A comparison of the Braun Oral-B Plaque Remover (D5) electric and a manual toothbrush in affecting gingivitis.


Objectives
The primary objective of this study was to compare the effect of the Braun Oral-B Plaque Remover (D5) with a manual toothbrush (Reach), on the ability to reduce gingivitis in healthy adults. A secondary objective was to compare gingival abrasiveness and plaque removal.

Design
Parallel group, single blind to investigator.

Materials and Methods
Seventy volunteers aged between 18 and 65, possessing at least twenty natural teeth, with no relevant medical condition, nor taking any medication likely to affect gingival health, were entered into the study. The volunteers had a Gingival Index Score (modified Löe and Silness) of at least 1.5 and a whole mouth plaque score (Turesky modification of Quigley and Hein of at least 2.0 on entry).

Volunteers were assessed for gingivitis, plaque and a soft tissue trauma and then randomly assigned to one of two groups, manual toothbrush (Reach, Johnson & Johnson) and D5 electric toothbrush (Braun Oral-B Plaque Remover). An ADA approved fluoridated toothpaste was given to all the volunteers. Volunteers were shown a 3 minute instructional video of either the modified Bass technique (manual toothbrush) or the manufacturer’s recommended method (Braun Oral-B Plaque Remover, D5).

All subjects received an initial prophylaxis to bring their baseline plaque score to zero. Volunteers were instructed to continue normal oral hygiene regime. Soft tissue trauma was assessed at two weeks and plaque, gingivitis and soft tissue trauma at 12 weeks.

Results

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<thead>
<tr>
<th></th>
<th>Plaque Index</th>
<th>Gingival Index</th>
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<tbody>
<tr>
<td></td>
<td>(Turesky modification on Quigley and Hein)</td>
<td>(modified Löe and Silness)</td>
</tr>
<tr>
<td>Braun Oral-B D 5</td>
<td>n = 34</td>
<td>n = 34</td>
</tr>
<tr>
<td>Manual Toothbrush</td>
<td>2.55</td>
<td>2.40</td>
</tr>
<tr>
<td>Reach</td>
<td>2.45</td>
<td>2.24*</td>
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* Statistically significant difference between groups (p<0.05).
Sixtynine of the seventy volunteers satisfactorily completed the study. The electric toothbrush (D5) group showed statistically significant reductions in both whole mouth (p=0.003) and interproximal (p=0.007) gingivitis scores. In contrast, the manual toothbrush group showed no significant reduction for gingivitis at three months. There was no significant differences in plaque reduction for either toothbrush group although plaque scores were reduced from study entry. No soft tissue damage was seen in either toothbrush group.

The D5 was significantly more effective than the manual toothbrush (Reach) in reducing gingival inflammation.

**Clinical Comment**
This study supports the claims that the D5 is more effective in reducing gingivitis than a manual toothbrush (Reach) and is not traumatic to soft tissues.

A parallel group study design was used with a pre-entry examination to ensure similarity in gingival inflammation and plaque score between the groups. Soft tissue trauma was not observed in either group at two weeks or at three months.

No significant differences in plaque reduction were observed for either toothbrush group. However, the plaque index used (Quigley and Hein, Turesky modification) measures area, not volume, and may not differentiate between pellicle and plaque.

The overall result of greater efficacy in reducing gingivitis with the D5 is a more powerful argument than the reduction of plaque score. In addition, not only whole mouth but also interproximal inflammation was reduced with no increase in soft tissue trauma.