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IIT-G develops AI model to predict bone repair outcomes for fracture treatment

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To potentially help a surgeon choose the right implant or technique before a fracture-treatment surgery

Researchers at the Indian Institute of Technology Guwahati (IIT-G) have developed Artificial Intelligence (AI) model to predict the healing of thigh bone fractures after surgery.

The model developed by Dr Souptick Chanda, Assistant Professor, Department of Biosciences and Bioengineering, IIT-G, and his team can be used to assess the healing outcomes of different fracture fixation strategies so that an optimum strategy can be chosen for the patient depending on their personal physiologies and fracture type.

Using such precision models can reduce the healing time, lighten the economic burden and pain for patients who need thigh fracture treatment.

The research team have used a combination of Finite Element Analysis and the AI tool, Fuzzy Logic to understand the healing process of fracture after various treatment methods.

An estimated 2 lakh hip fractures occur every year in India alone, most of which require hospitalisation and trauma care. Treatment for hip fractures traditionally includes bone plates and rods to bridge the fracture site and promote bone healing.

The researchers plan to develop a software/app based on the algorithm that can be used in hospitals and other healthcare institutions as part of their fracture treatment protocols. The team is presently collaborating with Dr Bhaskar Borgohain and his team of orthopaedists from the North Eastern Indira Gandhi Regional Institute of Health and Medical Sciences Hospital, Shillong, for animal studies to validate and fine-tune certain parameters.