

# Veterinary Bioscience: Metabolism



## WEEK 5 – THE HEALTHY URINARY TRACT

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### INTENDED LEARNING OUTCOMES

At the end of this lecture, you should be able to:

- explain why changes in extracellular fluid are linked to sodium concentrations and water movement
- describe the renin-angiotensin-aldosterone system (RAAS) and how it is regulated
- discuss how sympathetic nerves, angiotensin II, aldosterone and natriuretic peptides regulate sodium secretion and reabsorption
- describe the mechanisms and regulation of potassium secretion and reabsorption by the kidneys.

### KEYWORDS

sodium, potassium, water, reabsorption, secretion, renin-angiotensin-aldosterone system (RAAS), angiotensin II, aldosterone

## LECTURE 21 – STRUCTURE AND FUNCTION OF THE KIDNEYS 4 – RENAL CONTROL OF BLOOD VOLUME AND SODIUM, CHLORIDE AND POTASSIUM CONCENTRATIONS

This lecture will look at how sodium concentrations and water movement are related to each other, how the kidney reabsorbs sodium in order to increase blood volume, the role and actions of the renin-angiotensin-aldosterone system (RAAS), and how the RAAS is activated to produce angiotensin II and aldosterone.

### FURTHER READING

Hall JE. *Guyton and Hall Textbook of Medical Physiology*. 14th ed., Elsevier (2021)

Klein BG. *Cunningham's Textbook of Veterinary Physiology*. 6th ed., Elsevier (2020)