Heart Patient Education

Leading Our Community to Outstanding Health
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How the Heart Works

The heart is a hollow organ and a muscle about the size of your fist. The heart constantly pumps blood throughout the body. It is made of strong muscle tissue called myocardium. The myocardium receives blood from the coronary arteries.

What are the different coronary arteries?

- Left main coronary artery supplies blood to the left side of the heart. The left main coronary divides into two branches:
  - The left anterior descending artery.
  - The circumflex artery.

- The right coronary artery supplies blood to the right side of the heart.

What is coronary heart disease?

Coronary arteries deliver blood to the heart muscle. The inside walls of your arteries are normally smooth and flexible, which allows blood to flow through them easily. Over the years, fatty deposits may build up on the inside of an artery’s wall. As these fatty deposits, called plaque, continue to build up, they narrow the artery and can reduce or even block the flow of blood.
When plaque builds up in the coronary arteries, the result is coronary heart disease (also referred to as coronary artery disease). Blood flow in the coronary arteries may be reduced enough to cause chest pain (angina) or heart attack.

**Angina**

Angina is pain or discomfort in the chest, arm, or jaw that occurs when not enough blood flows to the heart muscle. Angina is a warning sign that the coronary arteries may be narrowed or blocked. It typically occurs during physical exertion or emotional stress, when the heart works harder and needs more oxygen. Angina generally lasts for only a few minutes and goes away with rest.

**What is a heart attack?**

A heart attack, or acute myocardial infarction (AMI), occurs when the flow of blood in a coronary artery is blocked. When a coronary artery is blocked, the area of heart muscle that receives blood from that artery dies. Patients who have coronary heart disease are at an increased risk of having a heart attack.

Heart attack is a serious medical condition. It causes damage to the heart muscle and can result in major complications, such as irregular heartbeat, heart failure and death.

**There are two types of heart attacks:**

- A **non-STEMI** (NSTEMI) heart attack occurs when an artery is partially blocked, causing heart damage.

- A **STEMI** heart attack occurs when an artery is completely blocked, increasing the risk of death and disability.
Signs and Symptoms of a Heart Attack

Heart attack symptoms may include:

- Uncomfortable pressure, tightness, fullness or squeezing in chest
- Pain in the center of the chest lasting more than a few minutes
- Pain spreading to the shoulders, neck, back, jaw or arms
- Lightheadedness
- Nausea
- Fainting
- Sweating
- Shortness of breath

You may experience any or all of these symptoms. Most of the damage from a heart attack occurs within six hours of symptom onset. The faster you get help, the greater the chance of limiting damage to your heart and recovering quickly and completely.

If you experience any of these heart attack symptoms:

- Call 911. Do not delay.
- Do not call your doctor to make an appointment.
- Do not try to drive yourself to the hospital.

Heart Attack Symptoms in Women

As with men, women’s most common heart attack symptom is chest pain or discomfort. But women are more likely to experience some of the other common symptoms, particularly shortness of breath, nausea/vomiting and back or jaw pain.

Heart Disease Risk Factors

Controlling coronary heart disease risk factors is the key to preventing illness and death from a heart attack and other vascular emergencies. Risk factors for coronary heart disease often include:

- Smoking
- Diabetes
- Physical inactivity
- Obesity
- High LDL cholesterol, high triglycerides levels, and low HDL cholesterol
- High blood pressure (hypertension)
- High saturated fat diet
- Family history of heart disease
- Stress
Controlling Your Heart Disease Risk Factors

Among the risk factors you can control are high cholesterol, smoking, high blood pressure, excessive body weight, lack of exercise, stress, excessive salt intake and diabetes.

What Can You Do To minimize Risk?

- Enjoy a heart-healthy diet
- Cut down on fat, especially saturated fats (*i.e. fatty cuts of meat, sausage, whole milk, cream, butter, cheese, bakery goods*)
  - Choose foods rich in starch and fiber, such as whole-grain breads and cereals, pasta and rice, dried beans and peas, and fresh fruits and vegetables
  - Choose low-fat dairy products, fish, chicken, and lean meats
- Use cooking methods that use little or no fat, such as steaming, baking, broiling, and grilling
- Trim off fat before cooking meat, remove skin before cooking chicken
- Exercise regularly
- Reduce stress
- Watch your blood pressure
- Control your diabetes
- Maintain ideal body weight
- Stop smoking
- Reduce salt intake (*The America Heart Association recommends no more than 1,500 mg a day*)

Depression

If you are told you have heart disease or are recovering from a heart attack, it is normal to feel sad. However, it is important to talk to your doctor if you feel unusually sad and are experiencing the following symptoms:

- Lasting sadness, anxiety, helplessness, “empty” mood or feelings of inappropriate guilt
- Changes in weight, appetite and/or sleep patterns
- Loss of interest in everyday activities, inability to concentrate or make decisions
- Increased restlessness, fatigue or decreased energy
- Frequent thoughts of death or suicide, wishing to die, or attempting suicide (*Note: People with this symptom should call their doctor right away*)
- Physical symptoms, such as headaches, digestive problems, and/or chronic pain that don’t get better with treatment

Without treatment, symptoms can last for weeks, months or even years. Appropriate treatment, however, can help most people who suffer from depression.
Heart Patient Education

Heart Attack Treatment
The following procedures to restore coronary blood flow may be used.

Coronary Angioplasty
A balloon is inserted to create a bigger opening in the artery to increase blood flow. This is often followed by the insertion of a stent into the artery to help keep the artery open. There are several types of coronary angioplasty (PTCA) procedures, including:

- **Balloon angioplasty**: A small balloon is inflated inside the artery to open the blocked area.

- **Coronary artery stent**: A tiny coil is expanded inside the artery to open the blocked area and is left in place to keep the artery open. You will be given information about the type of stent you received before discharge. If you received a stent, your provider will give you additional information regarding your stent.

Fibrinolytic Therapy (clot-busting medication)
An intravenous (IV) medication is used to dissolve the blood clot, thus, restoring blood flow.

Coronary Artery Bypass
Most commonly referred to as simply "bypass surgery" or CABG (pronounced "cabbage"). During this surgery, a bypass is created by grafting a piece of a vein above and below the blocked area of a coronary artery, enabling blood to flow around the obstruction.

Medical Management
For some patients, medications may be a better treatment option than having a procedure. Your provider will discuss your options to come up with the best treatment plan for you.
Nitroglycerin (NTG) Protocol

All patients who are at risk for or have had a heart attack will be placed on a nitroglycerin protocol. If you have been prescribed NTG it is important that you follow the instructions for use of your medication.

Instructions

When you have chest pain, immediately stop all activity. Sit down, and try to relax. Do not panic.

Take one nitroglycerin tablet and put it under your tongue. You should feel a “zip” or a “tingle” meaning the tablet is working.

If your chest pain gets worse or does not get better after five minutes, it is recommended that you or your family member call 911 immediately.

If the pain has improved but is not gone after taking the first nitroglycerin, you may take NTG every five minutes - no more than three times - at a maximum of three tablets. If your pain is not gone after three tablets, you or somebody else should call 911 immediately.

Important reminders

1. If you have a history of angina and take NTG tablets or sprays, you should ALWAYS have your medication with you.

2. Pay attention to the expiration date of your medication. Check it at least monthly.

3. Keep a record of your chest pain. You should document things like:
   - What your activity was when it started
   - If your chest pain improved with rest
   - What your chest pain was on a scale from 0-10; 0= none, 10 = worst
   - How often do you experience chest pain
   - How many tablets you needed to relieve the pain
   - Where the pain is
   - How you would describe the pain

Call your doctor if you have an increase in the frequency of episodes and/or severity of pain, especially if the nitroglycerin protocol does not help as much as it did before or if you feel pain while at rest.
# Cardiac Medications

<table>
<thead>
<tr>
<th>How they help me:</th>
<th>Common Side Effects:</th>
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</thead>
<tbody>
<tr>
<td><strong>Aspirin 81mg daily</strong></td>
<td></td>
</tr>
<tr>
<td>• Stops platelets from blocking your arteries</td>
<td>• Slight bleeding and bruising</td>
</tr>
<tr>
<td>• Helps prevent future heart attacks</td>
<td>• Stomach ulcers (take enteric coated)</td>
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<tr>
<td></td>
<td>• Avoid medications containing additional aspirin</td>
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<tr>
<td></td>
<td>• Severe bleeding: <strong>Call your doctor</strong></td>
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<tr>
<td><strong>My Medications:</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Antiplatelets (Clopidogrel, Prasugrel or Ticagrelor)</strong></td>
<td></td>
</tr>
<tr>
<td>• Stops platelets from blocking your arteries</td>
<td>• Slight bleeding and bruising</td>
</tr>
<tr>
<td>• Keeps your heart stent open</td>
<td>• Shortness of breath (Ticagrelor)</td>
</tr>
<tr>
<td>• Helps prevent future heart attacks</td>
<td><strong>DO NOT</strong> stop taking unless your cardiologist tells you, or you could be at risk for heart attack</td>
</tr>
<tr>
<td></td>
<td>• Severe bleeding: <strong>Call your doctor</strong></td>
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<tr>
<td><strong>My Medications:</strong></td>
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<td></td>
<td></td>
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<tr>
<td><strong>Beta Blockers</strong></td>
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<tr>
<td>• Slows down the heart rate</td>
<td>• Slow heart rate and low blood pressure</td>
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<tr>
<td>• Improves the pumping of the heart</td>
<td>• Feeling tired</td>
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<tr>
<td>• Helps prevent future heart attacks</td>
<td>• Wheezing: <strong>Call your doctor</strong></td>
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<tr>
<td><strong>My Medications:</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker</strong></td>
<td></td>
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<tr>
<td>• Widens blood vessels</td>
<td>• Dry cough that does not go away</td>
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<tr>
<td>• Lowers blood pressure</td>
<td>• Lowers blood pressure</td>
</tr>
<tr>
<td>• Improves pumping of the heart</td>
<td>• Increases potassium level</td>
</tr>
<tr>
<td>• Helps prevent future heart attacks</td>
<td>• Lip tingling or swelling: <strong>Call your doctor</strong></td>
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<tr>
<td><strong>My Medications:</strong></td>
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<td></td>
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<tr>
<td><strong>Statins</strong></td>
<td></td>
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<tr>
<td>• Lowers cholesterol levels</td>
<td>• Muscle aches</td>
</tr>
<tr>
<td>• Lowers inflammation in the arteries</td>
<td>• Severe muscle pain: <strong>Call your doctor</strong></td>
</tr>
<tr>
<td>• Helps prevent future heart attacks</td>
<td></td>
</tr>
<tr>
<td><strong>My Medications:</strong></td>
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Exercise

Your doctor will refer you to an outpatient cardiac rehabilitation program. Cardiac rehab is a formal program designed to monitor your progress and get you back to activity sooner. The rehabilitation staff offers professional counseling from a dietitian, pharmacist, stress counselor, respiratory therapists, nurses and exercise physiologists.

What happens in cardiac rehab?

- You will participate in exercise sessions.
  - Exercises include walking on a treadmill or on the track, riding an exercise bike or using a step machine.
- You will attend two to three sessions a week, for up to 36 visits.
- In addition to exercise, patients also attend education classes.

Class topics include:

- Heart healthy eating
- Diabetes education
- Recognizing signs and symptoms of a heart attack
- Weight loss
- Medication management
- Smoking cessation
- Stress/depression management

For more information on a cardiac or pulmonary rehabilitation program, call 910.662.9901.
Stop Smoking

The use of any tobacco products will cause the arteries in your body to tighten and will cause your heart to work harder. Smoking is one of the leading risk factors for heart attack and also makes it harder to breathe.

It is important to stop smoking and avoid secondhand smoke.

If you need help quitting, New Hanover Regional Medical Center offers a class to help you quit smoking. Call 910.667.8297 for more information about costs and schedule.

More information on quitting tobacco can also be found at:

- Smokefree.gov
- quitlinenc.com
- quitnow.net
- 1-800-quitnow

Resources to Learn More

The more you know about heart attack the better you can take care of yourself.

- New Hanover Regional Medical Center Health Library
  - www.nhrmc.org (Health and Wellness section)
  - www.nhrmc.org/code-stemi
- Join a FREE heart attack support group available in your area
  - www.nhrmc.org/support-groups
- American Heart Association
  - www.heart.org
My Heart and Coronary Arteries

- **Right coronary artery**
- **Left coronary artery**
- **Circumflex branch of left coronary artery**
- **Left anterior descending artery**
Follow-Up After Discharge

Appointments: ______________________________________________________________

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Cardiac Rehabilitation: _______________________________________________________

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Questions for your doctor: _____________________________________________________

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Notes: _____________________________________________________________________

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New Hanover Regional Medical Center and its affiliates comply with applicable Federal civil rights laws and do not discriminate on the basis of race, color, national origin, age, disability, or sex.

ATTENTION: If you speak a language other than English, language assistance services, free of charge, are available to you. Call 910-667-7000.

ATENCIÓN: Si habla español, tiene a su disposición servicios gratuitos de asistencia lingüística. Llame al 910-667-7000.

注意：如果您使用繁體中文，您可以免費獲得語言援助服務，請致電 910-667-7000 。