3D-printed brains: Brain tissue breakthrough could ‘change the way we look at neurological and psychiatric disorders’

In a path-breaking scientific endeavour, researchers have created the world’s first 3D-printed brain tissue that behaves like a natural brain tissue. This is being considered a major leap towards the development of advanced solutions to neurological and neurodevelopmental disorders.

The 3D printer employed by scientists here ditched the traditional approach in favour of stacking layers horizontally. They situated brain cells, neurons grown from induced pluripotent stem cells, in a softer “bio-ink” gel than previous attempts had employed.

“The tissue still has enough structure to hold together but it is soft enough to allow the neurons to grow into each other and start talking to each other,” [Su-Chun Zhang, professor of neuroscience and neurology at UW–Madison’s Waisman Center] added.

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As per experts, the printing technique offers an advanced level of precision not seen in other approaches, including brain organoids, miniature organs used to study brains. The technique offers control over the types as well as arrangements of cells, with proper organisation and control.

This provides scientists with flexibility in their research endeavours, which paves the way for radical advancements in the field.

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