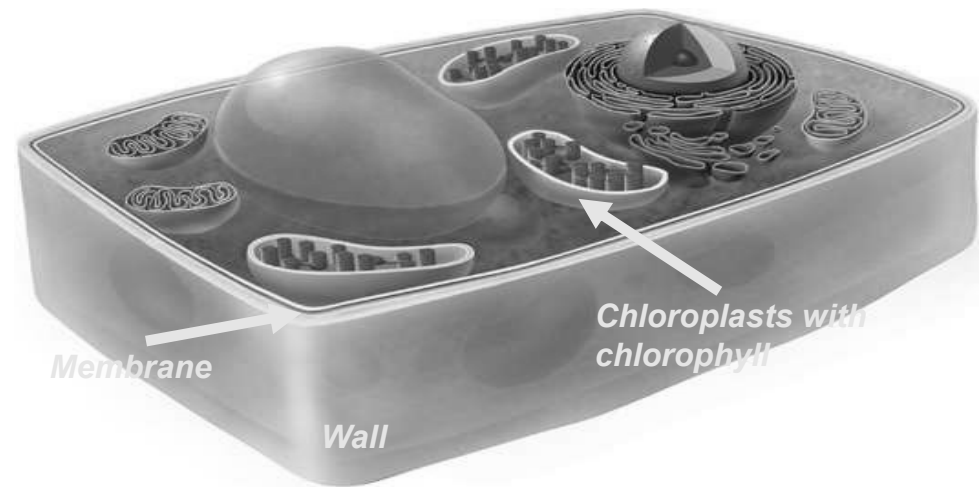
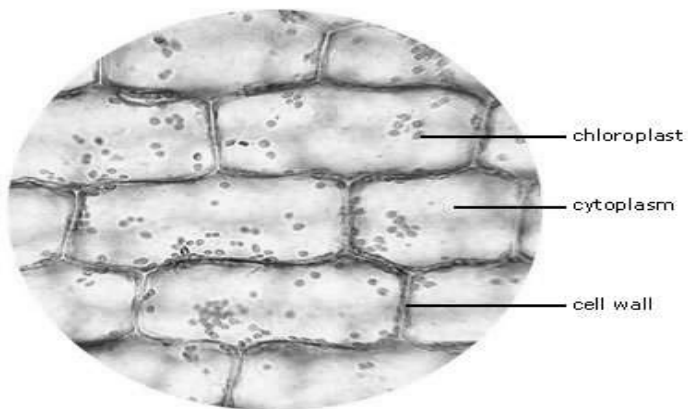


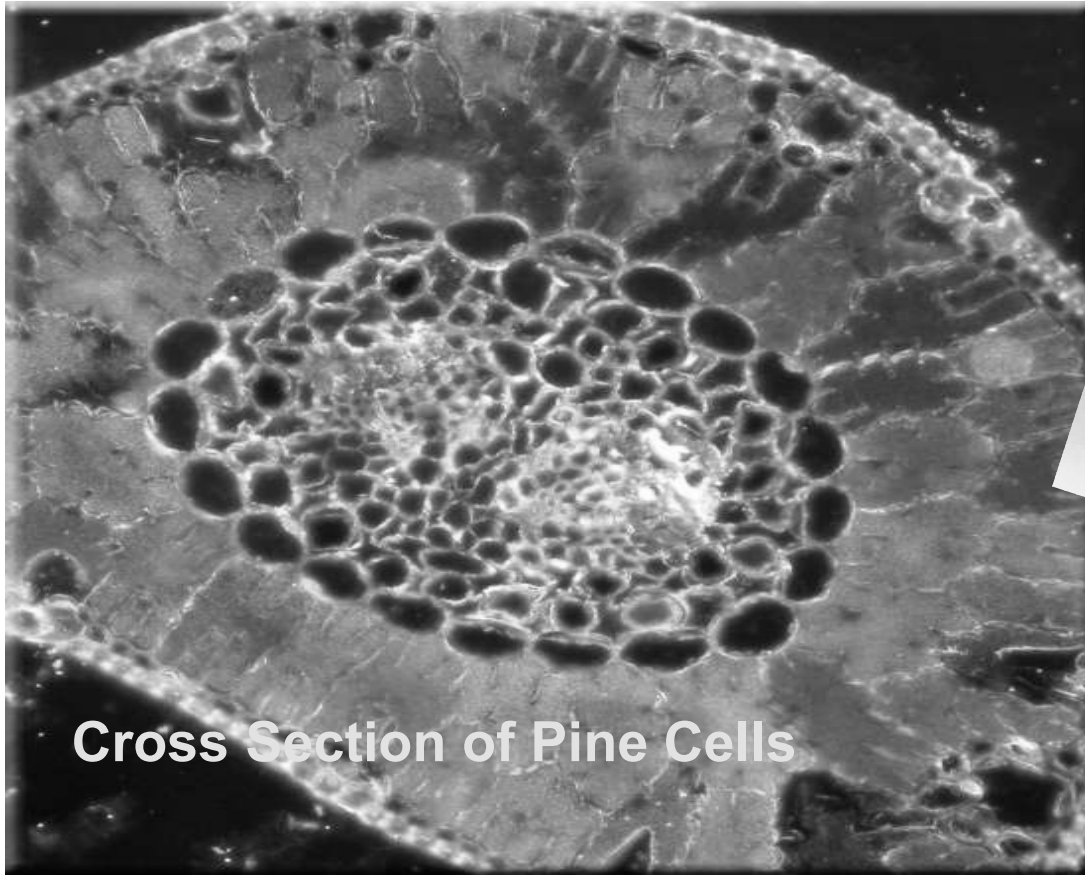
CHM 425
CYTOLOGY FOR CHEMIST
PART V

Plant Cells

Plant cells have a cell membrane and a more regular shape due to a stiff cell wall. They have chloroplasts with chlorophyll to help plants make their own food.



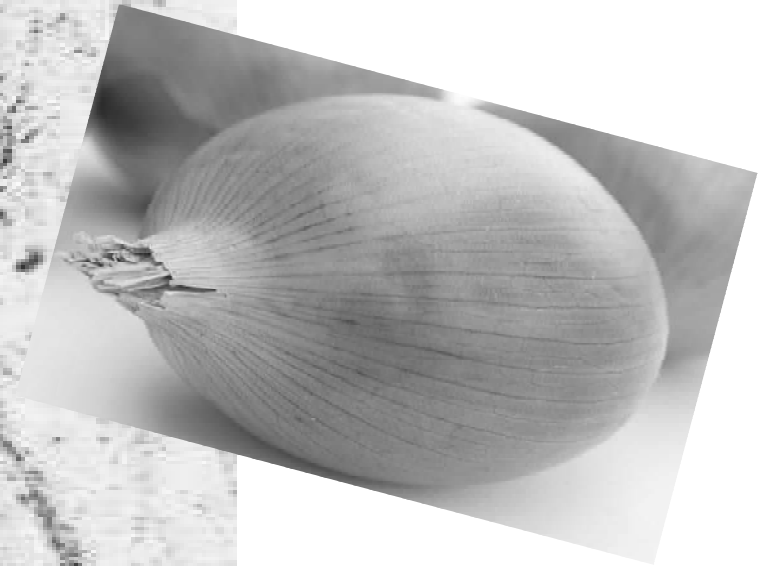
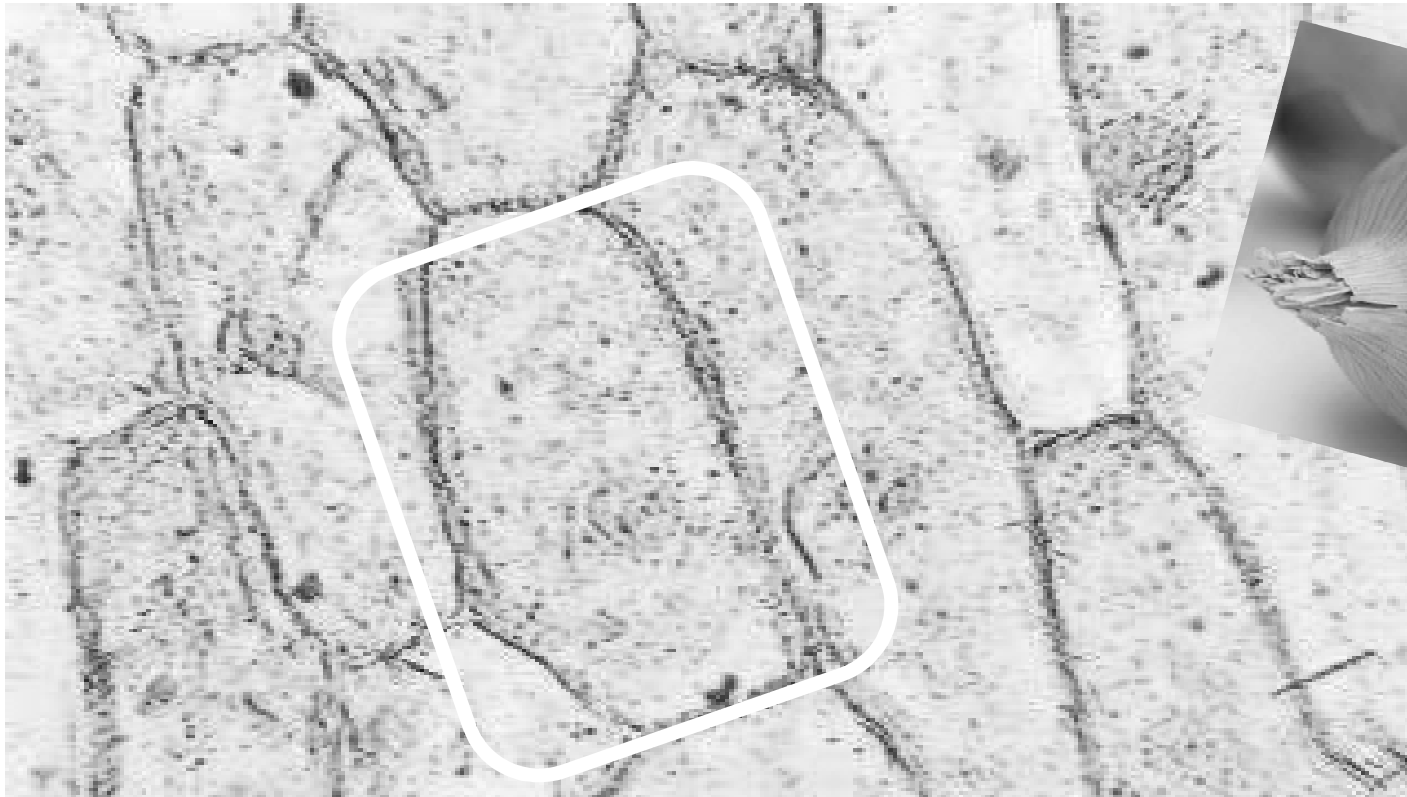
Pine Needle Cells



Cross Section of Pine Cells



Onion Cells

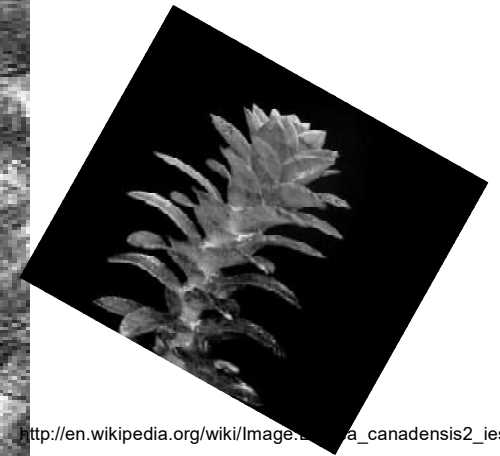
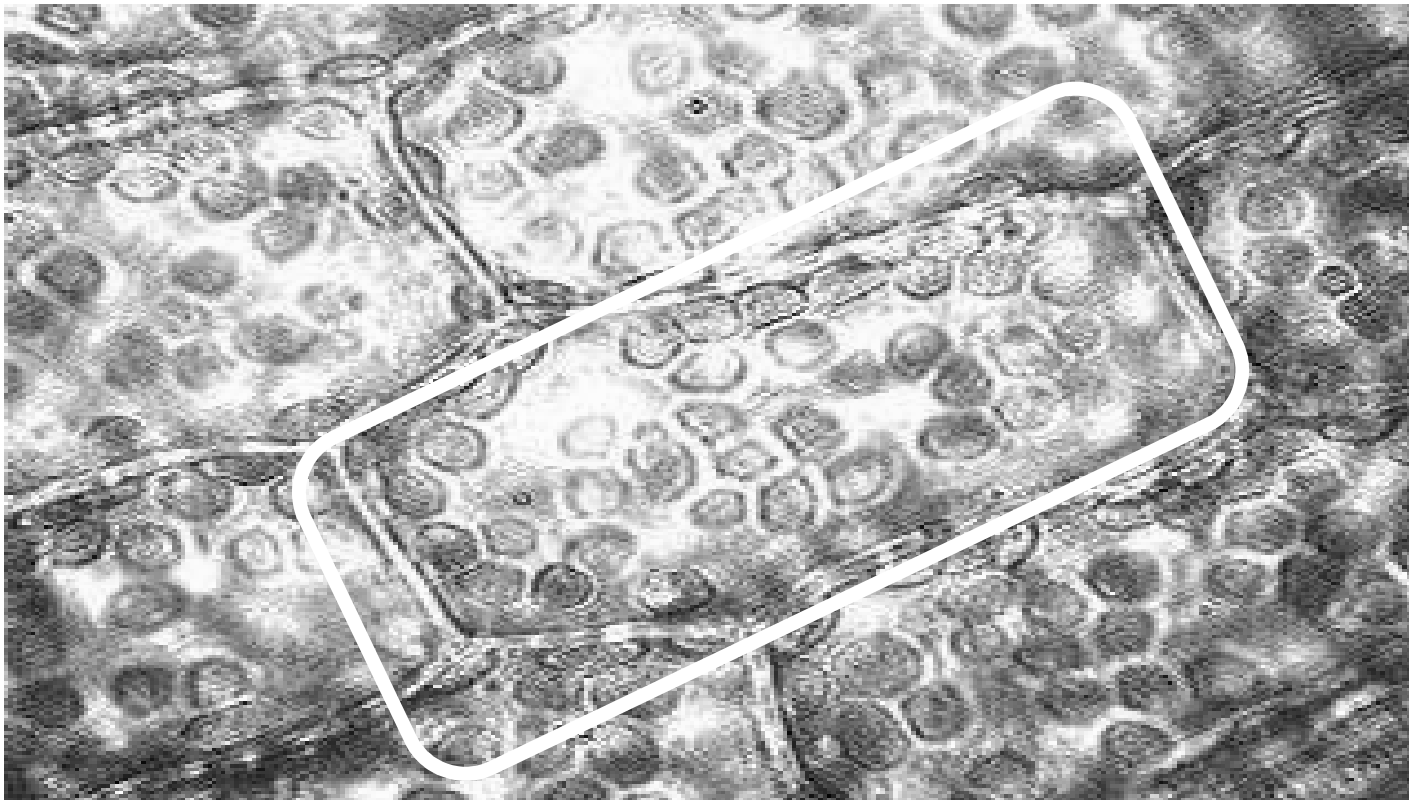


<http://upload.wikimedia.org/wikipedia/commons/1/1b/Onions.jpg>

<http://www.uleth.ca/bio/bio1010/bio1010.htm>

Plant Cell Example

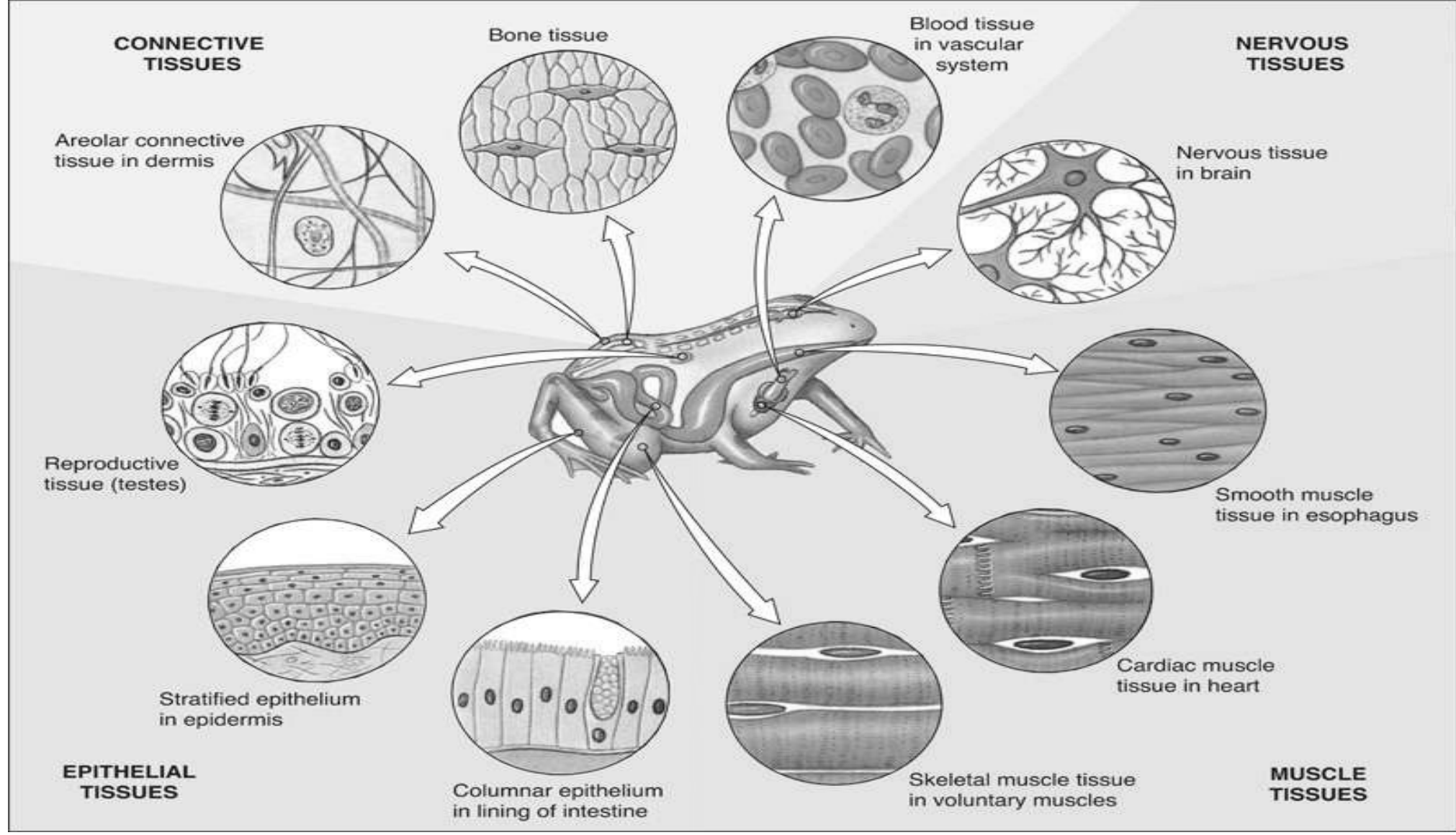
Elodea Cells



http://en.wikipedia.org/wiki/Image:Elodea_canadensis2_ies.jpg

Basic Tissue Types

- Epithelial
- Connective
- Muscle
- Nervous



Epithelial Types

- Simple Epithelium
 - Simple squamous – inside blood vessels
 - Simple cuboidal – lines ducts, ex. Kidney tubules, mucous glands
 - Simple columnar – lining of small intestine
 - Pseudostratified Columnar – trachea, bronchi

Epithelial Types

- Stratified Epithelium
 - Stratified squamous - skin
 - Transitional – urinary tract and bladder

Connective Tissue

- Tissue that connects
 - Loose connective tissue
 - adipose (fat)
 - Dense connective tissue
 - Cartilage
 - Bone
 - Vascular tissue
 - Erythrocytes: Red Blood Cells – carry oxygen
 - Leucocytes: White Blood Cells – part of the immune system
 - Platelets - clotting

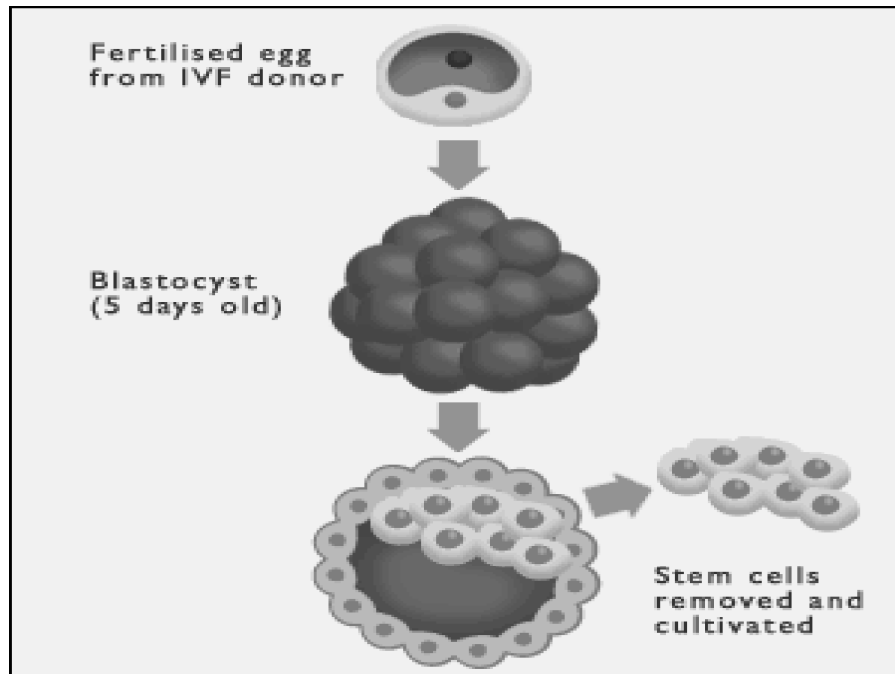
Muscle Tissue Types

- Smooth Muscle (=Involuntary Muscle)
 - Ex. Small intestine
- Skeletal Muscel (=Voluntary Muscle)
 - Ex. Large muscles of body
- Cardiac Muscle

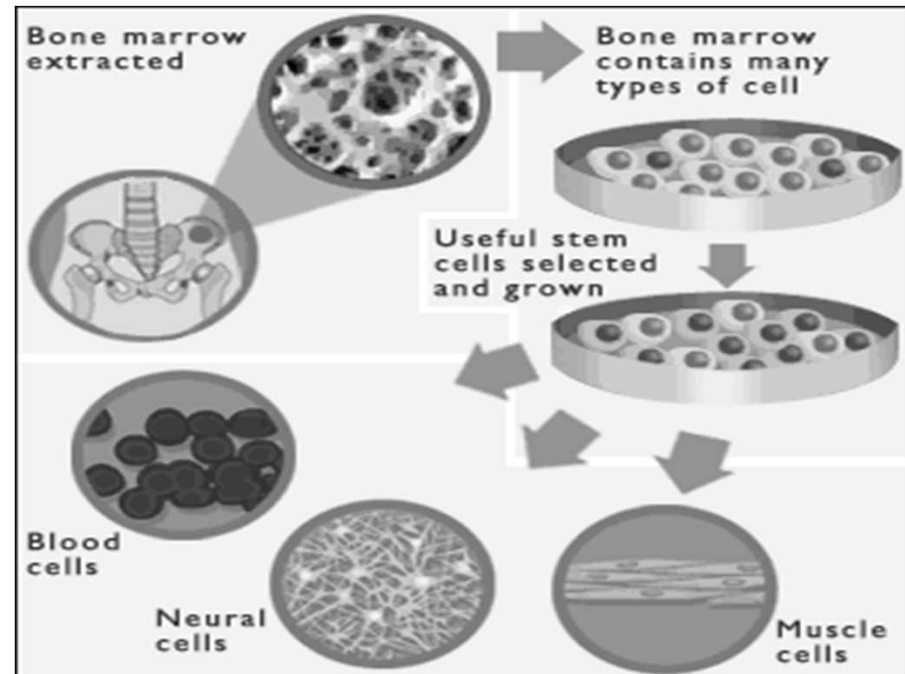
Nervous Tissue

- Includes Nerves, Spinal Cord, Brain
- Cells are called neurons
- Neurons and side cells

Types of stem cells

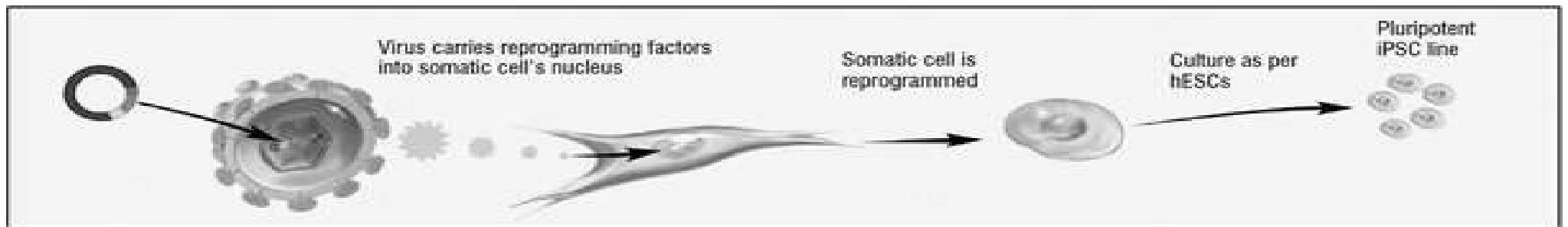


Embryonic



Adult

Induced pluripotent stem cells



Induced pluripotent stem cells are adult cells that have been genetically reprogrammed to an embryonic stem cell-like state.