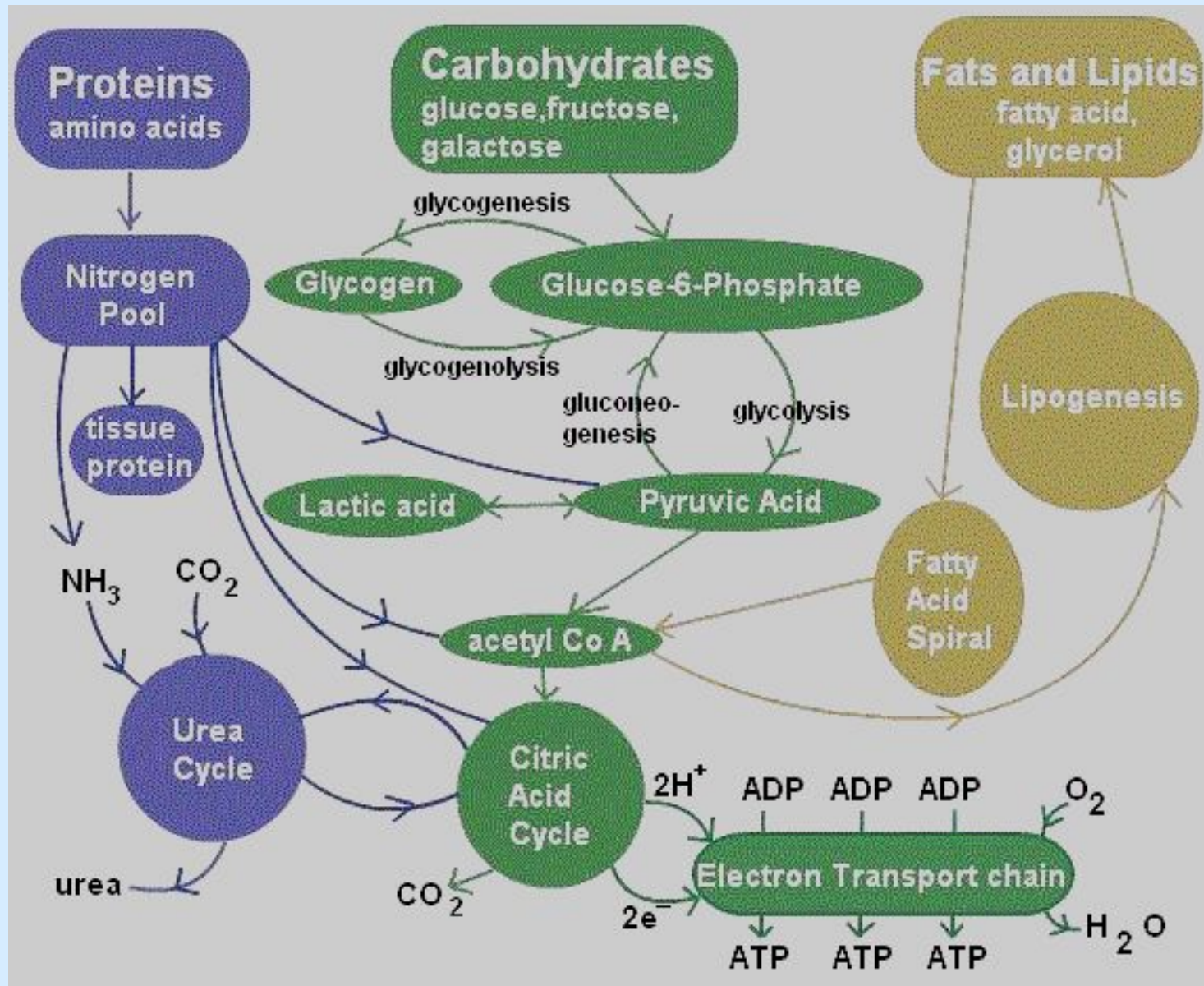


REGULATION OF METABOLISM

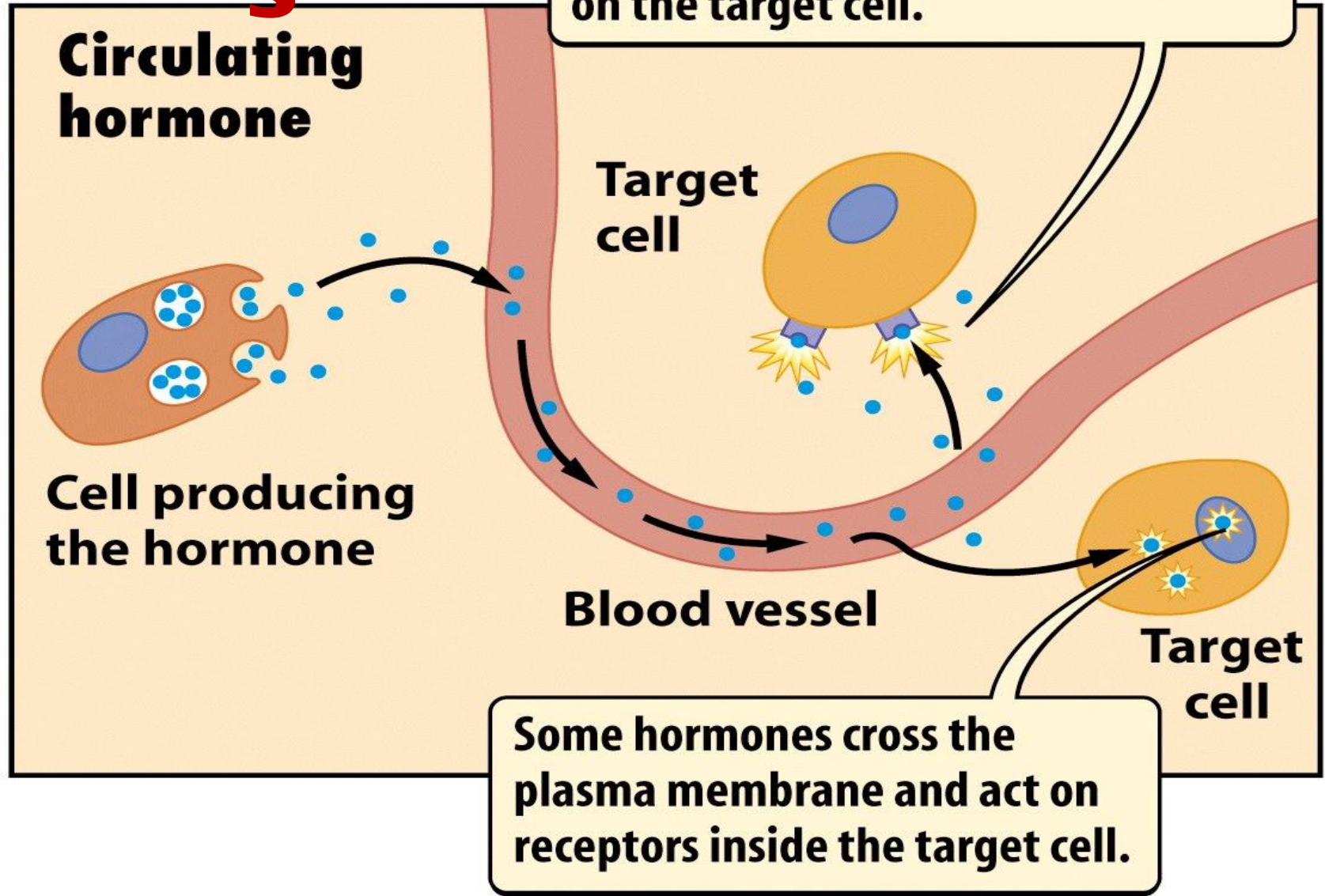


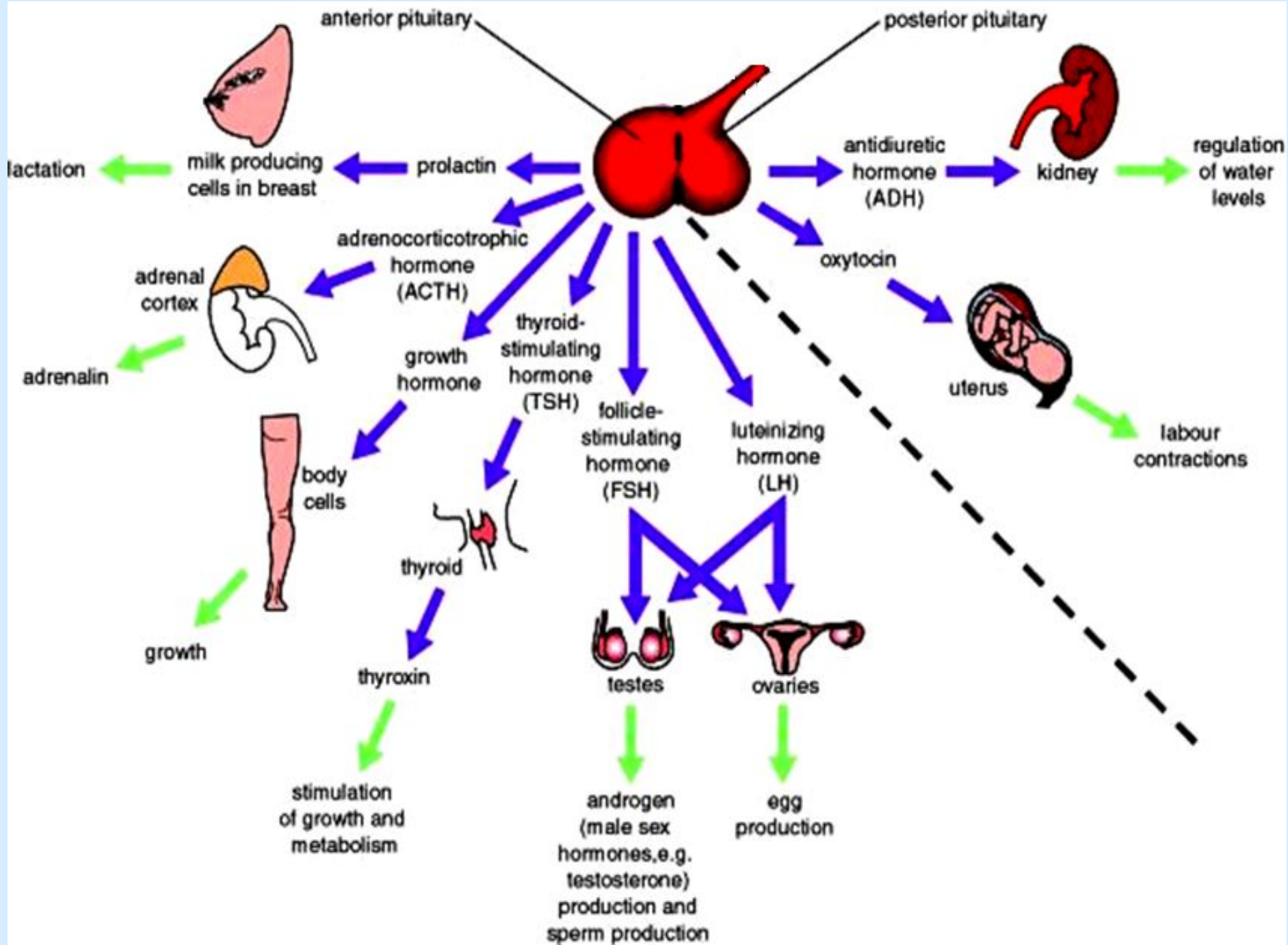
Metabolism



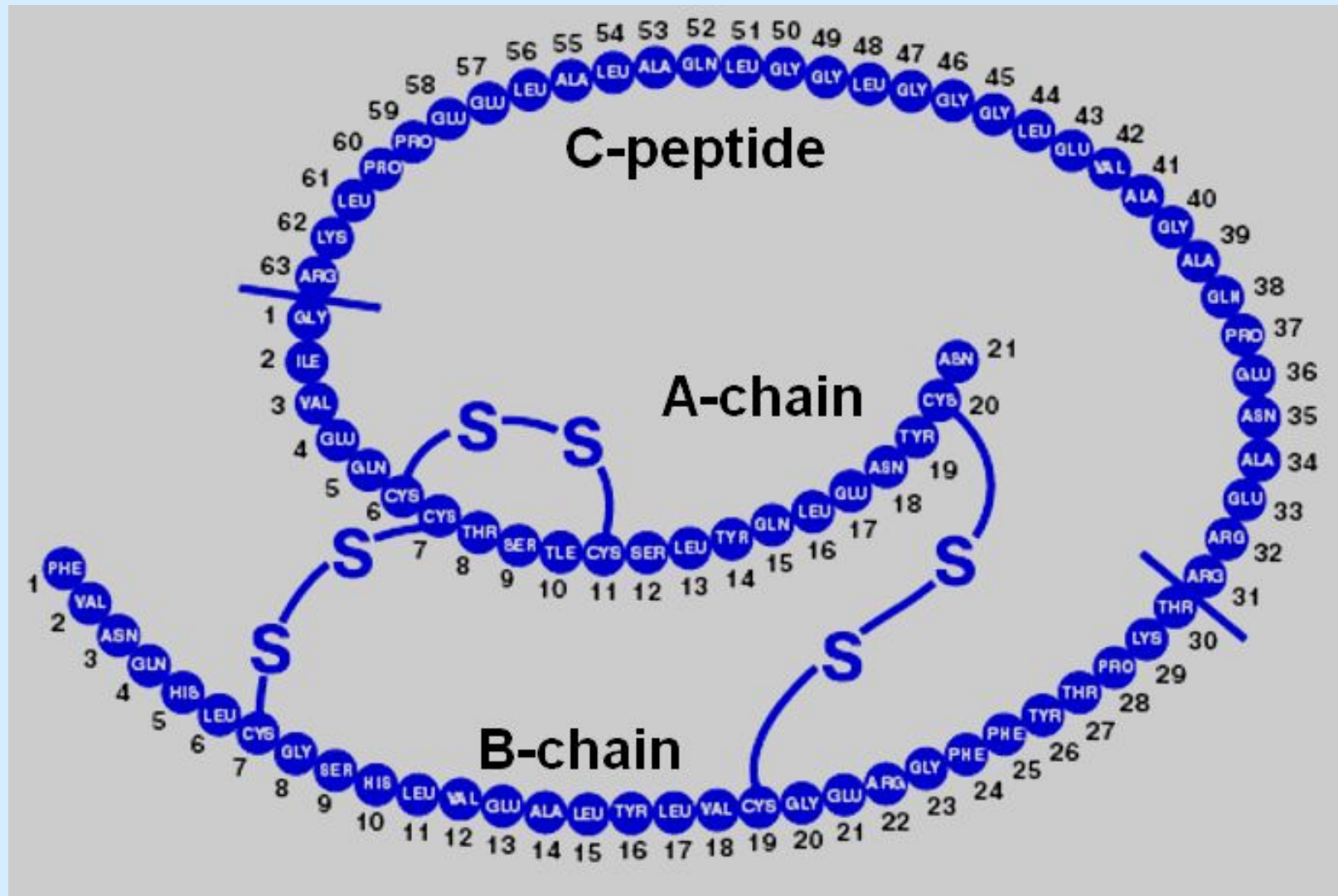
Hormone

S

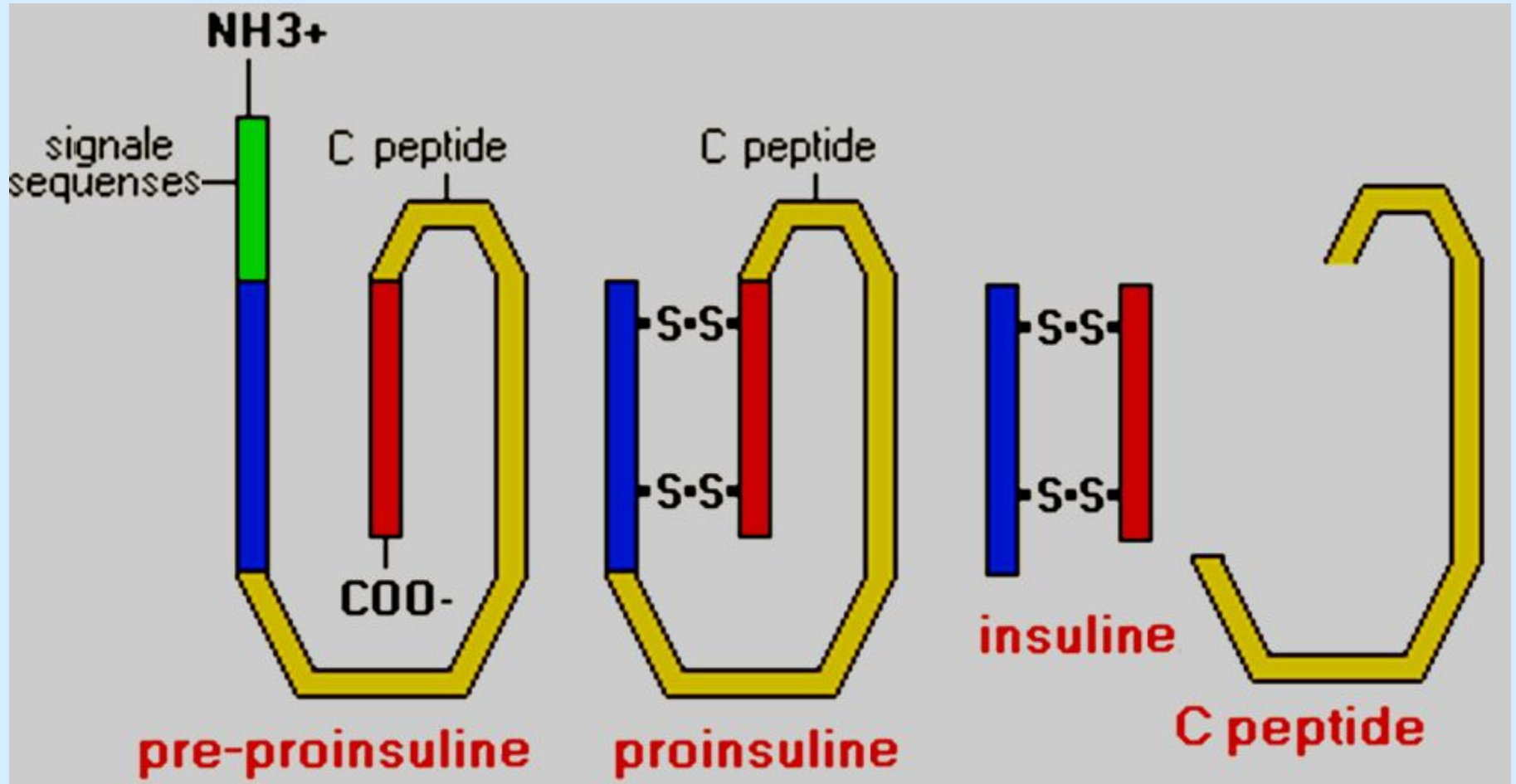




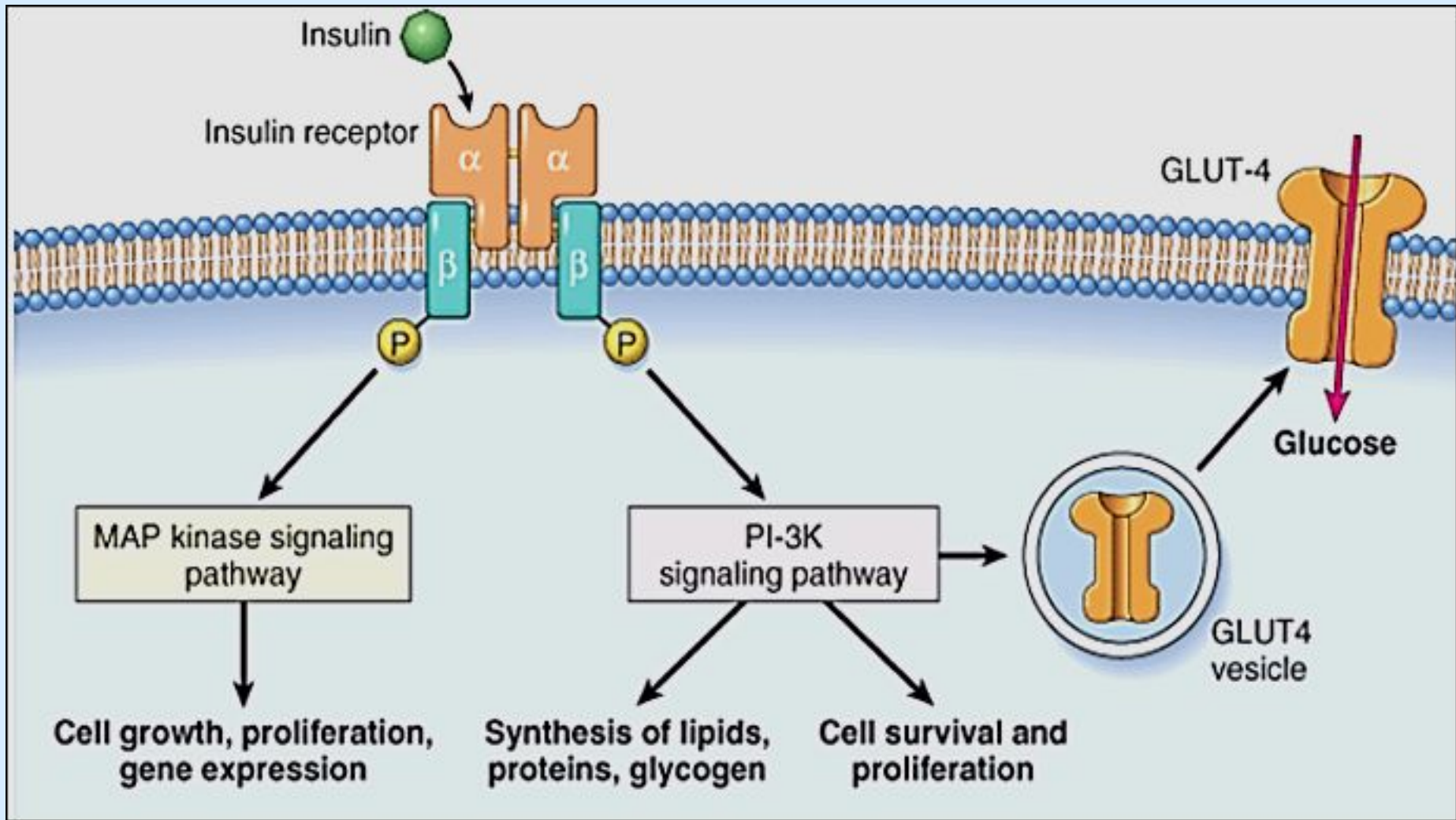
Insuline



The formation of active insulin



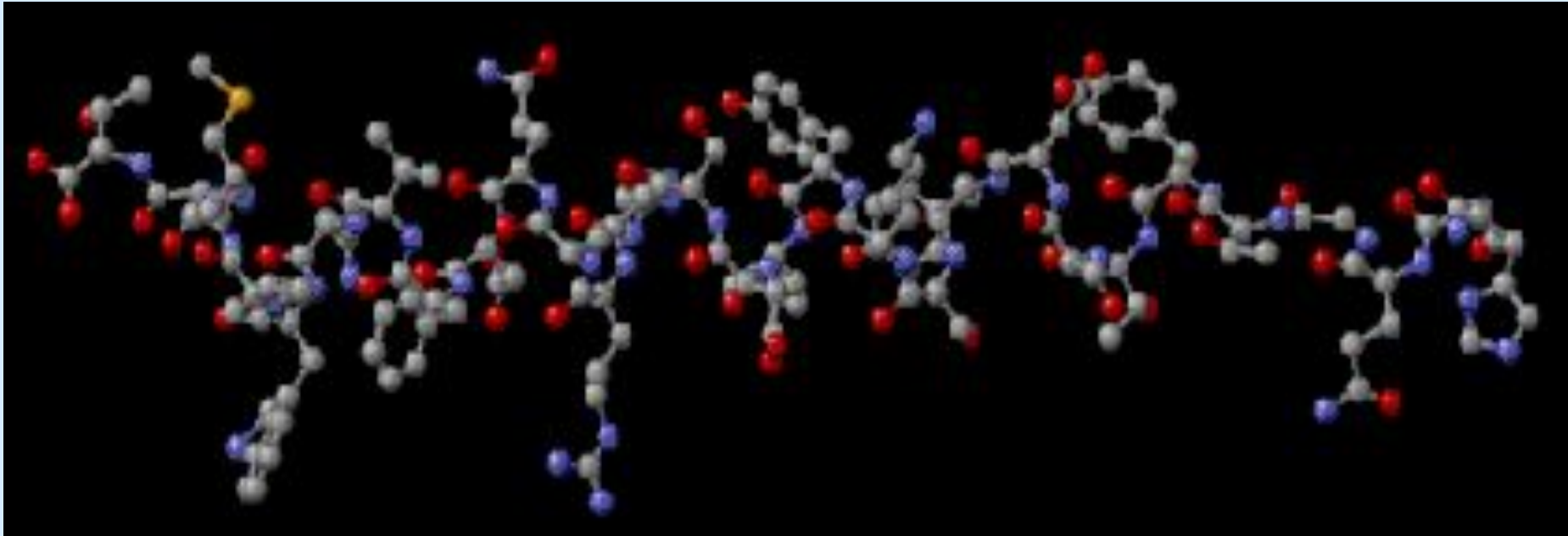
Insulin receptor



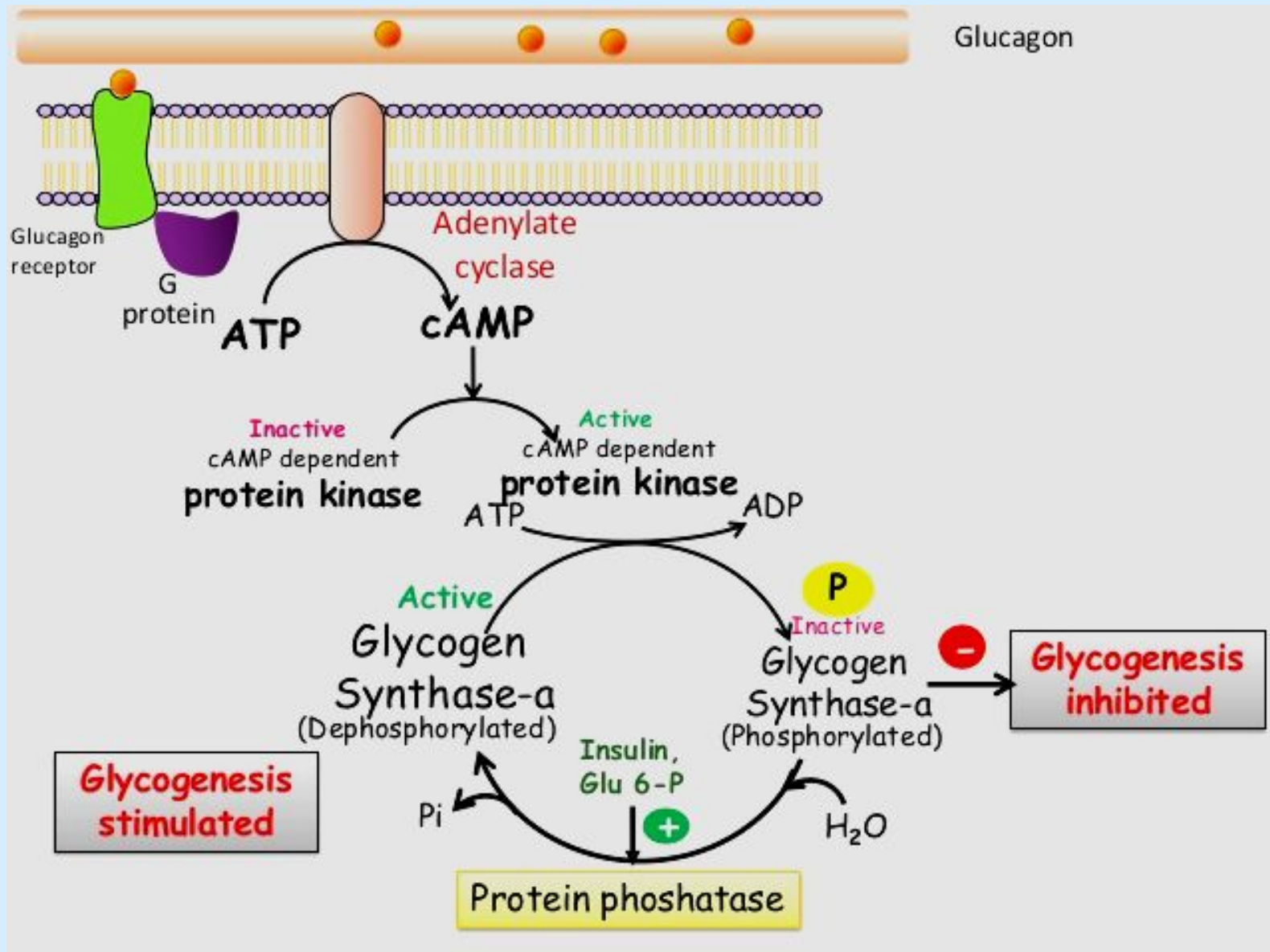
Insulin

The signal for secretion	Target organs	Changes in metabolism in target cells
Increasing the concentration of glucose in the blood	Liver	1. The acceleration of glycogen synthesis
		2. The acceleration of protein synthesis
		3. Inhibition of gluconeogenesis
	Muscles	1. The acceleration of glycogen synthesis
		2. The acceleration of protein synthesis
		3. The acceleration of glucose transport into the cell
	Adipose tissue	1. The acceleration of fat synthesis from glucose
		2. The acceleration of glucose

Glucagon



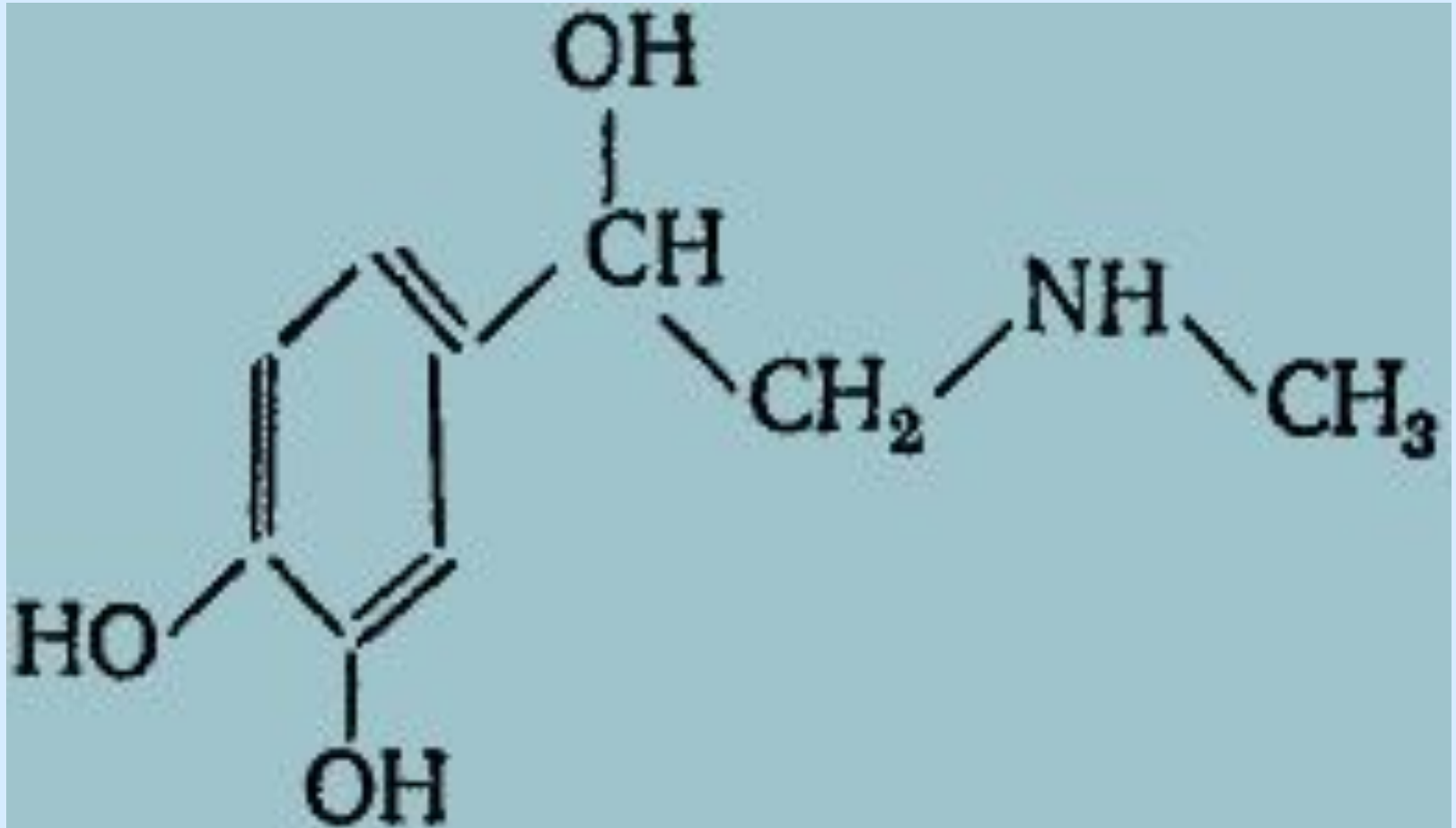
Glucagon receptor



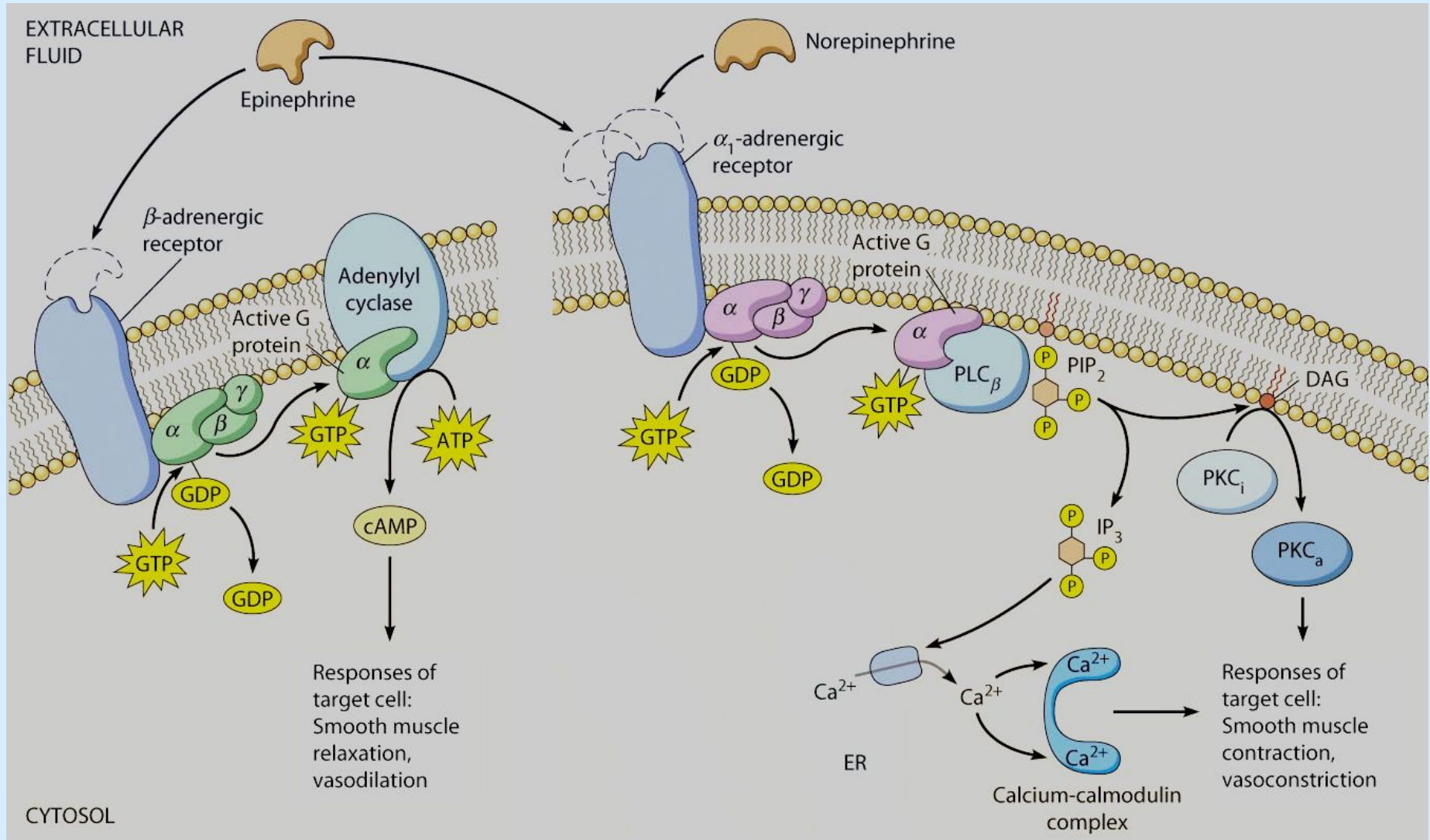
Glucagon

The signal for secretion	Target organs	Changes in metabolism in target cells
Lowering blood glucose levels	Liver	1. The acceleration of glycogen breakdown 2. The acceleration of gluconeogenesis
	Adipose tissue	The acceleration of lipolysis

Adrenaline



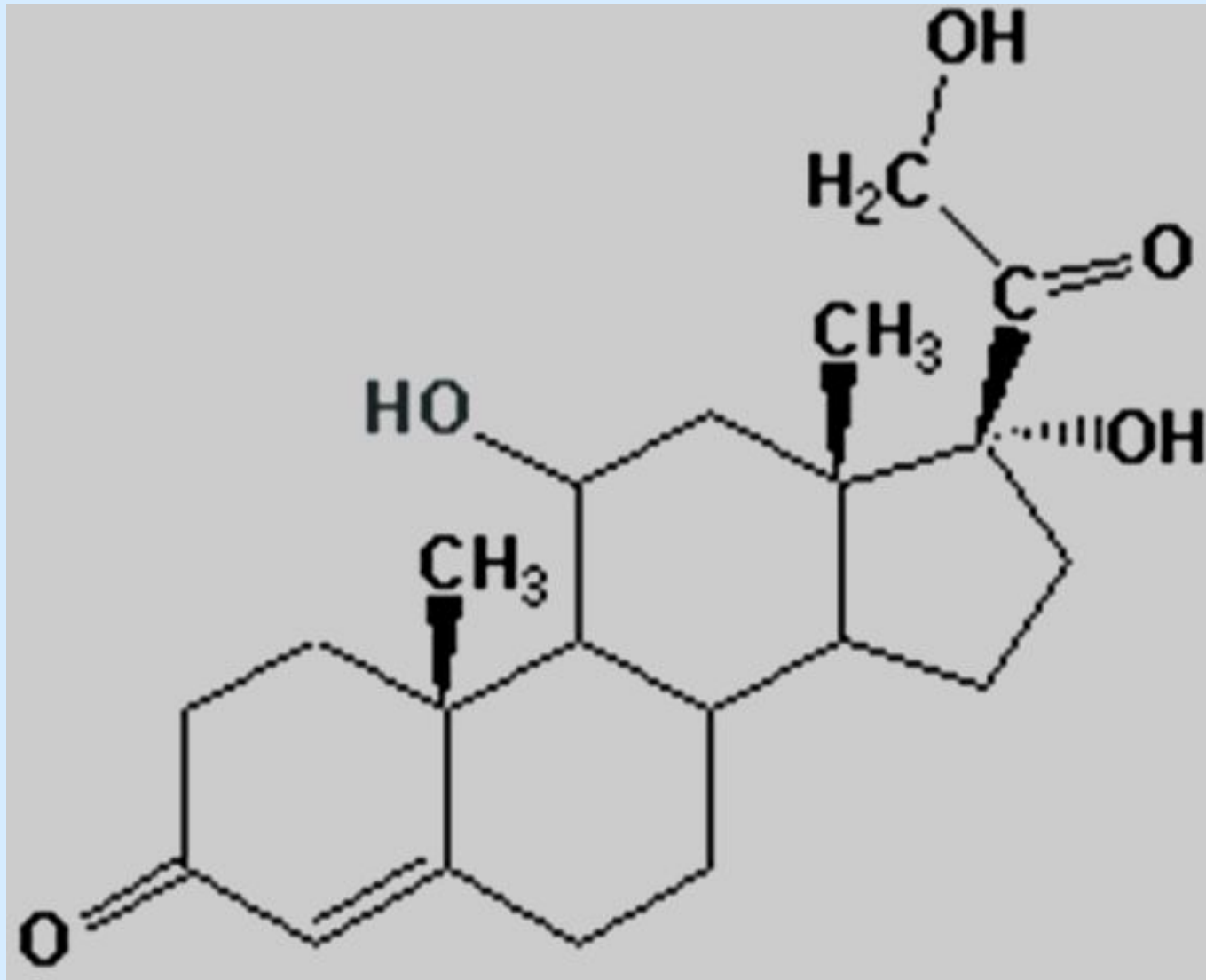
Adrenaline receptors



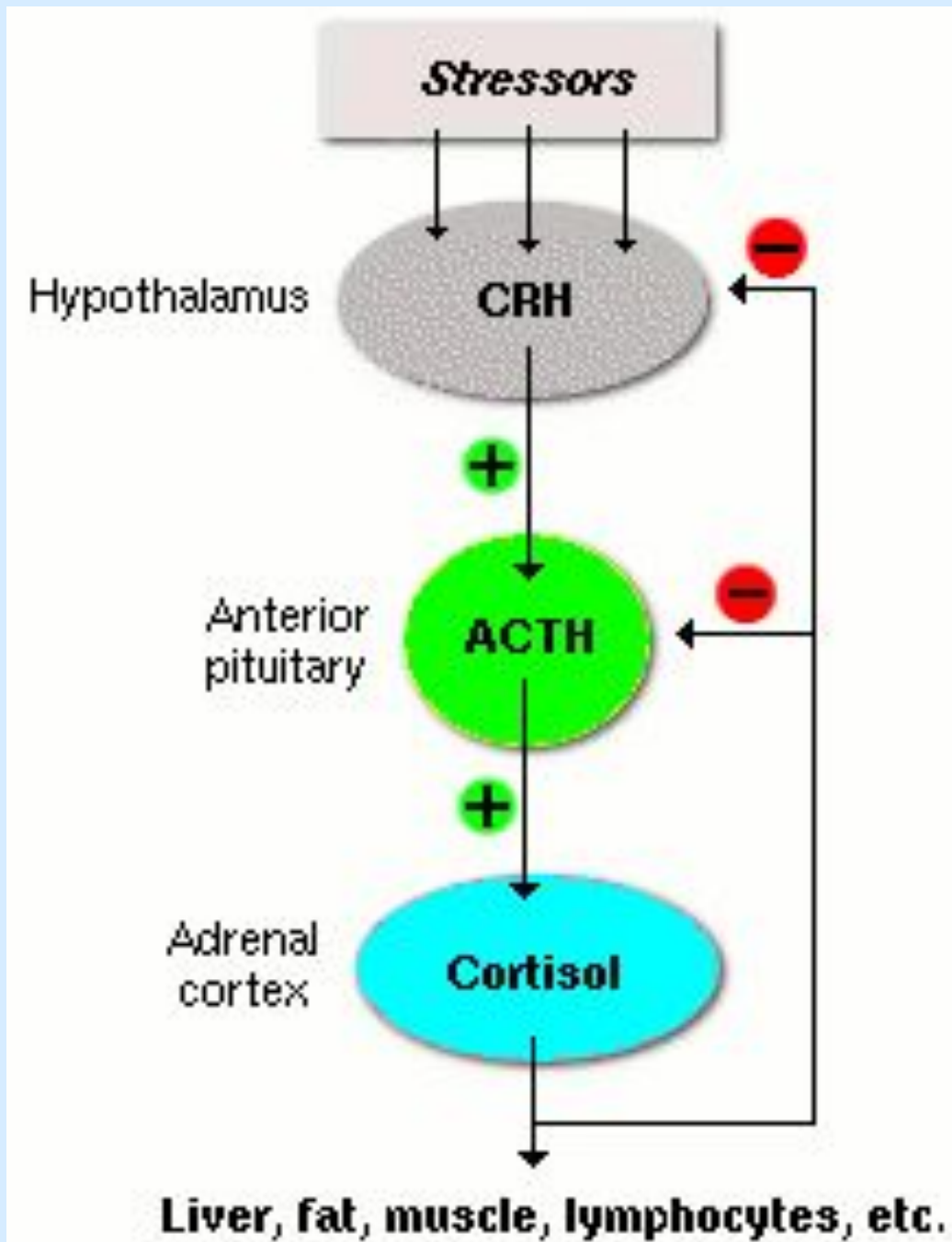
Adrenaline

The signal for secretion	Target organs	Changes in metabolism in target cells
Signal of CNS	Liver	The acceleration of glycogen breakdown
	Muscles	The acceleration of glycogen breakdown
	Adipose tissue	The acceleration of lipolysis

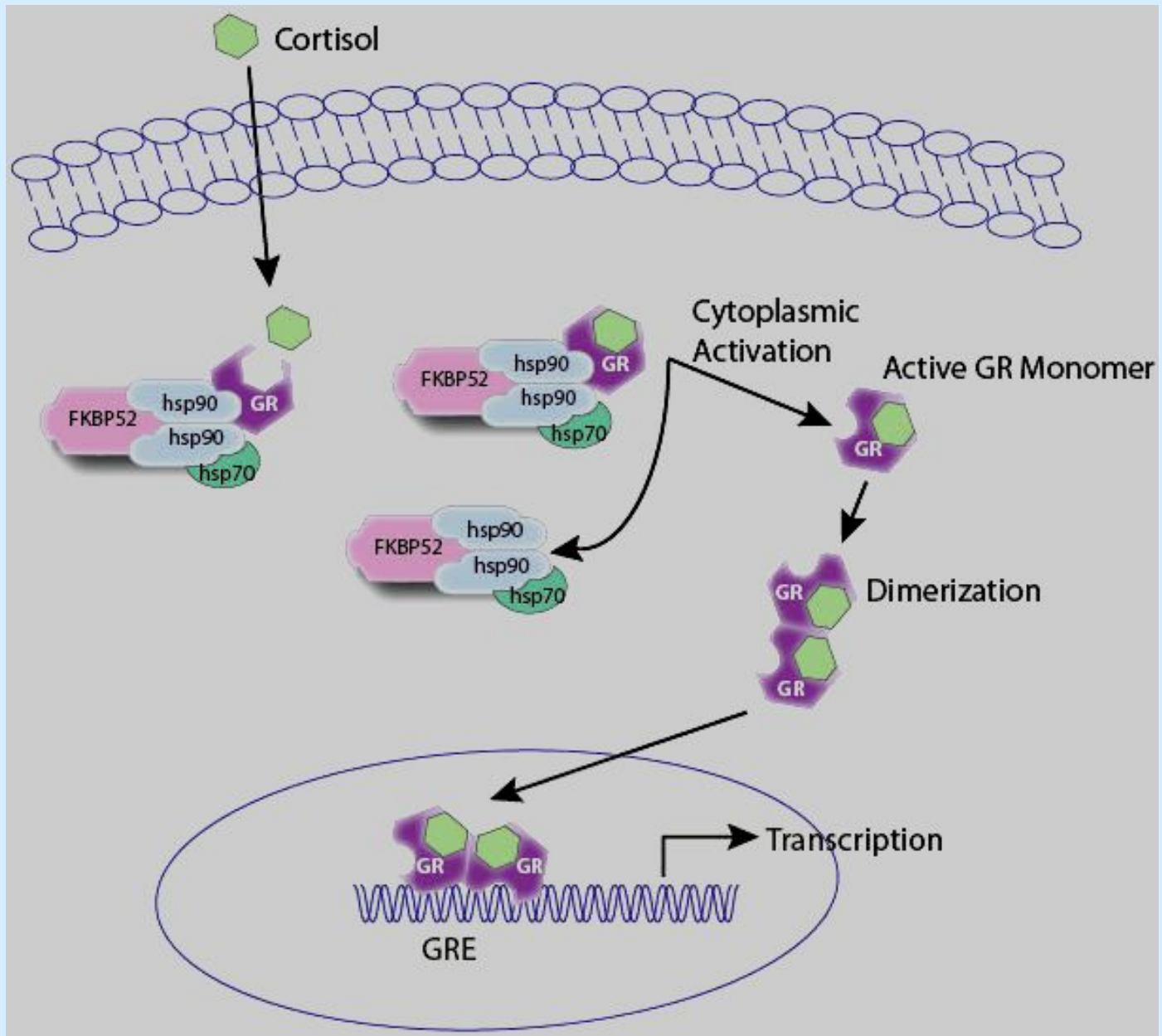
Cortisol



The regulation of cortisol synthesis



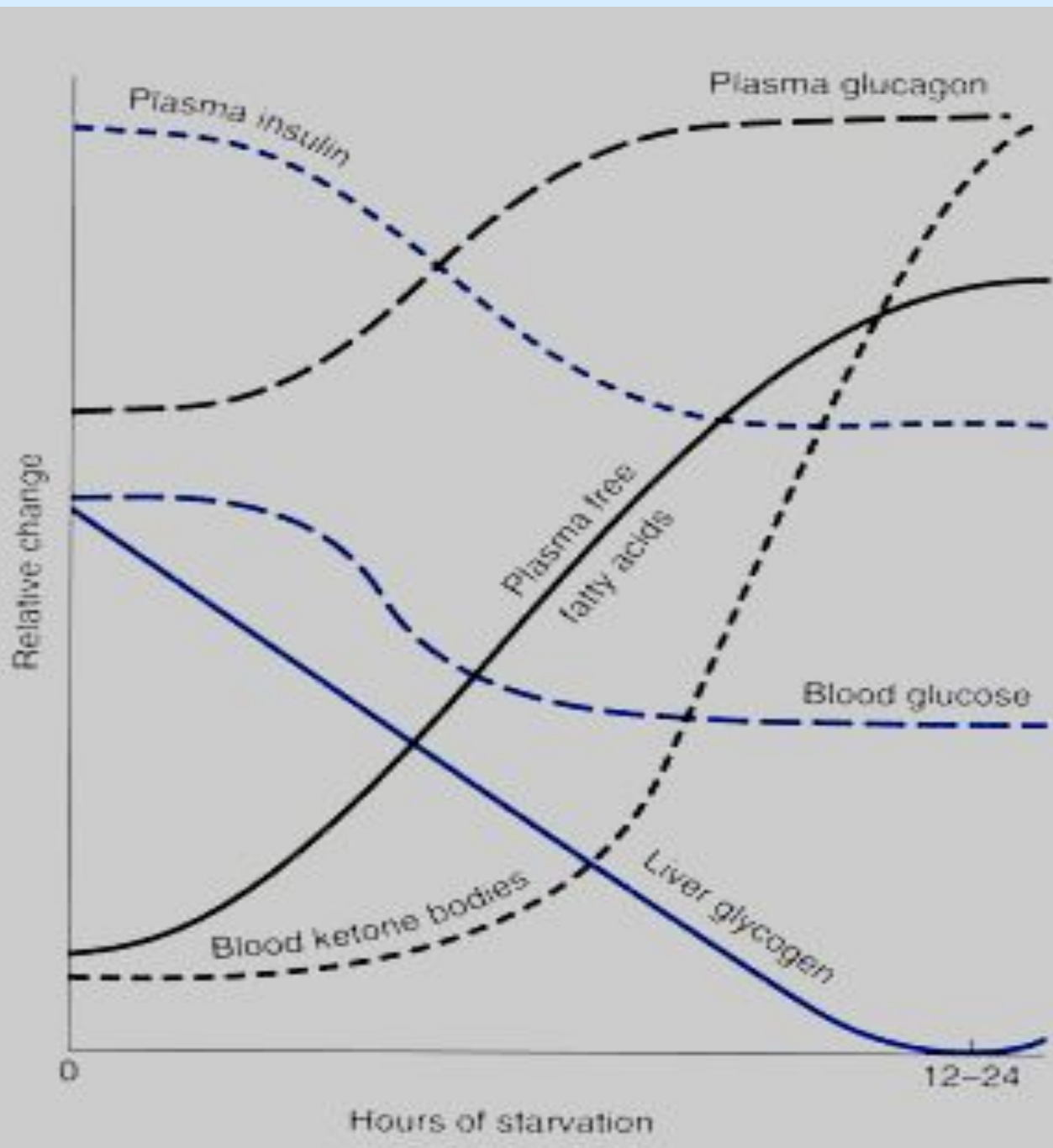
Cortisol receptor



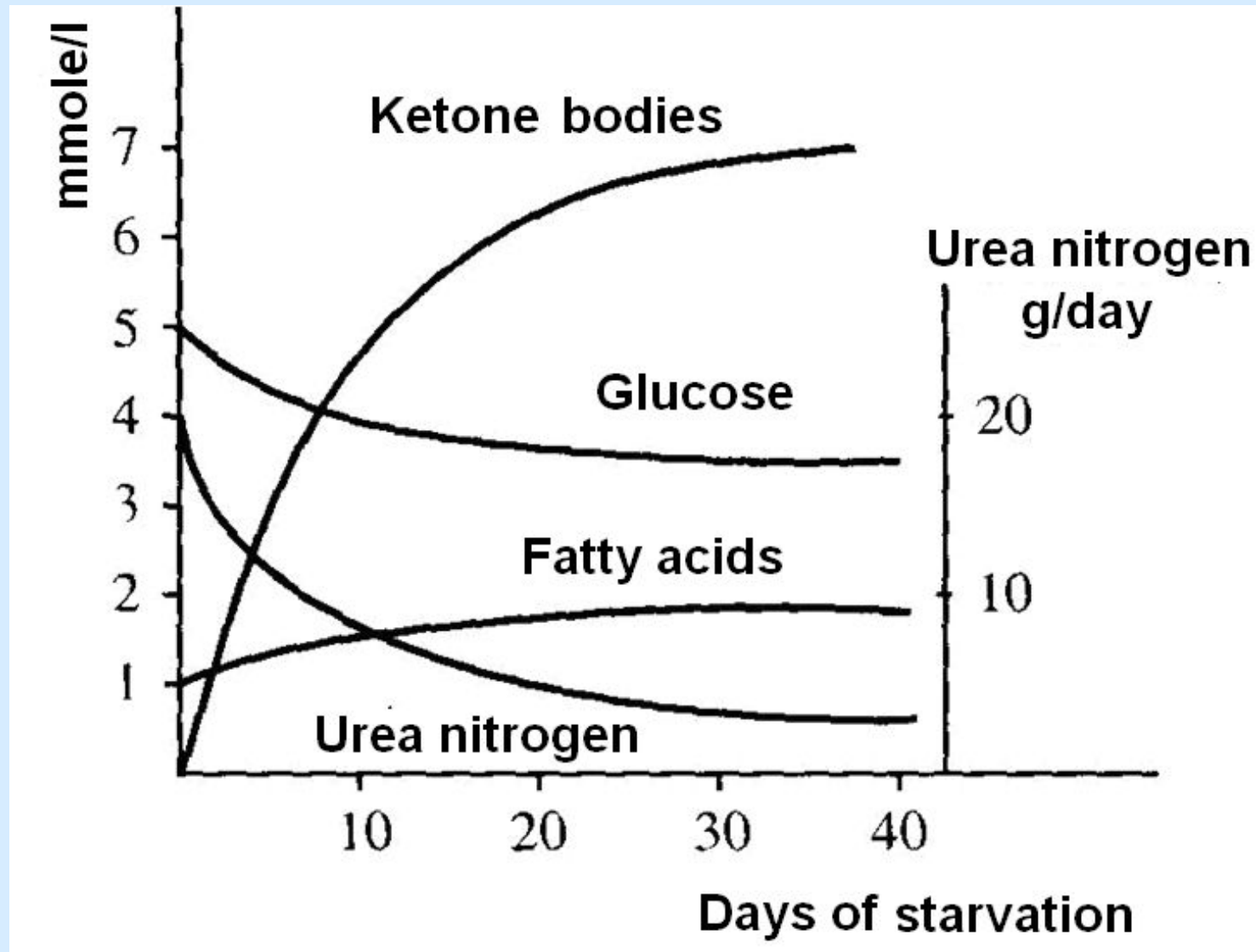
Cortisol

The signal for secretion	Target organs	Changes in metabolism in target cells
The concentration of glucose in the blood mediated by corticotropin	Liver	1. Acceleration of gluconeogenesis
		2. Induction of synthesis of the enzymes of gluconeogenesis and amino acids catabolism
	Muscles	1. The acceleration of the amino acids catabolism
		2. Reducing the rate of the amino acids transport

Changes in metabolism in starvation



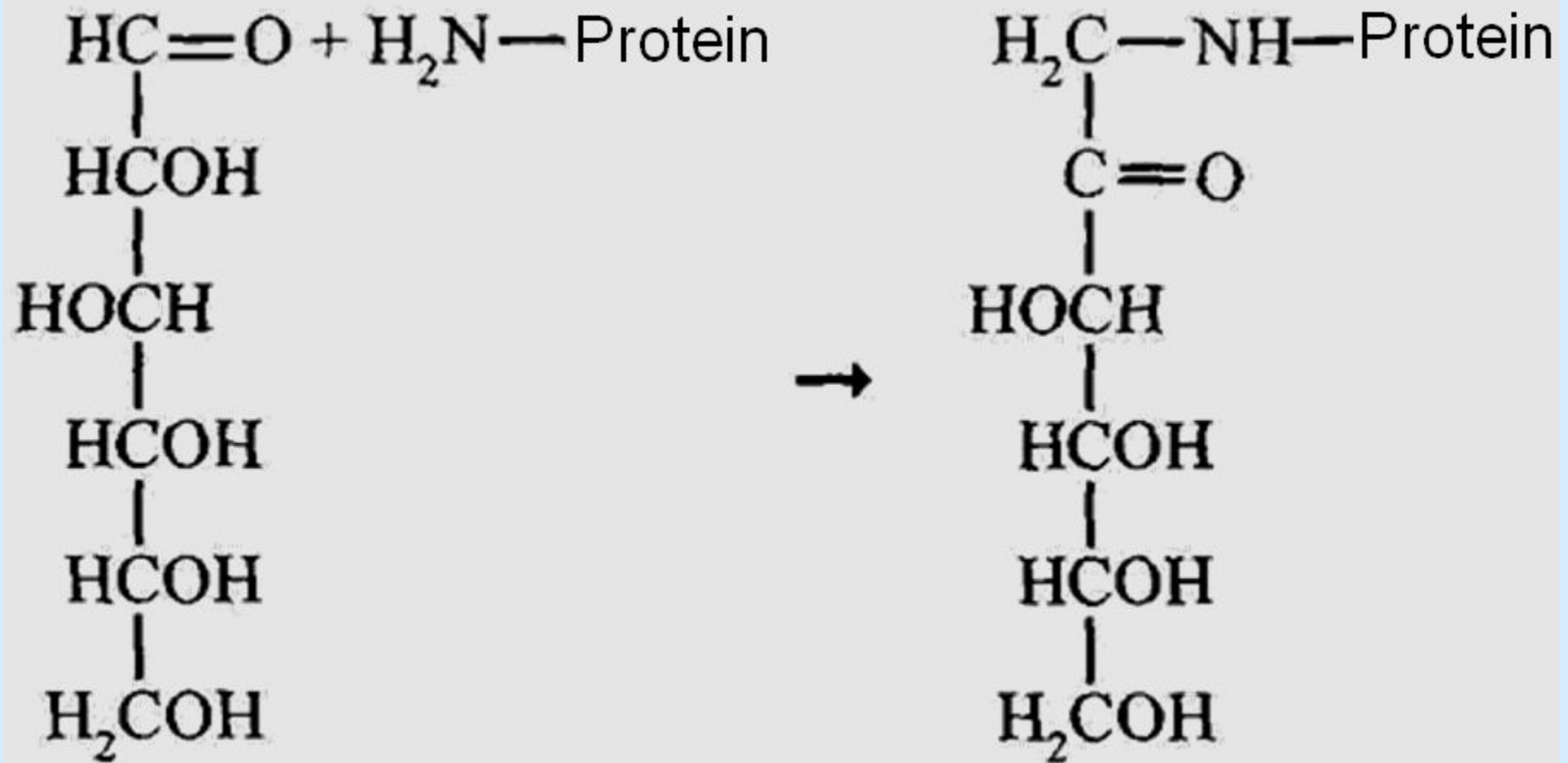
Changes in metabolism in starvation



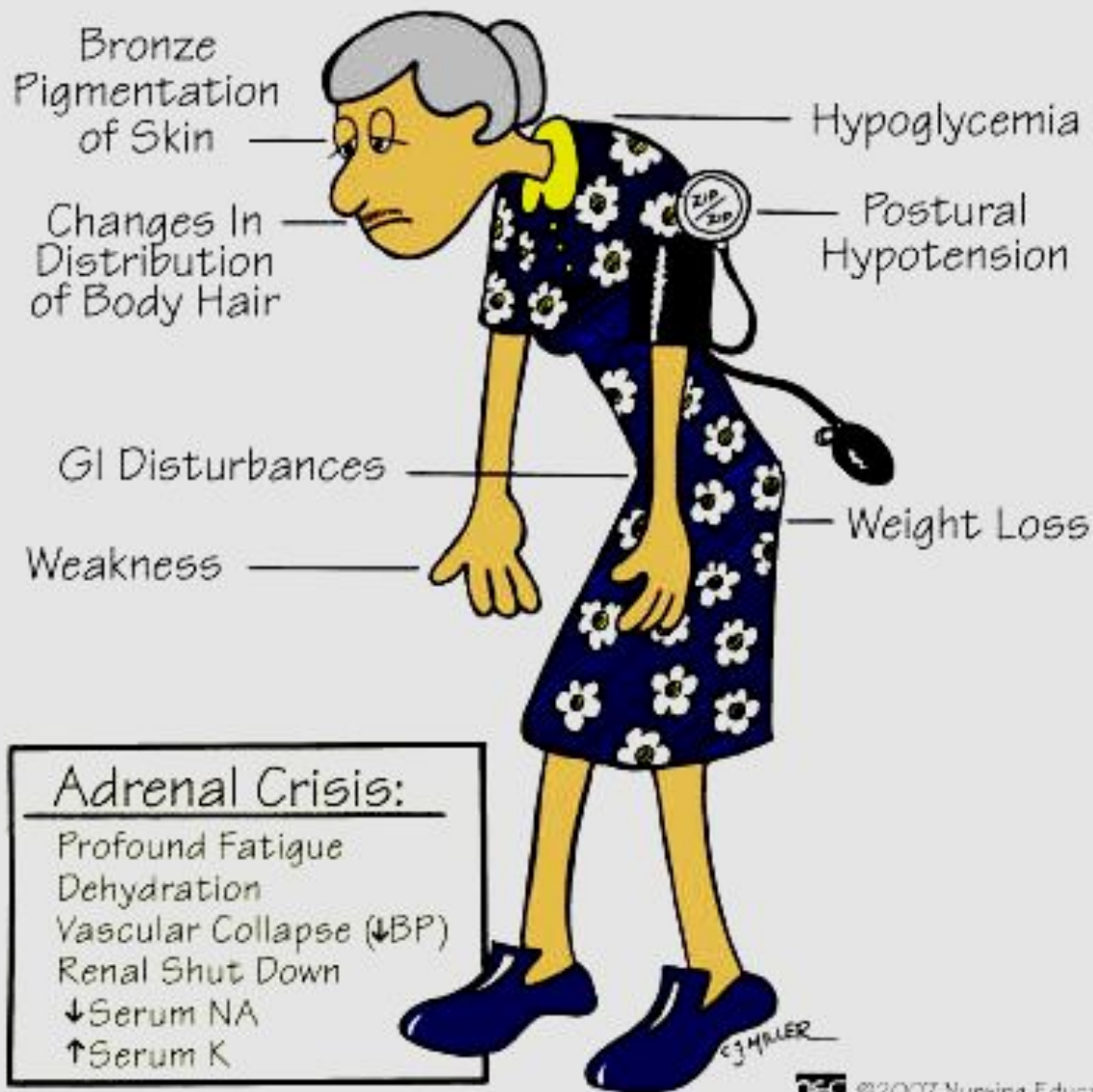
The main manifestations of diabetes

- ▣ Decreased synthesis and deposition of glycogen and fat
- ▣ Hyperglycemia
- ▣ Hyperlipoproteinemia
- ▣ Ketonemia
- ▣ Azotemia and azoturia
- ▣ Polyuria and polydipsia

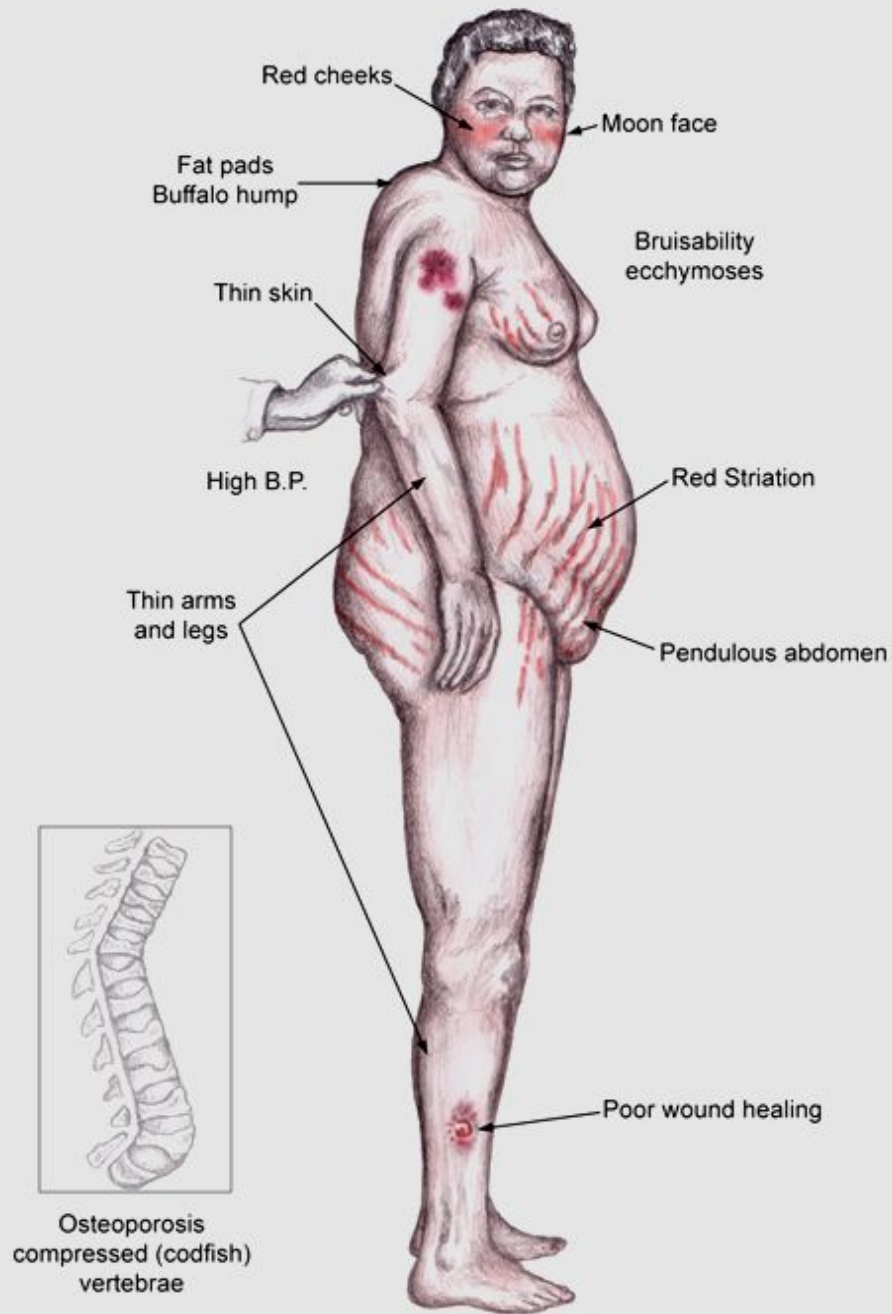
Protein glycosylation



ADDISON'S DISEASE

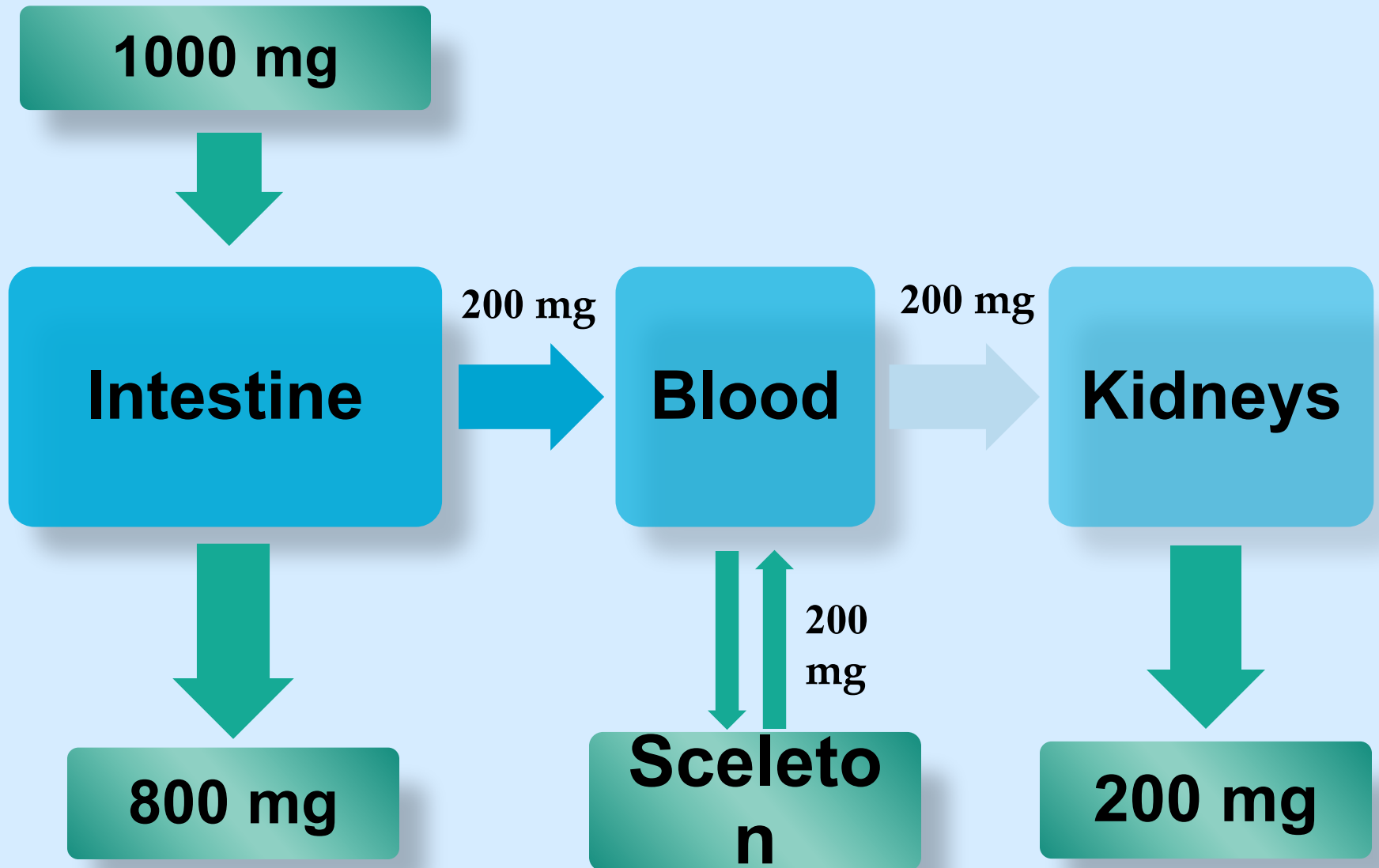


Cushing's disease

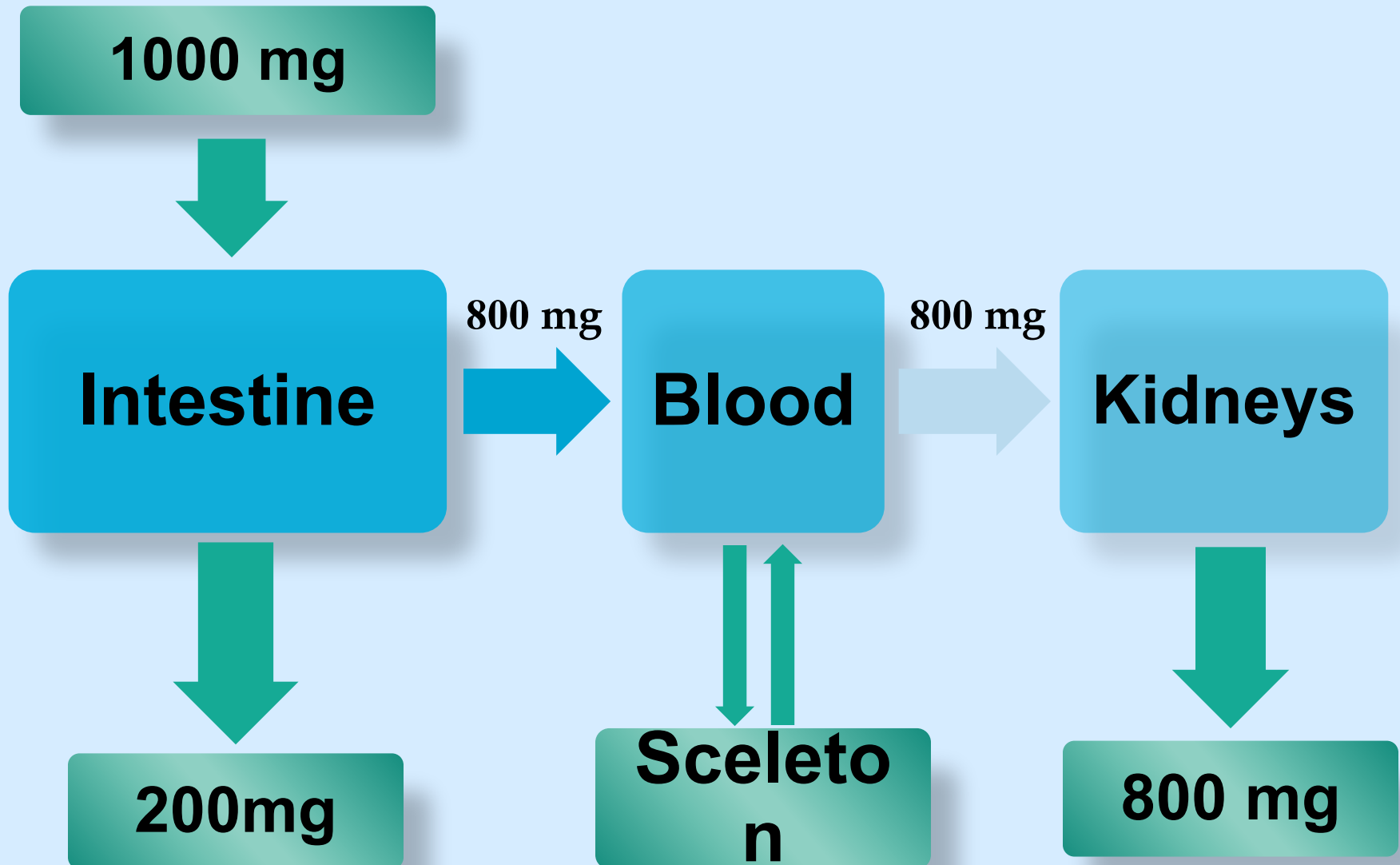


REGULATION OF PHOSPHORUS AND CALCIUM METABOLISM

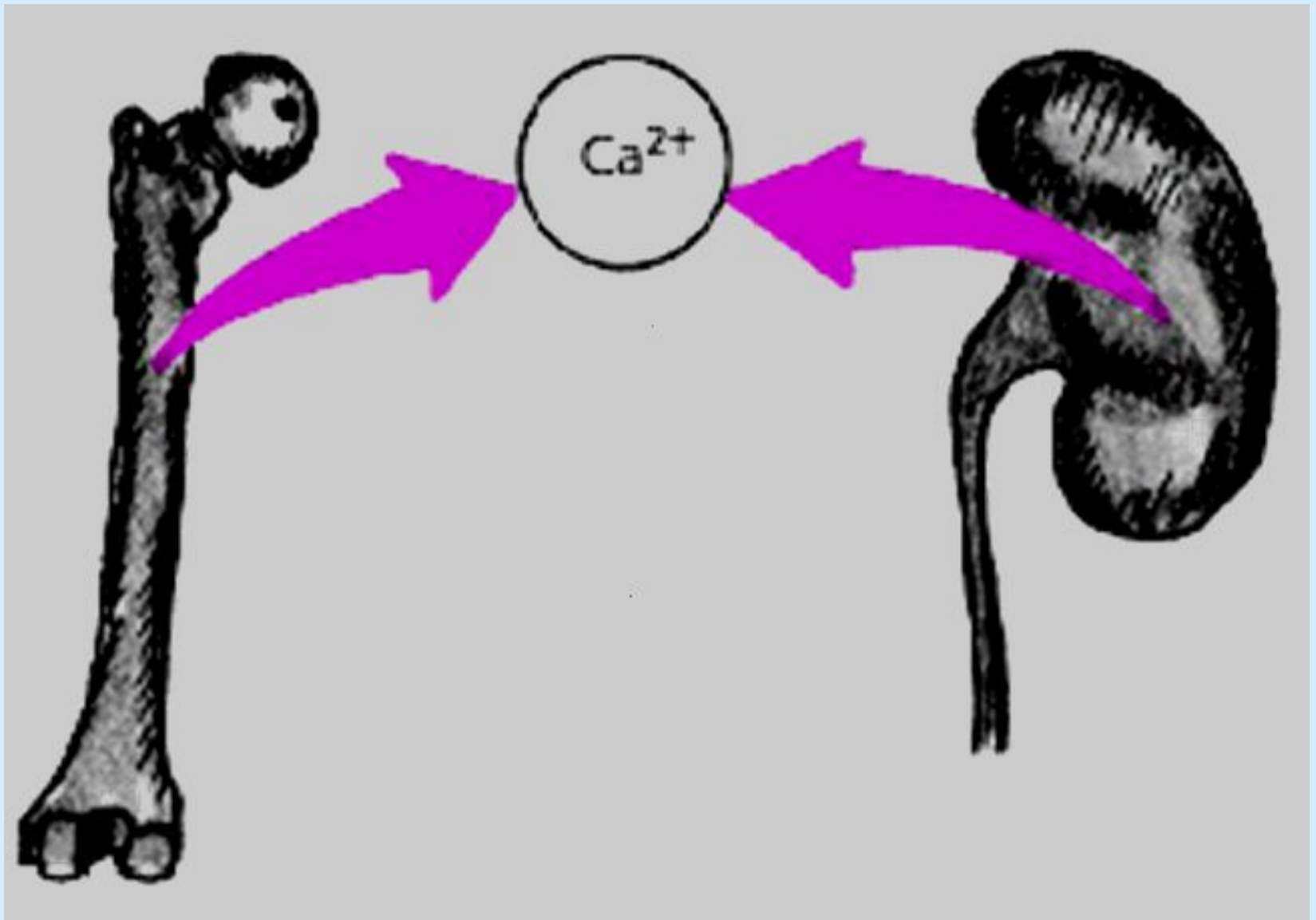
Calcium metabolism



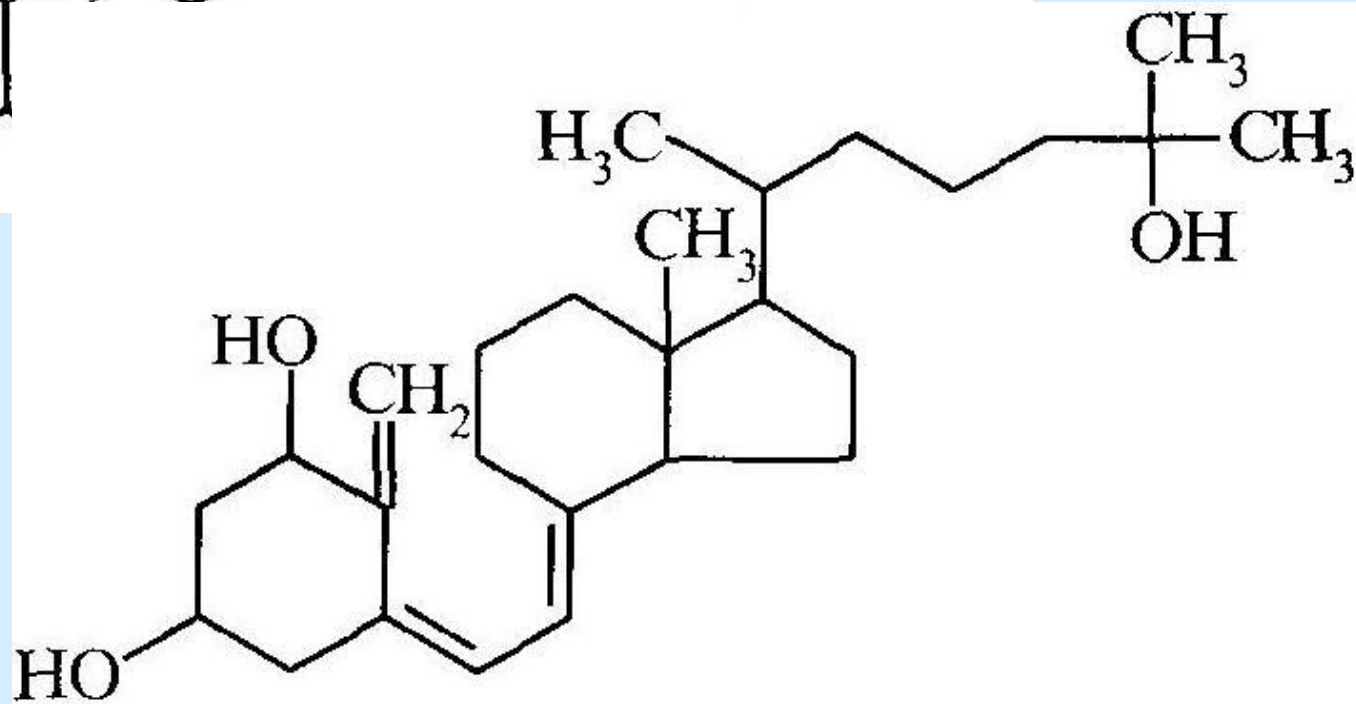
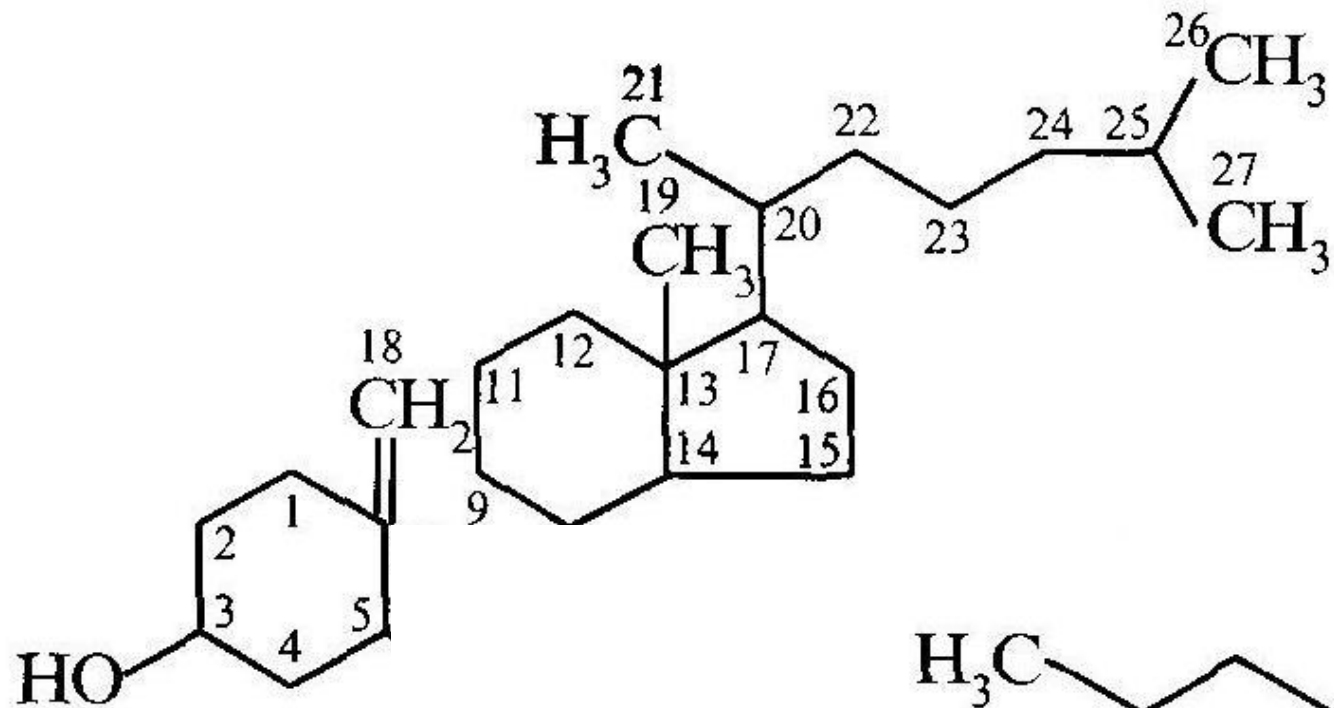
Phosphorus metabolism



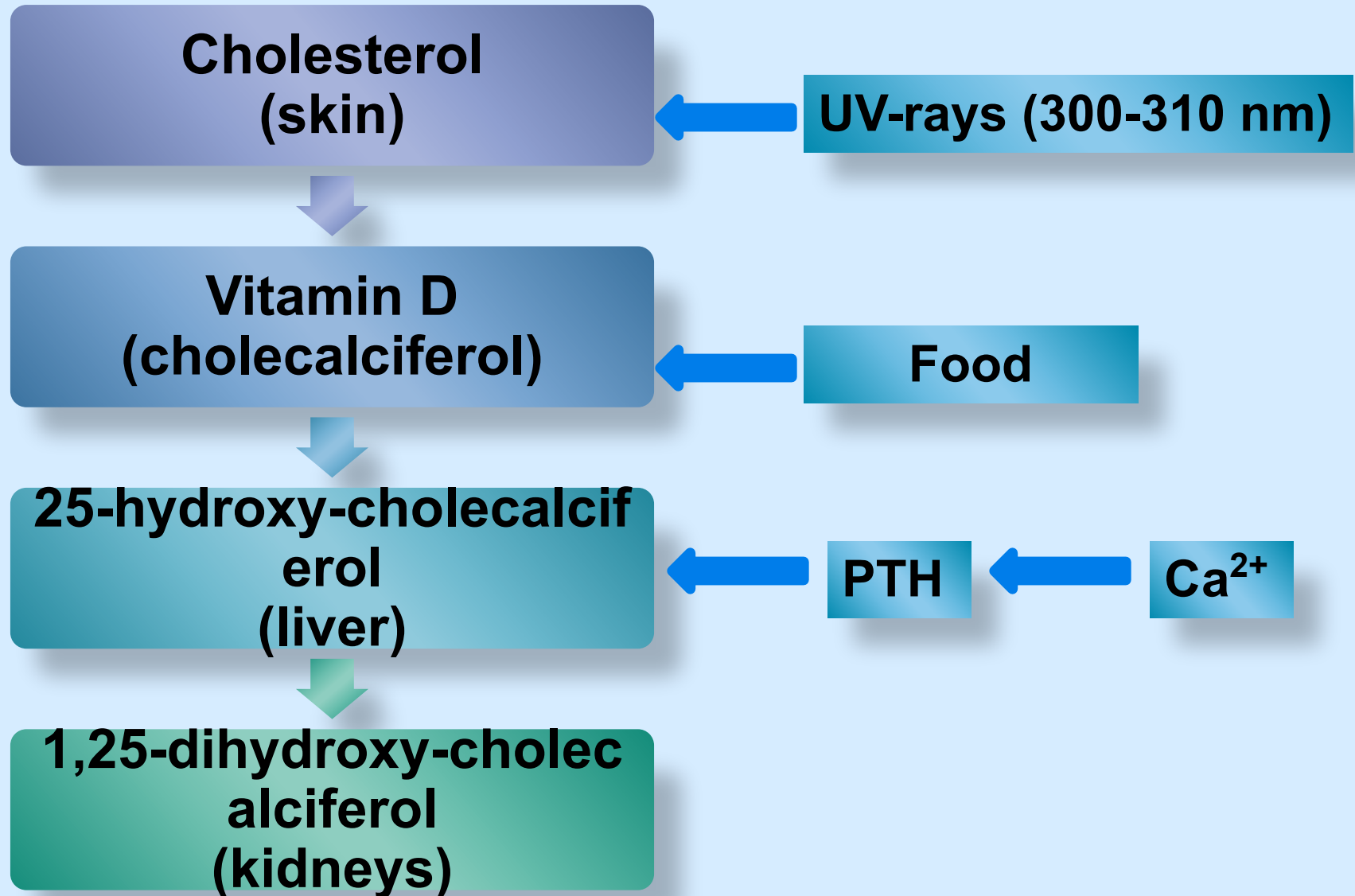
Parathyroid hormone



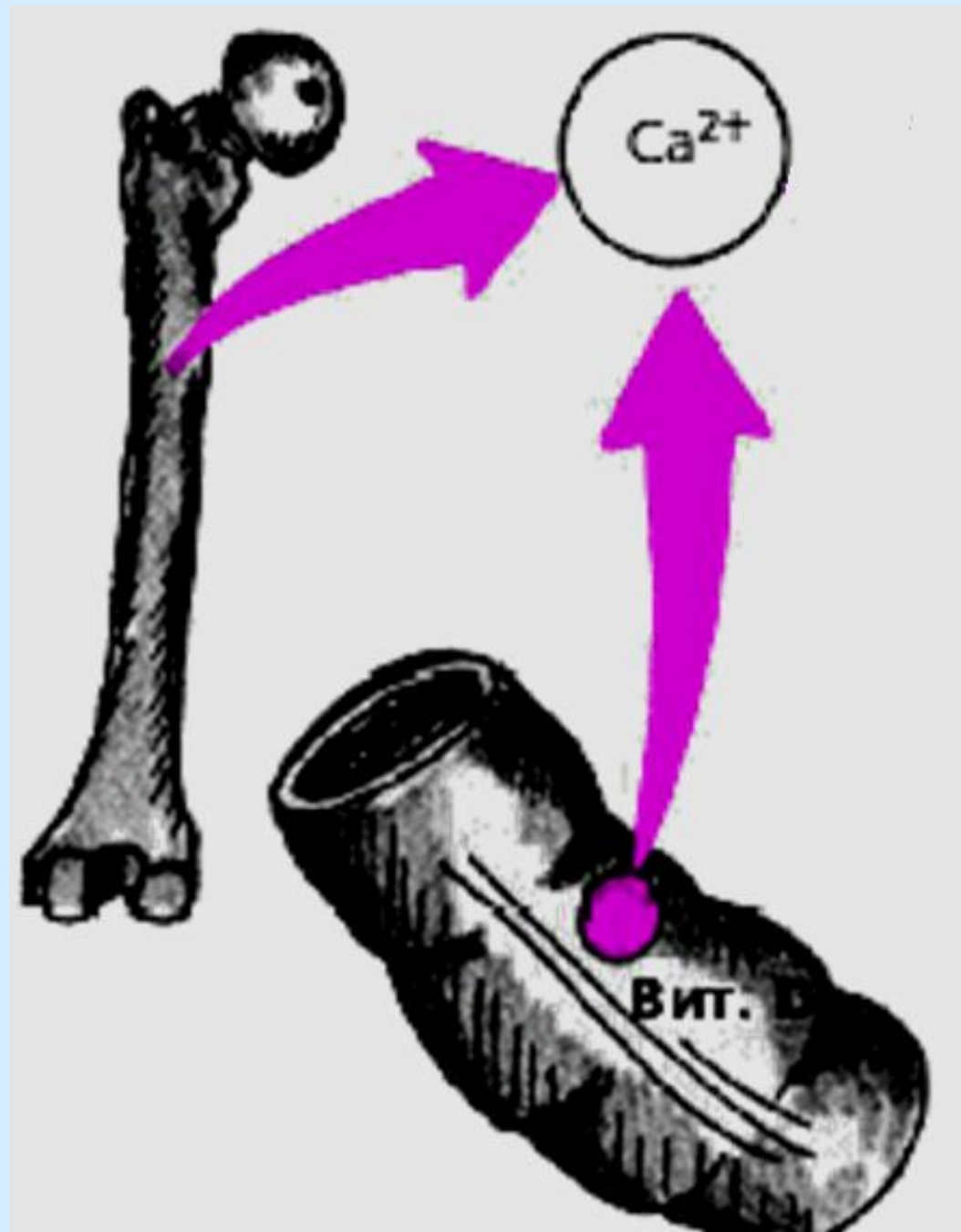
Vitamin



Vitamin D₃ activation



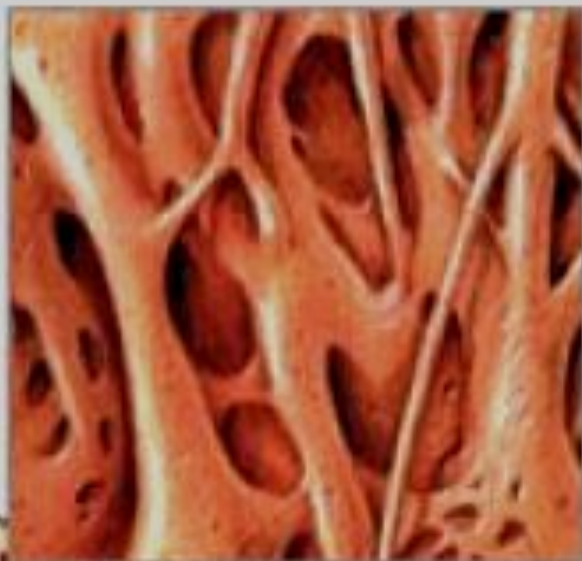
Calcitriol



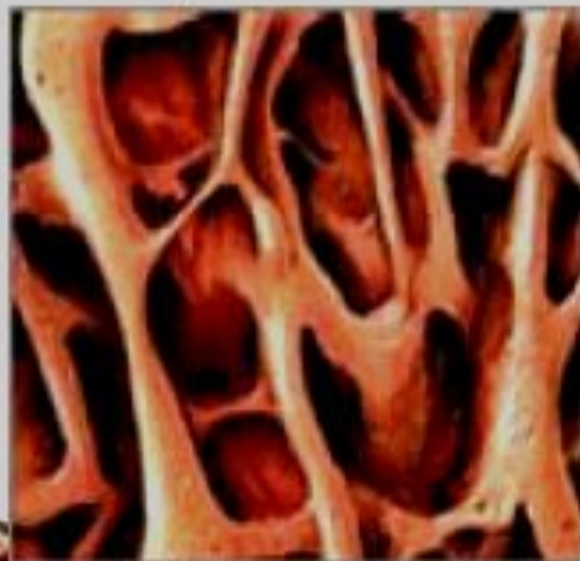
Rickets



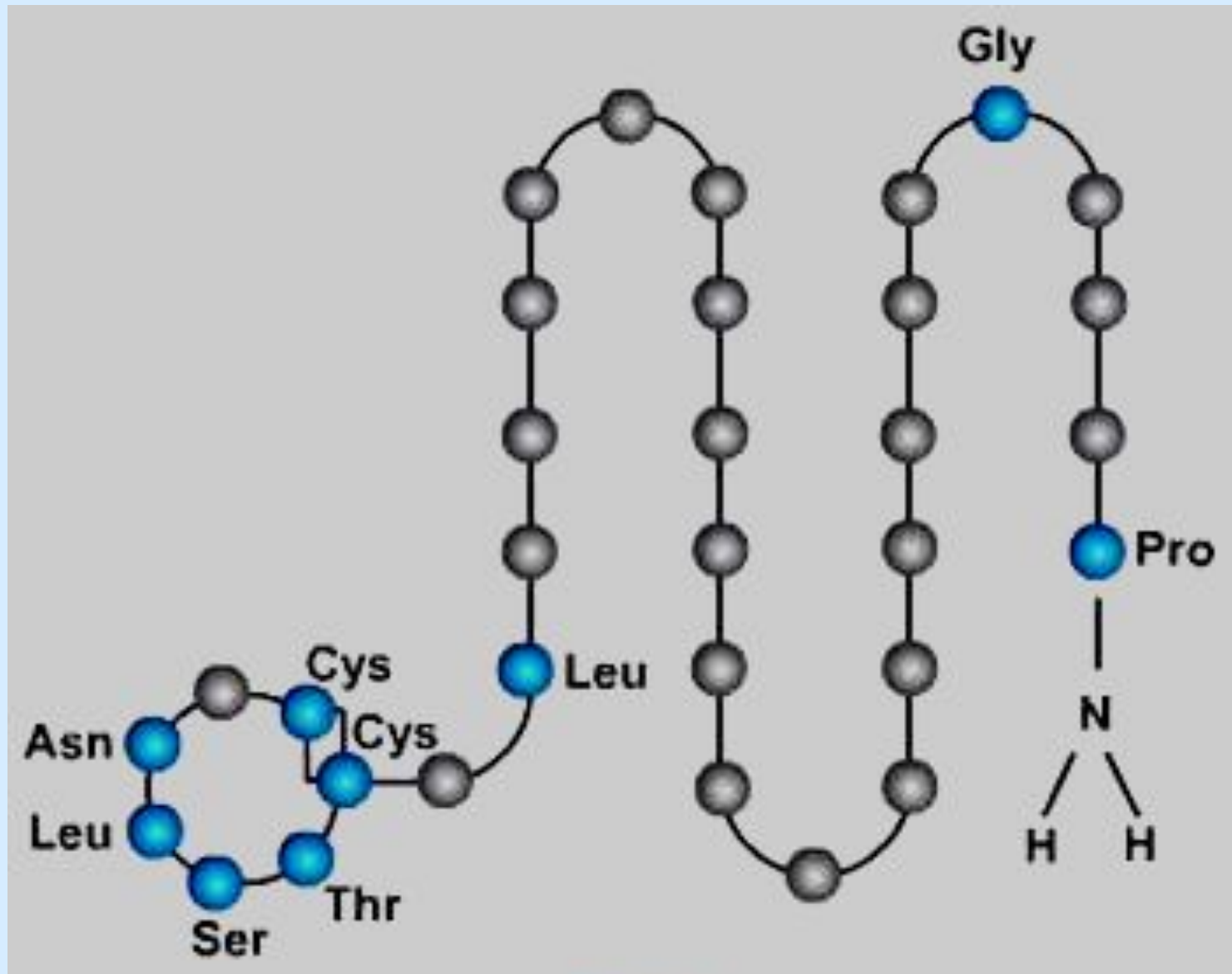
Normal



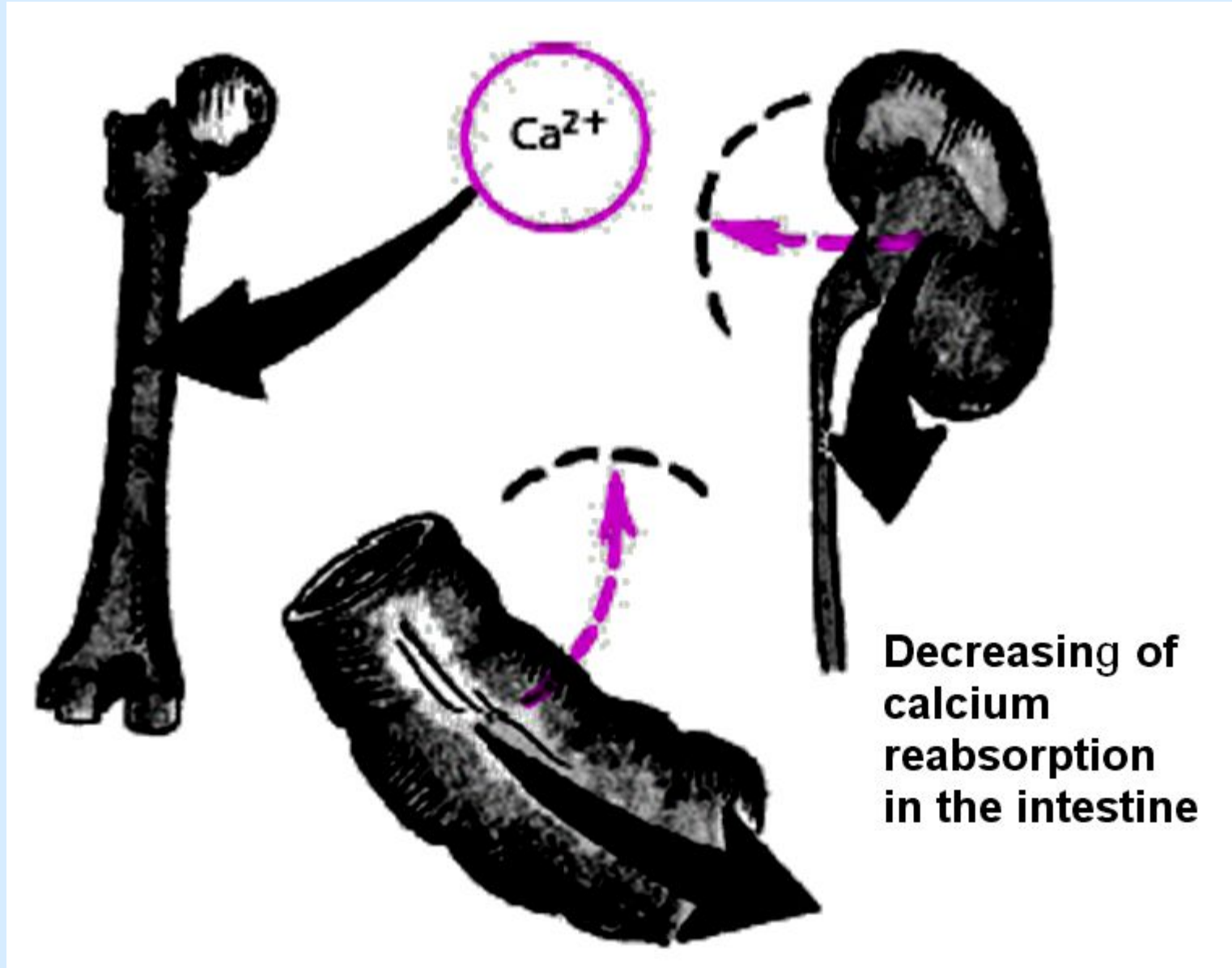
Osteoporosis



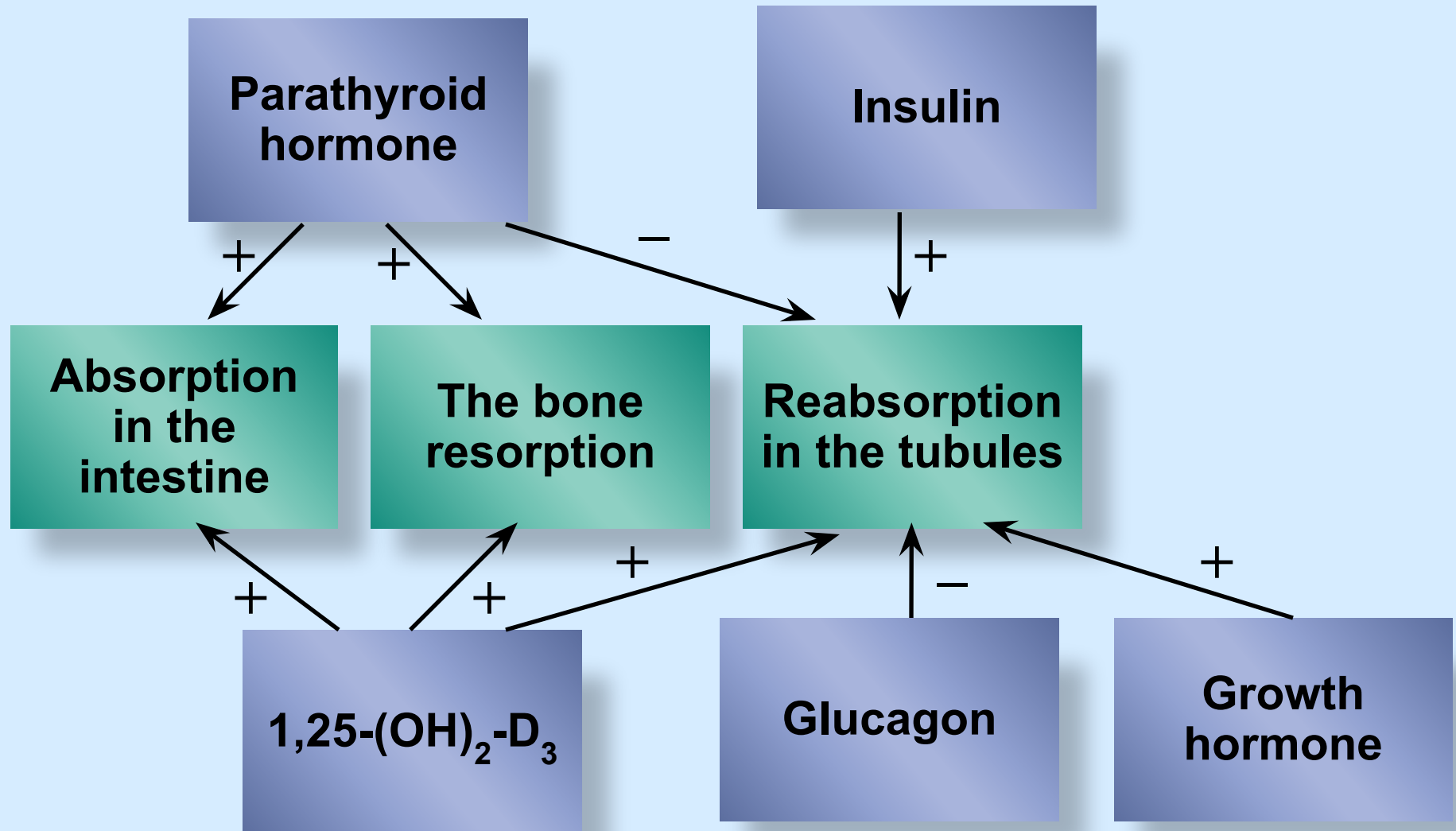
Calcitonin



Calcitonin



Hormonal regulation of phosphates transport

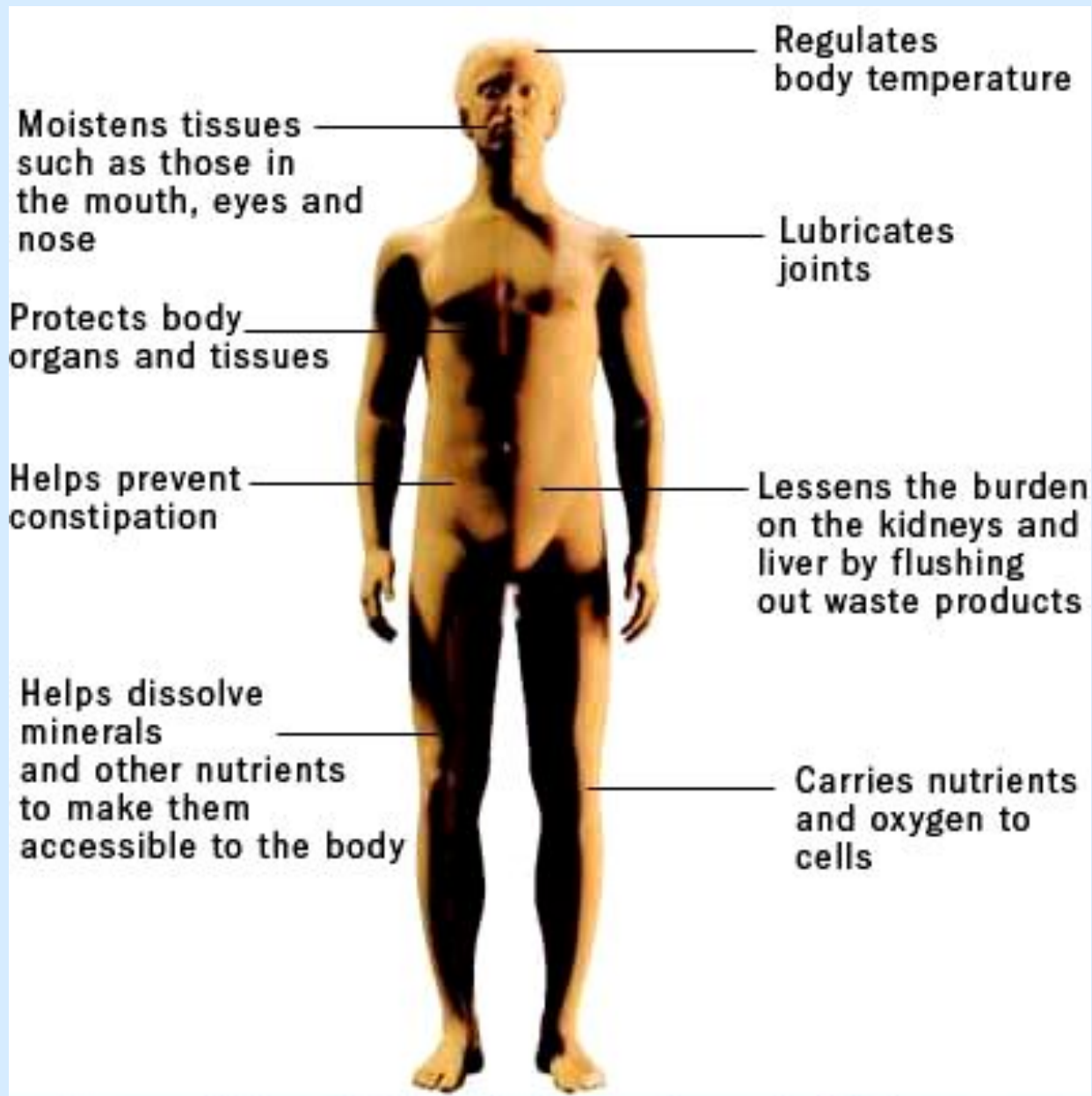


The influence of biologically active substances on the phosphates excretion

Substance	Phosphates excretion
Glucagon	↓
Glucocorticoids	↓
Thyroxine	↓
Growth hormone	↓
Insulin	↓
Serotonin	↓
Catecholamines	↓

**WATER AND
SALT
METABOLISM
RENAL
BIOCHEMISTRY**

Water functions

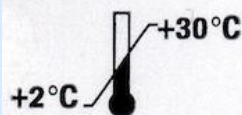


Urinalysis





IVD

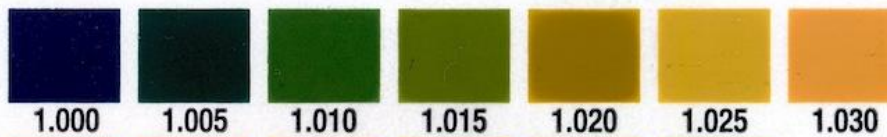


2011-02

23054941

LOT

Specific Gravity
Densidad
Densidade
60 sec/seg.



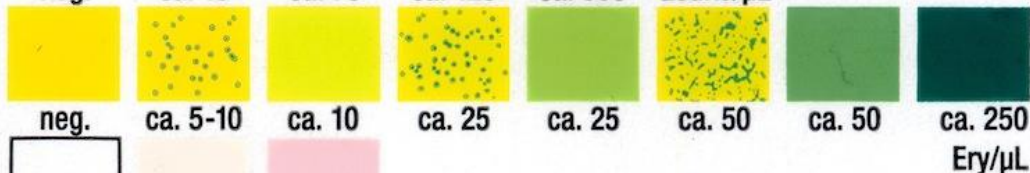
pH
60 sec/seg.



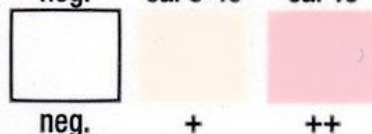
Leukocytes
Leucocitos
60-120 sec/seg.



Blood/Hemoglobin/
Sang(re)(ue)/Hemoglobina
60 sec/seg.



Nitrite/Nitrito/Nitritos
60 sec/seg.



Ketones/
C.Cetónicos
60 sec/seg.



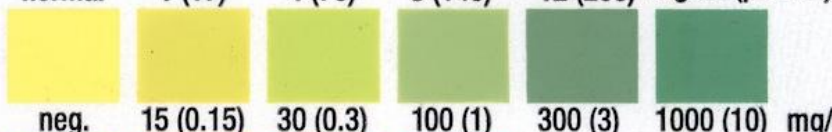
Bilirubin/Bilirrubina/
60 sec/seg.



Urobilinogen(o)/
Urobilinogênio
60 sec/seg.



Protein/Proteínas/
Proteínas
60 sec/seg.



Glucose/Glucosa/
Glicose
60 sec/seg.



Leuko/ μ L

Ery/ μ L

mg/dL (mmol/L)

mg/dL (μ mol/L)

mg/dL (g/L)

mg/dL (mmol/L)



Hematuria



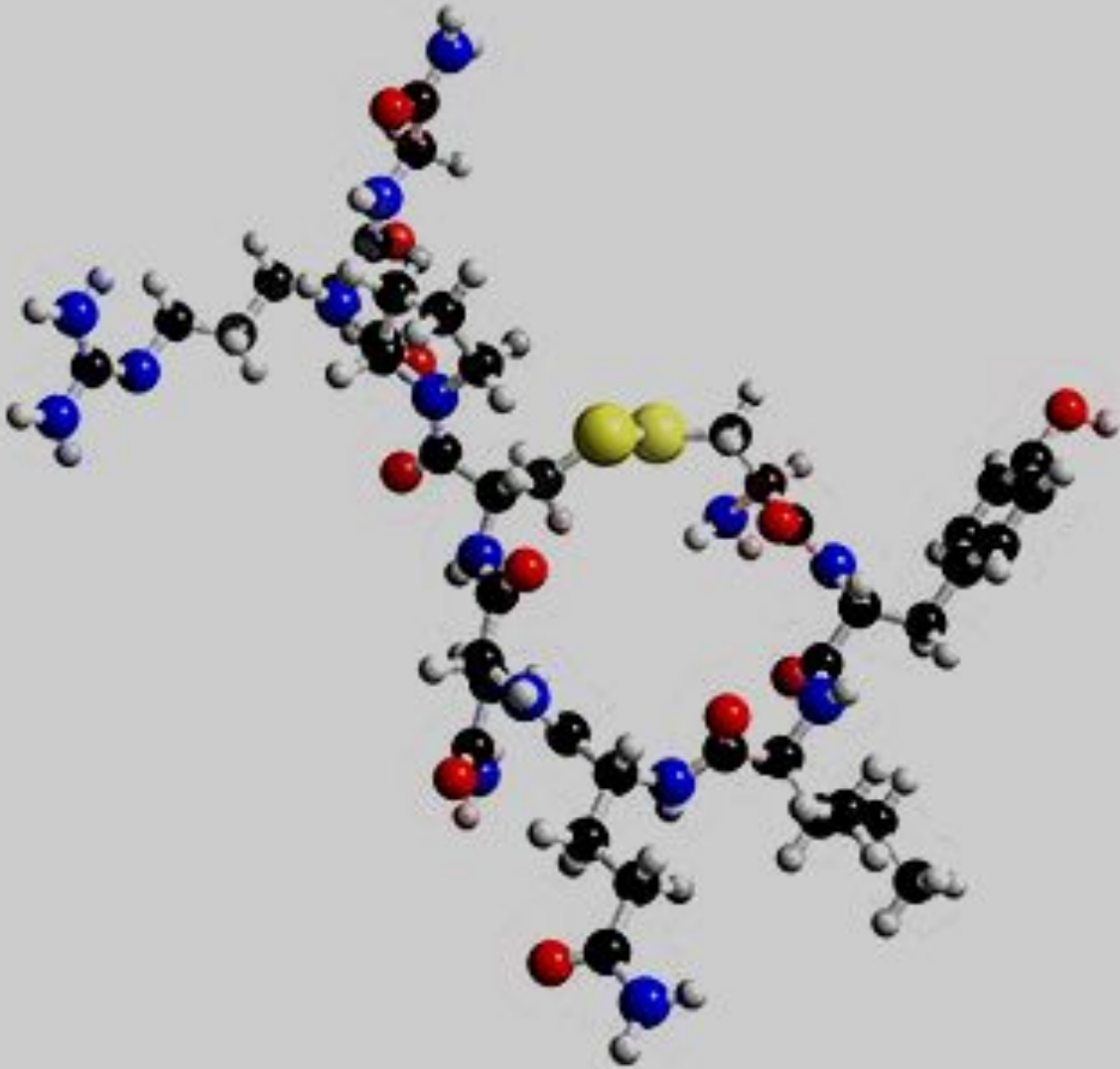
Hemoglobinuria

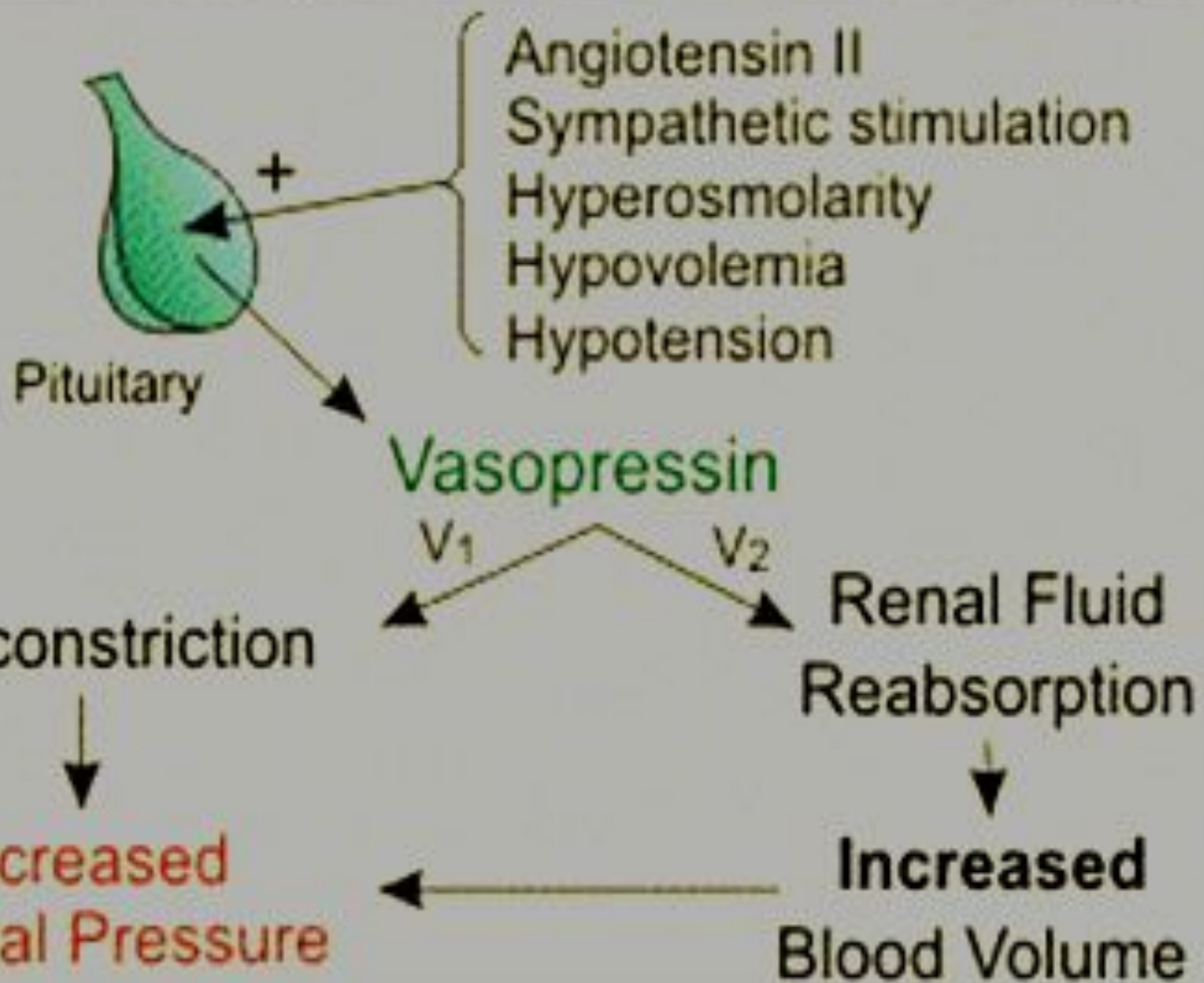


Urinary stones

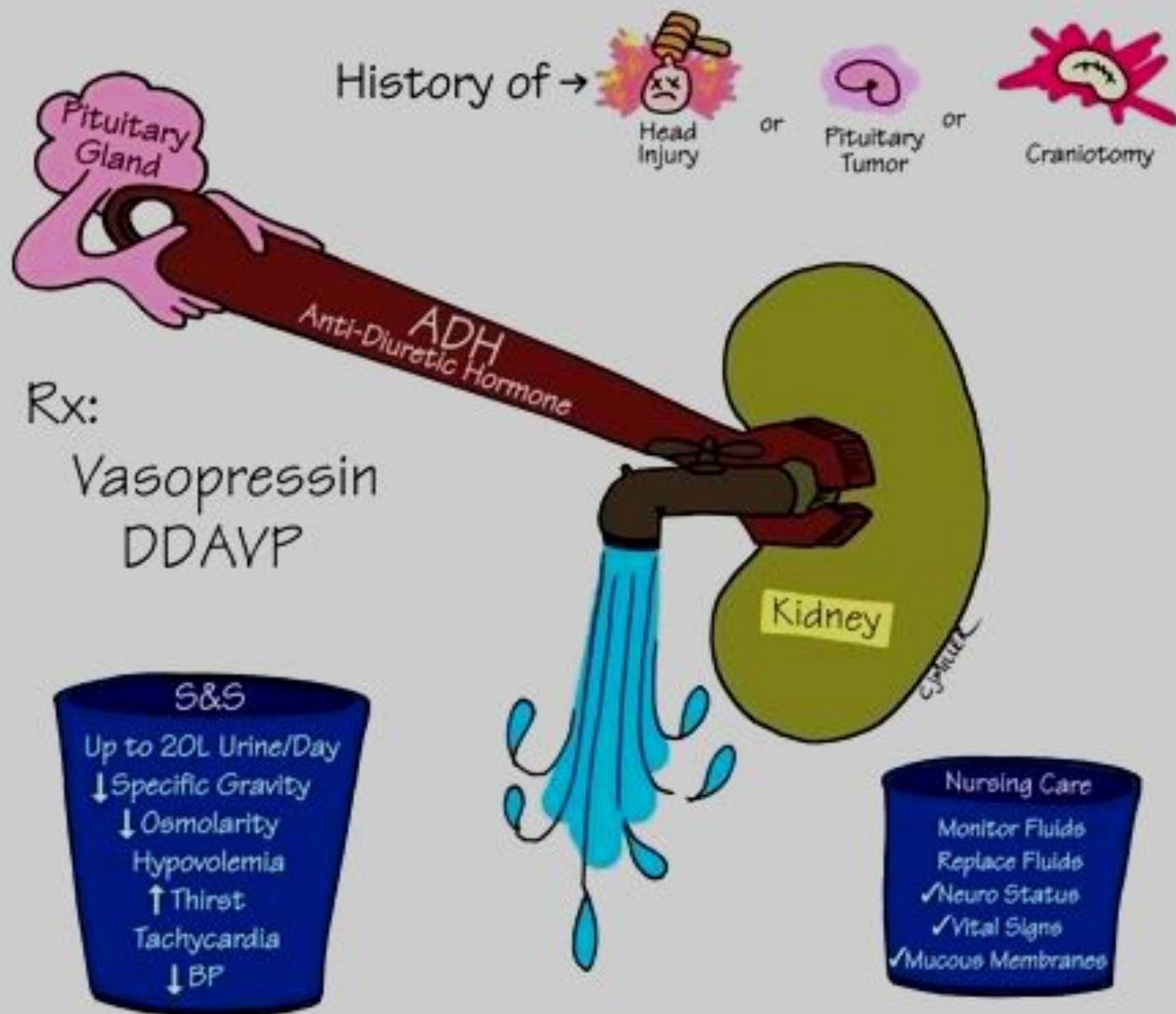


Vasopressin

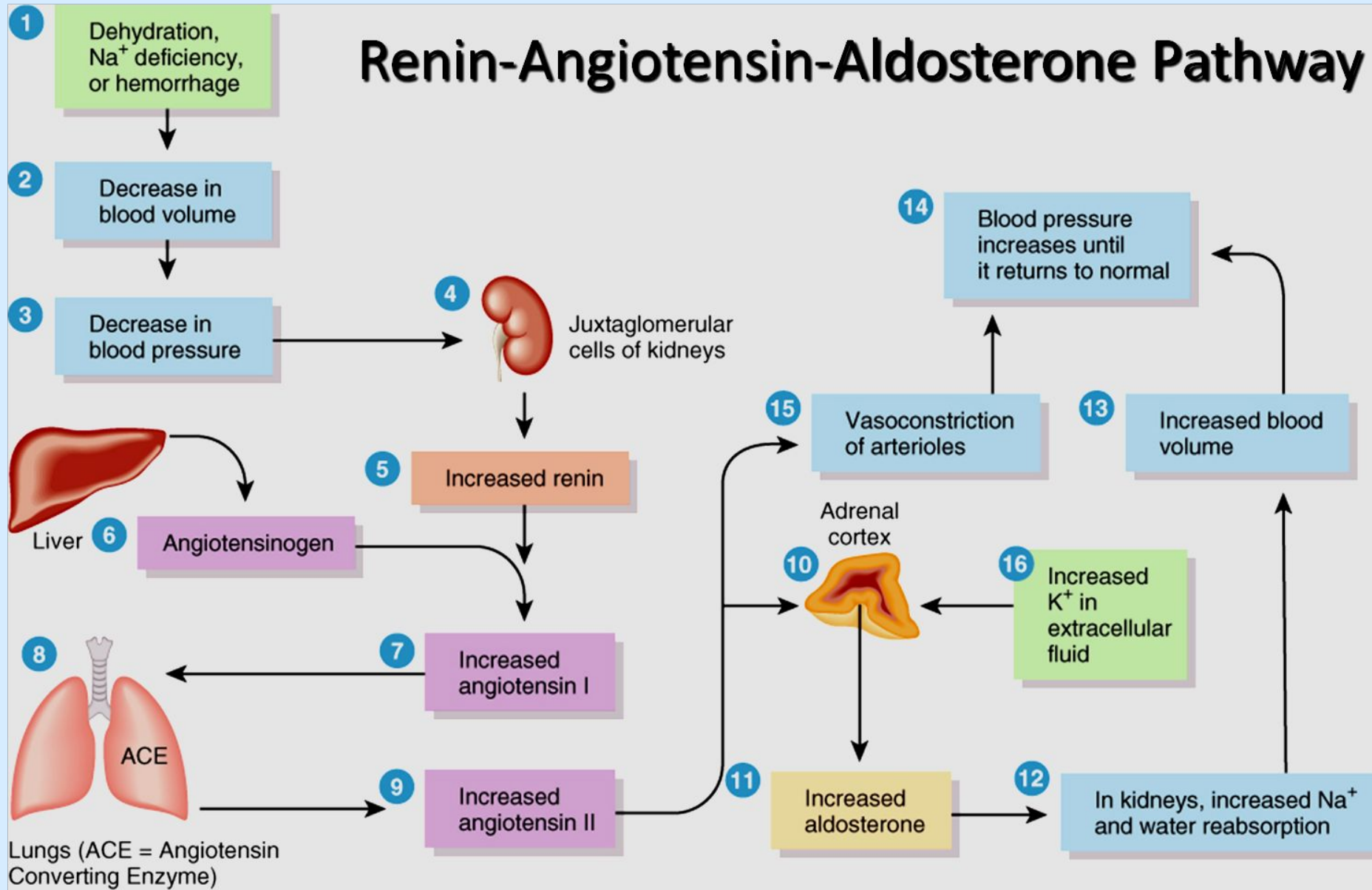




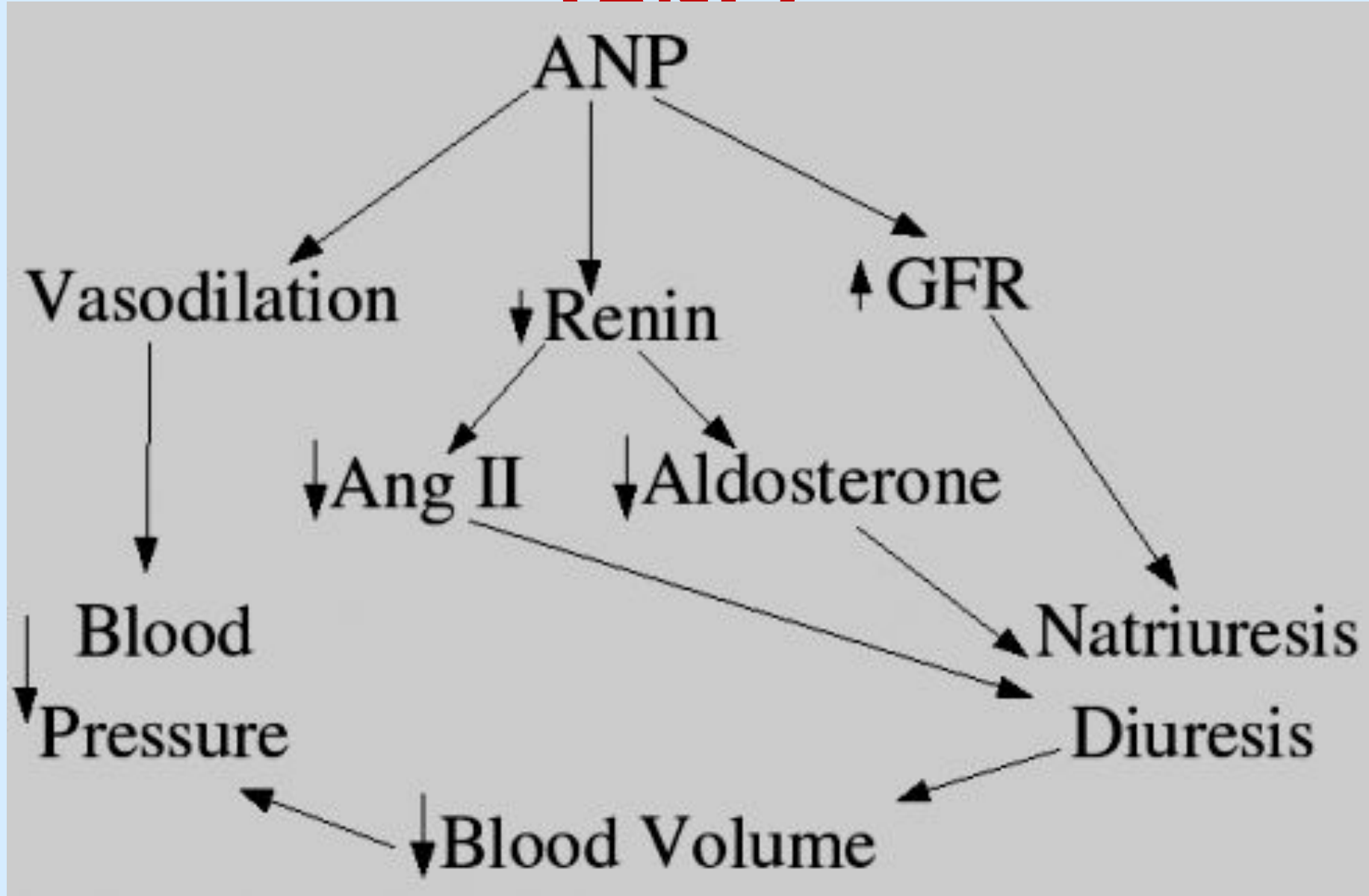
DIABETES INSIPIDUS



Renin-Angiotensin-Aldosterone Pathway



Atrial natriuretic peptide (ANP)



Kallikrein-kinin system

