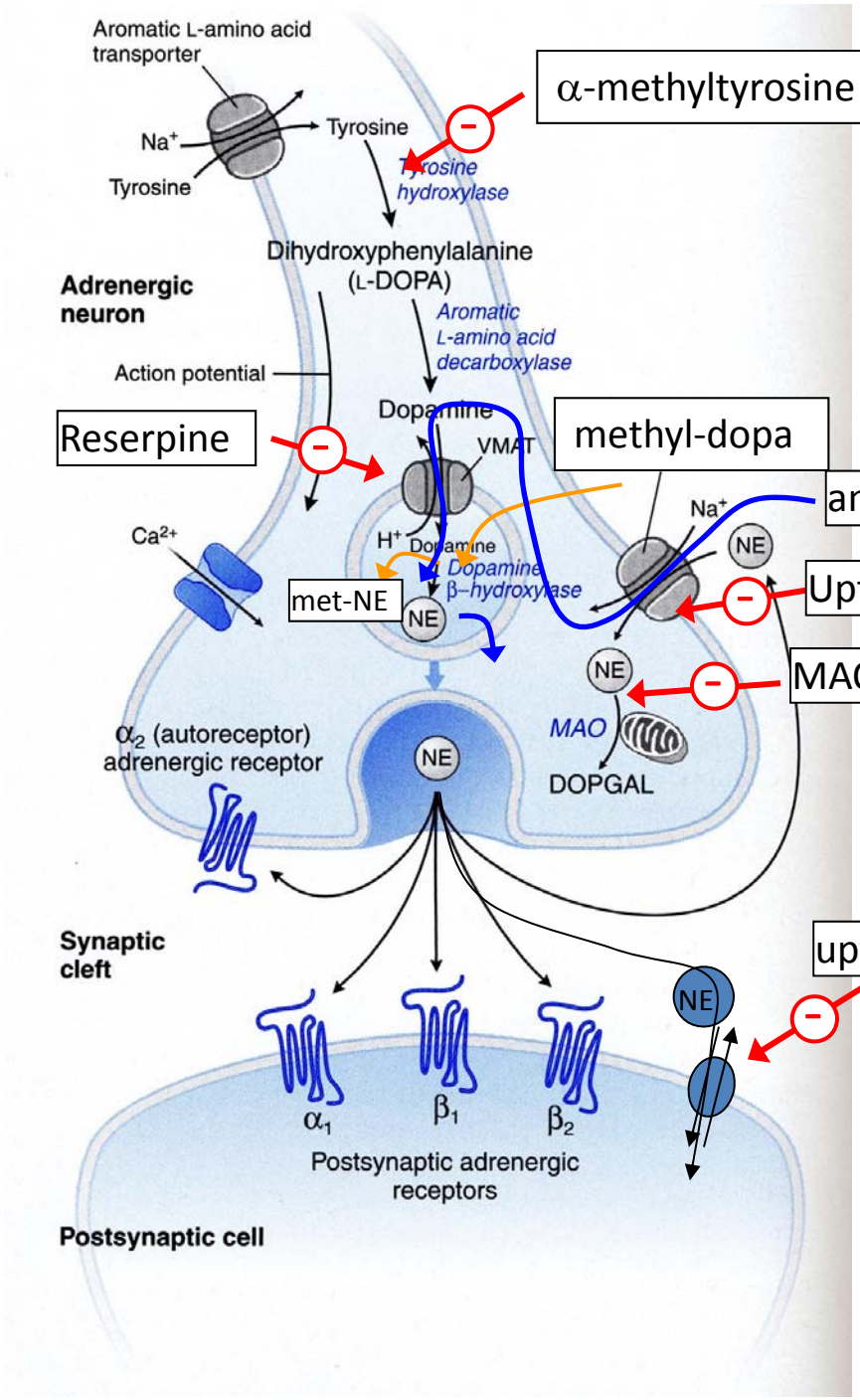
Drugs acting on noradrenergic nerve terminals



Drugs that affect noradrenaline synthesis:

- α-**methyltyrosine**: blocks tyrosine hydroxylase; not used clinically
- **Methyldopa** gives rise to false transmitter (methylnoradrenaline), which is a potent α_2 agonist, thus causing powerful presynaptic inhibitory feedback (also central actions). Rarely used as antihypertensive agent.

Drugs that affect transmitter transport:

- **Reserpine** blocks carrier-mediated noradrenaline accumulation in vesicles, thus depleting noradrenaline stores and blocking transmission. Effective in hypertension but may cause severe depression. Clinically obsolete.
- Indirectly acting sympathomimetic amines (e.g. **amphetamine**, **ephedrine**, **tyramine**) are accumulated by uptake 1 and displace noradrenaline from vesicles, allowing it to escape. Effect is much enhanced by monoamine oxidase (MAO) inhibition, which can lead to severe hypertension following ingestion of tyramine-rich foods (cheese, wine) by patients treated with MAO inhibitors.
- Indirectly acting sympathomimetic agents are central nervous system stimulants. **Methylphenidate** and **atomoxetine** are used to treat attention deficit-hyperactivity disorder.
- Drugs that inhibit uptake 1 include **cocaine** and **tricyclic antidepressant drugs**. Sympathetic effects are enhanced by such drugs.

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