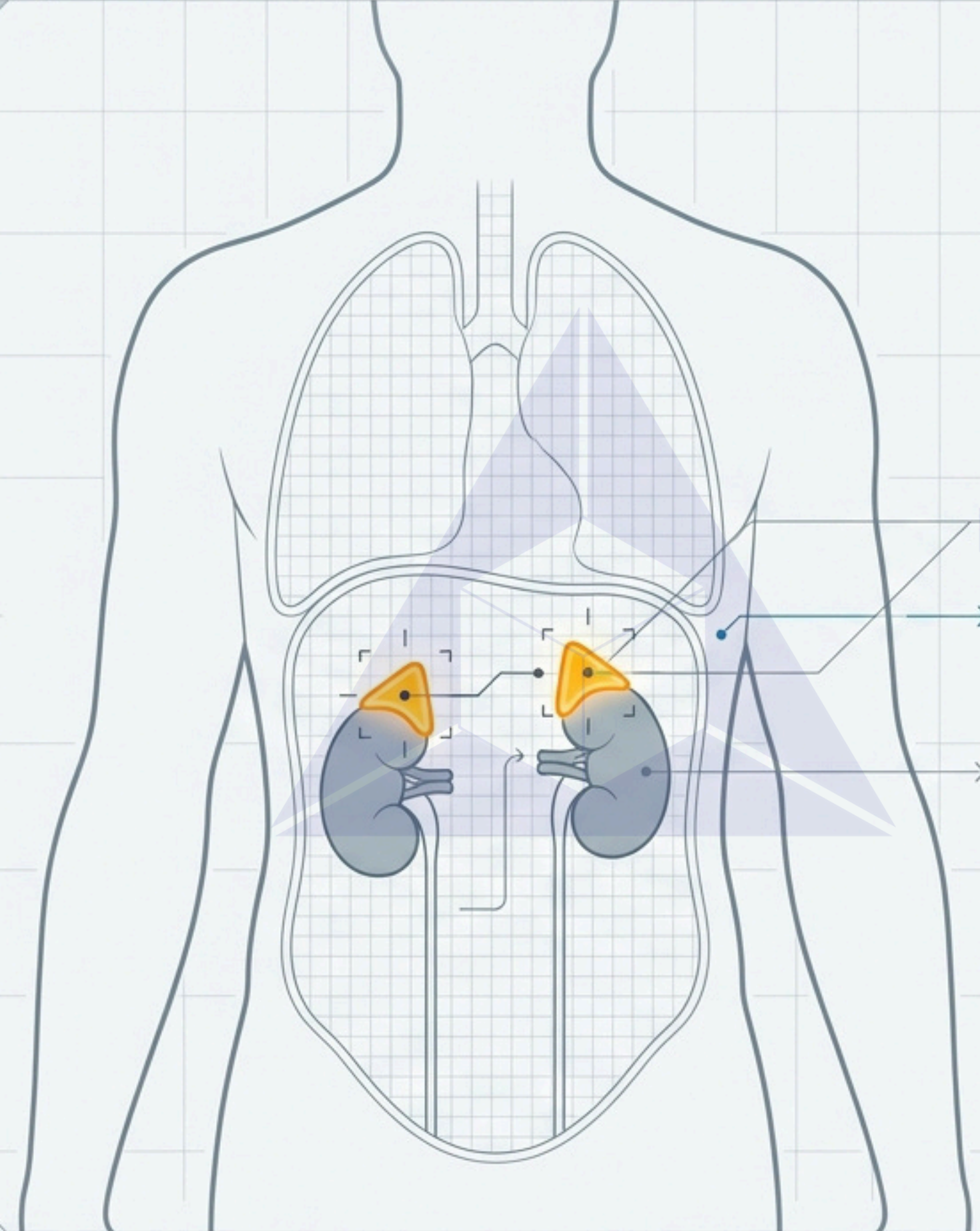
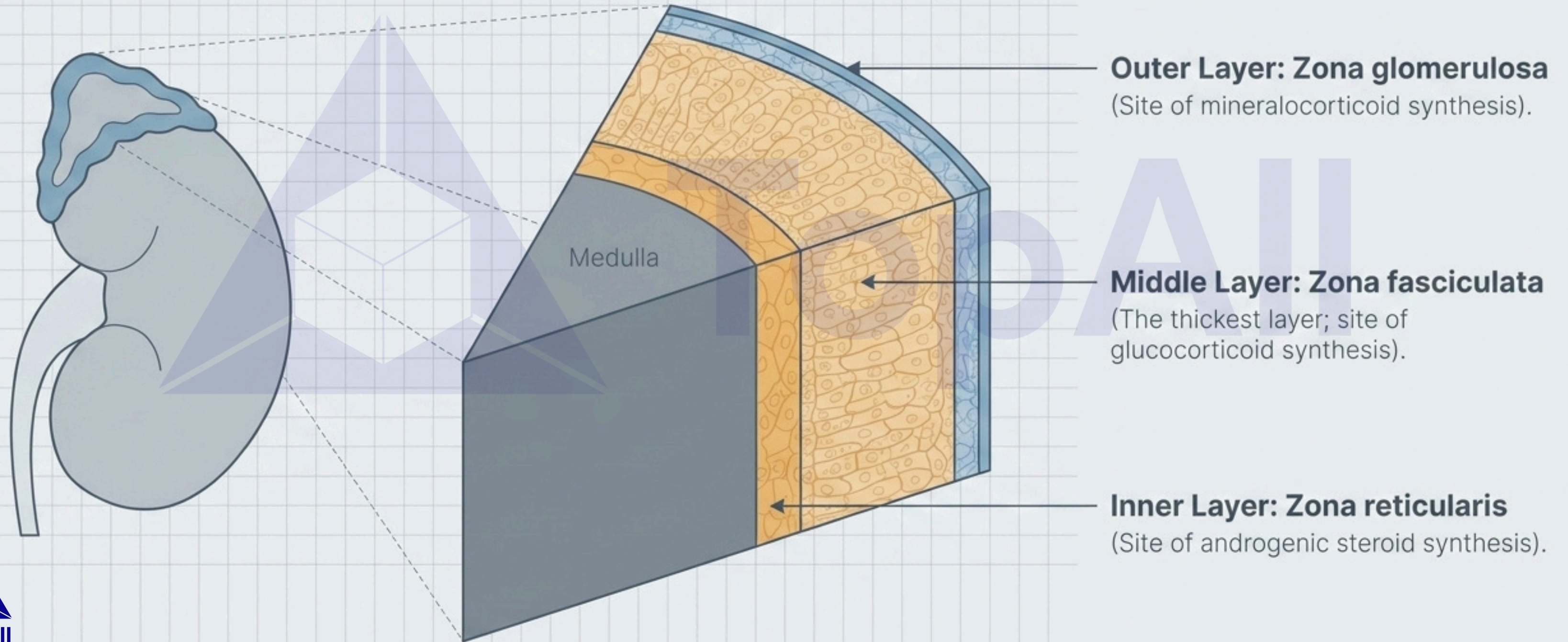




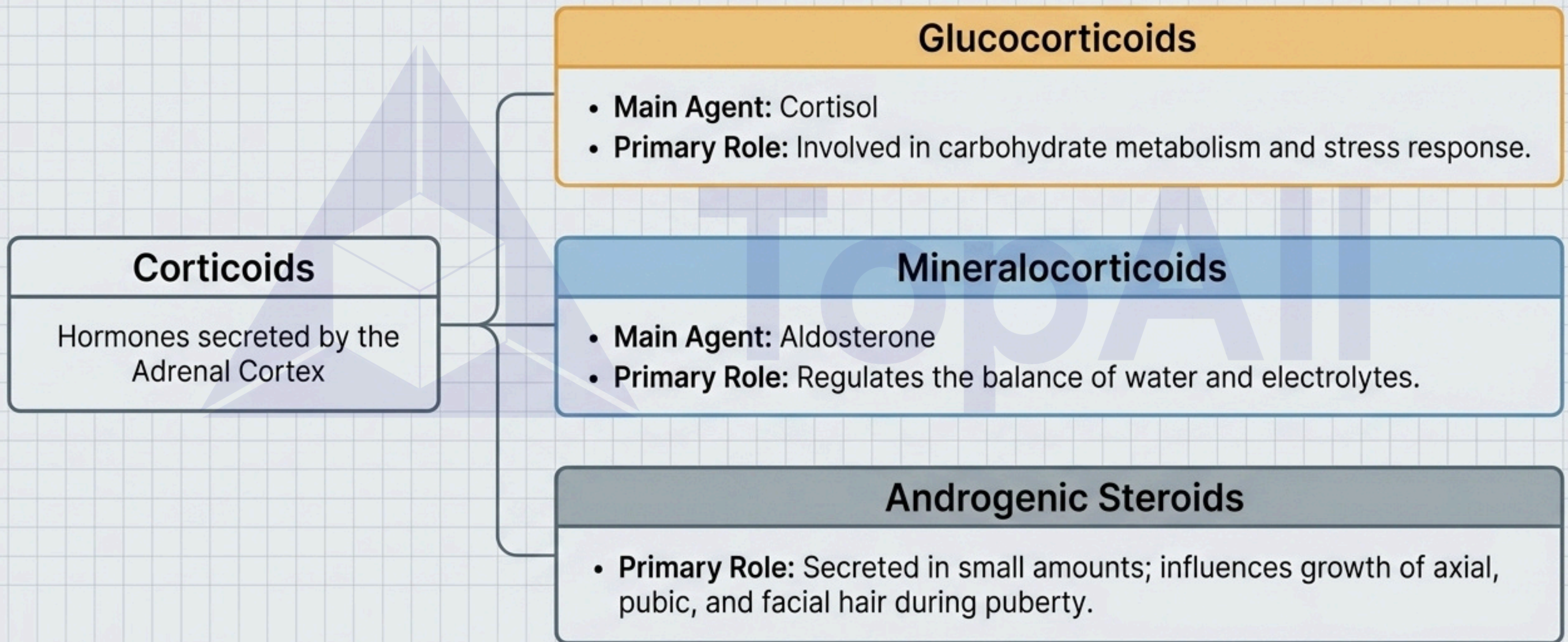
Cortisol, Aldosterone and Body Balance

The biological architecture of homeostasis and how the **adrenal cortex** manages **metabolism**, fluid, and survival.

The Architecture of the Adrenal Cortex



The Corticoid Family Tree





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Glucocorticoids and Cortisol: The Metabolic Managers

Blood



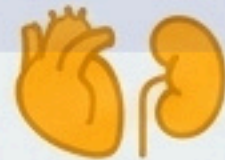
Stimulates red blood cell (RBC) production.

Metabolism



Stimulates gluconeogenesis, lipolysis, and proteolysis.
Inhibits cellular uptake and utilization of amino acids.

Cardio & Renal



Actively involved in maintaining the cardiovascular system and kidney functions.

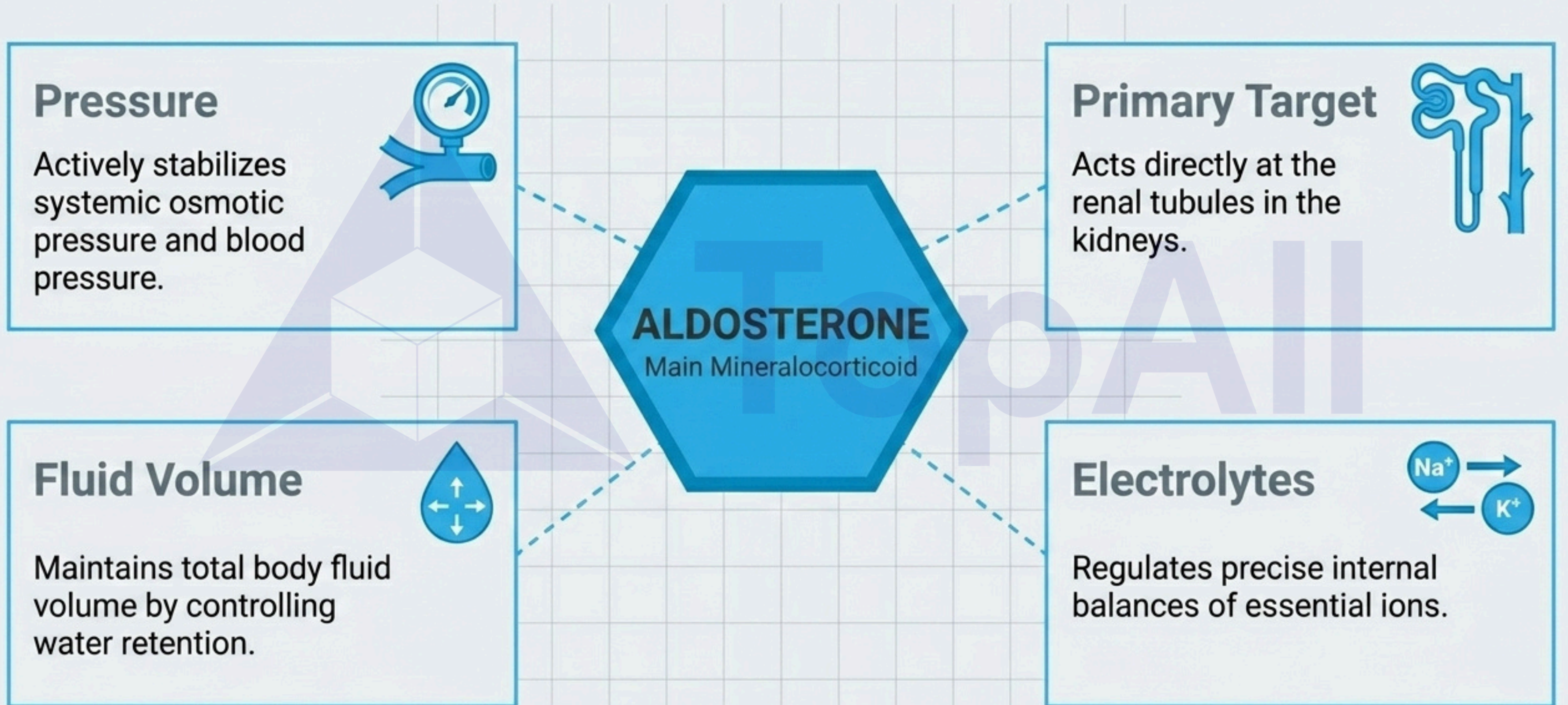
Immune System



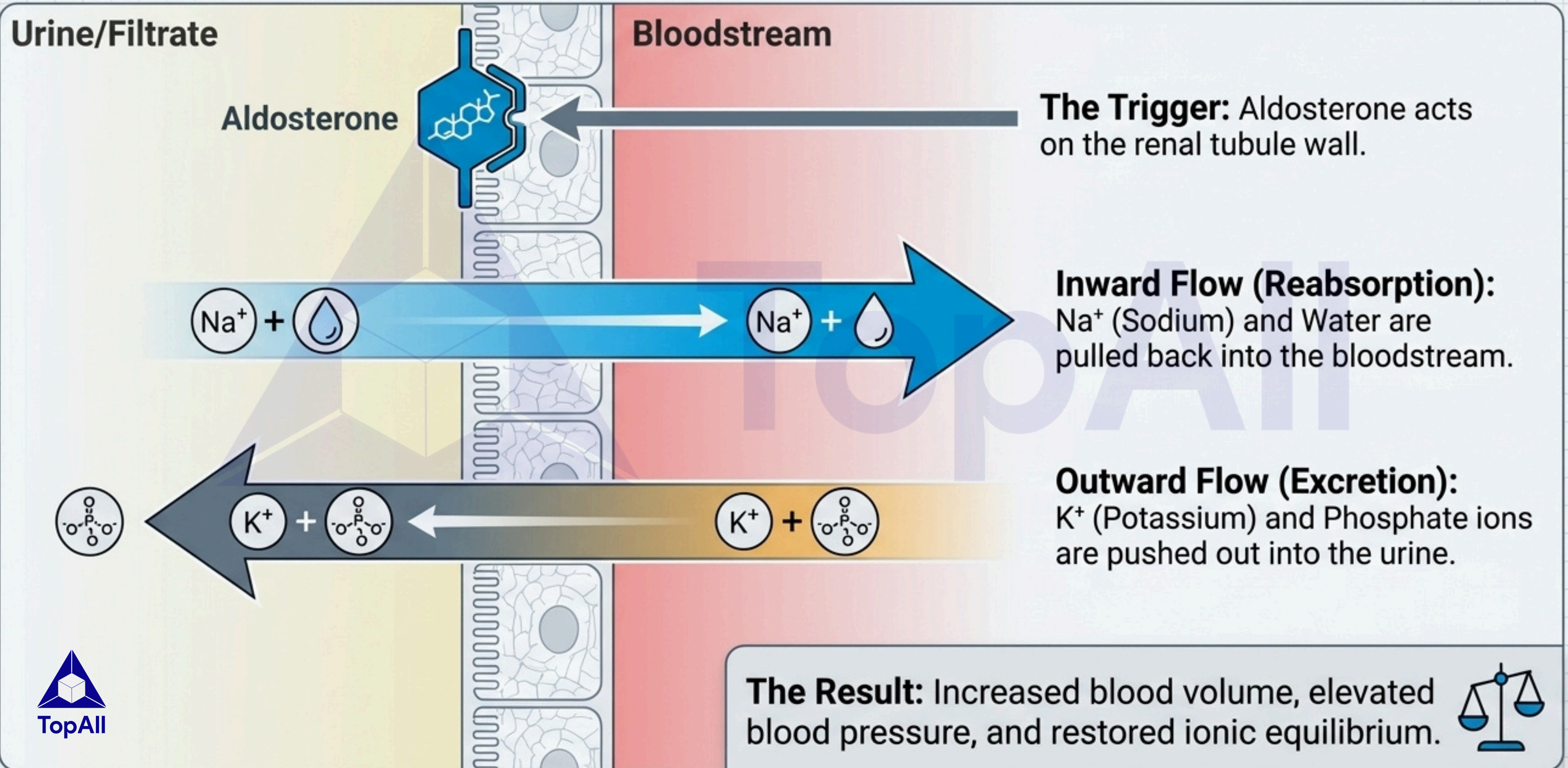
Produces anti-inflammatory reactions and suppresses the immune response.

CORTISOL
Main Glucocorticoid

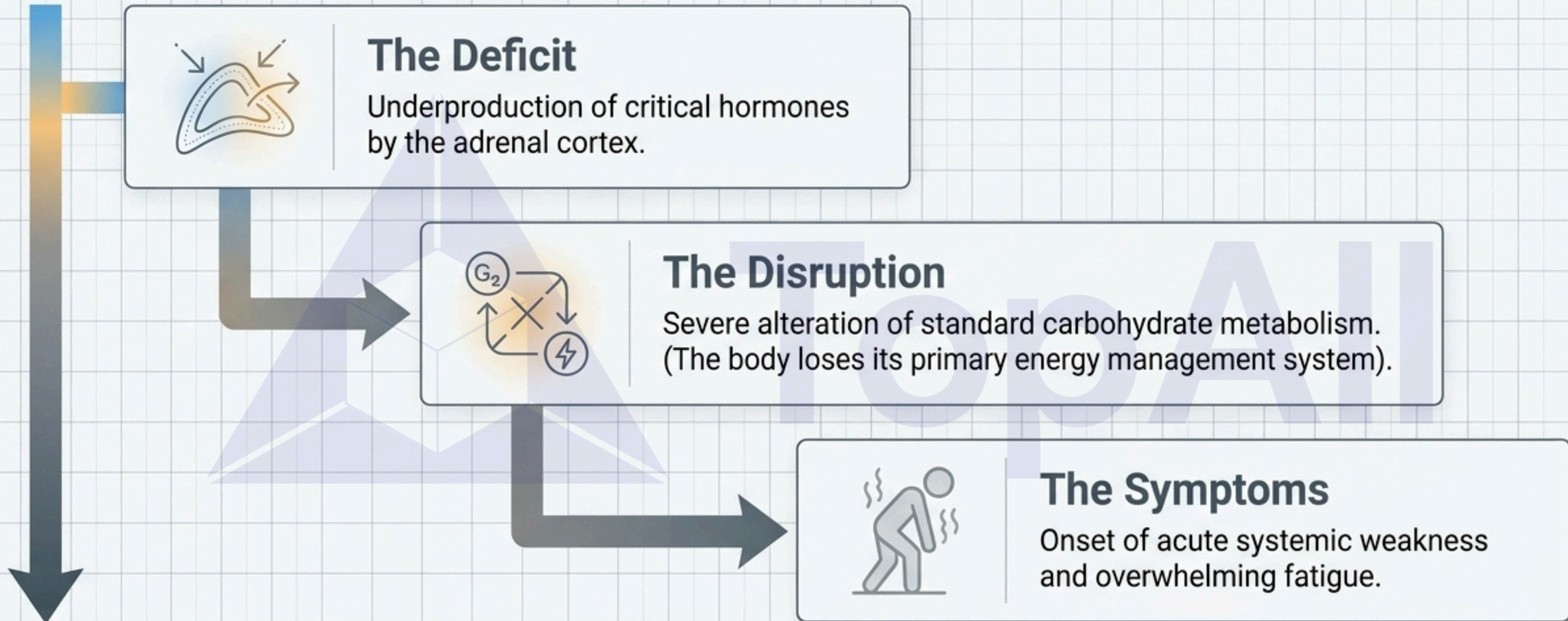
Mineralocorticoids and Aldosterone: The Fluid Regulators



The Mechanism of Balance: Reabsorption & Excretion



System Failure: Addison's Disease



This specific cascade of biological failure is diagnosed as Addison's disease.

Key Takeaway: The Managers of Homeostasis

	Cortisol	Aldosterone
Chemical Class	● Glucocorticoid (from zona fasciculata)	● Mineralocorticoid (from zona glomerulosa)
Primary Mechanism	● Drives gluconeogenesis, lipolysis, and proteolysis.	● Drives Na⁺/water reabsorption and K⁺ excretion.
Systemic Purpose	● Manages metabolic energy, suppresses inflammation, and stimulates RBCs.	● Manages electrolyte balance, fluid volume, and blood pressure.

Together, these adrenal cortex hormones dictate the body's internal equilibrium, ensuring survival through continuous metabolic and fluid regulation.



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