From Vulnerable Plaque to Vulnerable Patient – Part III: Executive Summary of the Screening for Heart Attack Prevention and Education (SHAPE) Task Force Report

Screening for early-stage asymptomatic cancers (e.g. cancers of breast and colon) to prevent late stage malignancies has been widely accepted. However, although atherosclerotic cardiovascular disease (e.g. heart attack and stroke) accounts for more death and disability than all cancers combined, there are no national screening guidelines for asymptomatic (subclinical) atherosclerosis, and there is no government or health-care sponsored reimbursement for atherosclerosis screening. Part I and Part II of this consensus statement elaborated on new discoveries in the field of atherosclerosis that led to the concept of the "vulnerable patient." These landmark discoveries, along with no diagnostic and therapeutic options, have set the stage for the next step: Translation of his knowledge into a new practice of preventive cardiology. The identification and treatment of the ball marble patient or the focuses of this consensus statement.

In this report, the Screening for Heart Attack Prevention and Education (SHAPE) Task Force presents a new practice guideline for cardiovascular screening in the asymptomatic at risk population. In summary, the SHAPE Guideline calls for noninvasive screening for all asymptomatic men 45 -- 75 years of age, and asymptomatic women 55 -- 75 years of age (except those defined at very low risk) to detect and treat those with subclinical atherosclerosis. A variety of screening tests are available, and the cost-effectiveness of their use in a comprehensive strategy must be validated. Some of the screening test, such as measurement of coronary artery calcification by computed tomography scanning and carotid artery intima -- media thickness and plaque by ultrasonography, have been available longer than others, and are capable of providing direct evidence for the presence and extent of atherosclerosis. Both of these imaging methods provide prognostic information of proven value regarding the future risk of heart attack and stroke. Careful and responsible implementation of these tests as part of a comprehensive risk assessment and reduction approach is warranted and outlined by this report. Other tests for the detection of atherosclerosis and abnormal arterial structure and function, such as magnetic resonance imaging of the great arteries, studies of small and large artery stiffness, and assessment of systemic endothelial dysfunction, are emerging and must be further validated. The screening results (severity of subclinical arterial disease) combined with risk factor assessment are used for risk stratification to identify the vulnerable patient and initiate appropriate therapy. The higher the risk, the more vulnerable and individual is to a near-term adverse event. Because < 10% of the population who test positive for atherosclerosis will experience a near-term event, additional risk stratification based on reliable markers of disease activity is needed and is expected to further focus the search for the vulnerable patient in the future. All individuals with a symptomatic atherosclerosis should be counseled and treated to prevent progression to over clinical disease. The aggressiveness of the treatment should be proportional to the level of risk. All individuals with no evidence of subclinical disease may be reassured of the low risk of a future near-term event, yet encouraged to it here to healthy lifestyle and maintain appropriate risk factor levels. Early heart attack care education is urged for all individuals with a positive test for atherosclerosis. The SHAPE Task Force reinforces existing guidelines for the screening and treatment of risk factors in younger populations.

Cardiovascular health-care professionals and policymakers are urged to adopt the SHAPE proposal and its attendant cost-effectiveness as a new strategy to contain the epidemic of atherosclerotic cardiovascular disease and rising cost of therapies associated with this epidemic.
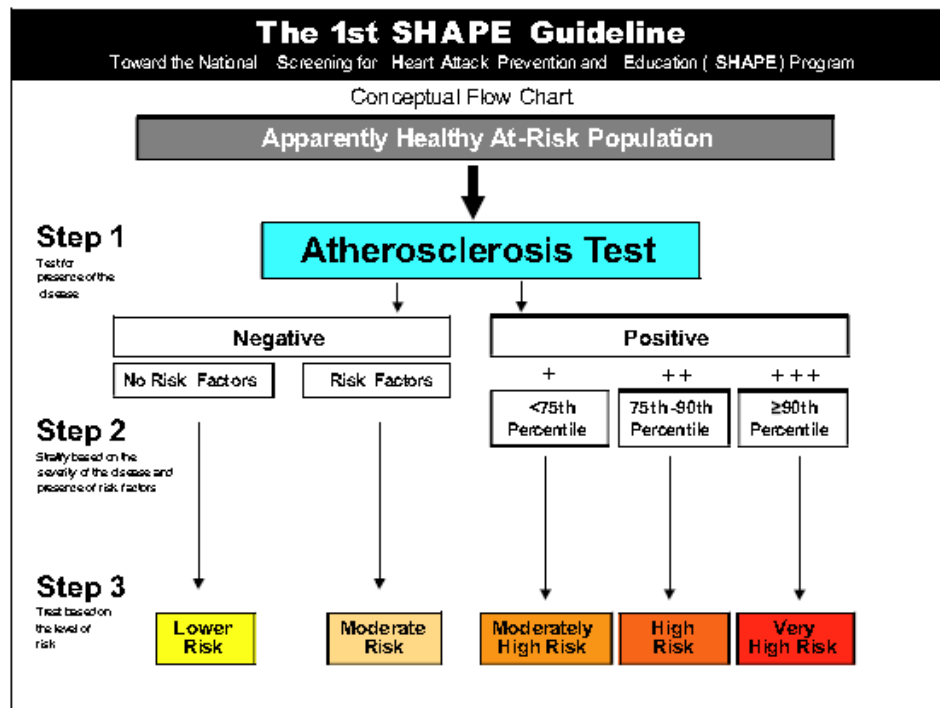
Figure 3. Conceptual flow chart illustrating the principles of the new Screening for Heart Attack Prevention and Education (SHAPE) algorithm.

Summary of SHAPE Guidelines

1. Current risk factor prediction is inaccurate. Over 80% of events occur in low, intermediate risk.
2. Measure atherosclerosis directly to find a truly vulnerable patient.
3. Treat vulnerable patient's risk factors aggressively.
4. Measure the efficacy of treatment overtime.

Who really needs CIMT?

1. High risk patients who resist treatment, or need motivation.
2. Patients with a Family History of early CAD.
3. When you are unsure of how aggressive to be with a patient, or if you want to measure efficacy.

What do I do with the results?

1. Moderate High Risk. CIMT <1 mm & 50% -- 75% & no carotid plaque.
   Treat risk factors with LDL <100. Re-screen in three years.

2. High Risk   CIMT >1 mm or > 75% or <50% plaque.
   Treat risk factors with LDL <70. Re-screen in two years.

3. Very High Risk.   CIMT > 1 mm or> 95% or > 50% plaque.
   Consider stress test. Treat risk factors LDL < 70 & HDL > 50.
   Re-screen in one year. Screen family members.