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IIT-M develops 3D-printed face implants for patients suffering from Black Fungus

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In partnership with Chennai-based Zoriox Innovation Labs

Researchers at the Indian Institute of Technology Madras (IIT-M) have developed 3D-printed face implants for patients suffering from Black Fungus, which has been reported in COVID-19 patients as well as those with uncontrolled diabetes, HIV/AIDS and other medical conditions. Around 50 implants have already been done on patients from economically-weaker sections.

The Institute has partnered with ZorioX Innovation labs, a startup founded by dental surgeons in Chennai, to implement this initiative, which is based on metal 3D printing or additive manufacturing.

The outbreak of black fungus disease, also known as 'Mucormycosis', has been a cause of great concern in India. One of the most devastating effects of this disease is the loss of facial features, which can have a profound impact on the patient's mental and emotional well-being.

Therefore, the reconstruction of faces lost due to black fungus is the need of the hour. Reports suggest that about 60,000 mucormycosis cases have been registered in India post-COVID.

Reconstructive surgery is a viable solution for patients who have lost their facial features due to black fungus disease. However, patient-specific implants and procedures are expensive, rendering them inaccessible for people from weaker sections.

Dr Murugaiyan Amirthalingam, Associate Professor, Department of Metallurgical and Materials Engineering, IIT-M, said, "Extensive research activities are already being carried out in IIT Madras to commercialise this technology for printing patient-specific implants in stainless steel, Ti-6Al-4V and Co-Cr-Mo alloys. Using unique in-house algorithms, a patient's MRI/CT data is converted to printable CAD format and custom implants are printed from medical-grade titanium using an indigenously-built laser powder bed facility in IIT Madras."

IIT-M researchers are also identifying patients who cannot afford costly imported implants and giving these implants free of cost under the campaign called #Right2Face.