

How to Read Your Pathology Report

Our team at Eastern Connecticut Pathology Consultants (ECPC) created this guide to help you understand your pathology report and the role of your pathologist on your care team.

What is a Pathologist?

A pathologist is a medical doctor who specializes in the diagnosis of many diseases, including cancer, by examining tissue samples from the body. Your pathologist is an integral member of your health care team with a key role in diagnosis and even the development of treatment plans.

After examining a tissue sample, your pathologist will often determine whether your condition is *benign*, *malignant* or *pre-malignant*.

- Benign: Non-cancerous cells that do not spread
- Malignant: Cancerous cells that can spread to other tissues and organs
- Pre-malignant: Pre-cancerous cells that are likely to develop into cancer and require monitoring

Biopsy & Tissue Samples: What Happens Next

Your doctor or surgeon may remove tissue samples and/or cells from your body during a biopsy, surgical procedure or blood draw. Your doctor places the tissue sample(s) into a special container marked with your unique patient identifiers – such as name, date of birth and medical record number – and sends them to the pathology laboratory. In the lab, a trained lab professional called a histotech prepares glass slides from your tissue sample(s) so they can be examined by the pathologist under a microscope. Your pathologist will communicate the diagnosis to your medical team in a detailed surgical pathology report.



From Biopsy to Pathology Lab

Most pathology reports are complete within 24 to 48 hours. Learn what happens to your tissue as it moves through the laboratory:



1 TISSUE FIXATION

After a biopsy or surgery, your tissue sample is preserved with a chemical fixative in a container with your name, date of birth and medical record number and then delivered to the laboratory. There, we register your sample and label it with a unique specimen number.



3 TISSUE PROCESSING

The tissue will be further evaluated under a miscroscope. First the tissue is placed in small containers called *cassettes*, where they are exposed to chemicals to harden. Next, a trained laboratory professional called a histotechnologist embeds the sample in paraffin wax to form a tissue block.



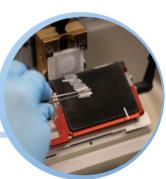
A pathologist or pathologists' assistant carefully removes the sample from the fixative and thoroughly examines it, making notes of its size, shape and any important characteristics.



MAKING A SLIDE

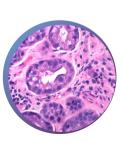
The histotechnologist uses a tool called a microtome to slice extremely thin sections of the specimen. These slices are placed on slides and stained so they will be visible under the microscope.





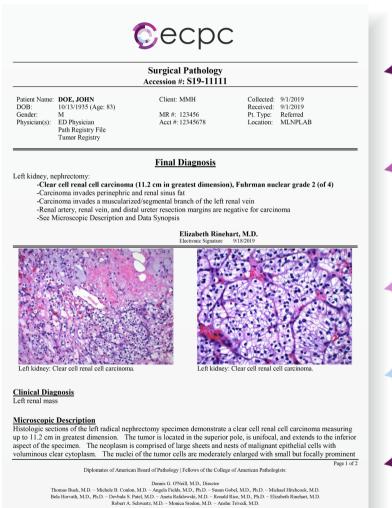
5 THE PATHOLOGIST

A type of medical doctor called a pathologist examines the slide under a microscope and prepares a thorough pathology report with his or her findings.



Understanding Your Pathology Report

Your surgical pathology report is customized to you and your diagnosis. Each section contains information necessary for you and your doctor to make informed treatment decisions:





Includes your unique patient identifiers such as name, date of birth and medical record number

These identifiers will be checked multiple times to track your specimen in the lab and to ensure accuracy.

Includes information about your diagnosis and tumor grade if there's a cancer diagnosis

The *grade* (low, intermediate or high) describes how abnormal your cells look under a microscope compared to non-cancerous cells.

Demonstrates photos of your cells taken through the microscope

Summarizes important aspects of your medical background, often provided by your doctor

Describes how your tissue looks under the microscope

This section provides valuable information to your doctor and other pathologists who may review your case, such as:

- How close cancer cells are located to the margin (edge of the tissue sample)
- Whether the cancer is likely to spread to other parts of the body (metastasize)

If you have had surgery, your pathologist will determine whether a tumor has been completely removed.

DOE. JOHN SURGICAL PATHOLOGY REPORT

nucleoli, corresponding to a Fuhrman nuclear grade 2 (of 4). The carcinoma invades into the perinephric fat, renal sinus fat, and directly invades a muscularized/segmental branch for the left renal vein (A7). Carcinoma is located less than 0.1 cm from the soft tissue resection margin. The adrenal gland and lymph nodes are not identified

Data Synopsis - Kidney

Laparoscopic radical nephrectomy Procedure

Laterality

11.2 x 8.3 x 5.5 cm Tumor size

Tumor focality Unifocal

Macroscopic extent Macroscopically involves the perinephric fat and abuts the renal sinus fat

Histologic type Clear cell renal cell carcinoma

Sarcomatoid features (%) Not identified

Nuclear grade (Fuhrman)

Microscopic tumor extension Microscopic invasion of the perinephric fat, renal sinus fat, and direct extension into a

muscularized/segmental branch of the left renal vein

Not identified Adrenal gland

Present as microscopic invasion (via direct extension) of a

muscularized/segmental branch of the left renal vein (A7); additional foci of

lymphovascular invasion are not identified

Less than 0.1 cm from the soft tissue resection margin Margins

Lymph nodes N/A N/A Number examined Number positive N/A

Additional findings Background renal parenchyma with no specific pathologic changes

TNM pT3aNXMX

Macroscopic Description

Received in formalin is a 631 g, $14.6 \times 9.8 \times 8.2$ cm left radical nephrectomy specimen with up to 4.5 cm of attached perinephric fat. An adernal gland is not present. Extending from the hilum, there is a 1.1 cm in length by 1.5 cm in diameter segment of renal vein, a 2.5×0.5 cm segment of renal artery and a 9.5×0.5 cm segment of ureter. The kidney is grossly distorted with a sub-capsular mass bulging from the superior pole. Also noted along the superior pole alo ureter is opened to show an unremarkable corrugated mucos. The specimen is bivalved demonstrating an 11.2 x 8.3 x 5.5 cm mass lession which involves the cortex and medulla, extending from the superior pole to the inferior aspect of the specimen. The mass is focally yellow-red and hemorrhagic with an extensive cystic component containing tan serous fluid. The lining of the cyst locules are white and trabeculated with areas of yellow nodularity. The mass is 1.4 cm from the hilum and 0.1 cm from the aforementioned inked soft tissue margin. The lesion abuts but does not grossly involve the renal sinus fat. The mass extends beyond the renal capsule, into the underlying fat and is less than 0.1 cm from the inked fascial margin. Definitive renal vein involvement is not appreciated grossly. The uninvolved parenchyma is red and rubbery and the corticomedullary junction averages 1.0 cm. Additional discrete mass lesions are not identified grossly. Hilar lymph nodes are not noted.

- Ureteral and vascular margins
- 2-3: Mass to include perinephric fat and inked soft tissue margin 4-6: Mass with respect to renal capsule
- 7-8: Mass with respect to renal sinus fat 9: Uninvolved parenchyma (DD)

This case was reviewed intradepartmentally and the preliminary results were communicated to Dr. Jane Doe on 9/16/2019 at 11:00 AM

Diplomates of American Board of Pathology | Fellows of the College of American Pathologists

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Synopsis

Outlines the most important findings in a table and provides information on tumor staging for cancer diagnoses

Tumor staging determines how much cancer is in the body and whether it has spread. It is based on factors such as:

- Extent of the disease
- Tumor size
- Whether the tumor has spread (metastasized) to the surrounding lymph nodes or other parts of the body

Describes how your specimen looks to the "naked eye"

This section contains precise details about the size, shape, color and composition of your tissue sample. If a specimen contains cancer (or suspected cancer), your pathologist will follow specific guidelines during the examination and sampling of the tumor.

Questions about Your Pathology Report?

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If you have questions or concerns about your pathology report, our team is happy to review your report and answer any questions you may have.



What Happens After a Cancer Diagnosis?

At Eastern Connecticut Pathology Consultants (ECPC), we require that a second pathologist review all new cancer diagnoses.

For rare or challenging cases, many pathologists will review your tissue slides and discuss your unique symptoms and medical history with a team of specialists working on your treatment plan.

This collaborative approach allows us to:

- Confirm your diagnosis
- Determine the best, most up-to-date treatment options for your condition

Additional Testing Options

Depending on the complexity of your diagnosis, your doctor may recommend additional testing to determine the cancer subtype and whether it will respond to certain medications, chemotherapies or other treatments.

Various molecular or genetic testing may:

- Help guide the next steps of your treatment
- Predict your chance of recovery
- Determine whether your family members should be tested for certain diseases

In many instances, your pathologist may identify tumor characteristics that would allow you to benefit from targeted therapies.



ECPC is an independent practice comprised exclusively of board-certified and subspecialty-trained pathologists with decades of experience and a broad range of expertise.

