Diet May Help Protect Nonsmokers (Even Smokers) Against Lung Cancer

Lung cancer is becoming more pervasive, striking celebrities like Peter Jennings and Dana Reeve and likely one of your own friends or relatives—some of whom may have never smoked. Unlike breast and prostate cancers, which strike more people, lung cancer is particularly lethal; it’s the leading cause of cancer deaths in both men and women. In fact, although it accounts for only 13% of cancer diagnoses, lung cancer is responsible for almost a third of all cancer deaths, due mainly to late detection and ineffective therapies.

What causes lung cancer? Few secrets there. Cigarette smoking is by far the main risk factor, blamed for about 87% of lung cancer deaths. But that leaves more than one in 10 of those afflicted who are not smokers. Other risk factors include secondhand smoke, air pollution, radiation exposure, tuberculosis and occupational or environmental exposure to toxic chemicals like arsenic, benzene, radon and asbestos.

So where do diet and nutrition enter the picture? Admittedly, the evidence that diet can reduce lung cancer risk is not as strong as it is for some other cancers. But while quitting smoking is inarguably the best defense against this deadly disease, research increasingly suggests that what you eat may offer some protection against lung cancer, even if you smoke.

Can Omega-3 Supplements Help You Reel In The Health Benefits Of Fish?

If you’ve been fishing for ways to improve your health, no doubt you know that eating a diet rich in omega-3 fatty acids may be beneficial. You might also have heard about a recent study that found omega-3 supplements probably won’t help reduce your risk of cancer. But that doesn’t mean omega-3 fats are useless. Not only might they still help prevent heart disease and some strokes, but omega-3s have the potential to improve a host of other conditions, from rheumatoid arthritis to depression.

Fatty fish—e.g., herring, salmon, sardines, trout and tuna—are the best sources of the two most potent omega-3 fats, called eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), both of which can confer big health benefits. A third omega-3 fat, alpha-linolenic acid (ALA), is found only in plant foods and its health benefits are less well understood.

How Much Do You Need? There’s no official recommended intake of omega-3 fats, but experts encourage healthy people to eat fish at least twice a week and eat foods rich in ALA (flax meal, canola oil, walnuts). For those at risk for heart disease, research suggests getting an average of 0.5 to 1.8 grams a day of EPA and DHA (from fatty fish or supplements) and 1.5 to 3 grams a day of ALA, from plant foods.

The reality is, if you’re not a fish eater—or you are, but you don’t eat at least two servings a week—it’s hard to get enough omega-3s in your diet. Plant foods and omega-3-fortified foods (see EN, January 2006) can help boost omega-3 intake, but probably not enough to offer protection against chronic health conditions. That’s partly because the body converts only about 10% of the ALA in plant foods to EPA, though researchers suspect ALA may have its own benefits.

Are Supplements the Answer? Research suggests that omega-3 supplements are as effective as food sources of omega-3s. Even the venerable American (continued on page 6)
Diet May Help Protect Nonsmokers Against Lung Cancer

(continued from page 1)

the substances in foods that may help shield your lungs from environmental influences that can lead to lung cancer.

Plants Provide Protection. Plenty of research has shown that eating lots of fruits and vegetables reduces lung cancer risk, particularly in nonsmokers. But even smokers appear more able to dodge lung cancer if their diets are plentiful in plant foods. A recent World Health Organization report suggests that if everyone ate at least four cups of fruits and vegetables daily, the incidence of lung cancer worldwide could be cut by 12%.

“The benefits are likely the result of synergy between nutrients and phytonutrients in fruits and vegetables,” says Karen Collins, M.S., R.D., of the American Institute for Cancer Research. Yet, until now, research focused on single nutrients.

Carotenoid Cure? Numerous studies have linked diets high in carotenoid-rich fruits and vegetables with a lower risk of lung cancer. Carotenoids encompass several hundred compounds that produce the red, yellow, and orange colors you see in some fruits and vegetables (and, though present, are not visible in dark green produce). They are valued as antioxidants. Carotenoids appear most protective in people with a history of heavy smoking, but getting them from foods seems to be critical. Two large studies found that taking high-dose supplements of beta-carotene actually increased lung cancer risk in smokers. Researchers theorize that cigarette smoke increases oxidation of beta-carotene in lung tissue, setting the stage for the proliferation of lung cancer cells.

Alpha Before Beta? One study of more than 4,500 men in Finland found that another carotenoid, alpha-carotene, was more protective against lung cancer than beta-carotene. Most of the alpha-carotene the study participants ate came from carrots. Other rich sources include winter squash and pumpkins. Despite this finding, the researchers concluded that a mix of carotenoids from a variety of fruits and vegetables is a nonsmoker’s best dietary protection against lung cancer.

Tofu for Your Lungs? Another class of nutrients thought to defend against lung cancer is phytoestrogens, or plant estrogens, found primarily in soy, but also in flaxseed and legumes. Research shows that, as with breast cancer, lung cancer cell growth may be fueled by estrogen. Scientists have speculated that dietary phytoestrogens mimic natural estrogen and can prevent it from attaching to receptors in the lung by getting there first. Numerous Asian studies cite lower rates of lung cancer in people who consume more soy. To confirm the findings in Americans, researchers at the M. D. Anderson Cancer Center in Houston analyzed the diets of more than 3,400 people, half with lung cancer, and found that phytoestrogen intake was significantly higher in those without lung cancer—in both smokers and those who had never smoked.

“Phytoestrogens act as antioxidants and as estrogen blockers, both of which are cancer-preventive,” explains lead researcher Matthew Schabath, Ph.D. He theorizes that phytoestrogens compete with dangerous chemicals in cigarette smoke, rendering the chemicals less damaging to lung tissue. But, cautions Schabath, his research “does not give smokers a license to smoke as long as they eat soy. To avoid lung cancer, you have to quit smoking.”

Potential Lung Protectors. Though less researched, other nutrients may also offer some protection against lung cancer:

• Cruciferous Vegetables. In a recent study published in the journal Cancer Research, mice exposed to the carcinogens in smoke and then fed a diet high in isothiocyanates—phyto-nutrients in cruciferous vegetables like broccoli, cauliflower, cabbage and kale—were significantly less likely to develop lung cancer. No word yet on effects in humans.

• Selenium. Studies analyzing blood selenium levels suggest that very low levels of this antioxidant nutrient may raise the risk of lung cancer, while

If You Haven't Quit Yet ....

According to the American Institute for Cancer Research, it’s particularly important for smokers to heed the following advice:

• Don't take beta-carotene supplements. They may actually increase your lung cancer risk.

• Load up on fruits and vegetables from a wide variety of sources.

• Eat a plant-based diet to reduce all cancer risk and for better overall health.

Safeguard Your Lungs

Here are the top five things you can do to lower your risk of lung cancer:

• If you smoke, quit. It's far and away the greatest risk factor for the disease. Even if you've smoked for decades, research shows that quitting now can still significantly reduce your lung cancer risk.

• Avoid secondhand smoke. Each year about 3,000 nonsmoking adults die from breathing in secondhand smoke. Ban smoking in your home and car.

• Have your home tested for radon. This odorless, colorless gas is the second leading cause of lung cancer. To find out more, contact the American Lung Association at 800-LUNGUSA or visit www.healthyhouse.org.

• Avoid exposure to cancer-causing substances at work. Prolonged exposure to asbestos or other hazardous substances in fumes, dust or chemicals increases lung cancer risk.

• Eat a diet rich in fruits and vegetables. Go for a colorful variety. —H.W.

higher levels may be protective. Get selenium from whole grains, legumes, meat, poultry, seafood, brewer's yeast and sunflower seeds. Brazil nuts are your best source, but don't eat more than a couple of nuts a day or you could get too much selenium.

• Carotenoids and Flavonoids. Preliminary research suggests that another carotenoid, beta-cryptoxanthin, found in oranges, tangerines, papayas, peaches, red peppers and carrots, and the flavonoids in tea, red wine, citrus fruits and berries, may also offer lung cancer protection.

The Bottom Line. The benefits of nutrition seem to go only so far; no single nutrient has been found to be particularly helpful, nor have supplements proved especially effective. One recent large study found no evidence for protection against lung cancer from multivitamin supplements or dietary intake of vitamins A, C, E and folate.

It appears nature once again knows best, packaging cancer prevention in fruits and vegetables. But remember, if you continue to smoke, there are limits to what a good diet can do to protect you.

—Hillary M. Wright, M.Ed., R.D.