

Cardiac Rehabilitation Programme

Information for Patients/Guardians



Introduction to Cardiovascular Disease

Cardiovascular disease is the leading cause of death in developing nations and is fast becoming a major health problem in Pakistan. Fortunately, cardiovascular disease can be prevented by risk-factor control.

The Heart

The heart is a hollow muscular organ whose main function is to collect blood from the body and send it to the lungs for purification. It then collects the oxygen-enriched blood and pumps it out to the rest of the body. The heart pumps blood to itself through arteries called coronary arteries.

Blocked Coronary Arteries

Healthy coronary arteries have smooth linings that allow blood to flow easily. However, arteries can be hardened by a process called atherosclerosis, where fatty substances and cholesterol stick to the lining and form plaques. These plaques cause the coronary arteries to narrow, decreasing blood flow, which can lead to angina and heart attacks.

- **Angina:** When blood flow through arteries is decreased, a person may feel chest pain, heaviness, or shortness of breath. This commonly occurs with exertion but may also occur at rest. Pain can travel to the stomach, back, left arm, or jaw.
- **Heart Attack:** When narrowing of arteries is severe, blood flow may be totally blocked. During a heart attack, the part of the heart muscle that does not receive blood dies. Symptoms are similar to angina but are usually more severe and can occur without exertion.

Prevention and Risk Factors

A "risk factor" is something that increases your chances of having coronary artery disease. Many of these factors can be controlled.

Major Risk Factors

- Diabetes Mellitus (raised blood sugar)
- Hypertension (high blood pressure)
- Dyslipidaemia (abnormal cholesterol or triglyceride levels)
- Smoking
- Lack of exercise
- Stress
- Increased body weight (especially around the abdomen)
- Lack of fruit and vegetable consumption in your routine diet
- Family history of heart disease
- Women are at a higher risk of heart disease after menopause.

Know Your Numbers

If you have been diagnosed with coronary artery disease, you should monitor yourself using these guidelines:

Category	Target Guideline
Body Mass Index (BMI)	18.5–23
Waist Circumference	Men: less than 90 cm (35 in.) Women: less than 80 cm (31 in.)
Blood Pressure	Less than or equal to 120/80 mmHg
Fasting Blood Glucose	Less than 110 mg/dl
Random Blood Sugar	Less than 160 mg/dl
Total Cholesterol	Less than 60 mg/dl
LDL (Bad) Cholesterol	Less than 100 mg/dl
HDL (Good) Cholesterol	Greater than 40 mg/dl
Triglycerides	Less than 150 mg/dl

Healthy Heart Guidelines

After a heart attack, bypass surgery, or angioplasty, it is vital to control your risk factors strictly.

1. Returning to Routine

Depending on your consultant's advice, it is usually safe to return to work:

- Within one week of angioplasty.
- Within four to five weeks after a heart attack.
- Within six to eight weeks after bypass surgery.

2. Medication Management

- **Do:** Take medicine exactly as prescribed and at the same time every day. Keep a one-week supply in stock.
- **Do Not:** Take medicine suggested by anyone other than a qualified practitioner. Do not skip doses or take extra doses to make up for a missed one.

3. Lifestyle and Activities

- **Tobacco:** Absolutely no tobacco should be used in any form. Avoid second-hand smoke.
- **Driving:** Start only when your consultant advises (usually six weeks after bypass surgery).

- **Weightlifting:** After bypass surgery, avoid lifting more than 0.5 kg (1 lb) for two weeks; avoid heavy lifting for six weeks.
- **Prayer:** Do not bend during prayers for about six weeks after bypass surgery. Ask your doctor when you can start.
- **Sexual Activity:** You can typically resume if you can climb two flights of stairs or walk briskly for half a mile without shortness of breath.
- **Stress and Depression:** Manage stress through time management, hobbies, and breathing exercises. If you feel persistent sadness or lack of sleep, consult your doctor regarding depression.

Physical Activity and Exercise

Following a heart attack, angioplasty, or bypass surgery, it is vital to begin an active lifestyle as soon as your doctor advises. You should set up a routine with the help of a rehabilitation specialist and establish goals that are realistic, reasonable, and easy to achieve.

Every adult should exercise for at least 30–40 minutes most days of the week.

Use the **SMILE** process to set your plan:

- **S** – Set goals
- **M** – how Many times per week
- **I** – how Intense
- **L** – how Long (length of session)
- **E** – what kind of Exercise

Stages of an Exercise Session

1. **Warm-up:** 5–10 minutes before each exercise session.
2. **Stretch:** Stretch for another 5–10 minutes for flexibility.
3. **Aerobics:** 20–30 minutes to increase heart rate.
4. **Muscle Toning:** Use of weights under supervision.
5. **Cool down:** 5–10 minutes at the end of each session to prevent blood pooling in extremities.

Signs of Overexertion

Stop exercising immediately if you experience any of the following:

- **Excessive shortness of breath:** You should be able to talk comfortably without straining during all phases.
- **Excessive tiredness:** Feeling unusually exhausted after your session.
- **Physical distress:** Nausea, dizziness, cold sweats, muscle pain, cramps, or palpitations.
- **Chest pain:** Any discomfort in the chest area.

Exercise Tips for Success

- Exercise before meals or 1.5 to 2 hours after eating.
- Drink plenty of fluids to replace what is lost, unless you are on fluid restrictions.
- Wear comfortable clothes and shoes suited to the weather.
- Avoid exercising in extreme heat or cold.
- Do not exercise if you have a high fever, flu, angina, or diarrhoea.
- Always carry readily absorbable carbohydrates (like juice or candy) in case of low blood sugar. Look for signs like sudden hunger, trembling, or confusion.
- Patients with coronary artery disease should always have sublingual nitroglycerin with them.

Dietary Guidelines

The most important elements to control are oil, salt, and sugar, while increasing fibre and fresh foods.

Fats and Cholesterol


- **Avoid Saturated and Trans-fats:** These raise cholesterol. They are found in animal products, ghee, margarine, and commercial baked goods.
- **Choose Unsaturated Fats:** These improve cholesterol and are found in plants, nuts, and seeds (e.g., olive, canola, and sunflower oils).
- **Limit Cholesterol:** High concentrations are found in egg yolks and organ meats (brain).

Cutting Down on Fat, Salt, and Sugar

- **Fat:** Use skimmed milk and low-fat yoghurt. Prefer baking, grilling, or steaming over deep-frying.
- **Salt:** Reduce salt intake and avoid "Chinese salt" (MSG) or salty sauces like soya sauce.
- **Sugar:** Avoid sugary snacks like cakes, halwas, and syrups. Choose fresh fruits over juices or canned fruits in syrup.
- **Fibre:** Increase intake of beans, lentils (daals), whole grains, and vegetables to help prevent obesity and constipation.

The Aga Khan University Hospital

 (021) 111-911-911

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