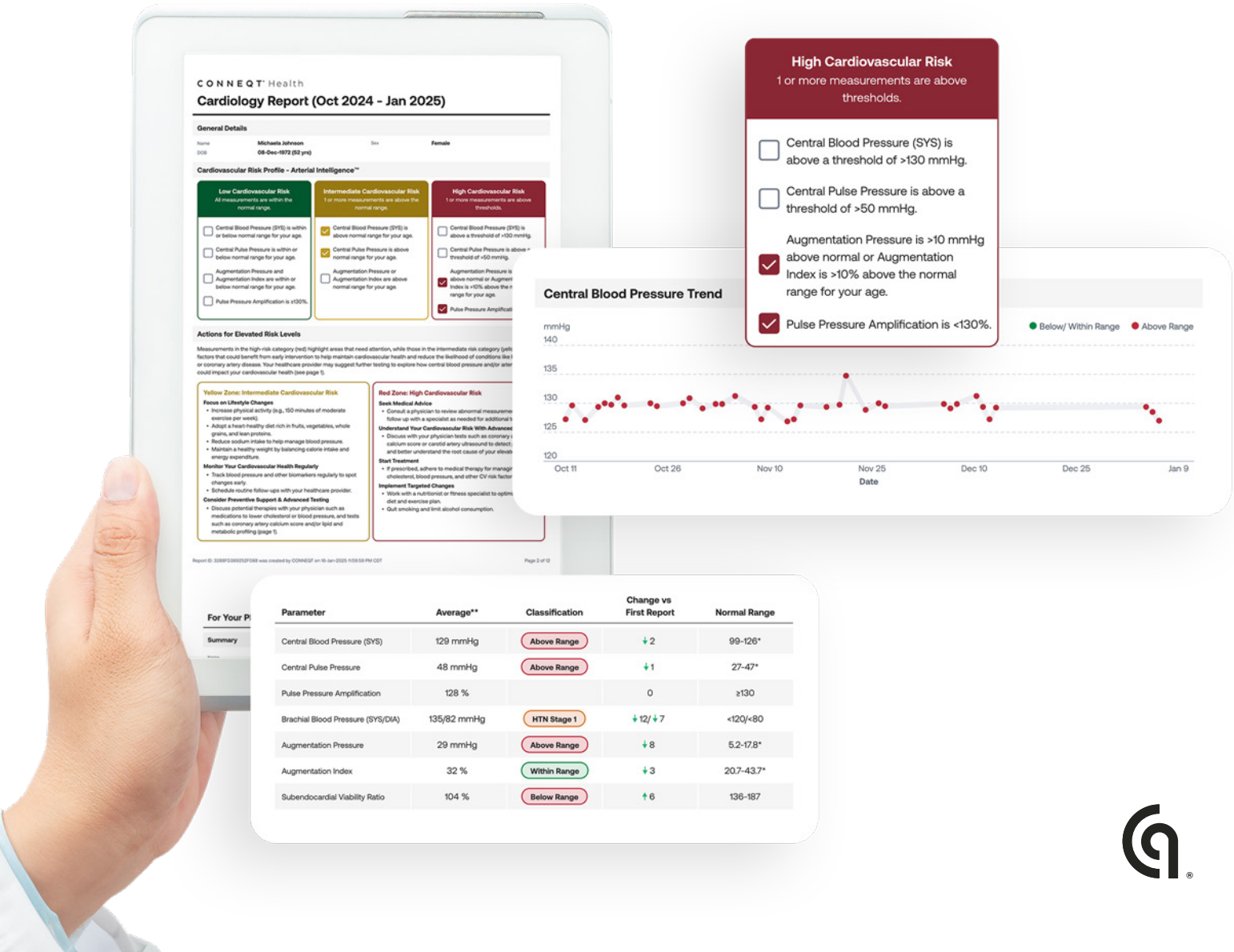
Our pioneering technology was enabled by more than 40 years of hemodynamic studies of the cardiovascular system and set the foundation for noninvasive measurement of vascular biomarkers including central aortic pressures and arterial stiffness indices.

The SphygmoCor technology has been independently validated by researchers worldwide and supported studies that resulted in over 2,300 peer-reviewed publications.

Clinical Trials Expertise

Our team is composed of study management and technical support personnel who are experts in clinical trial execution (phases I-IV), arterial stiffness assessments and central pressure waveform analysis, as well as data management and site support.

We have supported clinical trial sponsors and sites around the globe, spanning a variety of therapeutic areas including hypertension, heart failure, chronic kidney disease, COPD, diabetes and more.



Technical Specifications | Physical and Environmental

Operating Ambient Temperature	+15°C to 40°C (59°F to 104°F)	
Operating Relative Humidity	15% to 95% non-condensing	
Storage Ambient Temperature	-20°C to 65°C (-4°F to 149°F)	
Transport Ambient Temperature	-20°C to 65°C (-4°F to 149°F)	
Storage Relative Humidity	20% to 90% non-condensing	
Transport Relative Humidity	20% to 90% non-condensing	
External Power Supply	Input	100-240 VAC, 50-60Hz
	Output	15VDC at 2A
	Protective Class	IEC Class II, Double Insulated
	Power Connector	4 PIN DIN
Physical Specifications	Enclosure Material	Polycarbonate
	Weight	0.7 kg (1.5 lbs)
	Dimensions (EM4C)	9.9 (l) x 19 (w) x 17.2 (h) cm
	Dimensions (Tray)	30.5(l) x 16.7 (w) x 8.6 (h) cm
Measurement	NIBP	Oscillometric. Diastolic values correspond to Phase 5 Korotkoff sounds
Range	NIBP, PWA	Sys: 50 - 260 mmHg Dia: 40 – 200 mmHg
	PWV	2 to 25 m/s
	Heart Rate	30 - 220 beats per minute
	Display	0 - 300mmHg
Resolution	1 mmHg	
Tonometer	Uncalibrated Pressure Transducer	

Recommended Minimum Computer Requirements

Type	x86 PC
Processor	AMD64 compatible (ARM processors not supported)
Nominal Speed	2.4 GHz minimum
Memory	2GB RAM minimum
Hard Disk Size	Size 40 GB or larger
	2GB for Installation
	10GB for database
Accessories	USB port
Printer Drivers	User Provided
Communications	USB port
Minimum Display Resolution	1366 x 768 pixels
Operating Systems	Windows 10, version 22H2, English Windows 11, English

Regulatory Approvals

FDA Clearance	510(k) K122129
EU CE Mark	MDR 2017/745, ANNEX II, ANNEX III, Class IIa
Australia	TGA

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www.conneqthealth.com