

Agonizing wait for biopsy results reduced to a matter of hours, instead of days.

When a patient undergoes a biopsy at 10 AM on a Friday morning, the last thing she wants is to have to wait over the weekend to find out if she has cancer. For some medical conditions, every hour is critical. For all patients, every hour spent waiting feels like days. Yet, it has traditionally taken up to 48 or even 72 hours to receive results from a biopsy.

technology overview

Automated microwave based tissue processors use sophisticated vacuum pump and microwave heating technologies to automatically prepare tissue samples for pathological analysis. Tissue specimens are placed inside individual cassettes and loaded into the machine as they arrive in the laboratory, without having to accumulate large batches. The system automatically and rapidly processes the samples in a safe, enclosed environment. Results are available in a matter of hours, instead of days.

Today, new rapid processing technologies are changing the way pathology labs operate and providing doctors and patients with faster, more compassionate diagnoses than ever before. That 10 AM biopsy patient may learn she is cancer free, or what type of cancer she has, the same day. If the test is positive, she and her physician may be able to discuss, even begin, a course of treatment before the end of the day.

“Now, same-day diagnosis is gained with Microwave Technology that provides processing times as little as

60-90 minutes. This brings histoprocessing into the 21st century instead of being stuck with norms that date back to the early 1900’s of up to 72 hours that until now, we’ve had to contend with,” says Franco Visinoni, the medical researcher who helped develop the technology.

Automated microwave based tissue processors are devices that automate the processing of tissue samples from biopsies, autopsies or any other source using vacuum and microwave technologies. The tissues are rapidly and safely processed with various chemicals and heat in a multi-step procedure, then embedded into wax filled cassettes.

Where traditional techniques required samples be prepared individually by hand, then batched together for overnight and next-day processing, automation improves processing speed and produces consistent, high quality samples. Same day results are the norm and samples can be processed as they arrive in the lab – no more waiting to accumulate them in large batches.

The benefits to pathologist, physician and patient are evident.

Consumption of supplies is reduced. Large inventories of hazardous chemicals are replaced by smaller inventories of less-toxic reagents. Laboratory staff are exposed to fewer toxic hazards and contaminants when handling of samples is minimized. The devices produce tissue cassettes of excellent quality, which can then

be sliced thinly and laid down on a prepared glass slide for viewing under a microscope, providing pathologists with the best possible information from which to diagnose.

Pathologists are medical doctors who must inspect the tissues at cellular level, using the complex images embedded permanently on the slides produced by the histoprocessors. Based on the samples they analyze, they then deliver life or death diagnostic verdicts. Their decisions will mark the path down which the patient follows: a clean bill of health, or a specific treatment regimen best suited to the diagnosis the pathologist makes – with its resulting impact on the patient’s length and quality of life.

Armed with the pathology report, doctors and their patients are able to explore appropriate therapies earlier. The agonizing wait for information, that patients and their families endure, is reduced significantly. They can then move forward out of uncertainty and onto a therapeutic path more quickly and with less stress and greater confidence than ever before.

“If you have ever seen patients travel miles into the big city, hours away from their homes, to undergo a biopsy, whether it’s to diagnose an illness or to confirm they are cancer-free, you understand how agonizing it is to wait days for those results,” says Visinoni. “They may have to spend days in a hotel close to the hospital, just in case they must begin treatment. Just in case they can’t go home again. It can be a horrifying time.”



fast facts

- Same day diagnosis is becoming part of the growing armamentarium of research and clinical technologies being adapted to beat the high profile tissue based cancers such as Breast Cancer and Prostate Cancer.
- High throughput with rapid and safe automation.
- Much less chemicals are used resulting in less disposal of chemicals into the environment. No requirement of toxic Xylene or Toluene.

