

## **What is angioplasty?**

Coronary balloon angioplasty is an invasive method of opening blocked arteries that might impede flow to the heart, and possibly result in heart attack or death. It is more formally known as percutaneous transluminal coronary angioplasty (PTCA): percutaneous means "through the skin," transluminal means "inside the blood vessel," coronary means "relating to the heart," and angioplasty means "blood vessel repair." Other techniques to relieve coronary narrowing, such as stents, are called percutaneous coronary interventions (PCI).

Angioplasty involves creating space in the blocked artery by inserting and inflating a tiny balloon, which compresses some of the blocking plaque against the arterial wall. When the balloon is deflated and removed, the plaque still remains compressed, clearing space in the artery and improving blood flow. While angioplasty does not always completely clear an artery, more than 90 percent of all procedures are immediately successful.

Since angioplasty is a less invasive procedure than bypass surgery, it has less risk and a quicker recovery period than bypass. However, it is not recommended for all patients. Candidates for angioplasty are chosen based on a patient's age, physical history, and severity of the blockage or damage. The American Heart Association (AHA) and the American College of Cardiology (ACC) have guidelines for prospective angioplasty patients.

### **Use of stents**

Angioplasty was first performed in 1977, and more than 1 million procedures are done worldwide each year. The AHA and ACC recommend that you choose a doctor who performs at least 75 procedures each year, at a hospital with a cardiovascular surgical program that handles more than 400 angioplasty cases every year.

Studies suggest that angioplasty patients are doing better today because doctors are better able to target blockages, and because patients are getting better medical treatment through new techniques and drug therapies. The success is due in part to the increased use of tiny wire mesh tubes called stents, which more cardiologists began using in the 1990s to help keep arteries open following angioplasty. About 70 to 90 percent of all angioplasty patients receive a stent, which is inserted permanently at the site of the blockage.

Stents can be used in a number of ways with angioplasty procedures. A stent may be inserted during an original angioplasty to prevent possible arterial collapse and lower the chance of heart attack and re-narrowing of the artery (called restenosis). A stent also may be inserted during a second angioplasty to prevent recurrent restenosis. If restenosis warrants a bypass procedure rather than angioplasty, a stent also may be inserted as part of the bypass procedure. Stents can also be used in the unlikely event that an artery is injured by the catheter. Experienced doctors are able to install stents in one or more arteries with a high probability of success.

The use of stents has decreased the abrupt and unpredictable closure of an artery, which necessitates emergency coronary bypass surgery. Studies show stents are

better than angioplasty alone in preventing restenosis, which is one of the most common problems associated with angioplasty .