CORONARY ARTERY DISEASE 101

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contents

WHAT IS CORONARY ARTERY DISEASE?

Coronary Artery Disease, simply put, is blockages in the coronary (heart) arteries. The coronary arteries are major blood vessels that supply the heart with blood, oxygen, and nutrients. When these arteries become damaged or diseased, it results in CAD. Damage can occur as early as childhood and is often caused by various factors including smoking, high blood pressure, high cholesterol, diabetes or insulin resistance, and a sedentary lifestyle.

In a process called atherosclerosis, plaque (which is comprised of cholesterol and other cellular waste products) builds up, narrowing the coronary (heart) arteries, and decreasing the blood flow to the heart. Because of this narrowing of the arteries, the heart doesn't get the blood, oxygen, and nutrients it needs.

Coronary arteries are only about the size of a strand of spaghetti.

At birth, the inside of the arteries, including the coronary arteries, is slippery – similar to a nonstick frying pan. The blood cells flows smoothly through the arteries like little small cars.

Now that what have laid some groundwork, let's move on to the big question: What happens to an artery during a person's lifetime?

Fatty streaks in the arteries start to develop in the first ten (10) years of life as a result of lipids (fats) moving into the cell wall of the artery. These fatty streaks may become more advanced atherosclerotic lesions in the presence of risk factors such as smoking, high blood pressure, obesity, high cholesterol, and physical inactivity. The fatty streaks may then progress to more "advanced lesions" and are often referred to as plaque. Buildups may occur in more than one place in the artery. They can occur at different points along the length of the artery. The total closure of an artery may occur due to: a) the formation of a blood clot on the plaque; b) the buildup of plaque; c) the plaque rupturing and causing a larger blood clot to form; or, d) the plaque rupturing off the artery wall and lodging in a narrowed section of the artery. The complete blockage of the artery is called an occlusion.

An artery that is completely blocked has no blood flowing through it. If the heart muscle does not receive blood, then it does not receive nutrients and oxygen. When the heart does not receive oxygen, it experiences what is known as ischemia. This may result in heart pain (angina) or a heart attack. If this is prolonged and severe enough, it may cause a portion of the heart to die.

CORONARY ARTERY DISEASE SYMPTOMS

If you're experiencing any of these symptoms, please seek medical attention.

CHEST PAIN

(angina), which is a pressure or tightness in the chest. It may feel as if someone is standing on your chest. This pressure may be felt in the middle or left side of the chest and is usually triggered by physical or emotional stress. In some people, especially women, this pain can be brief or sharp and felt in the neck, arm, or back. The pain is generally short-lived, ceasing within minutes of stopping stressful activity.

SHORTNESS OF BREATH

can occur with exertion (when the heart rate is up). The heart can’t pump enough blood and oxygen to meet the body’s needs, resulting in shortness of breath or extreme fatigue.

HEART ATTACK

can be caused by a completely blocked coronary artery. A crushing pressure in the chest, accompanied by pain in the shoulder or arm, and shortness of breath and sweating, are classic signs of a heart attack. It is possible for a heart attack to occur without any apparent signs or symptoms, and women are more likely to experience less typical symptoms like neck or jaw pain.

SEEKING TREATMENT FROM THE RIGHT DOCTOR

It’s important to talk with the appropriate doctors at every point in a CAD diagnosis. Seeking the medical opinion from any of the doctors below can put a patient with CAD on the right path.

1. Internal Medicine/General Practitioner

When experiencing symptoms, it’s recommended to talk to your internal medicine doctor or general practitioner.
A general practitioner will help you recognize the symptoms and will consult with a general cardiologist after landing on a preliminary diagnosis.

They may then refer you to a specialized cardiologist for further assessment and treatment.

2. General Cardiologist

A cardiologist is a doctor who diagnoses and treats heart diseases. A cardiologist will be able to confirm or deny a CAD diagnosis after performing a series of tests and can work with an interventional cardiologist to determine the best treatment for each individual case. A cardiologist may refer you to an interventional cardiologist or cardiac surgeon for further assessment and treatment.

3. Interventional Cardiologist

An interventional cardiologist is a heart doctor who specializes in minimally invasive percutaneous coronary intervention procedures, or PCI, like stenting and angioplasty. This doctor will determine the type of treatment that best suits each case and can make referrals to PCI specialists for advanced PCI assessment.

4. Percutaneous Coronary Intervention (PCI) Specialist

A PCI Specialist is a heart doctor who is highly trained in complex cases and knows PCI treatment and procedures the best. They are there to determine which minimally invasive PCI procedure is right for each case.

5 SIMPLE WAYS TO LOWER YOUR RISK

1 keep the blood pressure down

High blood pressure is one of the top health concerns for Black Americans and is often referred to as a *silent killer* because you don't always have symptoms. It quietly strains your heart, damages blood vessels and increases your risk of heart attack, stroke, eye problems, and kidney problems.

2 control cholesterol

You have two kinds of cholesterol in your blood: LDL and HDL. LDL or "bad" cholesterol causes narrowing and hardening of the arteries, so this number should be under 70 mg/dl. HDL or "good" cholesterol provides protection by removing deposits from inside the arteries. HDL for men should be above 40 mg/dl and for women above 50 mg/dl.

5 SIMPLE WAYS TO LOWER YOUR RISK

3 Get Moving

Exercising can lower your risk of heart disease. It can lower your blood glucose, blood pressure, and bad cholesterol while increasing your good cholesterol. For overall cardiovascular health, the American Heart Association recommends 30 minutes of moderate-intensity aerobic activity at least five days per week or 25 minutes of vigorous aerobic activity at least three days per week. You should also include two days of moderate to high-intensity strength training.

4 lose the belly fat

Excess belly fat around your waist, even if you are not overweight, can raise your chances of developing heart disease. Belly fat is associated with an increase production of bad cholesterol. If your waist measures more than 40 inches for men and 35 inches for women, you should start a weight-loss and exercise plan.

5 kick the habit

Your risk for getting heart disease doubles if you are a smoker. Smoking narrows the blood vessels and increases the risk of other long-term complications, such as eye disease and amputation. If you kick the habit, you will lower your risk for heart attack; your blood glucose, blood pressure, and cholesterol levels may improve, and you will likely have an easier time being physically active.

WHY ELIMINATE STRESS

Too much stress can be poisonous

and wreak havoc on your health. Not only does stress increase your muscle tension, heart rate and blood pressure, but it can also lead to habits that increase your risk for developing heart disease, such as overeating, which can cause further damage to your arteries. The best solution? Take part in activities that relax you.

CAD TREATMENT OPTIONS

Not all CAD cases are the same. Depending on the factors, some CAD cases can be complex. Complexities are often seen in older patients, patients in a frail physical condition, or patients with severely or totally blocked arteries. A patient's anatomy or blockage type can create a need for a more specialized procedure. Some cases may only require medication while others may have the option of minimally invasive procedures.

CORONARY ARTERY SURGERY--

requires open-heart surgery. Because of this, it is often reserved for cases of multiple narrowed coronary arteries. A surgeon creates a graft to allow blood flow around (bypass) the blocked or narrowed artery. The surgeon does this by creating a new path using a healthy piece of vein from another part of the body and attaching it to the coronary artery, just above and below blockage.

CAD TREATMENT OPTIONS

PERCUTANEOUS CORONARY INTERVENTION (PCI)--

is the latest minimally invasive advancement designed to treat complex CAD patients. It includes angioplasty and stent placement.

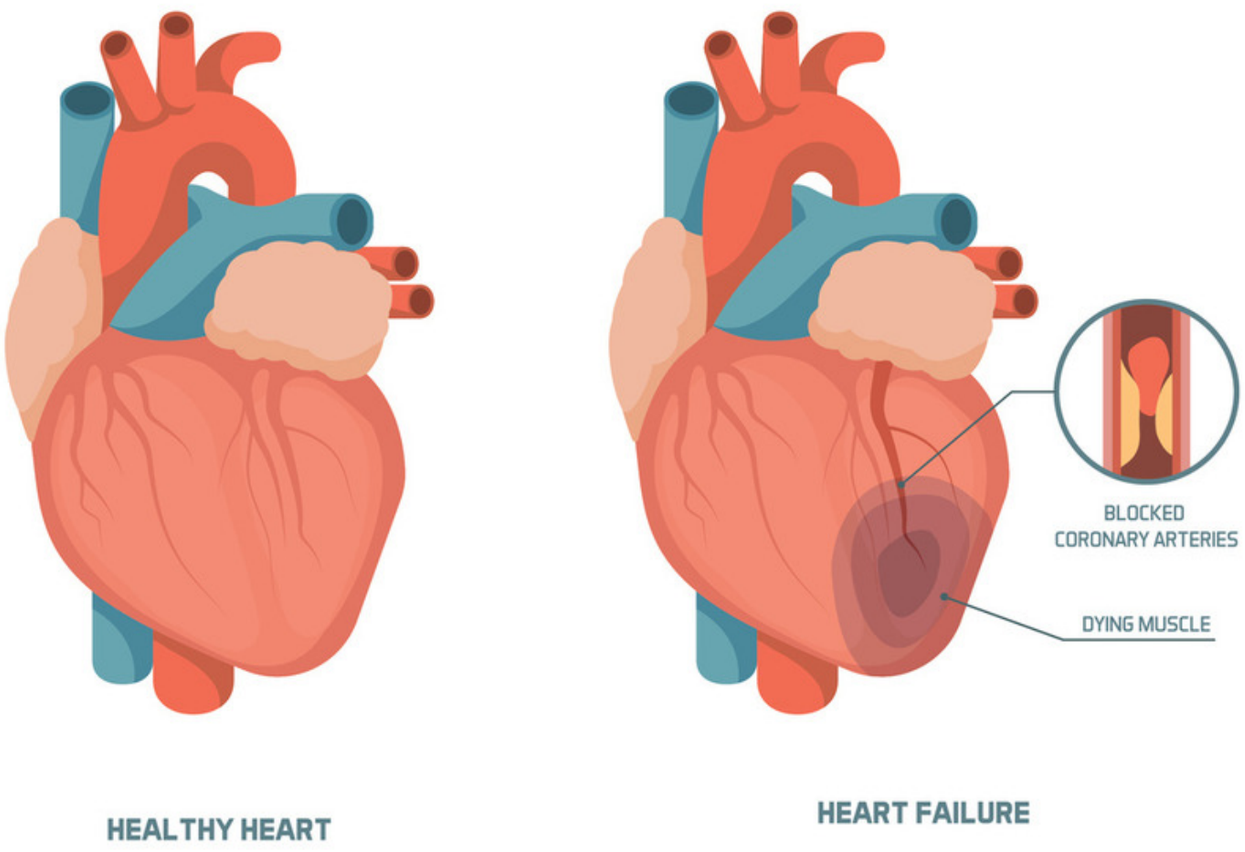
During this procedure, the doctor insert a catheter into the narrowed part of the artery. A wire with a deflated balloon is then passed through the catheter to the narrowed area. Once inflated, the balloon compresses the plaque deposits against the artery walls. A stent (small tube placed inside a blood vessel to relieve an obstruction) is often left in the after to help keep the artery open.

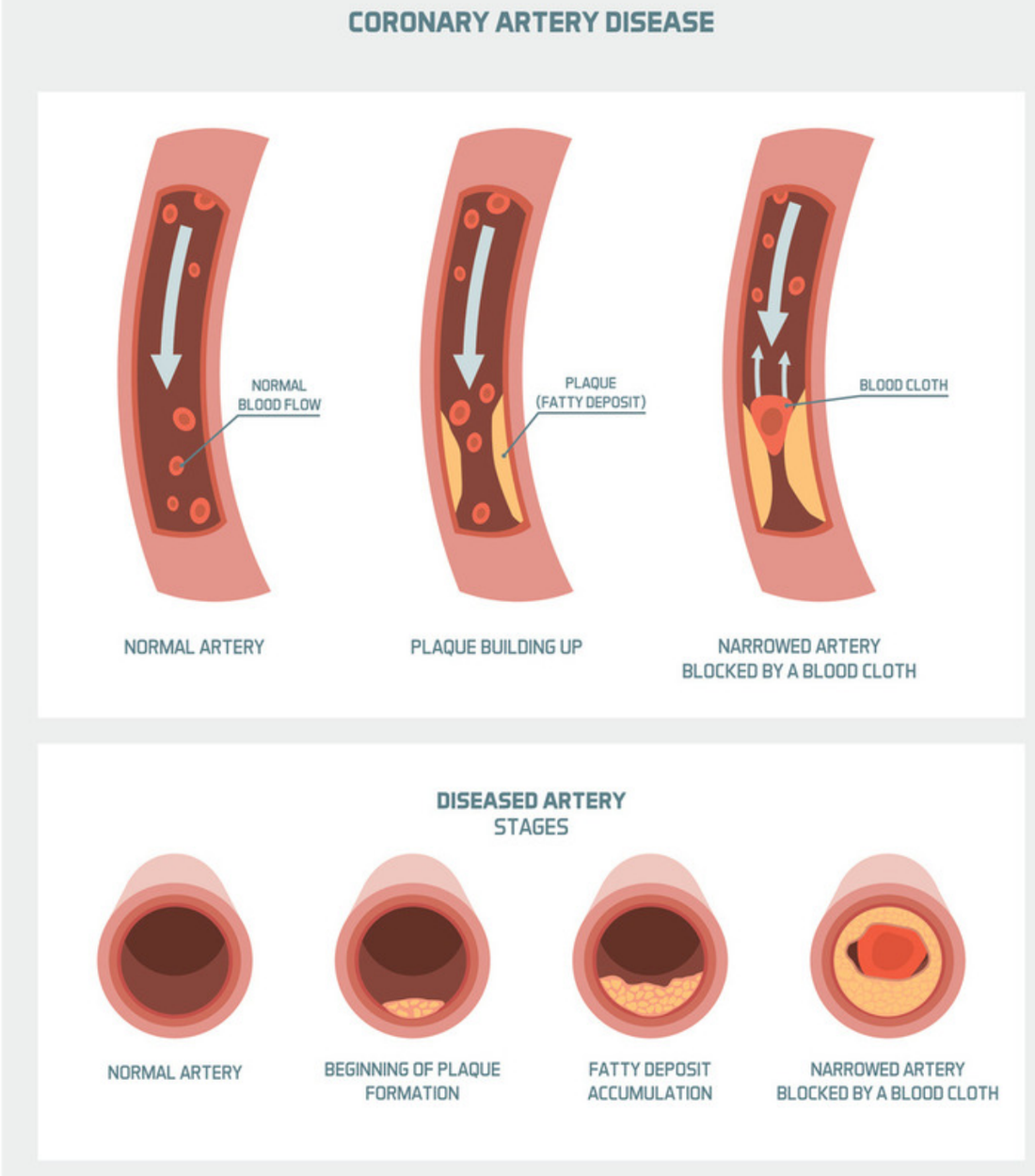
Most stents slowly release medication to help with keeping the artery clear. This may be a good option for patients who have been told their artery blockage is too complex to treat, patients who continue to experience symptoms while on medication, or patients who were not candidates for coronary artery/heart bypass surgery.

If you've been diagnosed with CAD, it's important to seek out treatment. You can also improve your heart health by taking the following steps:

- Quit Smoking
- Stay physically active (even if this means taking a walk)
- Eat healthy foods (a low-fat, low-salt diet)
- Maintain a healthy weight
- Reduce and manage stress

CAD TREATMENT OPTIONS





CORONARY ARTERY STENTING--

Stenting is another type of minimally invasive procedure to treat CAD. During this procedure, a small mesh tube is put into your artery to widen it and restore blood flow to your heart. This mesh tube is called a stent. Once the stent is placed into the coronary artery, it expands with the inflation of a balloon catheter. The stent is left in the artery to keep it open and help prevent further narrowing of the coronary artery.

Depending on your specific needs, your doctor may choose a bare-metal stent or a drug-eluting stent. There are differences between these stent types, such as when there is a need for longer-term dual antiplatelet therapy, which you should discuss with your doctor.

CAD STENT OPTIONS

BARE-METAL STENTS:

Bare-metal stents are tiny wire mesh tubes that help widen a clogged artery but are not coated with a polymer or drugs to help prevent re-blockage of the artery. This type of stent may be used in patients who are allergic to either the polymer or drugs used in drug-eluting stents.

DRUG-ELUTING STENTS:

A drug-eluting stent is a bare-metal stent that has been coated with a polymer that gradually releases a drug over the time when re-blockage is most likely to happen. This helps reduce the chance of the artery becoming blocked again. There are two types of drug-eluting stents:

- **Permanent Polymer Drug-Eluting Stent.** In this type of stent, the polymer stays on the stent permanently, even after all the drug has been released.
- **Bioabsorbable Polymer Drug-Eluting Stent.** With this type of stent, the polymer and drug coating are fully absorbed by the body shortly after the drug has been fully released. This promotes better healing by eliminating long-term polymer exposure.