



**MEDICINE TO TREAT: CARDIAC DISEASES (Anti-anginal Agents)
Nitrates**

Isosorbide Mononitrate
Isosorbide Dinitrate
Glyceryl Trinitrate

1. What are these medicines used for?

Nitrates are used to prevent and treat the symptoms of angina. Angina is chest pain arising from the heart muscle when it does not receive enough oxygen. Nitrates work by relaxing the blood vessels of the heart, so that more blood and oxygen is supplied to the heart.

Some examples of nitrates are isosorbide mononitrate, isosorbide dinitrate and glyceryl trinitrate (GTN).

Nitrates come in several forms, including regular, controlled-release, sublingual (under the tongue) tablets and oral spray (spray into the mouth). Controlled release forms of nitrates provide a slow and continuous supply of medicine into your body.

Depending on the form and how it is taken, nitrates can be used to treat angina in 3 ways:

- To relieve an attack by using the medicine when the attack begins
- To prevent attacks from occurring by using the medicine just before an attack is expected to occur
- To reduce the number of attacks that occurs by using the medicine regularly on a long-term basis

2. How should I take the medicines?

- Do not stop taking your medicines without checking with your doctors. If you have been taking this medicine regularly for several weeks or more, stopping this medication suddenly may bring on attacks of angina.
- If you miss a dose, take the missed dose as soon as you remember. If it is almost time for your next dose, take only the usual dose. Do not double your dose or use extra medicine to make up for the missed dose.

Oral Tablets

- Isosorbide dinitrate and isosorbide mononitrate are the oral forms of nitrate.
- They are swallowed and are used to reduce the number of angina attacks that occur. They do not act fast enough to relieve the pain of an angina attack.

- Nitrate tablets are usually taken on an empty stomach (at least 1 hour before or 2 hours after meals) with a full glass of water.
- The regular release tablet is usually taken every 6 to 8 hours.
- The controlled-release tablet allows the medicine to be taken less frequently at about 1 to 2 times a day. Do not crush or chew the controlled-release tablets.

Sublingual Tablets/Mouth Spray

- The sublingual forms of nitrates are isosorbide dinitrate and glyceryl trinitrate (GTN). GTN is also available as an oral spray.
- Isosorbide dinitrate, GTN sublingual tablets or GTN mouth spray are used either to relieve the pain of angina attacks or to prevent an expected angina attack, such as when you are about to exercise.
- The tablet or spray should be used at the first sign of an angina attack. Do not wait until severe pain develops.
- These medicines usually relieve the pain in less than 5 minutes. However, if the pain is not relieved, use a second tablet or spray. If the pain continues for another 5 minutes, a third tablet or spray may be used. If you still have the chest pains after a total of 3 tablets or sprays in a 15-minute period, contact your doctor or go to the nearest hospital's Accident and Emergency Department.
- If you are using GTN to prevent an expected angina attack, place a tablet under your tongue or use the spray 5 to 10 minutes before doing activities that you know may cause an attack
- How to take sublingual tablets:
 - Place a tablet under your tongue and allow it to dissolve completely.
- How to use GTN mouth spray:
 - Remove the plastic cover. Do not shake the container.
 - Hold the container upright. With the container close to your mouth, press the button to spray onto or under your tongue. Do not inhale the spray.
 - Let go of the button and close your mouth. Do not swallow immediately after using the spray.

3. What are the possible side effects of the medicines?

Headache, flushing or redness of the skin, dizziness, weakness or fainting, fast heartbeats, nausea or vomiting are common side effects of nitrates. These side-effects are usually temporary and will disappear on their own. Contact your doctor or pharmacist if the medicine causes you discomfort or if the symptoms do not go away.

After taking a dose of nitrates, you may get a headache that lasts for a short time. This is a common side effect and should become less noticeable after you have taken the medicine for a while.

Dizziness, lightheadedness or faintness may occur, especially when you get up quickly from a lying or sitting position. Getting up slowly may help reduce these side effects. If you feel dizzy, sit or lie down. These side effects are more likely to happen if you drink alcohol, stand for a long period of time, exercise or if the weather is hot. While you are taking this medicine, be careful not to drink too much alcohol. Do take extra care during exercise, when the weather is hot or if you are standing for long periods of time. You may experience these side effects more if you are taking erectile dysfunction drugs together with nitrates. Do check with your doctor or pharmacist if you are taking erectile dysfunction drugs.

4. How do I know if I am allergic to these medicines?

The symptoms of a drug allergy include one or more of the following:

- Swollen face/eyes/lips
- Difficulty in breathing
- Itchy skin rashes over your whole body

If you experience any of these symptoms, you should stop your medicine immediately and see your doctor.

5. What precautions should I follow when taking the medicines?

Allergies – Tell your doctor if you have any unusual or allergic reactions to nitrates. Also tell your doctor or pharmacist if you are allergic to any other substances, such as certain foods, preservatives or dyes.

Pregnancy – Inform your doctor and pharmacist if you are pregnant, plan to become pregnant or are breastfeeding. If you become pregnant while taking nitrates, inform your doctor.

Elderly – Dizziness or lightheadedness may be more likely to occur in the elderly as they may be more sensitive to the effects of nitrates.

Other medicines – Tell your doctor or pharmacist if you are taking any high blood pressure medicine, other heart medicine or medicines for erectile dysfunction.

6. How should I store the medicines?

- Keep your medicines in the original container or packaging, tightly closed or sealed in a cool and dry place.
- Keep the medicine out of reach of children.
- Throw away all expired medicines.

GTN tablets: The medicine evaporates quickly from the tablet. To prevent this, please do the following so that the tablet stays effective.

- Keep the tablets in its original container and close it tightly. Do not transfer the tablets into other containers.
- Store in a cool dry place, away from heat and moisture. Do not store it in the fridge.
- Carry them with you wherever you go. However, try not to carry them close to your body. Carry them in a purse or bag.
- Write the date of opening on the bottle. If you do not use the tablets within 2 months after you open, get a new bottle of medicine and throw away the old ones.

This leaflet answers some common questions about this medicine. It does not contain all the available information. It also does not take the place of talking to your doctor or pharmacist.