

# Prostate Cancer: Grade and Stage



Once your healthcare provider knows you have cancer, the next step is to find out the grade and stage of the cancer. The grade is a way to note how different the cancer cells are compared with normal cells. The stage is how much cancer there is and how far it has spread in your body. Grade and stage are determined when a biopsy (tissue sample) and other tests are done. Staging and grading of cancer is important for deciding how to treat it and for determining how curable it is.

## Grades of prostate cancer

The grade refers to how the cancer cells look when compared to normal prostate cells. The grade helps your healthcare provider get an idea of how fast the cancer may grow and spread. Cancer cells that look very different are likely to grow and spread faster than those that look a lot like normal cells.

Prostate cancer is graded using the Gleason score. This scale uses numbers 1 to 5 to show how much the tissue (removed during the biopsy or surgery) looks like or does not look like normal prostate tissue. The grades are:

- **Grade 1.** The cancer cells look a lot like normal prostate tissue.
- **Grades 2 to 4.** The cancer cells look in between normal and very abnormal.
- **Grade 5.** The cancer cells look very abnormal or different when compared to healthy prostate cells.

A grade is given to each of the two parts of the prostate that have the most cancer cells. The grades from the two areas are then added together to give the Gleason score, which is between 2 and 10 (but scores below 6 are rarely used).

Gleason scores are used to put prostate cancers into three groups:

- Gleason score of 6 or less is low-grade or well-differentiated cancer.
- Gleason score of 7 is intermediate-grade or moderately differentiated cancer.
- Gleason score of 8 to 10 is high-grade or poorly differentiated cancer.

The higher the Gleason score, the more likely the cancer will grow and spread.

## Grade groups

In recent years, healthcare providers have realized that the Gleason score might not always be the best way to grade prostate cancer. For instance, not all cancers with a Gleason score of 7 are the same. Cancers with more grade 3 areas ( $3 + 4 = 7$  Gleason score) are less likely to grow and spread than cancers with more grade 4 areas ( $4 + 3 = 7$  Gleason score). Likewise, Gleason score 8 cancers are less likely to grow and spread than cancers with a Gleason score of 9 or 10.

Based on these differences, healthcare providers have started to use a newer system that breaks up prostate cancers into 5 grade groups:

- Grade group 1 = Gleason 6 (or less)
- Grade group 2 = Gleason  $3 + 4 = 7$
- Grade group 3 = Gleason  $4 + 3 = 7$
- Grade group 4 = Gleason 8
- Grade group 5 = Gleason 9 or 10

If your biopsy report shows you have prostate cancer, it might show both the Gleason score and the grade group.

## Stages of prostate cancer

The stage of cancer describes how big it is and how much it has spread. The most commonly used system to stage prostate cancer is the TNM system from the American Joint Committee on Cancer.

The first step in staging is to find the value for each part of the TNM system. Here's what the letters stand for in the TNM system:

- **T** stands for **tumor**. It notes how big and where the tumor is inside the prostate and if it has spread into nearby areas.
- **N** stands for **nodes**. Lymph nodes are small collections of immune cells around the body. They help the body fight infections. The N value notes if cancer cells have spread to nearby lymph nodes.
- **M** stands for **metastasis**. It tells if the cancer has spread (metastasized) to distant organs, like your lung, bones, liver, or brain, or to lymph nodes that are not near your prostate.

Numbers or letters after T, N, and M provide more details about each of these factors.

Two other factors are also needed to find the stage of prostate cancer:

- The **blood PSA level** at the time of diagnosis
- The **grade group** (Gleason score) of the cancer

## Prostate cancer stage groupings

The T, N, and M values, your PSA level, and the grade group of the cancer are then used to put prostate cancers into stage groupings. The groupings give an overall description of the cancer.

A stage grouping is listed as a Roman numeral and can have a value of I (1), II (2), III (3), or IV (4). The lower numbered stages are cancers that tend to be smaller and slower growing. They also tend to be easier to treat and cure. The higher the number, the more advanced the cancer is. Letters and numbers can be used after the Roman numeral to give more details.

These are the stage groupings of prostate cancer and what they mean:

**Stage I.** The cancer is only inside the prostate, it's grade group 1, the PSA level is less than 10, and 1 of these is true:

- The tumor can't be felt by digital rectal exam (DRE) or seen on an ultrasound. (It was found during tests or surgery done for another reason.)
- The tumor can be felt by DRE or seen on an ultrasound. It's in half or less than half of one side of the prostate.
- Surgery has been done to remove the prostate, and the only cancer found was inside it.

**Stage II.** This stage is divided into three subgroups:

- **Stage IIA.** The cancer is only inside the prostate, it's grade group 1, and one of these is true:
  - The tumor can't be felt by DRE or seen on an ultrasound. (It was found during tests or surgery done for another reason.) The PSA level is between 10 and 20.
  - The tumor can be felt by DRE or seen on an ultrasound. It's in half or less than half of one side of the prostate. Or the prostate was removed and the cancer was only inside it. The PSA level is between 10 and 20.

- The tumor can be felt by DRE or seen on ultrasound. It's in more than half of one side of the prostate, or it's in both sides of the prostate. The PSA level is less than 20.
- **Stage IIB.** The tumor has not spread beyond the prostate. It may or may not be felt by DRE or seen on ultrasound. The grade group is 2. The PSA level is less than 20.
- **Stage IIC.** The tumor has not spread beyond the prostate. It may or may not be felt by DRE or seen on ultrasound. The grade group is 3 or 4. The PSA level is less than 20.

**Stage III.** This stage is divided into three subgroups:

- **Stage IIIA.** The tumor has not spread beyond the prostate. It may or may not be felt by DRE or seen on ultrasound. The grade group is 1 to 4. The PSA level is 20 or higher.
- **Stage IIIB.** The tumor has spread beyond the prostate to the glands that make semen (the seminal vesicles). Or it has spread to nearby tissues, such as the bladder sphincter muscle that controls urine flow, the bladder, the rectum, or the wall of the pelvis. It has not spread to nearby lymph nodes. The grade group is 1 to 4. The PSA can be any level.
- **Stage IIIC.** The tumor may or may not have spread beyond the prostate into nearby tissues. It has not spread to nearby lymph nodes. The grade group is 5. The PSA can be any level.

**Stage IV.** This stage is divided into two subgroups:

- **Stage IVA.** The tumor may or may not have spread beyond the prostate into nearby tissues. It has spread to nearby lymph nodes, but it has not spread to other parts of the body. It's any grade group. The PSA can be any level.
- **Stage IVB.** The tumor may or may not have spread beyond the prostate into nearby tissues. It may or may not have spread to nearby lymph nodes. It has spread to other parts of the body, such as distant lymph nodes, bones, or other organs. It's any grade group. The PSA can be any level.

## Talking with your healthcare provider

Once your cancer is staged, talk with your healthcare provider about what the stage means for you. Ask your healthcare provider to explain the stage of your cancer to you in a way you can understand. Ask any questions and talk about your concerns.

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