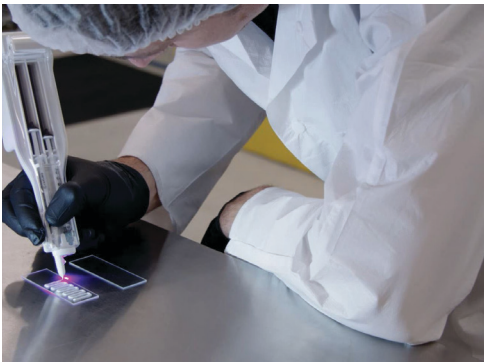


3dBioPen.

Hand-held 3D printer to apply bio material



Overview.

Orthopaedic surgeons required a device with a controlled delivery system to define and test suitable materials for promoting cartilage regrowth in knee surgery.

The 3dBioPen uses 3D printing methods enabling surgeons to draw live stem cells and growth factors directly on to the site of an injury. The shaft accepts 2 x standard syringes, one containing stem cell material and the other a hydrogel scaffolding material, extruded coaxially under an integrated UV-curing light.

This product has multiple extrusion speed options and helps surgeons design and personalise solutions for reconstructing bone and joint defects in real time.

Expertise.

Motherson was engaged by the University of Wollongong during the material development phase. Our end-to-end supply chain management meant we could support development of the delivery device from prototype tooling and component sourcing, through to final assembly.

With the customer brief in mind, Motherson applied expertise in mechanism design to develop the actuator, lighting design and simulation to perfect the UV-curing light and the effective development of electronic hardware and software.

We worked closely with the University of Melbourne and St Vincent's Hospital as they began clinical trials and continue to support the research, development, design and manufacture of the 3dBioPen.

Outcome.

The 3dBioPen is a single-use, hand-held device created in our state-of-the-art clean room to ISO 13485 standards.

Currently a prototype used in clinical trials by research groups within the University of Melbourne and St Vincent's Hospital Melbourne, the 3dBioPen is manually assembled in a Motherson manufacturing cell as required.

We're proud to be part of the solution, working with research in Australia to commercialise new medical devices.

Contact us for more information.