Frequently Asked Questions About Cancer

Below are common cancer questions we have encountered in public education events. We'll be adding questions so check back. If you have a question you'd like to see here, write us at cancerquest@emory.edu.

What causes cancer?

The uncontrolled reproduction of cells seen in cancer is due to defects in genes that normally drive and stop cell division. The genes become damaged (mutated) and no longer function properly. Many different things can cause mutations. These include radiation, environmental chemicals, and chemicals formed inside the body. Learn more about the causes of cancer.

Is cancer contagious?

In a word, the answer is 'no'. But in biology, there are almost always exceptions to every rule...

In humans, spread from person to person is **extremely** rare. There have also been some documented cases in which a cancer was passed from a pregnant mother to her child during pregnancy or birth. There is also a single case of a surgeon who got cancer when he cut himself while operating on a cancer patient.

There **are** some animal cancers that are transmitted directly from one animal to another.
Learn more about cancer in animals.

Note that there are several viruses that cause cancer, but the cancer is not contagious - the viruses are passed from person to person. SOME of the infected people can then develop cancer.
Learn about cancer viruses.

Is cancer hereditary?

The terms 'genetic' and 'hereditary' or 'inherited' are often confused.

Cancer IS a genetic disorder. Cancer develops only after a number of important regulatory genes are damaged.

Cancer is NOT hereditary (inherited from their parents). One does not get cancer directly from their parents. Children can inherit defective genes that put them at a higher risk of developing cancer. In some cases, the children have a very high (almost 100%) chance of developing cancer.

How does chemotherapy work?

Chemotherapy drugs work by poisoning cells that are reproducing (dividing) quickly. Most of the standard chemotherapy drugs cause damage to genetic material (DNA) or block the activity of important proteins in cells.

Unlike normal cells, cancer cells do not have the ability to stop and repair themselves so they are more sensitive to drugs that cause these kinds of damage.

Chemotherapy does not specifically target cancer cells. All rapidly dividing cells are damaged to some extent.

Learn more about chemotherapy.

Why does chemotherapy make you sick?

As mentioned in the question above, chemotherapy causes damage to cells. Cells that are reproducing quickly are the most likely to be damaged and killed.

The side effects of chemotherapy include nausea, hair loss, fatigue and a weakened immune system. All of these are caused by chemotherapy killing normal cells.

Learn more about chemotherapy's side effects.

How is radiation therapy different from chemotherapy?

Radiation therapy is the use of beams of high-energy radiation to kill cancer cells. The radiation enters the cancer cells and can directly cause damage to the genetic material (DNA). It also indirectly leads to damage by causing the formation of toxic chemicals in the cells.

Importantly, radiation only affects the cancer cells targeted by the beams. Cancer cells in other locations are not damaged by radiation. Chemotherapy travels throughout the body and can attack both the main (primary) tumor and also cancer cells in other parts of the body.

Learn more about radiation therapy.