Cancer Research Packet

**Directions**: Use the websites provided on schuettescience.weebly.com to research topics regarding cancer. You will explore how cancer grows, treatment options, how treatments are developed and possible routes of exposure to and causes of cancer.

Do a preliminary google search to try to find out the following:

1. How many different types of cancer are there? List at least 6 and write down the website you are referencing.

website url:

Next, go to my weebly click on ‘extra topics’ and click on **How Cancer Grows.**

1. What is the shape of the DNA molecule? How can it be mutated?
2. How does mitosis and cell replication differe in normal cells versus cancerous cells?
3. How many mutations typically occur before a tumor actually invades through epithelial tissue (organ lining or organ ‘skin’)? Is the tumor detectable?
4. Approximately how many cells must a tumor contain before it is detectable?
5. What does a tumor need from the body in order to grow?
6. How do tumors spread? What is the spread of cancer cells generally called?

Next, return to the weebly and click on **Possible Cancer Treatments.**

1. Define the details the following types of treatments:
	1. Surgery
	2. Radiation
	3. Chemotherapy
	4. Anti-angiogenic drugs
	5. Anti-metastatic drugs

Next, go back to weebly and click on **Expansive Treatment Types.**

1. Pick one treatment style of your choice that is different than the ones above, and describe it in detail.

Next, go to the weebly and click **Odds and Ends** – there are many frequently asked questions.

Browse through the questions and links to find the answers to the following.

1. What is angiogenesis?
2. What is an angiogenesis inhibitor?
3. What is a Clinical Trial?
4. What is the difference between a Phase I, Phase II and Phase III Trial?
5. Does Dr. Folkman see patients typically at Boston Childrens Hosptal? Why do you think this is?

Lastly, examine the list on the next page of factors thought to be possible causes for cancer. Put a check next to each of those factors you predict actually do cause cancer.

Potential Risk Factors to Cancer

|  |  |  |
| --- | --- | --- |
| **1st: Your Own Prediction?*** = You predict the factor causes cancer
 | **2nd: Is it actually a factor?*** = Evidence that it is a cause

 C = Controversial, needs more proof | Factor or Cause |
|  |  | Radiation therapy |
|  |  | Atomic blasts |
|  |  | Nuclear power plant exposure |
|  |  | Radon found in indoor air |
|  |  | Radon found in outdoor air |
|  |  | Food irradiation |
|  |  | Ultraviolet rays |
|  |  | Electric blankets |
|  |  | Television |
|  |  | Powerlines |
|  |  | Computer screens |
|  |  | Lightbulbs |
|  |  | Radar Guns (the kind cops use) |
|  |  | Cellular phones |
|  |  | Microwaves |
|  |  | Aspartame (nutrasweet, Splenda..) |
|  |  | High Fat Diet |
|  |  | Obesity |
|  |  | Sedentary lifestyle |
|  |  | Pesticides |
|  |  | Cigarette smoking |
|  |  | Cigar smoke |
|  |  | Smokeless tobacco |
|  |  | Second hand smoke |
|  |  | Alcohol consumption |
|  |  | Tanning beds  |
|  |  | Cosmetics |
|  |  | Teflon (found on nonstick pans) |

**After** you have made your prediction, go to the weebly and click What Causes Cancer?

You will have to REALLY dig and search for each of the following factors, and determine if there is support for them causing cancer or whether they may still be a controversy over their risks.

Mark the second column with a check or a letter “C” for whether or not the factor actually contributes to cancer or whether it is still controversially argued to be a contributing factor.