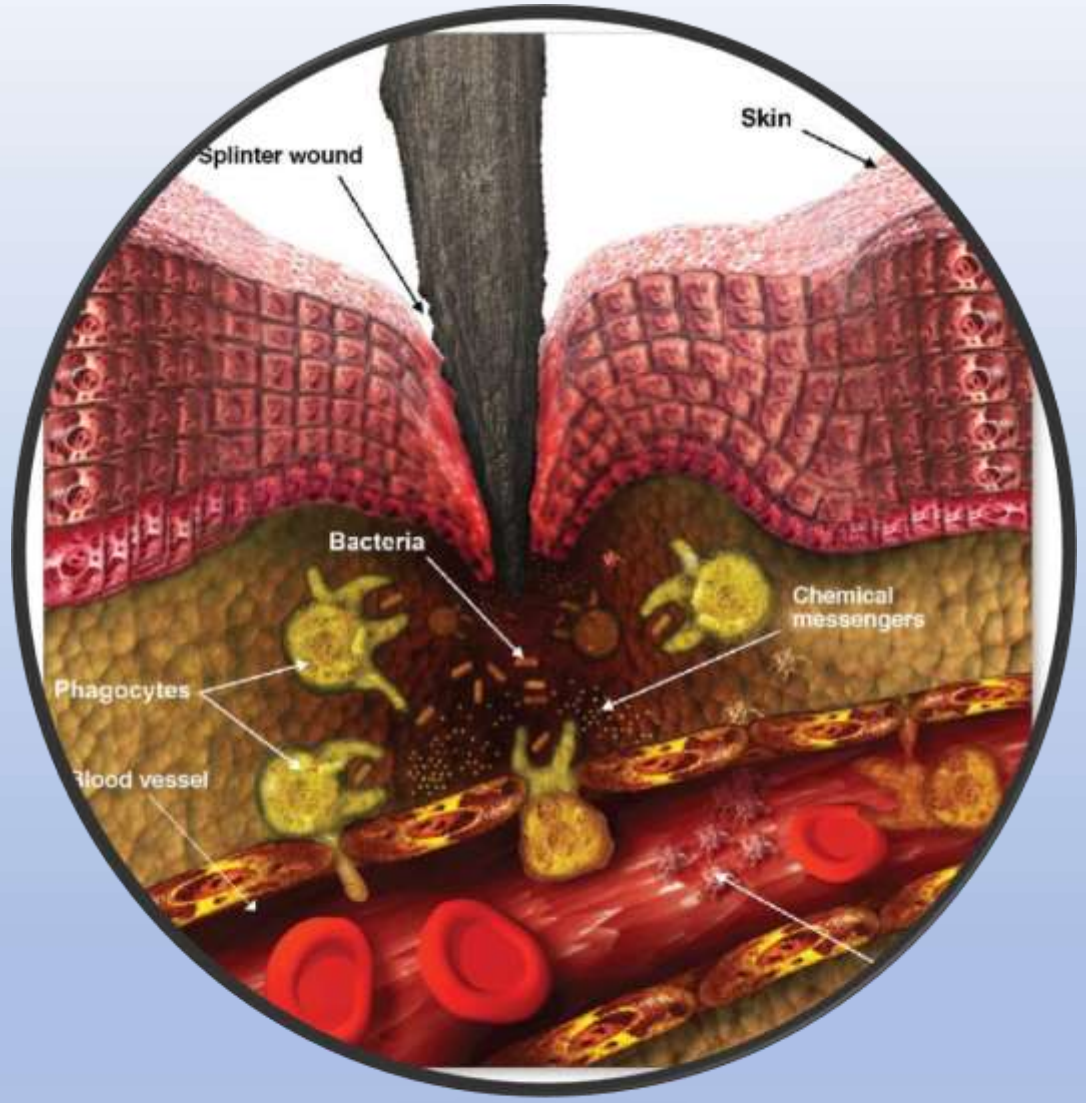
Pathophysiology 3rd stage

Lab - 1 -

Introduction & Slide preparation

Pathophysiology is the study of how a condition (disease, injury) affects a patient, including both the physical and functional changes.



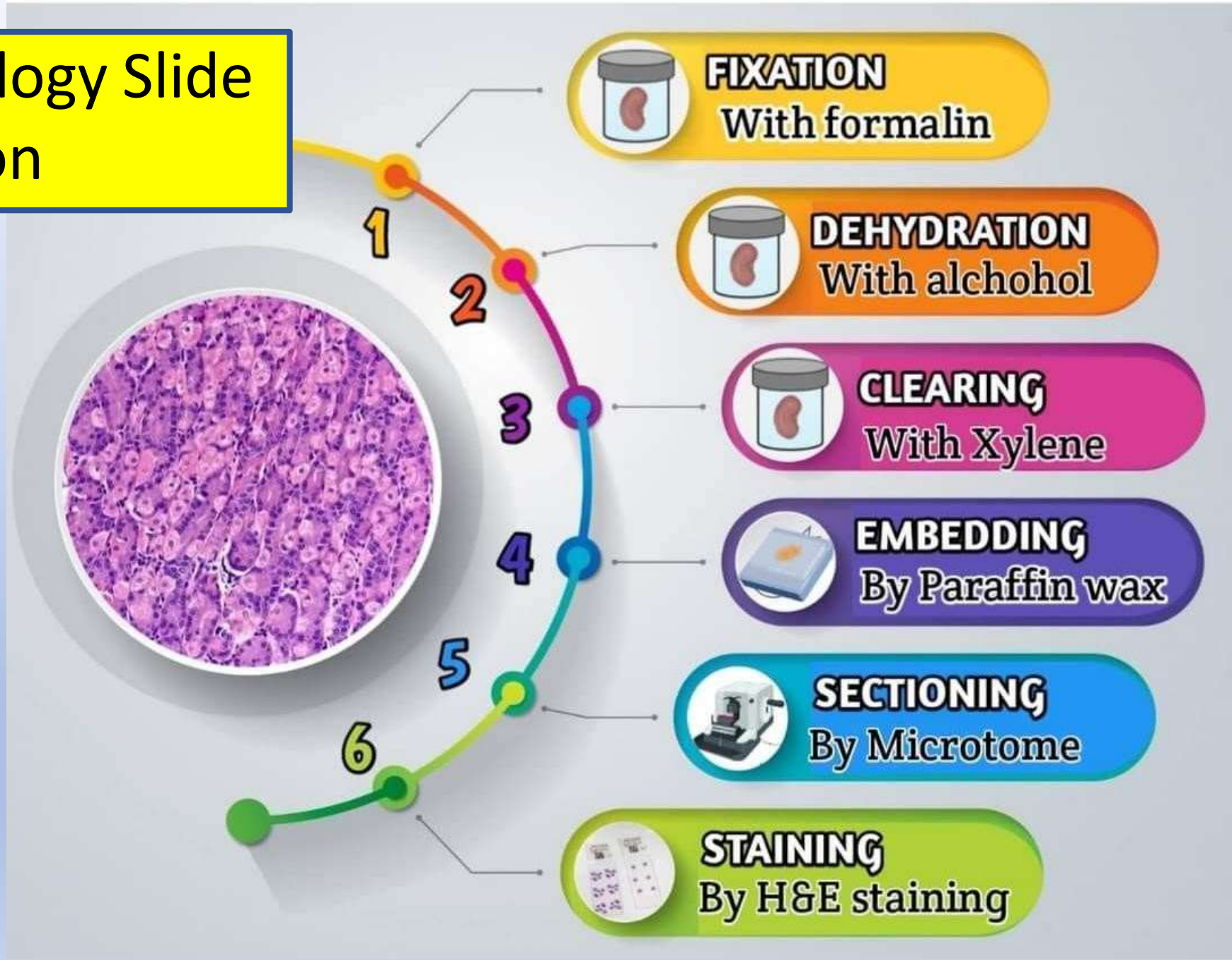
Tissue Specimens

Biopsy: piece of tissue or organ taken from living human being.

Gross: colour, size, surface, texture, consistency.

Microscopical examination: examine under microscope.

The Steps of Histology Slide Preparation



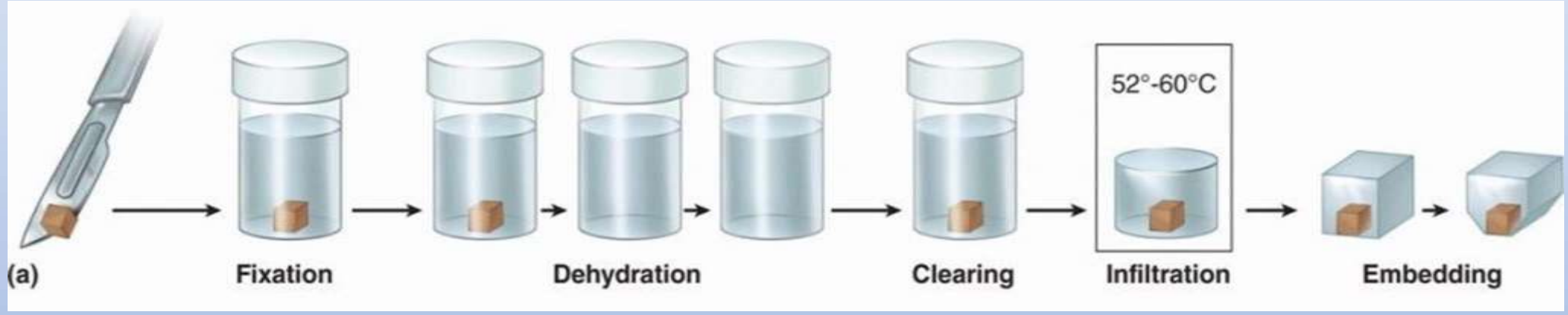
1. Tissue fixation:

- to prevent tissue autolysis and damage, and
- to prevent growth of bacteria,
- Most specimens are fixed in 10% formalin.

This will allow most tissues to become adequately fixed within 24-48 hours.

- 2. Grossing and labelling
- Grossing involves a careful examination and description of the specimen that will include:
- describing the appearance,
- the number of pieces,
- dimensions and
- measurements.
- all specimens are properly labeled

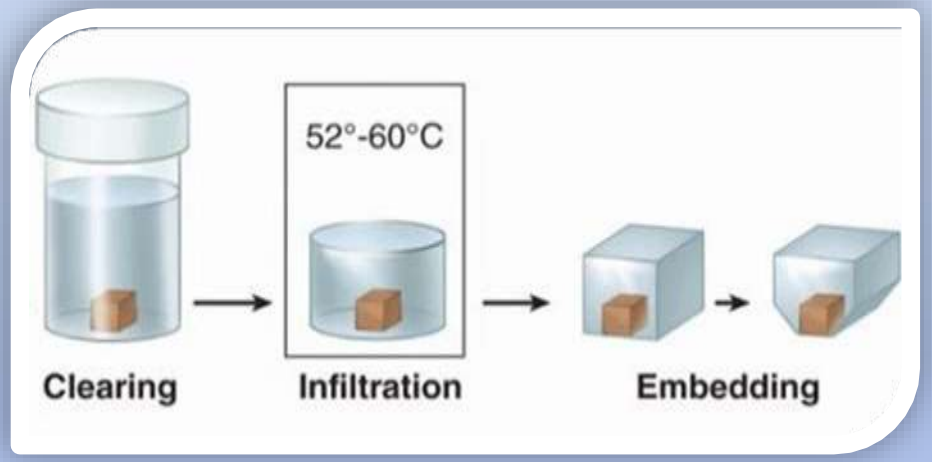
3- Dehydration, which involves immersing a specimen in alcohol to remove the water and formalin from the tissue.



4- Clearing, in which an organic solvent such as xylene is used to remove the alcohol and allow infiltration with paraffin wax.

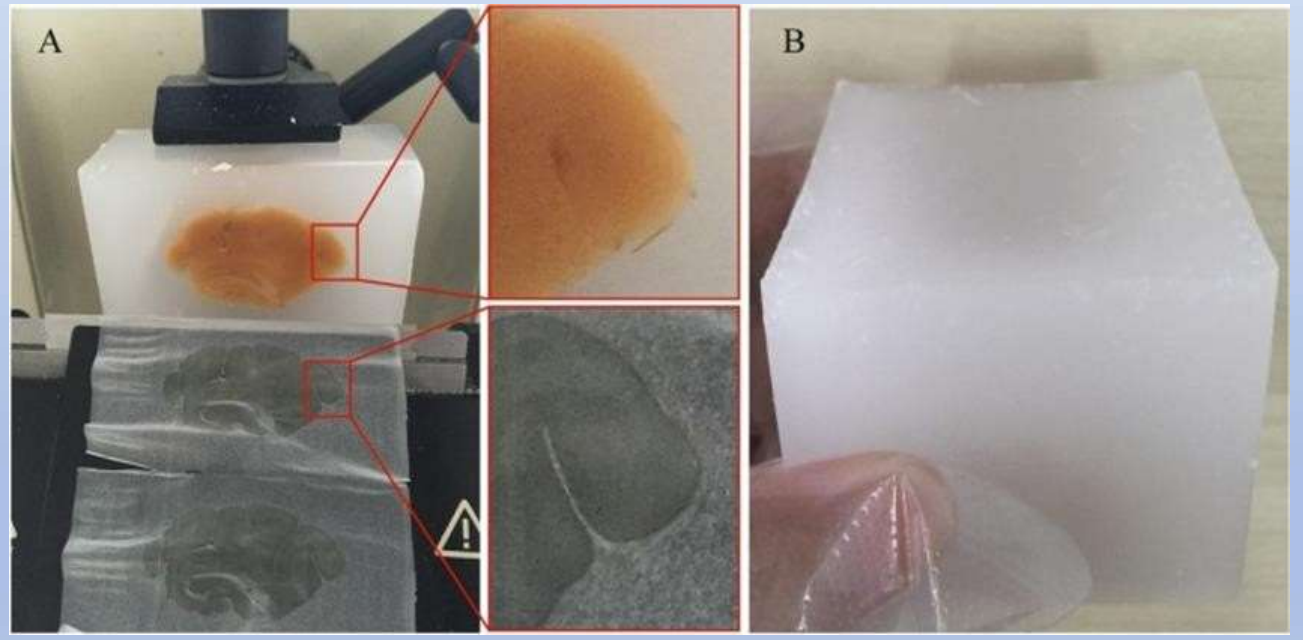
5- Embedding, where specimens are infiltrated with the paraffin wax.

The tissue becomes surrounded by a large block of molten paraffin wax, creating what is now referred to as the “block”.



6- Sectioning:

Once the block solidifies, it provides a support matrix that allows very thin sectioning.



7. Staining

Histochemical stains (typically hematoxylin and eosin) are used to making tissue structures more visible and easier to evaluate.

Following staining, a coverslip is mounted over the tissue specimen on the slide, using optical grade glue, to help protect the specimen.

THANK YOU