

## Introduction to Cells

Examples of cell types

1.

2.

3.

Our bodies include more than 260 cell types

**Somatic (body) cells** \_\_\_\_\_

**Sex cells** (Sperm and egg cells) have one copy of the genome and are \_\_\_\_\_

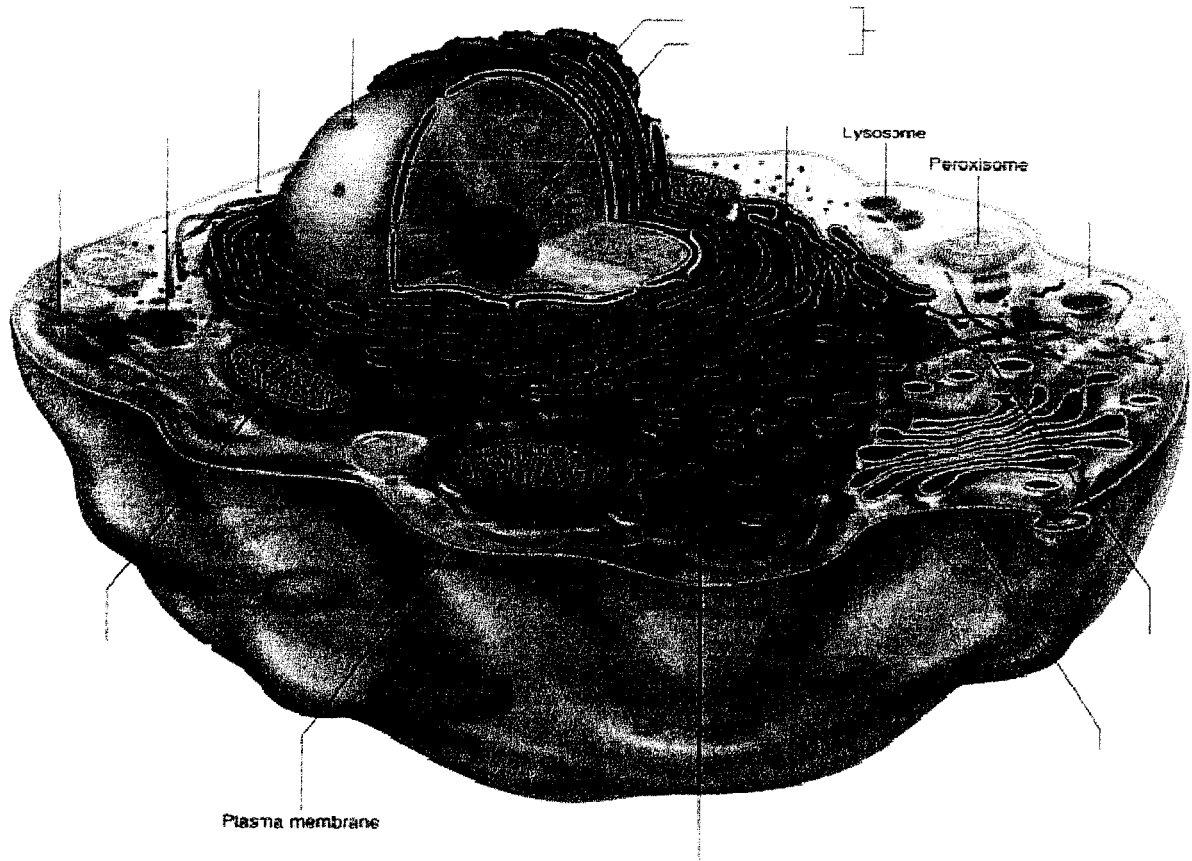
**Stem cells** can both replicate themselves and give rise to differentiated cells

Chemical Constituents

Cells contain four types of macromolecules

Type	Examples	Functions
<b>Carbohydrates</b>		Energy, structure
<b>Lipids</b>	Fats, oils	
<b>Proteins</b>	Myosin, collagen	

Label cell drawing



Know the function of the following:

1. Nucleus

2. Endoplasmic Reticulum (ER)

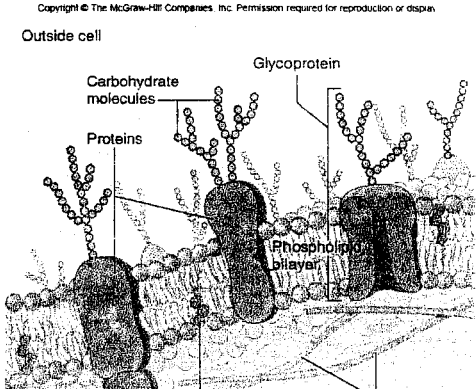
3. Gogli Apparatus

4. Lysosomes

5. Peroxisomes

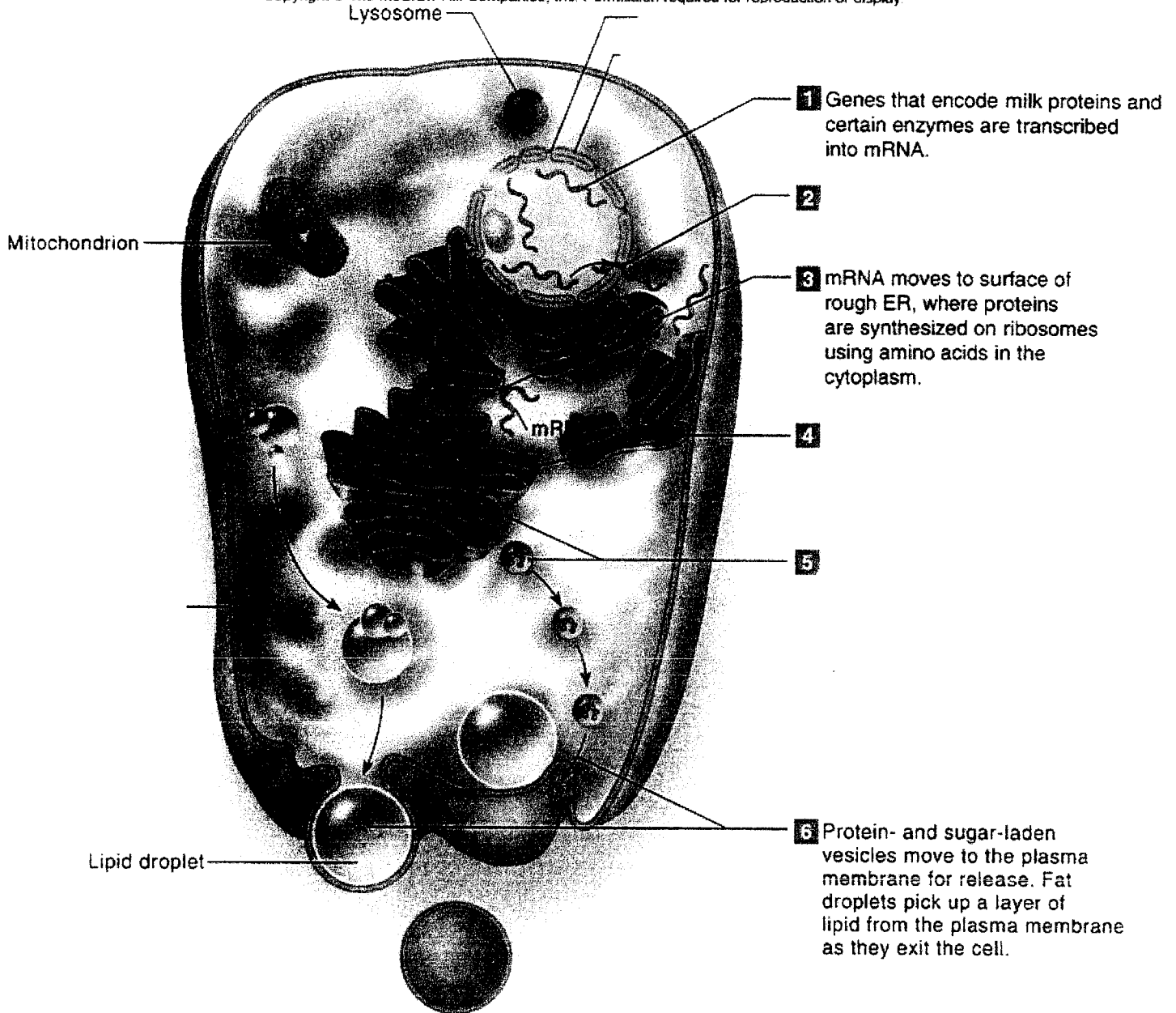
6. Mitochondria

7. Plasma membrane



## Lactation in a female from a cellular point of view

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### Faulty Ion Channels Cause Inherited Diseases

**Sodium channels-** Mutations lead to absence or extreme pain

**Potassium channels-** Mutations lead to impaired heart function and deafness

**Chloride channels-** Mutations lead to cystic fibrosis

Cell Division and cell death

Normal growth and development require an intricate interplay between the rates of two processes

**Mitosis –**

**Apoptosis –**

Cell cycle

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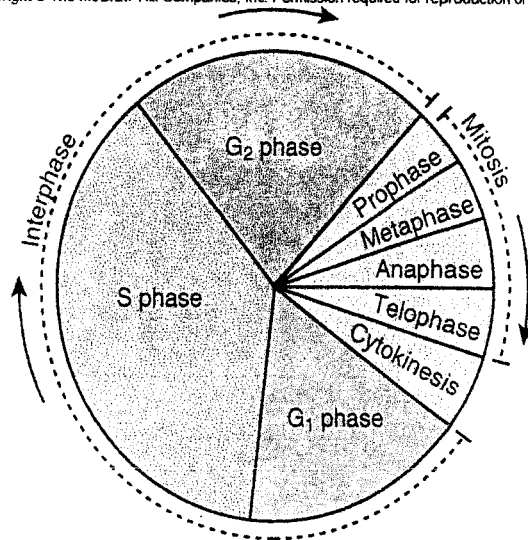
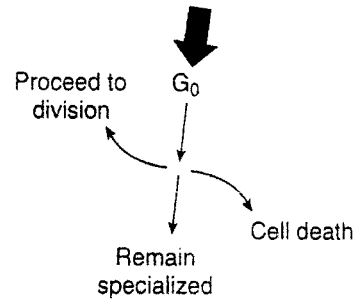


Figure 2.14



**Interphase**

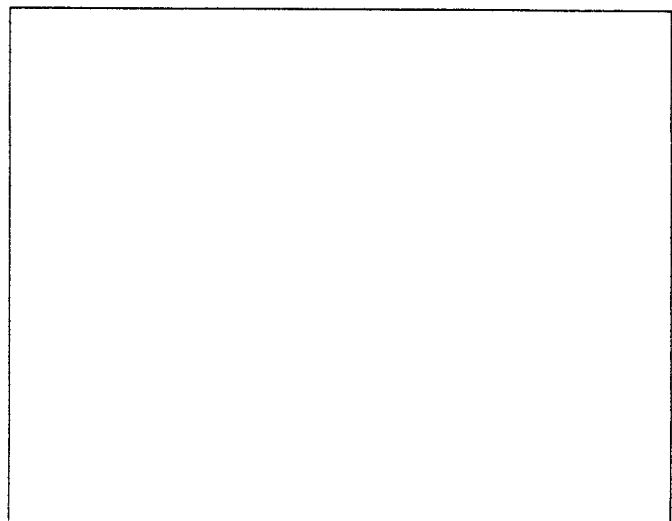
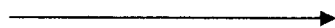
- Prepares for cell division
- Replicates DNA and subcellular structures
- Composed of G<sub>1</sub>, S, and G<sub>2</sub>

**Mitosis –** Division of the nucleus

**Cytokinesis –** Division of the cytoplasm

Replication of Chromosomes

\*\*\*\*Draw note example



**Draw and take notes on the following:**

**Prophase:**

**Metaphase:**

**Anaphase:**

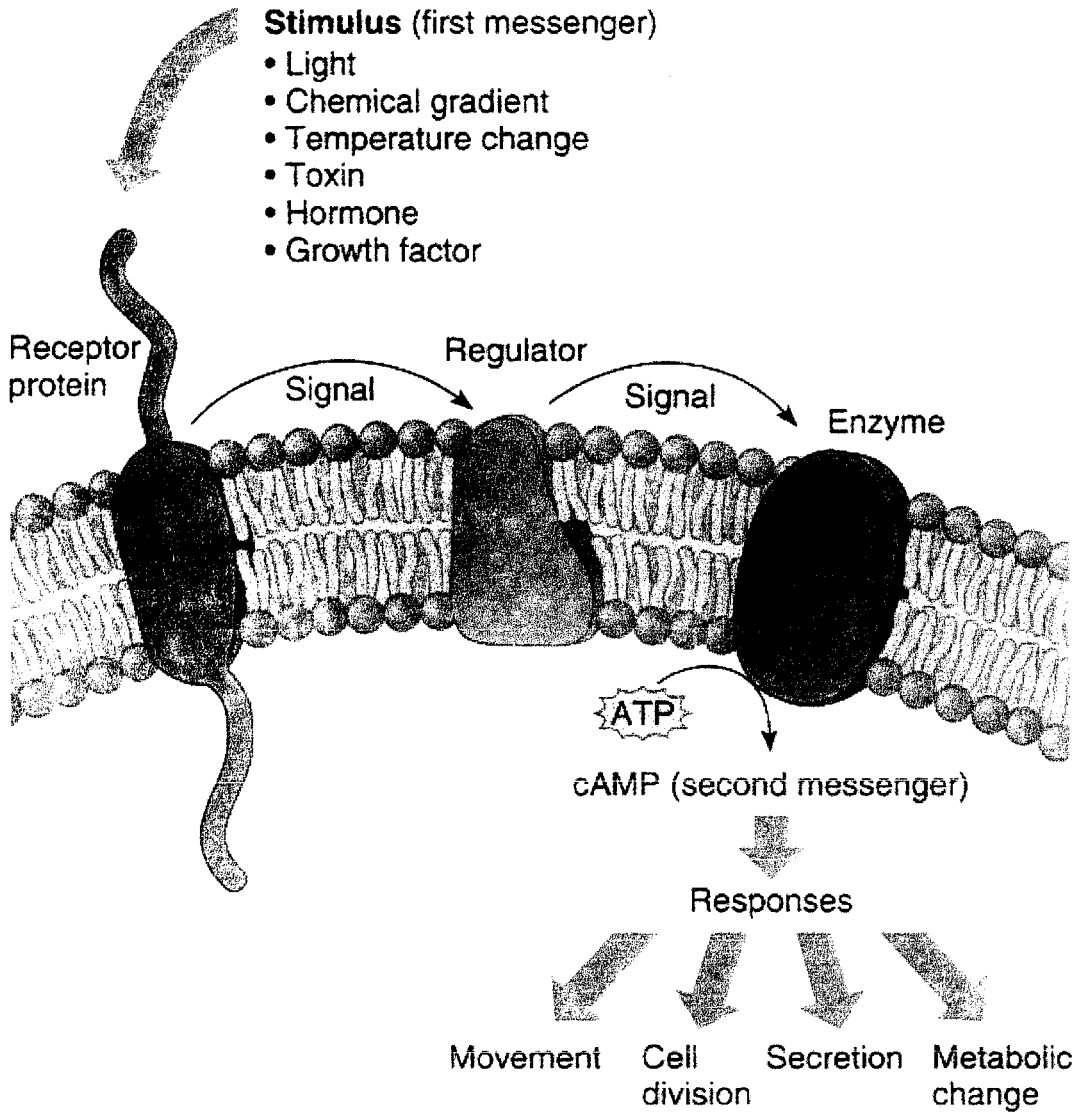
**Telophase:**

How do cells communicate during development? \*\*\*Draw note example

Signal Transduction, How does it work?

# Signal Transduction

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How do cells respond to a chemical signal? Example Yeast