

# DENTAL EDUCATION

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## Plaque removal efficiency of a multi-surface novel power toothbrush: A clinical study

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**Aim:** A multi-surface novel power toothbrush had already marketed in China, the aim of the study was to evaluate the toothbrush in clinic to test the plaque removal efficiency on different areas of the dentition.

**Methods:** A split-mouth design, examiner-blind and single center study was executed. University students were instructed by staff and then brushed their teeth with novel multi-surface power toothbrushes and oscillating-rotating power toothbrushes (as the control group). Before cleaning, all the teeth of the students were colored, then started to be brushed. The total cleaning time in half mouth was 60s, and time points for taking photos for the study were 0s, 15s, 30s, 45s and 60s for the experiment group, and 0s, 30s and 60s for the control group. Rustogi Modification of the Navy Plaque Index and Image Pro-Plus software were adopted to score the plaque.

**Results:** Multi-surface power toothbrush was more effective in removing plaque in lingual, gingival marginal, buccal and approximal areas. Reduction rates of using multi-surface toothbrush for 30s were 54.94%, 62.34% and 56.47% in lingual, buccal and whole mouth respectively, which doubled the efficiency of oscillating-rotating mode. Using multi-surface toothbrush for 15 seconds shared a similar plaque removal efficiency with using oscillating-rotating mode for 60s.

**Conclusions:** Multi-surface power toothbrushes could improve the plaque removal efficiency in hard-to-clean areas and considerably shorten the time of brushing.

### Biography

Mingjie Wang is pursuing his Bachelor's degree of Dentistry from Zhejiang Chinese Medical University. During his internship, he got an opportunity to be an exchange student to study at Academic Center for Dentistry Amsterdam (ACTA), and he is going to attend Implantology Master's course in ACTA. He has published two papers and another one paper is under review process.



Figure.1: Structure of the novel power toothbrush.

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