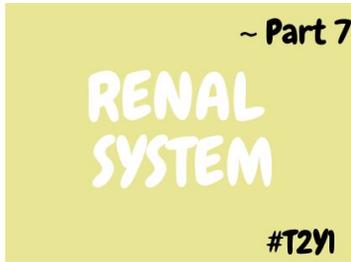


Note: All text underlined in blue are hyperlinks to external resources



## Key learning outcomes:

- Identify the key anatomical features of the kidney and its basic functional unit (nephron)
- Identify the microscopic features of the renal system
- Explain the processes involved in the three main stages in urine formation: (1) filtration, (2) reabsorption, (3) secretion

# ANATOMY

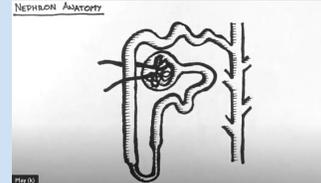
The renal system is also known as the urinary system. It is really important to get your head around the anatomy & microanatomy before moving onto some of the more challenging physiology concepts. You may have covered some of this at A level already so could be a great recap! The following videos give a great start:



This Khan Academy [video](#) covers the key structures and functions



Great visual [tutorial](#) to give more in-depth gross anatomy of kidney



This [video](#) delves deeper into the basic unit of the kidney - the nephron

# MICROANATOMY

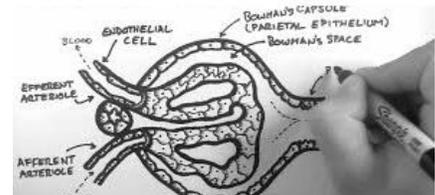
Start off by reading this [guide](#) which not only covers the histology of the kidney structures, but also the ureter, urethra and bladder, which funnily enough can be easy to neglect when studying the renal system! (Here is another [article](#) whose focus is on kidney histology)

Here are some videos which will talk through the key features seen on microscopic slides:

- *Overview of urinary system - 10m* ([WATCH](#))
- *Kidney - 10m* ([WATCH](#)) |
- *Bladder - 4m* ([WATCH](#))
- *Ureter - 2m* ([WATCH](#))

Try out these [slides](#) in slide and quiz mode to see what you have learnt from the reading and videos!

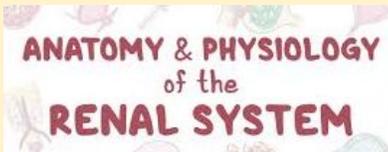
Check out this handwritten tutorial on glomerular histology - 6m



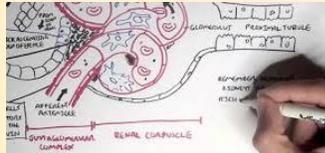
([WATCH](#))

# PHYSIOLOGY

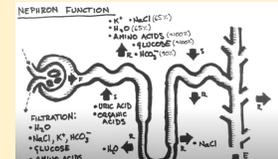
Now that you have a good foundation, it is time to build on this knowledge to understand the key physiological processes occurring at different parts of the renal system. Here are a selection of videos for you to watch, which tackle the three main stages in urine formation: filtration, reabsorption & secretion. Although they are all reviewing the same info, it is recommended to **choose at least two** of these to get two different approaches to explaining it:



Osmosis - 12m- [WATCH](#)



Armando Hasudungan - check out his [overview](#) of kidney physiology here and video on reabsorption/ secretion specifically ([WATCH](#))



Handwritten Tutorials - check out these videos on [nephron function](#) and the [role of GFR](#)

## CHAPTER SUGGESTIONS



If you like to read instead, these online chapters give an overview of the information discussed in the videos:

- Anatomy: Urinary system ([READ](#)) | Kidney ([READ](#))
- Physiology:
  - Lumen Learning - Overview ([READ](#))
  - Amboss - very detailed don't worry if you do not understand this all now - concepts will be reviewed in PCS ([READ](#))
  - Khan Academy: filtration ([READ](#)) | countercurrent flow ([READ](#))
  - TeachMe Physiology - glomerulus/ ion absorption ([READ](#))

To finish off, try these quizzes to see what you have learnt!

- Renal system ([GO](#))
- There are 3 anatomy quizzes and 2 physiology quizzes to try out! ([GO](#))
- Press [here](#) to try out quizzes on a variety of concepts discussed!



RENAL SYSTEM

~ Part 7

#T2Y1

Hope you have found this resource useful! Once you have completed this, please give some short feedback - it will take 10 seconds to fill in! This will help me to get your opinions and check engagement! ([GIVE FEEDBACK](#))