

AcQtrac™ System

Cardiovascular Hemodynamic Health



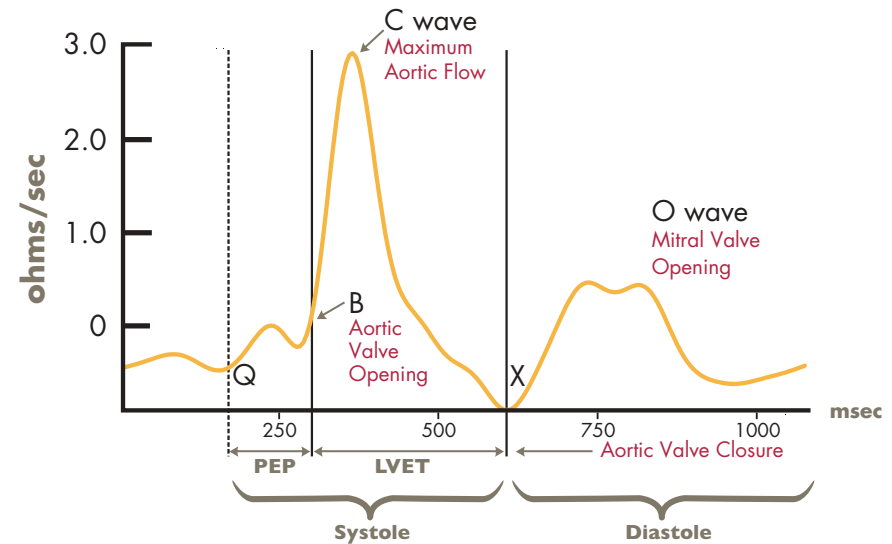
Now you can see the bigger picture.



LEADING THE WAY IN A NEW BREED of applied cardiovascular diagnostic technology is the AcQtrac™ System from väsamed. Goal-directed therapy has a powerful new tool. Now you can quickly and noninvasively access practical hemodynamic information – to confidently monitor and manage the cardiovascular health of your patients.

NORMAL CVG WAVEFORM. The AcQtrac System's Cardiovasculogram (CVG) waveform allows you to see all the mechanical events of the heart and conjoining circulation.

- Aortic valve opening and closing
- Contractility indices (PEP, LVET, STR, HI)
- Systole (C wave) and diastole (O wave)

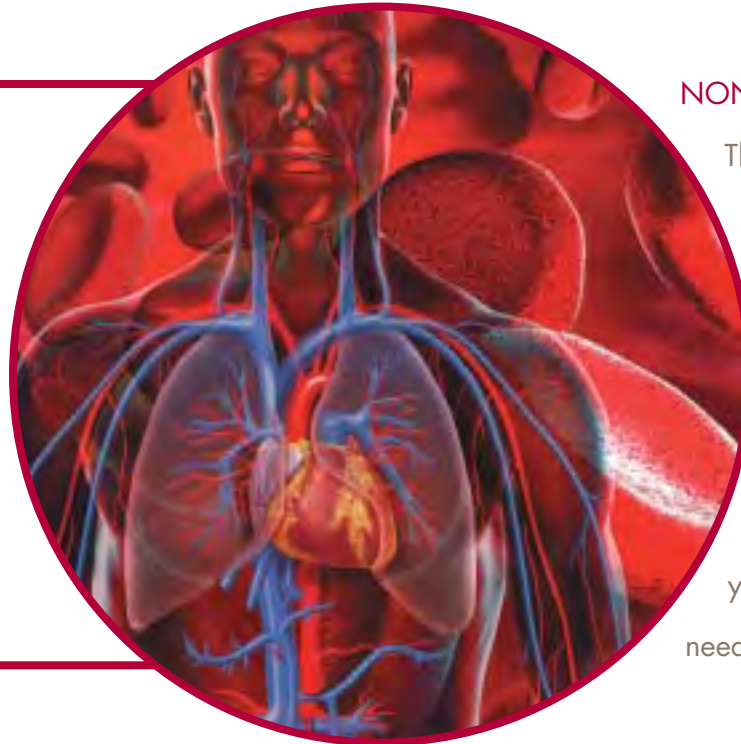


A PRACTICAL BREAKTHROUGH. The AcQtrac System uses thoracic impedance to present a Cardiovasculogram (CVG), a unique graphical waveform that illustrates the mechanical function of the cardiovascular system. This is information that until recently was available only to patients through invasive, risky and costly procedures.

THE IMPORTANCE OF HEMODYNAMICS. Because an accurate picture of blood flow is crucial to making cardiovascular diagnoses and defining therapy, the AcQtrac System's proven value is reimbursable. So now, in addition to blood pressure, heart rate, the physical exam, and patient history, the AcQtrac System allows you to see the bigger picture of patient cardiovascular health.

Clinical Applications

- Hypertension
- Congestive Heart Failure (CHF)
- Dysrhythmias requiring a pacemaker
- Titrating therapies
- Real-time stress testing



NONINVASIVE, AT THE POINT OF CARE.

The AcQtrac System provides a wealth of useful information right in your office. The software is PC-based, making the features of the display and functionality intuitive and easy to use. The noninvasive test is easy to administer by trained personnel for later interpretation. And you immediately get the information you need to better manage patients' health.

THE RIGHT INFORMATION WHERE AND WHEN YOU NEED IT. With the AcQtrac System, you can get reliable, repeatable information regarding patient cardiac and circulatory health. Our proprietary Cardiac Amplifier Technology employs exclusive algorithms to give you a clearer picture of cardiovascular health.

AcQtrac System Takes Hemodynamic Parameters Mainstream

Forty years in development, thoracic impedance technology, also known as impedance cardiography (ICG), was originally developed for NASA beginning in 1965 for use in monitoring the health of astronauts. Thoracic impedance was first officially used aboard Space Shuttle flight STS-8 in 1983. Like many such technologies, it has been refined many times since its early applications. It took väsamèd to make good technology great.

MORE THAN JUST NUMBERS. Today, the AcQtrac System fulfills the promise of giving physicians pertinent cardiac and hemodynamic information in a signature waveform. So you get an efficient, at-a-glance visual combined with the numerical data that go along with it. Together they allow physicians to see a bigger picture of hemodynamic health than ever before.



AcQtrac™ System Parameters At-a-Glance

Abbreviation	Parameter	Units	Abbreviation	Parameter	Units
CO	Cardiac output	lpm	PEP	Pre-ejection period	msec
CI	Cardiac index	lpm/m ²	LVET	Left ventricular ejection time	msec
SV	Stroke volume	ml	STR	Systolic time ratio	n/a
SVI	Stroke volume index	ml/m ²	HI	Heather index	ohms/sec ²
HR	Heart rate	beats/min	SVRe	Systemic vascular resistance*	dyne-sec/cm ⁵
MAP	Mean arterial pressure	mmHg	TFC	Thoracic fluid content	kohms ⁻¹

*estimated

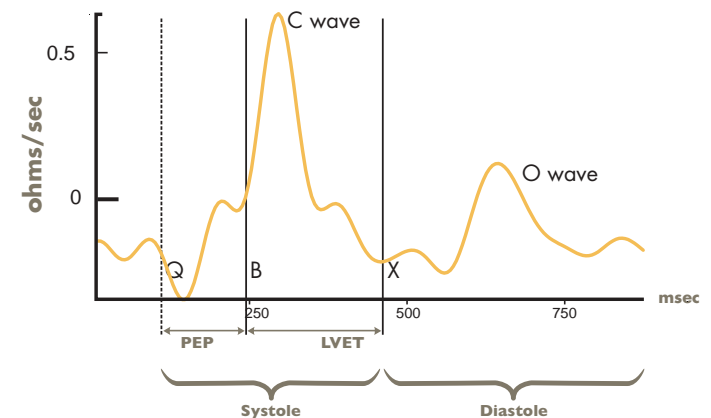
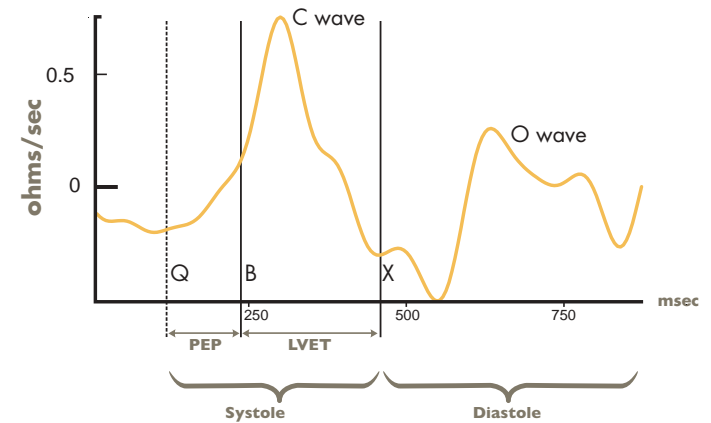
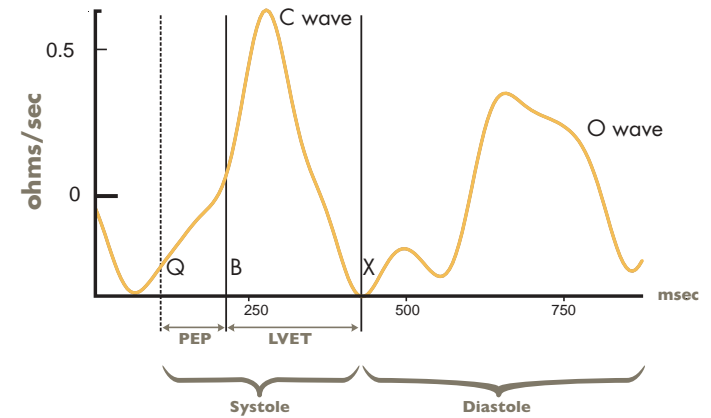
Patient Profile: Acute Decompensated Heart Failure**

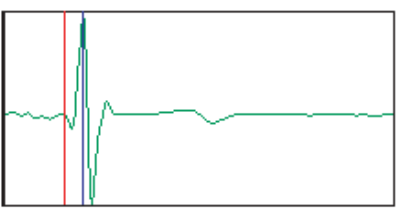
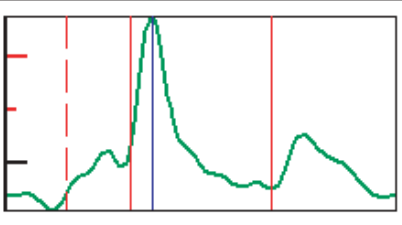
COMPLAINT: Shortness of breath, central and peripheral edema, hypertension.
Three CVGs show a patient from assessment through four hours of therapy.

FIRST TEST. Differences from Normal: Systole shows decreased amplitude C wave; upstroke slope is decreased. Overall image of contractile dysfunction. Diastole shows increased height and breadth of O wave meaning venous congestion.¹

WITHIN ONE HOUR of treatment. Patient is responding to treatment with diuretic and vasodilators. Systole is lengthened while diastole shows a normalizing O wave and shortened Isovolumic Relaxation Time.

WITHIN FOUR HOURS of continued treatment. Overall tightening of entire cardiac cycle and mean arterial pressure normalizes. Sharper upslope of C wave (systole). Diastole shows normalization of O wave in proportion to C wave.



Test Type: Non-Stress		Parameter	Measured	Units	Units	Normal	High	
Patient Position: Supine		Vital Signs						
ECG 	HR-	Heart Rate	61	bpm				
	BP-	SBP/DBP (MAP)	120/60 (80)	mmHg	0	40	100	220
ICG WAV: 96% 	Fluid Dynamics							
	SV-	Stroke Volume	111.2	ml/beat	0	60	100	160
	SVI-	Stroke Volume Index	46.1	ml/m ²	0	60	130	200
	CO-	Cardiac Output	6.8	lpm	0	30	70	100
	CI-	Cardiac Index	2.8	lpm/m ²	0	4	8	35
	Contractility							
	PEP-	Pre-Ejection Period	160	msec	0	2.5	4	20
	LVET-	Left Ventricular Ejection Time	355	msec	0	80	150	300
					0	250	400	500

COMPREHENSIVE AND REAL-TIME. Every in-depth report gives you vital information on your patient's cardiovascular state including cardiac output to aid in drug titration, systemic vascular resistance to better manage CHF and hypertension, and thoracic fluid content, which provides an overall fluid status to identify dehydration or fluid in the lungs. Integrated reporting and trending further allows clinicians to document hemodynamic variables over time, and easily monitor changes in the patient's condition.

1. Woltjer et al. Am Heart J. 1997;134(3):450-5.

**Note: The diagnoses and interpretation of these patient case studies are the expressed clinical opinion of Richard Summers, M.D., Professor, Department of Emergency Medicine and Assistant Professor, Department of Physiology and Biophysics, University of Mississippi Medical Center. The information contained herein is illustrative of Dr. Summers' use of the AcQtrac™ System in his practice. The AcQtrac System is a noninvasive hemodynamic monitor based on the technology of impedance cardiography. Clinical interpretation and conclusions of the noninvasive data provided by the AcQtrac System are the responsibility of the physician.

Caution: The AcQtrac System is intended only as an adjunct in patient assessment. It must be used in conjunction with clinical signs and symptoms and other available clinical information.

CONTINUE TO LOOK to väsa med for the solutions you need for noninvasive hemodynamic diagnostic tools for the wide range of cardiovascular diseases. Our goal is to help you continue to improve care, build your practice, reduce costs, and enhance your patients' quality of life.



vasamed[®]

7615 Golden Triangle Drive, Suite C
Eden Prairie, MN 55344
vasamed.com

For a copy of the complete CVG Waveform Atlas with additional case studies including hypertension and arrhythmias, please call us at:
1-800-695-2737