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Ability of Oral Health Care Products to Alleviate Oral Malodour. M. GROOTVELD¹, C. SILWOOD¹ and E. LYNCH². (¹Infl. Res. Grp. and ²Dept. of Conservative Dentistry, St. Bartholomew's and the Royal London School of Medicine and Dentistry, London E1 2AD, UK).

Oral malodour (halitosis) is generally ascribable to oral microbial putrefaction generating malodorous volatile sulphur compounds (VSC) which predominantly comprise dihydrogen sulphide and methyl mercaptan. This study assesses the relative effectiveness of 6 oral health care products (OHCPs) [1-6] in reducing oral cavity VSC. A mixed model 3-factor factorial experimental design involving 6 volunteers, 7 treatment regimens (products [1] - [6] and water placebo) and 5 time-points (0.00-3.30 hr.) was undertaken. Electron-donating VSC levels were determined in triplicate using a sulphide monitor (Interscan model 1170) both prior to (0.00 hr.) and following oral rinsing (20ml) or chewing (2 capsules of [6]) episodes with each product examined (0.30, 1.30, 2.30, and 3.30 hr. post-administration). Results were recorded as peak and steady-state VSC equivalents (p.p.b.). With the exception of product [6], each OHCP tested was found to reproducibly reduce VSC concentrations within 20 min. of treatment, the mean percentage \pm s.e. decreases in peak (and corresponding steady-state) levels being in the order [1] 16.81 ± 4.36 (16.44 ± 4.27)% ($p < 0.002$) > [2] 10.37 ± 2.12 (21.86 ± 3.41)% ($p < 0.001$) > [3] 4.68 ± 2.81 (13.66 ± 2.69)% ($p < 0.001$ for steady-state data) > [5] 3.27 ± 1.35 (3.18 ± 2.39)% ($p < 0.05$ for peak level data) > [4] 3.64 ± 2.50 (0.00 ± 3.82)% (n.s.). Subsequently, VSC concentrations returned to their zero-control (baseline) values within 3 hr., the rate of this regression being in the order [4]>[5]>[3]>[2]>[1] for both peak and steady-state measurements. As expected, the water placebo exerted no influence on oral cavity VSC levels. However, administration of product [6] gave rise to a 6.36 ± 2.98 (12.56 ± 3.88)% increase in this parameter at the 0.30 hr. time-point ($p < 0.01$ for steady-state data), values which continued to rise for 3 hr. thereafter. The most effective OHCPs ([1-3]) contain admixtures of chlorite anion and chlorine dioxide (both of these agents have the ability to directly oxidise VSC to non-malodorous products and the latter is powerfully cidal towards odourigenic micro-organisms). OCHPs containing oxhalogen oxidants provide a useful therapeutic avenue for the treatment of oral malodour.
 [1]: Retardex, [2]: Profresh, [3]: Oxyfresh, [4]: Listerine Mint, [5]: Scope, [6]: Breath Assure capsules.

"ACTIVE CHLORINE DIOXIDE"
 "STABILIZED CHLORINE DIOXIDE"