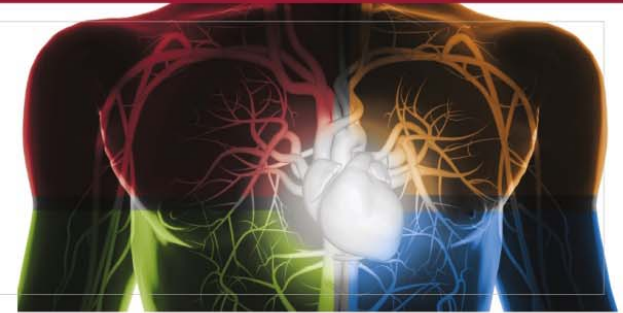


Contemporary Multi-Disciplinary
Cardiovascular Medicine

A Disease-Based Learning Experience for the Practitioner



Cardiac Workup of Chest Pain in the Low-Risk Patient

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Cardiac Workup of Chest Pain in the Low-Risk Patient

- The importance of the H&P
- The Risk Calculator
- Get an ECG
- Check the Lipids
- Chest X-ray?
- Stress testing as a last resort

Cardiac Workup of Chest Pain in the Low-Risk Patient

- The History
 - Nature and location of chest pain
 - Provocation of chest pain
 - Taco Bell?
 - Associated Dyspnea?
- The Exam
 - Pericardial Rub?
 - Murmurs or gallops
 - Chest wall tenderness
 - Epigastric tenderness

Cardiac Workup of Chest Pain in the Low-Risk Patient

- Remember Tietze's Syndrome:
 - First described by the German surgeon, Alexander Tietze in 1921
 - Characterized by painful **swelling** of the costochondral junction with pain radiation to the shoulder or arm
 - Differentiated from costochondritis (which is much more common) which does not manifest swelling or radiation of the pain


Cardiac Workup of Chest Pain in the Low-Risk Patient

- The Risk Calculators:
 - Framingham
 - <http://www.mdcalc.com/framingham-cardiac-risk-score>
 - <http://hp2010.nhlbihin.net/atpiii/calculator.asp>
 - SCORE
 - Assign-SCORE
 - QRISK1 and QRISK2
 - <http://qrisk.org/>
 - PROCAM
 - WHO/ISH
 - Reynolds Risk Score
 - <http://www.reynoldsriskscore.org/>

JACC 2009;54:1209-27

Cardiac Workup of Chest Pain in the Low-Risk Patient

- Risk Calculator

 NATIONAL CHOLESTEROL EDUCATION PROGRAM
Third Report of the Expert Panel on
Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III)

Risk Assessment Tool for Estimating 10-year Risk of Developing Hard CHD (Myocardial Infarction and Coronary Death)

The [risk assessment tool](#) below uses recent data from the Framingham Heart Study to estimate 10-year risk for “hard” coronary heart disease outcomes (myocardial infarction and coronary death). This tool is designed to estimate risk in adults aged 20 and older who do not have heart disease or diabetes. Use the calculator below to estimate 10-year risk.

Age: years

Gender: Female Male

[Total Cholesterol:](#) mg/dL

[HDL Cholesterol:](#) mg/dL


[Smoker:](#) No Yes

[Systolic Blood Pressure:](#) mm/Hg

Currently on any medication to treat high blood pressure. No Yes

Cardiac Workup of Chest Pain in the Low-Risk Patient

- Risk Calculator



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Risk score results:


Age:	35
Gender:	female
Total Cholesterol:	200 mg/dL
HDL Cholesterol:	65 mg/dL
Smoker:	No
Systolic Blood Pressure:	110 mm/Hg
On medication for HBP:	No
Risk Score*	Less than 1%

* The risk score shown was derived on the basis of an equation. Other NCEP materials, such as ATP III print products, use a point-based system to calculate a risk score that approximates the equation-based one.

To interpret the risk score and for specific information about CHD risk assessment as part of detection, evaluation, and treatment of high blood cholesterol, see [ATP III Executive Summary](#) and [ATP III At-a-Glance](#).

Cardiac Workup of Chest Pain in the Low-Risk Patient

- Risk Calculator

 NATIONAL CHOLESTEROL EDUCATION PROGRAM
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Risk score results:

Age:	35
Gender:	female
Total Cholesterol:	200 mg/dL
HDL Cholesterol:	27 mg/dL
Smoker:	No
Systolic Blood Pressure:	110 mm/Hg
On medication for HBP:	No
Risk Score*	Less than 1%

* The risk score shown was derived on the basis of an equation. Other NCEP materials, such as ATP III print products, use a point-based system to calculate a risk score that approximates the equation-based one.

To interpret the risk score and for specific information about CHD risk assessment as part of detection, evaluation, and treatment of high blood cholesterol, see [ATP III Executive Summary](#) and [ATP III At-a-Glance](#).

Cardiac Workup of Chest Pain in the Low-Risk Patient

- Risk Calculator



NATIONAL CHOLESTEROL EDUCATION PROGRAM

Third Report of the Expert Panel on

Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III)

Risk score results:

Age:	35
Gender:	male
Total Cholesterol:	200 mg/dL
HDL Cholesterol:	27 mg/dL
Smoker:	No
Systolic Blood Pressure:	110 mm/Hg
On medication for HBP:	No
Risk Score*	1%

* The risk score shown was derived on the basis of an equation. Other NCEP materials, such as ATP III print products, use a point-based system to calculate a risk score that approximates the equation-based one.

To interpret the risk score and for specific information about CHD risk assessment as part of detection, evaluation, and treatment of high blood cholesterol, see [ATP III Executive Summary](#) and [ATP III At-a-Glance](#).

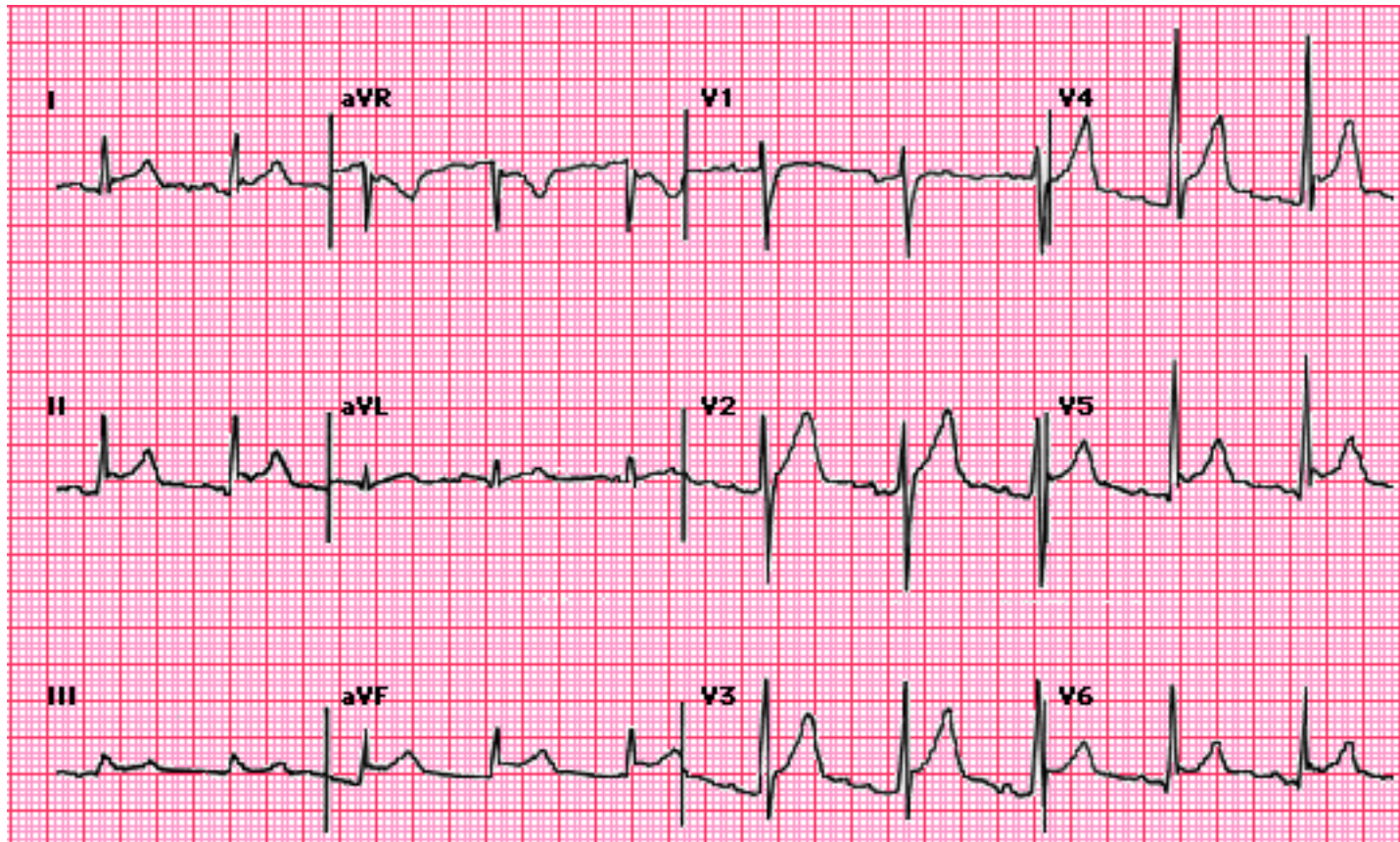
Cardiac Workup of Chest Pain in the Low-Risk Patient

- A Word about GERD:
 - Most common GI diagnosis recorded in outpatient visits
 - Affects 14-20% of the adult population
 - Rising prevalence linked to increasing obesity, especially abdominal obesity
 - Rising incidence of esophageal adenocarcinoma thought to be linked to increased prevalence of GERD
 - Chest pain, laryngitis and cough are common symptoms
 - Imperfect relationship between symptoms and endoscopic features
 - PPI's more effective than H2 blockers

NEJM 2008;359:1700-7

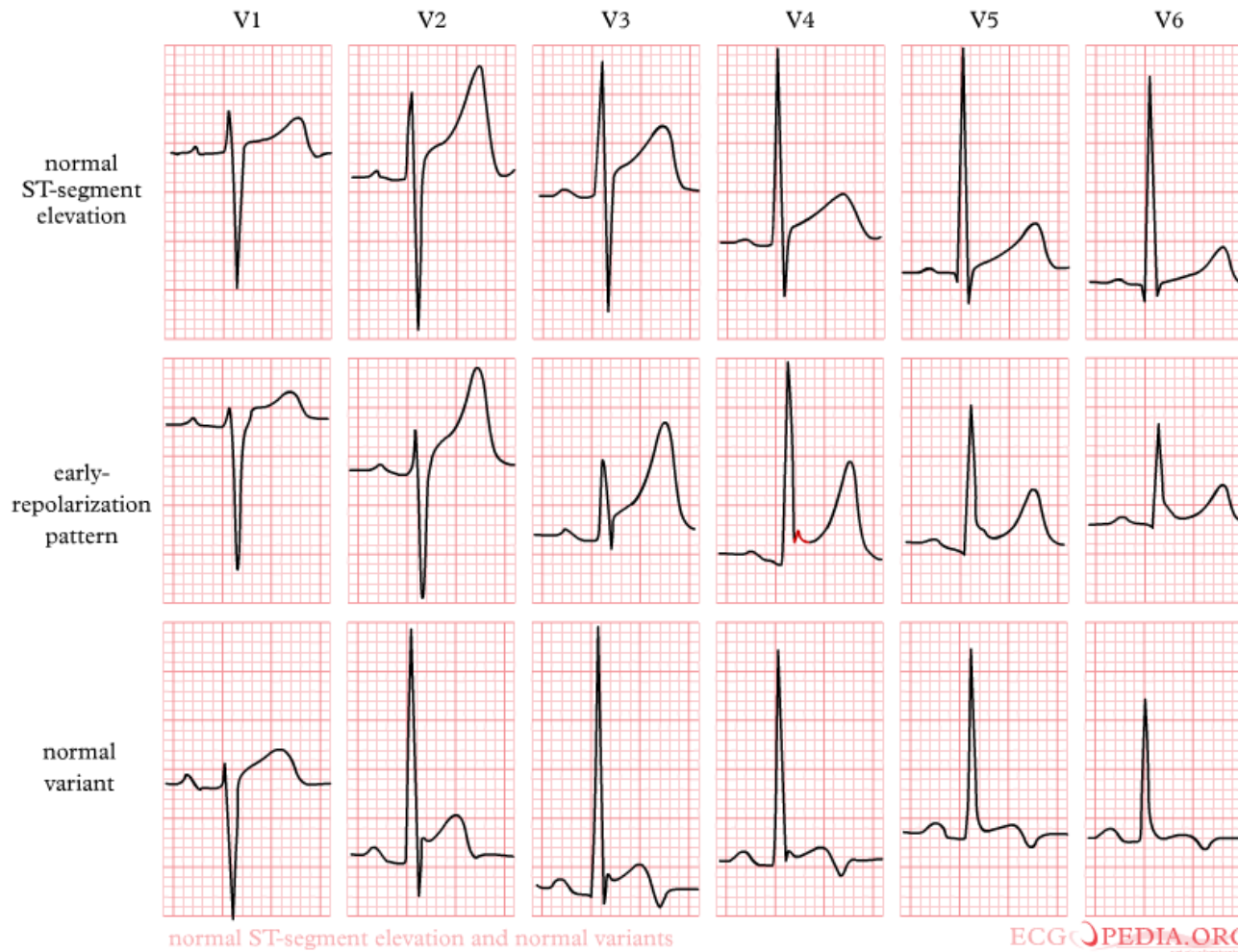
Cardiac Workup of Chest Pain in the Low-Risk Patient

- Get an ECG:



Cardiac Workup of Chest Pain in the Low-Risk Patient

- Get an ECG:



Cardiac Workup of Chest Pain in the Low-Risk Patient

- When to do Stress Testing:
 - The “low risk” patient is not so low risk (lipids, blood pressure, suspected smoking history)
 - Symptoms fail to improve with a PPI
 - Dyspnea becomes the prevailing complaint
 - Prior to beginning an exercise program in middle-aged persons

Cardiac Workup of Chest Pain in the Low-Risk Patient

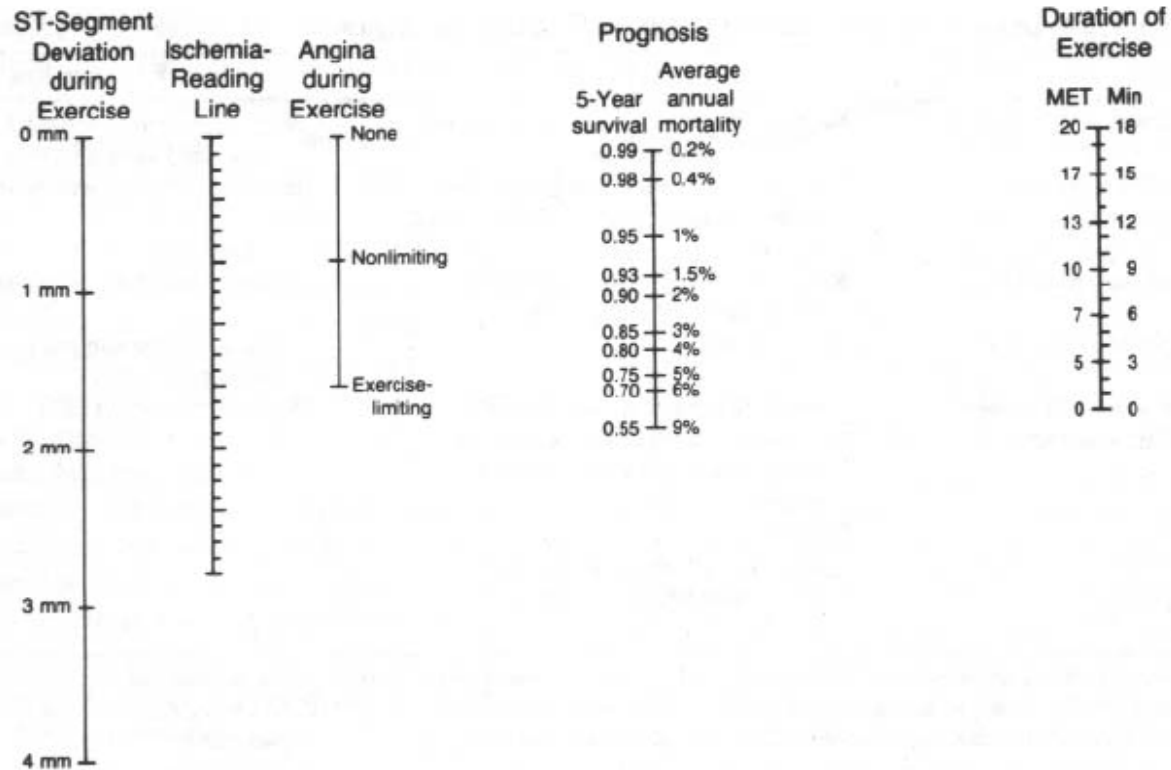
- What do you Learn from Stress Testing?
 - Additional prognostic/risk information
 - Duke treadmill score
 - Exercise capacity
 - Heart rate and blood pressure responses
 - Ischemia detection

Cardiac Workup of Chest Pain in the Low-Risk Patient

- Duke Treadmill Score:

American College of Cardiology Foundation - www.acc.org
 American Heart Association - www.americanheart.org

Gibbons *et al.* 2002
 ACC/AHA Practice Guidelines



Cardiac Workup of Chest Pain in the Low-Risk Patient

- When to do Stress Testing with Perfusion or Functional Imaging:
 - If the baseline ECG is abnormal
 - In intermediate risk persons, especially women
 - When the routine stress ECG is abnormal
 - When a low ejection fraction is suspected