

1. Record Nr.	UNINA9911133052503321
Autore	Walker Simon W
Titolo	Clinical Biochemistry
Pubbl/distr/stampa	New York : , : John Wiley & Sons, Incorporated, , 2013 ©2014
ISBN	9781118272114
Edizione	[9th ed.]
Descrizione fisica	1 online resource (304 pages)
Collana	Lecture Notes Ser.
Altri autori (Persone)	BeckettGeoffrey J RaePeter AshbyPeter
Disciplina	616.07/56
Soggetti	Biochemical Phenomena
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Clinical Biochemistry: Lecture Notes -- Contents -- Preface -- List of abbreviations -- How to use your textbook -- About the companion website -- 1 Requesting and interpreting tests -- Introduction -- Collection of specimens -- The use of clinical biochemistry tests -- Point of care testing (POCT) (Table 1.5) -- Interpretation of clinical biochemistry tests -- Sources of variation in test results -- Analytical sources of variation -- Blunders -- Biological causes of variation -- How do results vary in health? -- How do results vary in disease? -- The assessment of diagnostic tests -- Audit in clinical biochemistry -- The audit process -- FURTHER READING -- Appendix 1.1: Screening for rare diseases -- 2 Disturbances of water, sodium and potassium balance -- Introduction -- Water and sodium balance -- Internal distribution of water and sodium -- Osmolality and tonicity -- Colloid osmotic pressure (oncotic pressure -- Regulation of external water balance -- Regulation of external sodium balance -- Disorders of water and sodium homeostasis -- Hyponatraemia -- Hypernatraemia -- Other chemical investigations in fluid balance disorders -- Blood specimens -- Urine specimens -- Potassium balance -- Abnormalities of plasma potassium concentration -- Hypokalaemia -- Hyperkalaemia -- Other investigations in disordered K ⁺ metabolism -- Fluid and electrolyte

balance in surgical patients -- Intravenous fluid administration --
FURTHER READING -- 3 Acid-base balance and oxygen transport --
Introduction -- Transport of carbondioxide -- Renal mechanisms for
HCO₃ reabsorption and H⁺ excretion -- Buffering of hydrogen ions --
Investigating acid-base balance -- Collection and transport of
specimens -- Temperature effects -- Disturbances of acid-base status
-- Respiratory acidosis -- Respiratory alkalosis -- Metabolic acidosis
-- Metabolic alkalosis.

Interpretation of results of acid-base assessment -- Plasma [H⁺] is
increased -- Plasma [H⁺] is decreased -- Plasma [H⁺] is normal --
Mixed acid-base disturbances -- Other investigations in acid-base
assessment -- Total CO₂ (reference range 24-30 mmol/L) -- Anion
gap (reference range 10-20 mmol/L) -- Plasma chloride (reference
range 95-107 mmol/L) -- Treatment of acid-base disturbances --
Oxygen transport -- Indications for full blood acid-base and oxygen
measurements -- Respiratory insufficiency -- Type I: low PO₂ with
normal or low PCO₂ -- Type II: low PO₂ with high PCO₂ -- Oxygen
therapy -- FURTHER READING -- 4 Renal disease -- Introduction --
Impaired renal function -- Tests of glomerular function --
Measurement of creatinine clearance -- Estimation of creatinine
clearance -- Plasma creatinine -- Creatinine clearance or plasma
[creatinine]? -- Low plasma [creatinine] -- High plasma [creatinine] --
Plasma urea -- Tests of tubular function -- Urine osmolality and renal
concentration tests -- Fluid deprivation test -- DDAVP test -- Urinary
acidification tests -- Renal tubular acidosis -- Glycosuria -- The amino
acidurias -- Fanconi syndrome -- Renal handling of sodium and
potassium -- Sodium excretion -- Potassium excretion -- Acute kidney
injury -- Chronic kidney disease -- Proteinuria -- Overflow proteinuria
-- Glomerular proteinuria -- Nephrotic syndrome --

Glomerulonephritis -- Orthostatic proteinuria -- Tubular proteinuria --
Renal stones -- Hypercalciuria -- Oxalate, cystine and xanthine
excretion -- Chemical investigations on patients with renal stones --
FURTHER READING -- 5 Disorders of calcium, phosphate and
magnesium metabolism -- Calcium homeostasis -- Calcium balance --
Biological function of calcium -- Control of calcium metabolism --
Investigation of abnormal calcium metabolism -- Hypercalcaemia --
Primary hyperparathyroidism.

Hypercalcaemia of malignancy -- Other causes of hypercalcaemia --
Hypocalcaemia -- Vitamin D deficiency -- Hypoparathyroidism --
Metabolic bone disease -- Markers of bone turnover -- Rickets and
osteomalacia -- Osteoporosis -- Paget's disease -- Renal
osteodystrophy -- Phosphate metabolism -- Hypo- and
hyperphosphataemia -- Magnesium metabolism -- Hypomagnesaemia
and magnesium deficiency -- Hypermagnesaemia -- 6 Diabetes
mellitus and hypoglycaemia -- Glucose homeostasis -- Insulin
secretion -- Diabetes mellitus -- Diagnosis -- Blood and plasma
glucose -- Oral glucose tolerance test (OGTT) -- Impaired fasting
glucose (IFG) and impaired glucose tolerance (IGT) -- Monitoring the
treatment of diabetic patients -- Home blood glucose monitoring --
Glycated haemoglobin -- Glycated plasma proteins -- Microalbumin --
Metabolic complications of diabetes mellitus -- Diabetic ketoacidosis
(DKA) -- Laboratory assessment and management of diabetic
ketoacidosis -- Nonketotic, hyperglycaemic coma -- Hypoglycaemia --
Fasting hypoglycaemia -- Reactive or postprandial hypoglycaemia --
Insulinoma -- Other causes of fasting hypoglycaemia -- FURTHER
READING -- 7 Disorders of the hypothalamus and pituitary --
Introduction -- The hypothalamus -- Anterior pituitary hormones --
Corticotrophin-releasing hormone and adrenocorticotrophic hormone

-- Gonadotrophin-releasing hormone and the gonadotrophins
luteinising hormone and follicle-stimulating hormone -- Thyrotrophin-releasing hormone and thyroid-stimulating hormone -- Growth hormone-releasing hormone and growth hormone -- Acromegaly and gigantism -- Prolactin -- Hyperprolactinaemia and its investigation -- Hyperprolactinaemia in psychiatric patients -- Endocrine changes in anorexia nervosa -- Anterior pituitary disease and its investigation -- Causes -- Investigation -- Treatment.

Dynamic function tests - insulin stress test -- Monitoring treatment in hypopituitarism -- Monitoring hormone replacement therapy -- Posterior pituitary hormones -- Vasopressin -- 8 Abnormalities of thyroid function -- Introduction -- Thyroid hormone synthesis, action and metabolism -- Synthesis and metabolism -- Plasma transport and cellular action -- Regulation of thyroid function -- Investigations to determine thyroid status -- Selective use of thyroid function tests -- Interpreting results of thyroid function tests -- Hyperthyroidism -- Hypothyroidism -- T4 replacement therapy -- T4 replacement in subclinical hypothyroidism -- T4 therapy in central hypothyroidism (hypopituitarism) -- Situations in which thyroid function test results may be misleading -- Thyroid hormone resistance (THR) -- Causes of abnormal results for thyroid hormone measurements in euthyroid subjects -- Miscellaneous chemical tests and thyroid disease -- TRH test -- Anti-thyroid peroxidase antibodies (TPOAbs) -- Thyrotrophin receptor antibodies (TRAbs) -- Tests affected by thyroid dysfunction -- 9 Disorders of the adrenal cortex and medulla -- Introduction -- Regulation of adrenal steroid hormone synthesis and secretion -- Glucocorticoid secretion -- Aldosterone secretion -- Androgen secretion -- Investigation of suspected adrenocortical hyperfunction -- Cushing's syndrome -- Tests used to establish if a clinical diagnosis of Cushing's syndrome is likely -- Treatment -- Investigation of suspected adrenocortical hypofunction -- Diagnosis of primary adrenal hypofunction (Addison's disease) -- Diagnosis of secondary adrenocortical insufficiency -- Other pituitary function tests -- Biochemical tests in the investigation of hypertension -- Secondary hypertension -- Primary hyperaldosteronism (low-renin hyperaldosteronism) -- Investigation of suspected primary hyperaldosteronism.

Secondary hyperaldosteronism (high-renin hyperaldosteronism) -- Mineralocorticoid deficiency -- Inherited adrenocortical enzyme defects -- Pheochromocytoma -- Diagnosis -- Urine fractionated metadrenalines -- 10 Investigation of gonadal function infertility, menstrual irregularities and hirsutism -- Introduction -- Male gonadal function -- Spermatogenesis and its control -- Transport, metabolism and actions of testosterone -- Investigation of infertility and male hypogonadism -- Hypergonadotrophic and hypogonadotrophic hypogonadism -- Female gonadal function -- Menstrual disorders and infertility -- Ovarian dysfunction and its investigation -- Oligomenorrhoea and amenorrhoea -- Infertility -- Hirsutism and virilism -- Polycystic ovarian syndrome (PCOS) -- Ovarian failure -- Hormone replacement therapy -- Steroid contraceptives -- 11 Pregnancy and antenatal screening -- Introduction -- The foetoplacental unit -- Human chorionic gonadotrophin -- Steroids in pregnancy -- Effect of pregnancy on biochemical tests -- Reproductive hormones -- Cortisol -- Thyroid function tests -- Plasma volume and renal function -- Serum lipids and proteins -- Liver function tests -- Iron and ferritin -- Complications in pregnancy -- Ectopic pregnancy -- Diabetes mellitus -- Thyroid disorders -- Pre-eclampsia -- Obstetric cholestasis -- Pre-natal diagnosis of foetal abnormalities --

Screening for trisomy 21 -- Neural tube defects -- 12 Cardiovascular disorders -- The diagnosis of myocardial infarction -- Biochemical tests in myocardial infarction and ischaemia -- Time-course of changes -- Optimal times for blood sampling -- Creatine kinase -- The diagnosis of heart failure -- The diagnosis of thromboembolic disease -- Cardiovascular risk factors -- Lipids -- Enzymes involved in lipid transport -- Metabolism of plasma lipoproteins -- Chylomicron metabolism.

VLDL and IDL metabolism.

Sommario/riassunto

Concise yet comprehensive, Clinical Biochemistry Lecture Notes contains all the essential information for students and foundation doctors to understand the biochemical basis of disease and principles of biochemical diagnostics. It presents scientific principles in a clinical setting, with a range of case studies integrated into the text to clearly demonstrate how knowledge should be applied to real-life situations. Key features include: The fundamental science underpinning common biochemical disorders and their investigation in clinical practice Accessible flow charts of biochemical processes and the reasoning behind specific tests, making look-up and understanding easy A brand new companion website at www.lecturenoteseries.com/clinicalbiochemistry with self-assessment and downloadable summary slides for revision Clinical Biochemistry Lecture Notes is an ideal overview and revision guide for medical students, foundation doctors, general practitioners, and nurses. It also provides a core text for scientific and medical staff pursuing a career in clinical biochemistry.
