

# 'Expansion pathology' method could mean earlier intervention

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(HealthDay)—A new method, called expansion pathology (ExPath),

which is a clinically optimized form of expansion microscopy (ExM), can be used for pathology and clinical research, according to a report published online July 17 in *Nature Biotechnology*.

Yongxin Zhao, Ph.D., from the Massachusetts Institute of Technology in Cambridge, and colleagues describe a clinically optimized form of ExM that supports nanoscale imaging of human tissue specimens that have been fixed with formalin, embedded in paraffin, stained with hematoxylin and eosin, and/or fresh frozen. The method converts clinical samples into an ExM-compatible state, then applies a clinical sample-optimized ExM protocol with protein anchoring and mechanical homogenization.

The researchers found that using conventional diffraction-limited microscopes and standard antibody and fluorescent DNA in situ hybridization reagents, ExPath allows about 70-nm-resolution imaging of diverse biomolecules in intact tissues. ExPath was used for optical diagnosis of kidney minimal-change disease, which previously required electron microscopy. In addition, ExPath showed high-fidelity for computational discrimination between early breast neoplastic lesions, for which pathologists often disagree.

"ExPath may enable the routine use of nanoscale imaging in pathology and [clinical research](#)," the authors write.

**More information:** [Abstract](#)  
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