



Your Health

Cancer: Why Haven't We Found A Cure?©

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Words are explained alongside the text

Stressed syllables are underlined and in bold*

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Cancer is one of the most widely researched **areas** in **medicine**. If we can **create robotic** arms and 3D printed hearts, why can't we cure cancer yet? The answer is **actually surprisingly** simple. Cancer is often seen as one **disease** when, in fact, cancer is actually a number of **different** diseases. Every type of cancer has its own **profile**. The **process** of cancerous cell growth and **spread** can be very different depending on where it's **located** in the body. It's for this reason that some cancers can be cured **whilst** others have a very poor **survival** rate. You may have heard of some childhood **Leukemias** being cured in the news – the cure rate for some Leukemias in children can be up to 90%! This is usually possible through **chemotherapy**. It's **currently** unclear as to why children tend to **overcome** cancer better than **adults** but research is currently being **undertaken** to try and find out.

Some cancers are **especially lethal**. One of the most **notorious** is **pancreatic** cancer. This is a **particularly** hard cancer to overcome due to its location. The **pancreas**, which is partly **responsible** for digestion, is located very centrally in the body and has the **liver**, **bile duct**, **small intestine**, **gall bladder** and **stomach** all very near it. What this **basically** means is that, **given** the **unfortunate diagnosis** of pancreatic cancer, there is a reasonably small distance for the cancerous cells to **metastasize** over to one

actually (adv.) in fact, really

spread (n.) diffusion, dispersal

whilst (conj.) while

currently (adv.) at the present time

to overcome (overcame-overcome) (vb.) to surmount

to undertake (undertook-undertaken) (vb.) to embark on, tackle

lethal (adj.) deadly, causing death

notorious (adj.) well-known for badness or wickedness

liver (n.) large organ in the body which purifies the blood

bile duct (n.) tube from the liver and **gall bladder**, a small organ in the body, that stores bile, through which bile passes into the **small intestine**, the upper part of the bowels between the stomach and the large intestine

given (prep.) considering

of the **organs** listed earlier. Metastasis is **essentially** a word for a secondary **tumor** formation at a secondary site. One of the ways to tell if a tumor is a new cancer or a metastasis is by looking at the **tissue type**. If a tumor found on your **bladder** is made out of **lung** tissue, you know that this is a metastasis of lung cancer. If you have lung cancer and the tumor on the bladder tests as bladder cancer, you would have two different cancers at the same time (**although** you would be very unlucky!)

Now that we know cancer is in fact a **range** of diseases, rather than just one, what are we doing to try and cure it? There are two ways of **attacking** cancer, a '**one size fits all**' **approach** and a more **targeted** option. Often these can be used at the same time or one after the other.

Let's begin by the most well-known cancer **treatment**, chemotherapy. This is essentially a combination of drugs that targets the multiplication of cells. Unfortunately, chemotherapy can't tell the difference between healthy cells and cancerous cells and can therefore end up killing some healthy cells. Chemo would be classed as a 'one size fits all' treatment option. However, as cancer cells **divide** more quickly than healthy cells, chemotherapy targets cancerous cells more than healthy ones.

Next up, **radiotherapy**. This works by **blasting** radiation into the cancerous cells and destroying their DNA. This causes the cancerous cell to die. Unfortunately, much like chemo, radiotherapy can damage the surrounding cells and also damage their DNA. Having said this, as these cells are healthy, they often have the **ability** to repair themselves. Given the **broad** spectrum of cancers that this therapy can treat, this is classed as a 'one size fits all' approach too.

Third we have **immunotherapy**. This is a field of particular **interest**, as this treatment option would be classed as a 'targeted' or '**personalized**' approach. There are many different types of immunotherapy but they all work in a **similar** way. The process works by essentially training your **immune** system to **detect** and kill cancerous tumors. A **key** part of a successful immune **response** is the ability to **produce antibodies**. These are **proteins** that **bind to**

tissue type (n.) inherited chemical characteristics of the bodily tissue of an individual

bladder (n.) part of your body where urine is stored until it leaves your body

lung (n.) either of the two organs in the chest with which people breathe

range (n.) set of similar things

one size fits all (adj.) relating to approaches that are not tailored to individual needs

targeted (adj.) referring to a type of treatment that uses drugs or other substances to identify and attack specific types of cancer cells with less harm to normal cells

to blast (vb.) to hit with great force

broad (adj.) wide, extensive

key (adj.) major

to bind to (bound-bound) (vb.) to stick to

pathogens or **abnormal** cells and **flag** them **up** for white blood cells to see them and eat them. **Monoclonal** antibody immunotherapy works by injecting **lab** grown antibodies into the blood that can detect a particular cancer protein and target it for destruction by the immune system.

The final option, which can be used preventatively or post diagnosis is **surgery**. Simply cutting out the tumor can stop it spreading. **Surgeons** usually have to take out a **significant amount** of tissue to make sure that no cancer is left behind as it could grow back and metastasize if left in the body.

This week's advice: The **prevalence** of cancer looks like it's increasing over time, but it's not worth worrying about. Let's not forget that the reason cancer and mental **disorders** seem to be increasing is due to the fact that we are living longer! **Hopefully** one day, we may find a 'one size fits all' cancer cure to treat all types of cancer but until then, keep **optimistic** and live your life **to the full**.

to flag up (phrasal vb.) to point out, bring to someone's attention

monoclonal (adj.) from a single cell

lab = laboratory

surgeon (n.) physician who specializes in surgery

to the full (adv.) thoroughly

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*** Tip !**

In English many adverbs have the ending **-LY**. The adverbial suffix is stress-neutral.

Note the stress patterns in the following adverbs and in the adjectives from which they are derived :

essential (adj.) / **essentially** (adv.) ,

hopeful (adj.) / **hopefully** (adv.) ,

particular (adj.) / **particularly** (adv.) ,

reasonable (adj.) / **reasonably** (adv.) ,

unfortunate (adj.) / **unfortunately** (adv.) ,

usual (adj.) / **usually** (adv.)