

Why only some smokers get cancer

Researchers find enzyme that protects against lung disease

Sept. 3 Israeli researchers said they have identified a naturally produced compound that may explain why only some smokers get lung cancer.

The enzyme fixes damage done to DNA by smoking and other environmental stresses and is one of a large group of repair compounds in the body

SMOKERS WITH low levels of the enzyme were five to 10 times more likely to develop lung cancer than smokers with the highest levels, the team at Israel's Weizmann Institute found.

The enzyme is called OGG1 or 8-oxoguanine DNA glycosylase 1. The enzyme fixes damage done to DNA by smoking and other environmental stresses and is one of a large group of repair compounds in the body.

Writing in the *Journal of the National Cancer Institute*, Zvi Livneh and colleagues said 40 percent of the 68 lung cancer patients they tested had low levels of OGG1 activity, in contrast to 4 percent of a healthy group of 68 people.

Nonsmokers with the lowest levels of OGG1 also had a higher risk of lung cancer, although their overall risk of cancer was much lower than that of the smokers.

Lung cancer is by far the biggest cancer killer in the world, killing a million people every year worldwide and nearly 160,000 a year in the United States.

Up to 90 percent of all lung cancer patients are smokers, but only 10 percent of heavy smokers develop lung cancer. Smoking is also a major cause of heart disease and stroke.

The researchers said the findings needed to be confirmed in larger studies but they may lead to the development of a blood test that smokers could take to determine their personal risk.

Shark Cartilage - Shark cartilage has been shown to inhibit development of blood vessels that nourish solid cancer tumors and limit their growth. In addition to Kaposi's sarcoma, a type of cancer that is frequently related to AIDS, several case examples have shown shark cartilage treatment for cervical, uterine, bone, colon, and breast cancers. It has shown to reduce inflammation and pain associated with arthritis, enteritis (inflammation of the lining of the bowels) (skin inflammation), and blindness due to macular degeneration. As well, shark meat and skin have been used as remedies, including treatment for burn victims

Chemotherapy and hair loss: Why does it occur?

Chemotherapy drugs are powerful medications that attack rapidly growing cancer cells. Unfortunately, these drugs also attack other rapidly growing cells in your body — including those in your hair roots.

Chemotherapy may cause hair loss all over your body — not just on your scalp. Sometimes your eyelash, eyebrow, armpit, pubic and other body hair also fall out. Some chemotherapy drugs are more likely than others to cause hair loss, and different doses can cause anything from a mere thinning to complete baldness. Talk to your doctor or nurse about the medication you'll be taking. Your doctor or nurse can tell you what to expect.

Fortunately, most of the time hair loss from chemotherapy is temporary. You can expect to regrow a full head of hair six months to a year after you stop treatment, though your hair may temporarily be a different shade or texture.

Chemotherapy and hair loss: What should you expect?

Hair usually begins falling out 10 to 14 days after you start treatment. It could fall out very quickly in clumps or gradually. You'll likely notice accumulations of loose hair on your pillow, in your hairbrush or in your shower drain.

Your hair loss will continue throughout your treatment and up to a month afterward. Whether your hair thins or you become completely bald will depend on your treatment. You generally need to lose about 50 percent of your hair before it's noticeable to other people.

It takes about four to six weeks for your hair to recover from chemotherapy. In general, you can expect about a quarter inch of growth each month.

When your hair starts to grow back, it will probably be slightly different from the hair you lost. But the difference is usually temporary. Your new hair might have a different texture or color. It might be curlier than it was before, or it could be gray until the cells that control the pigment in your hair begin functioning again.

Chemotherapy and hair loss: Can hair loss be prevented?

No treatment exists that can guarantee your hair won't fall out during or after chemotherapy. The best way for you to deal with impending hair loss is to plan ahead and focus on making yourself comfortable with your appearance before, during and after your cancer treatment.

Several treatments have been investigated as possible ways to prevent hair loss, but none has been absolutely effective, including:

- **Scalp hypothermia (cryotherapy).** During your chemotherapy, ice packs or similar devices are placed on your head to slow blood flow to your scalp. This way, chemotherapy drugs are less likely to have an effect on your scalp. In general, scalp hypothermia works somewhat in 50 percent to 80 percent of people going through chemotherapy who try it. However, the procedure also causes a small risk of cancer recurring in your scalp, as this area doesn't receive the same dose of chemotherapy as the rest of your body. Most people who try this procedure find it to be uncomfortable and very cold.
- **Minoxidil (Rogaine).** Applying minoxidil — a drug approved for pattern hair loss in men and women — to your scalp before and during chemotherapy isn't likely to prevent your hair loss, although some research shows it may speed up your hair regrowth. In one small study, women undergoing chemotherapy for breast cancer applied minoxidil twice daily throughout their treatment and for four months afterward. Though their hair eventually all fell out, it took longer for the women who applied minoxidil to lose all their hair than it did for the women who didn't use it, and their hair started to grow back earlier.