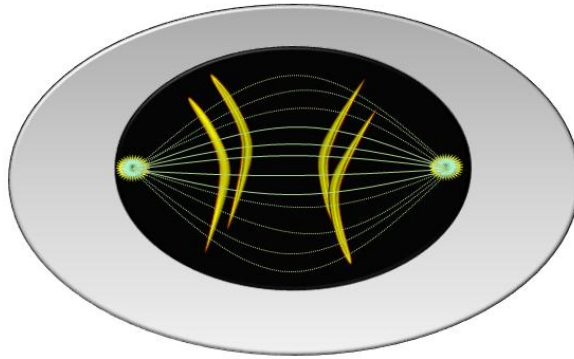


Mitosis

(Continuing Medical Education)



For more details, see the linked video.

In preparation for cell division, cell enters a preparatory phase, which is the Interphase. During the Interphase, the cell undergoes these changes:

- 1- The centromere duplicates.*
- 2- The chromatids duplicate.*

Then, the cell enters the process of mitosis according to the following sequence:

1) The Early Prophase:

- The mitotic spindle starts to form.*
- The chromosomes start to condense.*
- The nucleolus disappears.*

2) The Late Prophase (or Prometaphase):

- The nuclear envelope dissolves away, thus liberating the chromosomes.*
- The mitotic apparatus reaches full maturity.*
- The chromosomes condense into X- shaped structures and become easily seen in microscope.*

3) The Metaphase:

- The metaphase plate is built up at the equator of cell;*
- The chromosomes line up at the metaphase plate.*

4) *The Anaphase:*

- *The sister chromosomes are pulled apart, in opposite directions.*

5) *The Telophase:*










- *The chromosomes start to decondense.*
- *The mitotic apparatus disappears completely.*
- *The nucleoli reappear.*
- *The cytokinesis can begin right now.*

6) *The Cytokinesis:*

- *The cell pinches in the middle, and the actin constricting ring is built up.*
- *The cell division (Cytokinesis) may start right now or may be earlier.*

Cytokinesis is the final step of cell division. It is designated to describe the cytoplasmic division, which begins after or during the late phases of nuclear division. At the end of the Cytokinesis, two identical daughter cells are obtained.

In another context, one can read:

- [*Neural Conduction, Personal View vs. International View \(Innovated\)*](#)
- [*Upper Motor Neuron Lesions, Pathophysiology of Symptomatology*](#)
-  [*Neural Conduction, Action Pressure Waves \(Innovated\)*](#)
-  [*Neural Conduction, Action Potentials \(Innovated\)*](#)
-  [*Neural Conduction, Action Electrical Currents \(Innovated\)*](#)
-  [*The Function of Action Potentials \(Innovated\)*](#)
-  [*The Three Phases of Neural Conduction*](#)
-  [*Neural Conduction in the Synapse \(Innovated\)*](#)
-  [*Sensory Receptors*](#)
- [*Nodes of Ranvier, the Equalizers \(Innovated\)*](#)
-  [*Nodes of Ranvier, the Functions \(Innovated\)*](#)
-  [*Nodes of Ranvier, Function N1 \(Innovated\)*](#)
-  [*Nodes of Ranvier, Function N2 \(Innovated\)*](#)



Nodes of Ranvier, Function N3 (Innovated)

- *The Philosophy of Pain, Pain Comes First! (Innovated)*
- *The Philosophy of Form (Innovated)*
- *Spinal Injury, Pathophysiology of Spinal Shock, Pathophysiology of Hyperreflexia*



Spinal Shock (Innovated)



The Clonus (Innovated)



Hyperactivity Hyperreflexia (Innovated)



Hyperreflexia, Extended Sector of Reflex



Hyperreflexia, Bilateral Responses



Hyperreflexia, Multiple Responses

- *Nerve Conduction Study, Wrong Hypothesis is the Origin of Misinterpretation (Innovated)*



Wallerian Degeneration (Innovated)



Neural Regeneration (Innovated)

- *Wallerian Degeneration Attacks Motor Axons, While Avoids Sensory Axons*



Barr Body, the Whole Story (Innovated)



Boy or Girl, Mother Decides!



Adam's Rib and Adam's Apple, Two Faces of one Sin



The Black Hole is a (the) Falling Star?



Adam's Rib, could be the Original Sin?



Pronator Teres Syndrome, Struthers Like Ligament (Innovated)



Function of Standard Action Potentials & Currents



Posterior Interosseous Nerve Syndrome



Spinal Reflex, New Hypothesis of Physiology



Hyperreflexia, Innovated Pathophysiology



Clonus, 1st Hypothesis of Pathophysiology



Clonus, 2nd Hypothesis of Pathophysiology



Clonus, Two Hypotheses of Pathophysiology



Hyperreflexia (1), Pathophysiology of Hyperactivity



Hyperreflexia (2), Pathophysiology of bilateral Responses



Hyperreflexia (3), Pathophysiology of Extended Hyperreflex



Hyperreflexia (4), Pathophysiology of Multi-Response Hyperreflex



Barr Body, the Second Look



Mitosis in Animal Cell

30/7/2020