

The Cell Cycle and Cancer Virtual Lab

<http://bit.ly/1RgqmjJ>



1. Pick a cell type you are going to investigate. Record your choice. **Lung, Stomach, or Ovary**
2. Click on the **NORMAL** slide for the cell type you chose.
3. Label the phases of each cell “seen” in the field of view.
4. Click **CHECK**
5. Create Table 1 in your notes. Record the number of cells in each phase in Table 1.

6. Repeat steps 2-5 for **CANCEROUS** tissue of the cell type you chose.

Table 1:

| Tissue Type | # Cells in Interphase | # Cells in Prophase | # Cells in Metaphase | # Cells in Anaphase | # Cells in Telophase | Total # of cells in MITOSIS | TOTAL # OF CELLS |
|------------------|-----------------------|---------------------|----------------------|---------------------|----------------------|-----------------------------|------------------|
| NORMAL tissue | | | | | | | |
| CANCEROUS tissue | | | | | | | |

7. Create Table 2 in your notes. Use the data in Table 1 to calculate the % of cells at rest (in interphase) and the Mitotic Index (% cells in mitosis dividing) for each tissue.

Table 2:

| Tissue Type | % cells at rest <i># cells in Interphase ÷ total # of cell</i> | Mitotic Index % cells dividing <i># cells in Mitosis ÷ total # of cells</i> |
|-------------|---|---|
| NORMAL | | |
| CANCEROUS | | |

Questions:

1. Based on your data and observations, what are some of the differences between normal cells and cancer cells?

2. What does your data indicate about the rate of cell division in cancerous tissue compared to the rate of cell division in normal tissue? What data did you use to answer this question?

3. This lab explores three common cancers. An additional form of cancer – Skin Cancer – used to be seen only in older individuals but is now seen in younger individuals, many in their early 20s. Skin cancer results from accumulated mutations to the DNA of skin cells, caused primarily by sun exposure. What factors do you think may be contributing to the increase in skin cancer among young adults?