

**Norma Melchor Heart & Vascular Institute**

Mountain View Campus

# Information Handbook for Coronary Artery Disease



**Your name**

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**Primary care physician**

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**Cardiologist**

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**El Camino Health**

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## You and Your Heart

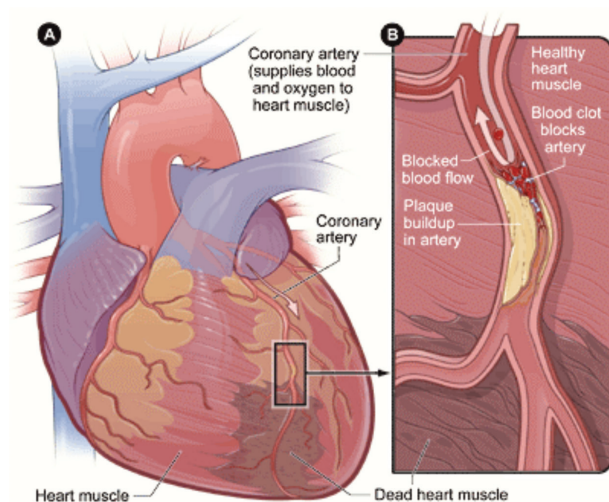
Your heart is a remarkable muscle. Although it's no bigger than your clenched fist, it beats more than 100,000 times every day, pumping more than 2,000 gallons of blood through 60,000 miles of blood vessels.

To pump the blood that nourishes all parts of your body, your heart muscle needs its own supply of oxygen-rich blood. All that blood flows through two coronary arteries that branch out into a network of smaller arteries. But the largest coronary artery is only about 6 mm in diameter, no wider than a pencil eraser, so it's easy to see how blockages in these tiny arteries can cause big trouble.

The blockages are called coronary artery disease (CAD), which causes angina or a heart attack.

## Coronary Artery Disease

CAD is a serious form of atherosclerosis ("hardening of the arteries"). It develops when LDL ("bad") cholesterol enters the artery wall. When cholesterol builds up, it causes fatty deposits called plaques. If a plaque produces enough narrowing, your heart muscle can't get the blood it needs; that's what causes the **chest pain** of angina. It's bad enough, but if a plaque ruptures, it triggers the formation of a blood clot on its surface. The clot closes off the artery, depriving the heart muscle of its blood supply. Muscle cells that depend on the blocked artery die, causing a **heart attack**.



## Who Gets Coronary Artery Disease?

Affecting about 16 million Americans, CAD is the leading killer of men and women. But some people are more vulnerable than others; for example, men develop CAD about 10 years before women.

Some risk factors are unavoidable and cannot be modified. However, most people at risk of CAD have at least one major risk factor that **can** be modified.

## Major Risk Factors

### Factors that Cannot Be Modified

- Male gender
- Family history
- Advancing age

### Factors that Can Be Modified

- Abnormal cholesterol
  - High LDL (bad) cholesterol; decrease to 100 mg/dl or less
  - Low HDL (good) cholesterol
- Diabetes
- Obesity
- Smoking
- High blood pressure
- Lack of exercise
- High fat diet
- Psychological factors
  - Stress
  - Anger
  - Depression

Figure A is an overview of a heart and coronary artery showing damage (dead heart muscle) caused by a heart attack. Figure B is a cross-section of the coronary artery with plaque buildup and a blood clot.

## Symptoms of CAD: Angina and Heart Attack

Symptoms	Description
<b>Chest discomfort or pain</b>	This discomfort or pain can feel like a tight ache, pressure, fullness or squeezing in the center of your chest lasting more than a few minutes. This discomfort may come and go.
<b>Upper body pain</b>	Pain or discomfort may spread beyond your chest to your shoulders, arms, back, neck, teeth or jaw. You may have upper body pain with no chest discomfort.
<b>Stomach pain</b>	Pain may extend downward into your abdominal area and may feel like heartburn.
<b>Shortness of breath</b>	You may pant for breath or try to take in deep breaths. This often occurs before you develop chest discomfort.
<b>Anxiety</b>	You may feel a sense of doom or feel as if you're having a panic attack for no apparent reason.
<b>Light-headedness</b>	You may feel dizzy or feel like you might pass out.
<b>Sweating</b>	You may suddenly break into a sweat with cold, clammy skin.
<b>Nausea and vomiting</b>	You may feel sick to your stomach or vomit.

**Chest pain is the most common symptom of CAD. Early treatment is crucial. Call 9-1-1 if there is any chance that you are having a heart attack.**

## Additional Heart Attack Symptoms in Women

A woman's heart attack symptoms may have all, none, many or a few of the typical heart attack symptoms. For women, the most common heart attack symptom is still some type of pain, pressure or discomfort in the chest. But women are more likely than men to also have atypical heart attack symptoms without chest pain, such as:

- Neck, jaw, shoulder, upper back or abdominal discomfort
- Shortness of breath
- Nausea or vomiting
- Abdominal pain or "heartburn"
- Sweating
- Light-headedness or dizziness
- Unusual or unexplained fatigue





## Diagnosing Heart Disease

In addition to a complete medical history and physical examination, diagnostic procedures for coronary artery disease may include any, or a combination, of the following:

- **Electrocardiogram (ECG or EKG)** — a test that records the electrical activity of the heart, shows abnormal rhythms (arrhythmias or dysrhythmias), and detects heart muscle damage.
- **Stress test** (usually with ECG; also called treadmill or exercise ECG) — a test that is given while a patient walks on a treadmill to monitor the heart during exercise. Breathing and blood pressure rates are also monitored. A stress test may be used to detect coronary artery disease, and/or to determine safe levels of exercise following a heart attack or heart surgery.



- **Cardiac catheterization** — with this procedure, X-rays are taken after a contrast agent is injected into an artery to locate the narrowing, occlusions, and other abnormalities of specific arteries.
- **Nuclear scanning** — radioactive material is injected into a vein and then is observed using a camera as it is taken up by the heart muscle. This indicates the healthy and damaged areas of the heart.

## Treatment for Heart Disease

Specific treatment will be determined by your physician based on:

- Age, overall health, medical history and extent of the disease.
- Tolerance for specific medications, procedures, or therapies.
- Expectations for the course of the disease.

## Treatment: Medications and Supplements

Medications can be used to treat coronary artery disease.

- **Cholesterol-lowering drugs** — By decreasing the amount of cholesterol in the blood, especially low-density lipoprotein (LDL) or “bad” cholesterol to 100 mg/dl or less, these drugs decrease the primary material that deposits on the coronary arteries.



Boosting your high-density lipoprotein (HDL), or “good” cholesterol, may help, too. Your doctor can choose from a range of medications, including statins.

- **Aspirin** — Your doctor may recommend taking a daily aspirin or other blood thinner. This can reduce the tendency of your blood to clot, which may help prevent obstruction of your coronary arteries. If you’ve had a heart attack, aspirin can help prevent future attacks. There are some cases where aspirin isn’t appropriate, such as if you have a bleeding disorder or you’re already taking another blood thinner, so ask your doctor before starting to take aspirin.
- **Beta blockers** — These drugs slow your heart rate and decrease your blood pressure, which decreases your heart’s demand for oxygen. If you’ve had a heart attack, beta blockers reduce the risk of future attacks.
- **Nitroglycerin.** Nitroglycerin tablets, sprays and patches can control chest pain by opening up your coronary arteries and reducing your heart’s demand for blood.

- **Angiotensin-converting enzyme (ACE) inhibitors** — These drugs decrease blood pressure and may help prevent progression of coronary artery disease. If you've had a heart attack, ACE inhibitors reduce the risk of future attacks.
- **Calcium channel blockers** — These medications relax the muscles that surround your coronary arteries and cause the vessels to open, increasing blood flow to your heart. They also control high blood pressure.

**Treatment: Lifestyle Changes**

Making lifestyle changes can often help prevent or treat CAD. For some people, these changes may be the only treatment needed:

- **Follow a heart-healthy eating plan**
  - Reduce saturated fats.
  - Reduce cholesterol by limiting red meat, whole dairy products and eggs.
  - Avoid trans fats (type of fat usually found in processed food that can increase cholesterol and risk of heart disease).
  - Eat plenty of fish, fruit and vegetables.
  - Cut down on use of salt.
  - Limit alcohol intake.
  - Increase fiber intake.
- **Read nutrition labels** to help you follow a heart-healthy eating plan.

LEARN TO READ FOOD LABELS: SAMPLE LABEL

**Start Here**

Check the total calories per serving

Limit these nutrients

Get enough of these nutrients

<b>Nutrition Facts</b>	
Serving Size 1 slice (47g)	
Servings Per Container 6	
<b>Amount Per Serving</b>	
<b>Calories</b> 160	Calories from Fat 90
	% Daily Value*
<b>Total Fat</b> 10g	15%
Saturated Fat 2.5g	11%
Trans Fat 2g	
<b>Cholesterol</b> 0mg	0%
<b>Sodium</b> 300mg	12%
<b>Total Carb</b> 15g	5%
Dietary Fiber less than 1g	3%
Sugars 1g	
<b>Protein</b> 3g	
Vitamin A 0%	Vitamin C 4%
Calcium 45%	Iron 6%
Thiamin 8%	Riboflavin 6%
Niacin 6%	

\*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

**Quick Guide to % DV**

5% or less is low

20% or more is high

Source: American Heart Association

- Watch calories per serving.
- Limit the grams of fat (saturated and trans fat).
- Watch the sodium, especially in processed and frozen foods.
- **Maintain a healthy weight.**
- **Increase your physical activity.** Check with your doctor first to find out how much and what kinds of activity are safe for you.
- Quit smoking, if you smoke. Avoid exposure to secondhand smoke.
- Reduce stress and anxiety. (Contact your healthcare provider for referrals to support groups and counseling.)
- Refer to Food as Medicine Guide on pages 10-11.

### Treatment: Revascularization

Sometimes more aggressive treatment is needed. Here are a few options:

- **Angioplasty and stent placement.** Also known as percutaneous coronary revascularization, in this procedure, your doctor inserts a long, thin tube (catheter) into the narrowed part of your artery. A wire with a deflated balloon is passed through the catheter to the narrowed area. The balloon is then inflated, compressing the deposits against your artery walls. A mesh tube (stent) is often left in the artery to help keep the artery open. Some stents slowly release medication to help keep the artery open.
- **Atherectomy.** The blocked area inside the artery is cut away by a tiny device on the end of a catheter.
- **Laser angioplasty.** A laser is used to destroy the blockage in the artery.
- **Coronary artery bypass surgery.** A surgeon creates a graft to bypass blocked coronary arteries using a vessel from another part of your body. This allows blood to flow around the blocked or narrowed coronary artery. Because this requires open-heart surgery, it's most often reserved for cases of multiple narrowed coronary arteries.

### Cardiac Risk Factor Reduction

Reducing your risk can help you maintain optimal physiological functions and reduce the progress of cardiovascular disease. The Cardiac & Pulmonary Wellness Center at El Camino Health has been awarded Program Certification for both the Cardiac Rehabilitation Program and the Pulmonary Rehabilitation Program by the American Association of Cardiovascular and Pulmonary Rehabilitation.

For more information about our education program, call the Cardiac & Pulmonary Wellness Center at 650-940-7130.

### Cardiac Risk Reduction Lecture Series

El Camino Health's Cardiac & Pulmonary Wellness Center offers this lecture series once a week for patients and their families. Subject matter covers risk factor reduction for heart disease. Topics include heart-healthy nutrition, cholesterol, diabetes health, stress management, exercise and physiology.

### Ash Kickers

Ash Kickers is a six-session smoking cessation program that helps smokers go through the various stages of quitting, which include thinking about quitting, preparing to quit, finally quitting, and preventing relapse. Ash Kickers also incorporates tobacco education, group support, and tools for maintenance as part of a comprehensive effort to help smokers as they work their way to a healthier life. For more information call 650-988-8225. There is a fee for this program.

### Staying Free Smoking Cessation Program

Working individually with a RN Counselor trained to provide this program, smokers learn how to quit smoking and — more importantly — how to remain a non-smoker. Participants focus on identifying their individual triggers and develop strategies to respond with new behaviors. For more information call 650-988-8225. There is a fee for this program.

For more information on heart programs, visit our website: [elcaminohealth.org/cpwc](http://elcaminohealth.org/cpwc).



# Heart Attack Quick Reference

## Warning Signs

- **Chest discomfort** — uncomfortable pressure, squeezing, fullness, or pain in the center of the chest that lasts more than a few minutes, or goes away and comes back.
- **Discomfort in other areas of the upper body** — this may be felt in one or both arms, the back, neck, jaw, or stomach.
- **Shortness of breath** — may often occur with or before chest discomfort.
- **Other signs** — may include breaking out in a cold sweat, nausea, or light-headedness.

## Fast Action Saves Lives

If you or someone you are with begins to have chest discomfort, especially with one or more of the other symptoms of a heart attack, call 9-1-1 right away. Don't wait more than a few minutes — 5 minutes at most — to call 9-1-1.

If you are having symptoms and cannot call 9-1-1, have someone drive you to the hospital right away. Never drive yourself, unless you have absolutely no other choice.

***Keep this information handy. Cut out and complete the form to the right and keep it handy. It can help you save a life — maybe your own!***

## Heart Attack Survival Plan

Information to Share with Emergency Personnel/Hospital Staff:

Medicines I am taking:

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Medicines I am allergic to:

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**If symptoms stop completely in less than 5 minutes, you should still call your healthcare provider.**

Physician phone number during office hours:

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Physician phone number after office hours:

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Person I would like contacted if I go to the hospital:

Contact name:

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Home phone number:

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Work phone number:

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Cell phone number:

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# Food as Medicine

## GUIDE TO HEALTHY EATING

	NON-STARCHY VEGETABLES	STARCHY VEGETABLES	FRUIT	GRAINS	HEALTHY FATS
<b>GO!</b>	<p><b>Fresh, frozen, or canned NO added salt</b></p> <p><b>All leafy green vegetables:</b> Spinach, kale, collards</p> <p><b>All orange, yellow, red, green, white non-starchy vegetables:</b> Carrots, tomatoes, red peppers, summer squash, green beans, mushrooms, broccoli, cauliflower, cabbage, Brussels sprouts</p>	<p><b>Winter squash:</b> Acorn, butternut, pumpkin</p> <p><b>Potatoes:</b> White potato with skin, sweet potato, yams</p> <p><b>Other:</b> Corn, green peas, Lima beans, rutabagas</p>	<p><b>All whole fruit:</b> Fresh or frozen, unsweetened</p>	<p><b>All whole grains:</b> Barley, oats, brown rice, wild rice, bulgur, quinoa, millet, whole wheat pasta and couscous, brown rice pasta, whole wheat and whole grain bread, buns, tortillas, pitas</p> <p>Cereals (look for more than 4 grams of fiber per serving): Bran flakes, steel cut or old-fashioned oatmeal, most Kashi® cereal, Uncle Sam® Wheat Berry Flakes</p>	<p><b>Nuts, seeds, and nut butters</b></p> <p><b>All nuts and seeds:</b> Walnuts, almonds, pistachios, Sunflower, pumpkin, chia, ground flax seeds, all natural peanut butter (only ingredients peanuts and salt), almond butter, tahini</p> <p><b>Other healthy fats:</b> Avocado, olives</p>
<b>CAUTION!</b>	<p><b>Limit due to high sodium content</b></p> <ul style="list-style-type: none"> <li>• Sauerkraut</li> <li>• Kimchi</li> <li>• Tomato juice</li> <li>• Pickles</li> </ul>	<p><b>Mashed potatoes:</b> Be mindful of added fat and salt</p>	<ul style="list-style-type: none"> <li>• Applesauce, unsweetened</li> <li>• Canned fruit, natural juices</li> <li>• Dried fruit, sweetened</li> <li>• Frozen fruit, sweetened</li> </ul>	<p><b>Breads:</b> Made with white flour/enriched</p> <p><b>Cereal:</b> Cream of Wheat®, granola, grits, rice cereal</p>	<p><b>Be mindful of portions</b></p> <p><b>One serving = 45 calories and 5 grams of fat</b></p> <p><b>1 teaspoon:</b> Extra virgin olive oil, canola oil, flaxseed oil, avocado oil, sesame oil, safflower oil, sunflower oil, grapeseed oil, regular mayonnaise</p> <p><b>1 tablespoon:</b> Pesto made with olive oil, light mayonnaise</p>
<div style="display: flex; align-items: center; justify-content: center;"> <div> <h3>Healthy Eating Tip</h3> <p><b>PORTION CONTROL:</b> Make at least half your plate vegetables for better portion control and weight management.</p> </div> </div>					
<b>STOP!</b>	<p><b>None that are deep fried</b></p>	<p><b>Mashed potatoes with added butter, cream, and salt:</b> French fries, tempura vegetables</p>	<ul style="list-style-type: none"> <li>• Applesauce, sweetened</li> <li>• Canned fruit with syrup</li> <li>• Cranberry sauce</li> <li>• Fruit juice</li> </ul>	<p><b>Breads:</b> Biscuits, cornbread, croissants, foccacia</p> <p><b>Cereal:</b> Less than 4 grams of fiber per serving, more than 8 grams of added sugar per serving</p>	<p>Butter, cream cheese, coconut, half and half, lard, margarine, gravy, shortening, sour cream, ghee, whipped cream</p>

Choosing a whole foods, plant-based diet has been shown to prevent and reverse chronic disease. Focus on the foods in the green **GO!** column for the best protection, slow down on the foods in the yellow **CAUTION!** column, and avoid or sparingly use the foods in the red **STOP!** column.

PROTEIN/ LEGUMES	DAIRY SUBSTITUTES	CHIPS/SNACKS/ SWEETS	SWEETENERS	OTHER
<p><b>All beans and legumes:</b> Garbanzo, kidney, black, navy, lentils, edamame, tofu, tempeh</p>	<p><b>Choose unsweetened:</b> Almond milk, soy milk, flax milk, cashew milk, coconut almond milk, soy yogurt, almond milk yogurt, non-dairy cheese</p>	<ul style="list-style-type: none"> <li>• Popcorn (air-popped)</li> <li>• Rye crisp breads</li> <li>• Whole grain crackers (Triscuits®)</li> <li>• Whole grain pita chips</li> <li>• Soy crisps</li> <li>• Brown rice cakes</li> </ul>	<ul style="list-style-type: none"> <li>• Stevia</li> <li>• Monk fruit extract</li> <li>• Dried, unsweetened fruit such as dates, apricots, figs</li> </ul>	<p><b>Cooking ingredients:</b> No-salt-added canned diced tomatoes, low-sodium or no-salt-added tomato sauce, vinegar, salsa, dried herbs and spices and salt-free blends, fresh herbs, cocoa powder (unsweetened), lemon and lime juice, broth (low-sodium)</p> <p><b>Beverages:</b> Seltzer water, unsweetened tea</p>



**Healthy Eating Tip** | **HEALTHY FATS:** Whenever possible choose whole food forms of fat: nuts, seeds, avocados, or olives over processed oils.

PROTEIN	DAIRY	CHIPS/SNACKS/ SWEETS	SWEETENERS	OTHER
<p><b>Limit to 3 ounces per meal (size of a deck of cards or smart phone)</b></p> <p><b>All fresh seafood:</b> Wild salmon, tuna, trout, crab, shrimp</p> <p><b>Canned seafood packed in water:</b> Tuna, wild salmon, sardines</p> <p><b>Lean meat:</b> Skinless, white poultry, grass fed beef such flank, roast, round, sirloin, wild game, pork such as tenderloin, nitrate/nitrite free lean cold cuts such as turkey breast, chicken breast, ham</p> <p><b>Eggs:</b> Limit to 3 yolks per week</p> <p><b>Cheese:</b> Limit to 1 ounce per day</p>	<p><b>Recommended: 2 cups per day if not using dairy substitutes</b></p> <ul style="list-style-type: none"> <li>• Skim milk</li> <li>• 1% milk</li> <li>• Nonfat yogurt</li> <li>• Low fat yogurt</li> </ul> <p><b>Limit due to sodium content:</b> Vegan cheese</p> <p><b>Limit portion to a light topping on food:</b> Cheese</p>	<p><b>Chips, snacks, baked:</b> Chips, wheat crackers, pretzels, white rice cakes, graham crackers</p> <p><b>Sweets:</b> 70% cocoa or higher dark chocolate when limited to 1 ounce, fruit juice bar, fat free pudding, sorbet</p>	<ul style="list-style-type: none"> <li>• Honey</li> <li>• Natural maple syrup</li> <li>• Agave nectar</li> </ul>	<ul style="list-style-type: none"> <li>• Ketchup</li> <li>• Mustard</li> <li>• Soy sauce (low-sodium)</li> <li>• Tabasco® sauce</li> <li>• Worcestershire® sauce</li> </ul> <p><b>Limit to 1 serving per day for women, 2 servings per day for men:</b></p> <ul style="list-style-type: none"> <li>• Beer (12 ounce serving)</li> <li>• Wine (6 ounce serving)</li> </ul>

PROTEIN	DAIRY & DAIRY SUBSTITUTES	CHIPS/SNACKS/ SWEETS	SWEETENERS	OTHER
<p><b>Canned seafood packed in oil:</b> Anchovies, tuna, sardines, salmon, herring</p> <p><b>Fatty cuts of meat:</b> Beef such as Porterhouse, prime rib, ribeye, dark meat poultry with the skin, hot dogs, lunch meat, pork such as bacon, ribs, sausage, etc, high fat cold cuts that contain nitrate/nitrites such as salami, pepperoni, bologna</p>	<ul style="list-style-type: none"> <li>• Coconut milk</li> <li>• Whole milk</li> <li>• Full fat yogurt</li> <li>• Kefir</li> </ul>	<p><b>Chips, snacks, fried:</b> Potato chips, tortilla chips, corn chips</p> <p><b>Crackers:</b> Saltines, oyster, buttered type, made with enriched flour</p> <p><b>Sweets:</b> Milk chocolate, soda, sweet tea</p>	<ul style="list-style-type: none"> <li>• Sugar/brown sugar</li> <li>• Corn syrup</li> <li>• High fructose corn syrup</li> <li>• Malt syrup</li> <li>• Powdered sugar</li> <li>• Invert sugar</li> <li>• Molasses</li> </ul>	<ul style="list-style-type: none"> <li>• Salt</li> <li>• Creamer, powdered and liquid</li> <li>• Whipped topping</li> </ul>

## About El Camino Health

El Camino Health includes two nonprofit acute care hospitals in Los Gatos and Mountain View and urgent care, multi-specialty care and primary care locations across Santa Clara County. Hospital key medical specialties include cancer, heart and vascular, lifestyle medicine, men's health, mental health and addictions, lung, mother-baby, orthopedic and spine, stroke, urology and women's health. Affiliated partners include Silicon Valley Medical Development, El Camino Health Foundation and Concern. For more information, visit [elcaminohealth.org](http://elcaminohealth.org).



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**Need a doctor referral? Visit our website or call the El Camino Health Resource Line at 800-216-5556.**