

FAQ ON CANCER

Q: What is cancer?

A: Cancer is the uncontrolled growth of abnormal cells anywhere in a body. These abnormal cells are termed cancer cells, malignant cells, or tumor cells. Many cancers and the abnormal cells that compose the cancer tissue are further identified by the name of the tissue that the abnormal cells originated from (for example, breast cancer, lung cancer, colon cancer). Cancer is not confined to humans; animals and other living organisms can get cancer. Below is a schematic that shows normal cell division and how when a cell is damaged or altered without repair to its system, the cell usually dies. Also shown is what occurs when such damaged or unrepaired cells do not die and become cancer cells and show uncontrolled division and growth - a mass of cancer cells develop. Frequently, cancer cells can break away from this original mass of cells, travel through the blood and lymph systems, and lodge in other organs where they can again repeat the uncontrolled growth cycle. This process of cancer cells leaving an area and growing in another body area is termed metastatic spread or metastasis. For example, if breast cancer cells spread to a bone, it means that the individual has metastatic breast cancer to bone. This is not the same as "bone cancer," which would mean the cancer had started in the bone.

There are over 200 types of cancers; most can fit into the following categories according to the research:

Carcinoma: Cancer that begins in the skin or in tissues that line or cover internal organs.

Sarcoma: Cancer that begins in bone, cartilage, fat, muscle, blood vessels, or other connective or supportive tissue.

Leukemia: Cancer that starts in blood-forming tissue such as the bone marrow and causes large numbers of abnormal blood cells to be produced and enter the blood.

Lymphoma: Cancers that begin in the cells of the immune system.
and myeloma

Central nervous: Cancers that begin in the tissues of the brain and spinal cord.
system cancers

Q: What are the Causes and Risk Factors for Cancer?

A: Most people don't realize that cancer is preventable in many cases. Learning what causes cancer and what the risk factors are is the first step in cancer prevention. Many cancer risk factors can be avoided, thus reducing the likelihood of developing cancer.

Tobacco

According to the National Cancer Institute, smoking causes 30% of all cancer deaths in the U.S. and is responsible for 87% of cases of lung cancer. Not only does it affect the lungs, it can cause kidney, pancreatic, cervical, and stomach cancers and acute myeloid leukemia. Quitting smoking immediately decreases your risk factor for cancer.

Physical Activity

Exercising at least 30 minutes a day, 5 days a week greatly reduces your cancer risk. Exercise like yoga, aerobics, walking and running are great activities to lower your cancer risk factor. Not only is physical activity important to preventing other diseases, it reduces the chances of becoming obese. Obesity is a major cause for many cancers. Exercising on a regular basis can prevent prostate, colon, breast, endometrial and lung cancer.

Genetics

Genetics can play a big role in cancer development. If you have a family history of cancer, such as breast cancer, taking extra precautions is vital. When cancer is genetic, a mutated gene has been passed down. Genetic tests are available for many hereditary cancers. Keep in mind that if you have a family history of cancer, it does not mean you will develop it. You only have a greater chance of developing it.

Environmental Factors

The environment you are in can cause cancer.

Exposure to asbestos, a group of minerals found in housing and industrial building materials can cause a variety of medical problems, such as mesothelioma. Studies have shown that people who are exposed to high amount of benzene are at risk for cancer. Benzene is a chemical found in gasoline, smoking, and pollution.

Unsafe Sex

Practicing unsafe sex can increase your risk of developing a virus called HPV. HPV is a group of over 100 viruses, medically known as human papilloma virus. HPV increases your risk factor for cervical, anal, vulvar and vaginal cancer. Further studies are being conducted in HPV's role in the development of other cancers. There is a test available to see if you have contracted HPV. It involves scraping of cervical cells and then the sample is sent to a lab. The lab test can even identify the strain of the virus, also.

Sun Exposure

Skin cancer is caused by exposure to the UV rays of the sun. A sunburn, or a tan is actually the result of cell damage caused by the sun. Skin cancer can be prevented in most cases. Wearing sunscreen when outdoors and staying out of the sun between the hours of 10 a.m. and 2 p.m., when the sun's rays are strongest is your best defense.

Q: What is the difference between a malignant and a benign Tumor?

A: Tumors can be benign (not a cancer) or malignant (a cancer). Benign Tumors do not invade other tissues or spread to other parts of the body, although they can expand to interfere with other organs. The main features of a malignant tumor (cancer) are its ability to grow in an uncontrolled way and to invade and spread to other parts of the body.

The original site in which a cancerous Tumor is formed is referred to as the primary site. The spread of cancerous cells from the primary site to another (i.e. secondary) site is referred to as metastasis.

Q: What are cancer symptoms and signs?

A: Symptoms and signs of cancer depend on the type of cancer, where it is located, and/or where the cancer cells have spread. For example, breast cancer may present as a lump in the breast or as nipple discharge while metastatic breast cancer may present with symptoms of pain (if spread to bones), extreme fatigue (lungs), or seizures (brain). A few patients show no signs or symptoms until the cancer is far advanced.

The American Cancer Society describes seven warning signs that a cancer may be present, and which should prompt a person to seek medical attention. The word CAUTION can help you remember these.

Change in bowel or bladder habits.

A sore throat that does not heal.

Unusual bleeding or discharge.

Thickening or lump in the breast, testicles or elsewhere.

Indigestion or difficulty swallowing.

Obvious change in the size, color, shape, or thickness of a wart or mole.

Nagging cough or hoarseness.

Other signs or symptoms may also alert you or your doctor to the possibility of your having some form of cancer. These include:

Unexplained loss of weight or loss of appetite.

A new type of pain in the bones or other parts of the body which may be steadily worsening, or come and go, but is unlike previous pains you may have had before.

Persistent fatigue, nausea or vomiting.

Unexplained low-grade fevers with may be either persistent or come and go.

Recurring infections which will not clear with usual treatment.

Anyone with these signs and symptoms should consult their doctor.

Many cancers will present with some of the above general symptoms but often have one or more symptoms that are more specific for the cancer type. For example, lung cancer may present with common symptoms of pain, but usually the pain is located in the chest. The patient may have unusual bleeding, but the bleeding usually occurs when the patient coughs. Lung cancer patients often become short of breath, and then become very fatigued.

Because there are so many cancer types (see next section) with so many nonspecific and sometimes more specific symptoms, the best way to learn about signs and symptoms of specific cancer types is to spend a few moments researching symptoms of a specific body area in question. Conversely, a specific body area can be searched to discover what signs and symptoms a person should look for in that area that is suspected of having cancer.

Q: What are the types of Cancer?

A: Cancer has the potential to affect every organ in the body. The cells within malignant tumors have the ability to invade neighboring tissues and organs, thus spreading the disease. It is also possible for cancerous cells to break free from the tumor and enter the bloodstream, in turn spreading the disease to other organs. This process of spreading is called metastasis.

When cancer has metastasized and has affected other areas of the body, the disease is still referred to the organ of origination. For instance, if cervical cancer spreads to the lungs, it is still called cervical cancer, not lung cancer.

Blood Cancer: The cells in the bone marrow that give rise to red blood cells, white blood cells, and platelets can sometimes become cancerous. These cancers are leukemia or lymphoma.

Leukemia

Lymphoma

Multiple Myeloma

Q: How is cancer diagnosed?

A: A physical exam and medical history, especially the history of symptoms, are the first steps in diagnosing cancer. In many instances, the medical caregiver will order a number of tests, most of which will be determined by the type of cancer and where it is suspected to be located in or on the person's body. In addition, most caregivers will order a complete blood count, electrolyte levels and, in some cases, other blood studies that may give additional information (for example, a PSA or prostate specific antigen test may guide the caregiver to do additional tests, such as a prostate biopsy).

Imaging studies are commonly used to help physicians detect abnormalities in the body that may be cancer. X-rays, CT and MRI scans, and ultrasound are common tools used to examine the body. Other tests such as endoscopy, which with variations in the equipment used, can allow

visualization of tissues in the intestinal tract, throat, and bronchi that may be cancerous. In areas that cannot be well visualized (inside bones or some lymph nodes, for example), radionuclide scanning is often used. The test involves ingestion or IV injection of a weakly radioactive substance that can be concentrated and detected in abnormal tissue.

The preceding tests can be very good at localizing abnormalities in the body; many clinicians consider that some of the tests provide presumptive evidence for the diagnosis of cancer. However, in virtually all patients, the definitive diagnosis of cancer is based on the examination of a tissue sample taken in a procedure called a biopsy from the tissue that may be cancerous, and then analyzed by a doctor called a pathologist. Some biopsy samples are relatively simple to procure (for example, skin biopsy or intestinal tissue biopsy done with a device called an endoscope equipped with a biopsy attachment). Other biopsies may require as little as a carefully guided needle, or as much as a surgery (for example, brain tissue or lymph node biopsy). In some instances, the surgery to diagnose the cancer may result in a cure if all of the cancerous tissue is removed at the time of biopsy.

The biopsy can provide more than the definitive diagnosis of cancer; it can identify the cancer type and thereby help to stage the cancer. The stage, or cancer staging is a way for clinicians and researchers to estimate how extensive the cancer is in the patient's body.

Q: Is the cancer that had been found localized to its site of origin, or is it spread from that site to other tissues?

A: localized cancer is said to be at an early stage, while one which has spread is at advanced stage. The following section describes the general staging methods for cancers.

Q: How is cancer staging determined?

A: There are a number of different staging methods used for cancers and the specific staging criteria varies among cancer types. According to the latest research, the common elements considered in most staging systems are as follows:

Site 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 cells)

The presence or absence of metastasis

However, there are two main methods that form the basis for the more specific or individual cancer type staging. The TMN staging is used for most solid tumors while the Roman numeral or stage grouping method is used by some clinicians and researchers on almost all cancer types.

The TNM system is based on the extent of the tumor (T), the extent of spread to the lymph nodes (N), and the presence of distant metastasis (M). A number is added to each letter to indicate the size or extent of the primary tumor and the extent of cancer spread (higher number means bigger tumor or more spread).

Q: What are treatments available to cure cancer?

A: A doctor who specialized in the treatment of cancer is called an oncologist. He or she may be a surgeon, a specialist in radiation therapy, or a medical oncologist. The first uses surgery to treat the cancer; the second, radiation therapy; the third, chemotherapy and related treatments. Each may consult with the others to develop a treatment plan for the particular patient.

The treatment is based on the type of cancer and the stage of the cancer. In some people, diagnosis and treatment may occur at the same time if the cancer is entirely surgically removed when the surgeon removes the tissue for biopsy.

Although patients may receive a unique sequenced treatment, or protocol, for their cancer, most treatments have one or more of the following components: surgery, chemotherapy, radiation therapy, or combination treatments (a combination of two or all three treatments).

Individuals obtain variations of these treatments for cancer. Patients with cancers that cannot be cured (completely removed) by surgery usually will get combination therapy, the composition determined by the cancer type and stage.

Palliative therapy (medical care or treatment used to reduce disease symptoms but unable to cure the patient) utilizes the same treatments described above. It is done with the intent to extend and improve the quality of life of the terminally ill cancer patient. There are many other palliative treatments to reduce symptoms such as pain medications and antinausea medications.

Q: Can cancer be prevented?

A: Most clinicians and researchers are convinced that many cancers can either be prevented or the risk of developing cancers can be markedly reduced. Some of the methods are simple; others are relatively extreme, depending on an individual's view.

Prevention of cancer, by avoiding its potential causes, is the simplest method. First on most clinicians and researchers list is to stop (or better, never start) smoking of tobacco. Avoiding excess sunlight (by decreasing exposure or applying sunscreen) and many of the chemicals and toxins is an excellent way to avoid cancers. Avoiding contact with certain viruses and other pathogens also is likely to prevent some cancers. People who have to work close to cancer-

causing agents (chemical workers, X-ray technicians, ionizing radiation researchers) should follow all safety precautions and minimize any exposure to such compounds.

There are also some vaccination available to prevent specific types of cancer. Vaccines against the hepatitis B virus, which is considered a cause of some liver cancers, and vaccines against human papillomavirus types 16 and 18, which, according to the NCI, are responsible for about 70% of cervical cancer. This virus also plays a role in cancers arising in the head and neck, as well as cancers in the anal region, and probably in others. Today, vaccination against HPV is recommended in teenagers and young adults of both sexes. The HPV virus is so common that by the age of 50, half or more people have evidence of being exposed to it.

People with a genetic predisposition to develop certain cancers and others with a history of cancers in their genetically related relatives currently cannot change their genetic makeup. However, some individuals who have a high possibility of developing genetically related cancer have taken actions to prevent cancer development. For example, some young women who have had many family members develop breast cancer have elected to have their breast tissue removed even if they have no symptoms or signs of cancer development to reduce or eliminate the possibility they will develop breast cancer. Some doctors consider this as an extreme measure to prevent cancer while others do not. Screening studies for cancer, while they do not prevent cancers, may detect them at an earlier stage when the cancer is more likely to be potentially cured with treatment. Such screening studies are breast exams, testicular exams, colon-rectal exams (colonoscopy), mammography, PSA levels, prostate exams, and others. People who have any suspicion that they may have cancer should discuss their concerns with their doctor as soon as possible. The earlier cancer is discovered or diagnosed and treated, the person will be better served.

Screening recommendations have been the subject of numerous conflicting reports in recent years. Screening may not be cost effective for many groups of patients, but individual patients' unique circumstances should always be considered by doctors in making recommendations about ordering or not ordering screening tests.

Q: If I have a risk factor such as smoking , does this mean I will develop cancer?

A: A cancer risk factor is defined as something that can increase the likelihood that one will develop cancer. Keep in mind that not all risk factors can be prevented like genetics, or unintentional exposure to toxins, like asbestos.

However, prevention is key. Many cancers can be prevented by avoiding risk factors, such as smoking.

According to the study, smoking is attributed to 30% of all cancer deaths. Not only does it cause lung cancer, it can cause several other cancers like pancreatic, leukemia, and cervical cancer.

Smoking cigarettes is a high risk factor for cancer, as well as many other diseases. Your best bet for prevention for any cancer, is to quit smoking.

Q: What Causes Lung Cancer?

A: Though we know that smoking causes lung cancer, lung cancer is a multifactorial disease — that is, many factors work together to either cause or prevent cancer. Between 80 and 90% of lung cancers are due to smoking, yet 10% of men and 20% of women who develop the disease have never smoked. On the other side of the equation, many people who smoke do not develop lung cancer.

Causes of lung cancer may be additive, or in certain cases, more than additive. Individuals who are exposed to asbestos and smoke, or exposed to radon and smoke, have a higher risk of developing lung cancer than can be explained by the risk of these causes added together. On the other hand, certain dietary practices and exercise may reduce the risk of some of these causes. What causes lung cancer?

Smoking

Smoking is responsible for 87% of lung cancers overall.

Secondhand Smoke

Secondhand smoke is also responsible for lung cancer deaths all over the world. Living with someone who smokes raises your risk of developing lung cancer by 20-30%.

Environmental Causes

Environmental causes of lung cancer include exposure to chemicals, wood smoke, and radiation.

Occupational Causes

Occupational causes of lung cancer include exposure to chromium, tar, arsenic, and nickel, among other substances.

Genetics

Genetic factors can play a role in lung cancer, and 1.7% of lung cancers are considered "hereditary." An inherited predisposition to lung cancer is more common in women, non-smokers, and patients under the age of 60 who develop the disease.

Q: What is oral cancer?

A: Oral cancer is part of a group of cancers of the mouth and throat. Oral cancer can develop in any part of the oral cavity (the mouth and lips) or oropharynx (the part of the throat at the back of the mouth). Most oral cancer begins in the flat cells (squamous cells) that cover the surfaces of the mouth, tongue, and lips. These cancers are called squamous cell carcinomas.

Q: Who gets it?

A: Oral cancer is twice more common in men than women. This may be because of their increased likelihood to use tobacco and alcohol over long periods of time and in large doses. Age is also a risk factor: Two-thirds of all cases are diagnosed in people age 55 and older. In addition, people with diets low in fruits and vegetables tend to be at greater risk, as well as those with outdoor jobs (lip cancer). Finally, the human papillomavirus (HPV) puts people at great risk: Approximately one-quarter of all patients with oral cancer also have HPV.

Q: What are the symptoms?

A: The following symptoms and others may be caused by oral cancers, but it's important to remember that other conditions share these same symptoms, so talk to your doctor if you experience any.

White or red patches on the lips, gum, tongue or mouth lining

Pain or difficulty chewing, swallowing or speaking

Hoarseness, numbness, pain, or swelling in the oral area

Bleeding in the mouth

A sore on the lips or in the mouth, or an earache, that doesn't go away

Q. What causes breast cancer?

A. No one yet knows what causes breast cancer, but medical research has generated a lot of knowledge about the disease. Researchers at the Comprehensive Cancer Center have made some important discoveries in the treatment and prevention of breast cancer, ranging from understanding more about the genetic aspects of cancer to developing a vaccine that may treat and prevent breast cancer.

Q. How likely am I to get breast cancer?

A. Statistics show that a woman has a 1 in 8 lifetime chance of developing breast cancer. Breast cancer is the most frequently diagnosed cancer in women in the United States, other than non-melanoma skin cancers. Three-fourths of breast cancer cases are diagnosed in women age 50 and older. And although breast cancer is more common in older women, it does occur in younger women and in men. There are additional factors that may increase a woman's cancer risk.

Q. What should I do if I find a lump while performing a monthly breast self-exam?

A. Check the other breast. Some lumpiness is normal. However, if the lump is new or unusual, it warrants examination by a physician. A lump found during a breast self-exam, a clinical breast exam or a mammogram does not necessarily mean that a woman has breast cancer. Nearly 80 percent of all breast lumps are noncancerous (benign). However, cancer is a possibility. Early detection and treatment provides the best outcome, so a woman shouldn't let fear stop her from seeing a physician.

Q. What are my risks for getting breast cancer?

A. Being a woman and getting older are the biggest risk factors for developing breast cancer. Other risk factors include:

age

family history of breast cancer in a close family member on either mother's or father's side

onset of menstruation before age 12

onset of menopause after age 50

not having children or having a first child after age 30

Q. Is the radiation exposure from getting a mammogram harmful?

A. The radiation exposure from modern, low-dose mammography equipment is minimal. Radiation doses usually are so low they're negligible. Plus, the medical benefits of early detection outweigh any potential risk.

Q. How can I detect cervical cancer early?

A. Most precancerous conditions of the cervix could be detected and treated before cancer develops if all women had pelvic exams and Pap tests regularly. This way, most invasive cancers could be prevented. Any invasive cancer that does occur would likely be found at an early, curable stage.

Q. What are the symptoms of cancer of the cervix?

A. Precancerous changes of the cervix usually do not cause pain. In fact, they generally do not cause any symptoms and are not detected unless a woman has a pelvic exam and a Pap test.

Symptoms usually do not appear until abnormal cervical cells become cancerous and invade nearby tissue. Symptoms may include:

Abnormal bleeding (bleeding may start and stop between regular menstrual periods)

Bleeding after intercourse, douching or pelvic exam

Menstrual bleeding that lasts longer or is heavier than usual

Bleeding after menopause

Increased vaginal discharge

These symptoms may be caused by cancer or by other health problems. Only a provider can tell for sure. It is important for a woman to contact her provider if she is having any of these symptoms.

Q. What is ovarian cancer?

A. There are several types of ovarian cancer. Ovarian tumors are the most histologically diverse group of tumors. At least 80 percent of malignant ovarian tumors arise from the lining of the ovary and are called epithelial carcinomas. The most common type is ovarian adenocarcinomas, which accounts for 75 percent of cases of ovarian cancer. The remaining 25 percent of malignant ovarian tumors are germ cell and sex cord-stromal cell tumors, which are non-epithelial in origin, and metastatic carcinoma to the ovary. Germ cell tumors, which arise from the primary germ cells of the ovary, occur in young women and are uncommon in women more than 30 years old.

Q. What are the causes and risk factors for ovarian cancer?

A. It is difficult to discover what actually causes cancer from one person to another, but researchers have discovered several factors that increase a woman's likelihood of developing ovarian cancer. Some risk factors for ovarian cancer include:

Most ovarian cancers develop around 60 years old

Women who started menstruating before age 12, had no children, or had their first child after age 30, and/or experienced menopause after age 50

Not eating enough fruits, vegetables, whole grain products and eating more high-fat foods, especially those from animal sources, leading to obesity

Women whose mother, sister or daughter have, or have had, ovarian or breast cancer, especially if they developed these cancers at a young age

Having breast cancer

Talcum powder applied to the genital area or on sanitary napkins may be carcinogenic to the ovaries

Q. What are the symptoms for ovarian cancer?

A. As a tumor grows, a woman may notice these symptoms:

Swelling, bloating or general discomfort in the lower abdomen

Loss of appetite or a feeling of fullness, even after a light meal

Gas

Indigestion

Nausea

Weight loss

Diarrhea, constipation or frequent urination caused by a large tumor pressing on nearby organs, such as the bowel or bladder

Less often, bleeding from the vagina is a symptom of ovarian cancer

Most of these may also be caused by benign (noncancerous) diseases of the ovaries and by cancers of other organs. It is important to see your doctor.

Q: How does prostate cancer compare with other cancers?

A: A non-smoking man is more likely to develop prostate cancer than he is to develop colon, bladder, melanoma, lymphoma and kidney cancers combined. In fact, a man is 35% more likely to be diagnosed with prostate cancer than a woman is to be diagnosed with breast cancer.

Q: Are some men more likely to be diagnosed with prostate cancer?

A: As men increase in age, their risk of developing prostate cancer increases exponentially. Although only 1 in 10,000 under age 40 will be diagnosed, the rate shoots up to 1 in 38 for ages 40 to 59, and 1 in 14 for ages 60 to 69. About 60% of all prostate cancers are diagnosed in men over the age of 65 and 97% occur in men 50 years of age and older.

Men with a single first-degree relative—father, brother or son—with a history of prostate cancer are twice as likely to develop the disease, while those with two or more relatives are nearly four times as likely to be diagnosed. The risk is highest in men whose family members were diagnosed before age 65.

Q: How curable is prostate cancer?

A: As with all cancers, "cure" rates for prostate cancer describe the percentage of patients likely remaining disease-free for a specific time. In general, the earlier the cancer is caught, the more likely it is for the patient to remain disease-free.

Because approximately 90% of all prostate cancers are detected in the local and regional stages, the cure rate for prostate cancer is very high—nearly 100% of men diagnosed at this stage will be disease-free after five years.

Q: What are the symptoms of prostate cancer?

A: If the cancer is caught at its earliest stages, most men will not experience any symptoms. Some men, however, will experience symptoms such as frequent, hesitant, or burning urination, difficulty in having an erection, or pain or stiffness in the lower back, hips or upper thighs.

Because these symptoms can also indicate the presence of other diseases or disorders, men who experience any of these symptoms will undergo a thorough work-up to determine the underlying cause of the symptoms. You can read more about prostate cancer symptoms [here](#).

Q: If there are no symptoms, how is prostate cancer detected?

Screening for prostate cancer can be performed in a physician's office using two tests: the PSA (prostate-specific antigen) blood test and the digital rectal exam (DRE).

A: How is prostate cancer treated?

There are a wide variety of treatment options available for men with prostate cancer, including surgery, radiation therapy, hormone therapy and chemotherapy, any or all of which might be used at different times depending on the stage of disease and the need for treatment.

Consultation with all three types of prostate cancer specialists—an urologist, a radiation oncologist and a medical oncologist—will offer the most comprehensive assessment of the available treatments and expected outcomes. More information regarding treatments for prostate cancer can be found on our website [here](#).

Q. What is the difference between primary bone cancer and secondary bone cancer?

A: Primary bone cancer refers to cancers that start in the bone. Secondary bone cancer is cancer that spreads to the bone from another part of the body. Primary bone cancer is rare, with approximately 2,400 new cases diagnosed each year in the United States. More commonly, bones are the site of tumors that result from the spread (metastasis) of cancer from other parts of the body such as the breasts, lungs or prostate. Bone metastases can cause pain and can lead to other symptoms such as hypercalcemia (abnormally high levels of calcium in the blood).

Q. Are there different types of primary bone cancer?

A. There are several types of cancer that start in the bones. The most common is osteosarcoma, which often develops in new tissue in growing bones. Evidence suggests that Ewing's sarcoma (see Ewing's family of tumors), another form of bone cancer, begins in immature nerve tissue in bone marrow. Osteosarcoma and Ewing's sarcoma tend to occur more frequently in children and adolescents, while chondrosarcoma, which starts in cartilage, occurs more often in adults.

Q. What are the risk factors for bone cancer?

A. There are a number of factors that may put a person at increased risk for bone cancer. Children and adolescents, particularly those who have had radiation or chemotherapy treatments for other conditions, develop bone cancer more frequently than adults. Adults with Paget's disease, a noncancerous condition characterized by abnormal development of new bone cells, may be at increased risk for osteosarcoma. A very small number of bone cancers are due to heredity. For example, children with hereditary retinoblastoma (an uncommon cancer of the eye) are at a higher risk of developing osteosarcoma.

Q. What are the symptoms of bone cancer?

A. The symptoms of bone cancer vary from person to person, depending on the location and size of the cancer. Pain is the most common symptom. Tumors that occur in or near joints may cause swelling or tenderness in the affected area. Bone cancer can also interfere with normal movements and can weaken the bones, occasionally leading to a fracture. Other symptoms may include fatigue, fever, weight loss, and anemia. None of these symptoms is a sure sign of cancer. They may also be caused by other, less serious conditions. If you have these symptoms, you should consult a doctor.

Q. How is bone cancer diagnosed?

A. To diagnose bone cancer, the doctor asks about the patient's personal and family medical history and does a complete medical exam. The doctor may suggest a blood test, since some bone tumors can be associated with increased levels of certain proteins in the blood.

X-rays can show the location, size, and shape of a bone tumor. If x-rays suggest that a tumor may be cancer, the doctor may recommend special imaging tests such as a bone scan, a CT (or CAT) scan, an MRI, or an angiogram. However, a biopsy—the removal of a sample of tissue from the bone tumor—is needed to determine whether cancer is present.

The surgeon may perform a needle biopsy or an incisional biopsy. During a needle biopsy, the surgeon makes a small hole in the bone and removes a sample of tissue from the tumor with a needle-like instrument. In an incisional biopsy, the surgeon cuts into the tumor and removes a

sample of tissue. Biopsies are best done by orthopedic oncologists – doctors experienced in the diagnosis of bone cancer. A pathologist – a doctor who identifies disease by studying cells and tissues under a microscope – examines the tissue to determine whether it is cancerous.

Q. Are there bone tumors that are not cancerous?

A. Bone tumors may be benign (noncancerous) or malignant (cancerous). Benign bone tumors are more common than malignant ones. Both types may grow and compress healthy bone tissue and absorb or replace it with abnormal tissue. However, benign tumors do not spread and are rarely life-threatening.

Q. What are the treatment options for bone cancer?

A. Treatment options depend on the type, size, location and stage of the cancer, as well as the person's age and general health. The three main types of treatment for bone cancer are surgery, chemotherapy and radiation therapy.

Surgery is often the primary treatment. Although amputation of a limb is sometimes necessary, pre- or post-operative chemotherapy has made limb-sparing surgery possible in most cases. When appropriate, surgeons avoid amputation by removing only the cancerous section of the bone and replacing it with an artificial device called an endoprosthesis.

Chemotherapy and radiation may also be used alone or in combination. Because Ewing's sarcoma tends to metastasize rapidly, multidrug chemotherapy is often used in addition to radiation therapy or surgery on the primary tumor.

Q. What is skin cancer?

A. Skin cancer is the most common of all cancers. It is a disease in which malignant cells are found in the outer layers of your skin. Several types of cancer can start in the skin. The most common are basal cell carcinoma and squamous cell carcinoma. These types are called non-melanoma skin cancer.

Q. What are the symptoms of skin cancer?

A. The most common warning sign of skin cancer is a change on the skin, especially a new growth or a sore that doesn't heal. Skin cancers do not all look the same. The cancer may start as a small, smooth, shiny, pale or waxy lump. Or it can appear as a firm red lump. Sometimes, the lump bleeds or develops a crust. It can also start as a flat red spot that is rough, dry or scaly.

Both basal and squamous cell cancers are found mainly on areas of the skin that are exposed to the sun – the head, face, neck, hands and arms. However, skin cancer can occur anywhere.

Q. What causes skin cancer?

A. Several risk factors increase the chance of getting skin cancer. Ultraviolet (UV) radiation from the sun is the main cause of skin cancer. There are two types of ultraviolet radiation - UVA and UVB. UVB rays are more likely to cause sunburn, but UVA rays pass farther into the skin. Scientists have long thought that UVB radiation can cause skin cancer. They now think UVA radiation also may add to skin damage that can lead to cancer. For this reason, skin specialists recommend that people use sunscreens that block both kinds of UV radiation.

Artificial sources of UV radiation, such as sunlamps and tanning booths, can also cause skin cancer. Although anyone can get skin cancer, the risk is greatest for people who have fair skin that freckles easily – often those with red or blond hair and blue or light colored eyes.

The risk of developing skin cancer is also affected by where a person lives. People who live in areas that get high levels of UV radiation from the sun are more likely to get skin cancer.

In addition, skin cancer is related to lifetime exposure to UV radiation. Most skin cancers appear after age 50, but the sun's damaging effects begin at an early age. Therefore, protection should start in childhood to prevent skin cancer later in life.

Q. How can I prevent skin cancer?

A. Whenever possible, people should avoid exposure to the midday sun (from 10 a.m. to 2 p.m. standard time, or from 11 a.m. to 3 p.m. daylight saving time). Keep in mind that protective clothing, such as sun hats and long sleeves, can block out the sun's harmful rays. Also, lotions that contain sunscreens can protect the skin. Sunscreens are rated in strength according to a sun protection factor (SPF), which ranges from 2 to 30 or higher. Those rated 15 to 30 block most of the sun's harmful rays.

Q. How can I detect skin cancer?

A. Check yourself regularly for new growths or changes in the skin. Skin cancer is almost totally curable when caught in the early stages. Performing a self-examination requires a full length mirror, a hand mirror and a well-lighted room.

Examine your body front and back in the mirror

Bend elbows and look at your arms and the palms of your hands

Look at your legs and feet, spaces between toes and bottom of soles

your back and buttocks with a hand mirror

Examine your neck and scalp with a hand mirror

Any suspicious spots should be reported to your doctor. The doctor should also look at your skin during routine physical exams.

Q. How is skin cancer diagnosed?

A. When an area of skin does not look normal, the doctor will perform a biopsy (removal of all or part of growth). The tissue is examined under the microscope to determine if it is cancerous.

Doctors generally divide skin cancer into two stages: local (affecting only the skin) or metastatic (spreading beyond the skin). Because skin cancer rarely spreads, a biopsy often is the only test needed to determine the stage. In cases where the growth is very large or has been present for a long time, the doctor will carefully check the lymph nodes in the area. In addition, you may have to have additional tests, such as special x-rays, to find out whether the cancer has spread to other parts of the body. Knowing the stage of a skin cancer helps the doctor plan the best treatment.

Q. What will my doctor do if I have skin cancer?

A. In treating skin cancer, the doctor's main goal is to remove or destroy the cancer completely with as small a scar as possible. To plan the best treatment, the doctor considers the location and size of the cancer, the risk of scarring, and the person's age, general health, and medical history.

It is sometimes helpful to have the advice of more than one doctor before starting treatment. It may take a week or two to arrange for a second opinion, but this short delay will not reduce the chance that treatment will be successful.

Q. How will my skin cancer be treated?

A. Treatment for skin cancer usually involves some type of surgery. In some cases, doctors suggest radiation therapy or chemotherapy. Sometimes a combination of these methods is used.