Case Study

3D-printed device provides world-class apnoea relief

A collaboration between the CSIRO and Australian dental company Oventus has developed a game changing solution for people suffering from sleep apnoea.

Using 3D scanners and printers, the team were able to create a new, individually customised mouthpiece allowing air to flow to the back of the throat, and therefore preventing obstructions such as the tongue from causing dangerous pauses in breath during sleep. Printed with lightweight titanium and coated with metal grade plastic, the device provides a more comfortable alternative to other products on the market.

This collaboration between CSIRO and the dental company fostered an innovative way to tackle the common issue, with access to CSIRO's Lab 22 advanced manufacturing technologies allowing for research that otherwise wouldn't be possible, as 3D printing with metal is costly, complex, and therefore high risk.

Clinical trials of the device showed outstanding results – with a 50 to 90 percent reduction in Apnoea Hypopnea Index (indicating severity) in 75 percent of patients, making it more effective than any other oral appliances, comparable to continuous positive airway pressure technology.

The 'Oventus Clearway Device' is currently available to patients in Australia, with plans to send the device to market across the globe.

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