Poster # 1289

Zinc Tongue, Plaque Scrapings 12 Hours After Single Dentifrice Use

Lisa Manus[1], Evaristo Delgado[1], Elizabeth Gittins[1], Jim Masters[1], Neelima Utgikar[2], Aabha Garud[2], Ashish Kakar[3], Luis R. Mateo[4]

[1]Oral Care Early Research Clinical & Method Development, Colgate-Palmolive Company, 909 River Road, Piscataway, NJ 08855-1343 USA;
[2]Colgate Palmolive India Ltd, Main Street, Hiranandani Gardens,Powai, Mumbai 400076 India;
[3]Global Health Research Group, H8 Masjid Moth Gk-2, New Delhi 110048, India;
[4]LRM Statistical Consulting, LLC, 23 Colony Drive East, West Orange, NJ 0705

Objective

The purpose of this study was to evaluate the zinc deposition from a Test Dentifrice containing 0.96% zinc (zinc oxide, zinc citrate) and 1.5% L-arginine in dental plaque and tongue scrapings 12 hours after a brushing in comparison to a control comparator dentifrice containing no zinc.

Conclusions

The Test Dentifrice containing 0.96% zinc (zinc oxide, zinc citrate) and 1.5% L-arginine provided significantly enhanced intra-oral deposition of zinc compared to a Control dentifrice without zinc 12 hours after single use.

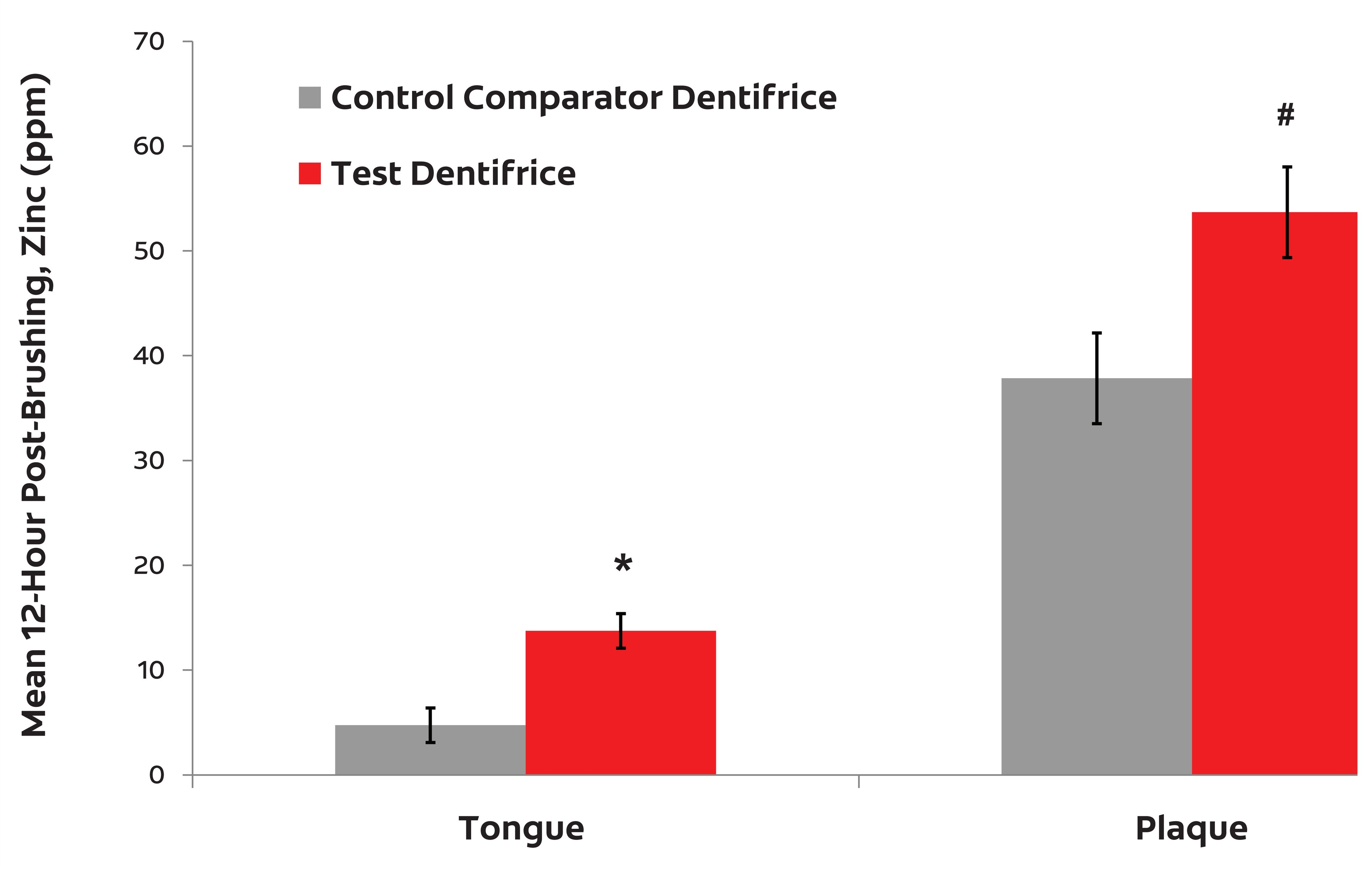
Results

There is significantly more zinc found on both the tongue and in plaque 12 hours after brushing with a 0.96% zinc (zinc oxide, zinc citrate) and 1.5% L-arginine containing toothpaste than a regular fluoride toothpaste.

Table 1. Demographics summary for participants enrolled in the clinical study.

	Number of Subjects			Age	
Parameter	Male	Female	Total	Mean (S.D)	Range
Tongue	10	21	31	36.35 (6.93)	20-46
Plaque	12	22	34	37.62 (7.90)	20-56

Figure 1. Baseline-adjusted subject mean zinc levels (ppm) measured 12 hours post-brushing for subjects who completed the study. *Statistically significant zinc level vs control ($p < 0.001$), # Statistically significant zinc level vs control ($p < 0.05$)



Methods and Materials

Zinc Uptake Clinical Method:

- The study employed a two cell, cross-over, double blinded, randomized design.
- Upon completion of a one week washout (performing oral hygiene twice daily with a non-zinc containing dentifrice), subjects were asked to brush the left side of their mouth with the washout dentifrice for 2 minutes followed by holding the slurry in their mouth for 30 seconds post-brushing.
- 12-hours post-brushing, dental plaque (right side of mouth) and tongue scraping baseline samples were obtained.
- That evening, subjects were asked to brush the left side of their mouth with their assigned Control or Test dentifrice for 2 minutes followed by holding the slurry in their mouth for 30 seconds post-brushing.
- 12-hours post-brushing, dental plaque (right side of mouth) and tongue scraping samples were obtained.
- This process of a washout week followed by biosampling was repeated for the other dentifrice as detailed above.

Zinc Quantification & Statistical Analysis:

- Zinc levels in the plaque and tongue scrapings at baseline and 12 hours after product use for the Control and Test product were quantified by ICP-OES. Values were normalized to the weight of the biological sample collected.
- A two-factor ANCOVA with the subject and treatment as factors was conducted for the zinc levels measured in the tongue and plaque samples (normalized to the weight of the biological sample collected) taken after 12 hours after a single use of the test products. The baseline zinc level measured after each washout period served as the covariate.

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