

# Farewell to fillings as scientists find a way to regrow tooth enamel

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By Sarah Knapton SCIENCE EDITOR

THE end of dental fillings is on the horizon after scientists discovered how to regrow tooth enamel. Until now, attempts to recreate the outer protective layer have proved elusive.

Tooth enamel is the hardest tissue in the human body but cannot repair itself when damaged, leaving people exposed to cavities and requiring fillings

or a tooth extraction. But scientists at the Zhejiang University School of Medicine in Hangzhou, China, have found that mixing calcium and phosphate ions – minerals found in enamel – with the chemical triethylamine in an alcohol solution, causes enamel to grow with the same structure as in teeth.

When applied to human teeth, it repairs the enamel layer to a thickness of around 2.7 micrometres and achieves

the same structure and orientation of natural enamel within 48 hours.

Writing in the journal *Science Advances*, Changyu Shao, from the chemistry faculty at Zhejiang University, said: “The layer newly regrown by remineralisation can be integrated into native enamel such that repair would be permanent and this may be developed as an effective cure for enamel erosion.

“We believe this will be developed

as a promising enamel repair material for dental applications in the future.”

Commenting on the Chinese claims, Prof Damien Walmsley, scientific adviser for the British Dental Association, said: “This is exciting but it’s still a very long way off.

“A lot of other things need to come together before we can successfully grow back a tooth. I think we’ll eventually get there in 10 to 20 years.”