

Are bleached teeth inflamed?

Some tooth-whitening procedures leave the treated teeth painful. The cause of this pain is unknown. To investigate the cause, we wanted to measure the blood flow in the teeth to see if they had become inflamed. Inflammation would be associated with an increase in blood flow. Blood flow inside teeth can be measured by illuminating them with red light from a laser, and recording the amount of light bounced back from them. But we were worried that bleaching the teeth might itself affect the amount of red light bounced back and by an amount that could falsely suggest that a change in blood flow had occurred. We investigated this by pumping blood at constant, known rates through recently extracted teeth and making recordings with a laser before and after a standard bleaching procedure that is used for tooth whitening. The results showed that after bleaching, the blood flow appeared to increase by about 40% when in fact it had not changed at all. We concluded that It is not possible to use this method to determine if bleaching increases blood flow in treated teeth.

Publication

[Effects of bleaching on laser Doppler blood-flow signals recorded from human teeth in vitro.](#)

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