

“Bean-eralization”

Role of theobromine in dental care



What is Theobromine?

- Discovered by Alejandro Voskrensky
- An alkaloid found in cocoa beans, tea leaves

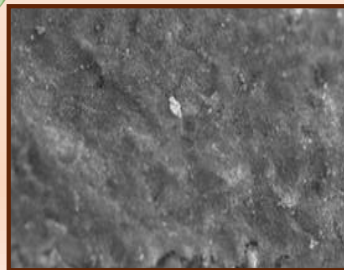


Mechanism of Action:

- Enhances microhardness by forming larger apatite crystals
- Penetrates HA micro tunnels, leading to interstitial reactions that strengthen enamel



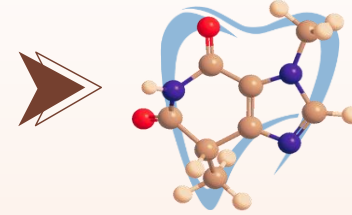
Makes tooth resistant to acid attacks



SEM image of enamel lesion treated with theobromine for 40 days (Nithya et al, JIDMR 2021;14)

Clinical applications

- Toothpaste formulation
- Caries prevention: Exhibits antibacterial properties reducing biofilm formation
- Dentin Hyper Sensitivity : Occludes dentinal tubules providing relief within 1 week
- Empowers the anti microbial efficacy of Glass Ionomer restorations
- Effective at 71 times lower concentration than fluoride for caries prevention



3,7-Dimethylxanthine

Safety and Acceptability

- Safe when ingested
- Pleasant chocolate flavour

The Future of Dental Health:

Theobromine offers a safe, effective alternative to fluoride for remineralizing enamel and preventing caries.

