

# Two Major Outcome Studies Demonstrate The Clinical Significance of Central Blood Pressures



Two major cardiovascular outcomes trials presented at American Heart Association Scientific Sessions 2005 – the Conduit Artery Functional Endpoint (CAFE)<sup>1</sup> study and a NIH-sponsored Strong Heart sub-study<sup>2</sup> – establish the importance of central blood pressures in assessing cardiovascular risk and the effects of pharmacologic therapy on clinical outcomes. These studies both showed central pressure to be superior to brachial cuff pressure.

Specifically:

- The CAFE sub-study of the ASCOT Trial included 2,199 hypertensive patients. The CAFE study used SphygmoCor<sup>®</sup> to investigate whether the two drug treatment regimens – amlodipine/perindopril and atenolol/thiazidem, which showed no difference in brachial pressure reduction – had differential effects on central blood pressure, and whether such differential effects might explain the differences in cardiovascular outcomes observed in the primary ASCOT trial. CAFE found that central aortic systolic blood pressure was 4.3 mm Hg lower in the amlodipine/perindopril group, and that this group also had a 3.0 mm Hg lower central pulse pressure. **Superior outcomes in CAFE (and ASCOT) are attributable to greater reduction in aortic systolic pressure.** Lead investigator, Dr Bryan Williams (University of Leicester, UK) said, “CAFE demonstrates... that blood pressure lowering drugs have significantly different effects on central arterial blood pressure, despite having a similar impact on peripheral blood pressure. The results of this study are clear-cut, dramatic and potentially very important.” The SphygmoCor System is easily incorporated into clinical practice, with Dr Williams commenting, “clinicians interested in central pulse pressures, especially in their high-risk or older patients with stiffer arteries, should be able to use the system effectively<sup>5</sup>.”
- The Strong Heart sub-study used SphygmoCor<sup>®</sup> to investigate central as well as brachial blood pressure, and followed 2,409 subjects for a mean of 4.0 years. The study concluded that non-invasively determined central aortic systolic pressure was an independent predictor of incident cardiovascular disease, while these events were not related to brachial systolic pressure. **Central aortic pressure, therefore better predicts incident cardiovascular disease**, likely due to a more accurate representation of the vascular load on the left ventricle.

**Only SphygmoCor<sup>®</sup> can provide central blood pressure and key indices of cardiovascular risk...non-invasively.**  
**SphygmoCor<sup>®</sup> is only available from AtCor Medical.**

<sup>1</sup> Central Blood Pressure Better Predicts Cardiovascular Events Than Does Peripheral Blood Pressure – The Strong Heart Study (Mary Roman, Cornell Univ, et al); Epidemiology; Traditional CVD Risk Factors, 4:00 pm, Sunday November 13.  
<sup>2</sup> Differential Impact of Blood Pressure-Lowering Drugs on Central Arterial Pressure Influences Clinical Outcomes – Principal Results of the Conduit Artery Functional Evaluation (CAFE) Study in ASCOT (Bryan Williams, Univ Leicester); Late Breaking Clinical Trials 1, 3:45 pm Sunday November 13.  
<sup>3</sup> New Data Show Hypertensive Patients Taking Norvasc-Based Regimen Achieved Better Central Blood Pressure Control. Yahoo Financial New, Sunday 13th November, 2005.  
<sup>4</sup> Norvasc better for lowering aortic blood pressure. Reuters, Sunday 13th November, 2005.  
<sup>5</sup> CAFE: Lower central aortic blood pressures with amlodipine and perindopril. www.thekidney.org, Sunday 13th November, 2005.