## Sympathetic Nervous System drugs

<table>
<thead>
<tr>
<th>Generic name</th>
<th>Trade name</th>
<th>Class/Indications</th>
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</thead>
</table>
| **Albuterol**        | Proventil           | • β2 agonist: bronchodilator for asthma, chronic bronchitis and emphysema (COPD) – \( \alpha = C \)  
• Inhaled (nebulizer, aerosol or metered inhaler), IV, PO  
• Avoid MAOIs  
• ADRs – Tremor, anxiety, palpitations, blurred vision, headache. |
| **Atenolol**         | Tenormin            | • β1 blocker: (1) HTN; (2) angina; (3) acute MI  
• PO, IV – \( \beta = C/D \)  
• Avoid MAOIs  
• ADRs – Bradycardia, heart failure, bronchospasm, may mask hypoglycemia S&S, sexual dysfunction. Discontinuation syndrome.  
• **Boxed warning: rebound angina** |
| **Clonidine**        | Catapres            | • α2 agonist: (1) HTN; (2) centrally-acting analgesic for chronic pain. Used off label for migraine, neuropathic pain, Tourette's syndrome, in programs for alcohol/smoking/opiate/benzodiazepine withdrawal.  
• PO, TD, epidural injection – \( \alpha = C \)  
• ADRs – may cause severe hypotension, dry mouth, constipation, sedation, dizziness, impotence. Discontinuation syndrome.  
• **Boxed warning: epidural not for obstetric use or to manage perioperative pain** |
| **Dobutamine**       | Dobutrex            | • Mixed αβ agonist: Short-term treatment of cardiac insufficiency (acts like dopamine, so mostly β agonist)  
• IV infusion – \( \beta = B \) |
| **Dopamine**         | Generics            | • Mixed αβ agonist: Shock and chronic heart failure (including congestive heart failure). Used off label in acute renal failure; IV infusion – \( \beta = C \) |
| **Doxazosin**        | Cardura             | • α1 blocker: (1) BPH; (2) HTN  
• PO – \( \alpha = C \)  
• ADRs – profound orthostatic hypotension, headache, leukopenia. |
| **Epinephrine**      | Epipen etc.         | • Mixed αβ agonist: (1) anaphylaxis; (2) bronchospasm; (3) prolong local anesthetic action  
• IV, intracardiac (left ventricular chamber), via endotracheal tube into the bronchial tree. Inhalation, SC, IM, ophthalmic & nasal solutions, topical (with local anesthetic) – \( \beta = C \). Refer to handbook for ADRs. |
| **Isoproterenol**    | Isuprel             | • Mixed β agonist: (1) heart block; (2) bronchospasm during surgery; (3) shock. Off label: status asthmaticus in children.  
• Metered inhaler, IV infusion – \( \beta = C \)  
• Avoid COMT inhibitors |
| **Labetalol**        | Normodyne Trandate  | • Mixed αβ blocker: HTN  
• PO, IV – \( \beta = C \) |
| **Metoprolol**       | Lopressor (tartrate), Toprol-XL (succinate) | • β1 blocker: (1) HTN; (2) angina; (3) MI  
• Metoprolol tartrate: PO, IV – \( \beta = C \)  
• Metoprolol succinate: PO – \( \beta = C \)  
• Avoid CYP2D6 inhibitors, MAOIs  
• ADRs – Bradycardia, heart failure, bronchospasm, may mask hypoglycemia S&S, sexual dysfunction. Discontinuation syndrome.  
• **Boxed warning: rebound angina** |
| **Norepinephrine**   | Levophed            | • Mixed αβ agonist: Acute hypotensive states, cardiac arrest  
• IV – \( \beta = C \) |
| **Oxymetazoline**    | Afrin               | • α1&2 agonist: nasal decongestant |
# Sympathetic Nervous System drugs

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Product Information</th>
<th>Notes</th>
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<tbody>
<tr>
<td>OX ee MET azz oh leen</td>
<td>Topical nasal spray – C</td>
<td>Potent rebound congestion</td>
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<tr>
<td>Phenotamine</td>
<td>Regitine, Oraverse</td>
<td>α Blocker: (1) diagnose pheochromocytoma; (2) HTN crisis due to pheochromocytoma; (3) prevent necrosis due to extra-vascularization of catecholamines (including synthetic catecholamines); IV, IM submucosal injection – C</td>
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<tr>
<td>Phenylephrine</td>
<td>Neo-Synephrine Vazculep (IV) Injection Ophthalmic solution PE + codiene</td>
<td>α1&amp;2 agonist (synthetic catecholamine): (1) nasal decongestant; (2) Eustachian tube decongestant; (3) hemorrhoid relief; (4) anti-arrhythmic (paroxysmal supraventricular tachycardia); (5) mild to severe hypotension and/or shock and shock-like states; (6) to prolong spinal/regional anesthesia; (7) to counter hypotension due to general anesthesia. PO, topical (nasal spray, ointment, cream, ophthalmic), PR, SC, IV, IM – C</td>
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<tr>
<td>Propranolol</td>
<td>Generic tablets Generic Inderal</td>
<td>Mixed β blocker: (1) HTN; (2) angina; (3) migraine; (4) hypertrophic subaortic stenosis; (5) tachyarrhythmias; Off label: anxiolytic (performance anxiety) PO, IV – C Avoid MAOIs ADRs – Bradycardia, heart failure, bronchospasm, may mask hypoglycemia S&amp;S, sexual dysfunction. Discontinuation syndrome. Boxed warning: rebound angina</td>
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<tr>
<td>Salmeterol</td>
<td>Serevent Diskus, Advair diskus</td>
<td>Long acting β2 agonist (LABA): bronchodilator for asthma, chronic bronchitis and emphysema (COPD) Must be given concurrently with a corticosteroid Metered inhaler – B Boxed warning: asthma-related death risk</td>
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<tr>
<td>Tamsulosin</td>
<td>Flomax Generic</td>
<td>α1 blocker: for BPH PO – B</td>
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<tr>
<td>Terbutaline</td>
<td>Brethaire Generic Dailymed info</td>
<td>β2 agonist: bronchodilator for asthma, chronic bronchitis and emphysema (COPD) – prevention and reversal of bronchospasm in patients older than 12 years. PO, SC – C Boxed warning: should not be used for prolonged tocolysis (inhibition of uterine contractions)</td>
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</table>

Other top 200 beta blockers: Carvedilol (Coreg) and Nebivolol (Bystolic), both of which are for CV disease. Timolol (Timoptic) is an important glaucoma medication.

Also note the sound alike/look alike drugs: albuterol (Beta-2 agonist) and atenolol (Beta-1 blocker).

The stem “-ol” = beta agonists and the stem “-olol” = beta blockers. The stem “-osin” or “-zosin” = alpha 1 blockers.