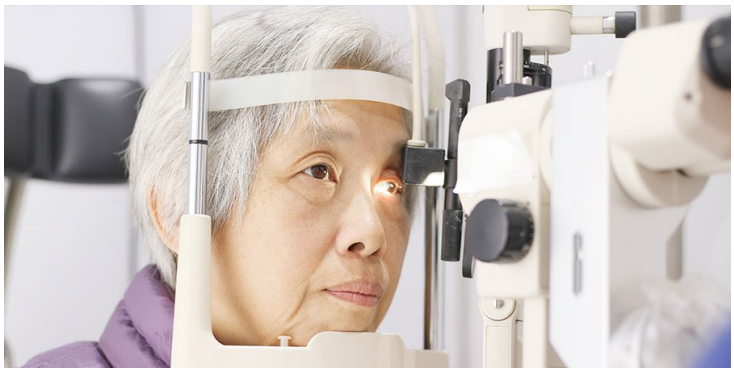
BioSpectrum
the business of Bio & Health Sciences
ASIA EDITION

US explores application of 3D bioprinting to create eye tissue

December 26, 2022 | News

Efforts have resulted in very relevant retina tissue models of degenerative eye diseases



Scientists are now using patient stem cells and 3D bioprinting to produce eye tissue that will advance understanding of the mechanisms of blinding diseases. The research team from the National Eye Institute (NEI), part of the National Institutes of Health in the US, printed a combination of cells that form the outer blood-retina barrier—eye tissue that supports the retina's light-sensing photoreceptors.

The technique provides a theoretically unlimited supply of patient-derived tissue to study degenerative retinal diseases such as age-related macular degeneration (AMD).

"We know that AMD starts in the outer blood-retina barrier," said Kapil Bharti, Ph.D., who heads the NEI Section on Ocular and Stem Cell Translational Research. "However, mechanisms of AMD initiation and progression to advanced dry and wet stages remain poorly understood due to the lack of physiologically relevant human models."

The researchers are using printed blood-retina barrier models to study AMD, and they are experimenting with adding additional cell types to the printing process, such as immune cells, to better recapitulate native tissue.