

CR 27377: Effective Treatment of Occlusal Fissure Caries Using Ozone

[N. JOHNSON](#)¹, J. JOHNSON¹, K. JOHNSON¹, and E. LYNCH², ¹ Private practice, Wales, United Kingdom, ² Queen's University, Belfast, United Kingdom

Abstract

Ozone has been shown to clinically reverse primary root carious lesions and early occlusal fissure caries. **Objectives:** This study assessed the effect of a novel ozone delivery system (HealOzone unit, CurOzone USA) on primary occlusal fissure carious lesions over a 1 month period. **Methods:** 35 patients attending a general dental practice were entered with 90 primary occlusal fissure carious lesions. Each carious lesion had been deemed to require drilling and filling and had a DIAGNOdent2 reading between 20 and 60 at baseline. After randomisation, lesions were assigned to either receiving no treatment or ozone treatment with each subject having at least one control lesion. Ozone was applied to each test lesion for 20 seconds. After 1 month, patients were recalled and clinically re-assessed for lesion severity. The DIAGNOdent (KaVo, Germany) was again employed to objectively quantify the primary occlusal fissure carious lesions. **Results:** After 1 month, 35 patients (90 lesions) were recalled for re-evaluation. There were no observed adverse events. Based on the clinical measurement of lesion severity, 59% of the ozone treated lesions showed visible signs of reversal, whilst 41% had remained stable ($P < 0.05$). 100% of lesions had been stabilised with no progression. When measured using the DIAGNOdent, 79% of the ozone treated primary occlusal fissure carious lesions had reversed and 18% remained stable. The control primary occlusal fissure carious lesions, which had not received any ozone treatment, did not significantly change clinically. **Conclusions:** This treatment regime using ozone is an effective alternative to "drilling and filling" for primary occlusal fissure carious lesions in general dental practice.