

Cardiovascular Disease and Stroke Prevention Guideline

Interim update: April 2012

Screening

Assess Global 10-year Cardiovascular Disease and Stroke/TIA Risk
(see Framingham risk assessment on reverse side)

Risk

Low
<10%

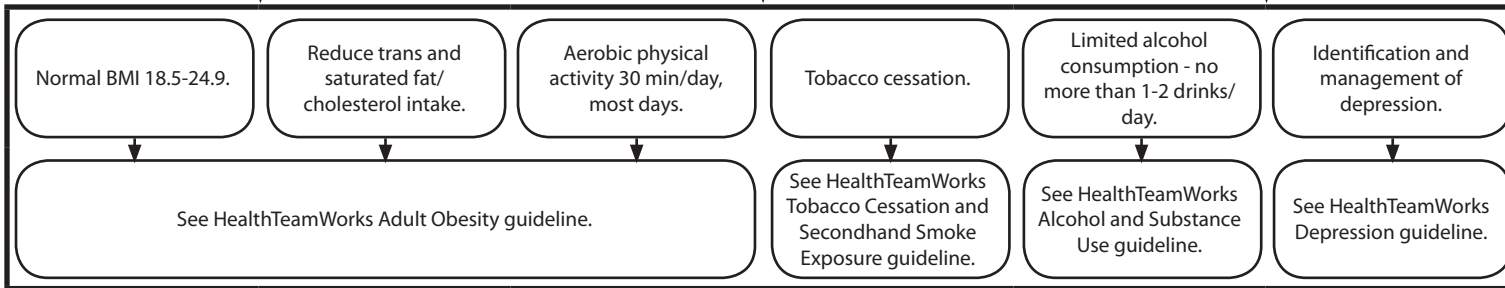
Moderate
10-20%

High
>20%

or

- Coronary Heart Disease (CHD) or CHD Risk Equivalents:**
- Diabetes mellitus (DM)
 - Stroke/Transient ischemic attack (TIA)
 - Peripheral arterial disease (PAD)
 - Abdominal aortic aneurysm (AAA)

Universal lifestyle targets



Aspirin

No

Yes, if benefits outweigh risk.

Yes, recommended dose range 81-325 mg.

Blood pressure

Assess blood pressure at every visit.
Treat to <140/90 mmHg.

If patient has heart failure (HF), DM or chronic kidney disease: goal <130/80 mmHg, use angiotensin converting enzyme inhibitor (ACE-I), or angiotensin receptor blocker (ARB) if ACE-I intolerance.

If systolic >20 mmHg or diastolic >10 mmHg above goal, start 2 drugs. Usually diuretics plus ACE-I, ARB, β -blocker or calcium channel blocker.

Lipids

Screen: ≥ 20 years old
LDL goal: <160 mg/dL

Use moderate dose statin* for achieving LDL <130 mg/dL. Assess annually.

Use high or moderate dose statin* for achieving LDL <100 mg/dL, consider <70 mg/dL for CHD or other atherosclerotic disease. Assess every 6-12 months.

If patient has HF or myocardial infarction, use ACE-I and β -blocker.

Secondarily, consider modifying HDL and triglyceride levels. Goals: HDL >40 mg/dL in men, >50 md/dL in women, and triglycerides <150 mg/dL.

*Recent studies have shown benefits of statin use. No studies have tested treatment to LDL-C targets. The targets above are derived from the LDL-C levels achieved by patients showing benefit in several RCTs of statin treatment (AHA/ACCF Secondary Prevention and Risk Reduction Therapy for Patients with Coronary and other Atherosclerotic Vascular Disease: 2011 Update).

Notes

These guidelines are applicable to adults ages 18 to 80. Patients with clinically documented DM, stroke/TIA, CHD, PAD and AAA are at greater risk.

Screening

- Family history:** Risk is greater if premature coronary heart disease (CHD) in a first-degree relative (males <55 years old, females <65 years old).
- Metabolic syndrome:** Characterized by a cluster of the following risk factors: abdominal obesity, hyperglycemia, high triglycerides, low HDL, and elevated blood pressure. This cluster increases risk of CHD and DM. Treatment should emphasize weight loss and physical activity.
- Age and frequency of screening:** Obtain total cholesterol and HDL (complete fasting lipid profile preferred) for males ≥35 yrs, females ≥45 yrs. every 5 years, or more often if risk factors change. LDL goal: <160 mg/dL.
- For assessment of peripheral artery disease (PAD), assess ankle-brachial index (ABI). This is also considered a reliable measure of pre-clinical atherosclerosis.

Lifestyle

- Weight management:** Weigh and assess BMI at each visit. Assist with weight maintenance or 5-10% weight loss. See HealthTeamWorks Adult Obesity Guideline.
- Nutrition:** Promote diet that emphasizes fruits, vegetables, whole grains, low-fat dairy, lean meats, poultry, fish, beans, and nuts; is low in saturated and trans fats, cholesterol, sodium, and added sugars such as the DASH diet (www.nhlbi.nih.gov/health/public/heart/hbp/dash/how_plan.html) or the American Heart Association dietary recommendations (www.americanheart.org).
- Physical Activity:** To manage weight/prevent weight gain, encourage 30-60 minutes moderate-to-vigorous activity such as brisk walking most days of the week while not exceeding caloric intake requirements.
- Tobacco cessation:** Screen for tobacco use, provide brief counseling and offer pharmacotherapy. Refer to Quitline (1-800-QUIT-NOW or 1-800-784-8669). See HealthTeamWorks Tobacco Cessation and Secondhand Smoke Exposure Guideline.
- Alcohol consumption:** Assess excess alcohol consumption. No more than 1 per day for women, 2 per day for men. One drink = 12 oz of beer, 5 oz of wine, or 1.5 oz of liquor. Refer to Substance Abuse and Mental Health Services Administration for information on problem drinking (<http://www.samhsa.gov>). See HealthTeamWorks Alcohol and Substance Use Guideline.
- Depression management:** Depression is an independent risk factor that increases relative risk for cardiovascular disease (CVD) 1.5-2.0 fold. Incidence of depression is 3-5 times higher in CVD patients vs. general population. Assess for and treat depression (see HealthTeamWorks Depression Guideline).
- Stress management:** Emerging evidence links stress with CHD. Consider implementing stress management techniques.

Aspirin

- Aspirin is indicated in all high risk patients. There is less evidence for its use in moderate risk patients and since aspirin is not risk free, providers should weigh the risks and benefits before recommending.

Blood pressure

- Treat to <140/90 mmHg.
- For more information, refer to The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure: www.nhlbi.nih.gov/guidelines/hypertension.

Lipids

- Consider LDL goal of <70 mg/dL in patients with known CHD and multiple or poorly controlled risk factors, or a recent myocardial infarction.
- For more information, refer to Third Report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III): www.nhlbi.nih.gov/guidelines/cholesterol.

Stroke/TIA

- Control of blood pressure is the most effective way to reduce risk of stroke/TIA.
- Atrial fibrillation is a major risk factor for stroke/TIA. Recommend anticoagulation with warfarin, rivaroxaban or dabigatran for patients with CHAD₂ (CHF, Hypertension, Age >75, Diabetes, prior Stroke) score ≥2.
- TIAs, "warning strokes" that produce transient stroke symptoms, but no lasting damage, are strong predictors of major stroke (10-fold increased risk).
- While aspirin is an effective first-line antiplatelet therapy for stroke/TIA prevention, clopidogrel and the combination of aspirin and sustained-release dipyridamole are effective alternatives.
- Carotid disease is a risk factor for stroke/TIA.
- For more information on stroke/TIA prevention, refer to AHA/ASA guidelines (2011): <http://stroke.ahajournals.org/content/42/2/517>

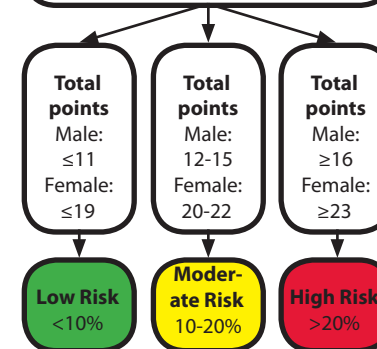
Framingham 10-year Cardiovascular Disease Risk Assessment

Age		
Years	Male Points	Female Points
20-34	-9	-7
35-39	-4	-3
40-44	0	0
45-49	3	3
50-54	6	6
55-59	8	8
60-64	10	10
65-69	11	12
70-74	12	14
75-79	13	16

Systolic BP				
(mmHg)	Male Points		Female Points	
	Untreated	Treated	Untreated	Treated
<120	0	0	0	0
120-129	0	1	1	3
130-139	1	2	2	4
140-159	1	2	3	5
≥160	2	3	4	6

HDL		
(mg/dL)	Male Points	Female Points
<40	2	2
40-49	1	1
50-59	0	0
≥60	-1	-1

Risk factor	Value	Points
Age	_____ yrs.	_____
Systolic blood pressure	_____ mmHg	_____
HDL	_____ mg/dL	_____
Total cholesterol	_____ mg/dL	_____
Smoker	Yes___ No___	_____
Total:		<input type="text"/>



Total Cholesterol										
(mg/dL)	Male Points by Age Group					Female Points by Age Group				
	20-39	40-49	50-59	60-69	70-79	20-39	40-49	50-59	60-69	70-79
<160	0	0	0	0	0	0	0	0	0	0
160-199	4	3	2	1	0	4	3	2	1	1
200-239	7	5	3	1	0	8	6	4	2	1
240-279	9	6	4	2	1	11	8	5	3	2
≥280	11	8	5	3	1	13	10	7	4	2

Smoking										
	Male Points by Age Group					Female Points by Age Group				
	20-39	40-49	50-59	60-69	70-79	20-39	40-49	50-59	60-69	70-79
Non-smoker	0	0	0	0	0	0	0	0	0	0
Smoker	8	5	3	1	1	9	7	4	2	1

Risk Assessment

- Global risk calculation (especially in patients with 2 risk factors) provides more accurate determination of treatment intensity than counting isolated risk factors.
- Risk factors: cigarette smoking, BP>140/90 mmHg or on BP therapy, HDL <40 mg/dL, premature CHD in first-degree relative, age (men >45 yrs, women >55 yrs), obesity, and physical inactivity.
- Clinical judgment is required to estimate incremental risk based on additional emerging risk markers.
- For an online risk calculator, go to <http://hp2010.nhlbihin.net/atp/iii/calculator.asp?usertype=prof>.
- For other validated risk assessment tools, go to www.healthteamworks.org.