



What Is a Stent?

A stent is a tiny wire mesh tube. It props open an artery and is left there permanently. When a coronary artery (an artery feeding the heart muscle) is narrowed by a buildup of fatty deposits called plaque, it can reduce blood flow. If blood flow is reduced to the heart muscle, chest pain can result. If a clot forms and completely blocks the blood flow to part of the heart muscle, a heart attack results.

Stents help keep coronary arteries open and reduce the chance of a heart attack.



A stent is inserted into the clogged artery with a balloon catheter. The balloon is inflated and the stent expands and locks in place. This holds the artery open and allows blood to flow more freely.

How are arteries opened?

To open a narrowed artery, a doctor may do a procedure called a percutaneous coronary intervention (PCI) or angioplasty. In it, a balloon-tipped tube (catheter) is inserted into an artery and moved to the point of blockage. Then the balloon is inflated. This compresses the plaque and opens the narrowed spot. When the opening in the vessel has been widened, the balloon is deflated and the catheter is withdrawn.

How are stents used?

When a stent is used, it's collapsed and put over the balloon catheter. It's then moved into the area of the blockage. When the balloon is inflated, the stent expands, locks in place and forms a scaffold. This holds the artery open. The stent stays in the artery permanently and holds it open. This improves blood flow to the heart muscle and relieves symptoms (usually chest pain).

Stents are used depending on certain features of the artery blockage. Factors that affect whether a stent can be used include the size of the artery and where the blockage is.

Stenting has become fairly common. Most angioplasty procedures are done using stents.

What are the advantages of using a stent?

In certain patients, stents reduce the renarrowing that sometimes occurs after balloon angioplasty or other procedures that use catheters.

Patients who have angioplasty and stents recover from these procedures much faster than patients who have coronary artery bypass surgery (CABG). They have much less discomfort, too.

Can stented arteries reclose?

In over a third of patients who've had angioplasty without a stent, the artery that was opened begins to become narrowed again within months of the procedure. This renarrowing is called **restenosis**.

Stents help prevent this. There are two types of stents. Stents that are covered with drugs that help keep the blood vessel from reclosing are called drug-eluting stents. Stents not coated with drugs are called bare metal stents.

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If stents don't work and the arteries reclose, you may need coronary artery bypass surgery (CABG).

What medications will I need to take after a stent procedure?

You will need to take one or more antiplatelet agents. These medicines keep platelets from clumping together and forming blood clots in the stent and blocking the artery.

One antiplatelet agent is aspirin. A second type is called a P2Y₁₂ inhibitor. You may be prescribed one of three P2Y₁₂ inhibitors -- clopidogrel, prasugrel, or ticagrelor. Which one of these medications your doctor prescribes will be based on what he or she feels is best for you, based on your risk of blood clots and bleeding. When aspirin and a P2Y₁₂ inhibitor are used together it is called dual antiplatelet therapy (DAPT).

In addition to DAPT, you may be prescribed additional medications as well.

How long do I have to take these medications?

Aspirin is used indefinitely. How long you need to take a P2Y₁₂ inhibitor depends on why you are being

prescribed the drug, as well as your future risk of blood clots and bleeding.

- If you had a heart attack, the general recommendation is that you should be on a P2Y₁₂ inhibitor for at least a year. If you don't have a high bleeding risk, longer duration of therapy may be beneficial and lower your risk of future heart attack.
- If you are a high bleeding risk, you may have been treated with a bare metal stent. In this case, you should take a P2Y₁₂ inhibitor for at least one month.
- If you were treated with a drug-eluting stent, in general, you will be treated for at least 6-12 months with a P2Y₁₂ inhibitor. If you are at a higher bleeding risk, you may be treated for a shorter period of time (3-6 months). If you don't have a high bleeding risk, longer duration of therapy (more than 6-12 months) may be beneficial and lead to a lower risk of future heart attack and clotting of the stent.

It is important for you to take your medication as prescribed. Stopping it on your own can lead to a marked increase in risk of clots forming inside the stent, particularly in the first month or months after stent placement.

HOW CAN I LEARN MORE?

- 1 Call **1-800-AHA-USA1** (1-800-242-8721), or visit **heart.org** to learn more about heart disease and stroke.
- 2 Sign up to get *Heart Insight*, a free magazine for heart patients and their families, at **heartinsight.org**.
- 3 Connect with others sharing similar journeys with heart disease and stroke by joining our Support Network at **heart.org/supportnetwork**.

Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

What are potential complications from this procedure?

My Questions:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit **heart.org/answersbyheart** to learn more.