

Cellular Pathology

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1. Five diagnostic techniques used in pathology

Necroscopy, radiography, urinalysis, microscopic examination of tissues and hematological tests are the different techniques used in pathology.

• **NECROPSY**

Is an examination and dissection of a dead body to determine cause of death or the changes produced by disease. autopsy, PM, postmortem examination, post-mortem examination, postmortem, post-mortem. examination, scrutiny - the act of examining something closely (as for mistakes). It is also called autopsy.

There are six distinctive morphological patterns of necrosis:

- 1 Coagulative necrosis
- 2 Liquefactive necrosis
- 3 Gangrenous necrosis
- 4 Caseous necrosis
- 5 Fat necrosis is
- 6 Fibrinoid necrosis



•RADIOGRAPHY

Radiography is an imaging technique using X-rays, gamma rays, or similar ionizing radiation and non-ionizing radiation to view the

internal form of an object.

Applications of radiography include medical radiography and industrial radiography.

Similar techniques are used in airport security.

System: Musculoskeletal

Significant tests: screening tests, X-ray, CT, MRI, PET, bone scan, ultrasonography, mammography, fluoroscopy

Significant diseases: Cancer, bone fractures

Subdivisions: Interventional, Nuclear, Therapeutics, Pediatric




Specialist: Radiographer

Example of a radiography



•URINALYSIS

3 Types of Urinalysis

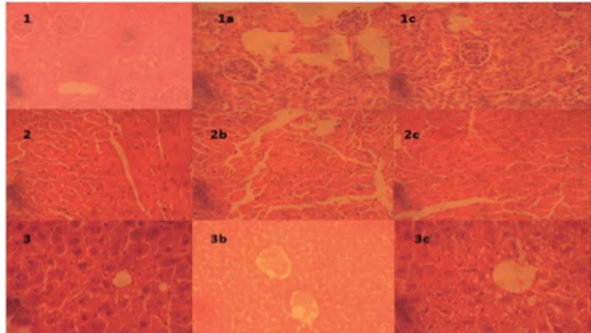
1. Urinalysis	2. Rapid Urinalysis	3. 24-hour Urinalysis
		
lab e composition	Performed at doctor's office using test strips Checks for common renal abnormalities	Performed over 24 ho Gives clear of renal fu

Urinalysis is a series of tests on your urine. It is used to check for signs of common conditions or diseases. You may have a urinalysis as part

of a routine check of your overall health, for instance as part of an annual physical. Urinalysis is one way to find certain illnesses in their earlier stages. They include: Kidney disease, Liver disease, Diabetics

•**MICROSCOPIC EXAMINATION OF TISSUES**

Histopathology is the microscopic examination of biological tissues to observe the appearance of diseased cells and tissues in very fine detail. Hence histopathology is the study of microscopic changes or abnormalities in tissues that are caused as a result of diseases.



Histology of some vital organs in the body

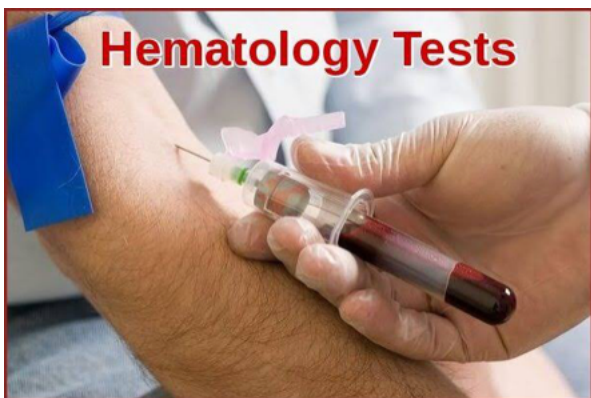
•HEMATOLOGY / HEMATOLOGICAL TESTS

Hematology is the branch of medicine concerning the study of blood, the blood-forming organs, and blood diseases. Hematology tests include laboratory assessments of blood formation and blood disorders.

Examples are:

- Full Blood Count Testing
- White Blood Cells (WBC) Testing

- Red Blood Cells (RBC) Testing
- Hemoglobin Testing
- Hematocrit and Platelets
- Mono Screening
- Vitamin B12 Deficiency Testing
- Renal Profiling.



2. Cellular adaptation precedes cell death. Cellular adaptation is the ability of cells to respond to various types of stimuli and adverse environmental changes. These adaptations

include hypertrophy (enlargement of individual cells), hyperplasia (increase in cell number), atrophy (reduction in size and cell number), metaplasia (transformation from one type of epithelium to another), and dysplasia (disordered growth of cells). Tissues adapt differently depending on the replicative characteristics of the cells that make up the tissue. For example, labia tissue such as the skin can rapidly replicate, and therefore can also regenerate after injury, whereas permanent tissue such

as neural and cardiac tissue cannot regenerate after injury. If cells are not able to adapt to the adverse environmental changes, cell death occurs physiologically in the form of APOPTOSIS, or pathologically, in the form of necrosis. This learning card provides an overview of the main cellular adaptive mechanisms and their different consequences in the human body.

