

## **Bladder Cancer - Stages and Grades** [1]

This section has been reviewed and approved by the [Cancer.Net Editorial Board](#) [2], 04/2014

**ON THIS PAGE:** You will learn about how doctors describe a cancer's growth or spread, as well as the way the tumor cells look when viewed under a microscope. This is called the stage and grade. To see other pages, use the menu on the side of your screen.

Staging is a way of describing where the cancer is located, if or where it has invaded or spread, and whether it is affecting other parts of the body. Doctors use diagnostic tests to find out the cancer's stage, so staging may not be complete until all of the tests are finished. Knowing the stage helps the doctor to decide what kind of treatment is best and can help predict a patient's prognosis, which is the chance of recovery. There are different stage descriptions for different types of cancer.

For bladder cancer, the stage is determined based on the results of the sample removed during a TURBT (see the [Diagnosis](#) [3] section) and whether the cancer has spread to other parts of the body, which is determined by imaging tests, a physical examination, and laboratory tests.

One tool that doctors use to describe the stage is the TNM system. TNM is an abbreviation for tumor (T), node (N), and metastasis (M). Doctors look at these three factors to determine the stage of cancer:

- How large is the primary tumor and where is it located? (**Tumor, T**)
- Has the tumor spread to the lymph nodes? (**Node, N**)
- Has the cancer metastasized to other parts of the body? (**Metastasis, M**)

The results are combined to determine the stage of cancer for each person. There are five stages: stage 0 (zero) and stages I through IV (one through four). The stage provides a common way of describing the cancer, so doctors can work together to plan the best treatments.

Here are more details on each part of the TNM system for bladder cancer.

**Tumor.** Using the TNM system, the "T" plus a letter and/or number (0 to 4) is used to describe the size and location of the tumor. Some stages are also divided into smaller groups that help describe the tumor in even more detail. If there is more than one tumor, the lowercase letter "m" (multiple) is added to the "T" stage category. Specific tumor stage information is listed below.

**TX:** The primary tumor cannot be evaluated.

**T0:** There is no evidence of a primary tumor in the bladder.

**Ta:** This refers to noninvasive papillary carcinoma. This kind of growth often is found on a small section of tissue that easily can be removed with TURBT and tends to be recurrent (comes back after treatment).

**Tis:** This stage is carcinoma (cancer) in situ, or "flat tumor." This means that the cancer is only found in cells within the lining of the bladder. The doctor may also call it non-muscle-invasive/superficial bladder cancer or noninvasive flat carcinoma (the cancer is on or near the surface of the bladder). This type of bladder cancer often comes back after treatment, usually as another noninvasive cancer in the bladder.

**T1:** The tumor has spread to the subepithelial connective tissue but does not involve the bladder wall muscle (lamina propria, the tissue below the inside lining of the bladder).

**T2:** The tumor has spread to the muscle of the bladder wall.

**T2a:** The tumor has spread to the inner half of the muscle of the bladder wall, which may be called the superficial muscle.

**T2b:** The tumor has spread to the deep muscle of the bladder (the outer half of the muscle).

**T3:** The tumor has grown into the *perivesical* tissue (the fatty tissue that surrounds the bladder).

**T3a:** The tumor has grown into the perivesical tissue, as seen through a microscope.

**T3b:** The tumor has grown into the perivesical tissue macroscopically, meaning that the tumor(s) is large enough to be seen during imaging tests or to be seen or felt by the doctor.

**T4:** The tumor has spread to any of the following: the abdominal wall, the pelvic wall, a man's prostate or seminal vesicle (the tube(s) that carry semen), or a woman's uterus or vagina.

**T4a:** The tumor has spread to the prostate, uterus, or vagina.

**T4b:** The tumor has spread to the pelvic wall or the abdominal wall.

**Node.** The **N** in the TNM staging system stands for lymph nodes, the tiny, bean-shaped organs that help fight infection. Lymph nodes near where the cancer started, within the true pelvis (called hypogastric, obturator, iliac, perivesical, pelvic, sacral, and presacral lymph nodes), are called regional lymph nodes. Lymph nodes in other parts of the body are called distant lymph nodes.

**NX:** The regional lymph nodes cannot be evaluated.

**N0:** The cancer has not spread to the regional lymph nodes.

**N1:** The cancer has spread to a single regional lymph node in the pelvis.

**N2:** The cancer has spread to more than one regional lymph node in the pelvis.

**N3:** The cancer has spread to the common iliac lymph nodes, which are located behind the major arteries in the pelvis, above the bladder.

**Distant metastasis.** The "M" in the TNM system indicates whether the cancer has spread to other parts of the body.

**M0:** The disease has not metastasized.

**M1:** There is distant metastasis.

### **Cancer stage grouping**

Doctors assign the stage of the bladder cancer by combining the T, N, and M classifications.

**Stage 0a:** This is an early cancer that is only found on the surface of the inner lining of the bladder. Cancer cells are grouped together and can often be easily removed. The cancer has not invaded the muscle or connective tissue of the bladder wall. This type of bladder cancer is also called noninvasive papillary urothelial carcinoma (Ta, N0, M0).

**Stage 0is:** This stage of cancer, also known as flat or carcinoma in situ, is found only on the inner lining of the bladder. It has not grown in toward the hollow part of the bladder, and it has not spread to the thick layer of muscle or connective tissue of the bladder (Tis, N0, M0). This is always a high-grade cancer (see Grades, below).

**Stage I:** The cancer has grown through the inner lining of the bladder into the lamina propria. It has not spread to the thick layer of muscle in the bladder wall or to lymph nodes or other organs (T1, N0, M0).

**Stage II:** The cancer has spread into the thick muscle wall of the bladder (also called invasive cancer or muscle-invasive cancer). It has not reached the fatty tissue surrounding the bladder and has not spread to the lymph nodes or other organs (T2, N0, M0).

**Stage III:** The cancer has spread throughout the muscle wall to the fatty layer of tissue surrounding the bladder. It may also have spread to the prostate in a man or the uterus and vagina in a woman. It has not spread to the lymph nodes or other organs (T3 or T4a, N0, M0).

**Stage IV:** Any of these conditions:

- The tumor has spread to the pelvic wall or the abdominal wall but not to the lymph nodes or other parts of the body (T4b, N0, M0).
- The tumor has spread to one or more regional lymph nodes but not to other parts of the body (any T, N1-3, M0).
- The tumor may or may not have spread to the lymph nodes but has spread to other parts of the body (any T, any N, M1).

**Recurrent cancer:** Recurrent cancer is cancer that has come back after treatment. If there is a recurrence, the cancer may need to be staged again (called re-staging) using the system above.

## Grades

Doctors also describe this type of cancer by its grade (G), which describes how much cancer cells look like healthy cells when viewed under a microscope. The doctor compares the cancerous tissue with healthy tissue. Healthy tissue usually contains many different types of cells grouped together. If the cancer looks similar to healthy tissue and contains different cell groupings, it is called differentiated or a low-grade tumor. If the cancerous tissue looks very different from healthy tissue, it is called poorly differentiated or a high-grade tumor.

Many urologic surgeons classify a tumor's grade based on the chance that the cancer will recur (come back after treatment) or progress (grow and spread), and plan their treatment based on the grade, using the following categories:

**Papilloma.** This is also called benign papillary urothelial neoplasm of low malignant potential (PUNLMP). This type of cancer may recur but has a low risk of progressing.

**Low grade.** This type of cancer is more likely to recur and progress compared with PUNLMP.

**High grade.** This type of cancer is the most likely to recur and progress.

More recently, the World Health Organization (WHO) has recommended changing bladder cancer grading to only two categories: 1) well-differentiated or low grade, and 2) poorly differentiated or high grade. This is the system that is used in the latest version of the American Joint Committee on Cancer (AJCC) Staging System.

*Used with permission of the AJCC, Chicago, Illinois. The original source for this material is the AJCC Cancer Staging Manual, Seventh Edition (2010) published by Springer-Verlag New York, [www.cancerstaging.net](http://www.cancerstaging.net)[4].*

*Information about the cancer's stage will help the doctor recommend a treatment plan. The next section helps explain the treatment options for this type of cancer. Use the menu on the side of your screen to select Treatment Options, or you can select another section, to continue reading this guide.*

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### Links:

[1] <http://www.cancer.net/cancer-types/bladder-cancer/stages-and-grades>

[2] <http://www.cancer.net/about-us>

[3] <http://www.cancer.net/node/18525>

[4] <http://www.cancerstaging.net/>