

King Saud University
College of Science
Biochemistry Department

Course title and code: Biochemistry of biological fluid (BCH 472)

Credit hours: 3 (2 + 1)

Objective: The students get important knowledge from this course about types and distribution of body fluids. Samples collection and management. Urine: Formation; normal and abnormal constituents and their role in diagnosis of renal, hepatic and blood diseases. Digestive tract secretions: saliva, bile, pancreatic juice; faeces and their relevance to laboratory diagnosis of some hepatic, pancreatic and intestinal diseases. Sweat analysis and its relevance to cystic fibrosis. Amniotic fluid and its relevance to some genetic diseases. Composition, function and physical properties of semen; milk; lymph; CSF; synovial fluid; tears, aqueous humour and mucous. Biochemical diagnostic tests related to these fluids.

Reference Books:

- **Urinalysis and body fluids** (Susan King Strasinger- Marjorie Schaub De Lorenzo) Latest edition
- **Fundamentals of Clinical Chemistry** (Tietz) Latest edition
- **Text Book of Medical physiology** (Guyton and Hall)

Topics	Contact hours
Quality control in laboratory analysis	1
Types of body fluids; intra-and extra stitial l fluids, intra-and extra cellular fluids collection and management of samples	2
Urine: Formation, anatomy and physiology of nephrons, renal threshold. Normal and abnormal physical properties. Normal and abnormal constituents. Electrolyte balance. Urine screening tests as laboratory diagnostic tools for renal function, hepatic functions, blood abnormalities. Calculi formation and analysis	5
Saliva: Composition, functions, secretion and its control. Clinical significance of saliva analysis	1
Gastric juice: Composition, functions, secretion, relevance of peptic ulcers & peptic carcinoma. Acid output	2
Bile: Composition, formation and function. Relevance to digestion	1
Pancreatic juice and duodenal content: Composition and function	1
Faeces: Composition, clinical significance of faeces analysis; diagnosis of hepatic pancreatic and intestinal disease	2
Sweat: Composition, formation, function and relevance to diagnosis of cystic	1

fibrosis & miner's syndrome.	
Amniotic fluid: Composition, analysis for screening of genetic diseases. Pregnancy tests.	2
Semen: Composition and formation. Biochemical tests relevant to fertility.	1
Milk: Composition, formation and properties	2
Lymph; Composition, formation and relevance to blood	1
CSF: Composition and formations. Biochemical and other relevant clinical laboratory tests	1
Synovial fluid: Composition, function and physical properties. Clinical significance in testing for arthritis	1
Sputum :Composition and formation. Biochemical tests of clinical significance	1
Pericardial, pleural and peritoneal fluids	3
Tears: Composition, function and secretion. Relevance of tear analysis to cystic fibrosis	1
Aqueous and vitreous fluids: Composition and function.	1

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