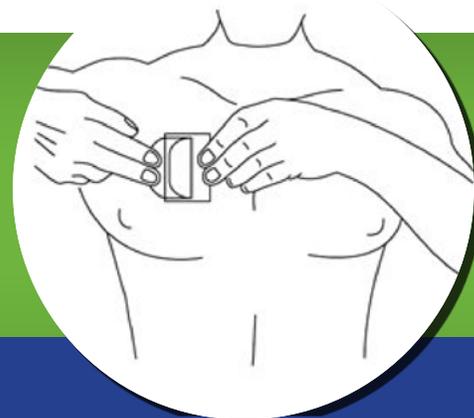


Nitroglycerin Patch and Chest Pain

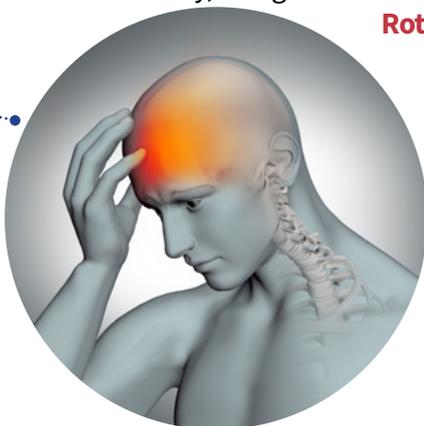


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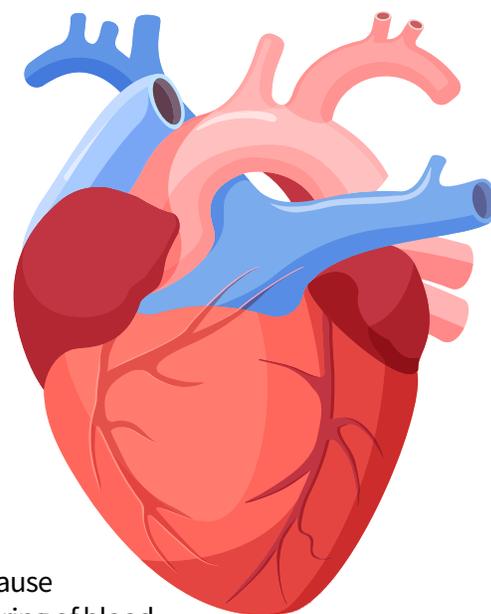
Nitroglycerin belongs to a class of drugs known as nitrates. The nitroglycerin transdermal patch (nitro-patch) delivers medication through the skin at a constant rate. Nitroglycerin relaxes blood vessels and increases blood supply to the heart. The patches are used to prevent angina in residents with coronary artery disease and are NOT intended for immediate relief of angina attacks.

The **most common side effect** is headache as a result of dilation of cerebral vessels in the brain. It usually disappears within several days. Other common side effects are dizziness, fatigue, flushing and postural hypotension. Nitro-patches have been associated with temporary reddening, local itching, and occasionally, allergic contact dermatitis at the application site.

Rotating sites can help to limit local irritation.



Blood pressure lowering agents such as ACE-inhibitors, diuretics and alcohol can cause additive hypotensive effects. Close monitoring of blood pressure is necessary especially in the elderly as they may be more sensitive to hypotensive effects and lower initial doses should be used. Phosphodiesterase-5 inhibitors (e.g. Viagra®, Cialis®) are **contraindicated** because they can cause a severe drop in blood pressure when combined with nitroglycerin.



Drug Interactions

Interacting Drug/ Drug Class	Effect
Phosphodiesterase 5 inhibitors e.g.: sildenafil (Viagra®), tadalafil (Cialis®), vardenafil (Levitra®)	Can cause severe reduction in blood pressure when combined with nitrates and are contraindicated
Ergot alkaloids e.g.: dihydroergotamine (Migranal®)	Ergot alkaloids prevent nitroglycerin from working so there is a risk angina may be precipitated, avoid if possible
Hypotensive Agents e.g.: calcium channel blockers, diuretics, beta-blockers, vasodilators, ACE-inhibitors etc.	May cause additive hypotension so recommend closer blood pressure monitoring, especially in elderly, when used with nitrates
Alcohol	May have additive vasodilatory effects, possibly resulting in hypotension, so use caution with this combination
Herbal Medications e.g.: coleus, hawthorn	Nitrates may have additive effects with herbal medicines that also have hypotensive or vasodilatory activity

Administration of Patch

Preparing New Patch

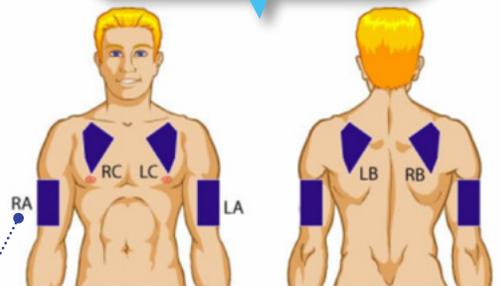
- Wash/sanitize hands, some homes require the use of gloves
- Identify an application site on either upper arm, chest, or upper back
- Patches should not be applied to the distal part of the extremities
- Application sites are rotated daily
- If necessary, hair may be clipped prior to application
- To avoid damage, remove nitro-patch by tearing the package using fingers instead of scissors



Patch Application

- Date and time of application is recorded directly on the patch using either the special labels provided with the patch, small piece of medical tape, or with a permanent marker written directly on the label/patch (if patch has protective cover)
- Use only water to clean the application site. Alcohol, soap or other solvents can alter absorption of the medication
- Remove backing from patch and avoid touching the adhesive back
- Apply patch to a clean, dry, hairless area of unbroken skin, avoiding rashes, cuts, sores or scars
- Hold patch down firmly for 30 seconds
- Remove gloves (if applicable) and rinse hands with water only to remove any drug residue
- Document patch application and site location on the MAR (See diagram for site location codes)

NITROGLYCERIN PATCH ROTATION SITES



SITE	CODE	DAY
Left Upper Arm	LA	Day 1
Right Upper Arm	RA	Day 2
Left Chest	LC	Day 3
Right Chest	RC	Day 4
Left Upper Back	LB	Day 5
Right Upper Back	RB	Day 6

Patch Removal

- Nitro-patches are not applied continuously because tolerance to their effect may occur
- Nitro-patches are usually applied in the morning and removed at bedtime. It is important to maintain a nitrate-free period of 10-12 hours each day when the patch is not on the resident
- Remove the patch and record the patch removal on the MAR and progress notes

- ✓ Fold sticky sides together and place used patch in a medication disposal container

- ✓ Always remove old nitro-patch and document removal before applying a new one

- ✓ DO NOT put heat on the application site as this may increase absorption from the patch e.g. heating pad, prolonged sun exposure, long hot baths or high fever. It is however, safe to bathe or shower while wearing the patch

- ✓ DO NOT trim or cut patches. Never use a damaged patch

- ✓ Nitroglycerin sublingual tablets or spray are used for immediate relief of angina attacks due to fast onset of action. Sublingual preparations can be used in combination with the patch



- ✓ The nitro-patch is initially prescribed at the lowest dose and titrated upward. The optimal dose is based upon the clinical response, side effects, and the effects of therapy on blood pressure. Nitro-patch strengths include: 0.2 mg/hr, 0.4 mg/hr, 0.6 mg/hr, and 0.8 mg/hr

- ✓ Nitroglycerin does not require any dose adjustment in renal or hepatic impairment

- ✓ Symptoms of overdose include features of an exaggerated therapeutic action such as persistent throbbing headache, severe hypotension, rapid heart rate, dizziness, flushing, confusion, nausea and vomiting. Remove patch immediately and scrub underlying skin thoroughly with water. The goal is to increase central fluid volume by elevating the residents' legs, moving passively the extremities and in severe cases, administer IV fluids under medical supervision