Former Smokers and Cancer Risk

Unfortunately, smoking any amount can cause damage that can lead to health problems. However, having quit smoking is a great achievement and you are reaping the benefits of improvements in your risk of smoking related illnesses every day. Quitting smoking has health benefits that start right away and continued improvements over many years. This is true even for people who already have a smoking-related disease.

The good news is that the risk of having lung cancer and other smoking-related illnesses decreases after you stop smoking and continues to decrease as more tobacco-free time passes. The risk of lung cancer decreases over time, though it can never return to that of a never smoker. The risk also continues to decrease for the 12 other types of cancer smoking can cause: cancers of the oral (mouth) and nasal (nose) cavity, sinuses, pharynx (throat), larynx (voice box), esophagus (tube from the throat to the stomach), stomach, pancreas, liver, bladder, kidney, cervix and one type of leukemia (acute myeloid leukemia).

Learn more about the benefits in the links below.

- Estimating your risk of lung cancer in numbers
- How does tobacco cause cancer?
- Benefits of quitting cigarettes
- Life after tobacco

Estimating your risk of lung cancer in numbers

Many current and former smokers want to know their risk of developing lung cancer in numbers. For example, some people want information such as "I have a 10% chance of developing the disease." Assigning a number to risk is very complicated and is often hard to interpret- while one person may think 10% is a high chance, another thinks that is a relatively low number.And for the person who is in that 10% and develops the cancer, the number is meaningless. Remember that statistics like these are numbers based on large groups of people. It can be difficult to translate what that means for any one individual. In other words, don't let the number convince you that it is okay to continue smoking.

If you are still interested in knowing some numbers, researchers at Memorial Sloan Kettering Cancer Center have developed an online tool that estimates risk of lung cancer in numbers for people between 50 and 75 years old who have smoked at least 25 years, though they can be current or former smokers. Remember this tool only considers lung cancer risk and not risk of the 12 other types of cancer or other health conditions that smoking causes.

If you don't fall into that tool's population, you can talk with your doctor about your risk. Calculating a risk is very complicated

and some researchers have spent entire careers trying to quantify an individual smoker's risk. Risk calculation takes into account the amount smoked, over what time period and can include other parts of your health history that can increase your risk (asbestos exposure, COPD).

How does tobacco cause cancer?

Tobacco and tobacco smoke cause cancer because they contain many chemicals that are known carcinogens (cancer causing agents). Cigarettes, cigars, chewing and pipe tobacco are made from dried tobacco leaves, as well as ingredients added for flavor and other reasons, such as making smoking more pleasant. More than 7,000 different chemicals have been found in tobacco and tobacco smoke -- among them are more than 60 known carcinogens. Some of the substances that are released by cigarettes and make up tobacco smoke include: ammonia, arsenic, benzene (like that found in pesticides and gasoline) cyanide, formaldehyde (a known carcinogen chemical used to preserve dead bodies), tar, and carbon monoxide. Similar substances are found in smokeless tobacco, including Polonium 210 (nuclear waste), cadmium (used in car batteries), lead (which causes nerve poison), nitrosamines, arsenic, and cyanide.

The chemicals in tobacco and tobacco smoke cause damage in the most basic level of our bodies, the cells and genes. Normally, the body has systems, controlled by genes, which regulate cell growth, repair and death. The genetic damage caused by smoking causes this regulation to malfunction, leading to uncontrolled growth. This uncontrolled growth can, in turn, lead to the formation of tumors that grow and spread throughout the body because they are not detected or repaired by the body's normal monitoring systems.

The Benefits of Quitting Cigarettes

Your risk of having lung cancer and other smoking-related illnesses and cancers depends on how much you have been exposed to cigarette smoke over your lifetime. However, the good news is that the risk of these diseases is reduced when you stop smoking. The risk of lung cancer is less in people who quit smoking than in people who keep smoking. The risk of cancer becomes less as the number of years you have been smoke-free increases. People who stop smoking while they are young get the greatest health benefits from quitting. Those who quit in their 30s may avoid most of the risk due to tobacco use. But even smokers who quit after age 50 largely reduce their risk of dying early.

Within minutes of smoking the last cigarette, the body begins to restore itself. Just look at these facts from the U.S. Surgeon General's reports and the American Cancer Society:

20 minutes after quitting

Your heart rate and blood pressure drop. (Effect of smoking on arterial stiffness and pulse pressure amplification, Mahmud A, Feely J. 2003. Hypertension:41:183)

12 hours after quitting

The carbon monoxide level in your blood drops to normal. (US Surgeon General's Report, 1988)

2 weeks to 3 months after quitting

Your circulation improves, meaning your blood is pumped better and your lungs work better. (US Surgeon General's Report, 1990)

1 to 9 months after quitting

Coughing and shortness of breath decrease; Lung function improves increasing the ability to handle mucus, clean the lungs, and reduce the risk of infection. (US Surgeon General's Report, 1990)

1 year after quitting

The excess risk of coronary heart disease is half that of a smoker's. (US Surgeon General's Report, 2010)

5 years after quitting

Your risk of stroke is reduced to that of a non-smoker 2-5 years after quitting. The risk of cancer of the mouth, throat, esophagus and bladder is cut in half after 5 years. (US Surgeon General's Report, 2010)

10 years after quitting

The lung cancer death rate is about half that of a person who is still smoking. (US Surgeon General's Report, 2010)

15 years after quitting

The risk of coronary heart disease is that of a non-smoker's. (US Surgeon General's Report, 1990)

These health benefits are certainly appealing. In addition, keep in mind the day to day benefits of better smelling breath, hair and clothes; further, your senses of smell and taste may improve, and you may begin to notice less shortness of breath when doing simple activities. You will be setting a great example for other smokers who want to quit and your family and friends will be proud of your achievement, not to mention the benefits for them. In addition, you will be saving lots of money; set aside what you would usually spend and do something nice for yourself with the money!

Life After Tobacco

Unfortunately, quitting tobacco cannot completely erase the damage done from previous smoking. You should always be honest with healthcare providers about your smoking history and be aware of the risks associated with this history.

As recommended by the American Cancer Society, you should tell your healthcare provider about any of the following symptoms:

- Any change in a cough (for example, you cough up more phlegm or mucus than usual)
- A new cough
- Coughing up blood
- Hoarseness
- Trouble breathing
- Wheezing
- Chest pain
- Loss of appetite
- Weight loss
- Feeling tired all the time (fatigue)

- Frequent lung or respiratory infections (like pneumonia or bronchitis)
- Development of sores or white patches in your mouth.