

# Ephedrine

Ephedrine is an indirect sympathomimetic that works to release stored catecholamines, such as norepinephrine, from sympathetic neurons. This drug is an agonist at  $\alpha$ ; and  $\beta$ ; adrenergic receptors. It has effects similar to, but less potent than epinephrine. It is indicated for use in rhinitis, hypotension and urinary incontinence.



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## Mechanism of Action

### Alpha Agonist

#### Afro Dragonist

Ephedrine has  $\alpha$ ; agonist activity. Ephedrine works to release stored catecholamines and is an indirect general agonist. This drug works to constrict smooth muscle of resistance blood vessels, such as those in the skin and splanchnic beds, causing increased peripheral resistance and venous return.

### Beta Agonist

#### Beta-fish Dragonist

Ephedrine acts on both  $\beta_1$  and  $\beta_2$  adrenergic receptors and acts to increase heart rate and contractility. Furthermore, it increases lipolysis and renin release, while causing vasodilation. Drugs acting on  $\beta$  receptors also decrease uterine tone, lead to ciliary muscle relaxation and increase aqueous humor production.

## Indications

### Rhinitis

#### Runny-nose

Ephedrine is indicated for nasal decongestion.

### Hypotension

#### Hippo-BP

Ephedrine is indicated for orthostatic hypotension, due to the  $\alpha_1$  agonist effect of increased blood pressure.

### Urinary Incontinence

#### Urine In-continents

Ephedrine can be used to treat urinary incontinence, as it works to constrict urinary sphincters and vasoconstricts renal arteries.