

2800

Reduction of oral malodor with zinc containing chewing gum.
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The purpose of this study was to evaluate the efficacy of zinc containing chewing gum as compared to placebo in reduction of oral malodor in subjects with moderate to severe halitosis. Forty subjects were randomly assigned to the following four groups: Group one: chewing gum with active ingredient (one piece), Group two: chewing gum with active ingredient (two pieces), Group three: chewing gum with inactive ingredient (one piece), Group four: chewing gum with inactive ingredient (two pieces). Subjects were instructed to chew the gum for a minimum of ten minutes twice a day for a week in this double blind study. Oral malodor parameters were assessed at baseline and at the end of one week. Whole mouth odor, tongue dorsum odor (spoon test) was assessed on a scale of 0-3 by two organoleptic judges (blind). Volatile sulfur compounds (VSCs) were determined by Halimeter™. Two-way ANOVA's with repeated measures was performed comparing active and placebo groups. These analyses examined seven outcome parameters of halitosis with respect to groups (placebo vs active), time (baseline and treatment) and groups over time (their interaction). These measurements were Halimeter™ mouth (anterior & posterior), Halimeter™ nasal (left & right), spoon test, wrist lick test and organoleptic test. In terms of Halimeter™ (anterior mouth) the active groups (one and two pieces) reduced clinically and were statistically significantly over time ($p=0.001$). Halimeter™ (posterior) active groups (one and two pieces) were clinically and statistically significant ($p<0.001$) and the placebo group did not decrease over time ($p=0.26$). Halimeter™ nasal (right & left): the active groups (one piece and two pieces) decreased significantly over time. Spoon test: active groups (one piece and two pieces) decreased overtime. Wrist lick tests: the active groups (one piece and two pieces) were statistically significantly lower placebo groups. Organoleptic test: both active groups and placebo groups decreased overtime. Results: Group using two pieces of active chewing gum showed maximum reduction in all the parameters of halitosis.