وزارة الصحة
Ministry of Health

Cancer: Facts and Guidelines

What is cancer?

Cancer is a broad term given to a collection of related diseases characterized by the abnormal growth and division of cells that leads to the destruction of other healthy cells in the body. Cancer cells have the ability to multiply and spread from one organ to another in the human body.

The difference between benign and malignant tumors:

Malignant (Cancerous) Tumor	Benign Tumor
The shape of the mass is usually abnormal with structures branching and protruding from it	The mass usually consists of one defined structure
Irregular and uneven outer shape	Regular round or oval outer shape
Accompanied by side effects	No side effects
Rapid growth	Slow growth
The tumor is not surrounded by a membrane	the tumor is mostly surrounded by a membrane
It has the ability to spread	It does not have the ability to spread
The tumor may come back after its removal	The tumor mostly does not reappear after its removal
Can potentially result in death	Mostly does not result in death

Symptoms:

- Extreme fatigue
- Unexplained weight loss
- Fever and night sweats
- Skin changes, such as redness, swelling, discoloration,developing lumps under the skin, or changes to existing moles or warts.
- Changes in bowel habits such as constipation and diarrhea
- Persistent coughing

- Persistent pain in the joints and muscles
- Unexplained secretions or bleeding.

Causes of cancer:

Cancer can develop from a single cell. The normal healthy cell can transform into a cancerous cell through multiple stages. This transformation usually turns a potential carcinogen into a malignant tumor. These changes in the cells are caused by the interaction between the individual's genetic factors and some external factors.

The chances of developing cancer increases significantly with age, probably because of the increased risk of certain cancers with age accompanied with the reduced effectiveness of cellular repair mechanisms as a person ages.

Some of the major risk factors for developing cancer in in low- and middle-income countries include,the consumption of alcohol and tobacco, poor diet habits such as low fruit and vegetable intake, suffering from hepatitis C and B, as well as getting the Human Papilloma Virus(HPV) that leads to cervical cancer. Cervical cancer caused by HPV is one of the leading causes of cancer deaths among women in low-income countries.

The known causes of cancer can be summarized as follows:

- The consumption of tobacco products.
- Excess body weight or obesity.
- Low fruit and vegetable intake.
- Physical inactivity.
- Alcohol consumption.
- Sexually transmitted infections such as HIV and the virus that causes cervical cancer.
- Urban air pollution.
- Exposure to smoke caused by burning solid fuel inside buildings.

Risk factors:

- **Age**: Most cancers are detected at the age of 55 and older, but cancer can be detected at any age.
- **Lifestyle:** Certain unhealthy lifestyle choices are known to increase the risk of cancer, such as smoking, drinking alcohol, getting direct exposure to the sun and engaging in forbidden relationships.
- **Family history:** Only 5–10% of all cancer cases can be attributed to genetics; however, not everyone who inherited a genetic factor is going to develop cancer.
- **Health conditions**: Some chronic health conditions, such as ulcerative colitis, can increase the risk of developing certain cancers.

Signs and symptoms:

Cancer Symptoms vary according to the affected organ of the body. The symptoms vary between fever, pain, tiredness, fatigue, and sudden changes in weight (often weight loss). These symptoms may be accompanied by a noticeable mass or thickness under the skin with some discoloration (yellowing, redness, darkening) or a wound that does not heal, a persistent cough, voice hoarseness, swallowing difficulties, indigestion, changes in bowel habits such as constipation and diarrhea.

Diagnosis:

The doctor may perform one of the following procedures to diagnose the disease according to the patient's condition:

- **Physical examination**: The doctor examines the patient's body, looking for any lump or abnormalities, such as changes in skin color or enlargement of an organ that may indicate the presence of cancer.
- **Laboratory tests**: This is done by taking a blood sample to detect cancers such as leukemia.
- **Imaging scans**: Imaging scans allow the doctor to examine bones and internal organs in a noninvasive way. Imaging scans used in

diagnosing cancer may include a computerized tomography (CT) scan, bone scan, magnetic resonance imaging (MRI), ultrasound and X-ray, among others.

- **Biopsy**: There are several ways to collect biopsy samples, depending on the type of cancer and its location in the body. In most cases, a biopsy is the the best way to definitively diagnose cancer.
- Early cancer detection and diagnosis helps speed the treatment of the condition, and increases the chances of recovery.
- Regular medical checkups help with detecting cancer at its early stages. These checkups must be regularly conducted particularly for certain groups of individuals who are most at risk of getting cancer.
- The American Cancer Society has recommended a series of cancer screening tests for the early detection of cancer in adults.

Groups most at risk per cancer type

Groups most at risk	Cancer Type
Women aged 40 years or older	Breast Cancer
Women aged 21 years or older	Cervical cancer
Women aged 50 years or older	Colon Cancer
Men aged 50 years or older	Prostate cancer

Cancer stages:

The doctor relies on diagnostic tests to determine the extent (stage) of the cancer and how far it spread through the body. Generally cancer is classified into four stages from (stage I) to (stage IV), and the fourth stage is considered the most severe.

Cancer Complications:

- Unusual immune system reactions to cancer: In some cases the body's immune system may react to the presence of cancer by attacking healthy cells.

- Cancer Metastasis: As cancer advances, it may spread to other parts of the body. This can often be controlled but not be cured.
- Cancer Recurrence: Some cancers are more likely to recur than others, so it is important to follow up on the condition after treatment, and make regular medical checkups.

Treatment:

Cancer treatment depends on several factors, most notably the type of cancer, its stage, and the patient's health status.

Goals of cancer treatment:

- **Primary treatment**: This treatment is usually done through surgery with the aim of completely killing cancer cells.
- **Adjuvant treatment:**The goal of this treatment is to kill any cancer cells that may remain after the primary treatment, this includes chemotherapy, radiation and hormonal therapy.
- **Palliative treatment**: Palliative treatments aim to relieve the side effects or complications of cancer.

Cancer treatment options:

- **Surgery**: To remove the cancer from your body.
- **Chemotherapy**: Chemotherapy uses drugs to kill cancer cells.
- **Radiation therapy**: Radiation therapy uses high-powered energy beams, such as X-rays, to kill cancer cells.
- **Stem cell transplant**: By transplanting bone marrow from the patient or from a donor.
- **Biological therapy**: The body's immune system helps detect and fight cancer cells.
- **Hormone therapy**: Some types of cancer are fueled by the body's hormones. Examples include breast cancer and prostate cancer.

Removing those hormones from the body may cause the cancer cells to stop growing.

Prevention:

There are no specific ways to prevent cancer, but there are factors that can reduce the risk of getting it; these factors are as follows:

- Avoiding smoking: Smoking is directly linked to several types of cancer, especially lung cancer.
- Avoiding excessive sun exposure. Harmful ultraviolet (UV) rays from the sun can increase the risk of cancer. This is why it is important to limit direct sun exposure by staying in the shade, wearing protective clothing and applying sunscreen.
- Proper nutrition: It is important to choose a diet rich in fruits and vegetables, whole grains such as oatmeal, brown rice, and crushed wheat.
- Exercising regularly: Regular exercise is linked to a lower risk of cancer. Excising for at least 30 minutes a day can help prevent cancer.
- Maintaining a healthy weight: Research has shown that there is a strong association between obesity and cancer. This is why it is important to maintain a healthy weight through a combination of a healthy diet and regular exercise.
- Scheduling regular medical checkups.
- Vaccinations: Certain viruses can cause cancer, such as the hepatitis B virus, which causes liver cancer and the virus that causes cervical cancer. Vaccination can protect the body from these viruses, and therefore reduce the risk of developing cancer.
- Getting enough rest and sleep.
- Avoiding stress and indulging in fun hobbies.

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There are many myths and misconceptions about cancer. The most common are:

- **Cancer is a purely health issue**:
  Truth: Cancer is not an isolated health issue. It is liked and intertwined with other aspects, such as social, economic, and developmental aspects as well as human rights.
- **Cancer is for old people, rich people, and people in developed countries**:
  Truth: Cancer doesn't differentiate between social classes. It is a global epidemic that affects people of all ages and increases the burden on low and middle income countries.
- **Cancer is a deadly disease**:
  Truth: Many cancer cases that were once deadly can be effectively treated today.
- **Cancer means the end of life**:
  Truth: Thanks to modern medicine, one in every three cancer cases can now be treated.

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