



Operational Manual for Your Heart

A guide to coronary artery disease
and its treatment

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NAME:

PROCEDURE DATE:

BRAND/TYPE OF STENT:

DOCTOR PLACING STENT:

PHONE:

Important phone numbers

My cardiologist

NAME:

PHONE:

My primary care physician

NAME:

PHONE:

My pharmacy

NAME:

PHONE:

Other phone numbers

NAME:

PHONE:

NAME:

PHONE:

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HOW TO USE THIS MANUAL

- Keep this manual handy. It contains information you may want to refer to again and again
- Some of the words may be new to you. Terms that appear in bold are explained in the glossary at the end of this manual
- **Ask questions!** If you don't understand something about your procedure, or have questions about your medications or how to take them, talk to your doctor

Unexpected news can be stressful, and stress can make it hard to remember important information. That's why it's a good idea to have a family member or friend read this material. Your family member or friend will be able to "back you up" and help make sure you understand and follow your doctor's instructions.

LIMITATION:

THIS MANUAL IS NOT A REPLACEMENT FOR YOUR STENT PATIENT INFORMATION GUIDE. YOU SHOULD CAREFULLY REVIEW THE GUIDE YOU RECEIVED WITH YOUR STENT.

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Coronary artery disease

WHAT IS CORONARY ARTERY DISEASE?

Coronary artery disease or CAD affects the arteries that supply blood to the heart. It occurs when the passageway through the coronary arteries, also known as heart arteries, becomes narrowed by a buildup of **plaque**, including cholesterol, fatty deposits, calcium, and other substances. Known as **atherosclerosis**, this buildup occurs over time and reduces the flow of blood. Reduced blood flow means less oxygen is getting to the heart. This may cause mild to severe chest pains or pressure, sometimes called **angina**, which can spread to the arms or jaw. This can happen during stressful times, during physical activities such as work or exercise, or even at rest. If the flow of blood in a heart artery is completely blocked, a heart attack can occur. Anyone who experiences chest pain or signs of a heart attack should seek medical help as soon as possible.

WHO IS AT RISK?

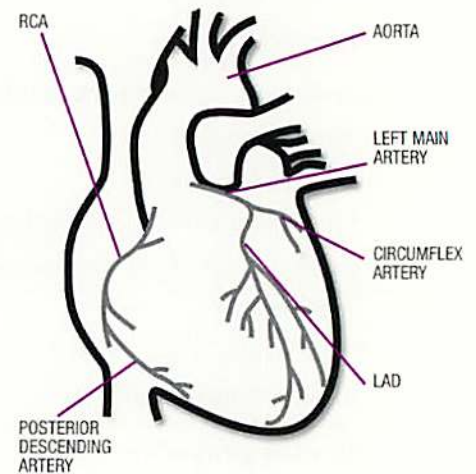
People with a history of high cholesterol, diabetes, smoking, high blood pressure, being overweight, or a family history of heart disease are at higher risk of developing CAD. Menopause may also increase the risk of CAD in women.

DIAGNOSIS OF CAD

There are a number of ways that doctors can diagnose CAD:

- An **electrocardiogram**, also known as an ECG or EKG, measures your heart's electrical activity and may show whether your heart has been damaged by a heart attack
- A **stress test** records your heart's electrical activity while you are exercising to reveal heart-related problems
- A **coronary angiogram** can show if any blockage and/or narrowing has occurred. A special dye is injected into the coronary arteries so that they can be seen in an x-ray. Information from the angiogram will help your doctor decide how to treat you

PRIMARY ARTERIES OF THE HEART



Treatment of coronary artery disease

WAYS TO MANAGE CAD

CAD may be managed with a combination of lifestyle changes, exercise, diet, and medical treatment. The treatment your doctor recommends will depend on the severity of your disease. There are medications that are given to relieve chest discomfort due to blockages, but do not treat the blockage itself. Treatments of the blockage may include medications, **angioplasty** with or without stent placement, or **coronary artery bypass graft surgery, or CABG**. CABG is also known as open heart surgery. During surgery, arteries or veins are taken from another part of the body and used to reroute blood around blocked heart arteries.

ANGIOPLASTY

Angioplasty is a procedure performed in the hospital to open blocked arteries. A thin tube called a **catheter** is placed through the groin or arm and passed through an artery to the site of the blockage. A small balloon located on the tip of the catheter is then slowly inflated to open the blockage. This procedure can be performed with a balloon alone, or can involve the placement of a **coronary stent**.

CORONARY STENTS

Stents are tiny, expandable tubes made of metal mesh that look similar to the spring in a ball point pen. After the angioplasty procedure opens the artery, a stent is placed and expanded to fit the size of the artery. The stent remains in the artery to help keep blood flowing freely. Over time, the artery wall heals around the stent.

BARE-METAL AND DRUG-COATED STENTS

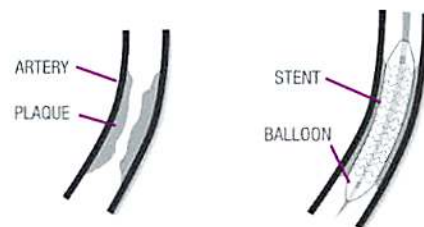
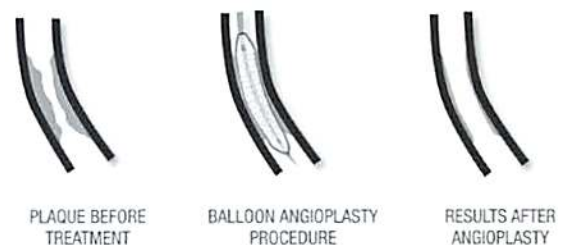
There are two kinds of stents, bare-metal and drug-coated. **Bare-metal stents** provide support to help keep the artery open after angioplasty. A **drug-coated stent** is a bare-metal stent with a special drug coating added to help reduce the chance of the artery becoming blocked again. The drug is released from the stent over the period of time during which re-blockage is most likely to occur.

THE GOALS OF ANGIOPLASTY AND STENTING

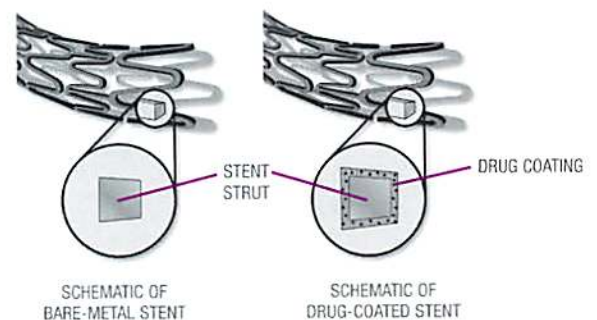
Angioplasty is used to:

- Restore blood flow to the affected area of the heart by treating narrowed coronary arteries
- Provide prompt relief of chest pain and/or shortness of breath
- Potentially lower the risk of heart attack and prolong life, compared with no medical treatment

SIDE VIEW OF CORONARY ARTERY



CROSS SECTION OF A COATED STENT TO POINT OUT HOW COATING CONFORMS TO THE SURFACE OF THE BARE-METAL STENT



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RE-BLOCKAGE

Some patients who undergo angioplasty may experience a re-narrowing or re-blockage of the treated artery. On average, 40% of patients treated with balloon angioplasty alone may experience re-blockage within 6 months after their first procedure.

The diagram below shows the reasons re-blockage may occur.

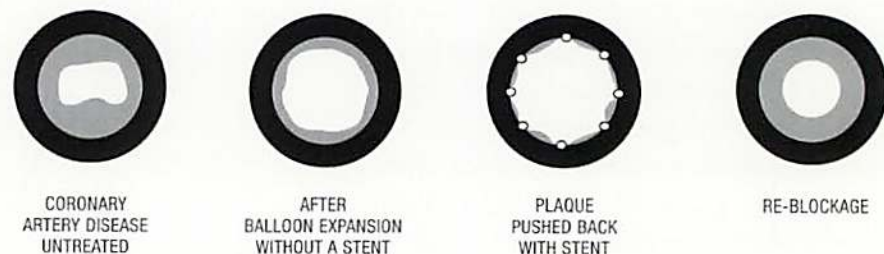
A balloon angioplasty opens the artery and the stent helps hold it open. However, buildup can still occur in the artery and cause blockage again. On average, 25% of patients who receive bare-metal stents later have a re-blocked artery. Drug-coated stents deliver a drug right to the artery wall to reduce buildup, so there's less chance of re-blockage. Typically, only about 7% of patients given a drug-coated stent needed repeat treatment, such as another stent or CABG.

BLOOD CLOTS

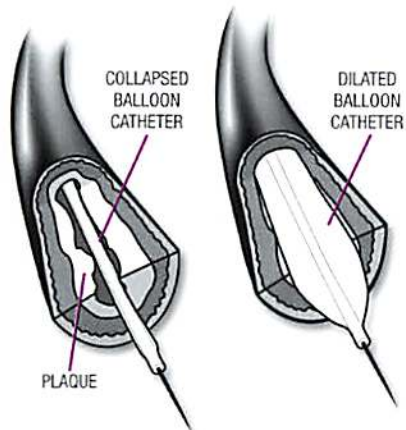
While the artery is healing, there is a small but real chance of a blood clot forming. It is very important to take the physician-prescribed anti-clotting medications every day for the full duration prescribed by the doctor who implanted your stent. After a patient clinical follow-up of four years, data showed a slight increased risk of blood clots (0.5%) with drug-coated stents.

After examining the results of many clinical trials, the US Food and Drug Administration (FDA) addressed this risk. They reported that when drug-coated stents are used for their approved purposes, the risk of blood clots does not lead to an increase in death or heart attack compared to bare-metal stents. The FDA also said that concerns about blood clots do not outweigh the benefits of drug-coated stents.

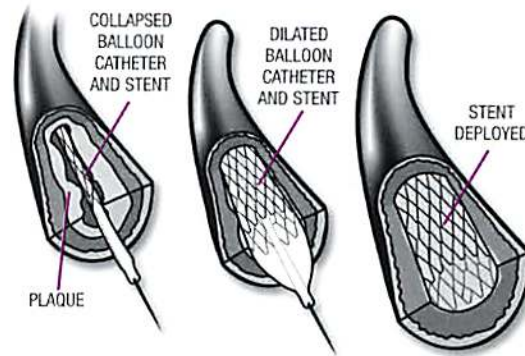
CROSS SECTION OF CORONARY ARTERY



ANGIOPLASTY PROCEDURE



STENT PLACEMENT PROCEDURE



ANTI-CLOTTING THERAPY

Anti-clotting therapy, usually aspirin and a prescription such as PLAVIX® (clopidogrel bisulfate) or TICLID® (ticlopidine),* is prescribed by your doctor and is an important part of your treatment. Aspirin and the prescription anti-clotting medications work differently. Aspirin, often called a blood thinner, is part of a class of medicines called **anticoagulants**. Although they are called blood thinners, these medicines do not really thin your blood. Instead, they help prevent your blood from clotting. This helps keep fewer harmful blood clots from forming and blocking blood vessels.

Prescription anti-clotting medications prevent certain cells from sticking together or clumping. Taking both aspirin **and** PLAVIX® or TICLID® provides the best protection against blood clots. It is important to take both medications together to have them work correctly.

WHAT DO YOU NEED TO REMEMBER ABOUT YOUR ANTI-CLOTTING THERAPY?

- **Take your anti-clotting medications each day** as prescribed by your cardiologist who implanted your stent, starting on the day they are prescribed
- **Take both aspirin and your prescription anti-clotting medication.** Both are needed to work correctly
- **Do not stop taking your medications** unless you are told to do so by your cardiologist who implanted your stent

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After the procedure

After the stent is implanted, the patient is moved to a cardiology unit to be watched closely during recovery. The patient may have to lie flat to keep their leg straight or arm immobile for 6 to 8 hours. This helps the puncture in the skin to remain closed. The patient will get specific instructions when it's okay to sit up and walk around. The hospital stay may last 1 to 3 days, on average.

Angioplasty and stenting usually provide rapid relief of symptoms such as chest pain and/or shortness of breath. Most patients return to regular life activities without chest pain in a relatively short period of time.

ACTIVITY

- Follow your doctor's guidelines
- Resume normal activities gradually, pacing your return to activity as you feel better. Check with your doctor about strenuous activities
- Let your doctor know about any changes in lifestyle you make during your recovery period
- Report side effects from medications to your doctor immediately, including headaches, nausea, vomiting, or rash
- Keep all follow-up appointments, including laboratory blood testing
- Carry your Patient Identification Card at all times in the sleeve provided in your Stentplus™ Patient Success Program kit. If you receive dental or medical care or go to an urgent care or hospital emergency department, show your Patient Identification Card

ANTI-CLOTTING MEDICATIONS

Anti-clotting therapy, usually aspirin and a prescription such as PLAVIX® or TICLID®,* is prescribed by your doctor and is an important part of your treatment. Together, they help prevent your blood from clotting. This helps keep fewer harmful blood clots from forming and blocking blood vessels. Taking both aspirin **and** PLAVIX® or TICLID® provides the best protection against blood clots. It is important to take both medications together to have them work correctly.

- Your doctor may have you take an aspirin indefinitely
- You will also take either PLAVIX® or TICLID® in combination with aspirin

Your doctor will decide how long you need to take these medications.

Make sure that you understand exactly how to take your medications and how long you need to take them. It is extremely important for you to take your medications as prescribed, even though you may be feeling better.

Do not stop taking your medications. If you stop taking these medications before being instructed to do so by your cardiologist who implanted your stent, your chances increase for a blood clot, a heart attack, or even death.

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FOLLOW-UP EXAMS

You may see the doctor who implanted your stent or your general cardiologist for routine follow-up exams. During these visits, your doctor will watch your progress and evaluate your medications, your CAD, and how the stent is working for you.

Many people find it useful to have a family member or friend involved in helping them follow their doctor's instructions. This can include keeping doctor appointments, taking medications exactly as instructed, and making sure prescriptions are refilled.

Frequently asked questions

You and your family or friends can become active partners in your treatment and recovery by asking questions and learning as much as you can about CAD. Use the questions and answers below as starting points for discussion with your doctor. Make sure to talk to him or her about any other questions or concerns you may have.

ABOUT YOUR PROCEDURE

Q. How long do stents last and are they removable?

A. Stent placement is permanent.

Q. What if I get symptoms again?

A. If pain or other symptoms return, immediately call your cardiologist or the center where your procedure was performed.

Q. Can I get an MRI or other scanner test with a stent?

A. Yes. Safety testing shows that MRI may be performed immediately following stent implantation, and that MRI testing does not affect the performance of a stent or the drug in drug-coated stents. You should tell your MRI technician that you have a stent.

Q. Will I be able to feel my stent?

A. No. There are no nerve endings inside the walls of your arteries, so you will not be able to feel the stent.

Q. Can the stent move or rust?

A. Once in position, the stent does not move on its own. It is made of a non-rusting metal.

Q. Can I walk through metal detectors with a stent?

A. Yes. Stents will not set off metal detectors in airports or other locations.

Q. Are there any restrictions on air travel with a stent?

A. Having a stent in place does not prevent air travel. Check with your doctor for any medical conditions that prevent air travel.

ABOUT YOUR MEDICATIONS

Q. Why are anti-clotting medications so important after receiving a stent?

A. Anti-clotting medications, also called blood thinners or anti-platelet therapy, can reduce the risk of heart attack, stroke, and death by reducing the risk of a blood clot forming. It is extremely important for you to take these medications as prescribed, even though you are probably feeling better.

Talk to the doctor who implanted your stent before you stop taking your medications, even if directed to do so by another physician, dentist, or pharmacist.

Q. Why are the 2 medications needed? Isn't aspirin enough?

A. Aspirin and the prescription anti-clotting medications work differently. Together, they help prevent your blood from clotting. This helps keep fewer harmful blood clots from forming and blocking blood vessels. Taking both aspirin **and** the prescription anti-clotting medication provides the best protection against blood clots. It is important to take both medications together to have them work correctly.

Q. What if I forget to take my medications?

A. If you miss a dose of aspirin and PLAVIX® [TICLID®],* take it as soon as you remember. Do not double the dose the next day to catch up.

Q. Is it okay to take PLAVIX® or TICLID® with the other medications I'm taking?

A. Make sure your doctor or pharmacist knows about all the other medications, vitamins, and other supplements you are taking, or plan to take.

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Q. What if another doctor, a dentist, or a pharmacist tells me to stop taking the anti-clotting medications?

A. **DO NOT STOP TAKING YOUR MEDICATIONS.** Contact your cardiologist, **right away.**

Q. Can I reduce my dose of PLAVIX® or TICLID®* after a few weeks or months?

A. It's critical that you take your medications exactly as prescribed. Do not change your dosage or stop taking your medications unless you are told to do so by the doctor who implanted your stent.

Q. Can I stop taking my medications if I start feeling better?

A. **No.** You must continue to take your medications every day as prescribed, even after you feel better.

Q. What happens if I stop taking my medications?

A. You increase the risk of a blood clot forming in or near your stent. A blood clot could cause a heart attack, stroke, or even death.

Q. If I find that I am bleeding a lot when I get a cut or have lots of bruises, should I quit taking my anti-clotting medications?

A. No. Call the doctor who implanted your stent before making any changes to your medications.

Q. These medications are expensive. Is financial help available?

A. Financial assistance may be available. See the financial assistance sheet in the Stentplus™ Program folder for information on possible medication financial assistance.

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ABOUT YOUR LIFESTYLE

Q. How soon can I go back to work?

A. Most patients return to work within a few days following the procedure. Follow your doctor's instructions.

Q. Can I play sports?

A. Yes, but be cautious! Your doctor will tell you which sports you can play, and when you can start.

Q. Will I need to change my diet?

A. Your doctor may prescribe a low-fat, low-cholesterol diet to help reduce the levels of fat in your blood and reduce your risk of further disease complications.

Q. What about exercise?

A. Your doctor will tell you what types and how much exercise is right for you.

Q. When can I safely resume sexual activity?

A. Some doctors say if you can climb a flight of stairs comfortably, you can probably resume sexual activity. It's a good idea to discuss it with your doctor first.

Resources

HEALTH CARE INFORMATION

Your doctor is always your best source of information about your individual health care needs. Be an active partner in your treatment and recovery. Ask questions and learn as much as possible about heart disease and its treatment.

For information about stents, heart procedures, and a wealth of other related topics, go to **www.stentplus.com**. For questions about your medications, including side effects or reactions to your medications, call your doctor. In addition, review the Patient Information Guide that came with your stent.

FINANCIAL ASSISTANCE PROGRAMS

There are programs for most stent implant patients, regardless of income level. For more information, see the financial assistance sheet in the Stentplus™ Program folder or go to **www.stentplus.com**.

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Glossary

Angina Chest pain, pressure, or discomfort.

Angioplasty A procedure to open a blockage. A thin tube, or catheter, is inserted through the groin or arm and threaded through a major vein or artery to the site of the blockage. A small balloon at the tip of the catheter is expanded to open the blockage. This can be performed with a balloon alone, or involve the placement of a coronary stent.

Anticoagulants A group of medications including aspirin that prevent blood from clotting.

Anti-clotting therapy Medications that lower the risk of heart attack and/or stroke by making certain cells in the blood less sticky. This reduces the chance that blood clots may form on the surface of the stent.

Atherosclerosis A thickening of the artery walls, causing them to narrow.

Bare-metal stent An uncoated coronary stent made of metal mesh.

Blood thinners Medications that help prevent the blood from clotting by making certain cells in the blood less sticky.

Catheter A long thin tube used in angioplasty to open a blockage.

Coronary angiogram A special dye is injected into the coronary arteries so that they can be seen on an x-ray screen. The angiogram will show any blockages and/or narrowing.

Coronary artery bypass graft surgery (CABG) CABG is open heart surgery. During surgery, arteries or veins are taken from another part of the body and used to reroute blood around a blocked vessel of the heart.

Coronary artery disease, or CAD When the passageway of coronary arteries becomes narrowed by a buildup of cholesterol, fat, calcium, and other substances carried in the blood.

Coronary stent Tiny, expandable tubes made of metal mesh. After the angioplasty procedure, a bare-metal or drug-coated stent is placed and expanded to fit the size, shape, and bend of the artery to facilitate blood flow.

Drug-coated stent A bare-metal coronary stent with a special drug coating to reduce the chance of the artery becoming blocked again.

Electrocardiogram, also known as an ECG or EKG. Measures your heart's electrical activity to find out if there is damage from a heart attack.

Heart attack A heart attack or myocardial infarction happens when a heart artery becomes blocked and blood is not getting to one or more parts of the heart. The signs and symptoms of a heart attack may include one or more of these symptoms: difficulty breathing, chest pain that can spread to the arm or jaw, chest pressure or discomfort, and extreme fatigue.

Introducer sheath A small tube placed in the groin or arm to provide access to the artery during an angioplasty procedure.

LAD Left anterior descending artery.

Myocardial infarction A heart attack.

Plaque A buildup in the arteries of cholesterol, fatty deposits, calcium, and other substances carried in the blood.

RCA Right coronary artery.

Re-blockage When the passageway of an artery becomes narrowed again following angioplasty as the artery naturally returns to its original size and/or tissues grow inside it.

Stent placement procedure A procedure in which a stent is passed into an artery that has been widened by a balloon catheter. The balloon is then re-inflated to expand and shape the stent to the size and shape of the artery.

Stress test Measures heart-related problems while you exercise.

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