

## **What is the Pathology examination and how is it done?**

To better understand what is going on with your body, your physician may order a pathology exam of tissue (like skin) or fluid that was removed. This evaluation is performed by Pathology Associates of Dubuque and United Clinical Laboratories.

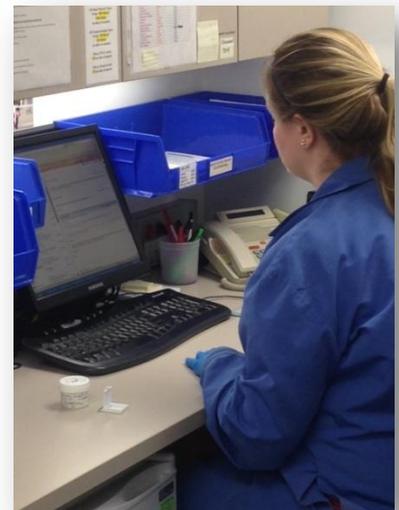
The pathology examination is a complex process that involves many people and many steps. It is critical for the evaluation of infection, neoplasm, or genetic abnormalities. The valuable information generated by the pathology examination is used by your physician to best determine the course of your care. Often the pathology examination is a key part in determining the presence or absence of cancer. It provides information on how best to treat the cancer if it is present.

### **The Process**

#### ***Step 1: Fixation of tissue & Specimen Identification***

When your doctor orders a pathology examination, a biopsy is taken and your tissue (or specimen) is placed in a chemical “fixative” that prevents it from natural degradation. The container (with this fixative) is uniquely identified as your tissue. After your doctor and nursing staff register your tissue, it is delivered to the pathology laboratory by a secure courier.

Your tissue is registered in the laboratory and given a unique identifying number.



#### ***Step 2: Gross Examination***

The tissue then is carefully removed from the chemical fixative and thoroughly examined by a professional who has special training in handling tissue in the laboratory. This examination (called the “gross examination”) requires the handler to describe the state of the tissue, its size and other pertinent qualities. For larger or more complex specimens, this examination involves meticulous dissection, documentation and description. The entire piece of tissue or specific portions of the tissue are then selected for a microscopic examination.

### ***Step 3: "Cassettes" and Tissue Processing***

Small tissue fragments destined for microscopic evaluation are placed in small plastic cages called "cassettes".



These cassettes are labeled with the patients name and their unique identifying number. While the tissue is confined to these cassettes, it is exposed to a series of controlled chemicals that allow for further permanent fixation and hardening of the tissue. This is called tissue processing. This is carried out by another group of trained professionals call histotechnologists. Tissue processing takes approximately 8 hours.

### ***Step 4: Making a Slide***

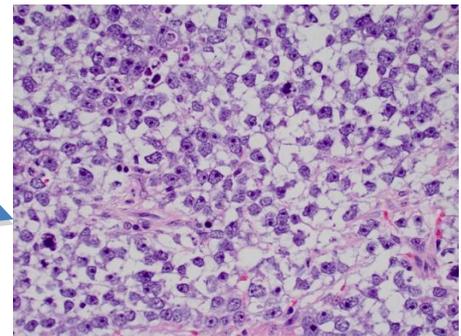
Next, the histotechnologist removes the tissue from its cassette and mounts it in paraffin wax on the same cassette that carried it through this process. This mounted tissue is called a paraffin block. The histotechnologist takes several extremely thin slices ("sections") of this tissue block with a semi-automated cutting device known as a microtome. The histotechnologist is trained to know how to precisely cut the tissue based on the type of tissue being evaluated and the questions your physician wants answered. These very thin slices of tissue are then placed on glass microscopic slides. The histotechnologist then applies another series of chemicals that stain the cells of the tissue in a particular way that allows for pathology evaluation.

After this, a protective cover is placed on the slide and it is sent to a Pathologist for evaluation and diagnosis.



**Step 5: Finally, the Pathologist!**

The Pathologist is a medical doctor who has trained many years to evaluate your tissues and perform a microscopic examination.



This is an image of the microscopic tissue sample.

Some diseased tissues can be very difficult to evaluate and other complex chemical tests (called histochemical or immunohistochemical stains) are often needed for a complete pathology examination. While most pathology reports are completed in 24 to 48 hours, it sometimes takes several days to complete this exam and much information is generated. After the process is completed, a Pathology report containing this valuable information is written and delivered to your physician who requested the evaluation.

The Pathologists is also the Medical Director responsible for all these steps needed for accurate evaluation. The Pathologists in Dubuque work as a team with United Clinical Laboratories for accurate assessment of tissues sent by physicians in the Tri-State area. Your tissue or biopsy is a representation of you and the information generated by the Pathology evaluation can be critical for your health care.

