Singular Health Group Ltd: SHG

ASX Announcement

19 October 2021

Singular Health to collaborate with CSIRO and Osteopore for an AI-based patient-specific cranial implant design tool

- Singular Health has been awarded funding from the CSIRO Kick-Start Program to undertake a research project with the national science agency, focused on the development of an Artificial Intelligence (AI)-based tool to automatically design replacement cranial implants.
- The AI will be integrated into Singular Health's Surgical Planning software for editing and review before the cranial implants are 3D printed.
- MOU executed with Osteopore Ltd (ASX: OSX) for Singular Health to validate the AI model and conduct comparative study between their existing cranial implant design process and new design process in a clinical environment.
- Osteopore are targeting an estimated 1.1 million cranial procedures per annum globally[1].

19 October 2021 – Singular Health Group Ltd (ASX: SHG) ("Singular Health", or "the Company") is committed to delivering better health outcomes through patient-specific surgical guides and implants, with Scan to Surgery™ combining Artificial Intelligence (AI), Virtual Surgical Planning (VSP) and medical 3D printing for an end-to-end surgical solution.

Singular Health is pleased to announce that the Company has been awarded a Kick-Start voucher from Australia's national science agency, CSIRO, matching $50,000 of funding to conduct a project with CSIRO division to automatically generate cranial implants for craniotomies from CT scans.

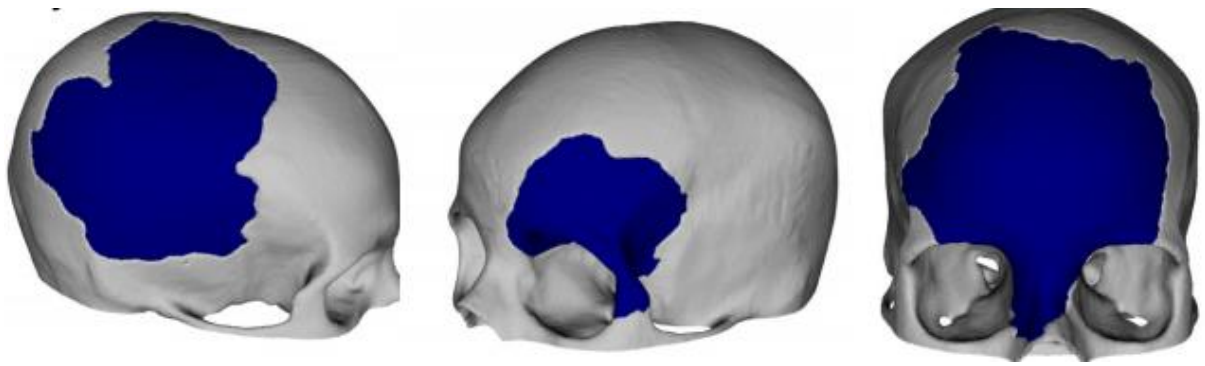

Figure 1: Cranioplasty designs (AutoImplant 2021)

1. cetas healthcare (2020). Market research conducted for Osteopore on the global cranial procedure market - Osteopore ASX Presentation lodged 10 June 2021.

Osteopore Ltd (ASX: OSX) ("Osteopore") and Singular Health have agreed in a memorandum of understanding (MOU) to validate the results with a dataset provided by Osteopore and conduct a comparative study, upon successful completion of the CSIRO Data61 project.

The second Kick-Start project follows Singular Health's highly successful first Kick-Start collaboration with CSIRO, which developed a spinal segmentation model with >95% accuracy (*ASX Announcement: Singular Health and CSIRO Successfully Deliver AI-Driven Spinal Segmentation Project, 25 March 2021*) and will see Singular's technical team collaborate with CSIRO to integrate the model into the 3Dicom Virtual Surgical Planning software.

In addition to the $50,000 investment which is being dollar-matched by the CSIRO Kick-Start program, Singular's contribution to the MOU includes the utilisation of its 3Dicom Surgical as the software platform upon which the Fully Automated Cranial Implant Tool will be developed, trialled, and commercialised, the provision of software development expertise; including for the AI, Segmentation, and volume rendering, and providing an initial training dataset for the AI algorithm. Following this MOU, Singular and Osteopore are to enter into formal transaction documents within 60 days that further detail the Project Scope and Timetable including contributions from each party, a Formal Collaboration Agreement and a Comparative Study Agreement.

The cranium is a highly complex shape, and the Company is very excited to be collaborating with Osteopore and their cutting-edge bioresorbable 3D printed lattice that not only uses 3D printing to generate the complex shapes required, but also enables regenerative bone growth.

Figure 2: Osteopore's 3D Printed Bioresorbable Lattice

Whilst the scope of the MOU with Osteopore is limited to the provision of cranial datasets and a comparative study to test the accuracy and potential time savings provided by the automated generation of cranial implant designs, Singular Health believes that there are significant synergies with Osteopore and looks forward to future collaborations and commercialisation opportunities.

The project was made possible through CSIRO Kick-Start, an initiative that provides funding and support for innovative Australian start-ups and small businesses to access CSIRO's research expertise and capabilities.

Thomas Hanly, Singular Health's Managing Director, said:

> "This project marks an exciting step for Singular Health as it highlights our expertise in Artificial Intelligence in the design of patient specific implants. Too often, advances in medical technology are made without the input of peers to focus on commercial priorities. Working with Osteopore ensures our work and results will be objectively compared with existing techniques and paves the way for future collaborations and commercialisation opportunities. In this space alone, according to Cetas Healthcare (2020), there are an estimated 1.1 million cranial procedures per annum globally."

Osteopore's Chief Executive Officer, Khoon Seng Goh, commented:

> "As a leader in regenerative medicine, Osteopore collaborates with a range of technologies that improve the efficacy of our regenerative implants. This win-win formula brings future technologies to commercialisation faster so that surgeons have new solutions for their treatment strategy, and patients can be treated early to make the most of their body's healing capacity."

Dr Dadong Wang, Research Lead from CSIRO's Data61, said:

> "This is a great example of how we can apply AI to advance the technology behind crucial medical procedures. This tool uses artificial intelligence (AI) to analyse the unique shape of a patient's cranium from CT scans, enabling the creation of patient-specific cranial implant models for 3D printing."

This announcement is authorised for release by the Board of Directors of the Company.

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About Singular Health:

Founded in 2017, Singular Health is a medical technology company that has developed and commercialised the proprietary Volumetric Rendering Platform ("VRP") for the 3D & VR visualisation of anatomy using standard radiological imagery.

Singular Health is committed to developing technologies that provides patients and practitioners alike with access to personalised, enhanced medical data to inform better health decisions and is currently developing and deploying software products that are built upon the proprietary VRP on a global scale through a direct-to-consumer Software-as-a-Service ("SaaS") model.

About Scan to Surgery:

Scan to Surgery™ is a disruptive technology driven process that revolutionises the planning and execution of surgical procedures, reducing cost and improving patient outcomes. Built on the backbone of MFTP, incorporating 3D/VR scan review with virtual surgical planning software and utilising local additive manufacturing facilities, Scan to Surgery™ aims to rapidly deliver patient-specific solutions.

About Osteopore Limited:

Osteopore Ltd, an Australian ASX listed company (OSX) with R&D and manufacturing in Singapore, is the global leader in the manufacture of innovative regenerative implants at commercial scale. By combining biomimetic tissue science with proprietary 3D printing and materials technology, Osteopore produces medical implants to meet the needs of both tissue and bone reconstruction as well as restoration. These bioresorbable implants provide a scaffold for bone regeneration, dissolving predictably over time to leave only natural bone tissue. In collaboration with clinicians and researchers, Osteopore develops and manufactures implants that address unmet clinical needs which improve patient outcomes, enhances lives, and potentially reduces healthcare costs. For more information, visit us at www.osteopore.com