Clinical Evaluation of Oral-B iO Electric Toothbrush versus a Sonic Toothbrush for the Reduction of Gingivitis and Plaque

KEY GINGIVITIS RESULTS

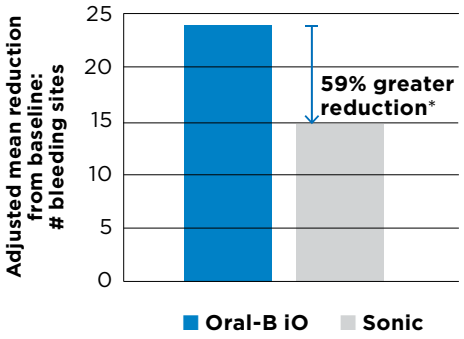
Twice daily use of the novel Oral-B® iO oscillating-rotating electric toothbrush for 8 weeks resulted in greater gingival health improvements versus Sonicare DiamondClean, including:

- 59% greater reduction in bleeding sites (See Figure 1)
- 51% greater reduction in gingival bleeding (GBI)
- 62% greater gingivitis reduction (MGI)

All differences were statistically significant (*P*<0.001).

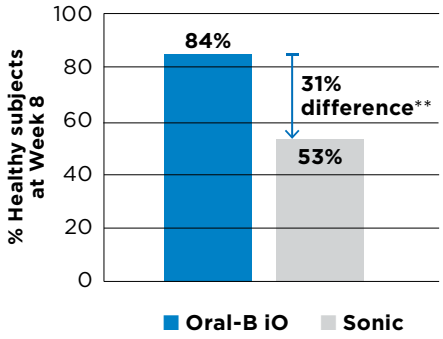
84% of subjects (38/45) using the Oral-B® iO toothbrush were categorized as Healthy (<10% bleeding sites) at Week 8 compared to 53% of subjects (24/45) using the sonic brush. The difference was statistically significant (*P*=0.003). See Figure 2.

Figure 1. Reduction in bleeding sites from Baseline to Week 8.



* *P*<0.001; overall baseline number of bleeding sites = 32.8.

Figure 2. % of subjects classified as "healthy"(<10% bleeding sites) at Week 8.



** *P*=0.003

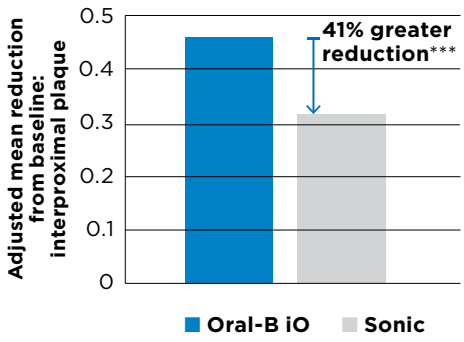
KEY PLAQUE RESULTS

Oral-B® iO also provided statistically significantly greater plaque reductions than Sonicare DiamondClean over 8 weeks, removing

- 29% more whole mouth plaque
- 41% more interproximal plaque (See Figure 3)
- 49% more plaque along the gumline

All differences were statistically significant (*P*≤0.011).

Figure 3. Reduction in interproximal plaque from Baseline to Week 8.



*** *P*<0.001; overall baseline interproximal plaque score = 0.98.

OBJECTIVE

To evaluate the efficacy of the Oral-B® iO oscillating-rotating electric rechargeable toothbrush with micro-vibrations to the Sonicare Diamond Clean sonic toothbrush for reduction of gingivitis and plaque over 8 weeks.

STUDY DESIGN

- This was an 8-week, single-center, examiner-blind, 2-treatment, parallel group, randomized controlled trial conducted at All Sum Research Center in Ontario, Canada.
- 90 subjects with evidence of gingivitis and plaque were enrolled and randomized to one of two treatments, balancing for baseline gingivitis and plaque scores, number of bleeding sites and tobacco use:
  - Oral-B® iO oscillating-rotating electric rechargeable toothbrush with micro-vibrations and Ultimate Clean brush head (M7/OC15, Procter & Gamble)
  - Sonicare DiamondClean sonic toothbrush with Premium Plaque Control brush head (HX9903/11, Philips)
- Subjects brushed with their assigned toothbrush, according to each manufacturer's instructions, and a standard sodium fluoride dentifrice (Crest® Cavity Protection) twice daily for the 8-week study.
- Plaque and gingivitis were assessed at Baseline and Week 8 using the Modified Gingival Index, Gingival Bleeding Index, and the Rustogi modification of the Navy Plaque Index. Oral Soft Tissue examinations were also conducted at Baseline and Week 8.
- All 90 subjects finished the study. Subjects had a mean age of 49.2 years; 68 were females.

CLINICAL COMMENT

The Oral-B® iO electric rechargeable toothbrush represents the next generation in oscillating-rotating technology, combining oscillating-rotating motion with gentle micro-vibrations. In this 8-week randomized controlled clinical trial, Oral-B® iO showed statistically significantly greater gingivitis and plaque reductions than an advanced model sonic toothbrush, consistent with numerous published studies evaluating base oscillating-rotating toothbrushes with various sonic control brushes.[1-3] Moreover, after 8 weeks of twice daily use, significantly more subjects in the Oral-B® iO group were classified as "healthy" (<10% bleeding sites) compared to the sonic brush (84% vs 53%) according to the new periodontal disease classification.[4] This is an important outcome as gingival bleeding is often the only sign of periodontal problems noticeable to patients and it is commonly assessed by dental professionals during a gingival health assessment.

1. Grender JM, et al. *Am J Dent* 2013;26:68-74.
2. Ccahuana-Vasquez R, et al. *J Clin Dent* 2018;29:27–32.
3. Klukowska M, et al. *J Clin Dent* 2014;25:26-31.
4. Trombelli L, et al. *J Periodontol* 2018; 89(Suppl 1), S46-S73.

