

Selected Questions & Answers

Why is cancer now often talked about as a “chronic” disease?

In the U.S., the lifetime risk of developing cancer is now about 1 in 2 for men, and 1 in 3 for women, with the risks varying by lifestyle (e.g. smoking) and other social-economic factors and increasing with age. However, a cancer diagnosis is not necessarily a death sentence, since about two-thirds of those diagnosed with cancer are alive after 5 years. Many persons who develop cancer lead long and active lives and die from other causes. It is estimated there are now over 10 million cancer survivors in the U.S., up from about 3 million in 1971. This increase in survivorship is usually attributed to:

- Earlier detection
- New and more effective therapies, often including multimodal and multi-agent combinations
- More effective adjuvant and/or maintenance therapies
- Better supportive care
- Growing attention to long-term surveillance

Unfortunately, being cancer free does not mean being free of disease! Cancer can (and often does) affect many aspects of an individual's life. Some of these effects are acute or short-term (hair loss, anemia, nausea); others are more persistent (fatigue, sexual dysfunction, pain syndromes); still others may be late (osteoporosis) and potentially life-threatening (e.g. second malignancies, cardiovascular disease). The cancer survivor's health care needs are forever altered and their special needs have only recently begun to be addressed in a systematic way.

All cancer survivors should have a follow-up care plan. Some common questions are:

- Should I tell the doctor about symptoms that worry me?
- Which doctors should I see after treatment?
- How often should I see my doctor?
- What tests do I need?
- What can be done to relieve pain, fatigue, or other problems after treatment?
- How long will it take for me to recover and feel more like myself?
- Is there anything I can or should be doing to keep cancer from coming back?

Coping with these issues can be a challenge. Being an active partner with your doctor and getting help from other members of your health care team is the first step. (See, for example, <http://www.cancer.gov/cancertopics/life-after-treatment>).

What Is A PET Scan?

The positron emission tomography (PET) scan creates computerized images of chemical changes that take place in tissue. The patient is given an injection of a substance that consists of a combination of a sugar and a small amount of radioactive material. The radioactive sugar can help in locating a tumor, because fast growing cancer cells often take up or absorb sugar faster than other tissues in the body.

What Is 'Staging'?

Staging describes the extent or severity of an individual's cancer based on the extent of the original (primary) tumor and the extent of spread in the body. Staging is important:

- Staging helps the doctor plan a person's treatment.
- The stage can be used to estimate the person's prognosis (likely outcome or course of the disease).
- Knowing the stage is important in identifying clinical trials (research studies) that may be suitable for a particular patient.

Staging helps researchers and health care providers exchange information about patients. It also gives them a common language for evaluating the results of clinical trials and comparing the results of different trials. Staging is based on knowledge of the way cancer develops. Cancer cells divide and grow without control or order to form a mass of tissue, called a growth or tumor. As the tumor grows, it can invade nearby organs and tissues. Cancer cells can also break away from the tumor and enter the bloodstream or lymphatic system. By moving through the bloodstream or lymphatic system, cancer can spread from the primary site to form new tumors in other organs. The spread of cancer is called metastasis.

Staging systems for cancer have evolved over time. They continue to change as scientists learn more about cancer. Some staging systems cover many types of cancer; others focus on a particular type. The common elements considered in most staging systems are:

- Location of the primary tumor
- Tumor size and number of tumors
- Lymph node involvement (spread of cancer into lymph nodes)
- Cell type and tumor grade (how closely the cancer cells resemble normal tissue)
- Presence or absence of metastasis

Can a cancer diagnosis contribute to depression?

Depression is a disabling illness that affects about 15% to 25% of cancer patients regardless of sex. People who face a diagnosis of cancer will experience different levels of stress and emotional upset, caused by such factors as:

- Fear of death.
- Interruption of life plans.
- Changes in body image and self-esteem.
- Changes in social role and lifestyle.
- Money and legal concerns.

Everyone who is diagnosed with cancer will react to these issues in different ways and may not experience serious depression or anxiety. Just as patients need to be evaluated for depression throughout their treatment, so do family caregivers. Caregivers have been found to experience an increased level of anxiety and depression. Children are also affected when a parent with cancer develops depression.

All people will experience reactions of sadness and grief periodically throughout diagnosis, treatment, and survival of cancer. When people find out they have cancer, they often have feelings of disbelief, denial or despair. They may also experience difficulty sleeping, loss of appetite, and a preoccupation with worries about the future.

These symptoms and fears usually lessen as a person adjusts to the diagnosis. Signs that a person has adjusted to the diagnosis include an ability to maintain active involvement in daily life activities, and an ability to continue functioning as spouse, parent, employee, or other roles by incorporating treatment into his or her schedule. Even patients without obvious symptoms of depression may benefit from counseling; however, when symptoms are intense and long-lasting, or when they keep coming back, more intensive treatment is important. (For more information see

<http://www.cancer.gov/cancertopics/pdq/supportivecare/depression/Patient/page1>).

What Are The Phases of A Clinical Trial?

Phase I trials are the first step in testing a new approach in humans. In these studies, researchers evaluate what dose is safe, how a new agent should be given (by mouth, injected into a vein, or injected into the muscle), and how often. Researchers watch closely for any harmful side effects. Phase I trials usually enroll a small number of patients and take place at only a few locations. The patients are divided into smaller groups, called cohorts. Each cohort is treated with an increased dose of the new therapy or technique. The highest dose with an acceptable level of side effects is determined to be appropriate for further testing.

Phase II trials study the safety and effectiveness of an agent or intervention, and evaluate how it affects the human body. Phase II studies usually focus on a particular type of cancer, and include fewer than 100 patients.

Phase III trials compare a new agent or intervention (or new use of a standard one) with the current standard therapy. Participants are randomly assigned to the standard group or the new group, usually by computer. This method, called randomization, helps to avoid bias and ensures that human choices or other factors do not affect the study's results. In most cases, studies move into phase III testing only after they have shown promise in phases I and II. Phase III trials may include hundreds of people across the country.

Phase IV trials are conducted to further evaluate the long-term safety and effectiveness of a treatment. They usually take place after the treatment has been approved for standard use. Several hundred to several thousand people may take part in a phase IV study. These studies are less common than phase I, II, or III trials.

Should I consider participating in a clinical trial?

Participating in a clinical trial can potentially provide benefits to the cancer patient and benefits to future cancer patients by advancing cancer research; but, it may also create some risks to the cancer patient. Therefore, before making such an important decision one should first learn as much as possible about clinical trials generally and about clinical trials for your particular cancer diagnosis—good places to start are the National Cancer Institute website www.cancer.gov and the website of the American Society of Clinical Oncology www.plwc.org. After learning as much as possible from reputable sources, one should then talk to your doctor(s), nurses(s), family and friends to help decide what is best for you.

Some of the potential benefits from participating in a clinical trial can include:

- Treatment by leading physicians who conduct clinical trials
- Access to new, potentially superior treatments before they are widely available
- Careful monitoring of your health and any side effects of the new treatment

At the same time, participating in clinical trials can carry risks, such as:

- The new treatment being studied may be less effective than current treatment regimens
- The new treatment may have adverse side-effects not known to the doctors

In order to maximize the potential benefits and minimize the risks from clinical trials, the government and all institutions that conduct clinical trials have a highly regulated system in place to protect human subjects of research. No person can participate in a clinical trial without giving their Informed Consent, which is a process to explain to the participant the possible risks and their rights and responsibilities. If you do agree to participate in a clinical trial, one of the key features to protect your rights is that you can change your mind and leave the study whenever you want -- before the study starts or at any time during the study or follow-up period.

What Is Immunotherapy?

Immunotherapy (also known as biological therapy) is a relatively new family of cancer treatments that stimulates or restores the ability of the immune system to fight cancer or is used to lessen side effects that may be caused by some cancer treatments. There are many kinds of immunotherapy, including interferons, interleukins, and vaccines. One new approach uses antibodies that have been specially made to recognize specific cancers. When coupled with natural toxins, drugs, or radioactive substances, the antibodies seek out their target cancer cells and deliver their lethal load.

What is an “orphan” cancer?

An “orphan” cancer (or any “orphan” disease) is one that has not been "adopted" by the pharmaceutical industry because it provides little financial incentive for the private sector to develop and market new medications to treat or prevent it. An orphan disease may be either: 1. **rare** (according to US criteria, an orphan disease is one that affects fewer than 200,000 people; there are more than 5,000 such rare disorders.); or 2. **common but ignored** by pharmaceutical companies (such as cholera, typhoid, and malaria) because it is far more prevalent in developing countries than in the developed world.

The U.S. Orphan Drug Act of 1983 offered tax incentives on clinical trials and 7 years of marketing exclusivity for drugs developed for conditions that occur only rarely in the US. Since then, more than 200 orphan drugs have been approved by the US Food and Drug Administration (FDA) and are on the market. (*Excerpted from MedicineNet.com at www.medterms.com/script/main/art.asp?articlekey=11418*)

What Are Targeted Drugs?

Targeted cancer therapies use drugs that block the growth and spread of cancer by interfering with specific molecules involved in carcinogenesis (the process by which normal cells become cancer cells) and tumor growth. Because scientists call these molecules “molecular targets,” these therapies are sometimes called “molecular-targeted drugs,” “molecularly targeted therapies,” or other similar names. By focusing on molecular and cellular changes that are specific to cancer, targeted cancer therapies may be more effective than current treatments and less harmful to normal cells. Most targeted cancer therapies are in preclinical testing (research with animals), but some are in clinical trials (research studies with people), or have been approved by the U.S. Food and Drug Administration (FDA).

What is the relationship between smoking and cancer?

According to the most recent report of the U.S. Surgeon General, compared to nonsmokers, men who smoke are about 23 times more likely to develop lung cancer and women who smoke are about 13 times more likely. Smoking causes about 90% of lung cancer deaths in men and almost 80% in women. In 2003, an estimated 171,900 new cases of lung cancer occurred and approximately 157,200 people died from lung cancer. The report also adds more evidence to previous conclusions that smoking also causes cancers of the oral cavity, pharynx, larynx, esophagus, and bladder. Cancer-causing agents in tobacco smoke damage important genes that control the growth of cells. For smoking-attributable cancers, the risk generally increases with the number of cigarettes smoked and the number of years of smoking, and generally decreases after quitting completely. Reductions in the number of people who smoke cigarettes, pipes, cigars, and other tobacco products or use smokeless tobacco could prevent most of the estimated 30,200 new cases and 7,800 deaths from oral cavity and pharynx cancers annually in the United States. Source: U.S. Department of Health and Human Services. *The Health Consequences of Smoking: A Report of the Surgeon General*, 2004.

What should cancer patients do when using or considering complementary and alternative medicine (CAM)?

Complementary and alternative medicine (CAM) is a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine. Complementary medicine is used together with conventional medicine, while alternative medicine is used in place of conventional medicine. CAM includes such therapies as acupuncture, herbal medicine, massage therapy, movement therapies (such as yoga), spiritual healing, and meditation. A 2002 survey found that 62% of U.S. adults have used some form of CAM in the previous 12 months; when prayer was excluded from the definition of CAM the figure is 36%. The NCI and others are currently sponsoring or cosponsoring various clinical trials to study complementary and alternative treatments for cancer. Cancer patients using or considering complementary or alternative therapy should discuss this decision with their doctor or nurse, as they would any therapeutic approach. Some complementary and alternative therapies may interfere with standard treatment or may be harmful when used with conventional treatment. It is also suggested to become informed about the therapy, including whether the results of scientific studies support the claims that are made for it.

What is cryosurgery and how is it used for cancer treatment?

Cryosurgery is a technique using extreme cold produced by liquid nitrogen or argon gas for freezing and killing abnormal cells, including cancerous cells. It can be used both inside the body and on the skin. For internal tumors, liquid nitrogen or argon gas is circulated through a hollow instrument called a cryoprobe, which is placed in contact with the tumor. The doctor uses ultrasound or MRI to guide the cryoprobe and monitor the freezing of the cells, thus limiting damage to nearby healthy tissue. Cryosurgery is an alternative to surgery for liver cancer that has not spread, for cancer that has spread to the liver from another site, for prostate cancer confined to the prostate gland, and for some other situations. The major disadvantage of cryosurgery is the uncertainty surrounding its long-term effectiveness. While cryosurgery may be effective in treating tumors the physician can see by using imaging tests, it can miss microscopic cancer spread. Furthermore, because the effectiveness of the technique is still being assessed, insurance coverage issues may arise.

Does being overweight also increase the risk of developing cancer?

Data from a comprehensive survey in 1999-2000, indicates 64 percent of U.S. adults are overweight or obese. Among children from age 9-16, it is estimated 15 % are overweight, a 3-fold increase from 20 years earlier. People who are overweight or obese have a greater risk of several health problems including diabetes, high blood pressure, cardiovascular diseases, stroke, and certain cancers. Many factors can contribute to cancer in complex ways including genetics, so-called "lifestyle" factors (such as smoking, eating habits, exercise, etc.) and environmental factors (toxic chemicals in the environment, exposure to sunlight, etc.). Therefore, direct effects from being overweight on the risk of developing cancer are difficult to assess. Nevertheless, a 2003 study estimated that 41,000 new cases of cancer (3.2% of the total) were linked to being overweight or obese. Another 2003 report estimated that in the United States, 14 percent of deaths from cancer in men and 20 percent of deaths in women were due to overweight and obesity. Cancer experts have concluded that cancers of the colon, breast (postmenopausal), endometrium (the lining of the uterus), kidney, and esophagus are associated with obesity. Some studies have also reported links between obesity and cancers of the gallbladder, ovaries, and pancreas.

In other words, maintaining a healthy weight can reduce the risk of many cancers. It is recommended that people establish habits of healthy eating and physical activity early in life to keep from becoming overweight or obese. For those who are already overweight, even a weight loss of only 5 to 10 percent can provide health benefits.

Does drinking wine really help reduce the risks of cancer?

Red wine is a rich source of biologically active compounds called polyphenols that are thought to have antioxidant or anticancer properties. Polyphenols are found in the skin and seeds of grapes; red wine contains more polyphenols than white wine because the making of white wine requires the removal of the skins after the grapes are crushed.

Laboratory research on the antioxidants found in red wine has shown that they may help inhibit the development of certain cancers. Red wine also contains high levels of another type of polyphenol called resveratrol (as do grapes, raspberries, peanuts and other plants) that has been shown to reduce tumor incidence in animals by affecting one or more stages of cancer development. It has been shown to inhibit growth of many types of cancer cells in culture.

Studies of the association between red wine consumption and cancer in humans are in their initial stages. Some research studies have shown that drinking a glass of red wine a day may cut a man's risk of prostate cancer in half and that the protective effect appears to be strongest against the most aggressive forms of the disease. It was also seen that men who consumed four or more 4-ounce glasses of red wine per week have a 60 percent lower incidence of the more aggressive types of prostate cancer. Although consumption of large amounts of alcoholic beverages may increase the risk of some cancers, there is growing evidence that the health benefits of red wine are related to its nonalcoholic components.