

+ Biology

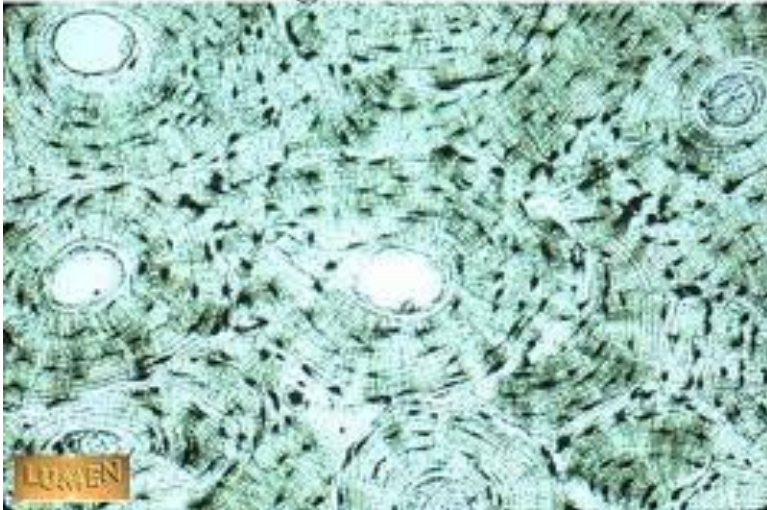


I. Biology = the study of life

+ Characteristics of Life



Histology Lab Part 9: Slide 40



1. Composed of cells

- unicellular = made up of a single cell

- multicellular = made up of many cells

* human is composed of billions of cells

+ Characteristics of Life



2. Capable of reproduction

- asexual reproduction = no mixing of genes

- sexual reproduction = mixing of genes

+ Characteristics of Life



- Have a metabolism

+ Characteristics of Life



- Maintain homeostasis = steady internal environment

+ Characteristics of Life



- Heredity = pass genes to offspring

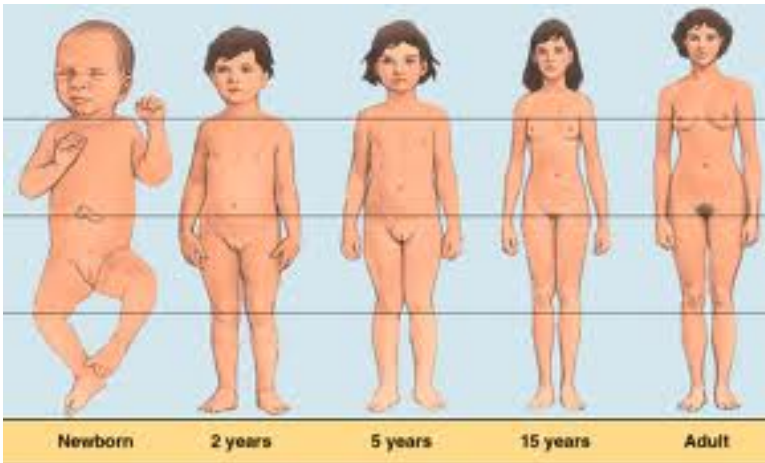
- mutation = damage to a gene

+ Characteristics of Life



6. Respond to the environment

+ Characteristics of Life

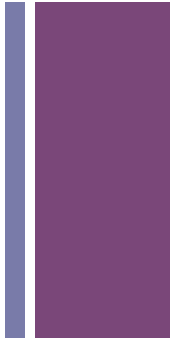


7. Growth and Development

+

Organic Compounds = compounds
found in living things

- contain the element carbon (C)
- also contain H O, P, N, S

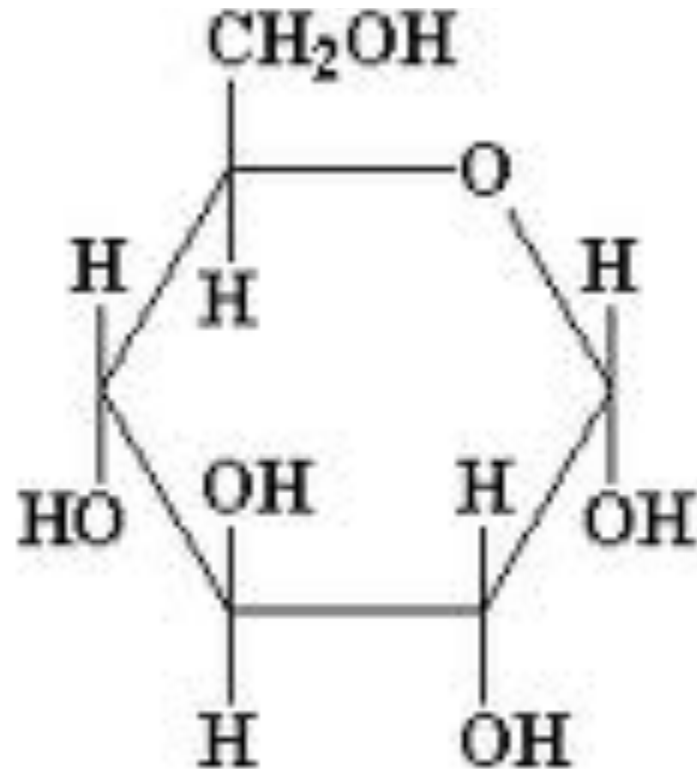


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Carbohydrates = sugars and starches

1. monosaccharides =

simple sugar building blocks



glucose

+ Carbohydrates



- Glucose = found in the blood

+ Carbohydrates



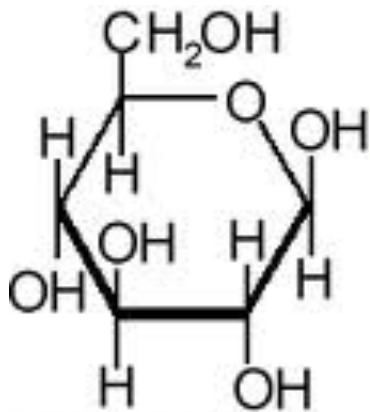
- Fructose = found in fruit

+ Carbohydrates

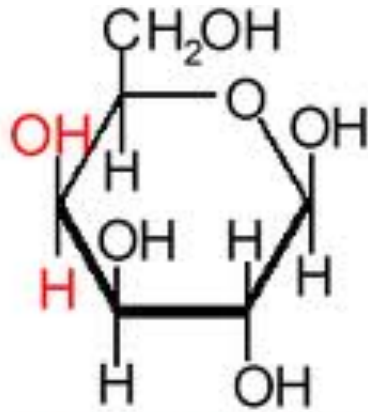


- Galactose = found in milk

+ Carbohydrates



Glucose



Galactose

2. Disaccharides = 2
monosaccharides “hooked”
together

+ Carbohydrates



- Sucrose = found in candy

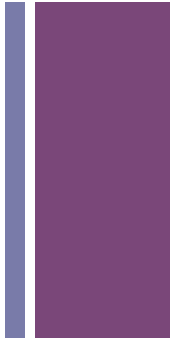


+ Carbohydrates



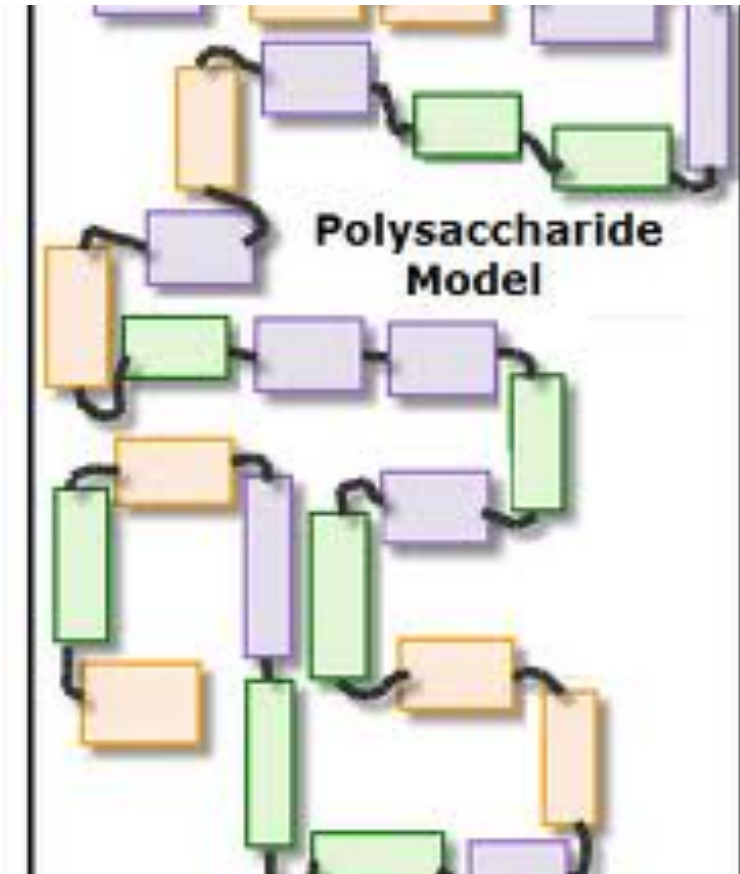
- Lactose = found in milk

+ Carbohydrates



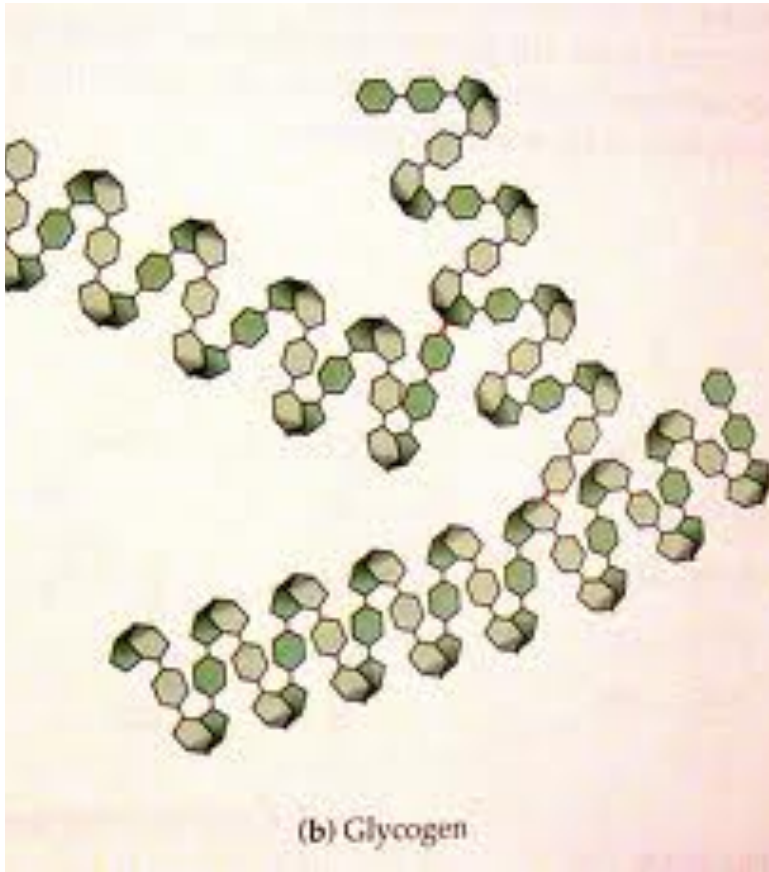
- Maltose – found in seeds

+ Carbohydrates



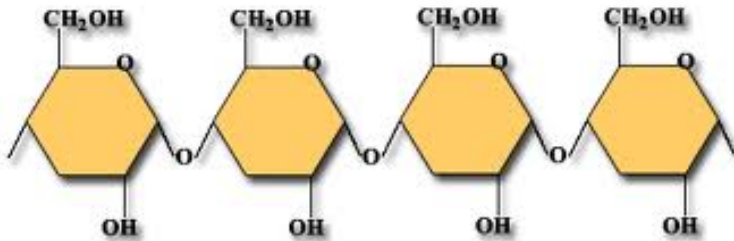
3. Polysaccharides = many monosaccharides “hooked” together

+ Carbohydrates



- Glycogen = stores sugar (energy) in the muscles

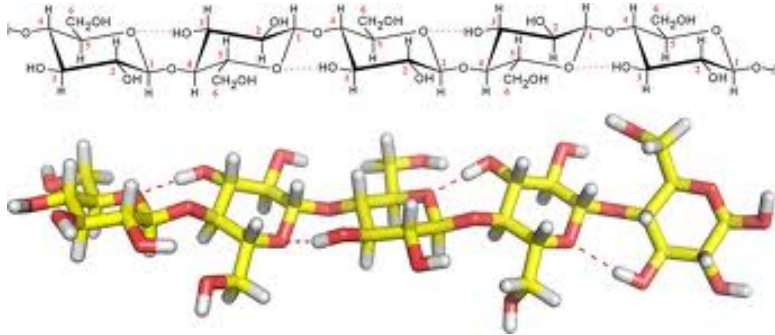
+ Carbohydrates



- Starch = stores sugar (energy)
in plants

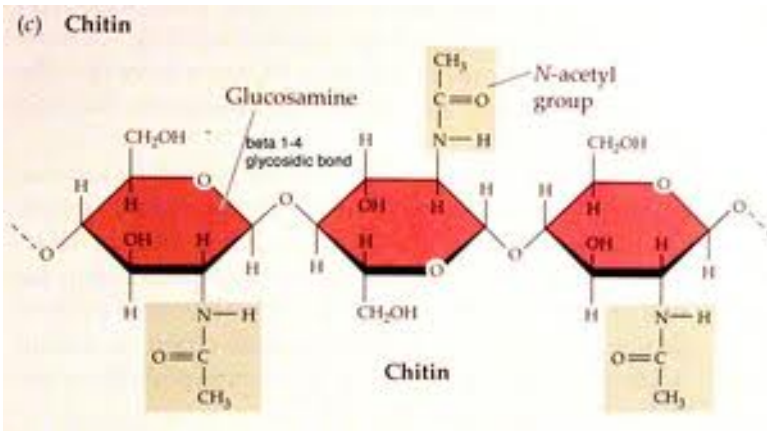
+

Carbohydrates



- Cellulose = provides support in plants

+ Carbohydrates



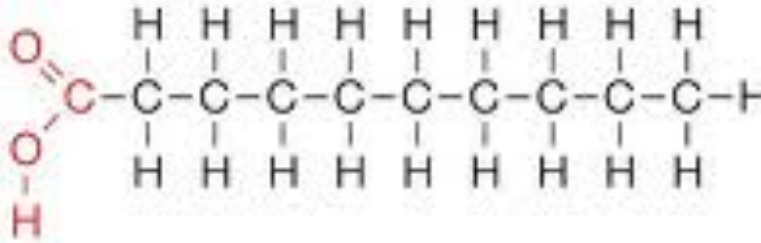
- Chitin = provides support in animals (insects, crustaceans)

+ Lipids = fats, oils, waxes

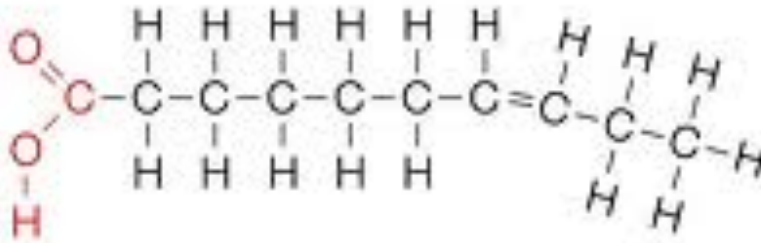


+ Lipids

Saturated



Unsaturated



1. Saturated = contains the maximum number of hydrogen (H) atoms

+ Lipids



Saturated fat

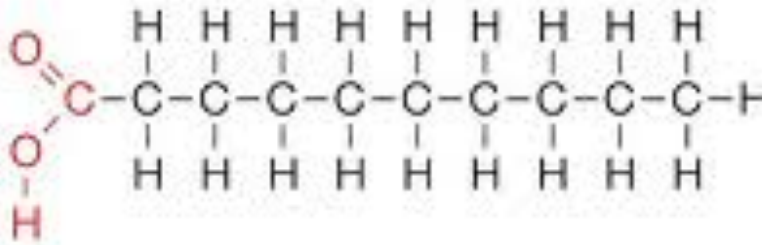
Saturated fats are found in animal products such as butter, cheese, whole milk, cream, and meats, and oils such as coconut, palm, and tallow oil.



- Solid at room temperature
- Come from animal sources
- “bad” for you

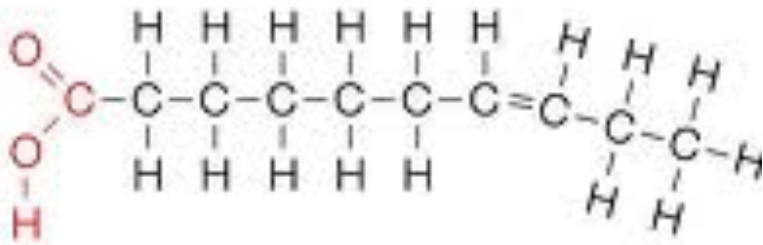
+ Lipids

Saturated



2. Unsaturated = does not have the maximum number of hydrogen(H) atoms .

Unsaturated



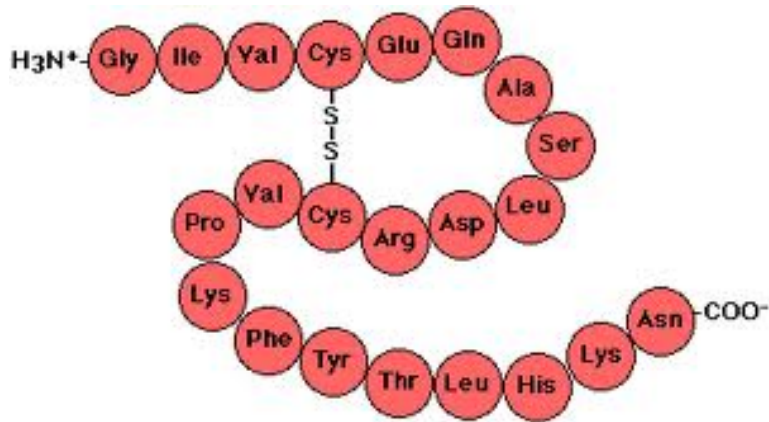
+ Lipids



- Liquid at room temperature
- Come from plant sources
- “good” for you



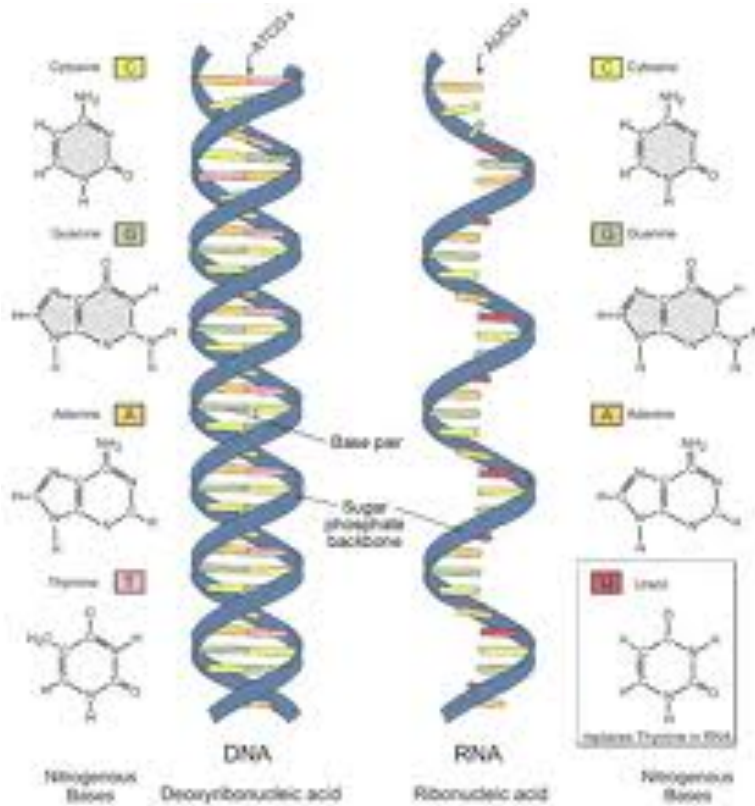
Proteins = made up of repeating units of amino acids held together by peptide bonds



1. Make up enzymes = act as catalysts to speed up chemical reactions.
2. Contain large amounts of nitrogen (N)



Nucleic acids = made up of repeating units of nucleotides



1. DNA = found in the nucleus of cells
2. RNA = found outside the nucleus of cells

+ Light Microscope



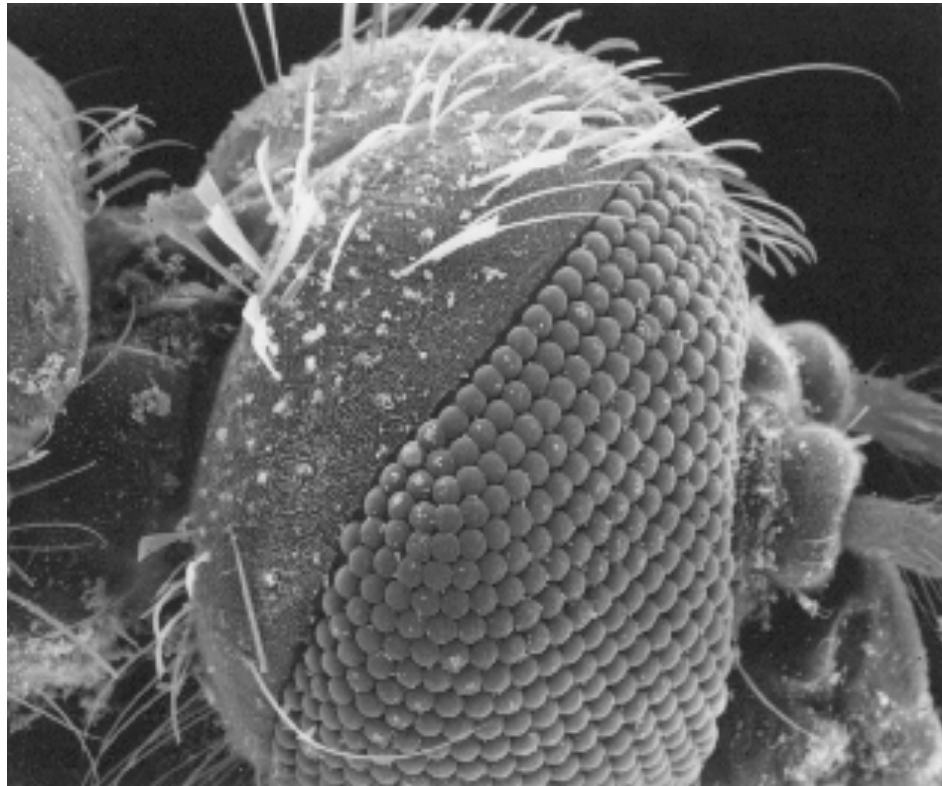
+ Light Microscope



+ Light Microscope



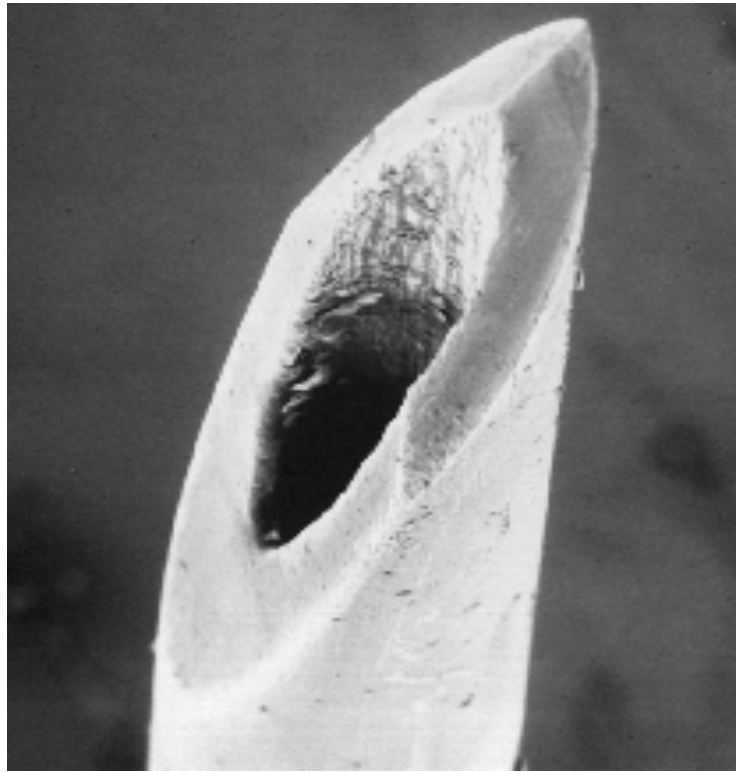
+ Scanning Electron Microscope



+ Scanning Electron Microscope



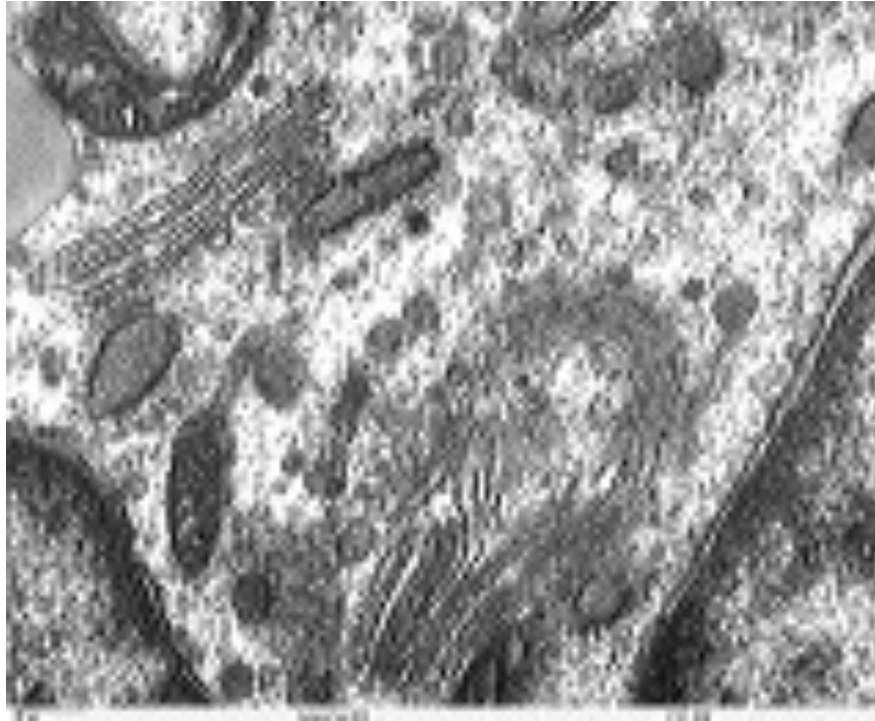
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+ Transmission Electron Microscope



+ Transmission Electron Microscope

