

Printed from

**THE TIMES OF INDIA**

# IIT-M develops dental filling for pain-free, lasting cure

TNN | Jan 7, 2016, 12:53 AM IST

*IIT-Madras logo.*

**C**HENNAI: More often than not patients experience pain or sensitivity after undergoing a dental filling to restore a decayed tooth as most conventional fillings begin shrinking almost immediately after the procedure.

At Indian Institute of Technology, Madras, researchers have come up with a new formulation of dental filling that does not shrink ensuring a pain-free treatment. The composite is made of unique organic resins and inorganic fillers. They are also biologically safe compared to the ones currently available in the market; the latter can affect the endocrine system apart from causing sensitivity issues post-treatment.

Madha Dental College and Hospital professor and head, department of conservative dentistry and endodontics, Dr V Susila Anand said

conventional dental composites shrink by up to 5%. It not only leads to post-operative sensitivity or pain, but also causes gaps between the teeth and fillings.

The endodontist, who was involved in developing the new composite, said several studies conducted on rats have shown that chemical substances leaching from the dental fillings can affect the endocrine system and target tissues of sex hormones

besides causing other potentially toxic reactions.

"The formulation is unique and does not leach chemical substances that have endocrine disruptive ability," she said. "The research has a three-pronged approach - to curb post-operative sensitivity, shrinkage and improve biological safety," she said.

Researchers said conventional materials, besides discharging certain chemicals, also emanate heat during polymerisation (a chemical process) that can harm the pulp tissue and cause post-treatment complications. The new composite releases 50% less heat keeping the pulp tissue safe.

IIT-M department of engineering design professor Venkatesh Balasubramanian said formulation of the new composites were put through rigorous chemical tests including the one to find its clinical impact on patients having multiple composite restoration after consuming liquor.

"This was done to understand the stability of the composite network and the correlation of its leaching to biological safety," he said.