

Cardiovascular, Respiratory and Renal Systems

Module Code:	CLS4002-B
Academic Year:	2018-19
Credit Rating:	20
School:	School of Pharmacy and Medical Sciences
Subject Area:	Clinical Sciences
FHEQ Level:	FHEQ Level 4
Module Leader:	Dr Keren Bielby-Clarke

Additional Tutors:
Dr Philippa Garner

Pre-requisites:

Co-requisites: Integrated Medical Sciences 2017-18

Contact Hours

Type	Hours
Lectures	33
Seminar	15
Tutorials	12.5
Laboratory	20.5
Directed Study	119

Availability Periods

Occurrence	Location/Period
BDA	University of Bradford / Academic Year (Sept - May)

Module Aims

To develop knowledge of: the structure, function & control of the human cardiovascular, respiratory and renal systems; its contribution to the maintenance of homeostasis; how the system is affected by common diseases & the basic principles of assessment & treatment of common cardiovascular, respiratory and renal disorders

Outline Syllabus

Introduction to transport systems, homeostasis, cardiovascular and respiratory physiology. Structure of heart and major blood vessels, development, congenital defects and valvular problems. Excitation and heart contraction, cardiac cycle. Cardiac output, gas transport. Blood flow, tissue perfusion, cardiovascular pressure, regulation and capacitance. Structure of respiratory system, its blood supply and innervation, development of respiratory system, ventilation and lung mechanics, gas exchange and transport, respiratory regulation and adjustments. Clinical assessment: Lung function testing, major features of chest X ray, respiratory muscle strength. Heart rate and cardiac cycle. ECG and blood pressure measurement. Cardiovascular and Respiratory disease: Chronic heart failure, acute chest pain, ischaemic heart disease, hypertension and thrombosis. Disturbance of cardiac rhythm, drug effects of rhythm and contractility. Respiratory failure and physiological consequences. Lung defences: physical, biological, immunological. Microbiology of lungs, diagnosis and treatment of acute and chronic infections. Pathology, diagnosis and treatment of asthma, interstitial lung disease, cancers. Introduction to the renal system and its role in homeostasis and its relationship with other transport systems. Structure and development of the renal system. Renal perfusion and glomerular filtration. Renal tubular function, renal clearance, body fluid compartments and their composition.

Renal perfusion and glomerular filtration. Renal tubular function, renal clearance, body fluid compartments and their composition. Regulation of water, salt and acid/base balance; renal regulation of haemoglobin and calcium. Urine composition, clearance measurements, imaging and examination of urinary structures. Interpretation of acid/base disturbances. Acute and chronic renal failure, glomerulonephritis, nephrotic syndrome and common infections of the urinary tract. Common pathological changes in the urinary tract. The role of the kidney in hypertension. Dialysis, diuretics and transplantation.

Module Learning Outcomes

On successful completion of this module, students will be able to...

- 1 Describe the structure and function of the human cardiorespiratory and renal systems, the control of respiration and cardiovascular function and the clinical assessment of cardiorespiratory and renal function.
- 2 Describe the features of common respiratory, cardiovascular and renal diseases and their treatments.
- 3 Demonstrate knowledge of the basis for the practical assessment of cardiorespiratory and renal function.
- 4 Interpret cardiorespiratory and renal function data.
- 5 Work collaboratively with colleagues to produce oral case study presentations and summaries.
- 6 Review your progress on the module and work to clearly defined targets.

Learning, Teaching and Assessment Strategy

Information outlining the knowledge and understanding required is delivered in lectures. Tutorials, practicals and CAL workshops will be used to reinforce the taught component and formative assessments will allow you to monitor your progress. Self-directed learning to

support each topic will take place within the directed study time. You will work in small groups for case studies which will be assessed by group presentations. A practical assessment, laboratory report and an MCQ/EMQ examination will be used to assess your knowledge base.

Mode of Assessment

Type	Method	Description	Length	Weighting	Final Assess'
Summative	Examination - MCQ	One 1.5 hour MCQ - End of Semester 2	1.5 hours	80%	Yes
Summative	Coursework	Anatomy Spot Test - Mid Semester 2		20%	No

Legacy Code (if applicable)

CS-1004L

Reading List

To view Reading List, please go to [rebus:list](#).