

# Cardiovascular Risk Stratification

By Rajiv K. Sharma, M.D.

**G**lobally, cardiovascular disease (CVD) is the number one cause of death. In medical care, cardiac risk stratification is essential. Understanding your risk level is imperative to making sure you are receiving appropriate risk reducing therapies, diagnostic testing, and furthermore allows individuals to be informed about and implement effective lifestyle changes. Decreasing the likelihood of morbidity or mortality is the goal for the cardiovascular and patient care teams. There are several steps we follow to determine a patient's risk levels. The earlier individuals start monitoring, getting routine examinations, and incorporating healthy lifestyle factors, the better.

## #1 Epidemiology

Disease assessment is critical for determining your level of risk for cardiovascular disease. We know that after the age of 30, one out of two people will be affected by CVD at some point in their lifetime. Our goal is to reduce the burden and prevent hard-end morbidity such as limb amputation, heart attack, stroke, aneurysm, etc.

Early identification of risk factors is essential. If a patient goes undiagnosed or ignores their risk factors, cardiovascular disorders will progress and be more challenging to treat. As with all disease states, early diagnosis is crucial for optimal outcomes.

## #2 Evaluating Stratification

We can see atherosclerosis (buildup of plaque in the arteries) as early as the age of 20. Ideally, every person over the age of 20 should have a CVD risk stratification, those with several established risk factors are especially at risk in the long term.

Typical risk factors that increase risk of cardiovascular disease are diabetes, high cholesterol levels, smoking, hypertension, family history, or personal history of CVD. The more of these one has, the higher their risk, and the more important risk stratification is.

Being informed about your CVD risk factors and getting proper medical care will lessen the likelihood of CVD events down the road, outcomes such





as heart attacks, stroke, limb amputations, and aneurysms. We have protocols in place to get an accurate assessment on our patients and help prevent and mitigate CVD conditions from progressing and evolving.

If you want to limit your risk at any age, it's imperative to eat a healthy diet, maintain a healthy weight, get regular exercise, limit stress, and get high-quality sleep. However, many patients will need medical interventions such as medications, diagnostic testing, and occasionally if not caught early, invasive procedures to reduce their risk or treat established disease.

### #3 Determining Risk

How do we calculate your risk? We use a risk calculator that is based on lab work and the presence or absence of the risk factors mentioned earlier in this article. Basic lab work is critical to help us understand some of your metabolic risk factors: lipid (cholesterol) levels, hemoglobin A1c (diabetes). In addition to these blood tests there are also simple imaging tests that can help us assess your cardiovascular risk such as coronary artery calcium score.

Once we put all this information together, we can estimate your cardiovascular risk, thereafter, we can determine the course of action that needs to be taken.

#### Calculated CVD Risk Levels:

**Less than 5%**—Incorporate healthy lifestyle changes (diet, exercise, limit stress, etc.)

**5% to 7.5%**—This is a borderline risk level. Further tests can be used to "re-stratify" whether someone is low or high risk such as imaging including coronary artery calcium, vascular ultrasounds. There are also blood tests that can aid such as CRP, and a myriad of other diagnostic modalities.

**7.5%+**—This is a higher risk level. We may have patients start medications, depending on shared decision making and a risk/benefit discussion, medications such as aspirin and statins are often discussed.

Anything over 10% is considered high risk and greater than 20% very high risk for a cardiac event such as a heart attack in 10 years. In these cases, it is imperative to reduce risk. Some patients will require intensive medical treatment, some will



require further imaging testing and a subset of those who have high risk features on imaging tests may need procedural evaluation such as cardiac catheterization and, in some stenting, or referral to bypass.

### #4 Risk Reduction

It all boils down to being aware of your health and risk factors. Be sure to get screenings, have routine blood work drawn, evaluate any new or lingering symptoms that you have, and incorporate healthy lifestyle factors. If you have diabetes, managing your blood sugar levels is critical. Diabetes and CVD are intricately associated.

Understanding symptoms is not so cut and dry. Many patients ignore these signs, which is the worst thing you can do, and many are confused by them and write them off as something else.

#### Common CVD symptoms:

- Chest pain with activity or exercise
- Shortness of breath
- Orthopnea (shortness of breath while lying flat)
- Hypertension (above 130/80) at rest
- Heart palpitations
- Dizziness
- Lightheadedness
- Edema (swollen limbs)
- Poorly controlled cholesterol
- Xanthelasma on elbows (excessive cholesterol bumps)
- Xanthelasma on eyes (excessive cholesterol)
- Claudication (pain in the calf when walking that subsides when you rest)

Starting Cardiovascular Risk Stratification early is ideal, but it's unquestionably never too late. No matter what your age, you should have routine physical examinations with blood draws regularly. If you have new symptoms or lingering symptoms, these are warning indicators that you need a cardiovascular consultation. Don't wait—Make an appointment promptly. If you have chest pain or symptoms of stroke or heart attack, call 911.



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Dr. Rajiv K. Sharma is board certified in cardiovascular disease, adult echocardiography, nuclear cardiology, cardiovascular computed tomography (CT), and internal medicine. He completed his fellowship in cardiovascular disease at the University of Tennessee Medical Center in Knoxville, Tennessee. He is part of BayCare Medical Group serving the St. Petersburg, Florida area. Dr. Sharma is trained in comprehensive cardiovascular disease and experienced in the management of a full range of cardiovascular disorders such as coronary artery disease, valvular disease, heart failure, arrhythmias, and cardiac risk stratification including the management of hypertension and cholesterol abnormalities. As an invasive cardiologist, he performs procedures such as right and left heart catheterizations. Beyond medical practice, Dr. Sharma is also a seasoned author, having contributed numerous articles to peer-reviewed publications. Dr. Sharma believes in a strong patient-physician relationship akin to a being a "team" and a calming relaxed approach to the discussion of cardiovascular symptoms or issues.

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