

Purpose

To identify and promote the essential elements to preventing, diagnosing, and managing coronary artery disease in adults.

Key Recommendations

- Conduct aggressive risk factor management for coronary artery disease beginning at age 20.
- Advise patients about importance of lifestyle as the foundation for risk reduction prior to and during cholesterollowering therapy: heart healthy diet; maintenance of a healthy weight; regular aerobic physical activity; avoidance of tobacco products (including electronic nicotine delivery systems [ENDS]/cessation of tobacco use and reducing exposure to second-hand smoke.
- Initiate beta-blockers, ACE inhibitors, and antiplatelet agents. ACE inhibitors and antiplatelet agents should be
 considered for indefinite use if no contraindication. The duration of therapy with beta-blockers must be
 weighed against potential for adverse effects associated with these agents including heart failure and cardiogenic
 shock.
- ASA Therapy:
 - 1) *Primary Prevention* The Food and Drug Administration does not recommend aspirin therapy as preventive medicine in people who have not already had a heart attack, stroke or other cardiovascular conditions. The USPSTF recommends low dose aspirin for persons aged 50-59 years for primary prevention of cardiovascular disease who have a 10% or greater 10 year CVD risk, are not at increased risk for bleeding, have a life expectancy of at least 10 years, and are willing to take low-dose aspirin daily for at least 10 years.
 - As of 2015, the <u>United States Preventive Services Task Force</u> updated its 2009 recommendation for Aspirin for the Prevention of Cardiovascular Disease Primary Prevention:

Men, Age 45-79	The USPSTF recommends the use of aspirin for men age 45 to 79 years when the potential benefit due to a reduction in myocardial infarctions outweighs the potential harm due to an increase in gastrointestinal hemorrhage. See the Clinical Considerations section for discussion of benefits and harms.
Women, Age 55-79	The USPSTF recommends the use of aspirin for women age 55 to 79 years when the potential benefit of a reduction in ischemic strokes outweighs the potential harm of an increase in gastrointestinal hemorrhage. See the Clinical Considerations section for discussion of benefits and harms.
Men and Women, 80 Years and Older	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of aspirin for cardiovascular disease prevention in men and women 80 years or older. See the Clinical Considerations section for suggestions for practice regarding the statement.
Women Younger than 55 (Stroke), Men Younger than 45 (MI)	The USPSTF recommends against the use of aspirin for stroke prevention in women younger than 55 years and for myocardial infarction prevention in men younger than 45 years.

- 2) Secondary Prevention 2 or more risk factors, especially those with CHD 10 yr risk of \geq 10%, and no contraindications, prescribe 81-162 mg/QD.
- Monitor blood pressure. Treat to blood pressure target levels: <130/80 mm Hg and <140/90 mm Hg with no diabetes and no kidney disease.^a
 - NOTE: The 2017 ACA/AHA Guideline for the Prevention, Detection, Evaluation and Management of High Blood Pressure in Adults classifies hypertension as a BP reading of 130/80 mm Hg or higher.



High Risk Populations/Disparities

- Cancer and heart disease are the leading causes of premature death (average years of potential life lost before age 75 (YPLL) in Monroe County from 2010 to 2014. . County-wide, the average YPLL is 6.4 years. The average YPLL is two times higher in the city compared to the suburbs and more than 3 times higher among African American and Latino residents compared to White residents.¹
- Two conditions that are risk factors for heart disease include diabetes and high blood pressure. Ten percent (10%) of Monroe County adults have diabetes, and 32% have high blood pressure.

Rates are higher among those age 35 and older and there are significant disparities by race/ethnicity and geography as shown in the table below.

*Statistical significance p<0.05, City compared to Suburbs, ** Statistical significance p<0.05 African American and Latino compared to White.

Ever Told by a Doctor or Health Professional that they have Diabetes or High Blood Pressure, Adults Ages 35+, 2012 (%	City	Suburbs	African American	Latino	White
of population)					
Diabetes	19*	12	24**	19**	12
High Blood Pressure	50*	39	64**	42	39

Quality Measures Commonly Used by National Organizations

- Antiplatelet Therapy: Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease (CAD) seen within a 12 month period who were prescribed aspirin or clopidogrel (MIPS)
- Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy: Percentage of
 patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period who
 also have diabetes OR a current or prior Left Ventricular Ejection Fraction (LVEF) < 40% who were prescribed
 ACE inhibitor or ARB therapy (MIPS)
- Symptom Management: Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period with an evaluation of level of activity and an assessment of whether anginal symptoms are present or absent with appropriate management of anginal symptoms within a 12 month period. (SIHD)



Prevention and Diagnosis

Initial Assessment of Risk Factors - B	eginning at Age 20 to In clude
 Family History Smoking Status and Readiness to Change Blood Pressure Fasting Lipid Panel Dietary and Physical Activity Assessment 	 BMI Calculation Past Medical History Assessment (including history of atrial fibrillation and diabetes) Waist Circumference Other illnesses including (e.g.) psoriasis have been associated with an increased risk of CAD.
Clinical Identification of Metabolic Syr	ndrome – Any 3 of the Following:
 Waist Circumference ≥ 40" (men), ≥ 35" (women) Blood Pressure ≥ 130/≥ 85 mm/Hg Fasting Glucose ≥ 100 mg/dL 	Triglycerides ≥ 150 mg/dL HDL Cholesterol < 40 mg/dL (men), < 50 mg/dL (women)
Assess and treat und	erlying causes

Blood Pressure

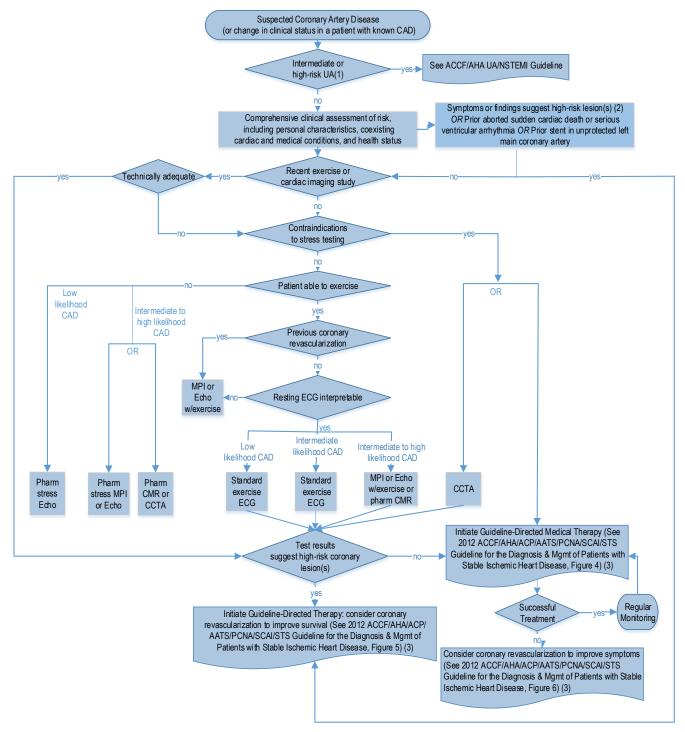
- \bullet Treat to blood pressure target levels: < 130/80 mm Hg and < 140/90 mm Hg with no diabetes and no kidney disease^{1,2}
- Prescribe life style modifications (e.g. effectiveness of regular aerobic exercise, moderation of sodium intake, a DASH eating plan or a <u>Mediterranean style diet</u> with emphasis on eating foods like fish, fruits, vegetables, beans, high-fiber breads and whole grains, nuts, and olive oil while limiting meats, cheeses, and sweets. This can be equivalent to drug monotheraphy).
- Initial antihypertensive treatment:
 - In general nonblack population, including those with diabetes, initial antihypertensive treatment should include a thiazide-type diuretic, calcium channel blocker (CCB), angiotensin-converting enzyme inhibitor (ACEI), or angiotensin receptor (ARB).
 - In the general black population, including those with diabetes, initial antihypertensive treatment should include a thiazide-type diuretic or CCB.³
 - o In the population aged ≥ 18 years with CKD (including all CKD patients with hypertension regardless of race or diabetes status), initial (or add-on) antihypertensive treatment should include an ACEI or ARB to improve kidney outcomes.

(See Monroe County Medical Society (MCMS) <u>Community-wide Guideline for Management of Hypertension</u> for complete recommendations.)

^{*} Figure reprinted with permission from *Journal of the American College of Cardiology*, 60/24, Fihn SD, Gardin JM, Abrams J, Berra K, Blankenship JC, Dallas P, et al. 2012 ACCF/AHA/ACP/AATS/PCNA/SCAI/STS Guideline for the Diagnosis and Management of Patients With Stable Ischemic Heart Disease, e44–e164, (2012), with permission from Elsevier. Available at: http://www.sciencedirect.com/science/article/pii/S0735109712027027.



Diagnosis of Patients with Suspected Coronary Artery Disease*



- (1) See Table 2 in 2012 ACCF/AHA/ACP/AATS/PCNA/SCAI/STS Guideline for the Diagnosis and Management of Patients With Stable Ischemic Heart Disease for short-term risk of death or nonfatal MI in patients with UA/NSTEMI. (2) 2012 ACCF/AHA Focused Update: Guideline for the Mgmt of Patients With UA/NSTEMI. (3) CCTA is reasonable only for patients with intermediate probability of CAD. (4) 2012 ACCF/AHA/ACP/AATS/PCNA/SCAI/STS Guideline for the Diagnosis and Management of Patients With Stable Ischemic Heart Disease
- CCTA: computed coronary tomography angiography; CMR: cardiac magnetic resonance; ECG: electrocardiogram; Echo: echocardiography; IHD: Ischemic Heart Disease; MI: myocardial infarction; MPT: myocardial perfusion imaging; Pharm: pharmacological; UA: unstable angina; UA/NSTEMI: unstable angina/non-ST-segment elevation myocardial infarction
- Recommendations remain unchanged in the 2014 ACC/AHA/AATS/PCNA/SCAI/STS Focused Update of the Guideline for the Diagnosis and Management of Patients With Stable Ischemic Heart Disease. Available from www.ncbi.nlm.nih.gov/pubmed/2507786

Guidelines are intended to be flexible. They serve as reference points or recommendations, not rigid criteria. Guidelines should be followed in most cases, but there is an understanding that, depending on the patient, the setting, the circumstances, or other factors, care can and should be tailored to fit individual needs.

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Lipid Management*

Moderate to high-intensity statin therapy for individuals at increased risk for ASCVD who are likely to benefit from risk reduction are stratified into 4 statin benefit groups.

Use the ASCVD risk estimator at http://www.acc.org/tools-and-practice-support/mobile-resources/features/2013-prevention-guidelines-ascvd-risk-estimator to determine 10 year and lifetime risks. A patient/physician risk discussion should follow any calculation of risk.

Statin Benefit Patient Groups ⁽¹⁾		Recommended Statin Treatment
Clinical ASCVD ⁽²⁾ -	Age ≤75 yrs with no statin- related safety concerns	High-intensity statin
secondary prevention	Age >75 yrs or not a candidate for high-intensity statins	Moderate-intensity statin
Individuals with primary elevations of LDL-C ≥190 mg/dL and without clinical ASCVD - primary prevention	Familial hyhpercholesterolemia (candidates for statin therapy)	High-intensity statin. (If not a candidate for high-intensity statin, moderate tolerated statin)
Individuals with diabetes, ages 40-75, with LDL-C 70-189 mg/dL and	Estimated 10-yr ASCVD risk <7.5%	Moderate-intensity statin
without clinical ASCVD - primary prevention	Estimated 10-yr ASCVD risk ≥7.5%	High-intensity statin
Individuals with no	Estimated 10-yr ASCVD risk ≥7.5%	Moderate to high-intensity statin
diabetes, ages 40-75, with LDL-C 70-189 mg/dL and without clinical ASCVD - primary prevention	Estimated 10-yr ASCVD risk 5 - < 7.5%	Consider use of moderate- intensity statin. (Moderate evidence available to support. Discuss risks/benefits with patent.)

For patients who do not fall into the above statin-benefit groups, physicians and patients should engage in a discussion regarding the risks and benefits of PCSK9 therapy.

Consider pill splitting or generic equivalents as available to increase patient compliance.

Risk Intervention

Lifestyle Modifications

- Physical activity of at least 150 min/wk of moderate-intensity aerobic activity over at least 5 days/wk or 75 min/wk of vigorous-intensity aerobic activity over at least 3 days/wk and muscle-strengthening activities on 2 or more days/wk that work all major muscle groups.
- Dietary Intake: Diet plays a role in management.; moderation of sodium intake, a DASH eating plan
 or a <u>Mediterranean style diet</u> can be beneficial and should be considered with emphasis on eating
 foods like fish, fruits, vegetables, beans, high-fiber breads and whole grains, nuts, and olive oil while
 limiting meats, cheeses, and sweets.
- http://www.heart.org/HEARTORG/HealthyLiving/HealthyEating/Nutrition/Making-Healthy-Choices_UCM_461295_Article.jsp#.Wo8L5W8rKAY
- Weight Management to achieve and maintain BMI at 18.5 24.9 Kg/m, waist circumference at iliac crest level ≤ 40" in men & ≤ 35" in women.
- Complete smoking cessation. Provide appropriate counseling, pharmacotherapy and referral to formal cessation programs. No exposure to environmental smoke. (See MCMC <u>Community-wide</u> <u>Guideline for Treating Tobacco Use and Dependence</u>).

Blood Lipid Management

Initiate therapeutic lifestyle changes and consider drug therapy.

Diabetes Management

Initiate appropriate therapy to achieve an A1c < 7.0% (Goals should be individualized based on age, comorbid conditions, duration of diabetes, individual patient considerations and other factors.) (See MCMS <u>Community-wide Guideline for Diabetes Care</u>). Every attempt should be made to identify patients at risk for diabetes (insulin resistance, glucose intolerance, obesity, family history, poor diet and exercise habits) to allow early intervention with diet and lifestyle changes to prevent the development of frank diabetes.

ASA Therapy

- Primary Prevention The <u>Food and Drug Administration</u> does not recommend aspirin therapy as
 preventive medicine in people who have not already had a heart attack, stroke or other
 cardiovascular conditions. See USPSTF Aspirin Therapy for persons aged 50-59 year under Key
 Recommendations on page 1. As of 2015 the <u>United States Preventive Services Task Force</u> updated
 its recommendation for Aspirin for the Prevention of Cardiovascular Disease Primary Prevention.
- Secondary Prevention 2 or more risk factors, especially those with CHD 10yr risk of ≥10%, and no contraindications-prescribe 81-162 mg/QD.

Depression Screening

Screen for depression (See MCMS Community-wide Guideline for Major Depressive Disorder)

Disease Management Support

- One to one interaction for personal education and support.
- Resource tools to assist with self management of chronic conditions

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5 Approved Jan 2018. Next scheduled review by Jan 2020.

^{*}Adapted from 2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines

^{1.} Characteristics that may predispose patients to statin adverse effects include, but are not limited to: multiple or serious comorbidities, including impaired renal, hepatic function; hx of previous statin intolerance or muscle disorders; unexplained ALT elevations >3 X ULN; age >75 yrs. 2. Atherosclerotic Cardiovascular Disease (ASCVD) defined as acute coronary syndrome, history of myocardial infarction, stable or unstable angina, prior coronary or other arterial revascularization, stroke, transient ischemic attack, or peripheral arterial disease presumed to be atherosclerotic.



Patient Tracking Tool for Secondary CVD

ate of Birth:		Age:	Sex:			
Pre-existing: CVD conditions:						
RISK INTERVENTIONS	INITIAL STATUS	PATIENT GOAL	DATE:	DATE:	DATE	
Smoking Complete avoidance/ Cessation including ENDS	Smoker Non-smoker		Smoker Non-smoker	Smoker Non-smoker	Smoker Non-smoker	
Blood Pressure < 130/80 mm Hg < 140/90 mm Hg with no diabetes & no kidney disease	mmHg					
Cholesterol Initial screening w/lipid panel/therapy based on risk calculation (Screen for familial ipdemia to identify higher risk ndividuals)						
Physical Activity 150 min/wk (moderate over at least 5 days) or 75 min/wk (vigorous over at least 3 days) plus muscle strengthening (2 or	Duration: Frequency:					
more days/wk)						
Weight Mgmt. BMI: < 25 Height: Waist Circumference: Men < 40" Women < 35"	Height: Weight: BMI: Waist Circ:					
Diabetes Management* HbA1c < 7.0%	HbA1c: FBG:					
Antiplatelet Agents/ Anticoagulants**	Yes/No	Compliant? Rx	Y/N Rx	Y/N Rx	Y/N Rx	
Ace Inhibitors	Yes/No	Compliant?	Y/N Rx	Y/N Rx	Y/N Rx	
Beta-blockers	Yes/No	Compliant?	Y/N Rx	Y/N Rx	Y/N Rx	
Depression Screening	Yes/No		Y/N	Y/N	Y/N	

METABOLIC SYNDROME INCLUDES ANY 3 OF THE 5 DIAGNOSITC MEASURES: Waist Circumference (men \geq 40", women \geq 35"); **BP** \geq 130/ \geq 85 mm Hg; **FBG** \geq 100 mg/dL; **Triglycerides** \geq 150 mg/dL; **HDL** cholesterol (men <40 mg/dL, women <50 mg/dL)

^{*}Goals should be individualized based on age/life expectancy, duration of diabetes, comorbid conditions, individual patient considerations and other factors.

^{**}Consider annual reassessment of the need for antiplatelet/anticoagulant therapy.



Resources for Physicians

<u>American Heart Association</u> (The American Heart Association is a national voluntary health agency to help reduce disability and death from cardiovascular diseases and stroke.)

Provides featured science news, research, cardiovascular risk calculator and daily e-newsletter.

Centers for Disease Control

• <u>Million Hearts® Action Guide Series</u> – Provides evidence-based strategies for improving cardiovascular health.

Resources for Patients

American Heart Association

(The American Heart Association is a national voluntary health agency to help reduce disability and death from cardiovascular diseases and stroke.)

- <u>Answers by Heart</u>: Downloadable Q & A patient information sheets, in English and Spanish, on cardiovascular conditions, tests and treatments and lifestyle and risk reduction.
- <u>Caregiver Resources</u>: online support communities, printable resources and monthly e-newsletter.

Centers for Disease Control

Information about physical activity for adults and older adults.

DASH Eating Plan

Online booklet with information about servings and food groups for the DASH eating plan; tips on switching to the DASH eating plan; lowering sodium intake, using herbs and spices, and comparing labels; and how to lose weight.

Mediterranean Diet

Information in English and Spanish from Medline Plus, a service of the <u>U.S. National Library of Medicine National Institutes of Health</u>.

Million Hearts

Information on ABCS of prevention, Practice Healthy Living Habits

National Heart Lung & Blood Institute

Tips for a lifelong approach to prevent and control coronary heart disease risk factors.

USDA Choose My Plate

- <u>Tips for increasing physical activity</u> How to make physical activity a regular part of the day at home, work and play.
- How much physical activity is needed?



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