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Primary Cardiovascular Disease Prevention

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Primary Cardiovascular Disease Prevention

Kaileen Cruden

Family Medicine Rotation

October- November 2021

UVM Medical Center Family Medicine - Colchester

Dr. Anya Koutras

Problem Identification

- Cardiovascular Disease is the leading cause of death in the United States, causing about 1 in 4 deaths.⁶
- Cardiac rehabilitation is often only suggested to patients **AFTER** a hospitalization for serious heart conditions such as heart attack or heart failure.
- Data demonstrates the decrease of a secondary cardiac event for individuals who are/were enrolled in cardiac rehab as well as an improvement in cardiac risk factors including: decrease in lipid levels and insulin resistance with increased smoking cessation and exercise tolerance. Levels of depression and anxiety also improved in this population.^{1,2}
- This leads us to ask: **How can we take what has been proven to improve heart health and prevent secondary cardiac events to prevent primary cardiac events?**

Public Health Costs

- Heart Disease cost the United States about \$363 billion a year. This includes the health care services, medications, and loss of productivity due to death. ⁴
- Annual hospitalizations of myocardial infarctions and coronary heart disease alone account for \$20 billion. ⁴

The average annual medical costs for heart failure in 2020 was \$24,383. ³

The average cardiac rehabilitation program costs the health system an average < \$995 per person to attend. ⁵

The average hospitalization cost for heart attack patients in 2013 was \$19,327. ⁴

Community Perspective:

“What resources do you know about for prevention prior to cardiac rehab?”

“I don’t know even know where to start for someone like me who doesn’t need to be in rehab and doesn’t have a background in exercise but wants to start living better.”

“What resources would you like primary care physicians to tell their patients in clinic about for heart health?”

Education is the biggest tool we have. Many people do not know the resources they have access to. People wait until after their life-or-death cardiac event before they take heart health seriously.
Prevention is the key.

Intervention and Methodology

- I created a smartphrase on Epic for all providers to use as a guide when talking with patients and resource for patients to take home after their visit.
- This multi-prong approach includes heart health education, diet modifications, movement opportunities, and other lifestyle alterations.

Results

Seen below are screenshots of sections of the educational document
Smartphrase: Hearthealthy

User SmartPhrase – HEARTHEALTHY [350801]

Do not include PHI or patient-specific data in SmartPhrases.

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Primary Cardiovascular Disease Prevention

Diet

DASH Diet: Care Instructions

The DASH diet is an eating plan that can help lower your blood pressure. DASH stands for Dietary Approaches to Stop Hypertension. Hypertension is high blood pressure. The DASH diet focuses on eating foods that are high in calcium, potassium, and magnesium. These nutrients can lower blood pressure. The foods that are highest in these nutrients are fruits, vegetables, low-fat dairy products, nuts, seeds, and legumes. But taking calcium, potassium, and magnesium supplements instead of eating foods that are high in those nutrients does not have the same effect. The DASH diet also includes whole grains, fish, and poultry. The DASH diet is one of several lifestyle changes your doctor may recommend to lower your high blood pressure. Your doctor may also want you to decrease the amount of sodium in your diet. Lowering sodium while following the DASH diet can lower blood pressure even further than just the DASH diet alone.

Follow-up care is a key part of your treatment and safety. Be sure to make and go to all appointments, and call your doctor if you are having problems. It's also a good idea to know your test results and keep a list of the medicines you take.

How can you care for yourself at home?

Following the DASH diet

- Eat 4 to 5 servings of fruit each day. A serving is 1 medium-sized piece of fruit, ½ cup chopped or canned fruit, 1/4 cup dried fruit, or 4 ounces (½ cup) of fruit juice. Choose fruit more often than fruit juice.
- Eat 4 to 5 servings of vegetables each day. A serving is 1 cup of lettuce or raw leafy vegetables, ½ cup of chopped or cooked vegetables, or 4 ounces (½ cup) of vegetable juice. Choose vegetables more often than vegetable juice.
- Get 2 to 3 servings of low-fat and fat-free dairy each day. A serving is 8 ounces of milk, 1 cup of yogurt, or 1 ½ ounces of cheese.
- Eat 6 to 8 servings of grains each day. A serving is 1 slice of bread, 1 ounce of dry cereal, or ½ cup of cooked rice, pasta, or cooked cereal. Try to choose whole-grain products as much as possible.
- Limit lean meat, poultry, and fish to 2 servings each day. A serving is 3 ounces, about the size of a deck of cards.
- Eat 4 to 5 servings of nuts, seeds, and legumes (cooked dried beans, lentils, and split peas) each week. A serving is 1/3 cup of nuts, 2 tablespoons of seeds, or ½ cup of cooked beans or peas.
- Limit fats and oils to 2 to 3 servings each day. A serving is 1 teaspoon of vegetable oil or 2

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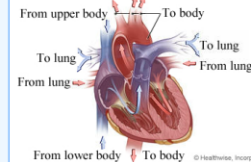
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Heart Education:

Learning About How the Heart Works: What does your heart do?



Your heart pumps blood to the rest of your body through blood vessels. Blood carries oxygen and other important nutrients that your body needs to stay healthy and to work properly.

Your heart is a muscle with four chambers, and valves between each chamber.

- The chambers on the right side of your heart receive blood without oxygen in it from your veins and pump it to your lungs. In your lungs, the blood picks up oxygen and gets rid of carbon dioxide.
- The chambers on the left side of your heart receive oxygen-rich blood from your lungs and pump it to the rest of your body.

Your heart has its own electrical system that controls how fast and regular your heart beats. The electrical system sends signals to the heart chambers to contract (pump blood out) and relax in a set rhythm.

What problems can happen with your heart?

Problems with the heart may include:

- Heart failure. This means that your heart is not pumping as well as it should.
- Coronary artery disease (CAD). CAD happens when fats build up in the arteries that bring oxygen-rich blood to your heart. The buildup reduces the amount of blood that gets to your heart. It can cause angina symptoms such as chest pain or pressure. It can lead to a heart attack.
- Heart rhythm and heart rate problems. Your heart may beat in an irregular pattern or too fast or too slow.

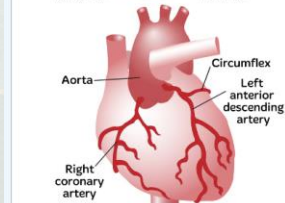
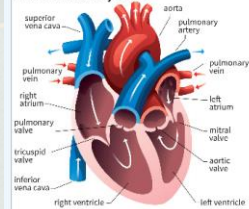
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The Heart: Anatomy Sketch



Open

Results

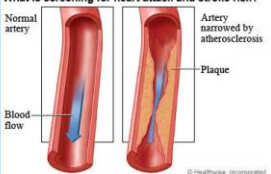
Continued from previous slide. The full version can be seen using the smartphrase .hearthealthy

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Do not include PHI or patient-specific data in SmartPhrases.

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Learning About Screening for Heart Attack and Stroke Risk
What is screening for heart attack and stroke risk?



Normal artery
Artery narrowed by atherosclerosis
Plaque
Blood flow

© Healthwise, Incorporated

Screening for heart attack and stroke risk is a way for your doctor to check your chance of having a problem called atherosclerosis. This problem is also called hardening of the arteries. It is the starting point for most heart and blood flow problems, such as coronary artery disease, heart attack, stroke, and peripheral arterial disease.

You and your doctor can use your risk score to decide if you want to take steps to lower your risk.

How can you find out your risk?

Your doctor looks at things that put you at risk for a heart attack and stroke. He or she might look at many things, such as:

- Your cholesterol levels.
- Your blood pressure.
- Your age.
- Your race.
- Whether you are male or female.
- Whether or not you smoke.

Your doctor might use a tool to calculate a risk score for you. There are different tools that doctors use. They may show that your risk is higher or lower than it really is. But the tools give you and your doctor a good idea about your risk.

What happens after screening?

Knowing your risk can help you and your doctor talk about whether to take steps to lower your risk.

Open

User SmartPhrase – HEARTHEALTHY [350801]

Do not include PHI or patient-specific data in SmartPhrases.

Insert SmartText Insert SmartList

Exercise:

Learning About Physical Activity
What is physical activity?

Physical activity is any kind of activity that gets your body moving.

The types of physical activity that can help you get fit and stay healthy include:

- **Aerobic or "cardio" activities** that make your heart beat faster and make you breathe harder, such as brisk walking, riding a bike, or running. Aerobic activities strengthen your heart and lungs and build up your endurance.
- **Strength training activities** that make your muscles work against, or "resist," something, such as lifting weights or doing push-ups. These activities help tone and strengthen your muscles.
- **Stretches** that allow you to move your joints and muscles through their full range of motion. Stretching helps you to be more flexible and avoid injury.

What are the benefits of physical activity?

Being active is one of the best things you can do for your health. It helps you to:

- Feel stronger and have more energy to do all the things you like to do.
- Focus better at school or work.
- Feel, think, and sleep better.
- Reach and stay at a healthy weight.
- Lose fat and build lean muscle.
- Lower your risk for serious health problems.
- Keep your bones, muscles, and joints strong.

How can you make physical activity part of your life?

Get at least 30 minutes of exercise on most days of the week. Walking is a good choice. You also may want to do other activities, such as running, swimming, cycling, or playing tennis or team sports. Pick activities that you like—ones that make your heart beat faster, your muscles stronger, and your muscles and joints more flexible. If you find more than one thing you like doing, do them all. You don't have to do the same thing every day.

Get your heart pumping every day. Any activity that makes your heart beat faster and keeps it at that rate for a while counts.

Here are some great ways to get your heart beating faster:

- Go for a brisk walk, run, or bike ride.
- Go for a hike or swim.
- Go in-line skating.

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Effectiveness and Limitations

Evaluation of the **Effectiveness**:

- The goal of this resource is to decrease the number of hospitalized individuals for serious cardiac events by emphasizing preventative lifestyle practices.
- During Medicare annual wellness visit at Colchester, I suggest adding the following questions:
 - Have they been offered the primary cardiovascular prevention information, and if so, have they found that info useful?
 - Do they feel that their cardiac education and health has improved on a scale from 0-10?

Evaluation of the **Limitations**:

- Depends on patients to be self-motivated and compliant.
- Time constraints on providers for in office visits and education.
- Cost of suggested resources and lifestyle modifications may limit some from participating completely

Future Recommendations

- Identify and risk stratify the patients who might need cardiac interventions. Create an algorithm for Colchester's patient population to identify said at risk patients.
- Coordinate with providers at UVM cardiac rehab for a “pre-hab” program. Allow patient to sign up who are identified as at risk for cardiac interventions. Work with interdisciplinary training team (PTs, exercise physiologists, etc.) to create a network within the community.
- Coordinate with local gyms, rec spaces, or kitchens to create space for these programs to run and create classes for them for them to join.

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Interview Consent Form

Thank you for agreeing to be interviewed. This project is a requirement for the Family Medicine clerkship. It will be stored on the Dana Library ScholarWorks website. Your name will be attached to your interview and you may be cited directly or indirectly in subsequent unpublished or published work. The interviewer affirms that he/she has explained the nature and purpose of this project. The interviewee affirms that he/she has consented to this interview.

Consented

Name: Harry Leyl – Colchester FM patient

Name: Patrick Savage –UVM Cardiac Rehab, Senior Exercise Physiologist



Thank you!