Adrenergic receptor

α_1 (contraction)	α_2 (relaxation)	β_1	β_2	β_3
① Vasoconstruction for blood vessels, so ↑ BP	presynaptic ← على العصبي يعني بتنظم عكس (α1)	* (heart)	① bronchodilatation	Adipose tissue ← mainly in the upper part of the body ← تتوزع الدهون بشكل بطريقة غير متساوية في الجسم
② Uterus (in few time)	Adrenaline على تستخدم كمريضان وتعمل عكس ← α_1 receptor	① ↑ Heart rate	② Skeletal muscle ↳ ↑ blood flow (vaso dilatation) ↳ hypocalimin in blood. ↳ Facilitation of Nm receptor.	
③ Mydriasis because of radial muscle contraction		② ↑ conduction	③ Heart → dilatation of choronic artery	
④ GI ↳ wall → relaxation ↳ sphincter → contraction		③ ↑ contractility	④ glycolysis	
⑤ Urinary bladder ↳ wall → relaxation ↳ sphincter → contraction		* Kidney	⑤ Uterus relaxation	
⑥ Sweat gland (palm, forhead)		* adipose tissue in low concentration ←	⑥ تقلص عضلة الحلق عن طريق Aqueous humor of eye زيادة	

Gq
2nd messenger

↑ CAMP

Muscarinic receptor

Necotenic receptor

$M_1 \rightarrow Gq \uparrow Ca^+$	$M_2 \rightarrow \downarrow CAMP$	$M_3 \rightarrow Gq \uparrow Ca^+$	Nn	Nm
excitatory	inhibitory	excitatory	ganglia ↓	
① GI → ↑ mortality and ↑ Hcl with M_3	① heart → ↓ SAN, bradycardia ←	vasodilatation → ↓ BP ① blood vessles ↑ M_3 [ ] ↳ في كل مكان يكون parasympathetic nerve		skeletal muscle ↳ contraction
② CNS		② GI ↳ wall → contraction ↳ sphincter → relaxation		
		③ Urinary bladder ↳ wall → contraction ↳ sphincter → relaxation		
		④ Gland → ↑ Secretion		
		⑤ Eye → miosis ↳ ↓ Iop ↳ near vision		
		⑥ Smooth muscle → contraction		

* Drugs to treat these diseases

Diseases

Myasthemia gravis

① Neostigmine

بس لأنه non-selective للازم

نعطي معه Atropine حتى يسكر

(M receptor) ....

② Pyridostigmine

- more selective (N_m)
- We use it without Atropine.
- Longer duration

③ Edrophonium (tensilon)

- more selective than Neostigmine and pyridostigmine.
- Short duration (5 min) So it uses as a test

④ Immunosuppressive drug
↳ (prednisolone, azathioprine, cyclosporine)

⑤ Potassium chloride

⑥ Ephedrine → ↑ glycogenolysis and muscle blood flow and muscle potassium.

Glucoma

- Carpacol
- pilocarpine
- Cevimeline
- physiostigmine
- Isoflurophate
- Echothiophate
  (Its duration 2 weeks)
  ↳ not prefered

Alzeheimer disease

- physiostigmine
- Donibenzil
- Rivastigmine

Sjogren syndrom

- Pilocarpine
- Cevimeline