

# Anti-Gingivitis and Anti-Plaque Efficacy of an Oral Hygiene Routine including Oral-B® iO Oscillating-Rotating Electric Toothbrush, Stannous Fluoride Dentifrice, CPC Rinse and Floss: Results from a 12-week Trial

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## KEY CLINICAL FINDINGS

### Gingivitis

- Subjects using the experimental oral hygiene routine, consisting of the Oral-B® iO oscillating-rotating smart-connected electric toothbrush, stannous fluoride dentifrice, CPC rinse and floss, were nearly free of gingival bleeding after 12 weeks of use (<3 bleeding sites). See Figures 1 and 2.
- At Week 12, the experimental group demonstrated a 91.9% reduction in adjusted mean number of bleeding sites from baseline compared to a 21.7% reduction for the manual brush group, which used a regular anti-cavity dentifrice and soft manual toothbrush ( $P<0.001$ ).
- 100% of subjects in the experimental group moved from “gingivitis” ( $\geq 10\%$  bleeding sites) to a “generally healthy” state ( $<10\%$  bleeding sites), per the World Workshop on Periodontology Gingivitis Case Definition,<sup>1</sup> after 12 weeks of use compared with only 7% of the manual brush group. See Figure 3.

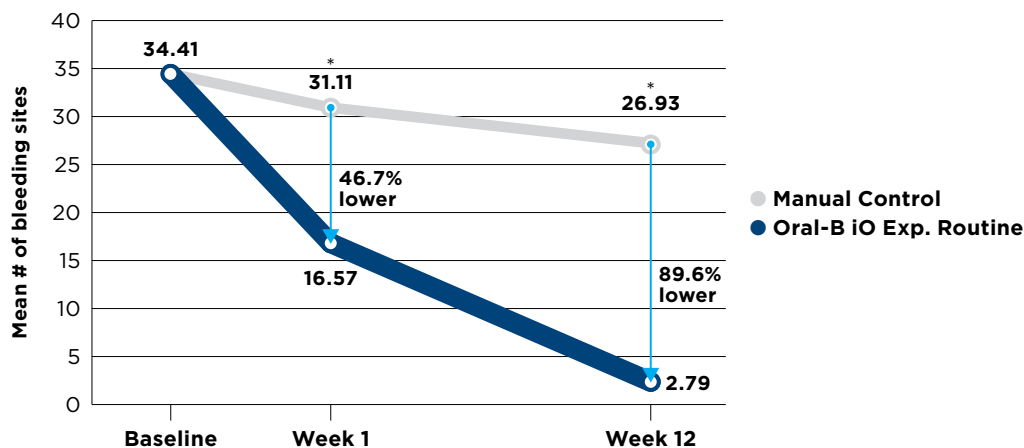
### Plaque

- Starting from the Day 1 single brushing and continuing through Weeks 1 and 12, subjects in the experimental group demonstrated statistically significantly greater reductions in whole mouth plaque (see Figure 4), interproximal plaque and gingival margin plaque versus the manual brush group ( $P<0.001$ ).

### Safety

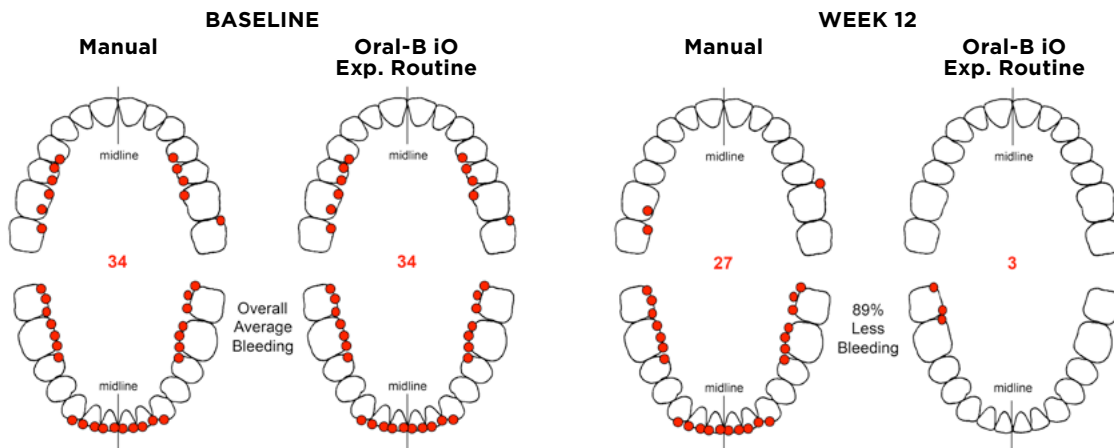
- Both treatments were well tolerated.

Figure 1. Number of bleeding sites per group

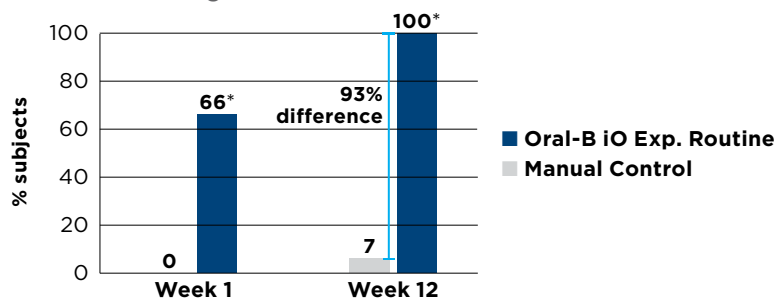


\*  $P<0.001$  between groups

**Figure 2. Depiction of actual number of bleeding sites**

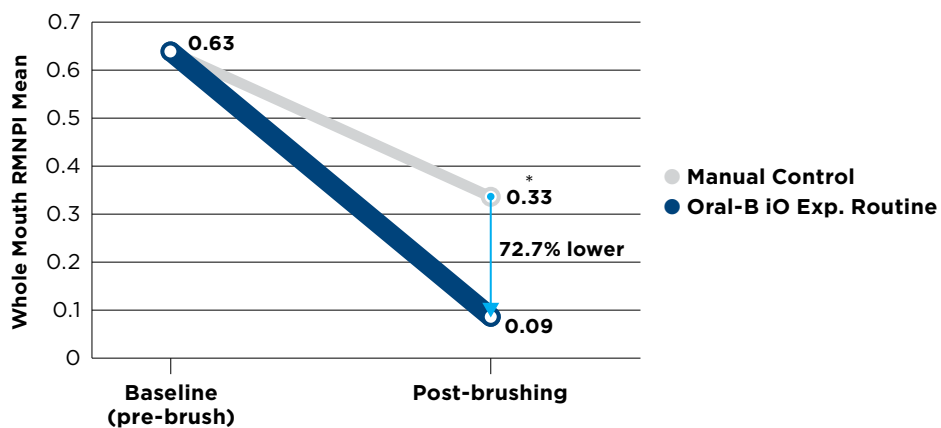


**Figure 3. Percentage of subjects classified as healthy gingivitis case status (<10% bleeding sites)**



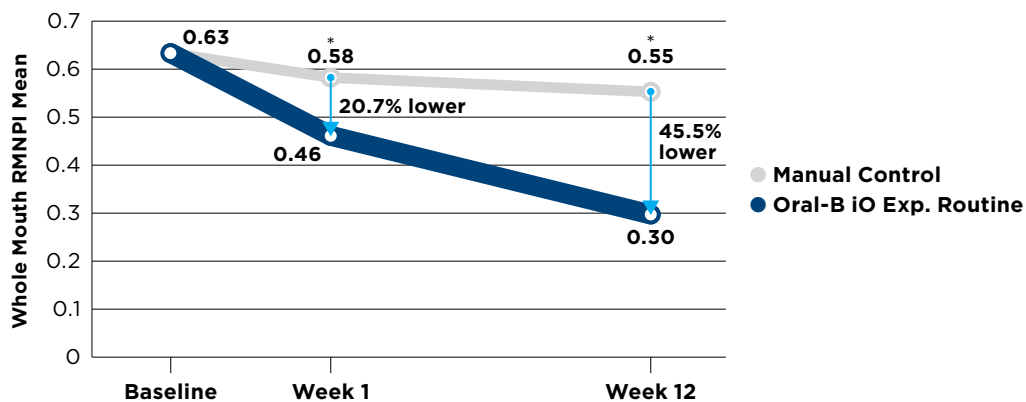
\*  $P < 0.001$  between groups

**Figure 4a. Whole mouth plaque: Day 1 pre- and post-brushing scores**



\*  $P < 0.001$  between groups

**Figure 4b. Whole mouth plaque: Pre-brushing scores over time<sup>+</sup>**



\*  $P < 0.001$  between groups; + Represents plaque 12-hours since last brushing

## OBJECTIVE

To evaluate the anti-gingivitis and anti-plaque efficacy of an experimental oral hygiene routine (novel oscillating-rotating electric toothbrush, stannous fluoride dentifrice, CPC rinse and floss) versus a control (standard anti-cavity dentifrice and soft manual toothbrush).

## METHODS

This was a 12-week, single-center, examiner-blind, 2-treatment, open label, parallel group, randomized study design.

Subjects with evidence of gingivitis and plaque were enrolled in the study, stratified based on baseline scores and randomized to one of two treatment groups:

- **Experimental oral hygiene routine**

- Oral-B® iO oscillating-rotating electric rechargeable toothbrush with micro-vibrations and Ultimate Clean brush head (M8/OC15)
- 0.454% stabilized stannous fluoride dentifrice (Crest® Gum Detoxify™ Toothpaste)
- 0.07% cetylpyridinium chloride (CPC) rinse (Crest® PRO-HEALTH™ Multi-Protection Mouthwash) and
- Oral-B® Glide™ PRO-HEALTH™ Advanced Floss

- **Manual brush control group**

- Oral-B® Indicator™ manual toothbrush
- 0.243% sodium fluoride dentifrice (Crest® Cavity Protection)

Subjects were instructed to brush twice a day for 12 weeks. Subjects in the experimental oral hygiene routine group were instructed to use the app on their Smartphone when brushing for the duration of the study.

Plaque measurements were taken at Baseline (pre- and post-brushing), Week 1, and Week 12 visits (both pre-brushing only) using the Rustogi Modification of the Navy Plaque Index. Gingivitis measurements were taken at Baseline, Week 1, and Week 12 visits using the Modified Gingival Index (MGI) and Gingival Bleeding Index (GBI). Subjects were instructed to abstain from any oral hygiene for 12 hours prior to all visits.

59 of 60 subjects completed the trial; 30 in the manual control group and 29 in the experimental group.

## CLINICAL RELEVANCE

Gingival bleeding is a common sign of gingivitis, often noticeable to patients during toothbrushing. Absence of bleeding (on probing) has been shown to be a reliable indicator for sustained periodontal health,<sup>2</sup> thus the reduction of gingival bleeding is an important goal in treating gingivitis. This study showed use of a novel oscillating-rotating electric toothbrush with micro-vibrations (Oral-B® iO), stannous fluoride dentifrice, CPC rinse and floss was highly effective at reducing gingival bleeding. After 12 weeks, 100% of subjects using the experimental oral hygiene routine transitioned from “gingivitis” (≥10% bleeding sites) to a “healthy” gingival state (<10% bleeding sites) based on the recently revised gingivitis case definitions<sup>1</sup> compared to only 7% in the manual control group. Dental professionals should consider Oral-B® iO, stannous fluoride dentifrice, CPC rinse and floss for patients to reduce gingival bleeding and protect their long-term periodontal health.

1. Trombelli L, et al. *J Clin Periodontol.* 2018;45 (Suppl 20): S44-S67.

2. Lang NP, et al. *J Clin Periodontol.* 1990 Nov;17(10):714-21.