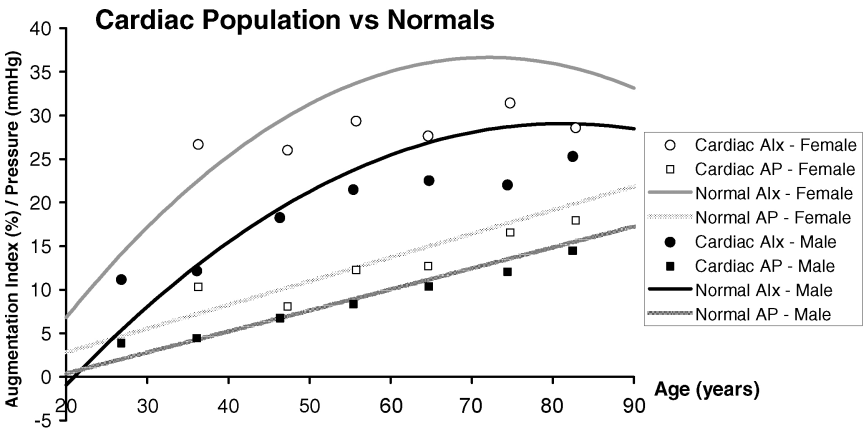
the proportion of central aortic pulse pressure that is attributed to the reflected pulse wave. We hypothesise that in a cohort of patients, who have one or more cardiac risk factors, and suspected coronary artery disease; arterial stiffness will be elevated compared to a normal population.

Methods and results: 910 patients presenting for coronary angiography at Westmead Hospital, Sydney, were recruited into the Australian Heart Eye Study (AHES). Brachial blood pressure was recorded (HEM 907, Omron). Radial artery waveforms were measured with a tonometer and pulse wave analysis was used to derive central blood pressures, AP and AIx (SphygmoCor, AtCor Medical). The average values for each decile of age were compared against normal reference ranges derived from 4001 healthy, normotensive individuals (McEniery et al., JACC 2005). The figure shows that while AP is consistent with normal ranges, the AIx is lower than that that of normals, for both genders.



Conclusions: AIx and AP are not significantly increased in a cardiac population, contrary to expectations.

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This abstract has been withdrawn.

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Calibration of Carotid Central Pressures: A Flaw in Brachial Applanation Tonometry?

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Central pressure, based on carotid and brachial applanation tonometry (AT) does not predict outcomes. This may be due to inaccuracy of brachial and carotid AT. No validation has been published.

To test its (in)accuracy, we measured radial, brachial and carotid pressure pulse waveforms by AT in 100 subjects. Carotid systolic (SP) and pulse (PP) pressures were estimated by two techniques. First, the Pressure Equivalence (PE) technique calibrated brachial waves with brachial cuff pressure values, then the carotid wave was calibrated by assuming identical mean and diastolic pressures, with carotid SP extrapolated. Second, SphygmoCor® technique applied the Transfer Function (TF) to the radial waveform, calibrated to brachial cuff, to generate carotid SP and PP.

Amplification was significant between carotid and brachial (8.0 mm Hg, $p < 0.0001$) with TF, but not with PE (1.5 mm Hg, p = NS). PE gave considerable amplification between brachial to radial (8.4 mm Hg), which was not present with the TF. Form Factors (FF = (mean pressure − diastolic pressure)/PP) for carotid and brachial waves were similar (40.2 c.f. 39.1%; p = NS), but different to the radial (34.5%; $p < .0001$). Amplification as brachial PP ÷ carotid PP using PE was insignificant, but with TF was positive (18%, $p < 0.0001$).

The PE method for recording PP amplification in the upper limb is inaccurate. A major problem is use of AT in carotid and brachial arteries, which cannot reliably be applanated. Findings explain inability of the PE method to predict cardiovascular outcomes, and superiority of TF. "Die Methode ist Alles" (Carl Ludwig 1852).

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Correlation Between Radial Artery- and Peripheral Arterial Tonometry Derived Augmentation Index in Patients with Atrial Fibrillation

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Introduction: Augmentation index (AI) measures the contribution that wave reflection makes to the arterial pressure waveform. AI is considered a surrogate marker for the stiffness of the arterial system; however its utility in atrial fibrillation (AF) is unknown. The AI is routinely recorded from the radial artery (rAI). AI can also be calcu-