

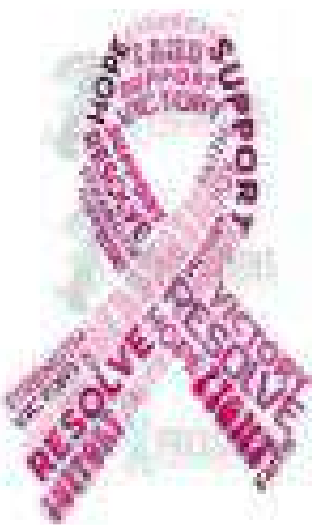
# Biology investigatory project

## Study of cancer



*Name :*

*STD : XII*



# Certificate

This is to certify that I, \_\_\_\_\_ of class **XII** of Trinity international school has successfully completed the Biology Investigatory Project on "Study of Cancer" under the guidance of Mr. \_\_\_\_\_ in particular fulfillment of the curriculum of **Central Board Of Secondary Education { CBSE }** leading to annual examination of the year \_\_\_\_\_

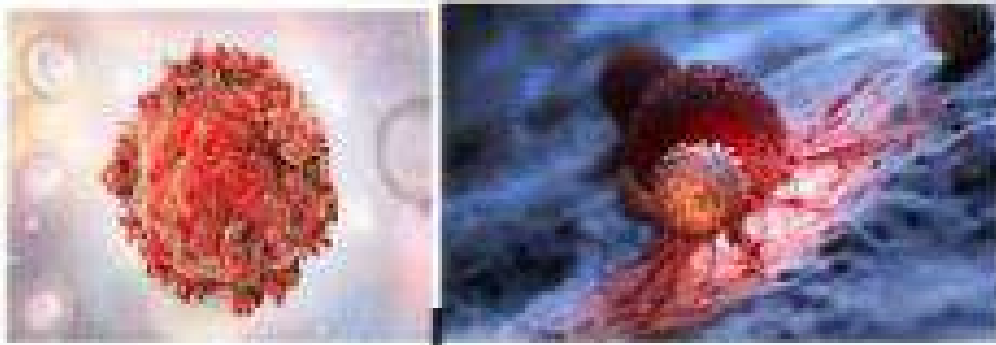
# ACKNOWLEDGEMENT

As a student of Class XII, I did this project as a part of my Studies entitled "Study of Cancer". I owe a deep sense of Gratitude to my biology teacher **Mr.** , whose valuable advice, guidance helped me in doing this project from conception to completion. At the same time, I cannot forget to express my gratitude to our school Principal **Mr.D.** for extending his generous, patronage and constant encouragement. Finally I am thankful to my parents for helping me economically, and my friends for being a helping hand at every step of this project

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# What is cancer?



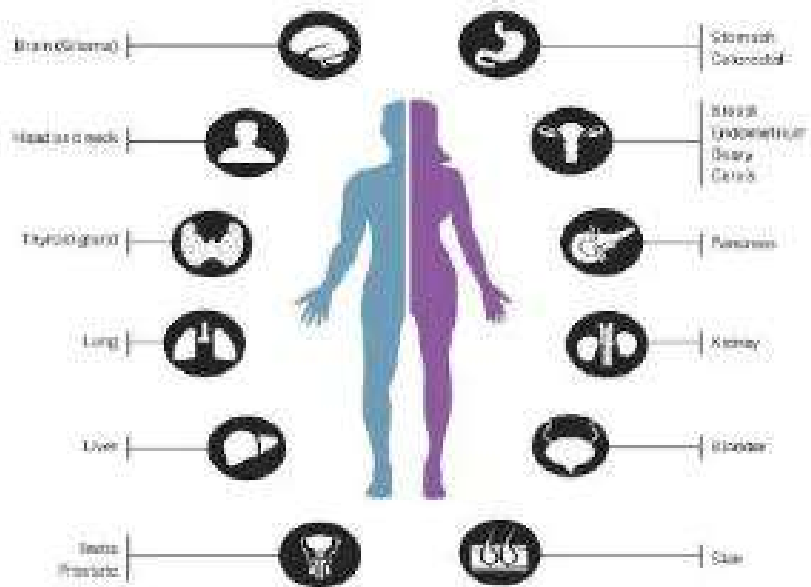
Cancer is the uncontrolled growth of abnormal cells anywhere in a body. These abnormal cells are termed cancer cells, malignant cells, or tumor cells. These cells can infiltrate normal body tissues. Many cancers and the abnormal cells that compose the cancer tissue are further identified by the name of the tissue that the abnormal cells originated from (for example, breast cancer, lung cancer, colorectal cancer). Cancer is not confined to humans; animals and other living organisms can get cancer. Below is a schematic that shows normal cell division and how when a cell is damaged or altered without repair to its system, the cell usually dies. Also shown is what occurs when such damaged or unrepaired cells do not die and become cancer cells and show uncontrolled division and growth -- a mass of cancer cells develop. Frequently, cancer cells can break away from this original mass of cells, travel through the blood and lymph systems, and lodge in other organs where they can again repeat the uncontrolled growth cycle. This process of cancer cells leaving an area and growing in another body area is termed metastatic spread or metastasis. For example, if breast cancer cells spread to a bone, it means that the individual has metastatic breast cancer to bone. This is not the same as "bone cancer," which would mean the cancer had started in the bone.

# Types of cancer

- ✦ Breast (Female - Male)
- ✦ Colorectal Cancer
- ✦ Endometrial
- ✦ Kidney (Renal Cell and Renal Pelvis) Cancer
- ✦ Leukemia (All Types)
- ✦ Lung (Including Bronchus)
- ✦ Melanoma
- ✦ Non-Hodgkin Lymphoma
- ✦ Pancreatic
- ✦ Prostate
- ✦ Thyroid



### The Human Pathology Atlas



# Some examples of common cancers

## Breast cancer:



Breast cancer is a type of cancer that starts in the breast. Cancer starts when cells begin to grow out of control. Breast cancer cells usually form a tumor that can often be seen on an x-ray or felt as a lump. Breast cancer occurs almost entirely in women, but men can get breast cancer, too.

## Lung cancer (including bronchus):



Lung cancer is the second most common cancer in American men and women. It's also the leading cause of cancer-related deaths for both American men and women. One in every four cancer-related deaths is from lung cancer. Cigarette smoking is the leading cause of lung cancer. Men who smoke are 23 times more likely to develop lung cancer. Women who smoke are 13 times more likely, both when compared with nonsmokers.



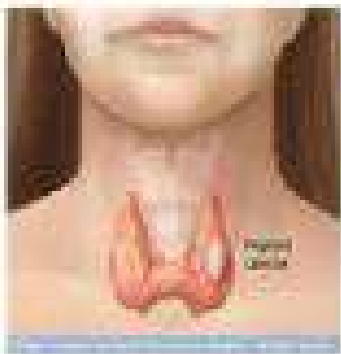
## Prostate cancer:

Prostate cancer is a serious disease that affects thousands of men each year who are middle-aged or older. About 60 percent of the cases occur in men older than age 65. The American Cancer Society



(ACS) estimates that 174,650 American men will be newly diagnosed with this condition in 2019. The prostate is a small gland found in a man's lower abdomen. It's located under the bladder and surrounding the urethra. The prostate is regulated by the hormone testosterone and produces seminal fluid, also known as semen. Semen is the substance containing sperm that exits the urethra during ejaculation.

## Thyroid cancer:



Thyroid is a butterfly-shaped gland in the lower front part of your neck. The hormones it makes are carried throughout your body to help regulate heat and energy.

of Anaplastic thyroid cancer is one of four types of thyroid cancer. It's very rare: The American Thyroid Association notes that this type represents less than 2 percent of all cases of thyroid cancer. It metastasizes, or spreads, quickly to other organs. It's one of the most Trusted Source aggressive cancers in humans.

## Kidney (renal cell and renal pelvis) cancer:



The kidneys are two bean-shaped organs, each about the size of a fist. They're located in your abdomen on either side of your spine. The kidneys filter out waste from your blood and make urine. There are different types of cancer that can affect your kidneys. The National

Cancer Institute estimates that there were more than 63,000 new cases of kidney cancer in the United States in 2017.

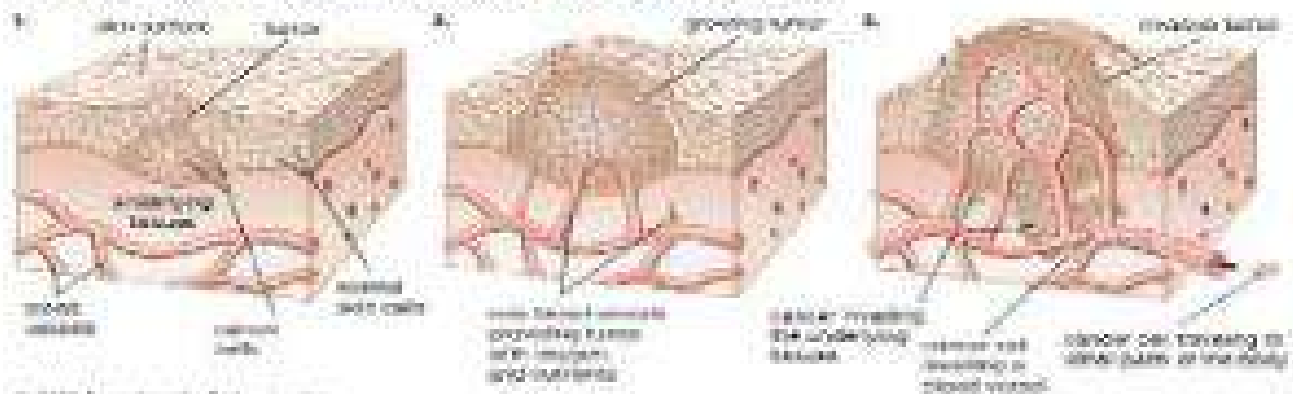
The incidence of kidney cancer appears to be increasing, according to the Mayo Clinic. One possible reason may be increased screening by CT scans.

**Pancreatic cancer:** Pancreatic cancer occurs within the tissues of the pancreas, which is a vital endocrine organ located behind the stomach. The pancreas plays an essential role in digestion by producing enzymes that the body needs to digest fats, carbo the pancreas also produces two important hormones: glucagon and insulin. These hormones are responsible for controlling glucose (sugar) metabolism. Insulin helps cells metabolize glucose to make energy and glucagon helps raise glucose levels when they are too low hydrates, and proteins



# Formation of cancer cell

Cancer cells are usually formed after a *series* of mutations cause them to become increasingly abnormal. These mutations are either inherited or more often, caused by carcinogens (cancer-causing substances) in our environment. That cancer is caused by not one but several mutations explains why cancer is more common in older people and why it is often multifactorial (meaning there are several factors that work together to cause cancer) in origin. It also helps explain a genetic predisposition to cancer. A genetic predisposition does not mean you will get cancer, but, simplistically, if a few mutations are already in place, it will likely take fewer acquired mutations for a cell to become cancerous.



The process of normal cells becoming cancer often goes through stages in which the cell becomes progressively more abnormal appearing. These stages may include hyperplasia, dysplasia, and finally cancer. You may also hear this described as differentiation. Early on a cell may look much like normal cells of that organ or tissue, but as progression occurs, the cell becomes increasingly undifferentiated. This is, in fact, why sometimes the original source of cancer cannot be determined.

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# Treatment of cancer

There are many types of cancer treatment. The types of treatment that you receive will depend on the type of cancer you have and how advanced it is.

Some people with cancer will have only one treatment. But most people have a combination of treatments, such as surgery with chemotherapy and/or radiation therapy. When you need treatment for cancer, you have a lot to learn and think about. It is normal to feel overwhelmed and confused. But, talking with your doctor and learning about the types of treatment you may have can help you feel more in control. Our [Questions to Ask Your Doctor About Treatment](#) may help.



# Bibliography

- <https://en.wikipedia.org>
- <https://www.scribd.com>