Major Elective-
BMS-EC-10
Cardiovascular Biology

Factors Controlling Cardiac Output-3

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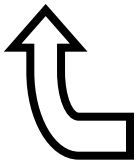
Hormonal control

CO = HR x SV



hormonal control

NE, E

ADH (antidiuretic hormone)
angiotensin II
EPO
natri uretic peptides

} all regulate blood volume

Hormonal control

ANTIDIURETIC HORMONE ADH

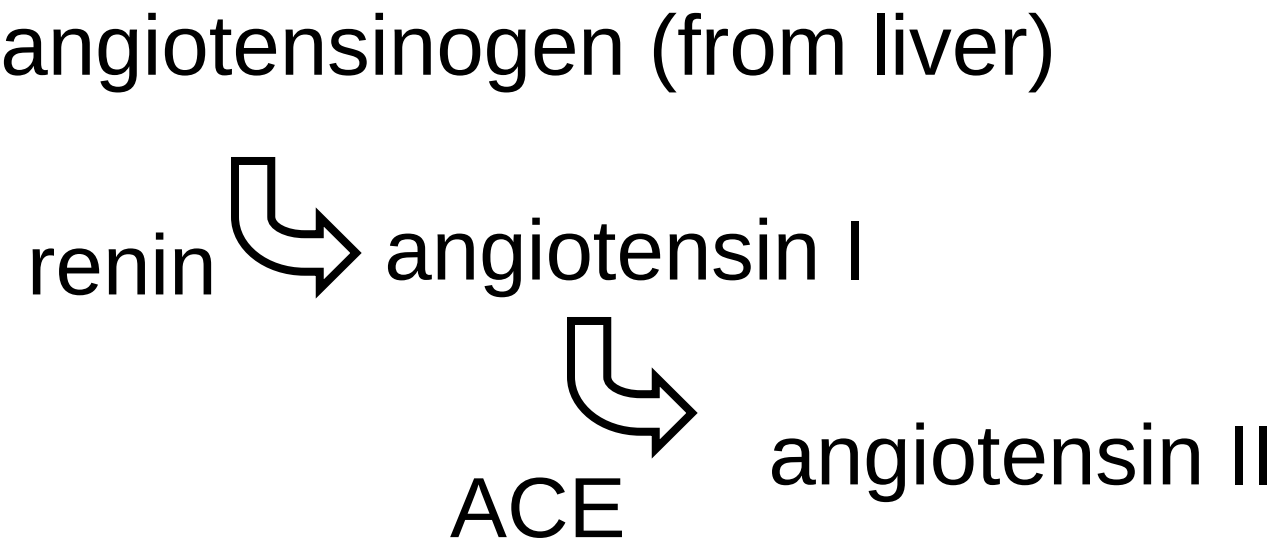
made in hypothalamus
released from posterior pituitary gland
in response to ▼ blood volume

vasoconstriction (▲ bp)
H_2O recovery in kidney

Hormonal control

Angiotensin II

fall in bp
renin release from kidney



Hormonal control

angiotensin II

Four functions:

1. stimulates kidney to produce aldosterone
2. stimulates secretion of ADH
3. stimulates thirst
4. stimulates CO and vasconstriction (bp)

Hormonal control

Erythropoietin EPO

released from kidneys

low bp

low O_2 levels

stimulates bone marrow to make more RBC's

Hormonal control

natriuretic peptides

natrium = sodium (Na)

atrial natriuretic peptide (ANP)
brain natriuretic peptide (BNP)

released in response to stretching

reduce blood volume
reduce blood pressure

Hormonal control

natriuretic peptides

increase Na^+ excretion at kidney
increase volume of urine produced
reduce thirst
block ADH, NE, E, aldosterone release
stimulate peripheral vasodilation

reduce blood volume
and blood pressure

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The End

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