CORONARY ARTERY DISEASE AND ANGINA

PROTECT YOUR HEART
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We’re part of a global family, who reinvests our profits to provide better services for our members. We proudly offer affordable, high-quality health cover to more than three million Australians.
ABOUT THIS GUIDE

This guide offers practical advice, current research and information to help people affected by coronary artery disease (CAD) and angina.

It may also be a useful resource for family and friends who want to know more about CAD and angina.

Inside this guide, you’ll find the following:

- Information about CAD and angina and how to reduce the impact these can have on your health and everyday life
- A Coronary Artery Disease Action Plan that you can prepare together with your doctor (found at the back of this guide).

Living with CAD is not always easy. However, using a combination of lifestyle management, medication and other treatment that works for you can make a positive difference.

Following a personalised, written CAD Action Plan may help significantly reduce the long-term effects of CAD. So take this guide with you when you next visit your doctor so you can get started on making your CAD Action Plan together.
WHAT IS CORONARY ARTERY DISEASE?

Your heart is a sophisticated arrangement of muscles. Like any muscle tissue, it needs oxygen and nutrients to function. Coronary artery disease (CAD) occurs when the blood vessels that supply oxygen and other nutrients to your heart muscle (coronary arteries) become clogged, stiff and narrowed.

You might have heard of the term atherosclerosis. Atherosclerosis is the term given to this process of narrowing arteries. It’s due to plaques (deposits of cholesterol, fats and other materials) building up in, and damaging the lining of your arteries. Atherosclerosis can happen in any arteries throughout the body. When atherosclerosis occurs in the coronary arteries, you have CAD. This means the narrowing of these important arteries caused by atherosclerosis, decreases the amount of blood, and therefore oxygen, that gets to your heart muscle. This can result in serious complications such as angina and heart attack.

Plaques can start to build up in your arteries before your teen years, although most people won’t experience symptoms of CAD until much later. Those who smoke, have a family history of heart attacks at a young age and have high cholesterol, blood sugar or blood pressure are more likely to have CAD. That’s why it’s important to protect your heart at all stages of life.

When people with CAD experience symptoms, the most common are:

- angina
- shortness of breath
- heart attack.

Although CAD is one of Australia’s most common chronic conditions, there are many ways to manage and reduce its impact on your quality of life and wellbeing.
WHAT IS ANGINA?

When your heart muscle can't supply enough oxygen-rich blood, you may feel pain in your chest during exertion (for example, when you exercise). This chest pain is one of a group of symptoms known as ‘angina’. You may also experience angina as chest heaviness, tightness, pressure, aching, burning, numbness, fullness or squeezing. These symptoms are most often felt in the chest, but can also be felt in the back, shoulders and arms, sometimes radiating into the neck or jaw. Some people may also experience shortness of breath or light-headedness.

Angina can be classed into two types: stable angina and unstable angina.

**Stable angina**

Stable angina is angina that has not worsened in frequency and/or severity over the past month. The pain associated with stable angina usually only lasts less than ten minutes and typically subsides with rest. The pain usually occurs after predictable events such as physical exercise or emotional stress.

There’s strong evidence that this type of angina is best treated by lifestyle changes and medication to decrease risk factors of developing further heart problems, and will be discussed later in this guide. Stenting of the coronary arteries and by-pass surgery in people with stable angina is a last resort, generally only when symptoms are no longer adequately controlled by optimum medication and lifestyle measures.
Unstable angina

Unstable angina is a less common type of angina that can occur in someone who has had stable angina in the past. The symptoms are often more severe, more frequent, can occur unexpectedly (even when you’re resting), may last longer than five minutes and often don’t go away — even after you take your angina medication as prescribed.

Unstable angina is an emergency condition which needs to be taken seriously as it may be immediately life-threatening, and can be a sign that a heart attack is taking place or about to occur. If you think this is what you are experiencing, you should call an ambulance straight away so you can be treated at hospital.
Unstable angina is often grouped with a range of conditions called acute coronary syndromes (ACS). A heart attack (acute myocardial infarction or MI) is an example of an ACS.

The most common cause of an ACS is when there is a sudden and complete blockage of a blood vessel. This is often due to clots forming at sites where there are plaques. When this happens in your coronary arteries, blood can’t get to that portion of your heart muscle, and without oxygen the tissue of the muscle dies.

**Heart attack**

A heart attack usually manifests as prolonged chest pain that generally lasts more than 30 minutes. The extent of damage to your heart depends on the size of the area supplied by the blocked artery and the time between injury and treatment. In some patients who have a heart attack, the heart may stop altogether (this is called a cardiac arrest) and it can result in sudden cardiac death.

Symptoms of a heart attack can include pain, pressure, heaviness or tightness in the chest, neck, jaw, back, shoulders or arm. Other symptoms can include nausea, dizziness, cold sweat or shortness of breath.
While warning signs and their intensity can vary from person to person, the same is true for all — the sooner you get treatment — the less likely the damage.

Treatment of ACS is often by emergency stenting — opening the affected coronary artery with balloon treatments — or by-pass surgery with monitoring in a coronary care unit. So it’s important that you get to a hospital as quickly as possible if you experience chest pain that doesn’t go away even after you rest or take your anti-angina medicines.
HOW IS CORONARY ARTERY DISEASE MANAGED?

Knowledge, good self-management and regular visits to your doctor are important to controlling CAD effectively. The four main steps to good CAD management aim to keep you as well as possible while minimising the impact of CAD and CAD treatment on your life.

1. Protect your heart from further damage
You can be at high risk of CAD but not yet show signs of it. Good CAD management aims to reduce the impact of risk factors that can lead to serious complications such as angina and heart attack. These risk factors are often managed by lifestyle changes and include:

- high blood pressure
- abnormal cholesterol and triglyceride levels
- poorly controlled diabetes
- being overweight or obese
- a diet high in saturated fats
- inadequate physical activity
- smoking
- excessive alcohol intake

2. Manage your medications
Your doctor may recommend one or more of these treatments, sometimes in combination with each other to control the progression of your CAD. If lifestyle measures alone are not enough to reduce and control your CAD risk factors, your doctor may recommend medications such as cholesterol-lowering statin medication and blood-pressure-lowering ACE inhibitors to reduce your risk of having a heart attack. Other medications such as nitrates or beta-blockers may be recommended to help treat angina. If lifestyle changes and medicines can’t control your CAD symptoms, you may need a medical procedure to treat it.
3. **Monitor your clinical indicators**

Clinical indicators give you an idea of your risk of CAD and how you’re managing it. It’s important to track your:

- cholesterol levels
- blood pressure
- blood sugar levels
- weight
- waist circumference.

There are national health guidelines (see page 17) that suggest acceptable levels for these indicators, however we recommend discussing these with your doctor to set targets that are appropriate for your individual situation.

4. **Visit your GP regularly**

Regular visits to your doctor can help you stay in control of your CAD and encourage you to lead as active and healthy a life as possible. If you don’t already have a regular GP, choose one you feel comfortable with and can trust. Your GP may refer you to a specialist and you’re also entitled to seek a second opinion if you’d like further information.
WHY DO I NEED AN ACTION PLAN?

Good control of CAD reduces the risk of angina and heart attack. Whether you’ve had symptoms or not, there’s plenty of positive action you can take now to minimise the way CAD affects you.

A combination of medical advice, medication, the right diet and physical exercise are all vital. Self-management skills and visits to your doctor can help minimise short and long term complications.

Developing a written Action Plan together with your doctor to record medication and other treatments can help you monitor symptoms and manage your CAD.
PROTECTING YOUR HEART WITH LIFESTYLE MEASURES

A good first step is discussing lifestyle factors with your doctor to control the progression of your CAD. This may involve:

- eating a healthy, balanced diet
- giving up smoking
- reducing alcohol intake
- regular appropriate exercise.

Diet and nutrition

Nutrition impacts four major CAD risk factors — blood cholesterol, blood sugar, blood pressure and being overweight. Good foods to eat are those low in fat, low in sugar and low GI (glycaemic index) and high in fibre, such as vegetables, fruit, wholegrain breads and cereals. Low-fat dairy products, lean meat and plenty of water are also good to include in your diet. And to lower your cholesterol levels, it’s important to limit the amount of saturated fat in your diet.

Smoking

Reducing the amount you smoke — or even better, giving up — can really help to prevent or slow the progress of CAD. If you’ve tried to quit smoking before without long-term success, don’t be too hard on yourself. Sometimes it takes multiple attempts. Each try gets you closer to reaching your goal and in the meantime, you have reduced the total number of cigarettes you’ll have in your lifetime. Talk to your doctor or pharmacist about ways to make giving up smoking a reality.
Alcohol
Excessive drinking increases your risk of high blood pressure and heart disease. The national alcohol guidelines recommend healthy men and women drink no more than two standard drinks a day.

If you have high cholesterol levels, high blood pressure, liver disease, diabetes, are overweight or obese and you have established CAD, you may need to reduce your alcohol intake further. Talk to your doctor about what level of drinking is appropriate for you.

Physical activity
Physical activity, like healthy eating, also helps to reduce risk from the four major factors of high cholesterol, high blood sugar, high blood pressure levels and being overweight. National guidelines recommend at least 30 minutes of moderate-intensity physical activity on most or preferably every day of the week to help prevent development and progression of CAD.

Talk to your doctor before beginning an exercise program. And if you’ve had a heart attack, all physical activity, including sexual activity, will need to be resumed gradually under the guidance of your cardiac rehabilitation professional in the weeks following the heart attack.
MEDICATIONS FOR CORONARY ARTERY DISEASE

If you have CAD, medications such as artery-relaxing nitrates, cholesterol-lowering statins, blood-pressure-lowering ACE inhibitors and beta-blockers can help reduce your risk of having a heart attack. These medications are designed to treat CAD and its risk factors. When taken as directed, they can help reduce the future risk of heart attack, angina and heart failure, control symptoms and help you live longer.

Below is some information on these medications. Be sure to always check with your doctor and pharmacist prior to taking any medications as they may cause side effects. If you’re experiencing side effects or symptoms that might be caused by medication, contact your doctor or pharmacist as soon as possible. You may also have to be careful about mixing your medication/s with other medications and/or alcohol.

Medications to treat angina

**Beta-blockers** lower heart rate and blood pressure and are used to treat angina and heart failure. Beta-blockers can also help increase your ability to exercise.

**Calcium channel blockers** work in a similar way to beta blockers and lower blood pressure and heart rate to treat angina. They are an alternative option for people who can’t tolerate beta-blockers.

**Short-acting nitrates** can provide relief when you experience chest pain. It comes in the form of a tablet or mouth spray used under the tongue and works by relaxing the coronary arteries to try and increase blood flow to the heart muscle. If pain persists for more than 10 minutes despite medication use as directed, seek urgent medical assistance such as calling for an ambulance.
Long-acting nitrates have a similar action to short-acting nitrates. They also open up the coronary arteries to improve blood flow to the heart muscle, but work over a longer period of time. They’re available as tablets and patches which can be applied to the skin for a prescribed amount of time (usually eight hours or so each day). It’s important to have a nitrate free period each day otherwise your body becomes used to the nitrate and you need to take more medication to achieve the same effect.

Other medications that are sometimes used to treat angina include nicorandil, ivarbradine or perhexiline.

Medications to decrease other risk factors associated with CAD

Blood-thinning medication such as aspirin makes blood platelets less likely to form the clots that narrow the coronary arteries. When aspirin can’t be tolerated, other anti-platelet drugs such as clopidogrel may be used. Aspirin is only used in some specific circumstances, so speak to your doctor before taking blood-thinning medication to check if it’s appropriate for you.

Cholesterol lowering medications such as statins lower levels of LDL-cholesterol. They may also improve the lining function of the arteries, further reducing the risk of CAD.

Blood pressure lowering medications such as ACE inhibitors and angiotensin II receptor blockers inhibit production and action respectively of naturally-occurring angiotensin, a protein in your body that constricts the arteries and increases blood pressure.
DO I NEED SURGERY?

Most patients with stable angina have their symptoms well controlled with lifestyle changes and optimal use of medication. If lifestyle changes and medicines are not controlling your symptoms, you may need a medical procedure to treat your CAD. Angioplasty and coronary artery bypass grafting are the most common procedures used.

In unstable angina or during heart attacks, early angioplasty and stenting of narrowed coronary arteries can save lives. In angioplasty procedures, a thin tube with a balloon or similar device on the end is threaded through blood vessels to the narrowed or blocked coronary artery. Once in place, the balloon is inflated to push the plaque outward against the wall of the artery to widen the artery and restore blood flow. A small mesh tube called a stent is often then placed in the artery to keep it open.

Coronary bypass surgery is the option of choice when there is severe blocking of a main coronary artery or multiple coronary arteries. Healthy arteries or veins are taken from other areas in your body to allow blood to ‘bypass’ the blocked coronary arteries. This procedure can improve blood flow to the heart to relieve chest pain, and possibly even prevent a heart attack.
**CLINICAL INDICATORS OF CORONARY ARTERY DISEASE**

High blood pressure, abnormal cholesterol and triglyceride levels, poorly-controlled diabetes and being overweight or obese are known risk factors of CAD and the progression of CAD. National health guidelines suggest acceptable levels for these indicators. Figures outside the ranges set by these guidelines may indicate that you need treatment to help manage these risk factors and reduce your chances of complications such as heart attack. Below are the recommended levels for people with or at high-risk of CAD.

**Blood cholesterol and triglyceride levels**

Cholesterol and triglycerides are lipids (a type of fat) that circulate in the blood. In the wrong concentration these lipids are risk factors for CAD. Guidelines suggest people aim for the following fasting blood cholesterol levels to help lower their risk:

<table>
<thead>
<tr>
<th>Lipid</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDL cholesterol</td>
<td>≥1.0 mmol/L</td>
</tr>
<tr>
<td>LDL cholesterol</td>
<td>&lt;2.0 mmol/L</td>
</tr>
<tr>
<td>Total cholesterol</td>
<td>&lt;4.0 mmol/L</td>
</tr>
<tr>
<td>Triglycerides</td>
<td>&lt;2.0 mmol/L</td>
</tr>
<tr>
<td>Non HDL-cholesterol</td>
<td>&lt; 2.5 mmol/L</td>
</tr>
</tbody>
</table>

If you are already living with CAD, it's advised you further lower your LDL cholesterol levels to below 1.8 mmol/L to help reduce your risk of a cardiovascular event such as a heart attack or stroke.

**Blood pressure**

The National Heart Foundation recommends healthy adults should have a blood pressure (BP) of less than 140/90. If you already have CAD or you also have diabetes or kidney disease then your BP should be less than 130/80.
Blood sugar levels
Diabetes is a major contributing cause of CAD in our community. People with diabetes are more likely to have health problems such as elevated cholesterol and high blood pressure, which also increases their risk of CAD.

The target for good blood sugar control as recommended by Diabetes Australia is HbA1c level being 53mmol/mol or lower. Before July 2013 HbA1c results were also reported as a percentage (where 7% was equivalent to 53mmol/mol) and was just a different way of reporting the same HbA1c result.

HbA1c gives an indication of whether your average blood sugar level over the past three months has been within an acceptable range, and if any diet and other lifestyle changes and/or diabetes medicines are helping to manage your diabetes well.

Right weight for height
Being overweight or obese is a risk factor for heart disease as it contributes to your risk of developing high blood pressure, high cholesterol and type 2 diabetes. Knowing key health numbers such as your body mass index and waist circumference can give you an idea of whether you’re maintaining a healthy weight for you.

According to the national guidelines, a waist circumference of over 94cm for men (over 90cm for Asian men) and 80cm for women puts you at increased risk of developing CAD and diabetes.

Body Mass Index (BMI) is another widely used measure to indicate if you’re a healthy weight for your height. A BMI of between 18.5 and 24.9 is considered healthy for most Australian adults, although this target may need to be adjusted depending on your age, ethnic origin and the type and amount of physical activity you do. Talk to your doctor about what a healthy BMI range might look like for you.
# THE CORONARY ARTERY DISEASE ACTION PLAN

Take this action plan with you when you visit your doctor and ask them to fill in the dates, actions required and any goals discussed. Use it to remind you when to go for your checks.

<table>
<thead>
<tr>
<th>CHECKS OR REVIEWS BY DOCTOR OR HEALTH PROFESSIONAL</th>
<th>RECOMMENDED FREQUENCY</th>
<th>DOCTOR TO FILL IN: DATE/ ACTION/GOAL</th>
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</thead>
<tbody>
<tr>
<td>Review medications</td>
<td>every routine visit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood pressure</td>
<td>every routine visit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>every routine visit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood test for lipid studies</td>
<td>every 12 months</td>
<td></td>
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<tr>
<td>Review exercise</td>
<td>every 6 months</td>
<td></td>
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<tr>
<td>Review diet</td>
<td>every 6 months</td>
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<tr>
<td>Non-smoking status</td>
<td>every 6 months</td>
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<td></td>
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<tr>
<td>Review glucose monitoring</td>
<td>every 6 months</td>
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<tr>
<td>Review general health</td>
<td>every 6 months</td>
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<tr>
<td>Review information needs</td>
<td>every 6 months</td>
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**IF YOU ALSO HAVE DIABETES:**

<table>
<thead>
<tr>
<th>CHECKS OR REVIEWS BY DOCTOR OR HEALTH PROFESSIONAL</th>
<th>RECOMMENDED FREQUENCY</th>
<th>DOCTOR TO FILL IN: DATE/ ACTION/GOAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood test for HbA1c</td>
<td>At least once every 6 months</td>
<td></td>
</tr>
<tr>
<td>Feet check by doctor or podiatrist</td>
<td>Every 3-12 months, depending on your foot risk</td>
<td></td>
</tr>
<tr>
<td>Kidney check (urine check for protein (microalbumin))</td>
<td>Every 12 months</td>
<td></td>
</tr>
<tr>
<td>Eye check by eye specialist</td>
<td>At least once every 24 months</td>
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For a medical emergency, call 000 or go to the nearest hospital. If you’re unsure, call your doctor or local hospital.