

# Aldosterone

**Aldosterone** is a steroid hormone that is produced and secreted in *the zona glomerulosa* of the adrenal cortex. It is the main **mineralocorticoid**, whose precursor molecule is cholesterol. Aldosterone is transported in the plasma either free or bound to plasma proteins, its effect in the target tissue is mediated by nuclear receptors. Aldosterone secretion increases due to hyperkalemia and angiotensin II. Conversely, a slight decrease in aldosterone secretion is caused by hypernatremia. The presence of adrenocorticotrophic hormone (ACTH) is essential for aldosterone secretion, but has little regulatory significance.

## Function

The level of plasma aldosterone is low, usually around  $0.17 \text{ nmol/l}^{[1]}$ . The hormone is the main regulator of natremia, potassium and extracellular fluid volume.

### Effects of aldosterone

It acts mainly in the kidneys (distal tubule), then in the sweat and salivary glands and in the intestine. In the target organs, it supports the resorption of  $\text{Na}^+$  by binding to cell receptors in the collecting ducts and in the distal tubules. Aldosterone-stimulated  $\text{Na}^+$  resorption is accompanied by water resorption (passively, following an osmotic gradient), leading to an increase in extracellular fluid volume and a consequent **increase in blood pressure**. It also stimulates the excretion of  $\text{K}^+$  in the kidneys.

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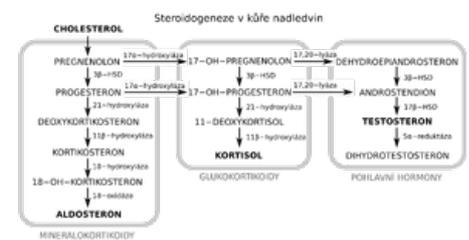
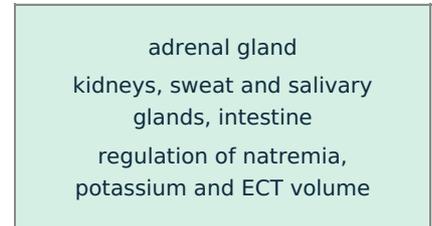
- Renin-angiotensin-aldosterone system
- ADH

### References

- GANONG, William F. *Review of Medical Physiology*. 20th edition. Prague: Galén, 2005. 890 pp. pp. 374. ISBN 80-7262-311-7 .

### Bibliography

- GANONG, William F. *Přehled lékařské fyziologie*. 20. edition. Praha : Galén, 2005. 890 pp. ISBN 80-7262-311-7.



Scheme of steroidogenesis