

2 année de médecine

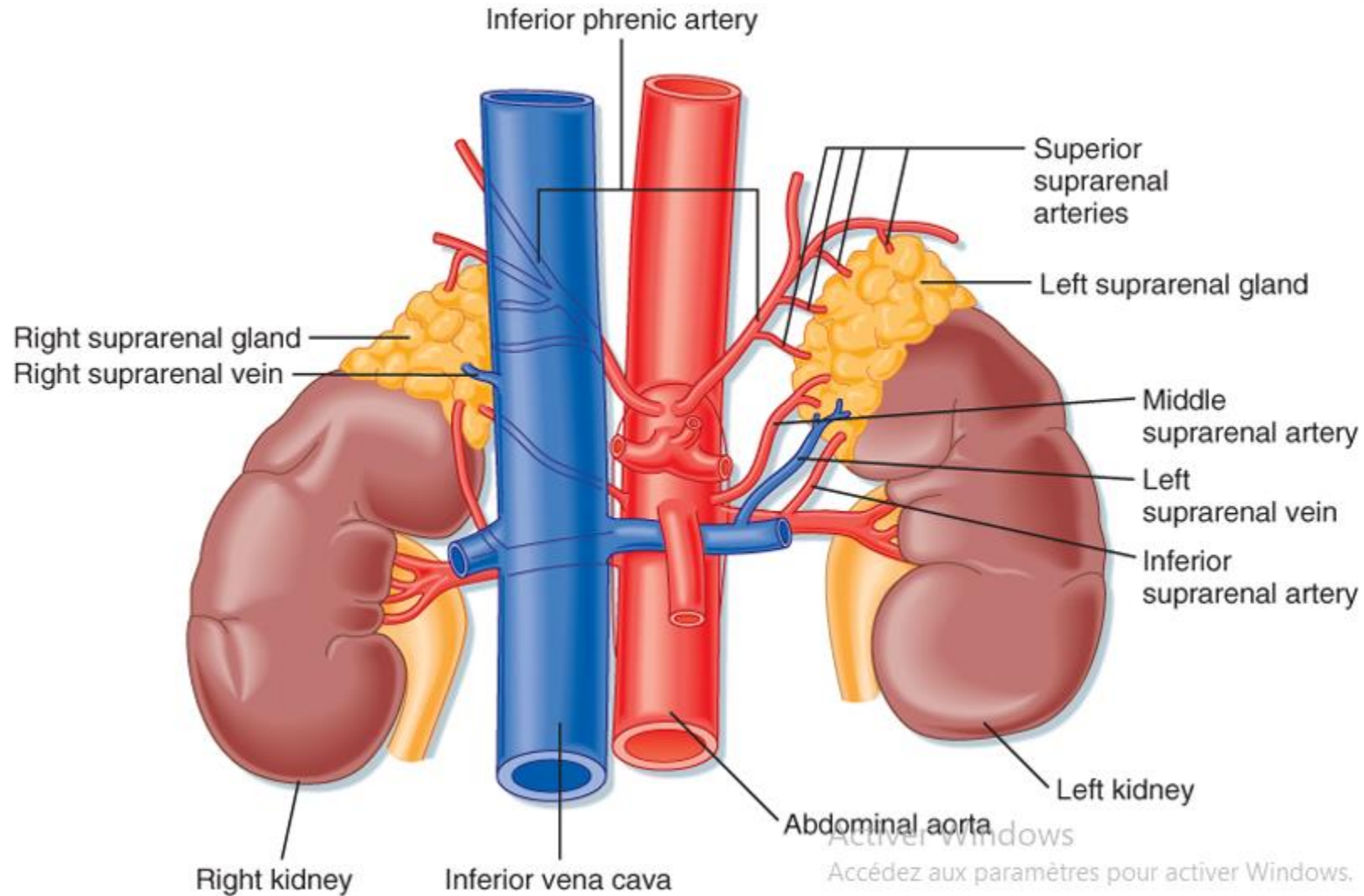
Surrénale

Physiologie

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17 Janvier 2019

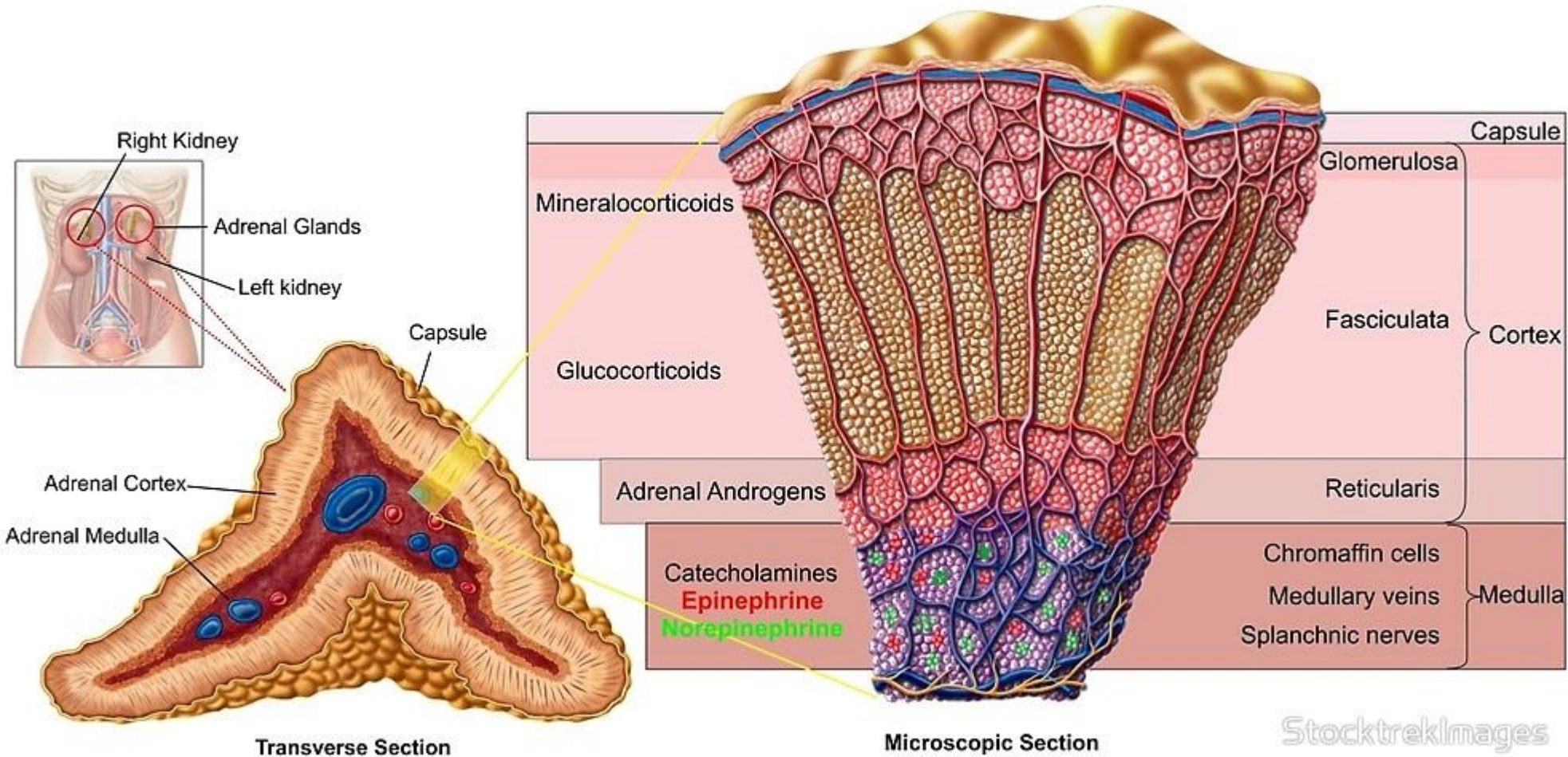
Anatomie

Surrénale



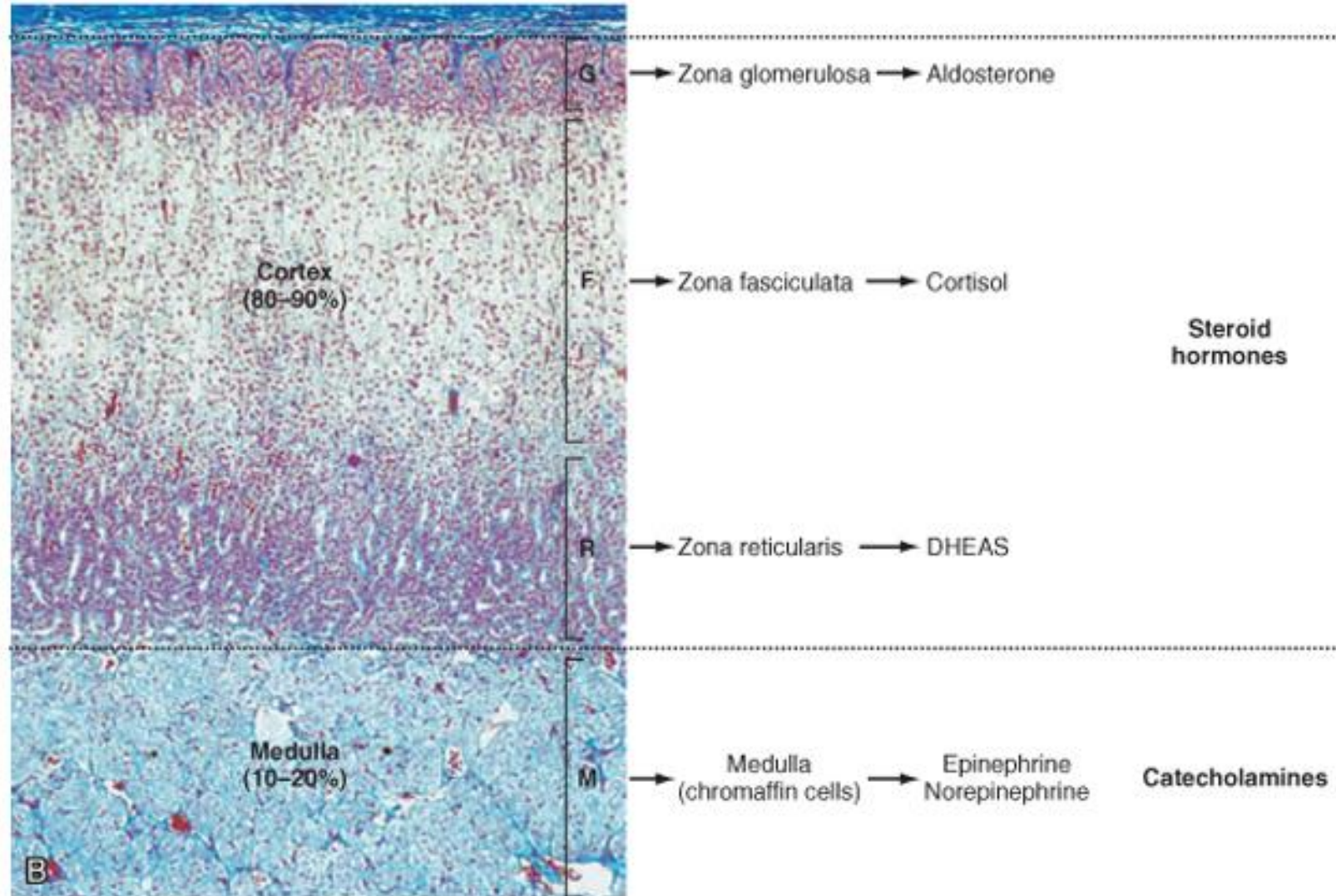
Histologie

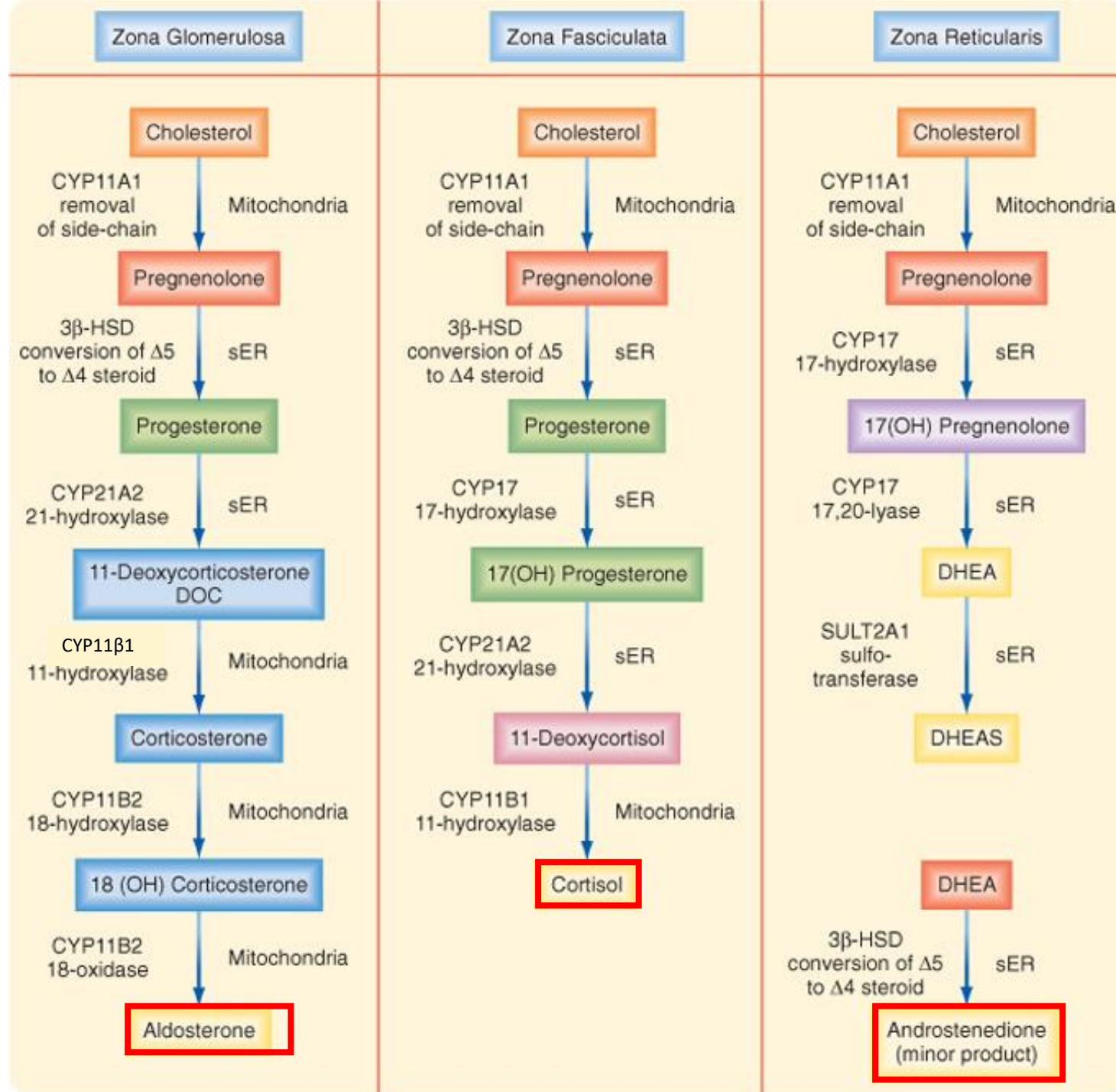
Surrénale



Histologie

Surrénale

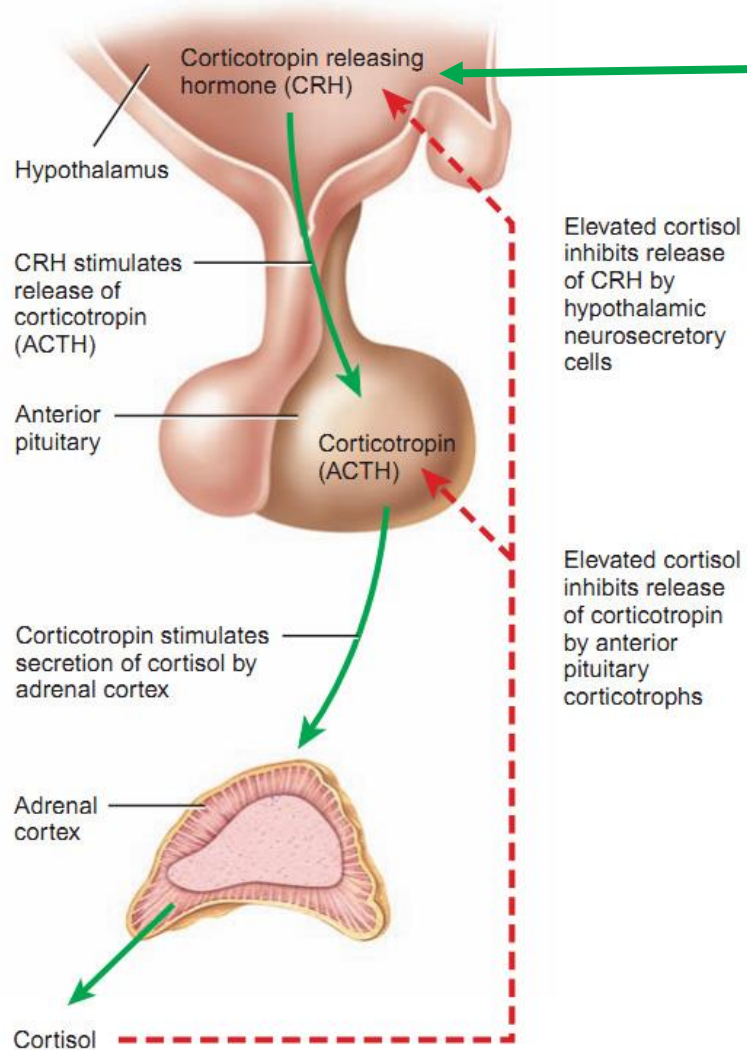




Cortisol: régulation

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Cortisol secreted by the adrenal cortex suppresses secretion of CRH and ACTH.



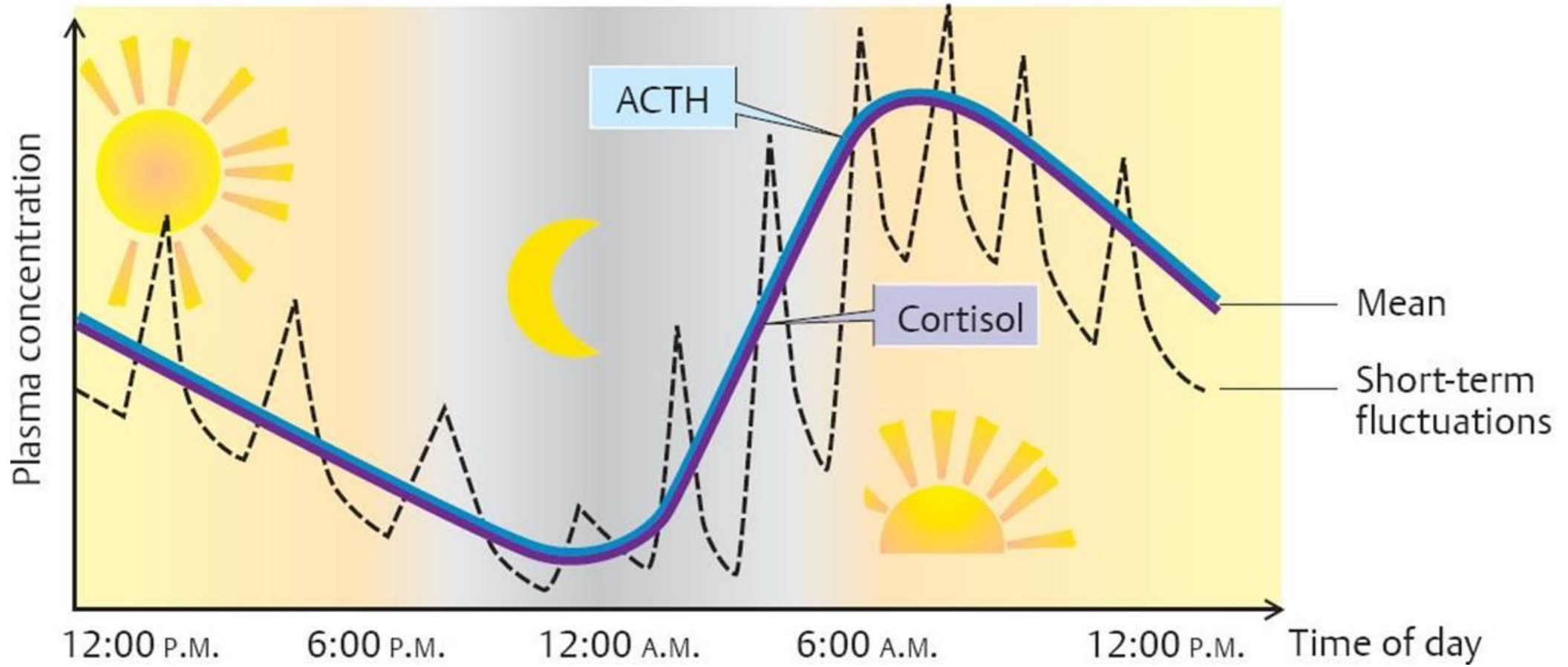
1. Stress physique
2. Stress psychologique
3. Hypoglycémie
4. Hémorragie

Elevated cortisol inhibits release of CRH by hypothalamic neurosecretory cells

Elevated cortisol inhibits release of corticotropin by anterior pituitary corticotrophs

Cortisol

Surrénale



Cortisol: effets métaboliques

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Foie

- ↗ néoglucogenèse
- ↗ glycogénolyse

Muscle

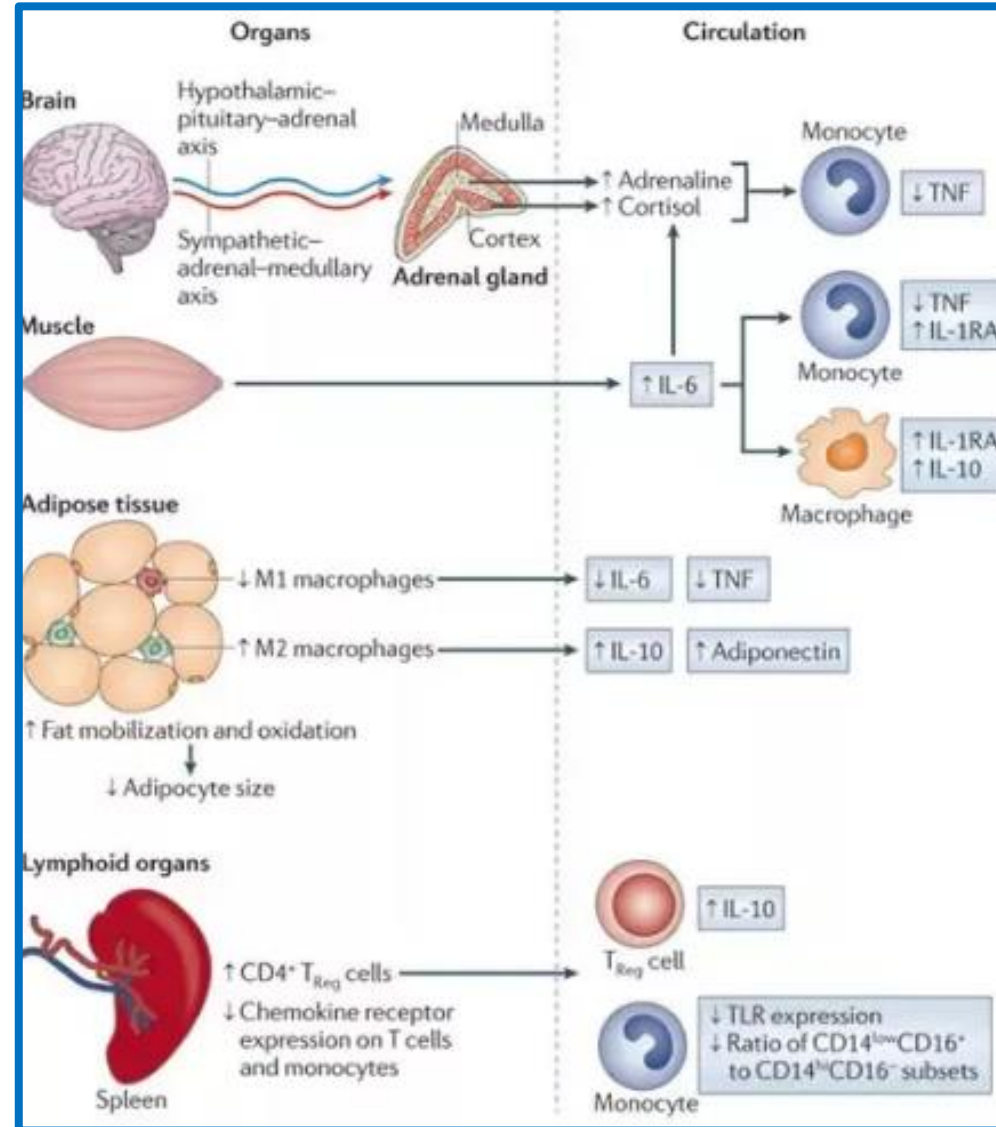
- ↘ entrée du glucose
- ↗ glycogénolyse
- ↗ catabolisme protidique

Tissu
adipeux

- ↘ entrée du glucose
- ↗ lipolyse

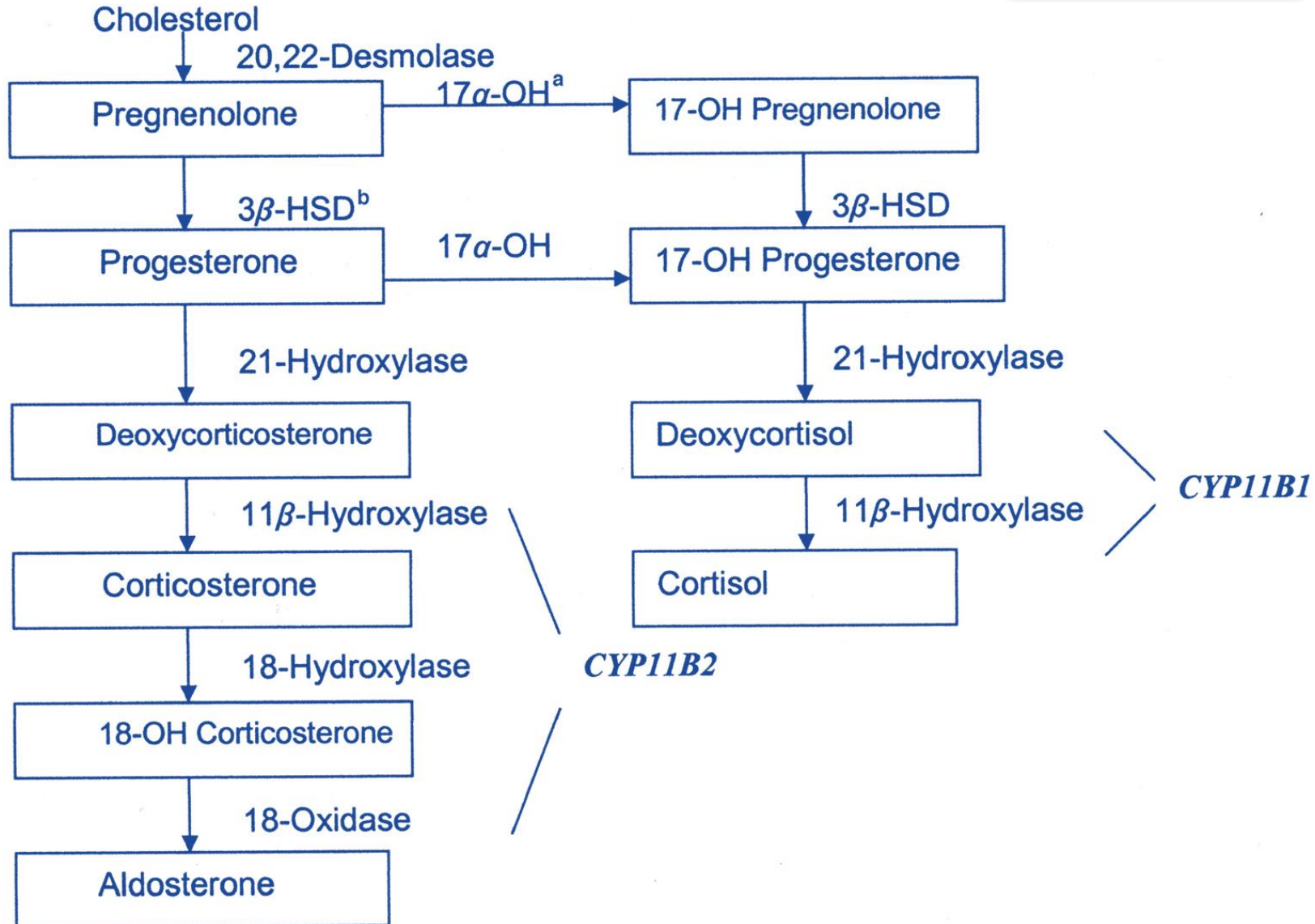
Cortisol: effet sur l'immunité

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Aldostérone: synthèse

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Aldostérone: rôle

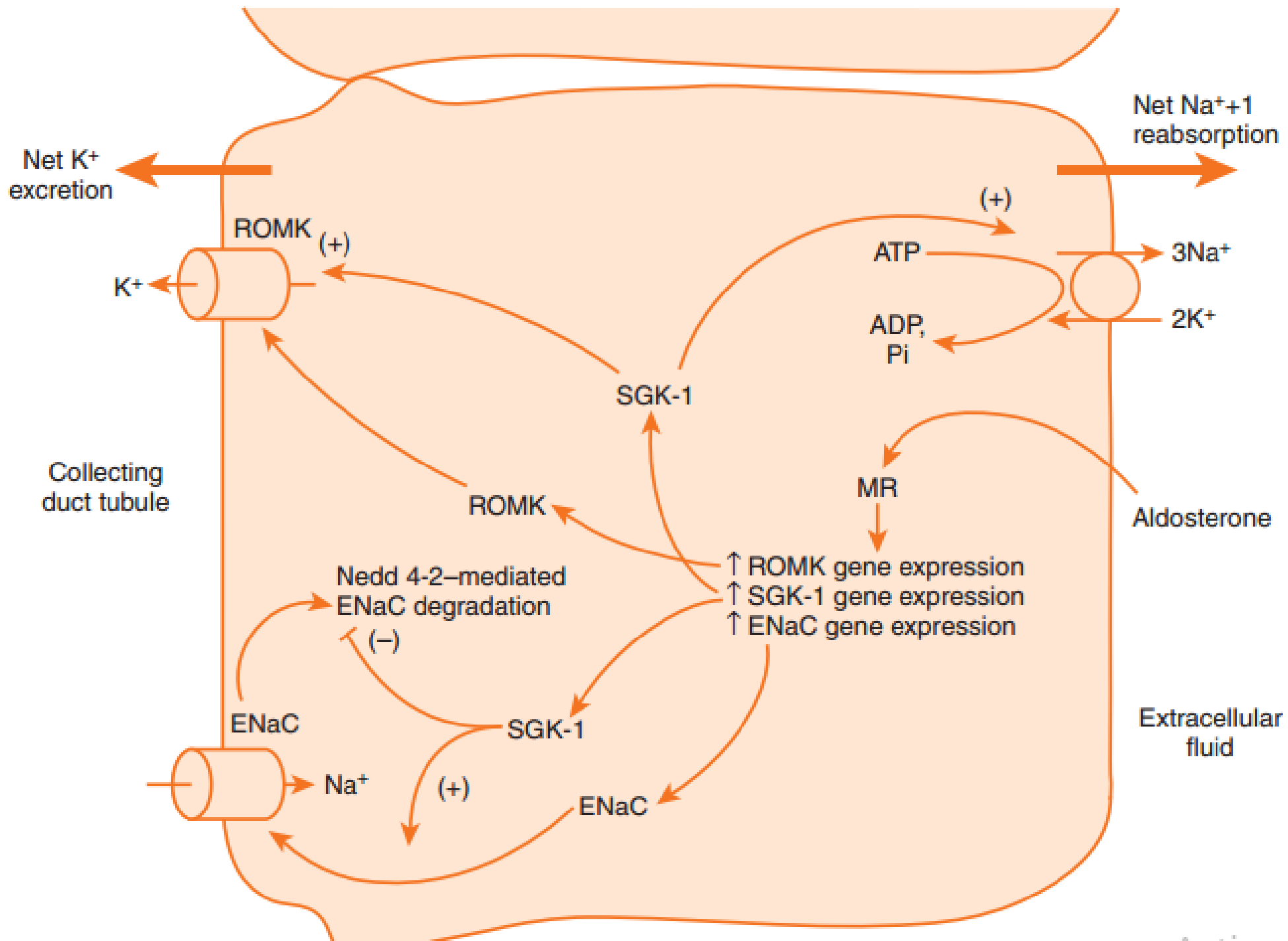
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1. Osmorégulation
2. Régulation de la pression artérielle

Aldostérone: organes cibles

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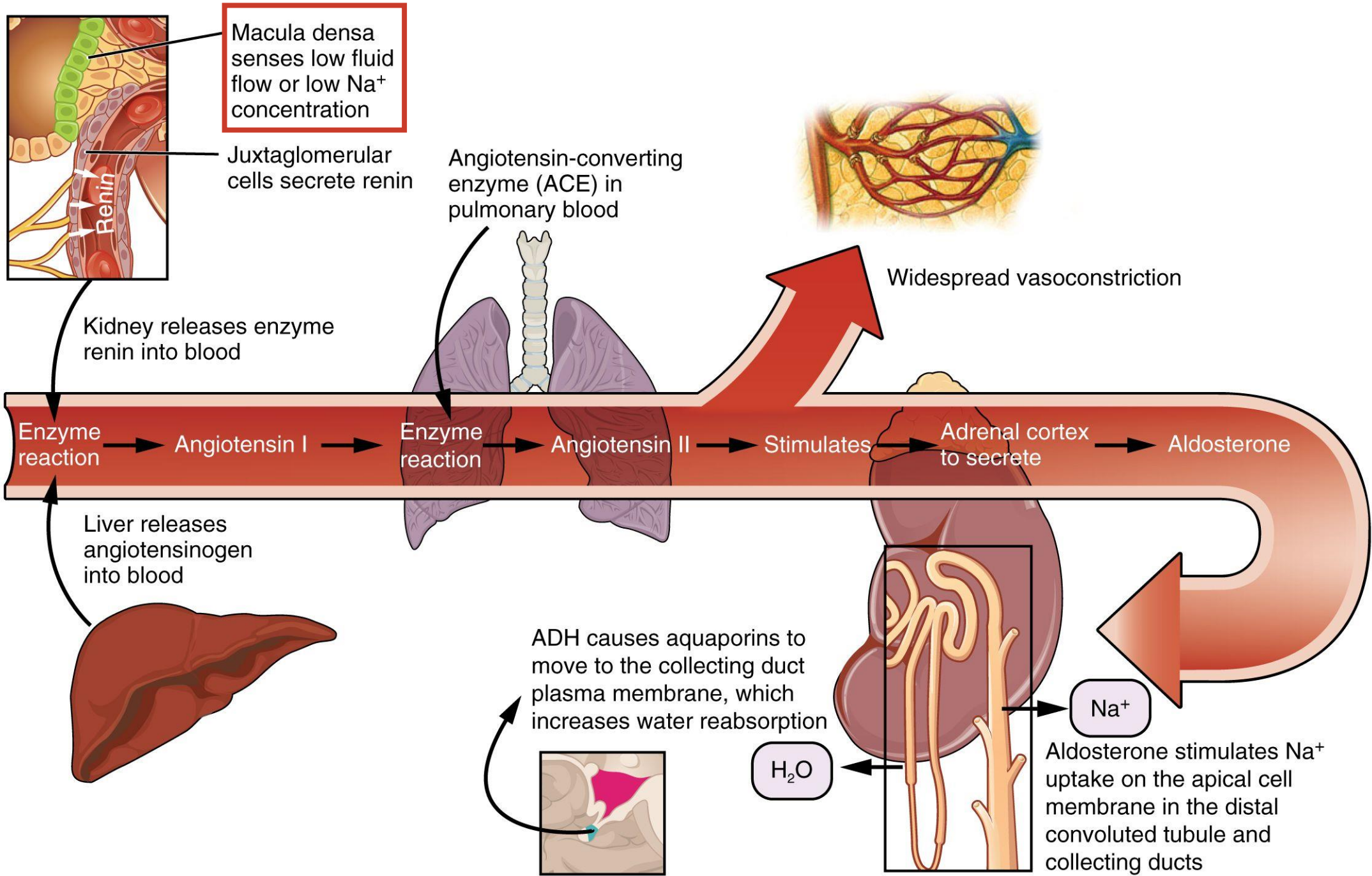
1. Rein +++
2. Colon
3. Glandes salivaires
4. Glandes sudoripares
5. Glandes gastriques
6. Myocarde: action proinflammatoire et profibrotique: HVG



Aldostérone: régulation

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Macula densa senses low fluid flow or low Na^+ concentration

Juxtaglomerular cells secrete renin

Kidney releases enzyme renin into blood

Angiotensin-converting enzyme (ACE) in pulmonary blood

Widespread vasoconstriction

Enzyme reaction

Angiotensin I

Enzyme reaction

Angiotensin II

Stimulates

Adrenal cortex to secrete

Aldosterone

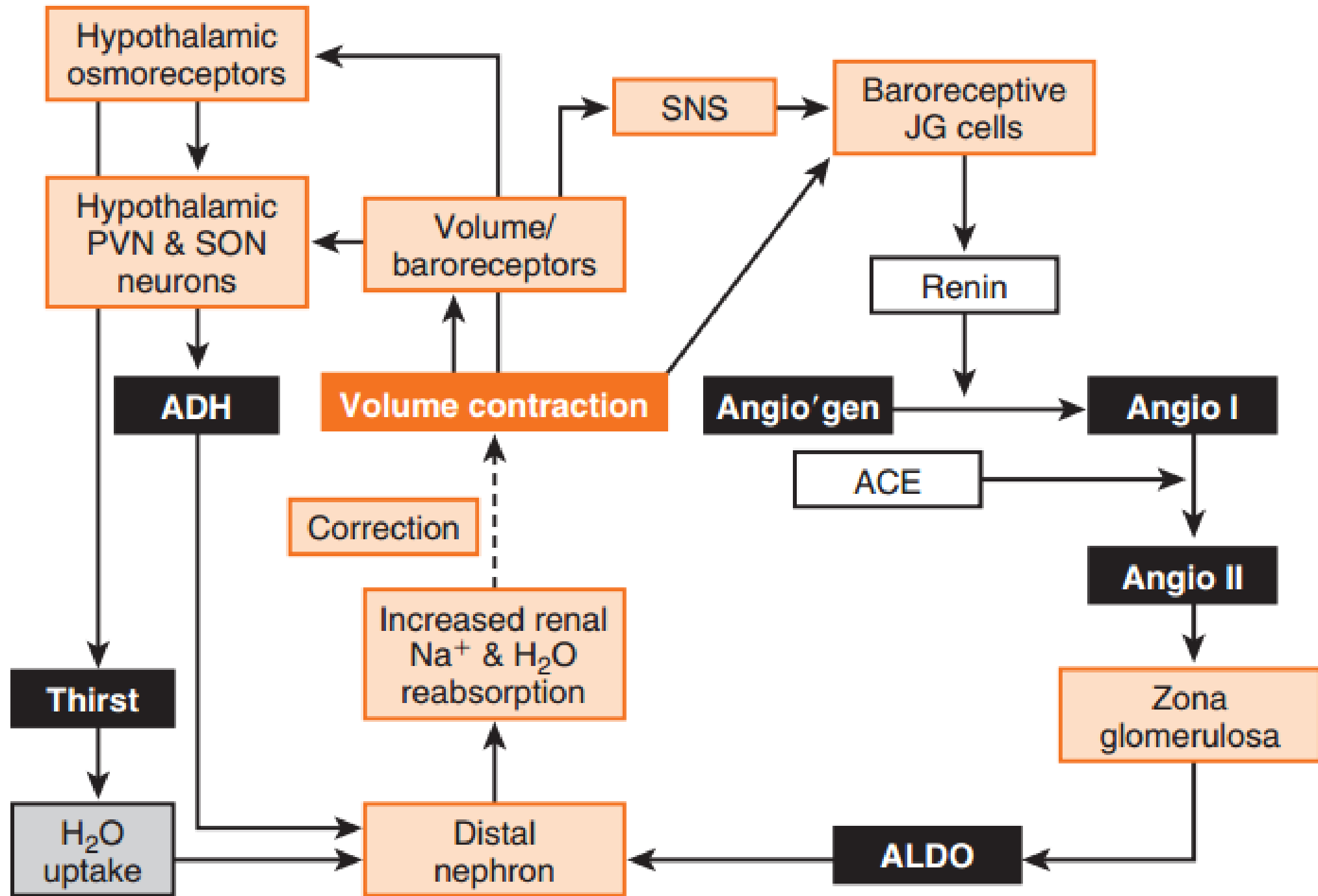
Liver releases angiotensinogen into blood

ADH causes aquaporins to move to the collecting duct plasma membrane, which increases water reabsorption

H_2O

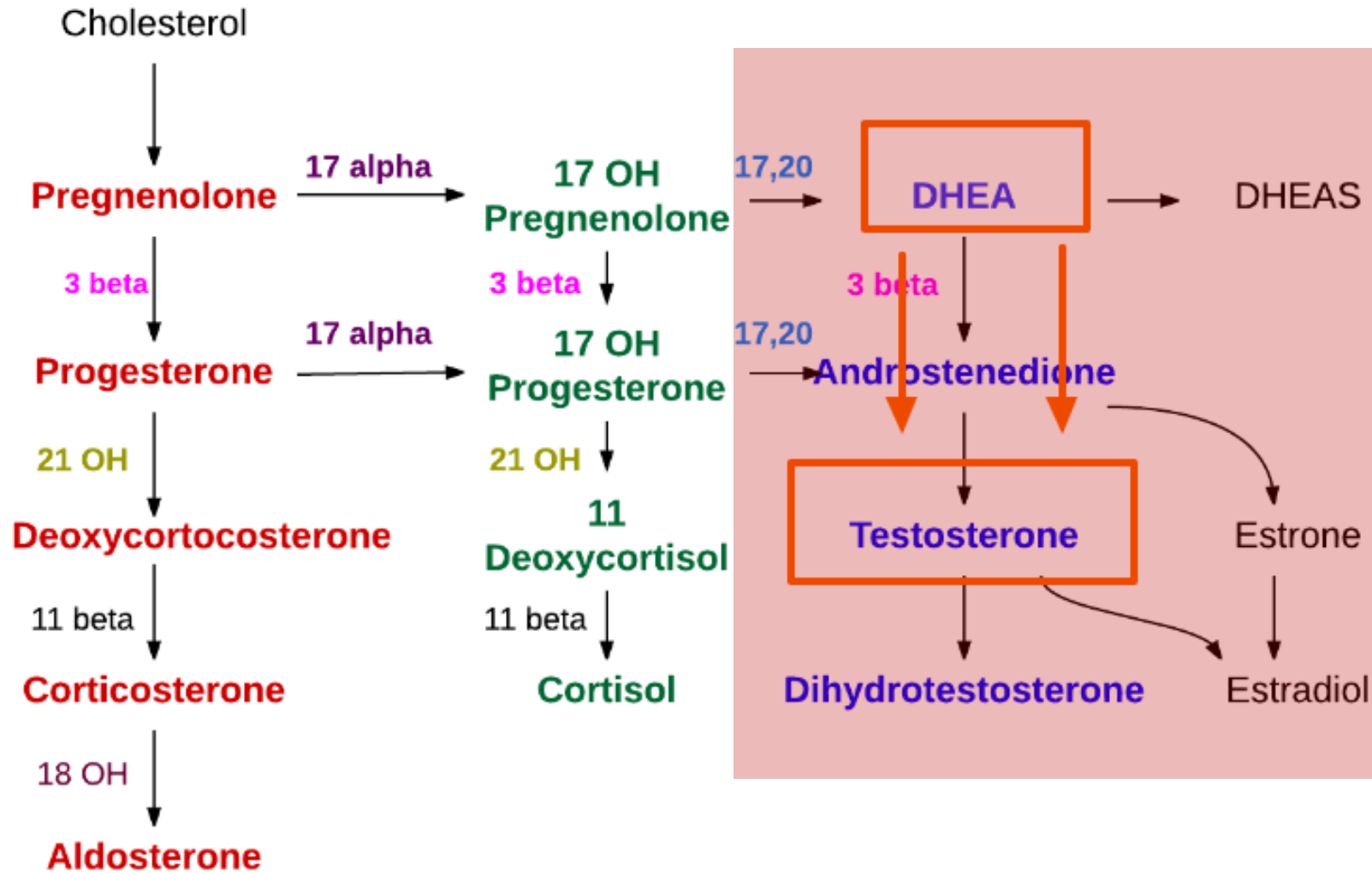
Na^+

Aldosterone stimulates Na^+ uptake on the apical cell membrane in the distal convoluted tubule and collecting ducts



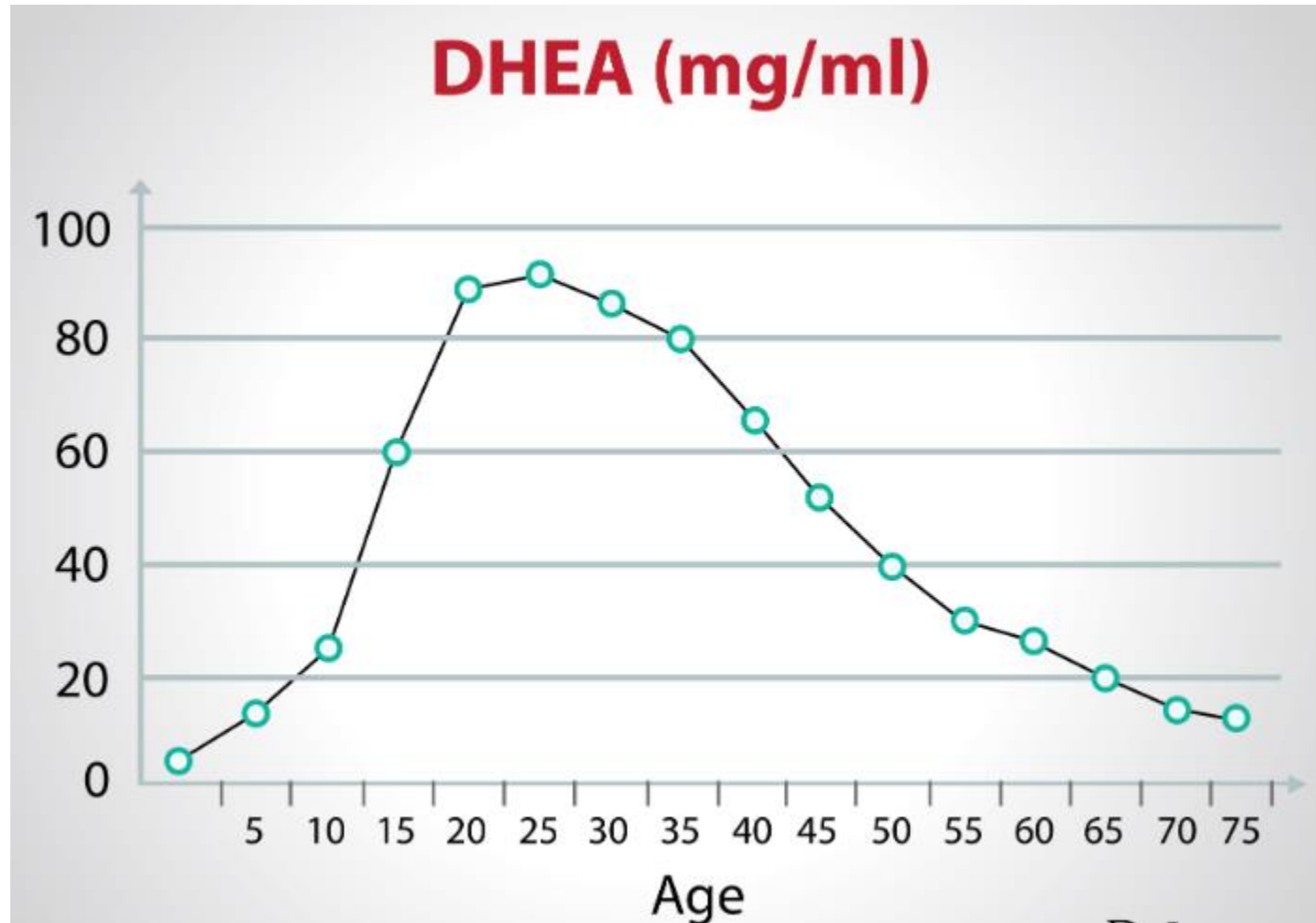
Androgènes: biosynthèse

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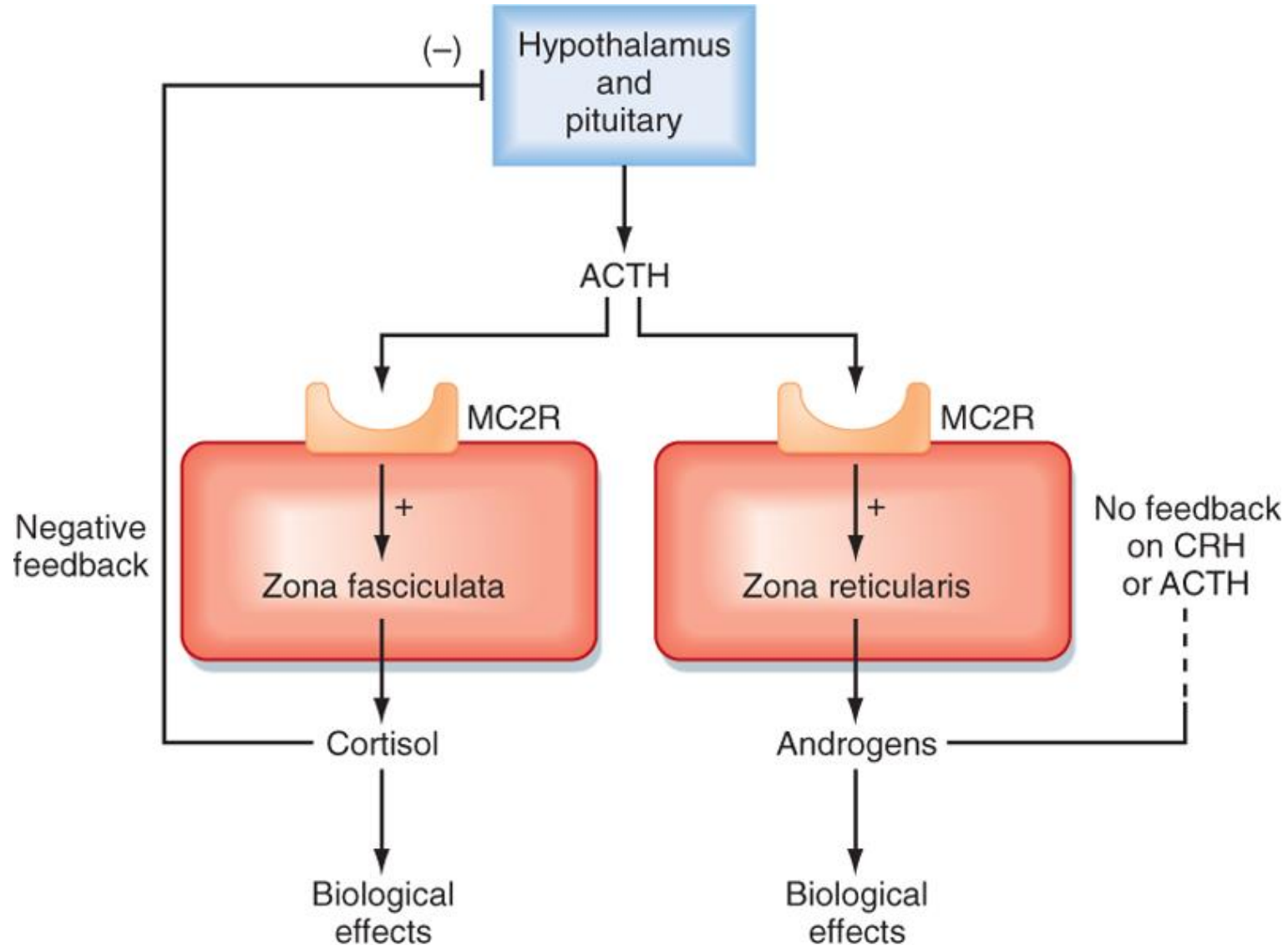
Androgènes: régulation

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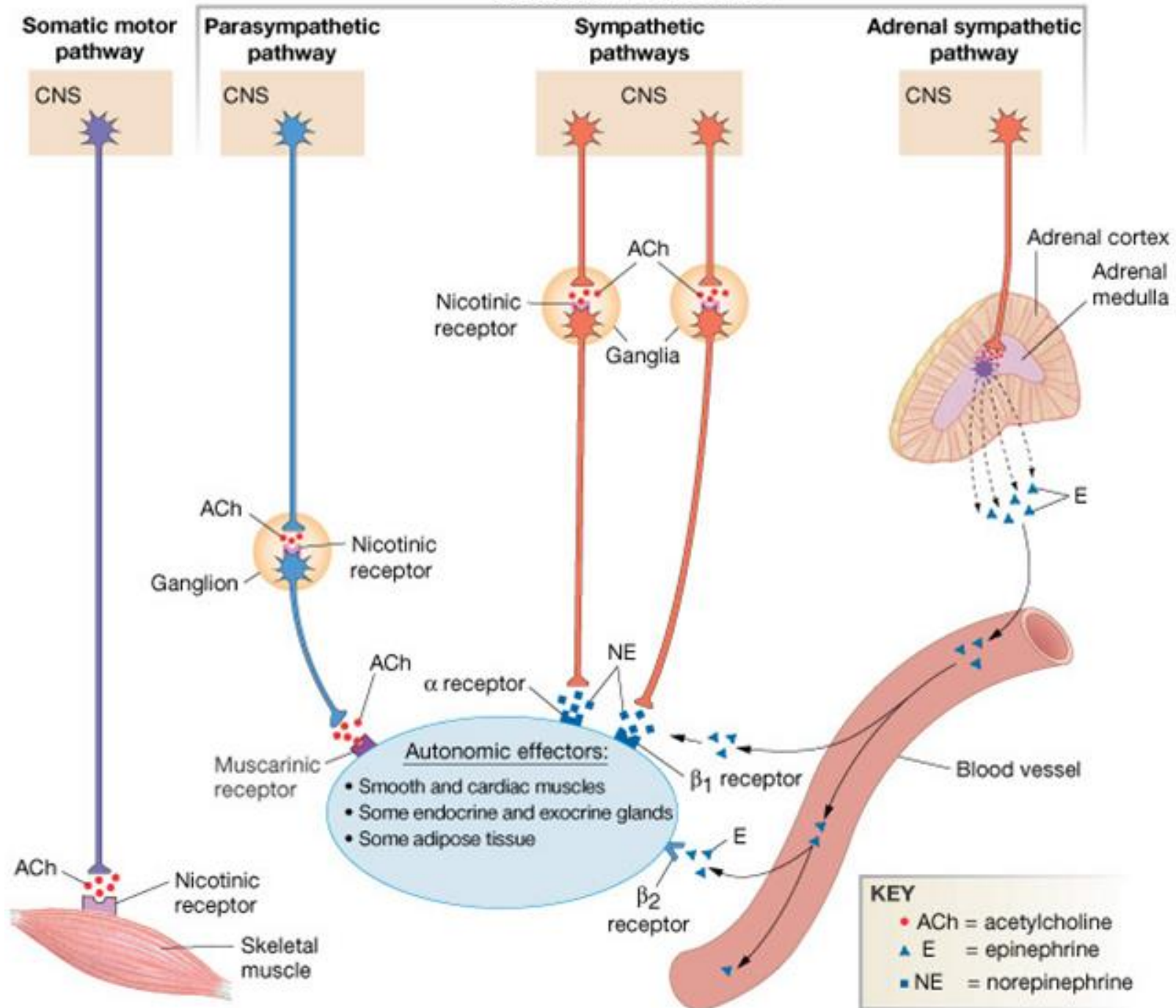


Androgènes: régulation

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AUTONOMIC PATHWAYS



Parasympathetic division

Sympathetic division

Action on target organs:

Action on target organs:

Location of preganglionic neurons: brainstem and sacral segments of spinal cord

Location of preganglionic neurons: thoracic and lumbar segments of spinal cord

Neurotransmitter released by preganglionic neurons: acetylcholine

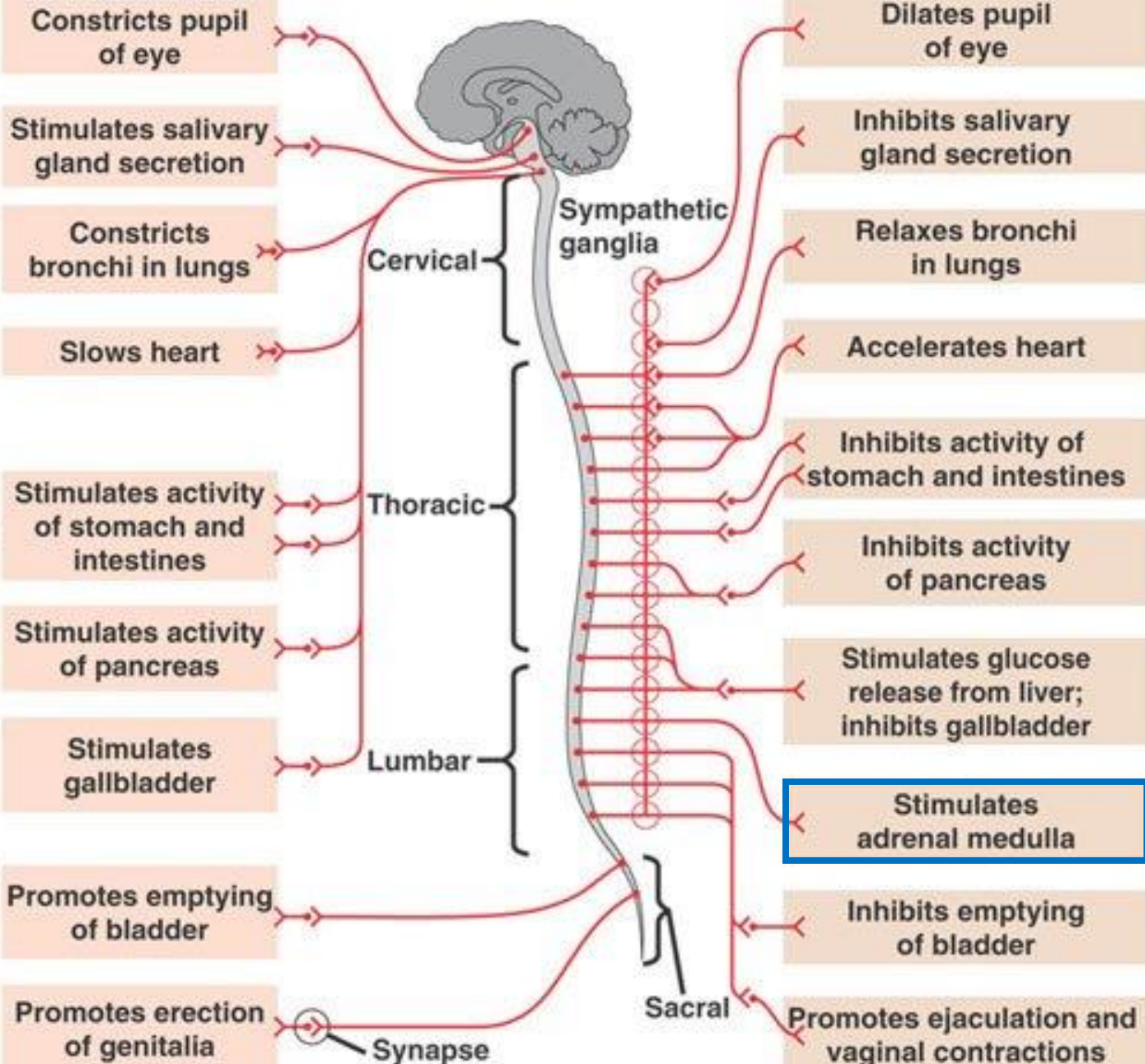
Neurotransmitter released by preganglionic neurons: acetylcholine

Location of postganglionic neurons: in ganglia close to or within target organs

Location of postganglionic neurons: some in ganglia close to target organs; others in a chain of ganglia near spinal cord

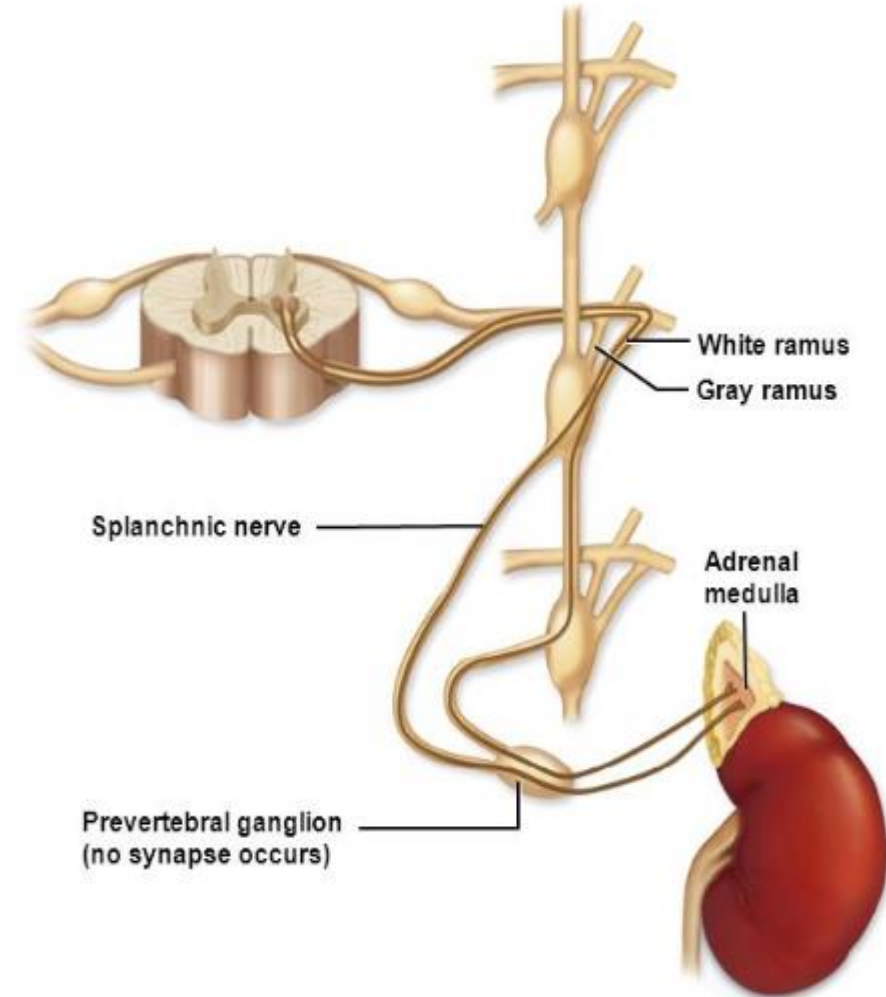
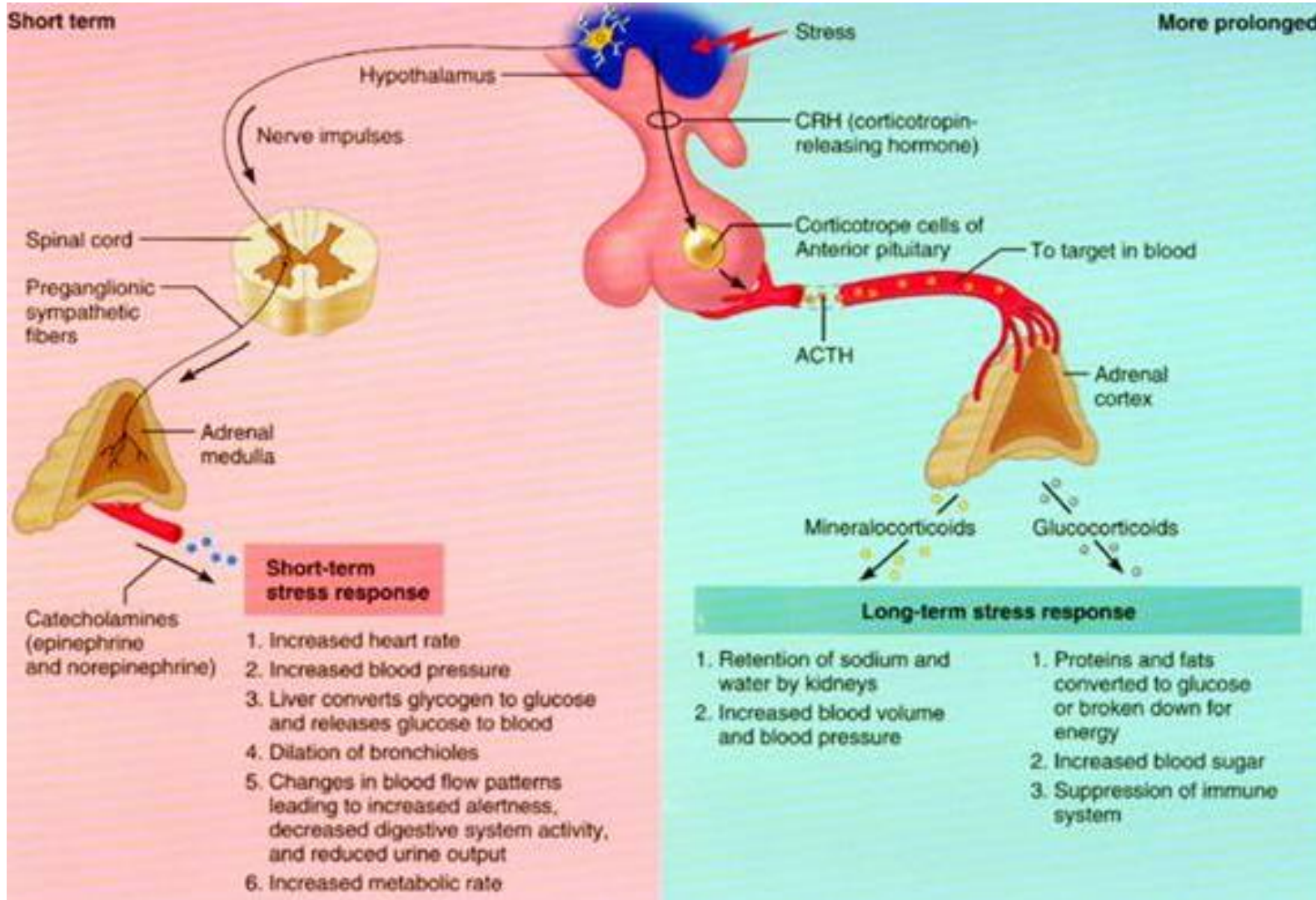
Neurotransmitter released by postganglionic neurons: acetylcholine

Neurotransmitter released by postganglionic neurons: norepinephrine

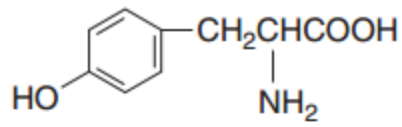


Médullosurrénale

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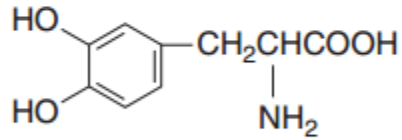
(d) Adrenal medulla pathway



Tyrosine

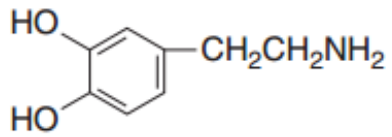
Sympathetic stimulation

Tyrosine hydroxylase



Dihydroxyphenylalanine (DOPA)

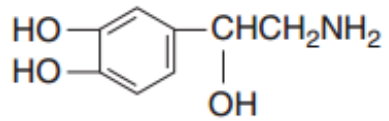
Amino acid decarboxylase

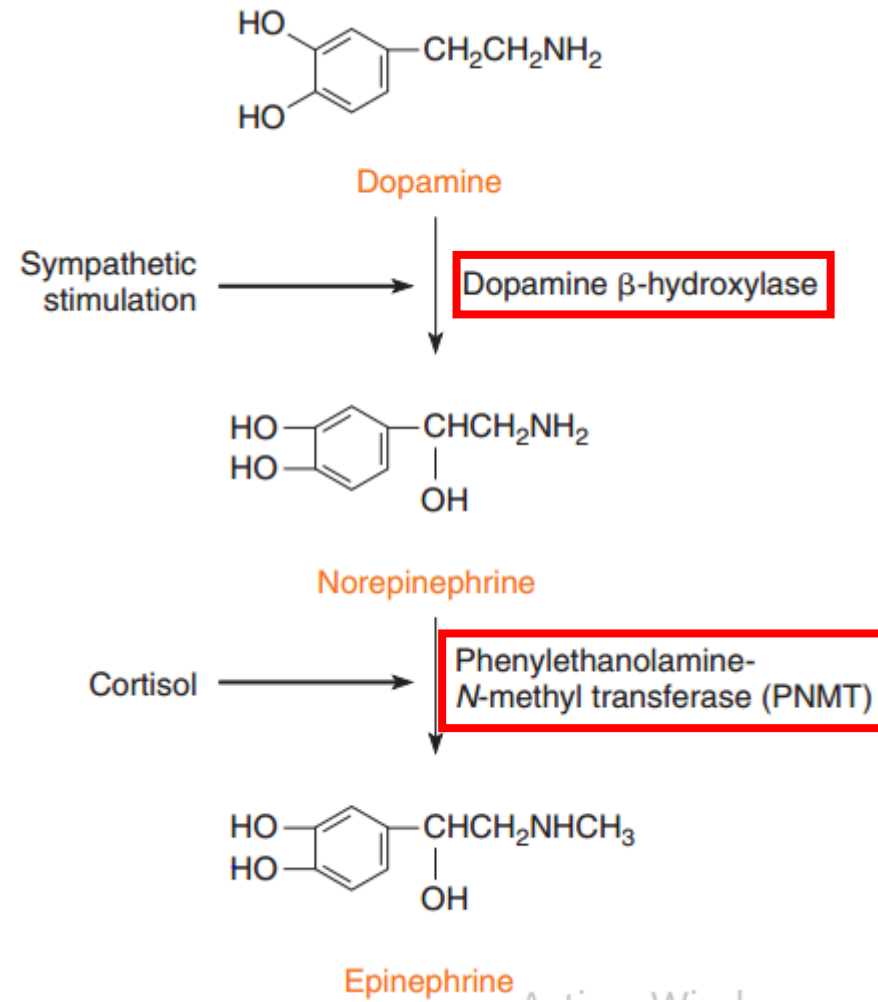


Dopamine

Sympathetic stimulation

Dopamine β-hydroxylase





Catécholamines: récepteurs

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Catecholamine Receptors

RECEPTOR TYPE	PRIMARY MECHANISM OF ACTION	EXAMPLES OF TISSUE DISTRIBUTION	AGONIST POTENCY
α_1	\uparrow IP ₃ , DAG	Vascular smooth muscle	Epinephrine \approx norepinephrine
α_2	\downarrow cAMP	Pancreatic β cells	Epinephrine \approx norepinephrine
β_1	\uparrow cAMP	Heart	Epinephrine = norepinephrine
β_2	\uparrow cAMP	Liver	Epinephrine \gg norepinephrine
β_3	\uparrow cAMP	Adipose	Norepinephrine \gg epinephrine

cAMP, cyclic adenosine monophosphate; DAG, diacylglycerol; IP₃, inositol triphosphate.

Catécholamines: effets

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