TYPES OF FIXATION

- Three types of fixation

Heat fixation

Perfusion

Immersion

CLASSIFICATION OF FIXATIVES

Based on mode of action

COMPOUND FIXATIVES

Micro anatomical	Cytological	Histochemical
· 10% formol saline · 10% neutral buffered formalin · Zenkers solution · Bouin's solution · Rossman's fluid · Formol calcium	· 1. Nuclear fixatives · glacial acetic a- affinity for nuclear chromatin. · pH≤ 4.6 · Flemming's · Carnoy's · Newcomer's · Clarke's · 2. Cytoplasmic fixatives · glacial acetic a - destroys mitochondria and Golgi. · pH ≥ 4.6. · Kelly flemmings · Regauds's fluid · Orth's fluid	· Formol saline 10% · Absolute ethyl alcohol · Acetone

MICROANATOMICAL

Formol calcium (Baker, 1944)
Formalin ---------- 10 mg
Calcium chloride ---- 2g
Water ----------to 100ml

Formol calcium (Lillie,1965)
Formalin.....10ml
Calcium acetate....2g
Water.....to 100ml

Acetic – alcoholic- formalin
Formalin---------5ml
Glacial acetic A----5ml
70% alcohol---------90ml
-excellent- glycogen
-Fix- nuclear protein
- rapid, 5mm thick- 4hrs

Buffered formol sucrose (Holt & Hicks, 1961)
Formalin ----------10ml
Sucrose ----------7.5g
M/15 phos. Buffer----------to 100ml
-preserve- fine structure, phospholipids, enzymes

Buffered formalin
Formalin---------- 10ml
Acid sod. Phos. Monohydrate--- 0.4g
Anhydrous disodium phos. ------ 0.65g
Water ----------to 100ml

MICROANATOMICAL

CARBOHYDRATES

Zenker's fluid
Mer. chlr.-------5g
Pot. Dichromate--- 2.5g
Sod. Sulphate---- 1g
Dist. Water----- 100ml
Glacial acetic A ----- 5ml

-Rapid & even penetration
-Fx -12hrs;3mm- 2 to 3 hrs

Rossman's fluid
Formalin-----10ml
Abs. ethyl alc
Sat. picric acid--- 90ml
- carbohydrates

Bouin's fluid
Picric acid sat. aq. Soln-----75ml
Formalin(40% formaldehyde)—25ml
Glacial acetic acid---------- 5ml
-Penetartes -rapid, even
-Brilliant staining – trichome methods
-Glycogen
-Fx -24hrs
-2-3mm thick – 2-3 hrs

Zenker's formol(Helly's fluid)
Formalin --5ml
-Fx – bone marrow, spleen
- fx – 6-24hrs

Heidenhain's susa
Mercuric chloride....4.5g
Sod. Chloride.....0.5g
Trichloro acetic acid..2g
Acetic acid.....4ml
Formalin 20ml
Dist. Water.....to 100ml
-excellent fx- routine biopsy
-brilliant staining; good- cytological detail
-penetration- rapid & even
-tissues left 24hrs- bleaching, hardening