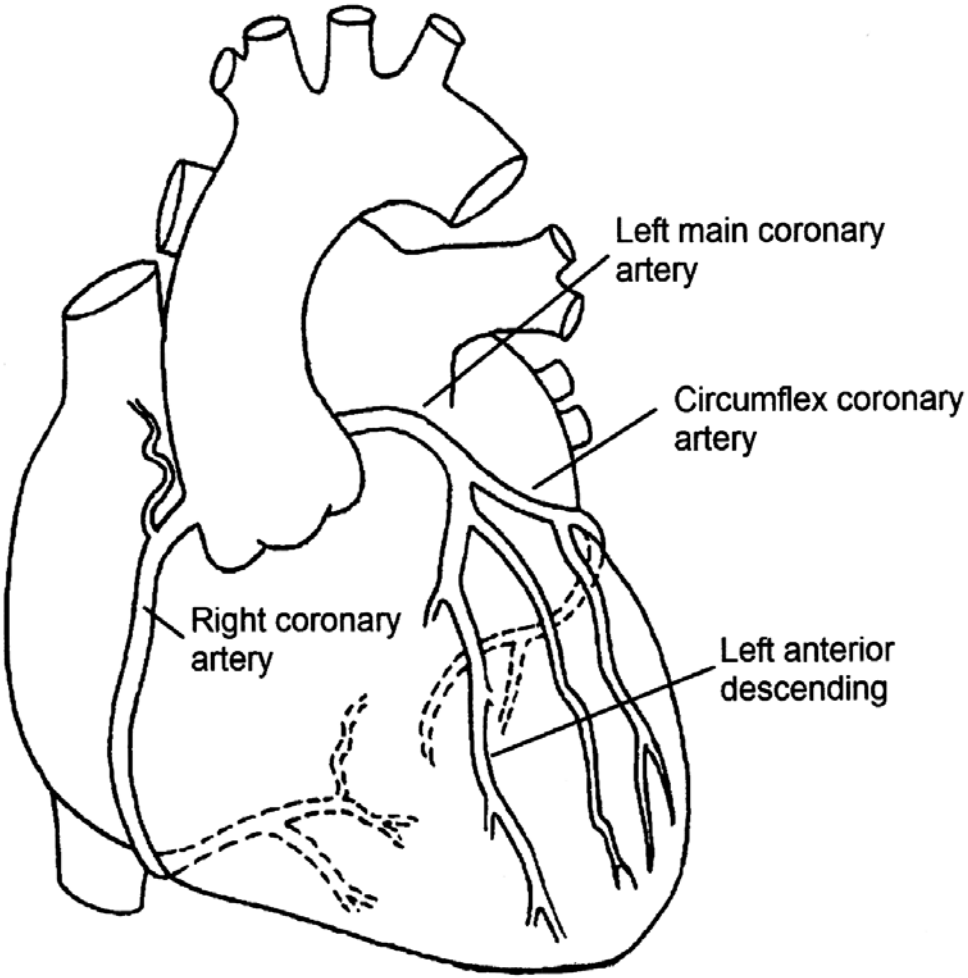
Tan Tock Seng HOSPITAL

Department of
CARDIOLOGY

Discharge Advice
Coronary Angioplasty & Stenting

Contents

Coronary Arteries and Stent(s)



Patient's Particulars

(Sticky Label)

Date of Implant	Implanted Artery(ies)	Type of Stent(s) / Balloon(s) and Number of Implant Used			
	Left Main Coronary Artery	❑DES _____	❑BMS _____	❑DEB _____	❑Others: _____
	Left Anterior Decending	❑DES _____	❑BMS _____	❑DEB _____	❑Others: _____
	Circumflex Artery	❑DES _____	❑BMS _____	❑DEB _____	❑Others: _____
	Right Coronary Artery	❑DES _____	❑BMS _____	❑DEB _____	❑Others: _____
	Other Artery(ies):				
		❑DES _____	❑BMS _____	❑DEB _____	❑Others: _____
		❑DES _____	❑BMS _____	❑DEB _____	❑Others: _____
		❑DES _____	❑BMS _____	❑DEB _____	❑Others: _____

Abbreviation:

DES - Drug Eluting Stent
BMS - Bare Metal Stent
DEB - Drug Eluting Balloon

IMPORTANT

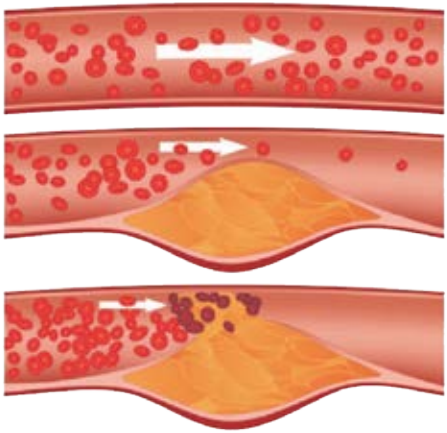
Please refer to page 9 for importance of medication compliance.
For any enquiries, kindly contact Invasive Cardiac Laboratory at 6357 2380.

Coronary Artery Disease

Coronary or heart arteries supply blood to the heart muscles to maintain its vital function.

Narrowing of the coronary artery occurs when fatty deposits accumulate on the arterial wall and can cause the following symptoms:

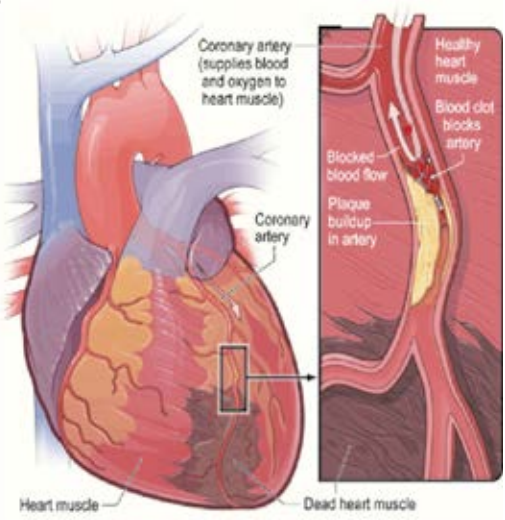
- Chest or neck discomfort
- Breathlessness
- Irregular heart rhythm
- Fatigue



Gradual build up of plaque in the artery

A heart attack, also known as Acute Myocardial Infarction (AMI), can occur when blood clots block the narrowed artery completely, causing obstruction of blood flow to the heart muscle.

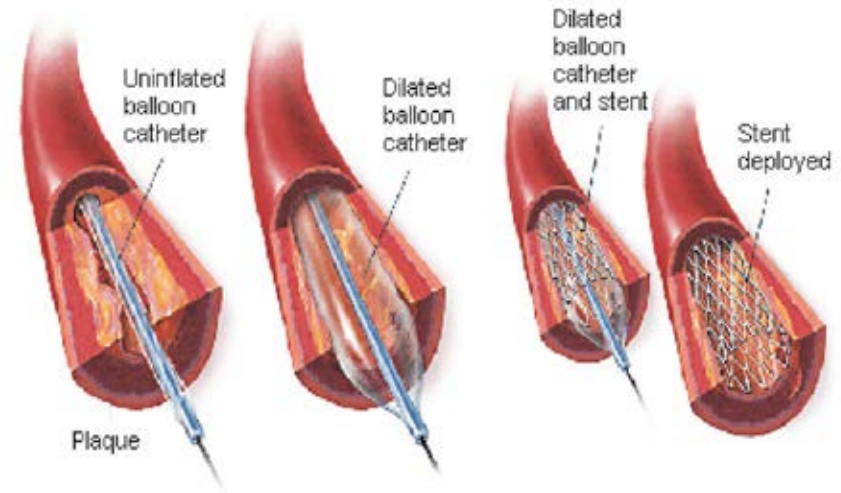
Early restoration of blood flow reduces the amount of damage to the heart.



Coronary Angioplasty

Coronary Angioplasty, also known as Percutaneous Coronary Intervention (PCI), can help to increase blood supply to the heart. In PCI, a balloon is mounted on a thin wire and is moved forward into your coronary artery until it lies within the narrowed blood vessel(s).

Once in place, the balloon is inflated to compress the plaque against the artery wall. This widens the blocked artery and restores blood flow.



Metal mesh tube also known as stent may be deployed into the newly-opened area of the artery. Some stents are coated with medication (drug-eluting stents), while others are not (bare-metal stents).

Image Source: http://www.nycsurgical.net/womens-health/angioplasty-stenting/

Discharge Advice

Going Home

- You will be discharged within the next 2 to 5 days (or earlier) if there are no complications.
- You should get someone to accompany you home.
- You should not drive home yourself.

Looking After the Puncture Site

- You may remove the light dressing a day after the procedure, and replace it with a new dressing if necessary.
- You may shower but avoid swimming until the puncture site is healed.
- Avoid lifting heavy objects, doing straining or strenuous activities for at least 48 hours after the procedure.

a. Puncture Site at Wrist:

- If you notice bleeding from the puncture site, please sit down immediately and apply firm pressure with your fingers for at least 10 minutes or until the bleeding stops.

b. Puncture Site at Groin:

- If you notice bleeding from the puncture site, please lie down immediately and apply firm pressure with your fist for at least 10 minutes or until the bleeding stops.
- Avoid climbing stairs if possible.
- Apply pressure onto the puncture site if you need to sneeze or cough within 48 hours after the procedure.
- If another groin puncture is needed within 90 days, please inform the doctor that you have received a vessel closure device such as angioseal (please check with your doctor if unsure).

Warning Signs

Please go to nearest Accident & Emergency Department (A & E) if you notice the following:

- Signs of infection, such as fever and/or redness, discharges, warmth, itchiness, pain or swelling over puncture site.
- Breathlessness, palpitations, excessive sweating, tingling or bruising.
- Bleeding persists despite applying pressure.

Please CALL 995 if:

- Persistent chest pain not relieved by sub-lingual GTN.

Medications

- Consume all medications as prescribed by doctors from Tan Tock Seng Hospital on discharge.
- **It is very crucial that you take the blood thinners, such as Aspirin, Clopidogrel (Plavix), Prasugrel (Effient), or Ticagrelor (Brilinta) as prescribed by your doctor to reduce the risk of blood clot formation and blocking your stent.**
- You must not stop any medication without consulting your cardiologist. Do not replace prescribed medication with traditional chinese medication.

Going Back to Work

- You may resume working after 1-2 weeks or as advised by your cardiologist.
- We strongly recommend that you participate in the Cardiac Rehabilitation Program in Tan Tock Seng Hospital. It is a holistic program which aims to help you return to your usual activities, including work.

Resuming Normal Activities

- It is recommended that you should do light activities after 48 - 72 hours of rest with no apparent bleeding or swelling seen on puncture site.
- Activities should increase gradually, from light to strenuous over the next 2 weeks.
- Avoid lifting heavy objects (>5kg) after discharge over the next 1 - 2 weeks.

Mood and Emotions

- It is normal to feel emotionally down after a heart event.
- Some may experience fear, shock, denial, anger, anxiety or depression. Give yourself some time to rest and re-adjust back to your normal lifestyle.
- You are encouraged to join the Cardiac Rehabilitation Program to gain support and confidence.

Sexual Activity

- Avoid sexual activity for the next 1-2 weeks.
- Thereafter, you may resume sexual activities if you can climb 2 flights of stairs at a fairly brisk pace without becoming short of breath or having chest discomfort.

Special Considerations:

- Avoid sexual activities
  i. Immediately after meals; wait for 2 hours.
  ii. After drinking alcohol, smoking or if you feel tired.
  iii. If you feel uneasy, allow more time for hugging, caressing and getting to know your partner again.
- Having your partner on top may reduce the workload on your heart.
- Drugs such as Viagra or Cialis may interact with your heart medication. Do consult your cardiologist before using them.

Driving

You are likely able to drive again if you are recovering well from your heart. However, the time frame of returning to driving depends on the type of heart condition you have.

Heart Condition	Personal Driving	Vocational Driving
Heart Attack	No driving for 1 month	No driving for 2 months
Angioplasty without heart attack	No driving for 1 week	No driving for 2 weeks

Please refer to the Singapore Medical Association website for more information.

Holidays

- Traveling abroad is not recommended for at least two weeks to a month after discharge.
- You are encouraged to carry an extra week's supply of medication.
- Follow the advice of your cardiologist. Bring a list of your medication along.

Discharge and Appointment

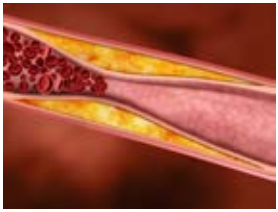
- You will receive an outpatient appointment in the ward.
- If you do not receive a date for this appointment or need to reschedule, please call:
  - i. **6357 7000 (subsidised)**
  - ii. **6357 8000 (non-subsidised)**

Modifiable Risk Factors of Coronary Artery Disease (CAD)

Smoking

- Smokers are almost twice as likely to have a CAD compared with people who have never smoked. Smoking damages the lining of your arteries, leading to a build up of fatty deposits causing blood to form easily, which increases the risk of having a CAD.
- In addition, the nicotine in cigarettes stimulates your body to produce adrenaline, which increases the heart rate and raises your blood pressure.

Hyperlipidaemia



- Your body needs cholesterol to build new cells, insulate nerves, and produce hormones. Cholesterol is produced by the liver and from the food that we eat. When there is too much cholesterol in your blood, it builds up in the walls of your arteries, causing them to be hard and narrow.
- The two common form of cholesterol are Low-density lipoprotein (LDL or «bad» cholesterol) and high-density lipoprotein (HDL or «good» cholesterol.) The Higher LDL, the higher risk of having CAD. In contrast, HDL actually works to reduce cholesterol from the blood.

Obesity

- Being obese can raise blood cholesterol and triglyceride levels, lower your "good" HDL cholesterol level, increase blood pressure and induce diabetes. Therefore, you should aim to maintain an ideal body weight with BMI 18.5 -22.9 kg/m^2.

Hypertension

- The extra force on the blood vessels in patients with hypertension can damage the cells of the blood vessels' inner lining. The cholesterol in the bloodstream can be collected in the damaged arteries. Overtime, your vessels' walls become less elastic, restricting blood flow, thus increase risk of having CAD.

Diabetes

- High blood glucose can damage your blood vessels and the nerves that control your heart and blood vessels. The longer you have diabetes, the higher the chances that you will develop heart disease. The lining of the blood vessels may become thicker, and this in turn can impair blood flow.

Physical Inactivity

- Physical inactivity can have serious implications for one's health. It has higher chance of developing high blood pressure, obesity, high cholesterol, diabetes, Depression and anxiety, thus increasing the risk of developing CAD.

Stress

- Stress is a normal part of life. But if unmanageable stress can lead to emotional, psychological, and even physical problems like Heart Disease. Stress may affect behaviours and increase risk of developing high blood pressure and high cholesterol. For instance, one may turn to food or smoking when managing stressful situation; some people may choose to drink too much alcohol to "manage" their chronic stress.
- Studies also link stress to changes in the way blood clots, which increases the risk of CAD. On the other hand, acute stress can cause in increase in heart rate and stronger contractions of the heart muscle which in the long run can cause damages to the wall lining of the heart.

A need for Behavior Change

Quit Smoking

Benefits when you quit smoking:

- Reduce risk of developing cancer, heart or lung diseases even up to the risk of a person who has never smoked before.
- Improve blood circulation and prevent complications that lead to gangrene or amputation.
- Breathe in fresh air and improve your stamina.
- Regain your taste buds and enjoy food again.

Ways you can quit smoking:

- **Gradual Reduction**

  Try reducing on the number of cigarettes if you are not ready to quit immediately.

- **Cold Turkey**

  Decide a particular date to stop smoking and stay firm on that decision! Clear all your ashtrays, lighters/cigarette packs and remind yourself of your reasons for quitting.

- **Seek Professional Help from Quit Smoking Consultant**

  They will help to assess your level of addiction, customise a quit plan according to your needs and offer you useful advice and support during your quit journey. Ask for a referral to our Smoking Cessation Team from your Cardiologist.

Adopt a healthy and well-balanced diet

1. **Increase fibre intake**

- High fibre food reduces cholesterol levels, lowers the risk of heart disease and keeps one full for longer, hence may help with weight control.

- Aim for two serves of fruits and vegetables daily
- Choose wholegrains such as oats, brown rice, and noodles/bread made from whole wheat/wholemeal flours

2. Limit intake of refined sugars

- Limit intake of sugar-sweetened beverages and desserts (e.g. regular soft drinks, drinks with honey/condensed milk, ice cream, cake).
- Choose sugar-free beverages when possible, or opt for less sweet options if sugar-free options are not available.

3. Choose healthier fats and oils, and use minimal in cooking

- Limit intake of saturated fat and trans-fat, which found in animal fats/skins, full cream dairy products, food products that contain palm oil or coconut oil / milk, commercially deep fried /baked food products. These food increases LDL.

- Replace with healthier fat such as monounsaturated and polyunsaturated fat, which are mainly found in vegetable oils (e.g. olive oil and canola oil), nuts, seeds and oily fishes.
- Choose healthier cooking techniques which use minimal amounts of oil, like Steaming, Boiling, Baking, Grilling, Roasting, Stir frying, Stewing and Pressure cooking
- Limit deep frying to once a week
- Remove visible fat and skin from meat and poultry dishes
- Choose plain rice over flavoured rice (e.g nasi lemak, chicken rice, fried rice)

Consult a dietitian for more comprehensive nutritional assessment and individualised dietary advice. Obtain a referral from your Cardiologist for a dietitian consultation.

Stress management

Below are some strategies that you might start practising to help you manage your stress.

- Have enough sleep of 7-8 hrs a night.
- Exercise. It enables body to release chemicals called endorphins, which triggers a positive feeling.
- Change your mindset by thinking positively. It maintains our sense of control and confidence in overcoming the challenges.
- Confide in your spouse, a family member or close friend. Sharing of feelings, being able to feel supported and understood reduces the level of stress.
- Schedule "me" time. Making time to engage in a hobby or pleasurable activity (such as going for movies) on a regular basis helps you to relax and to improve mood.
- Plan for a vacation. It allows a break from daily hassles to feel refresh when returning to usual routine and confident when handling challenges.
- Resolve problems instead of hiding. Actively resolving problems maintain level of stress.
- If require, seek help from someone else-your family or friends. We have psychologist service in TTSH, ask for a referral from your Cardiologist.

Exercise

If you exercise,

- Coronary arteries will become wider and more flexible; therefore decrease the risk of developing high blood pressure.
- Muscles will contract and cells are able take up glucose and use it for energy, thus reducing blood glucose level.
- Enzymes are stimulated to move LDL from the blood to the liver, where it will be converted into bile for excretion. Therefore, the more you exercise, the more LDL your body will expel.
- Anxiety, depression, and stress will be reduced. Energy level, mood, sleep, and general sense of well-being will be improved.

However, due to the recent heart events, you need to enrol into a medically-supervised program to exercise safely. Ask for a Cardiac Rehab appointment from your Cardiologist.

Cardiac Rehabilitation

Cardiac Rehabilitation is a multi-disciplinary treatment and secondary prevention programme for patients after a heart attack and angioplasty.

The purpose of cardiac rehabilitation is to provide a comprehensive, multifaceted treatment and education, to aid recovery and prevent recurrence of future heart problems.

The programme consists of two main parts:

1. Education and Counseling

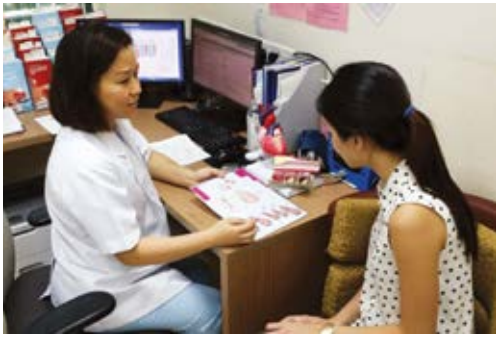
This is to help you understand your heart condition and find ways to reduce your risk of future heart problems. Nurses will set personal goals with you and you will learn how to manage your risk factors.

2. Exercise Testing and Prescription

This will enable the physiotherapist to assess you safely based on your ability and needs. Regular exercise training according to the FITT (Frequency, Intensity, Type and Time) principle will improve your cardiorespiratory fitness and well being.

Cardiac rehabilitation has many benefits. It can:

- Reduce the risk of future heart problems and the risk of dying from a heart attack.
- Lessen the chance of having to go back to the hospital or emergency room
- Improve your overall health by reducing your risk factors such as obesity, diabetes for heart problem.
- Improve your quality of life and make it easier for you to work, take part in social activities and exercise.



Help you understand your heart condition and find ways to reduce your risk of future heart problems.

Frequently Asked Questions

1. Can I feel the stent in my body?

You may experience a slight chest discomfort especially for the first few hours after the procedure. It will usually resolve by the time you are ready for discharge.

2. Will my stent get blocked again?

There is a <1% risk of the stent abruptly clotting off (thrombosis). This can be serious and is most likely to happen if you stop your blood thinning medications. There is also a small risk of gradual narrowing of the stent (restenosis) during the first year due to new tissue growth within the stent, and may present with renewed chest discomfort.

3. How long would it last?

Most stents are metallic so they are truly durable. However, while they stay inside the artery permanently, they can get blocked by blood clot and cholesterol plaque. It is therefore important to take your prescribed medications and adopt a healthy lifestyle.

4. Can I travel and will it trigger the security check at the airport?

You can usually travel after the first month following your procedure unless you continue to have symptoms such as chest discomfort or breathlessness. In this case you should consult your doctor in the outpatient clinic.

The stents are very small in size and the amount of metal presence is too negligible to be detected at the airport security check.

5. Can I have X-ray or MRI?

Modern stents are all MRI-compatible. When in doubt, do ask your heart specialist for further clarification.

6. Can the stent move?

Once the stent is implanted in the artery, it will remain in place permanently. In addition, vessel tissue will grow around the stent and hold it in place.

7. How long should I take my medications?

The risk of having blood clots form within the stent is high if you do not take the medications your doctor prescribes. Therefore, do not stop taking these medications until your cardiologist tells you to, even if you are feeling better.

If you have a drug-eluting stent, you may need to take your medications for an extended period of time, perhaps a year or longer. Strictly follow your doctor's instructions.

8. How would I know if my artery re-narrowed?

You may experience symptoms similar to those when you first noticed you had coronary artery disease or before your stent procedure. These symptoms may include chest pain or shortness of breath, especially during physical activity. If you experience such symptoms, inform your doctor.

Notes

Plaste CD pouch

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