

## The Role of Pathology Reports in Preventive Medicine and Early Detection

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Pathology reports are essential documents created by pathologists that provide detailed information about the findings from laboratory tests conducted on tissue or fluid samples. These reports are essential for diagnosing diseases, guiding treatment plans and assisting in patient management. Pathology reports are used by physicians and healthcare providers to make informed decisions regarding the next steps in treatment, such as surgery, chemotherapy or other interventions.

A pathology report typically begins with basic patient information, including the patient's name, age and relevant medical history. This is followed by a description of the sample submitted for examination, such as a biopsy, surgical tissue or bodily fluid, including where it was taken from and why it was needed. For example, a pathology report might describe a breast tissue biopsy collected to investigate a lump or an abnormality detected in imaging studies.

The core section of a pathology report includes the macroscopic and microscopic findings. The macroscopic description gives an overview of the sample's physical appearance, such as size, shape, color and any noticeable abnormalities. This description provides context for the pathologist before examining the sample under a microscope.

The microscopic findings are the most important part of the report, as this is where the pathologist identifies cellular and tissue-level changes that may indicate disease. For example, in cancer diagnosis, the report will detail the type of cancer cells present, the degree of malignancy and how the cancer has spread (if applicable). The pathologist will also look for signs of infection, inflammation or other abnormal tissue responses and provide their interpretation based on established diagnostic criteria.

In cancer diagnoses, the pathology report may include information about the grade and stage of the tumor. The grade refers to how abnormal the cancer cells appear under the microscope, while the stage describes the extent to which the cancer has spread in the body. Together, the grade and stage provide a comprehensive understanding of the cancer's aggressiveness and help guide treatment decisions.

Another important section of the report includes diagnostic conclusions or final diagnosis. Here, the pathologist will summarize their findings and provide a definitive diagnosis. In cases of cancer, the report will often indicate the specific type of cancer, such as breast cancer, lung cancer or melanoma, and may include details about subtypes or molecular markers that influence treatment decisions.

In some cases, the report may include recommendations for further testing or follow-up procedures. For instance, if the pathologist identifies suspicious cells that may require more investigation, they might recommend additional diagnostic tests, such as imaging studies or genetic testing, to provide more clarity. The report may also discuss whether the disease is localized or whether there is a risk of metastasis, helping doctors make informed decisions about whether surgery or other therapies are appropriate.

The pathology report will also sometimes include special tests and stains performed on the tissue sample. These additional tests are important for identifying specific proteins, genes or mutations that may influence the diagnosis or prognosis of the disease. For example, immunohistochemical staining can help identify specific tumor markers and molecular testing can detect genetic mutations linked to particular cancers.

## CONCLUSION

In conclusion, pathology reports are a fundamental of modern medicine. They play an important role in the diagnostic process, offering valuable understanding into diseases and conditions at the cellular level. By detailing the nature of abnormalities, such as cancerous tumors or infections, pathology reports help clinicians make informed decisions about patient care, leading to better treatment outcomes and improved patient management. As medical science advances and new technologies develop, the role of pathology reports continues to evolve, allowing for more precise and personalized healthcare.

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