

## Phenylephrine

Phenylephrine is a direct sympathomimetic drug which acts as an  $\alpha_1$  agonist. It is used to treat rhinitis and in emergency hypotension situations. It is also used in ocular procedures as a mydriatic. This drug should not be used in patients with narrow-angle glaucoma.



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### Mechanism of Action

#### Alpha-1 Agonist

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Alpha-1 agonists have several pharmacologic effects. They constrict smooth muscle of resistance blood vessels, such as those in the skin and splanchnic beds, causing increased peripheral resistance and venous return. Phenylephrine also has alpha-2 agonist activity.

### Indications

#### Mydriatic

##### Meter-eyes

Phenylephrine is used to dilate the pupil (in conjunction with an anticholinergic) and should be avoided in patients with narrow-angle glaucoma.

#### Rhinitis

##### Runny-nose

Phenylephrine is indicated to treat rhinitis and hay fever, and is the most commonly prescribed over-the-counter decongestant. It is often used to open obstructed eustachian tubes.

#### Hypotension

##### Hippo-BP

This drug is used during short-term hypotensive emergencies, increasing mean blood pressure with no effect on pulse pressure. This may include severe hemorrhage, where there is inadequate perfusion of the heart and brain.

#### Decreased Chronotropy and Inotropy

##### Down-arrow Chrono-trophy and Down-arrow Flexing I-heart Unaffected

Phenylephrine's purely alpha-adrenergic agonist activity results in vasoconstriction with minimal direct cardiac inotropy or chronotropy. In response to increased systemic vascular resistance, indirect decrease in cardiac chronotropy and inotropy would be seen.