

Medical Affairs Policy & Procedure

Title/Service: Non-Invasive Measurements of Heart Disease Risk (Arterial Elasticity, Carotid Intima Media Thickness, CIMT, CVProfilor, Endo-PAT2000, peripheral artery tonometry, PulseWave)

Revised	
Reviewed	01/23/09, 07/27/10, 09/16/2011
Developed	01/23/09
Policy Committee Approval	09/16/2011

Description:

Evaluation of arterial elasticity and carotid intima media thickness are two non-invasive methods used for the identification of individuals at increased risk for heart disease who do not have any abnormal standard risk factors, such as nicotine use, diabetes, hyperlipidemia, or hypertension.

Indications of Coverage:

None

Limitations of Coverage:

- A. Review contract and endorsements for exclusions and prior authorization or benefit requirements.
- B. Arterial elasticity and carotid intima media thickness testing are considered investigational as there is insufficient peer-reviewed scientific literature documenting the superior effectiveness of the technology over standard diagnostic techniques.

Documentation Required:

- Office notes
- Test Results

Rationale:

Cardiovascular disease is one of the leading causes of death in the United States. Some researchers have argued that standard risk factor (for example, nicotine use, high blood pressure, high cholesterol, diabetes, and obesity) evaluation may not be sufficient to quantify the risk factors for heart disease, since as few as 50% of individuals with an increased risk for heart disease may be identified using standard risk factor measurements. The use of other non-invasive measurements has been proposed in an

effort to improve outcomes for those individuals not identified with standard risk factor assessment.

Carotid intima media thickness (CIMT) uses ultrasound to evaluate the layers of the carotid artery in the neck. CIMT is used to assess the presence of atherosclerosis (hardening of the arteries due to the formation of plaque or fatty deposits in the arteries) in the carotid artery, which has been shown to correlate with the degree of atherosclerosis in the arteries of the heart. A statement by the National Institutes of Health, however, concluded that the predictive power of CIMT for individuals without the standard risk factors has not been adequately studied and CIMT cannot be recommended for routine risk assessment. A consensus statement from the American Diabetes Association and the American College of Cardiology stated that it is unclear whether CIMT and similar tests improve management of the individual at increased risk for heart disease.

Arteriosclerosis (hardening of the arteries due to decreased elasticity) has been documented in individuals with coronary artery disease and high blood pressure and has been evaluated as a method of early identification for individuals at increased risk for heart disease. One manufacturer (Hypertension Diagnostics Inc) has developed a method of analyzing blood pressure waveforms to evaluate arterial elasticity. The manufacturer suggests that the technology can help to determine the risk of vascular disease and whether more testing is needed, since decreased arterial elasticity can occur several years before the typical signs of a heart attack or stroke are identified. Another manufacturer (Itamar Medical) suggests that measurement of endothelial (a layer of protective cells that protects blood vessels from injury) dysfunction can identify individuals in the beginning stages of atherosclerosis of the coronary arteries and other heart disease. Currently, the evidence does not support the measurement of arterial elasticity in improving management of an individual at risk for heart disease.

References:

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Approved by the Medical Director