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Swiss researchers develop 3D bioprinting device for muscles

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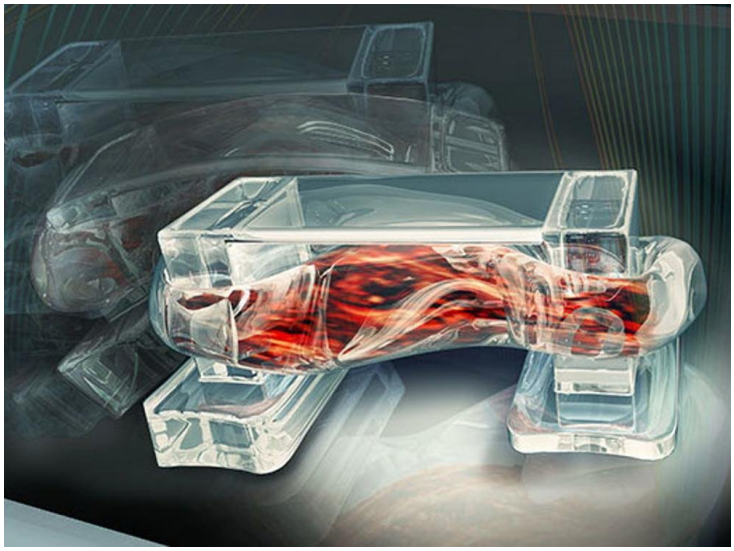
The scientists believe the device could fill a gap in the market for medication that treats age-related degenerative muscle and tendon diseases.



Researchers from Zurich University of Applied Sciences in Switzerland have developed a screening platform that uses 3D bioprinting for the automated production of 3D muscle and tendon-like tissues.

The device works by printing muscle and tendon tissue models in alternating layers of photo-polymerised gelatin-methacryloyl-based bioink and cell suspensions in a dumbbell shape on to a newly designed cell culture insert in 24-well plates containing two vertical posts. The cells showed high viability after they had been printed in the culture and good tissue differentiation based on marker gene and protein expressions.

The scientists believe the device could fill a gap in the market for medication that treats age-related degenerative muscle and tendon diseases. The current lack of efficient and robust functional assays for compound screening has been labelled as one of the reasons for a bottleneck in the discovery and development of drugs for musculoskeletal issues.