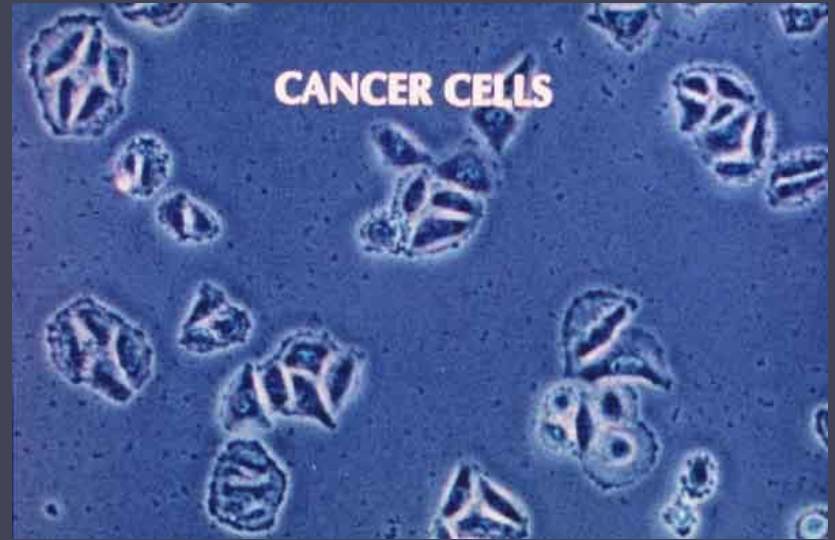
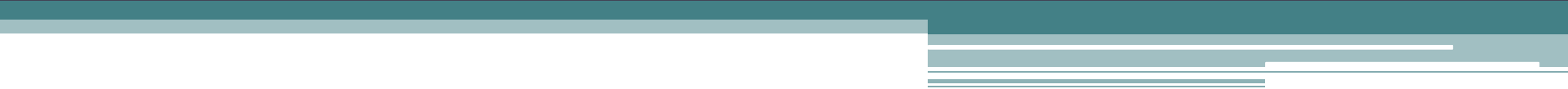




Cancer and the Cell Cycle

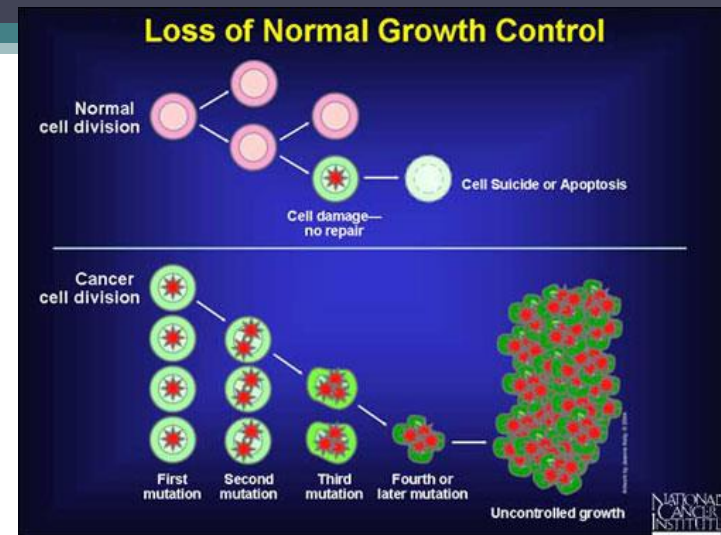
EQ: How do errors in the cell cycle develop into cancer?

What is cancer? Animation

A series of horizontal lines in teal and light blue colors, some solid and some dashed, extending across the width of the slide below the title.

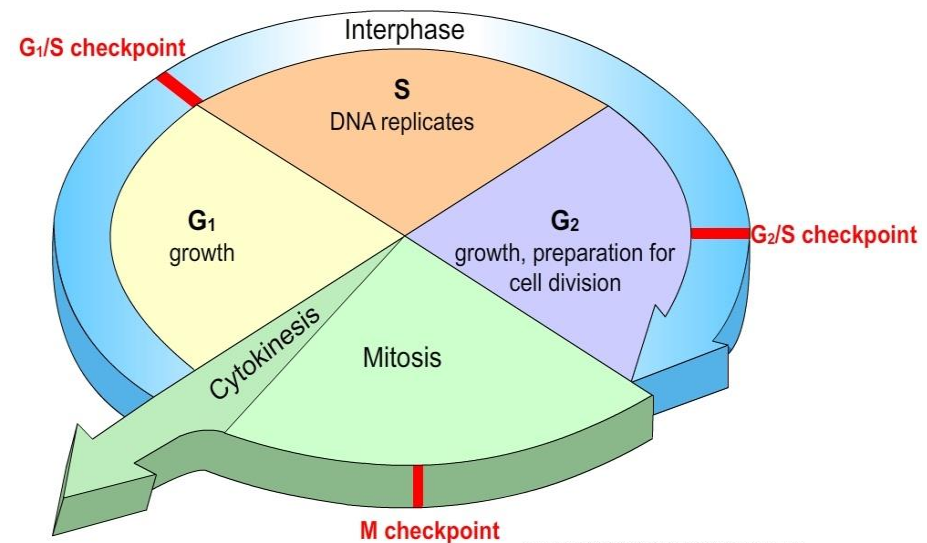
Cancer

- Uncontrolled cell growth
- Mutations- damaged or changed DNA
- Tumor- mass of tissue that can crowd out normal cells and spread in the body through blood or the lymphatic system
 - Benign- not cancerous, can be removed, do not spread, (bein=good)
 - Malignant- cancerous, invade nearby tissues and spread, (mal=bad)



Cancer and the Cell Cycle:

- Checkpoints during cell cycle to keep control:
 - If good → Next Stage
 - If bad → *Apoptosis* (destroy cell)
 - This does not occur in cancer cell
- Unlike normal cells, cancer cells continue to divide indefinitely, even if they become densely packed.
- Cancer cells will also continue dividing even if they are no longer attached to other cells

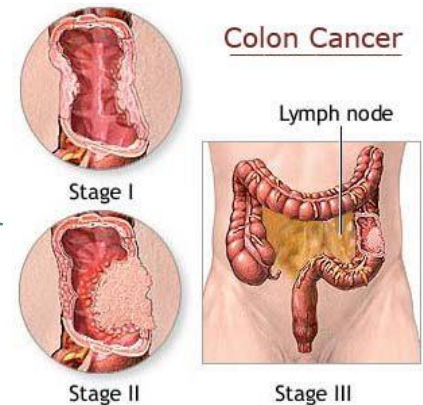
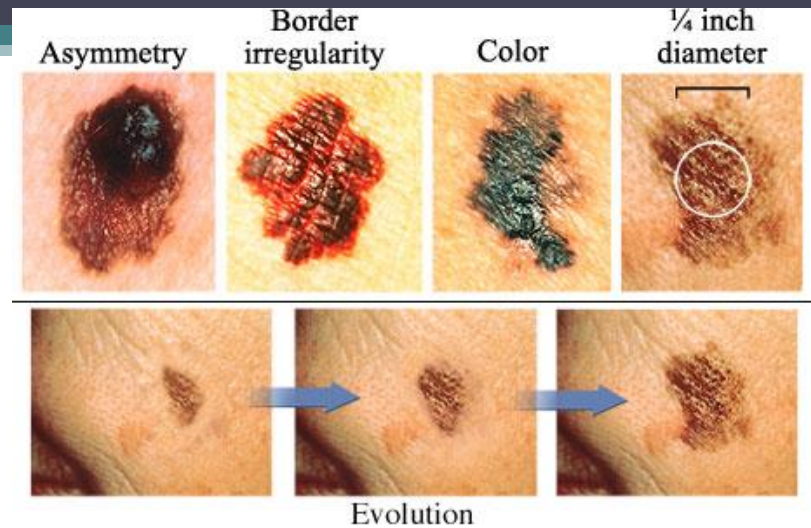


- Unregulated cancer division:
- https://www.youtube.com/watch?v=leUANxFVXKc&feature=em-share_video_user

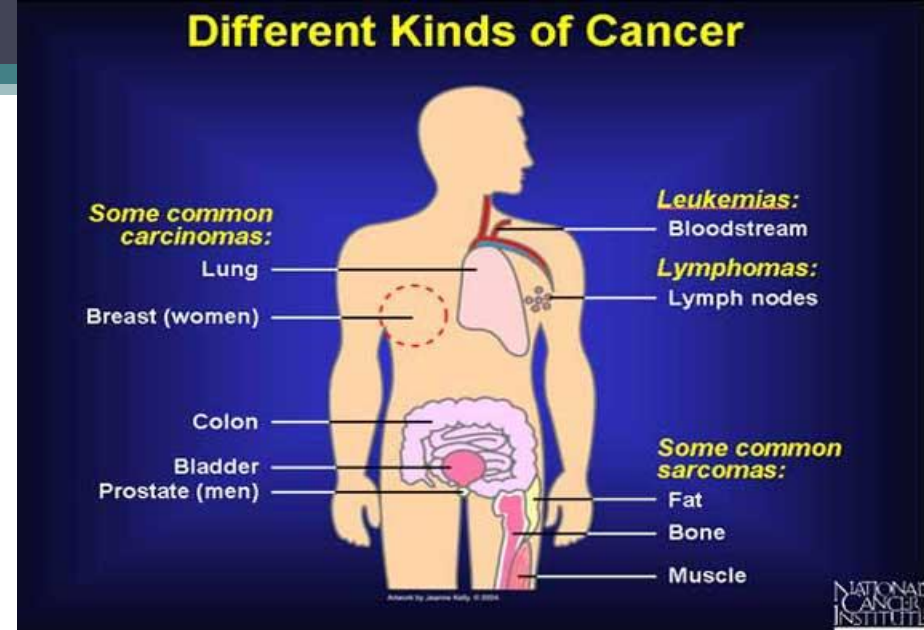
Causes:

**Any substance that causes cancer is called a carcinogen!*

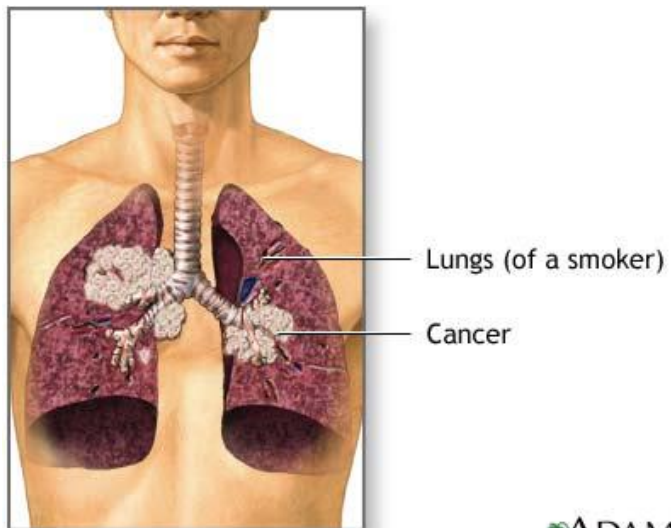
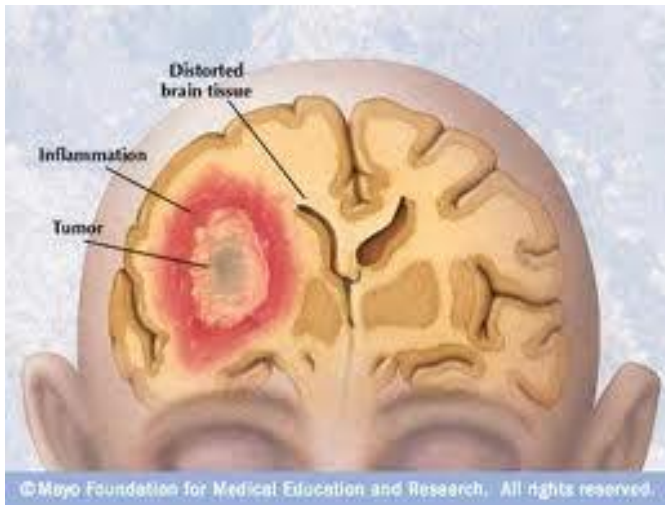
- There is no single cause
- Genetics, health, nutrition, lifestyle, and environmental factors
 - Cigarette smoke
 - Diet: Fatty food/Alcohol Consumption
 - UV Light
 - Sexual Behavior/HPV Virus
 - Environmental: Chemicals in drinking water, air pollution, food, etc



KINDS OF CANCER



- **Carcinomas**- tumors grow in the skin and lining of organs. Ex. Lung and breast cancer
- **Sarcomas**- tumors that grow in bone and muscle tissue.
- **Lymphomas**- tumors that grow in the lymph and blood. Ex. Leukemia.



Treatment

- Surgery/removal
- Radiation
- chemotherapy



Exit Ticket:

1. Which stage do you think cancer most likely speeds up during the Cell cycle?
2. What are some ways you can prevent cancer in your life?