

# Pharmacology week 10 – Analgesics & Anti-inflammatories

'Analgesics & Anti-inflammatory Agents' makes up 9% of the pharmacology MCQ matrix.

**Reference:** Katzung's Basic and Clinical Pharmacology, 14th edition. Chapters 31, 36



Relative risk of side effects with different drugs in the same class is a common theme



Opiates comes up time and again (*often as part of other questions*)



Make sure you understand the mechanism of paracetamol toxicity in detail

## Learning Outcomes LOA 1

- Paracetamol
- Opiates
- Aspirin
- Steroids

## Learning Outcomes LOA 2

- Non-steroidal anti-inflammatory drugs
- Anti-gout agents

## Learning Outcomes LOA 3

- Disease modifying anti-rheumatic drugs

## Questions to consider

- Tell me about the pharmacodynamics and pharmacokinetics of paracetamol. What happens in toxicity?
- What are the opioid receptor subtypes, their locations and actions?
- What are the relative equivalences of the opiates?
- What are the pharmacodynamics and pharmacokinetics of opiates?
- Tell me about morphine? Fentanyl? Codeine? Pethidine? Tramadol? (you will also need some familiarity with methadone, buprenorphine, tapentadol)
- What are the adverse effects of the opiates? How do they differ in acute vs chronic use?
- To which opiate effects can people become tolerant?
- Which drugs have anti-inflammatory actions? How do they work?
- How is aspirin different to the NSAIDs? How does the side-effect profile differ?
- Which drugs are COX-2 selective? What are the implications of this?
- Look at the DMARDs briefly: major classes/actions/adverse effects
- What classes of drugs are used in the management and treatment of gout? How do they work?
- Tell me about colchicine. What happens in overdose?

# Physiology week 10 – Renal Function

Contributes to 'Renal Physiology' which makes up 15% of the physiology MCQ matrix.

**Reference:** Ganong's Review of Medical Physiology, 26th edition. Chapter 37



When studying, consider the *effects* of disordered renal function



This might not seem like a busy week but these are *BIG* concepts



Post your tubular function notes somewhere visible for easy reference and revision

## Learning Outcomes LOA 1

- Renal circulation
- Glomerular filtration
- Tubular physiology
- Regulation of water and electrolyte excretion
- Renal function disorder and diuretics

## Learning Outcomes LOA 2

- The bladder
- Anatomy of the renal system

## Questions to consider

- Describe the functional anatomy of the nephron. What is the role of mesangial cells? What is the juxtaglomerular apparatus?
- How is renal plasma flow calculated?
- What is the renal blood flow? How is it regulated?
- What is GFR? How is it measured and what is its normal value? Why is creatinine clearance different?
- What factors affect the GFR?
- Describe how the kidney handles water? Sodium? Glucose? Potassium? (*This is a really common viva topic*)
- Describe the concept of the renal threshold, how does this actual value differ from expected?
- What is the countercurrent mechanism?
- Compare and contrast osmotic versus water diuresis
- Describe the feedback mechanisms within the kidney for GFR
- Describe the mechanisms of different diuretic agents (table 37.8)
- Describe the control of the bladder, how is this altered in disease states?

# Pathology week 10 – Renal System

Contributes to 'Renal system and Genitourinary' which makes up 8% of the pathology MCQ matrix.

**Reference:** Robbins and Cotran Pathologic Basis of Disease, 9th edition. Chapter 20

**Supplemental Reference:** Barrett et al. Ganong's review of medical physiology 25th ed. Chapters 37, 39



Pay attention to how renal pathology affects acid base balance (very relevant clinically)



Urolithiasis is a common exam topic and links well to anatomy



Glomerular disease crops up commonly in the MCQs

## Learning Outcomes LOA 1

- Urinary tract obstruction
- Urolithiasis

## Learning Outcomes LOA 2

- Principles of renal disease
- Tubular and interstitial disease

## Learning Outcomes LOA 3

- Glomerular disease
- Hypertensive renal disease

## Questions to consider

- What are the systemic manifestations of renal disease?
- Outline the potential causes and consequences of acute renal failure
- How and where in the renal system can obstruction occur?
- Tell me about urolithiasis. What are they made up of? What influences their formation?
- What happens in acute tubular necrosis? What are the potential outcomes?
- Outline the pathogenesis of urinary tract infections and pyelonephritis
- Tell me about polycystic kidney disease including extra-renal associations
- What is the difference between primary and secondary glomerular disease? Give some examples
- Compare and contrast the nephritic and nephrotic syndromes
- Give a brief outline of post-streptococcal glomerulonephritis, what about IgA nephropathy? Renal disease in diabetes?
- What processes occur in the kidney in vascular disease? Tell me about the thrombotic microangiopathies, TTP and HUS
- Which malignancies arise in the kidney? Outline their morphology

# Anatomy weeks 9 & 10 – Lower Limb: Hip and Thigh

Contributes to 'Lower Limb' which makes up 25% of the anatomy MCQ matrix.

**Reference:** Moore and Dalley's Clinically Oriented Anatomy, 8th edition. Chapter 7

**Supplemental Reference:** McMinn's clinical atlas of human anatomy 7th edition. Chapter 7



This is the second week of study allocated to anatomy of the hip and thigh region. Check week 9 of the study guide for the LOA details



If you haven't already, cross reference your study with McMinn's and Anatomedia



The relative anatomy of the sciatic nerve as it exits the pelvis needs some attention