

At risk for acute MI? Protecting your patients' heart health

Follow guidelines for gauging key risk factors

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One in five of your patients could suffer a heart attack in the near future—unless you take steps to ensure their heart health.

Psychiatric patients have more modifiable risk factors for coronary artery disease (CAD) compared with the general population.¹⁻³ Your patients are also less likely than nonpsychiatric patients to receive preventive medical care,^{4,5} leaving it to you to assess their CAD risk. (See *“When depression treatment goes nowhere,”* CURRENT PSYCHIATRY, August 2005, at www.currentpsychiatry.com.)

To help keep you abreast of constantly changing guidelines and strategies for recognizing and minimizing CAD risk, this article discusses:

- preventive and diagnostic guidelines for managing hypertension, diabetes, and dyslipidemia
- practical advice on convincing at-risk patients to adopt a healthier lifestyle and have a primary care doctor monitor their health.



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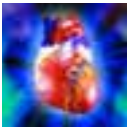


Table 1

Risk factors for coronary artery disease

Core risk factors

- Age ≥ 45 for men*
- Age ≥ 55 for women or premature menopause without estrogen-replacement therapy*
- Family history: premature coronary artery disease with myocardial infarction or sudden death before:
 - age 55 in male first-degree relatives
 - age 65 in female first-degree relatives
- Current cigarette smoking
- Hypertension or antihypertensive treatment*
- Elevated LDL cholesterol (>130 mg/dL in patients with low cardiac risk)
- HDL cholesterol <40 mg/dL*
- Triglycerides >150 mg/dL
- Total cholesterol >200 mg/dL*
- Obesity (BMI >30 kg/m²)[†]
- Sedentary lifestyle

Other risk factors

- Elevated C-reactive protein
- Elevated homocysteine
- Chronic renal failure
- Depression

Negative (cardio-protective) risk factors

- HDL >60 mg/dL
- Moderate alcohol use—no more than 1 to 2 drinks per day (1 drink = 12 oz beer or 5 oz of wine)

If >1 risk factor, refer to primary care doctor or quantify 10-year risk by using the Framingham/ATP III point system scale (www.nhlbi.nih.gov).

* Framingham/ATP III point system scale variables

[†] Use BMI calculator (<http://nhlbi.support.com/bmi/>) to determine body mass index.

HDL: High-density lipoprotein

LDL: Low-density lipoprotein

Source: References 9,10

CASE: CIGARETTES AND SUPERSIZING

Mr. H, age 54, is receiving cognitive-behavioral therapy for mild depression. He has been smoking one pack of cigarettes per day for 20 years and has never seriously considered quitting.

The patient, a school teacher, says his “busy

schedule” keeps him from exercising and eating properly; he eats fast-food hamburgers and fries approximately five times per week. His father had a heart attack at age 52 and died in his sleep 10 years later.

Mr. H says he feels fine and has never seen a physician other than his psychiatrist. He is reluctant to see a primary care physician for a check-up and, because he is asymptomatic, has no incentive to do so. The psychiatrist thus decides to do a routine examination.

Blood pressure is 148/86; other vital signs are normal. Mr. H’s waist size is 42 inches, he weighs 242 lbs, and his body mass index (BMI) is 34 kg/m², indicating clinical obesity. Cardiovascular, pulmonary, and abdominal exams are unremarkable.

Discussion. Mr. H is at high risk of a myocardial ischemic event in the near future. He has six risk factors for CAD (*Table 1*)—four of which are modifiable:

- family history
- age
- current cigarette use
- provisional hypertension diagnosis
- obesity
- physical inactivity.

Mr. H’s weight, inactivity, and poor diet increase his risk of diabetes and dyslipidemia—two additional risk factors for CAD. Because he is asymptomatic, Mr. H probably is unaware that he is damaging his vascular system. The challenge: assess the degree of Mr. H’s risk and get him to understand the need for regular monitoring by a primary care physician.

TOOLS FOR ASSESSING RISK

The lifetime risk at age 40 for developing CAD is 49% and 32% in men and women, respectively.⁶

The National Cholesterol Education Program Expert Panel on Detection, Evaluation and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel) has focused on decreasing heart disease incidence by educating patients

and providers. Preventive strategies and standards of care have changed several times over the past decade; the Adult Treatment Panel (ATP III) was last revised in July 2004.⁷

The American College of Cardiology and American Heart Association both endorse the modified Framingham/ATP III scale to measure CAD risk (see *Related resources*). Although this somewhat tedious point system has limitations, it can precisely calculate coronary risk across 10 years.⁸ Variables not included in the scoring system—such as C-reactive protein, homocysteine, and postmenopausal state—may be clinically significant and should be gauged separately.

An easier-to-use alternative, the ATP III “core risk factors” scale, estimates hypertension, hypercholesterolemia, family history, current cigarette smoking, and age as low, intermediate, or high (“risk equivalent”) risks (*Table 1*).⁸ Psychiatrists can quickly obtain this information from a brief history, blood pressure assessment, and relatively inexpensive lab studies.

Generally, the more risk factors present, the higher the risk of having a major coronary event. Presence of ≥ 2 risk factors signals intermediate or high risk and necessitates referral to a primary care doctor for monitoring.

Patients with a cardiac “risk equivalent” face a $>20\%$ risk of having a cardiac ischemic event within 10 years⁸ (*Table 2*).

Examples of risk equivalents include diabetes or significant vascular disease in any artery.

“Non-core” variables. Also consider certain “non-core” variables—such as pre-existing psychiatric illness—when estimating clinical risk for heart disease. Depression, anxiety, and stress are correlated with an increase in pro-inflammatory markers such as C-reactive protein and predispose patients to CAD.^{11,12} Depression has repeatedly been shown to increase morbidity and mortality

Table 2

Risk equivalents for CAD*

Established coronary artery disease
Symptomatic carotid artery disease
Peripheral vascular disease
Abdominal aortic aneurism
Diabetes mellitus

*Risk equivalent: Patient is assumed to have coronary artery disease (CAD).

two- to four-fold after myocardial infarction (MI).^{9,13,14} Interestingly, however, depression treatment after an acute coronary event does not clearly decrease mortality.¹⁵ Although prospective, randomized studies are lacking, mood and anxiety disorder treatment is presumed to help prevent CAD development.¹⁶

RECOGNIZING CAD RISK

At what point do hypertension and dyslipidemia become risk factors for CAD? When and how often should patients be screened for diabetes mellitus?

Hypertension is one of the most common and deadly CAD risk factors, affecting 50 million Americans.¹⁰ Although hypertension awareness and treatment have improved, only 35% of adults have “controlled” blood pressure ($<140/90$ mm Hg).

According to the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7), normalizing blood pressure can reduce stroke incidence by 35% and MI by 25%, respectively. JNC 7, however, also found that 90% of persons who are normotensive at age 55 eventually develop hypertension.¹⁰

Based on these findings, JNC 7 in 2003 drastically changed the standard of care for diagnosing hypertension. JNC 7 defines normal blood

2 or more CAD risk factors? Refer patient to primary care doctor for monitoring

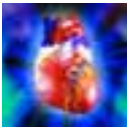


Table 3

JNC 7: What blood pressure readings mean

Category	Systolic BP (mm Hg)	Diastolic BP (mm Hg)
Normal	<120	and <80
Prehypertension	120-139	or 80-89
Stage 1 hypertension*	140-159	or 90-99
Stage 2 hypertension	160	or ≥100

JNC 7: Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure

*Patients with diabetes mellitus or chronic kidney disease have stage 1 hypertension at >130/80 mm Hg.

Source: Reference 10

pressure as <120/80 mm Hg and classifies as “prehypertension”:

- systolic blood pressure 120 to 139 mm Hg
- diastolic blood pressure 80 to 89 mm Hg (Table 3).

A patient is considered prehypertensive if either reading falls within these ranges.

Patients with diabetes mellitus or chronic kidney disease are considered hypertensive with blood pressure >130 mm Hg systolic and/or >80 mm Hg diastolic.

As with Mr. H, a blood pressure check is imperative for patients who have rarely or never seen a primary care physician in recent years. The U.S. Preventive Services Task Force strongly recommends measuring blood pressure during a routine medical evaluation at least every 2 years. A second abnormal reading at a separate visit at any time should prompt a hypertension diagnosis. Once diagnosed with hypertension, patients should be treated and checked monthly until stable, then monitored every 3 to 6 months indefinitely.¹⁰

If you cannot measure blood pressure in the office, urge patients to use an over-the-counter blood pressure measuring device and refer them

to a primary care physician. Check the patient’s self-test reading for accuracy against a clinician’s measurement.

Diabetes is now considered a risk equivalent for CAD development.⁸ Patients diagnosed with diabetes are extremely likely to have established vascular disease,⁸ which predisposes them to MI, stroke, kidney disease, blindness, and lower-extremity amputations.¹⁷

Those with type 1 diabetes usually present with acute symptoms—including polyuria, polydipsia, weight loss, malaise, dry mouth, and blurred vision—and are readily diagnosed with elevated plasma glucose.

Screening for diabetes is critical because one-third of patients with the disease are undiagnosed. Also, more than 90% of patients with diabetes are non-insulin-dependent (type 2) and are asymptomatic early in the disease course.

No data definitively show benefits from screening asymptomatic adults. Recently revised diagnostic criteria for diabetes, however, call for re-testing asymptomatic patients who were found to have normal fasting plasma glucose (FPG) levels and were considered “free” of diabetes. The American Diabetes Association recommends measuring FPG after no caloric intake for ≥ 8 hours for asymptomatic patients.

FPG measurement is cost-effective and generally more convenient than other diabetes tests.¹⁷ Expert consensus strongly suggests checking FPG every 3 years beginning at age 45:¹⁷

- FPG <100 mg/dL is normal
- FPG 100 to 125 mg/dL suggests pre-diabetes or impaired fasting glucose
- FPG ≥ 126 mg/dL demands a provisional diabetes diagnosis and a follow-up test on another day to confirm the diagnosis.

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Refer for screening at an earlier age or more frequently for patients with:

- comorbid cardiac risk factors
- history of polycystic ovary disease
- a first-degree relative with diabetes
- habitual inactivity
- or FPG 100 to 125 mg/dL.

Monitor persons with schizophrenia closely as their risk of diabetes is three times that of the general population.¹ Also, use of atypical antipsychotics increases the risk of developing diabetes and dyslipidemia. In addition to the above diabetes screening guidelines, check FPG before starting any atypical antipsychotic, again after 12 weeks, and annually thereafter.¹⁸

Do not base diabetes diagnosis on glycosylated hemoglobin measurements, as this test can produce false-negative results in patients with new-onset diabetes.

Dyslipidemia. Every 10% reduction in serum cholesterol reduces cardiovascular mortality by 10% to 15%.¹⁹ Data from the large, prospective Framingham heart study show a 25% increase in MIs with each 5-mg/dL decrease in high-density lipoprotein cholesterol (HDL) below the age-based median for men and women.²⁰ Serum triglycerides >150 mg/dL clearly predict future CAD and increase the likelihood of abnormally low HDL.

Every 30-mg/dL increase in low-density lipoprotein cholesterol (LDL) raises the relative risk for CAD by 30%.⁷ ATP III classifies LDL as the “primary target of cholesterol-lowering therapy.”⁸ *Table 4 (page 56)* lists LDL target levels based on other CAD risk factors.

Check fasting lipid profile or serum cholesterol, LDL, HDL, and triglycerides beginning at age 20 and about every 5 years thereafter.⁸ Total cholesterol <200 mg/dL and HDL 40 to 60 mg/dL are considered normal. Refer patients at intermediate or high CAD risk or who are being treated for dyslipidemia more often based on clinical judgment.

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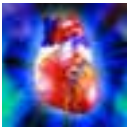


Table 4

Acceptable LDL cholesterol levels for adults based on CAD risk

Risk category	Existing CAD risk factors	LDL goal
High risk (10-year risk > 20%)	History of diabetes, CAD, symptomatic carotid artery disease, peripheral vascular disease, or abdominal aortic aneurysm	<100 mg/dL, with optional goal of <70 mg/dL
Moderate high risk* (10-year risk 10 to 20%)	>2 risk factors	<130 mg/dL
Moderate risk* (10-year risk <10%)	>2 risk factors	<130 mg/dL
Low risk	0 to 1 risk factor	≤160 mg/dL

CAD: Coronary artery disease

*Same goals apply to managing moderate high and moderate risk. Find 10-year risk calculations at nhlbi.nih.gov/guidelines/cholesterol.

Source: Reference 7

ADDRESSING SMOKING, OBESITY

Smoking. Before trying nicotine patches or bupropion, Mr. H should realistically contemplate his risks with continued smoking; if he doesn't want to stop, periodically encourage him to reconsider.¹⁰ Most people know the dangers of smoking but few understand that complete cessation for 1 to 2 years often nearly reverses cardiovascular disease.²¹

Obesity and lack of exercise go hand in hand. Reducing Mr. H's waist size to <40 inches and

his BMI to <30 kg/m² is a reasonable short-term goal. To that end, encourage him to:

- decrease his number of weekly fast-food meals from five to three, with an eventual goal of one per week. As an alternative, microwaveable, low-calorie meals—each with at least two servings of fruits or vegetables—can be prepared at home or work.
- walk 30 minutes three times weekly and progress to 1 hour five times weekly over 6 months. As with any exercise program, remind Mr. H to “start low and go slow.”

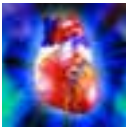
Once Mr. H understands his CAD risk, refer him to a primary care physician, who will monitor his blood pressure, diet, and exercise plan and order appropriate tests.

The patient's role in treatment. Patients often feel overwhelmed after getting large amounts of information on CAD risk and may feel hopeless and unenthusiastic about improving their physical health. Work with the primary care doctor to emphasize a patient care plan that clearly defines easily attainable, step-by-step goals. Make sure the patient agrees to these goals.

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Compared with the general population, psychiatric patients are more likely to develop coronary artery disease and less likely to receive preventive care. Follow current heart attack prevention guidelines for monitoring risk. Refer at-risk patients to a primary care physician to monitor blood pressure, diet, and lifestyle and to order testing as needed.

BottomLine



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CASE CONTINUED: NO MORE SUPERSIZING

Mr. H now understands the importance of minimizing his CAD risk and realizes that CAD and many associated risk factors are asymptomatic in the early stages of development.

With help from his doctors, Mr. H quit smoking. He also became more mindful of his caloric intake and the types of foods he was eating. He advanced from briskly walking 30 minutes three times per week to slow jogging 40 minutes five times weekly. He still eats at fast-food restaurants but usually orders broiled chicken, salads, or the occasional burger.

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Related resources

- ▶ National Cholesterol Education Program. CAD risk assessment tool and ATP III guidelines. www.nhlbi.nih.gov/guidelines/cholesterol/.
- ▶ U.S. Preventive Services Task Force preventive guidelines. www.ahrq.gov/clinic/uspstfix.htm.
- ▶ National Heart, Lung, and Blood Institute. Calculate your body mass index. <http://nhlbisupport.com/bmi/>.
- ▶ American Heart Association. www.americanheart.org.

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