Cancer Staging

Staging is the process of finding out how much cancer is in a person's body and where it's located. It's how the doctor determines the **stage** of a person's cancer.

The cancer stage is also a way for doctors to describe the extent of the cancer when they talk with each other about a person's cancer.

Not all cancers are staged. For example, leukemias[6] are cancers of the blood cells and therefore typically have spread throughout the body by the time they are found. Most types of leukemias aren't staged the way cancers that form tumors are.

Exams and tests to stage cancer

Different types of exams and tests can be used to figure out a cancer's stage.

- Depending on where the cancer is located, a **physical exam** may give some idea as to how much cancer there is.
- Imaging tests[7] like x-rays, CT scans, MRIs, ultrasound, and PET scans may also give information about how much and where cancer is in the body.
- Endoscopy exams[8] are sometimes used to look for cancer. For these exams, an endoscope, which is a thin, lighted tube (usually with a small video camera on the end) is put inside the body to look for cancer.
- A **biopsy** often is needed to confirm a cancer diagnosis. Biopsies might also be needed to find out if a lump felt on an exam or if something seen on an imaging test in another part of the body is really from the spread of cancer. During a biopsy, the doctor removes a tumor or pieces of a tumor to be looked at in the lab. Some biopsies are done during surgery. But biopsies can also be done using a thin, hollow needle or through an endoscope. For more on biopsies, see Testing Biopsy and Cytology Specimens for Cancer[9].
- **Lab tests** of cancer cells (from a biopsy or surgery) and blood tests can also be used to help stage some types of cancer.

Cancer can be staged at different times

Typically, a cancer is staged when it is first diagnosed, before any treatment is given. But in some cases, it is staged again after treatment has started.

Clinical staging

The **clinical stage** is an estimate of the extent of the cancer based on results of physical exams, imaging tests (x-rays, CT scans, etc.), endoscopy exams, and any biopsies that are done before treatment starts. For some cancers, the results of other

tests, such as blood tests, are also used in clinical staging.

The clinical stage is often a key part of deciding the best treatment options. It can also be used when trying to get an idea of what a person's outlook (prognosis) might be. For example, the survival rates for most types of cancer are based mainly on the stage at the time of diagnosis (see below).

Pathological staging

If surgery to remove the cancer is the first treatment, doctors can also determine the **pathological stage** (also called the **surgical stage**). The pathological stage relies on the results of the exams and tests done before the surgery, as well as what is learned about the cancer during surgery.

Sometimes, the pathological stage is different from the clinical stage (for instance, if the surgery shows the cancer has spread more than was seen on imaging tests). The pathological stage gives more precise information, which can be used to help determine what other treatments might be needed, as well as to help predict treatment response and outcomes (prognosis).

Post-neoadjuvant therapy (or post-therapy) staging

For some cancers, some treatment other than surgery (such as chemo, targeted drug therapy, or radiation) might be done first. The goal might be to try to shrink the tumor before surgery (in which case the treatment is called **neoadjuvant therapy**), or it might be done as the main treatment if it's not clear that surgery is going to be an option.

Staging might be done after this first treatment to help measure the cancer's response to treatment. This can be done the same way as clinical staging (if surgery hasn't been done yet), which can help determine what type of surgery should be done. Or it can be done after surgery (the same way as pathological staging), which might give more precise information.

Recurrence or retreatment staging

Staging might also be done again at some point if the cancer comes back (recurs) or progresses (grows or spreads without ever having gone away completely). This information can be used to help guide decisions about further treatment.

Does restaging a cancer change the original stage?

The **T category** can be assigned a letter or a number:

- **TX** means there's no information about the primary tumor, or it can't be measured.
- **T0** means there is no evidence of a primary tumor (it cannot be found).
- **Tis** means that the cancer cells are only growing in the layer of cells where they started, without growing into deeper layers. This may also be called **in situ** cancer **or pre-cancer.**
- A number after the T (such as T1, T2, T3, or T4) might describe the tumor size and/or amount of spread into nearby structures. The higher the T number, the larger the tumor and/or the more it has grown into nearby tissues.

The lymph nodes (N category)

Lymph nodes[10] near the primary tumor usually are checked to find out if cancer has

Each cancer type has its own version of the TNM categories, so letters and numbers don’t mean the same thing for every type of cancer. For example, for some types of cancer, the T categories describe the size of the main tumor, while for others they describe how deeply the tumor has grown into the organ it started in, or whether the tumor has grown into nearby structures (regardless of its size).

For some cancer types, TNM categories may also have subcategories. These are noted with lowercase letters after the category. For example, T3a or T3b.

Some cancer types may also have fewer category options than other cancer types. For instance, some cancers may not have an N3 category.

Other notations that can be part of TNM

Each of the T, N, and M categories might be written with a lowercase letter in front of it,

For most cancers, the stage is a Roman numeral from I (1) to IV (4). Stage I cancers are less advanced and often have a better prognosis (outlook). Higher stage cancers typically have spread farther (or have other concerning features), so they might require more intense (or different kinds of) treatment. Sometimes stages are subdivided as well, using capital letters (for example, stage III might be subdivided into stages IIIA and IIIB).

Some cancers also have a stage 0, which is often called carcinoma in situ. This means the cancer is still only in the layer of cells where it first started, and it has not spread any farther.

Other staging systems

Not all cancers are staged using the TNM system. For example:

- Staging systems other than the TNM system are often used for Hodgkin and non-Hodgkin lymphomas, as well as for some other cancers.
- The International Federation of Gynecologists and Obstetricians (FIGO) has a staging system for cancers of the female reproductive organs. The TNM stages closely match the FIGO stages, which makes it fairly easy to convert stages between these 2 systems.
  Most cancers in or around the brain do not have a formal staging system, since these cancers typically don’t spread to lymph nodes or other parts of the body.

percentage of people with a certain type and stage of cancer who are still alive a certain amount of time (usually 5 years) after being diagnosed. For example, if the 5-year survival rate for a certain type and stage of cancer is 80%, it means that 80 out of 100 people who have that type and stage of cancer will still be expected to be alive after 5 years.

Survival rates can't tell for sure what will happen with any particular person, because many other factors can also affect prognosis (see below). But they can give doctors and patients a general idea of how likely it is that treatment will be successful.

Survival rates are nearly always based on the stage of the cancer at the time of diagnosis. These numbers don't apply if the cancer is restaged later on. For example, the 5-year survival rate of a cancer that is initially diagnosed as stage II and later spreads to another part of the body is not necessarily the same as that for a cancer that is initially diagnosed as a stage IV cancer (because it had already spread to another part of the body when first diagnosed).

This is important to understand because the information on our pages that discusses survival statistics refers to the stage when the cancer was first diagnosed.

Other factors can also affect prognosis

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It is also important to understand that while the stage of the cancer is important, many other factors can also affect a person's outlook. Desgyedng d2 Te7teser72 50 g 1 u a 65j 0 g 1 0 0 1 7

At the same time, adding these newer findings often makes the staging systems more complex than they were in the past, which can make it harder for people to understand them.

If you're not sure about the stage of your cancer or what it might mean for you, ask your doctor to explain it to you in a way you understand.

Cancer staging for statistics purposes

The AJCC TNM (and similar) staging systems are used most often to determine the stage of a person's cancer, which in turn might be used to help determine the best treatment options for them.

But for statistics purposes, such as for survival rates, cancer registries and researchers often use a simpler staging system for most cancers. This is the National Cancer Institute (NCI) **Surveillance, Epidemiology and End Results (SEER) Summary Staging system**.

The SEER Summary Stages are a basic way of recording how far a cancer has grown and spread from where it started. Because it uses simpler stage definitions, an advantage of this system is that it doesn't change over time (unlike the TNM stages, which are updated every 5 to 10 years). This allows statistics that are based on stages (such as survival rates) to be followed over time to look for trends.

SEER Summary Stages

The basic SEER Summary Stages for most cancer types are:

- **In situ:** The cancer cells are only in the layer of cells where they first started and have not grown into (invaded) nearby tissues in the organ. (Not all cancer types have an in situ stage.)
- **Localized:** The cancer is invading nearby tissue but is still only in the organ it started in.
- **Regional:** The cancer has grown outside of the organ where it started. It has grown into nearby organs or structures **and/or** it has spread to nearby lymph nodes. But the cancer hasn't spread to distant parts of the body.
- **Distant:** The cancer has spread to distant parts of the body, to other organs or structures **and/or** to distant lymph nodes.
- **Unknown:** There is not enough information to figure out the stage.

For more on staging and survival rates, see ‘How the cancer stage might affect a person’s prognosis’, above.

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Written by

The American Cancer Society medical and editorial content team (https://www.cancer.org/cancer/acs-medical-content-and-news-staff.html)

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