Dear OncoLink "Ask The Experts,"

I do not understand my Nottingham score of 9, or the histologic grade of III/III.

The Nottingham histologic score (or histologic grade) is simply a scoring system to assess the "grade" of breast cancers. The grade is a way to rate how aggressive a tumor may behave.

Nottingham is a total of 3 different scores. The pathologist looks at the breast cancer cells under a microscope and gives a score to 3 characteristics:

- Tubule formation – or how much the tumor looks like normal cell structure.
- Nuclear pleomorphism – how different the tumor cells look from normal cells.
- Mitotic activity – or how fast cells are dividing or reproducing.

Each characteristic is given a score from 1 to 3, with 1 being the closest to normal and 3 being the most abnormal. These 3 scores are added together, making the Nottingham Score. The minimum score possible is 3 (1+1+1) and the maximum possible is 9 (3+3+3).

The total score is assigned to a grade:

- Grade I is assigned for a total score of 3 to 5. This is also called well differentiated.
- Grade II is assigned for a total score of 6 to 7. This is also called moderately differentiated.
- Grade III is assigned for a total score of 8-9. This is also called poorly differentiated.

Grade I cancers tend to be less aggressive. They are also more often estrogen receptor-positive (ER+). Grade III cancers tend to be more aggressive and are more likely to be "triple-negative" – or negative for hormone (ER & PR) and HER2 receptors.

**How is the grade used in treatment decisions?**

The Nottingham score and histologic grade are used to determine if radiation is used after surgery (lumpectomy or mastectomy). A high-grade (grade III) tumor is seen as a higher risk for recurrence and having radiation therapy reduces this risk. The grade can help the radiation oncologist decide if the patient could benefit from a boost dose of radiation (an added dose given to a specific area at the end of the radiation course), to determine if a patient is eligible for accelerated partial breast radiation (APBI), and to guide the use of radiation to treat lymph nodes.

The grade is not used as often in determining the need for medication treatments such as chemotherapy and hormone therapy. The exception to this is in young patients with triple-negative cancer with no lymph node involvement. For these patients, having a high-grade tumor suggests that they may consider chemotherapy as part of their treatment.

OncoLink Team
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medication that you have been prescribed, you should consult your health care provider.