

Maximizing Efficacy with Digital Pathology

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Editorial Note

A increasing number of labs around the world are adopting digital pathology. Scanning entire slide images of tissue samples, analyzing them, uploading them to a database, and exchanging them with laboratories all over the world is part of the practice. However, while digital pathology is being increasingly adopted across the country, the method for primary diagnosis has been completely introduced by only a small portion of laboratories.

For decades, the concept of digital pathology has been around, but it has only recently become mainstream as technological advancements have enabled it to begin to achieve its full potential.

To provide it with its full range of analytical, automation, library, and communication capabilities, digital pathology relies on computers with high processing powers, an internet connection, and advanced technology, such as artificial intelligence (AI). As a result, digital pathology's adoption is still gaining momentum, as the technologies that enable it are still rising.

In order to justify the cost of setting it up, scientists need evidence of the benefits of digital pathology. Although costs have dropped in recent years, in order to back up its arguments, it is still an investment that needs hard evidence.

One of the most important advantages of digital pathology is that it improves productivity. It accomplishes this in a variety of ways, as detailed below.

How does digital pathology help you be more productive?

Firstly, in scanning tissue slides, automated pathology uses AI to automatically select regions of interest. It is normally the pathologist's job to use their experience and training to select these regions manually. This task can be performed much more easily and reliably with digital pathology. It also helps pathologists to concentrate on other activities while delegating the more mundane ones to technology. Furthermore, AI can be used in digital pathology to examine tissue samples automatically. This will speed up timeframes for diagnosis and make pathologists available again to focus their time on other duties.

If the lab still wants to rely on human staff for this role, automated pathology may be used to double-check pathologists' diagnoses. Overall, this will improve productivity by avoiding mistakes, minimising the time and money spent correcting these mistakes. A unique way in which digital pathology helps improve productivity is to put together experts from all over the world to work together without wasting time or money on travelling to work together in person.

Furthermore, peers may not need to be present in the lab at the time a tissue sample was examined to offer feedback; they may look at it whenever it is convenient for them, minimizing the time spent waiting for colleagues to evaluate each other's slides.

The opportunity to put pathologists together in this way has a profound effect on the pace at which scientific breakthroughs can be made. Scientists may gain access to richer data sets as well as diverse theoretical perspectives by encouraging this collaborative work style, allowing them to extend their understanding of the anatomy of a disease, contributing to the faster creation of new drug therapies and diagnostic methods.

As digital pathology is still relatively new, the issue is that there are currently a small number of published studies supporting the true value of digital pathology. This acts as a major obstacle to adoption, because scientists have limited evidence on how digital pathology in their laboratory can realistically increase performance. Fortunately, studies demonstrating the method's superiority over traditional methods are starting to be released.

Overall, in a variety of ways, digital pathology improves productivity in pathology laboratories. This allows procedures to be accelerated and pathologists to be able to focus on other projects, increasing performance. It also decreases the time and energy expended in order to correct errors.

Finally, and perhaps most significantly, it enables scientists to collaborate regardless of their geographical position, speeding up drug discovery and diagnosis. To allow digital pathology to continue to expand, to demonstrate its advantage, more published data is required.