

# INTRODUCTION TO HISTOPATHOLOGY

Histology is the technique of examination of normal tissues at microscopic level. Histopathology is examination of tissues for presence or absence of changes in their structure due to disease processes. This observation has been made possible by examining thin sections of tissues which are coloured differently by different dyes and stains.

The histopathological specimens are mostly collected by a surgeon in an operation theater. The specimens in the form of small pieces of tissues are submitted to the histopathology section of a pathology laboratory.

## Responsibilities of a technician

1. Specimen preservation
2. Specimen logging
3. Preparation of the specimen to facilitate their gross and microscopic examination to be performed by histopathologist .



## Methods To Preserve Specimens



## Basic Steps For Tissue Processing :

The specimen processing includes the following basic steps:

- A. Fixing
- B. Embedding
- C. Microtomy
- D. Staining
- E. Mounting

## Laboratory Requirements :

### Glassware :

- I. Specimen containers
- II. Coplin staining jars or dishes
- III. Balsam bottles

### Chemicals and reagents :

- I. Fixatives
- II. Various organic solvents
- III. Decalcifying solutions
- IV. Embedding materials
- V. Various staining solutions
- VI. Various dilutions of ethyl alcohol
- VII. Mounting media



## THE GROSS ROOM

The gross room or specimen reception laboratory is where tissue specimens from the operating theaters and clinics are received. An accurate diagnosis from this tissue is dependent upon the correct identification, handling and processing in this busy area.

### Specimen handling and identification

Each laboratory has its own way of specimen identification, giving the tissue a unique accession number. This may include the year and month the specimen was received. e.g. 04-05-06 could represent a specimen that was the fourth case received in may 2006; the laboratory computer usually generates this number.

If multiple specimens are received on the same patient from the same operation procedure, then specimens may be given the same number followed by a numerical or alphabetical designation.

### GROSSING:

A pathologist, resident, physician assistant, histotechnologist, or biomedical scientist can gross specimens.

The routine surgical laboratory receives many different tissue specimens ranging from small biopsies (breast, bladder, bone marrow) to complete resections (larynx, uterus, large bowel) .



## **THERE ARE SEVEN MAJOR COMPONENTS IN GROSSING A SPECIMEN:**

- Reliable and rapid transfer of the specimen from surgery to pathology
- Accurate identification of the specimen
- Description of additional specimens received from the same patient
- Gross description of the specimen's normal and abnormal features
- Recording the sites from which blocks of tissue are taken
- Recording markers that help with the correct orientation
- Identifying special studies requested and/or needed.