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The Effects of Second Premolar Extractions and TipEdge Mechanotherapy on Dento-facial Structures



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for the Degree of Doctor of Clinical Dentistry**

by

N R Fernando

**Dental School
Faculty of Health Sciences
University of Adelaide
South Australia**

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Summary

Controversy has existed since the early 1900s about whether or not teeth should be extracted in crowded dental arches for orthodontic therapy. In the past, Angle believed that the facial profile appearance would automatically harmonize if all 32 teeth were retained, with arch expansion if necessary, and “normal” occlusion established.¹ The assumption was made that the soft tissues were intimately related to the changes of the supporting hard tissue scaffold. However, this may not be correct. Subtelney² and Burstone³ determined that the bony and soft tissue profiles matured along opposing paths, and the inherent structure of the soft tissues may have a greater impact on the appearance of the facial profile than previously thought.

Concern developed about the impact of extractions on facial aesthetics, with the assumption that premolar extraction therapy would inevitably cause faces to appear “dished in”.⁴ However, there was little in the refereed literature to substantiate these concerns.⁴⁻⁶ There was also the belief that the general public, prefer fuller and more prominent lips, suggesting that the majority of patients could be treated without tooth removal, but controversy still surrounds this issue.⁵

Of interest in the current study is whether use of the TipEdge™ appliance together with second premolar extractions significantly affects the facial profile. The TipEdge™ appliance is relatively new, and to date there are limited data published on aspects of treatment using this system. Together with the lack of consensus and data on the effects of premolar extractions on the facial profile, the current study was undertaken.

The study comprised two sections. The first, was an observational retrospective cephalometric study that assessed hard and soft tissue treatment changes following treatment. The second section was an evaluation of the facial profiles of the current sample by different groups of raters, to determine the effects of second premolar extraction with TipEdge™ mechanotherapy on patient attractiveness.