Modality	Premier Heart MCG	Angiogram	EST[2] EKG	EST[2] Echo	EST[2] Nuclear	12-lead Resting EKG	Troponin	MRI Angiogram[3]	CT Angiogram[3]
Measures	Myocardial Systems Expression[5]	Coronary Anatomy	Physical Stress Induced EKG Changes	Physical Stress Induced Echo Changes	K+ Channel Effect from Physical Stress	2D Vectorized Time-Domain ECG Signal	Heart Muscle Enzymes	Coronary Anatomy	Coronary Anatomy
Sensitivity 40-50%[1] (Partial Occlusion)	80 to 90%	Gold Standard	—N/A—	—N/A—	—N/A—	—N/A—	—N/A—	—N/A—	—N/A—
Sensitivity 50-70%[1] (Partial Occlusion)	90 to 95%	Gold Standard	—N/A—	—N/A—	—N/A—	20% (CAD)	—N/A—	74%	82 to 92%
Sensitivty >70%[1] (Stenosis)	95 to 100%	Gold Standard	45%	31 to 90%+%	44 to 91%	20% CAD 52% MI	—N/A—	54%	82%
Specificity	80+ to 90%	Gold Standard	85%	46 to 100%	81 to 90%	97% CAD 9% MI	—N/A—	75%	75%
Time Required	5 Minute Test 1-5Minute Report[4]	Long prep and testing time	30-40 Minutes	30-40 Minutes Technically Demanding	~6 Hours	Minimal Lag Time	~6 Hours	A few minutes	A few minutes
Quantitative & Objective	Yes	No	No	No	No	No	Yes	Yes	Yes

Information (except MCG data) from: Cleveland Clinic Intensive Cardiology Review Course, 2001.
MCG Data from: Premier Heart Clinical Trials

[1] - Percentage of lumenal encroachment by atherosclerotic plaque

[2] - EST indicates Exercise Stress Testing

[3] - Ann. Intern. Med. 2006; 145:407-415

[4] - Dependent on internet connection speed

[5] - Quantifies stress/strain between the myocardium and blood flow

Notes on MCG

MCG is the evolution of Premier Heart's groundbreaking 3DMP technology, applying the principles of multiphase systems analysis to the ECG. It is the only non-invasive diagnostic technique currently available which has been clinically proven to be capable of identifying early-stage coronary artery disease with accuracy approaching that of coronary angiography. Additionally, a positive correlation exists between the increasing severity of CAD and the sensitivity of MCG in detecting ischemia.

The MCG diagnostic technoloy assigns an overall severity score for myocardial disease burden, which enables physicians to quickly assess a patient and determine if additional evaluation and treatment is required.

The short testing time, rapid report turnaround and exceptional accuracy combine to make MCG ideal for urgent care situations where fast, accurate results are critical to saving lives.

The low cost and easy-to-understand reports make the technology practical over a wide range of applications from family practitioners performing routine examinations to large hospitals and cardiology practices monitoring the progress of a patient's treatment.

Notes on Other Modalities

Coronary Angiography is considered the "Gold Standard", permitting both diagnosis and treatment in the same procedure, however it is an invasive procedure which requires significant preparation and testing time.
Additionally, coronary angiography was able to detect atheromas only 3.0% of the time in 17% of those under 20 years, 37% of those aged 20 to 29, and 60% of those aged 30 to 39 years. This means that angiography results were negative in 97% of these populations when they in fact had atheromas in their coronary arteries.

All stress testing modalities share relatively low sensitivity in detecting ischemia. The outlier (EST Echo) requires quick and careful work by the technician in order to produce usable results.

A conventional 12-lead resting EKG is an excellent tool for detecting arrhythmias, however it typically has poor sensitivity for detecting ischemia.

MRI and CT Angiography are expensive tests, neither of which is universally available.
Additionally, MRI Angiography has a high noise rejection rate (13-18%) and is subject to the usual contraindications for MRI procedures.
CT Angiography has a 7% noise rejection rate, however it invoves radiation exposure and the use of IV contrast, and so is not suitable for all patients.