

**WHO  
WHAT  
WHY  
WHERE  
WHEN**

**of**

**cancer**

**THE AMERICAN CANCER SOCIETY • 47 BEAVER STREET, NEW YORK, N. Y.**

## what is cancer?

Cancer is not a disease caused by a germ or infection coming from outside the body. It is a disease, which, for some reason as yet unknown, develops within the body, and if not stopped in time eventually kills its victims. In order to understand the nature of cancer and how it develops, we must first understand the fundamental process of growth.

Your body is composed of billions of units of living matter called cells. The individual cell is so small that it can be seen only with the aid of a powerful microscope. It is, therefore, amazing to realize that each one of us started life as a single fertilized egg cell. Within a few hours this first cell divided into two cells, each similar in all respects to the other. A short time later these two cells divided into four, and four into eight, and so on.

This process of growth through cell divisions went on rapidly before birth, and then continued at a somewhat slower rate until each one of us reached adult life. When adult life is reached, we stop growing. The various types of cells carry on their special duties but cease reproducing new cells ex-

cept to replace worn out or destroyed tissue. The tendency of the cells to divide, which was so insistent in early life, is now held in check. It is as though some growth restraint pulled on a brake and said, "Stop!" And in the normal healthy body this restraining or controlling factor remains in charge for the rest of one's life.

## OUTLAW CELLS

But sometimes a cell or group of cells gets out of hand, ignores the normal restraints, and begins multiplying crazily and endlessly. These "outlaw" cells push aside neighboring tissues, robbing them of food and thus causing the death of normal cells. Gathering strength, they continue their ruthless and relentless program of conquest. Not content with invasion of nearby tissues, they dispatch members of their "gang" to other parts of the body, traveling by way of the lymph or blood streams, to set up new headquarters and carry on their outlaw activities of unceasing growth and destruction.

This transformation of normal, law-abiding cells into lawless, criminal cells is called **cancer**.

At this point it is well to remember that not all abnormal growth or tumors are cancer. Some tumors are surrounded by a limiting membrane, and although they crowd nearby tissues, they do not destroy their neighbors. Nor do they spread to other parts of the body. These are known as benign tumors,

and ordinarily can be removed without difficulty.

On the other hand, there are many kinds of malignant tumors which may differ in various respects, such as location in the body, appearances under the microscope, and response to treatment. But they all have three important characteristics in common—uncontrolled growth, the tendency to spread through the body, and the power to kill if not treated **adequately and in time**.



**what causes cancer?**

By this time you are probably wondering what it is that causes some cells to rebel against the orderly process of growth and to start off on a rampage of lawless expansion, destruction, and death. Unfortunately, we do not yet know exactly why this happens. What we do know is that certain old-fashioned ideas have been exploded and certain other conditions are now recognized as contributing factors.

## SOME FALSE NOTIONS

First, let's explode the false notions.

Cancer is not caused by a single severe injury, or by the use of aluminum cooking vessels, or by electrical refrigeration, or by



any particular food or combination of foods, or by the use of alcohol, or by kissing or any other form of contact between persons or between persons and animals.

Since cancer is not caused by a germ or infection, it is neither contagious nor infectious.

Nor is cancer necessarily hereditary. Evidence indicates that children may inherit a certain degree of susceptibility which should make them more alert to warning signals. But there is no reason to assume that children will inevitably die of cancer because one or both parents die of the disease.

### THIS MUCH WE KNOW

Now for what we know about the causes of cancer.

It is clear, above all, that cancer **never** develops in healthy tissue. This means that any condition which results in the breakdown or deterioration of normal cells may be preparing the way for the revolution called cancer.

For example, irregularity of eating does not cause cancer, but it may result in unhealthy conditions within the digestive system, which sooner or later give rise to cancer.

One-half of all cancer is found in the digestive tract. Approximately one-third of all cancer is in the stomach. Hence, whenever indigestion persists longer than three weeks a doctor should be consulted at once.

### THE ROLE OF IRRITATION

A second important factor in the development of cancer is continual or chronic irritation. It is as though the cells of some body tissue become annoyed beyond endurance, lose patience, break into open revolution, and begin building up their rebel army through cell division.

There are three types of irritants: chemical, thermal, and mechanical. There are many chemicals which have been found to produce cancer in the laboratory. Continued overexposure to hot sun and high temperatures may cause cancer of the skin. Constant rubbing of a mole, wart, or old scar may be sufficient mechanical irritation to cause rebellion and growth of malignant tissue.

### SUSCEPTIBILITY

One more factor should be mentioned here, though its origin and influence are as yet little understood. This is individual susceptibility. It seems obvious that certain people are more susceptible than others to the danger of cancer. Whether this is due to the faulty functioning of certain glands or to the presence or absence of certain chemical substances in the body, or to some condition as yet unsuspected, is not known. Scientific research is still trying to discover the complete answer to the age-old riddle—what causes cancer?

## who does cancer strike?

Cancer victims are to be found among young and old, among men and women, among married and unmarried. No age group is free from cancer. Babies are sometimes born with it, and over two thousand children under 21 die of cancer every year in the United States.

### THE DANGEROUS YEARS

Nevertheless, it is true that cancer strikes more people in the older age group, and more women than men in middle life. More than half of all cancer deaths occur below the age of 65—that is, in the most productive years for both men and women. Cancer kills 60 per cent more men and women in the prime of life (between 45 and 60) than are killed by all contagious and infectious diseases. Moreover, cancer is the chief cause of death among women between 30 and 60; in fact, it is responsible for one out of four deaths among women between the ages of 45 and 60.

### THE DANGER ZONES

Certain sites are commonly recognized as danger zones.

Among men, these danger zones are lips,

lungs, stomach, prostate gland, intestines and rectum, throat and mouth.

Among women, the hazardous spots are womb, breast, intestines and rectum, stomach, and genito-urinary organs.

An unmarried woman is more likely to have cancer of the breast than a married woman who nurses her children, while cancer of the cervix (outlet of the womb) occurs more often among married women who have borne children.

## what are its warning signals?

We come now to the most essential information in this booklet—the facts which may actually mean the difference between life and death for you or someone you love.

There is as yet no antitoxin or serum to protect you and your family from cancer.

The only defense at the present time is **knowledge**.

KNOW, then, that cancer often gives some kind of warning in its early stages, and there are seven danger signals. Therefore, it behooves you to know what these signals are.

KNOW, too, that delay is dangerous; that the instant a signal appears, one should go to a physician for a thorough physical examination.



KNOW that pain is usually a late symptom; therefore to wait for pain in most instances is to wait too long.

Above all, KNOW the danger signals and be prepared to act promptly:

**Any sore that does not heal—particularly about the tongue, mouth or lips. Do not pass it off as "nothing at all." Go to the doctor.**

**A painless lump or thickening, especially in the breast, lip, or tongue. Do not wait "to see what happens." Go to the doctor.**

**Irregular bleeding or discharge from any natural body opening. Do not wait for pain. Go to the doctor.**

**Progressive change in the color or size of a wart, mole or birthmark. Do not try salves or ointments. Go to the doctor.**

**Persistent indigestion. Do not wait for loss of weight. Go to the doctor.**

**Persistent hoarseness, unexplained cough, or difficulty in swallowing. Do not assume that it is due to smoking or some other form of irritation which will clear up. Go to the doctor.**

**Any change in the normal bowel habits. Do not attempt to diagnose yourself. Go to the doctor.**

There is no time to be lost if you see one of these danger signals. Once Cancer, the Rebel, starts his criminal career of outlaw growth and destruction, he does not pause. Your only hope is to stop him before he becomes too powerful and has dispatched some

of his henchmen to distant parts of your body. The sooner this dangerous criminal is discovered and identified, the greater are your chances of cure.



**why people wait**

Unfortunately, many people put off going to a doctor for an examination. Some just wait for a more convenient time. Others delay because they do not realize how serious the consequences of postponement may be. Still others are so afraid that they wait as long as possible before finding out what they think will be bad news. There are even those who avoid an examination because they think there is social disgrace connected with having cancer and they shrink from having it discovered. As a matter of fact, there is no more disgrace about having cancer than about having a broken arm or leg.

Whatever the reason, all such delay only gives this enemy more and more opportunity to start his invasion forces on their ruthless march through your body.

## **NOT ALWAYS CANCER**

It is reassuring to know that cancer is often curable if diagnosed and treated in time,

and that a danger signal does not necessarily mean cancer.

For example, cancer is the cause for only about half of the cases of bleeding from the nipple. Bleeding from rectum and bladder or blood in the urine does not invariably mean cancer, but does mean that something is wrong and a careful examination offers the only chance for safety and peace of mind.

### **ABOUT THIS AND THAT**

Perhaps you are wondering about various types of tissue and growth. For example, what about freckles? Do they ever turn into cancer? Simple freckles do not, but flat moles which look like dark freckles or birthmarks may become malignant and should be watched for any change in color or size.

What about corns? The record shows that cancer rarely develops in an ordinary corn. Nevertheless, since cancer may occur in any body tissue, it would be unwise to ignore any form of continual irritation.

What about lumps in the breast? Not all lumps in the breast are malignant. However, because some are, every single one should be carefully examined to determine whether cancer is present.

What about hemorrhoids? Hemorrhoids are enlarged veins in the wall of the rectum. Cancer is sometimes found in the tissue underlying a hemorrhoid; therefore, "bleed-

ing piles" should always be regarded with suspicion and carefully examined.



**where to go**

Your own physician can make the preliminary examination which may reveal the possibility of cancer. However, it is not always possible to know from a superficial examination whether a tumor is benign or malignant.

No reliable skin or blood test has been developed for the diagnosis of cancer, although many people claim to have done so. The one certain method of determining whether or not rebel cells are on the march is to have a competent pathologist examine a small piece or section of the suspected tissue under the microscope. Such an examination is called a biopsy.

Where it is not practical to do a biopsy, as in the case of inaccessible parts of the body, an X-ray examination may be used in making the diagnosis. Cancer of the stomach, for example, can best be diagnosed by X-ray, which reveals clues to the presence of cancer when the stomach is filled with a dense substance. There are also times when exploratory surgery is justified in order to make possible a biopsy to prove the presence or absence of cancer.



It is obvious that not all doctors or all hospitals are equipped to diagnose all types of cancer. Every physician can make the kind of examination that reveals tissue of a suspicious character. If a biopsy or surgical operation is then necessary, he must then have access to a hospital with complete diagnostic equipment, including an operating room, a laboratory for the microscopic diagnosis of tissue, and X-ray equipment.

## how is cancer treated?

There are three—and only three—methods of treating cancer which are accepted and approved by the medical profession: surgery, X-ray and radium. No serum or medicine has yet been developed which is of the slightest value in treating cancer.

The physician may use one, two, or all three of the above methods. Each cancer patient must be treated as an individual problem, since the type and amount of treatment needed will depend upon the location, type and site of the cancer, its duration, its rate of growth, and other factors. No type of treatment should be undertaken until a complete examination has been made by a thoroughly competent physician.

Surgery removes the cancer from the body. Neither the use of surgery nor radium causes

the spread of cancer. If cancer appears in other parts of the body after an operation or irradiation treatment, it indicates that the rebel cells had already begun to invade other territory before treatment was begun.

There is no essential difference between the action of X-ray and radium. When properly used, both will destroy cancer cells without seriously injuring neighboring normal cells. There are various methods of using radium. Hollow needles containing radium may be inserted into the cancer growth or in the tissue surrounding it, or both. Radium in a suitable container may be placed in contact with the growth, as in cancer of the skin. In larger quantities radium may be used at a distance from the body, the rays passing through an opening in the container into the cancerous growth. Also the gas emanating from radium, known as radon, may be applied by means of suitable containers in the same manner as the radium salt from which it is obtained.

## SURE SIGNS OF A QUACK

Any person who advertises a cancer cure, guarantees a cure, or demands payments in advance of treatment may unquestionably be regarded as a quack. No reputable, ethical physician will do any of these things. Few quacks have had medical training; therefore they have no fundamental knowledge about the nature of cancer or recognized methods of treatment.



Quacks are dangerous because they take the patient's money under false pretenses, thus depriving him of the means for obtaining competent treatment elsewhere. What is far more important, quacks waste valuable time, often depriving the patient of his last chance for adequate treatment and cure.

## when can cancer be cured?

Cancer is curable in a large percentage of cases when diagnosed early and treated adequately. The following table is concrete proof of the indisputable fact that cancer is no longer a hopeless disease:

| Type of cancer           | % of cures if treated early | % of cures if treated when moderately advanced |
|--------------------------|-----------------------------|--|
| Breast . . . . .         | 75%                         | 40%  |
| Cervix of womb . . . . . | 75%                         | 15%  |
| Mouth . . . . .          | 75%                         | 25%  |
| Lip . . . . .            | 95%                         | 25%  |
| Skin . . . . .           | 95%                         | 25%  |
| Rectum . . . . .         | 50%                         | 10%  |
| Bladder . . . . .        | 50%                         | 10%  |

## WHAT CAN YOU DO TO GUARD AGAINST CANCER?

1. Realize that cancer, as the second greatest cause of death in this country, has become an increasing threat to every home. Last year cancer killed over

175,000 Americans — 20 every hour. At the present rate one in every eight is destined to die of cancer.

2. Realize, however, that many cancers are curable if caught in time. It is estimated that one-third to one-half of those who now die of cancer could be saved on the basis of present knowledge about diagnosis and cure. At least 55,000 lives could be saved every year; 1,000 lives could be saved every week; six lives could be saved every hour. It is up to you and other Americans to learn the facts and use them intelligently.
3. Learn the danger signals and go to your doctor promptly if any one of these signals appears. Insist that members of your family learn these signals also and understand the importance of prompt examination.
4. Arrange for a periodic health examination for yourself and other members of your family. Such an examination should reveal any conditions which might lead to cancer. A thorough physical examination should include:

Careful inspection of the entire body surface and heart, blood vessel and lung examination.

Examination by sight and touch of all body openings that can be so examined, such as mouth, nostrils, ears, throat, sinuses, vagina, rectum.

Examination of stomach and intestines by X-ray, microscopic examination of blood, urine, and any suspected tissue.

Special examination of breasts in women.

Other examinations as indicated, as of the eye, bladder, and prostate with appropriate instruments.

5. Take pains to prevent prolonged or chronic irritation to any part of the body. This should include protection from over-exposure to sun and wind, prompt repair of birth injuries to the womb, permitting the breasts to function normally, repair of jagged teeth, avoidance of ill-fitting dental plates, temperance in the use of tobacco, correction of chronic constipation. In other words, avoid unnecessary abuse of any tissues; remember that cancer never develops in healthy tissue.



**CONNECTICUT  
CANCER SOCIETY, INC.**

**State Office**

**95 North Main Street  
Waterbury 14, Connecticut**