

TISSUE PROCESSING

□ Histology:

It is the branch of science which deals with the gross & microscopic study of normal tissue

□ Histopathology:

It is the branch of science which deals with the gross & microscopic study of tissue affected by disease.

□ Histo-technique :

The techniques for processing the tissue, whether **biopsies**, larger **specimen** removed at surgery, or **tissue from autopsy** so as to enable the pathologist to study them under the microscope .

Protocols followed in Histo-techniques

- 1) Receipt & Identification.
- 2) labeling of the specimen with numbering.
- 3) fixation.
- 4) Washing.
- 5) dehydration.
- 6) clearing.
- 7) impregnation.
- 8) Embedding.
- 9) section cutting.
- 10)staining.
- 11)mounting.

protocols followed in Histotechniques

1- Receipt & Identification

Tissue specimen received in the surgical pathology laboratory have a request form that list the patient information and history along with a description of the site of origin.



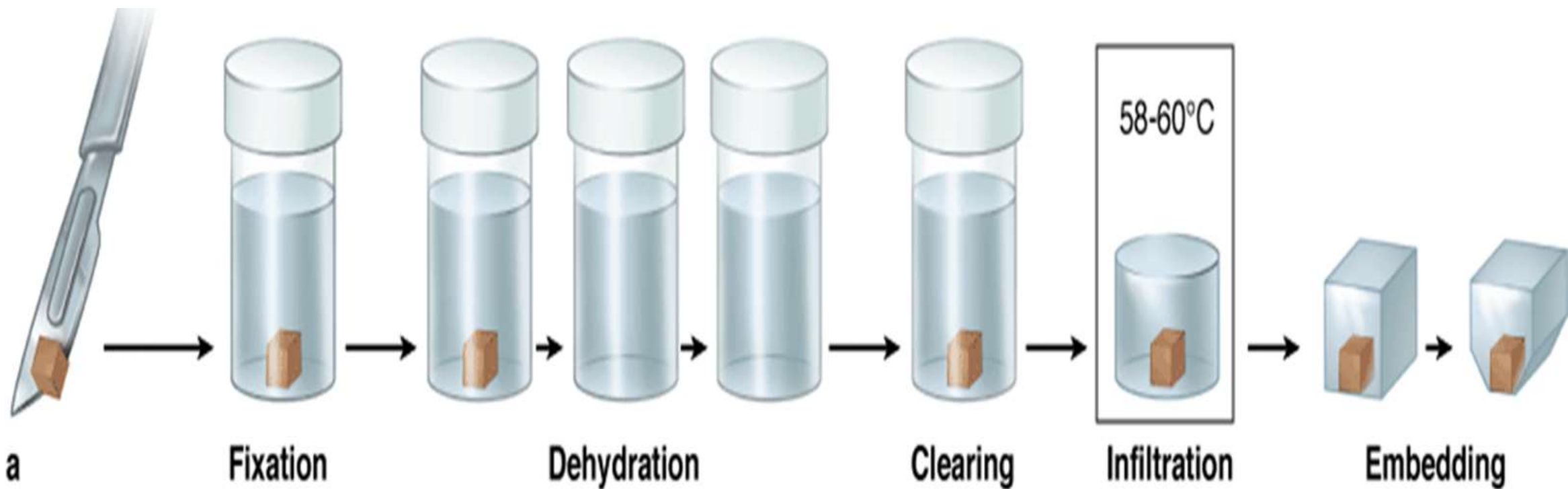
2-labeling of the specimen with numbering.

The specimen are accessioned by giving them a number that will identify each specimen for each patient.



3-fixation.

- ❑ It is a process in which a specimen is treated by exposing it to a fixative for a particular period of time in order to facilitate the succeeding step.
- ❑ The purpose of fixation is to preserve tissue permanently in as life-like a state as possible.
- ❑ The fixative should be 15-20 times more in volume than the specimen.
- ❑ Mechanism of action. it forms cross link between amino acid of proteins thereby making them insoluble.
- ❑ The bite should of size of approximately 2x2 cm & 4-6 micrometer in thickness for optimum fixation to take place.
- ❑ Tiny biopsies or small specimen can be wrapped in filter paper and then put in a cassette & fixed.



Source: Mescher AL: *Junqueira's Basic Histology: Text and Atlas, 12th Edition*: <http://www.accessmedicine.com>

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Aim of fixation

(Properties of an ideal fixative)

- 1- It should prevent autolysis & putrefaction of the cell.
- 2- It should penetrate evenly and rapidly .
- 3- It should harden the tissues .
- 4- Increase the optical density .
- 5- Should not cause shrinkage or swelling of the cells .
- 6- Must not react with the receptor sites & thus must not interfere with the staining procedure .
- 7- It must be cheap and easily available.

Classification of fixatives

A) Physical fixatives : heat , freezing etc .

B) Chemical fixatives :

1- simple fixatives .

2- compound fixative .