

# NITROGLYCERIN

## PHARMACOLOGY & MECHANISM OF ACTIONS:

- ❑ Nitrate
- ❑ Antianginal agent
- ❑ Generalized smooth muscle relaxation
- ❑ Onset of action is approximately 1-3 minutes
- ❑ Cardiovascular effects include:
  - Reduced venous tone. This causes pooling of blood in peripheral veins and decreased return of blood to the heart.
  - Decreased peripheral vascular resistance
  - Dilation of coronary arteries (if not already at maximum)
  - Myocardial oxygen consumption/demand decreased

## INDICATIONS:

- ❑ Cardiac related chest pain (e.g., chest, arm, or neck pain thought to be related to coronary ischemia.) May be used diagnostically or therapeutically.
- ❑ Pulmonary edema: to increase venous pooling, lowering cardiac pre-load and after-load.

## CONTRAINDICATIONS:

- ❑ Known sensitivity to nitroglycerin
- ❑ Sildenafil (Viagra) or vardenafil (Levitra) use within the preceding 24 hours.
- ❑ Tadalafil (Cialis) use within the preceding 48 hours.

## ADMINISTRATION:

	ADULT	PEDIATRIC	
<b>EMT</b>	<ul style="list-style-type: none"> <li>❑ May assist patient with their own NTG if they have a R<sub>x</sub></li> </ul>		<b>EMT</b>
<b>A-EMT</b>	<ul style="list-style-type: none"> <li>❑ 0.4 mg SL / 1 spray aerosol or 1 tablet SL (if initial SBP ≥100 mmHg)</li> <li>❑ May repeat every 5 minutes unless SBP drops below 100 mmHg</li> </ul>		<b>A-EMT</b>
<b>PARAMEDIC</b>	<p><b>DRIP RATE:</b></p> <ul style="list-style-type: none"> <li>❑ 100 mcg/mL concentration at 10 mcg/minute</li> <li>❑ Increase every 5 minutes to a max. dose of 100 mcg/minute</li> </ul>		<b>PARAMEDIC</b>

## **NITROGLYCERIN (CONTINUED)**

### **PRECAUTIONS & SIDE EFFECTS:**

- ❑ Headache
- ❑ Flushing
- ❑ Burning under tongue
- ❑ Dizziness
- ❑ Marked orthostatic hypotension, particular in patients taking antihypertensive beta-adrenergic blocks and phenothiazines.
- ❑ If these side effects are noted, the pills may be assumed potent, and not outdated

### **SPECIAL NOTES:**

- ❑ Generalized vasodilation may cause profound hypotension and reflex tachycardia.
- ❑ Nitroglycerin loses potency easily; should be stored in dark glass container with tight lid and not exposed to heat. It is seldom effective if it is older than 6 months old.
- ❑ Hypotension and bradycardia following nitroglycerin are usually responsive to fluid bolus or atropine sulfate.
- ❑ Less common effects: marked hypotension (less than 5% of patients), and more commonly orthostatic hypotension.
- ❑ Therapeutic effect is enhanced, and adverse effects are increased when patient is upright.
- ❑ Because nitroglycerin causes generalized smooth muscle relaxation, it may be effective in relieving chest pain caused by esophageal spasm, biliary colic, or hiatal hernia.
- ❑ Pregnancy Category C.
- ❑ NTG may cause a drop in a patient's blood pressure, which may indicate a right-sided MI.
- ❑ Excessive patient use may lead to NTG tolerance and a decrease in effectiveness.
- ❑ Must take blood pressure before and after every dose.