

Australia takes new step towards future 3D printing of human tissues

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New method serves as an instruction manual for cells, allowing them to create tissues that are better organised

A team of bioengineers and biomedical scientists from the University of Sydney and the Children's Medical Research Institute (CMRI) at Westmead, Australia has used 3D photolithographic printing to create a complex environment for assembling tissue that mimics the architecture of an organ.

Using bioengineering and cell culture methods, the technique was used to instruct stem cells derived from blood cells or skin cells to become specialised cells that can assemble into an organ-like structure.

The researchers are hopeful that the research will have the potential for treating vision loss caused by conditions such as macular degeneration and inherited diseases causing loss of retinal photoreceptor cells.

The team will next focus on furthering the technique to advance the field of regenerative medicine and potentially new treatment approaches for many diseases.

The knowledge gleaned from the study also enables the development of cell and gene therapy for diseases. The ability to generate the desired cell types further provides the capacity to produce clinically relevant stem cells for therapeutic purposes.