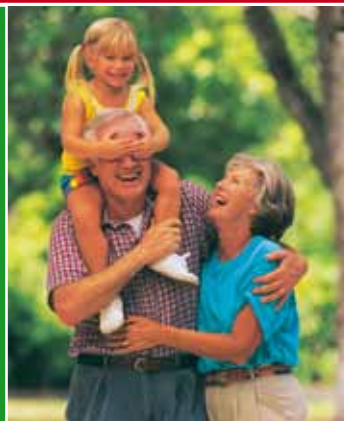




A Guide to
Angioplasty



**a helping
hand to
making a
difference**

Introduction



This booklet has been written for people who are about to have, or have had, a coronary angioplasty – with or without stent implantation. While it may not contain the answers to all your questions, remember you are not going through this alone. Talk to your doctor, nurse or other health professionals if there is anything you are unsure of; they are there to help you recover physically and emotionally.

This resource was initially developed and printed with support from the Ministry of Health

Contents

1 Section One - Coronary Angioplasty

The benefits of coronary angioplasty

Coronary angioplasty

2 Section Two - The Angioplasty Procedure

Before the angioplasty procedure

The angioplasty procedure

Stent implantation

Drug-eluting stents

After the procedure

Medications

3 Section Three - Life after Angioplasty

Achieving maximum benefit from your angioplasty

Cardiac rehabilitation

Angina recurrence

Getting behind the wheel

Feelings and relationships

Sex after angioplasty

Returning to work

Angina action plan

Heart attack warning signs

1

Coronary Angioplasty

→ The benefits of coronary angioplasty

Angioplasty is a procedure performed to relieve angina symptoms. By improving blood flow to the heart muscle, an angioplasty can result in a more active and better quality of life, with less or no angina and less requirement for medication. However, you should still make and maintain healthy lifestyle changes to help prevent a recurrence (see section 3).

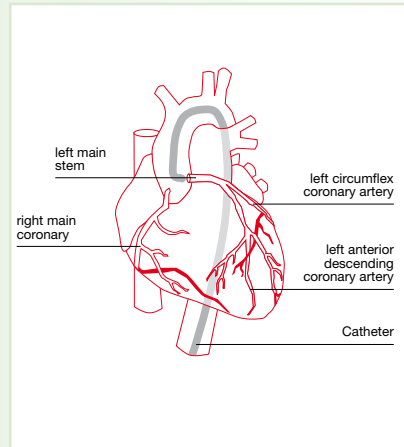
Occasionally, an angioplasty is performed as an emergency procedure to try and improve the blood flow during a heart attack, or if you are experiencing unstable angina.

Your cardiologist will discuss with you whether an angioplasty can help you on the basis of your symptoms and the results of other tests. The most important test is a coronary angiogram.

Angiogram

A coronary angiogram is an X-ray procedure used to examine the arteries of the heart. An introducing sheath is inserted into an artery, usually in the groin or sometimes in an arm. A catheter is threaded through this to the part of the aorta near the heart, where the coronary arteries start. A special contrast medium is injected through the catheter, into your bloodstream. X-rays of the heart and coronary arteries are then taken. The contrast in your bloodstream helps to highlight coronary arteries and the narrowings in them. Your cardiologist will then review the X-rays and discuss with you the results and any follow up action required.

The heart being catheterised



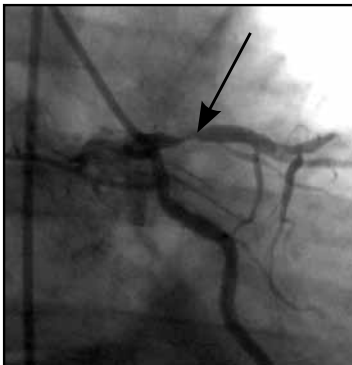
→ Coronary angioplasty

Coronary angioplasty ('angio' means artery and 'plasty' opening) is the procedure used to widen a narrowing in a coronary artery using a special balloon. Narrowing is caused by a build-up of fatty and calcium deposits (plaque) in the walls of the arteries. A catheter, with a deflated balloon attached to the tip, is passed into the coronary artery under X-ray guidance. A coronary angiogram is performed and the balloon positioned within the narrowed artery. The balloon is then inflated to compress the plaque against the artery wall, widening the artery and improving blood flow to the heart muscle.

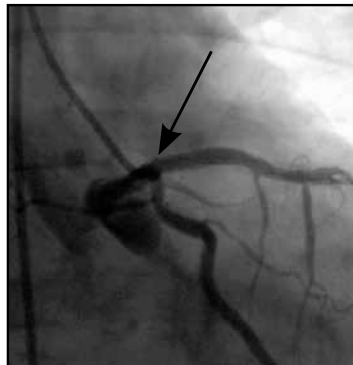
Often, a stent will be inserted at this time. A stent is a metal mesh or coiled tube that can be inserted into the narrowed artery. It acts as a metal scaffold by pressing the plaque against the artery wall, widening it and keeping it open.

Angioplasty is also known as Percutaneous Coronary Intervention (PCI) or Percutaneous Transluminal Coronary Angioplasty (PTCA).

Before an angioplasty, you should consider what changes you can make to your lifestyle to fully benefit from the procedure. Modifying your lifestyle and minimising risk factors will help reduce the possibility of further heart problems after an angioplasty. Remember to discuss your risk factors with your doctor or nurse.



Coronary artery - pre-angioplasty



Coronary artery - post-angioplasty

2

The Angioplasty Procedure

→ Before the angioplasty procedure

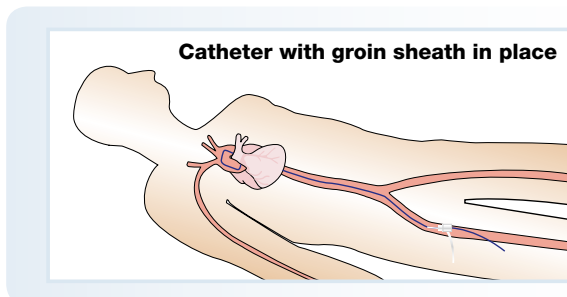


When you are admitted to hospital the doctor or nurse will explain the procedure and answer any questions you and your family/whanau may have. They will record your medical history and note your medications and allergies. You will then be asked to sign a consent form agreeing to the procedure and any further interventions that may be necessary.

Important - if you are taking medication, especially blood thinning medication such as aspirin or warfarin, your doctor will advise you on whether to continue or stop taking it. If in doubt ask your doctor, nurse or cardiologist. You should bring all your medications to hospital.

Before your angioplasty you will have some tests, e.g. blood tests and an electrocardiogram (ECG). An intravenous cannula will be placed in a vein on the back of your hand or arm, through which medications can be given, as required. The catheter insertion site will be clipped or shaved. Your nurse will let you know when to stop eating and drinking before your procedure.

You may be given a sedative tablet, which will help relax you and may make you a little drowsy, but you will still be able to follow the doctor's instructions.



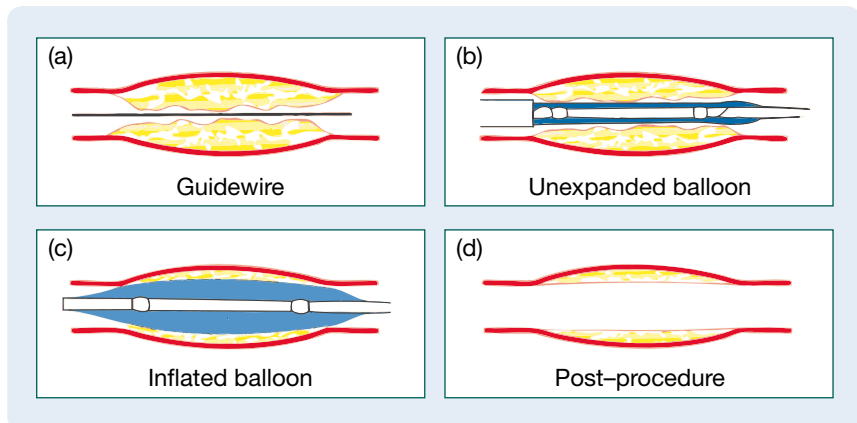
→ The angioplasty procedure

Your coronary angioplasty is performed in a cardiac catheterisation laboratory (cath lab), which you will be taken to on a bed.

The catheter insertion site in your groin or wrist will be cleaned and covered in sterile sheets. The doctor will then inject local anaesthetic into this area to numb it. The sheath (or guiding catheter) is then inserted into the artery and a balloon-tipped catheter passed through this into the aorta (the artery coming from the heart) to the coronary arteries. This should not be uncomfortable. During the procedure it is important that you lie flat.

Once the catheter is in place, X-ray pictures will be taken. You will be asked to tell the doctor/nurse if you start to feel flushed or develop chest pain. You might have the sensation of wanting to pass urine, which is normal. Very occasionally, some people have an allergic reaction to the X-ray contrast. This is very uncommon and medication can be given immediately to stop the reaction.

The catheter, with a deflated balloon at the tip, is placed into the narrowed section of the coronary artery. The balloon is then inflated to compress the plaque against the artery wall, opening the artery to allow blood to flow more easily. During this time, you may experience mild angina-type symptoms as the blood supply to the heart muscle is temporarily interrupted. It is important to let the doctor know if this happens. Once the artery has been sufficiently opened, the balloon is deflated and removed.

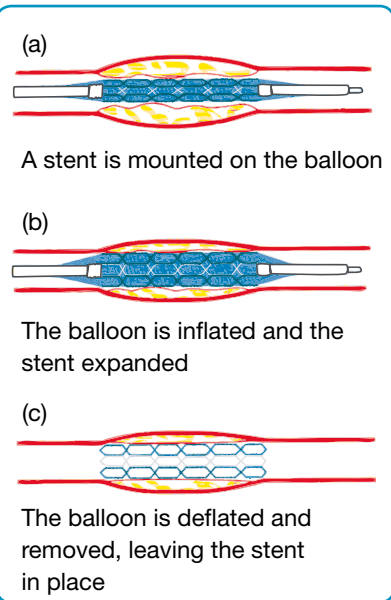


2

The Angioplasty Procedure

→ Stent implantation

Often, a stent is inserted to help keep the artery open, forming an internal scaffolding. The stent is mounted over the catheter's balloon, so that when the balloon is inflated in the narrowed section, the stent opens. The balloon is then deflated and removed, leaving the expanded stent(s) in place, keeping the artery open. If a stent is inserted, you will be given a course of tablets to thin your blood to prevent blood clots forming on the stent.



→ Drug-eluting stents

These stents are coated with a special substance, which is slowly released into the surrounding area, helping reduce the chance of tissue growing over and narrowing the artery again. Drug-eluting stents are inserted in the same way as a regular stent. Your doctor will discuss the different options with you and decide which is most suitable for you.

→ After the procedure

Upon returning to the ward the nursing staff will closely monitor you until you are fully recovered. If there is a sheath in your groin, it is usually removed two to four hours after returning to the ward. However, if the insertion sheath is in your arm it will be removed at the end of the procedure and a pressure band applied, followed by a pressure dressing.

When the sheath is removed, pressure is applied to the area for about 20 minutes to stop any bleeding - it is very important that you lie still during and after the removal process.

Please follow the nurse's instructions, as he/she will let you know when it is safe to slowly move around.

If you feel any bleeding, pain, dizziness, sweating or a warm, wet feeling around the catheter insertion site, call the nurse immediately.

It is normal to have some bruising around the site and for it to be slightly tender. If you experience discomfort at the site, inform the nurse and you will be given pain relief. You may feel a small lump where the sheath was inserted, but this should disappear over the next few months. If this increases in size or becomes painful, please seek medical advice.

Before going home, a nurse will teach you how to check the site for bleeding and explain what to do if this does happen, although this is unlikely if you have been walking around the ward. You will be advised not to do any heavy lifting or straining for about a week, to prevent bleeding from the insertion site.



2

The Angioplasty Procedure

Following an angioplasty, you may go home that evening or stay in hospital for the night and go home the following day. You will need to arrange for someone to take you home.

Medications

Before leaving hospital you will be started on medications, which must be continued when you go home. These will help prevent further heart problems. To prevent blood clots forming, you will be given blood thinning drugs. These drugs will include:

Aspirin (e.g. HeartCare, Solprin, Dispirin, Aspec, Cartia, Cardiprin): You will be advised after the procedure that you will need to take a small dose of aspirin for the rest of your life, unless you are allergic or unable to tolerate it.

Clopidogrel (e.g. Plavix, Apo-Clopidogrel): This is recommended for a period of time (usually 6 months) post-stent implantation and will be prescribed by your cardiologist.



If you need to have any surgery and your surgeon asks you to stop taking your aspirin or clopidogrel, please discuss with your cardiologist or the cardiology registrar at the hospital before you stop this important medication.

Taking your medication is an important part of your treatment. Always follow your doctor's instructions and do not stop taking your medication without discussing with your doctor first.

Depending on your lipid levels, you may be started on cholesterol lowering medication, if you have not already been taking it. Prior to discharge your cardiologist will discuss your follow-up care with you.



‘The best way to prevent further heart disease is by reducing or removing any risk factors’

3

Life After Angioplasty

→ Achieving maximum benefit from your angioplasty

After an angioplasty most people resume to normal everyday activities within one to two days of returning home and can usually go back to work after a week.

It is important to remember that an angioplasty is NOT a cure for heart disease.

Your symptoms may have stopped, but you will still need to make and maintain changes to your lifestyle to prevent the angina returning.

The best way to prevent further heart disease is by reducing or removing any risk factors. Every risk factor you reduce or remove can have a major effect on lowering your chances of having further heart disease problems, such as angina or a heart attack.



**'Cardiac rehabilitation
involves education, exercise
and emotional support'**

→ Cardiac rehabilitation

You can learn about tackling your risk factors by attending a cardiac rehabilitation programme. Cardiac rehabilitation is an important part of your treatment and will provide you and your partner with information and support needed for a faster recovery, helping return you to a full and healthier life.

Cardiac rehabilitation involves education, exercise and emotional support, and ensures you get the interventions that are best for you. It is important to ask what programmes are available in your area.

Cardiac rehabilitation programmes can be delivered in different ways and by a range of professionals. Programmes usually have three phases:

Phase 1: While in hospital you should be visited by a Cardiac Rehabilitation Nurse. You will be invited to attend a cardiac rehabilitation programme and will be given advice on lifestyle changes and the medication you are on.

Phase 2: Following discharge, this rehabilitation programme, often run by hospital staff, is an important part of your recovery, incorporating physical activity and education. Health professionals will give you advice and support about exercise, healthy eating, smoking cessation, stress management, medication and work. Ask your cardiac rehabilitation nurse what is available in your area.

Phase 3: This takes place in the community. Your local cardiac club offers you on-going support to maintain healthy lifestyle changes. Cardiac clubs provide education, exercise and emotional support for you and your family/whanau. You should also be followed-up regularly by your GP.

To find out where your nearest cardiac rehabilitation programme or cardiac club is located, contact the Heart Foundation on (09) 571 9191 or visit www.heartfoundation.org.nz

3

Life After Angioplasty

→ Angina recurrence

In a small percentage of cases, the coronary artery may narrow again in the same place and cause a recurrence of angina. If so, the recurrence will generally happen in the first six months. The coronary artery may also narrow in another location. It is important to take your medications as prescribed and maintain a heart healthy lifestyle to reduce the chance of this occurring.

If you do develop angina or chest pains after an angioplasty, you must always follow the **Angina Action Plan** (see over page) and talk to your doctor within 24 hours of an angina attack, so that you receive appropriate treatment.

→ Getting behind the wheel

The Land Transport Safety Authority's (LTSA) guidelines state that you must not drive for at least two days after an angioplasty.

If you have complications arising from the procedure, or you have had a heart attack resulting in angioplasty, you must not drive until you have been given medical clearance which is generally two weeks for a car licence.

If you hold a vocational licence and, for example, drive passenger vehicles, trucks, fork lifts, courier vans or fly aeroplanes, then different rules apply. Your licence needs to be approved by a cardiologist or specialist who will examine you and make sure it is safe for you to drive. It also pays to check with your insurance company to ensure you are fully covered.

For more information, contact Land Transport Safety Authority phone 0800 822422 or visit www.ltsa.govt.nz



**‘coronary angioplasty
can give you a
more active and better
quality of life’**

3

Life After Angioplasty

→ Feelings and relationships

Learning that you have heart disease can be very emotional and you may experience many different feelings, including anxiety and uncertainty. These feelings are common, especially when you arrive home from hospital, and are a perfectly normal part of your recovery for you and your family/whanau. If you are feeling down or anxious at all, talk to your doctor, cardiac rehabilitation co-ordinator or a member of your cardiac club.

If you would like more information on anxiety, depression or other emotional issues contact The Mental Health Foundation on 09 300 7030 or visit www.mentalhealth.org.nz

→ Sex after angioplasty

A healthy sex life is part of returning to a normal life after a heart event. It can be very beneficial for your relationship, helping you feel secure and happy. While it may take a little while for you to feel like having sex, normally the desire will soon return. Try to take things slowly, making an effort to discuss your feelings and concerns with your partner.

The amount of energy needed for sexual intercourse is about the same as walking up two normal flights of stairs briskly, so it will not unduly affect your heart.

You should never use PDE-5 medications such as sildenafil (Viagra), tadalafil (Cialis) and vardenafil (Levitra) if you take a nitrate-containing medication such as glyceryl trinitrate (GTN) or isosorbide mononitrate. Taking nitrates and a PDE-5 inhibitor within 24 hours of each other may greatly lower your blood pressure which could lead to a heart attack, stroke or death. Nitrates are also found in some recreational drugs such as amyl nitrate or nitrite “poppers”.

→ Returning to work

Most people can return to work after one week, although this may vary depending on the nature of your work and any other heart events. Discuss these factors with your medical professional prior to discharge.

→ Angina action plan

If you get angina:

- Stop what you are doing. Sit down and rest.
- If the angina still persists after a few minutes, take one or two puffs of your glyceryl trinitrate spray, or half to one glyceryl trinitrate tablet.
- If the angina is relieved by rest, or glyceryl trinitrate spray /tablet, you can resume your activities gently.
- If the angina persists, you can repeat the dose safely every five minutes, for a further two times.
- If the angina is not relieved after three doses in 15 minutes, call an ambulance; dial 111 immediately.

→ Heart attack warning signs

- Heavy pressure, tightness, crushing pain or unusual discomfort in the centre of the chest lasting more than 10-15 minutes. It may stop or get less intense and then return.
- Pain spreading to the shoulders, neck, jaw, and /or arms.
- These may be accompanied by sweating, a sick feeling in the stomach, dizziness and a shortness of breath.

When it's a heart attack, minutes do matter.

Action Plan

- Dial 111, ask for the ambulance service and tell them you are having a possible heart attack.
- If available, **chew** one aspirin – unless you have been advised not to take aspirin.
- Rest quietly and wait for the ambulance.



We need your help

The Heart Foundation relies almost entirely on voluntary contributions to continue much of its work. This work ranges from funding research into the causes and treatment of heart disease, to providing heart health services and booklets such as this.

Helping the Heart Foundation

You can help the Heart Foundation by:

- Being a volunteer
- Supporting our fundraising events
- Making a donation
- Making a memorial gift as a mark of respect for those who have passed away
- Purchasing one of our Lottery tickets – we offer a house as the major prize!
- Remembering the Heart Foundation in your Will
- Becoming a corporate sponsor or partner
- Becoming an advocate.

Want to know more?

For further information about heart health and services the Heart Foundation provides, visit:

www.heartfoundation.org.nz

or contact us at:

The National Heart Foundation of New Zealand,

PO Box 17-160, Greenlane,

Auckland 1546

Tel: 0064 9 571 9191

Fax: 0064 9 571 9190

Email: info@nhf.org.nz

Any help you can give will be gratefully accepted.

The Heart Foundation would be grateful for a suggested donation of \$0.50 to help cover the costs of producing this booklet. To make a donation, please phone 0800 830 100 or visit:
www.heartfoundation.org.nz

For more information about heart health resources and/or supporting the Heart Foundation, please contact:

The National Heart Foundation of New Zealand
PO Box 17-160, Greenlane, Auckland 1546, New Zealand
Tel: **0064 9 571 9191**
Fax: **0064 9 571 9190**
Email: **info@nhf.org.nz**
www.heartfoundation.org.nz

ISBN 978-1-877465-29-1 (paperback)

ISBN 978-1-877465-28-4 (pdf)

Revised and printed March 2009