

Pharmacist's advice on appropriate medication use

❌ Lifestyle changes are not needed after taking medications for heart failure.

✅ Most patients find it difficult to change their current lifestyle. However, unhealthy lifestyle habits add burden to the heart and worsen heart failure. For example, consuming high sodium and processed food worsens swelling; consuming fatty food leads to hardening of the blood vessels and higher resistance in the blood circulation. Excessive physical activity or vigorous exercise increases oxygen demand. Persistent high blood pressure, blood sugar and blood lipid levels also worsen heart failure. Lifestyle changes should go hand-in-hand with medication therapy for optimal disease management.

❌ Refuse to use medications because of potential side effects.

✅ Not everyone will experience side effects after using the medications. The severity of side effects also differs among individuals. You should not be too worried about the side effects of the medications. If you stop using the medications or change the dose or frequency due to potential side effects, your conditions may get worse. Most common side effects are mild and will subside when your body adapts to them. Consult your doctor or pharmacist if the side effects persist or worsen.

❌ The doctor has prescribed multiple medications to manage my heart failure problem; I choose to take the water pill (diuretics) only because leg swelling is my main concern.

✅ Heart failure is a chronic disease related to the decline of heart function. To delay the disease progression and to help you live longer with better quality of life, it is necessary to use multiple medications, such as those improving heart muscle contractions and relieving workload of the heart. Leg swelling (oedema) is only a symptom. Resolved swelling only controls the symptom but not the disease. Thus, patients should not stop or change the dosage of medications without medical advice.

❌ Self-reduce the dosage or even stop the medication when the symptoms of heart failure improve and the disease is under control.

✅ Heart failure requires lifelong management by medications. It is crucial to take your medications regularly according to the dosage instructions. Although taking the medications will improve the symptoms, this does not mean the disease is completely cured. Therefore, any changes made to the medications should be directed by your doctor.

What if I miss a dose



Use the missed dose as soon as you remember. Skip the missed dose if it is almost time for your next scheduled dose.

Do not double the dose.

How to store



- ♥ Store in a cool and dry place away from direct heat and light.
- ♥ Keep out of reach of children.
- ♥ Discard all medications that have expired or are no longer required.
- ♥ Do not share the medications with other people.

**? For any queries,
please seek advice from your doctor,
pharmacist or other healthcare
professionals.**

Medications for the Heart – Heart Failure Medications



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What is Heart Failure



The heart is best described as a pump, delivering blood with oxygen and nutrients to the body through rhythmic contraction and relaxation. Heart failure is a disease where the heart is not able to pump blood around the body as well as it used to. Patients may feel tired most of the time and find exercise exhausting because there is not enough blood flow to meet the body’s needs. Besides, the weakened pumping function of the heart may slow down the blood circulation, leading to water retention in various body parts, in particular, the legs and lungs. Common symptoms of heart failure include frequent urination at night, leg swelling, shortness of breath and cough. In early stage of the disease, shortness of breath happens only during exercise. As the disease progresses, this symptom may occur at rest, while lying down or during sleep. Sitting upright or propping up the head with pillows can sometimes relieve the symptom. Water retention in the lungs may occur in advanced stage of the disease.

There are many causes of heart failure, including coronary heart disease, high blood pressure, heart attack, heart valve disease, inborn heart diseases, inflammation of the heart muscles. These causes may (1) damage heart muscles and weaken the ability of the heart to contract or relax, or (2) increase the resistance of blood flow when the heart is contracting and relaxing, and weakening its pumping function. To prevent heart failure or its progression, the underlying causes, such as high blood pressure and coronary heart disease, should be well managed. Although diabetes does not directly lead to heart failure, persistent high blood sugar level will increase the risk of cardiovascular diseases like coronary heart disease and high blood pressure. Therefore, blood sugar control should not be neglected.

Heart failure is a chronic disease, meaning that it has no complete cure. Both lifestyle changes and medication therapy are equally important for the management of heart failure. The treatment goals of heart failure are to (1) relieve the symptoms (such as using diuretics to lessen swelling), and (2) delay disease progression and reduce mortality. In general, several medications are usually prescribed to patients with heart failure. Patients should take these medications regularly as directed. They should not stop taking them or change the dosage without instructions from doctor.

Precautions on lifestyle

- ♥ Monitor blood pressure, blood lipid and blood sugar levels regularly.
- ♥ Limit intake of salt and fluids as instructed by healthcare professionals.
- ♥ Have a balanced diet. Eat food with less salt, less fat and less cholesterol. Eat more vegetables and fruits to avoid constipation and straining.
- ♥ Quit smoking. Limit consumption of alcohol and caffeinated beverages.
- ♥ Maintain an appropriate body weight, especially for overweight and obese patients.
- ♥ Take enough rest, manage stress and maintain a positive attitude.
- ♥ Do moderate amount of exercise as instructed by healthcare professionals.

Precautions on medication use

- ♥ Use the medications as directed. Do not stop using the medications or change the dose or frequency unless directed by your doctor.
- ♥ Use the medications preferably at the same time every day.
- ♥ If you have history of drug allergy, consult your doctor or pharmacist before using the medications.
- ♥ Tell your doctor and pharmacist if you are pregnant, planning to become pregnant or breastfeeding.
- ♥ Consult your doctor or pharmacist before using any other medications, including health supplements, Traditional Chinese Medicines, Proprietary Chinese Medicines and over-the-counter medications.
- ♥ Please consult your doctor or pharmacist if you encounter any difficulties in using the medications.
- ♥ The symptoms of heart failure should be improved after medication therapy. If your symptoms persist or worsen, such as increasing shortness of breath, more frequent urination at night, severe leg swelling, significant weight gain or irregular heartbeat, your disease may not be under control, and you should seek medical attention immediately.

Medications for Heart Failure

Classes of medications	Common side effects	Precautions
Diuretics (“Water pill”) Bumetanide, Eplerenone, Frusemide, Hydrochlorothiazide, Indapamide, Metolazone, Spironolactone	Dizziness, stomach upset	※ To avoid frequent urination at night, diuretic should preferably be taken in the morning for daily dose. For twice daily dosing, take the second dose six to eight hours after the first dose. ※ Diuretics may affect potassium level in blood, do not use any potassium-containing medications, supplement or potassium salt substitutes without consulting your doctor. ※ Take with food to reduce stomach upset. ※ Consult your doctor if muscle twitching or weakness occurs during the therapy.
Angiotensin converting enzyme (ACE) inhibitors Captopril, Enalapril, Lisinopril, Perindopril, Ramipril	Dry cough, skin rash, dizziness	※ Avoid this class of medication if you are pregnant. ※ These medications may raise potassium level in blood. Do not use any potassium-containing medications, supplement or potassium salt substitutes without consulting your doctor. ※ Apart from captopril and perindopril which should be taken before meals, these medications can be taken before or after meals.
Angiotensin II receptor blocker - neprilysin inhibitor Sacubitril, Valsartan	Headache, dizziness	※ Avoid this class of medication if you are pregnant. ※ These medications may raise potassium level in blood. Do not use any potassium-containing medications, supplement or potassium salt substitutes without consulting your doctor.
Angiotensin II receptor blockers Candesartan, Irbesartan, Losartan, Telmisartan, Valsartan	Headache, dizziness	※ Avoid this class of medication if you are pregnant. ※ These medications may raise potassium level in blood. Do not use any potassium-containing medications, supplement or potassium salt substitutes without consulting your doctor.
Beta₂-blockers Bisoprolol, Carvedilol, Metoprolol	Slow heartbeat, cold hands and feet, tiredness, dizziness	※ Patients with asthma and chronic obstructive pulmonary disease should be aware that these medications may cause shortness of breath. ※ Patients taking medications to lower blood sugar or using insulin should be aware that these medications may mask the symptoms of low blood sugar.
Sodium-Glucose Co-transporter 2 (SGLT2) Inhibitors Dapagliflozin, Empagliflozin	Dizziness, lower back or side pain, change in how much or how often you urinate, cloudy urine, pain while urinating	※ Take with meals in the morning. ※ Swallow the whole tablet. Do not chew or crush. ※ Drink sufficient water after taking the medication. ※ As the drug causes more glucose to be excreted in the urine, there is an increased risk of genital and urinary tract infections. It is important to maintain good genital hygiene. ※ Diabetic ketoacidosis is a rare but serious side effect of SGLT-2 inhibitors. Seek medical attention immediately if you notice any symptoms like abdominal pain, nausea, vomiting, loss of appetite, extreme thirst, breathing difficulty (fast and deep breathing), severe fatigue or drowsiness, confusion, a sweet smell to your breath or a sweet or metallic taste in your mouth.
Vasodilators Hydralazine	Headache, nausea, vomiting, fast heartbeat	
Nitrates Isosorbide dinitrate, Isosorbide mononitrate	Severe or ongoing dizziness, mild headache, warmth or redness on face, fast heartbeat	※ Sit down to take the medication to reduce side effects such as headache and dizziness. ※ Controlled release formulations should not be chewed or crushed, but should be swallowed whole. ※ Medications used to treat erectile dysfunction (such as sildenafil, tadalafil) should be avoided if you are using nitrates to avoid potential severe side effects, such as a drastic drop in blood pressure.
Selective sinus node I₁ channel inhibitors Ivabradine	Dizziness, temporary blurring of your vision, slow heartbeat	※ Take with meal. ※ Avoid grapefruit or grapefruit juice. ※ Avoid this medication if you are pregnant or breastfeeding.
Digitalis Digoxin	Taking too much of the medications or abnormal absorption may cause: Extreme tiredness, weaknesses of the arms and legs, severe stomach upset (poor appetite, nausea, vomiting, diarrhea), abnormal state of mind or mood, blurred or yellow-green vision, yellow halos, abnormal pulse.	※ Not taking the medication as directed may cause severe side effects or worsen the condition. Patients must take the medication as directed. Do not stop using the medication or change the dose or frequency unless directed by your doctor. ※ Do not take any other medications, including health supplements, Traditional Chinese Medicines, Proprietary Chinese Medicines and over-the-counter medications as these may affect the absorption of digoxin. Consult your doctor or pharmacist if necessary. ※ Mention you are taking this medication if you are seeing other doctors. ※ Seek medical attention immediately if you have side effects listed on the left.
※ Some heart failure medications may be used for other diseases, such as angina, ischemic heart disease, high blood pressure. ※ If you experience sleepiness, dizziness or blurred vision after taking the medications, avoid driving or activities requiring mental alertness or coordination. Avoid alcohol as it may potentiate the side effects. ※ If you notice any allergic reactions like skin itchiness, face or hand swelling, breathing difficulty, consult your doctor immediately.		