

# **Johns Hopkins Ciccarone Preventive Cardiology Center: The *ABCs* of Preventing Cardiovascular Disease**

## **What Are Your Risk Factors For Cardiovascular Disease?**

### **Traditional risk factors:**

- A**ge: Male > 45 or Female > 55 years of age
- High **B**lood pressure (> 140/90 mm Hg)
- Current **C**igarette smoking
- Elevated LDL-**C**holesterol (> 100 mg/dl) or non-HDL cholesterol (> 130 mg/dL)
- Low HDL- **C**holesterol (< 40 mg/dL in men, < 50 mg/dL in women)
- D**iabetes (fasting glucose  $\geq$  125 mg/dL or HbA1C  $\geq$  6.5%)

### **Additional risk factors that are part of the comprehensive Ciccarone Center approach to risk assessment:**

- Elevated Triglycerides (> 150 mg/dL), Triglyceride/HDL ratio > 3
- Elevated Lp(a) ( $\geq$  20 mg/dL or  $\geq$  70 nmol/L, depending on assay used)
- Elevated C-reactive protein (hsCRP; > 2 mg/liter)
- Elevated Apo B or LDL particle number
- Increased coronary calcification or carotid intima media thickness for one's age
- Family history of premature coronary heart disease (first degree relatives; < 55 yrs in a father, brother or son or < 65 yrs in a mother, sister, or daughter)
- Obesity (body mass index > 30); overweight (body mass index 25-29)
- Physical inactivity/sedentary lifestyle (lack of regular brisk exercise)
- Impaired fasting glucose/Metabolic Syndrome
- Sleep Apnea or Vascular Disease (Erectile Dysfunction, Claudication)
- Chronic kidney disease or microalbuminuria

**The Johns Hopkins  
Ciccarone Center for the Prevention of Heart Disease**

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**Aspirin:** You should probably be taking a low dose aspirin daily or on most days of the week if you have any of the following: (1) An Atherosclerotic cardiovascular disease (ASCVD) Risk estimate score  $>7.5\%$  (risk of a heart attack and/or stroke over the next 10 years), (2) known atherosclerotic vascular disease (hardening of the arteries), (3) Diabetes, (4) Men age  $>50$  with one other risk factor, or (5) Women over age 65.

**Blood Pressure:** A normal blood pressure is  $< 120 / 80$  mm Hg. Hypertension (high blood pressure) is classified as  $> 140/90$  mm Hg on at least two occasions.

If your blood pressure is high, lifestyle improvements such as dietary changes (decreasing salt consumption, eating a low saturated fat, low cholesterol diet that is rich in fruits and vegetables), increased physical activity, achieving and maintaining a desirable weight as well as medication will be important to control your blood pressure.

**Cholesterol:** An average LDL-Cholesterol (bad cholesterol) is  $< 130$  mg/dL but an optimal value is  $< 100$  mg/dl. In persons with known heart disease or diabetes, we may wish to maintain the LDL-cholesterol  $< 70$  mg/dL and the non-HDL-cholesterol (Total – HDL)  $< 100$  mg/dL..

If your cholesterol values are not ideal and your cardiovascular risk is elevated, then lifestyle improvements (dietary changes, increased physical activity, achieving and maintaining a desirable weight) and possibly medication (statins are first line) will reduce your risk for developing a heart attack or stroke.

**Cigarettes:** If you smoke, develop a plan to quit. Set a quit date. Call 1-800-QUIT-NOW. The use of nicotine patches, gum, or inhalers and prescription medication in conjunction with a smoking cessation program can help you. Gradually decrease the number of cigarettes you smoke per day until your quit date when you will have your last cigarette.

**Diet and weight:** A diet and exercise program will assist you in achieving and maintaining a desirable weight, blood pressure, blood glucose, and cholesterol levels. A healthy diet is rich in fruit and vegetables and low in saturated fats and salt. Avoid fried or greasy foods or excessive alcohol.

**Diabetes/blood sugar control:** Diabetes is an important risk factor for heart disease and stroke. A fasting blood sugar (obtained after not eating for 8 hours)  $\geq 125$  mg/dl on 2 consecutive occasions is one way of diagnosing diabetes. Alternatively, a hemoglobin A1C  $\geq 6.5\%$  is diagnostic of diabetes. Fasting blood sugars between 100-125 mg/dl are considered high and are a sign of the metabolic syndrome or pre-diabetic state. Diet (reducing simple “white” carbohydrates), exercise, achieving and maintaining a desirable weight, and possibly medications will be important in improving your blood sugar control.

**Diagnostic studies:** Other tests may be helpful if you plan to begin a vigorous exercise program, have a family history of heart disease or another major risk factor for heart disease. These include an exercise stress test (a “treadmill test” to see whether or not your heart muscle gets enough blood flow and oxygen during exercise), a non-contrast cardiac CT scan of the heart (to measure the amount of calcified plaque in the heart arteries), a carotid ultrasound to measure intima media thickness (IMT), or blood tests such as C-reactive protein (hsCRP), a protein that increases when there is inflammation in the lining of the arteries. Consider an abdominal ultrasound for men who are over 65 with a history of smoking to assess aortic diameter..

Individuals with a coronary calcium score or carotid IMT that is high for one’s age and gender and/or an elevated hsCRP value will probably benefit from more intensive and comprehensive risk factor improvements.

**Exercise:** A good exercise program consists of regular aerobic activity, strength training and flexibility exercises. It is recommended that persons participate in brisk walking or similar activities for 30 minutes a day most days of the week. Get a pedometer and try to walk 10,000 steps per day. An exercise stress test may be useful before you begin a vigorous exercise program.