

Second Molar Substitution: A Survey of Dental Specialists

Macaira C. Leahy, DDS

Research Mentor and other collaborators:

Kecia Leary, DDS, MS

Alexa Rosenau, DDS

Wei Shi, MS

Tad Mabry, DDS, MS

Fabricio Teixeira, DDS, PhD, MS

Steve Marshall, DDS, MS

Steven Fletcher, DDS

Objective:

This survey aims to determine if the concept of second molar substitution is being taught to pediatric dentists, orthodontists, and endodontists in their residency programs.

Additional goals are to identify if and how these specialists are incorporating this treatment modality in their practices.

Method:

A survey consisting of 19 total questions was distributed via email in spring/summer of 2022 to active members of the American Academy of Pediatric Dentistry, the American Association of Endodontists, and sample of the American Association of Orthodontists. Questions included demographics regarding specialty, residency program location, type of training on the concept of second molar substitution, as well as specific scenarios regarding treatment planning extraction of hypomineralized first permanent molars. The scenarios regarding extraction of hypomineralized first permanent molars assessed treatment planning with the following conditions: a single affected tooth (maxillary and mandibular) as well as two affected teeth (maxillary, mandibular, right side, and left side). Content validity was assessed by a panel of pediatric and endodontic faculty and current residents. Descriptive statistics and bivariate analysis were calculated using a significance level of 0.05.

Results:

87.2% of respondents had heard of the concept “second molar substitution” or “first molar replacement”. 68.0% of respondents were aware of this concept and it was introduced during their residency training. 32% were introduced to this concept somewhere other than residency. 80.2%-93.6% would treatment plan extraction of only the affected tooth or teeth in the scenarios listed. There was a significant difference in the responses between specialties in their recommendation for 2nd molar substitution based on clinical characteristics other than the affected tooth ($p < 0.001$).

Conclusion:

The majority of respondents were pediatric dentists followed by endodontists and orthodontists. Respondents, including current residents, were aware of the concept “second

molar substitution” or “first molar replacement”. The majority were made aware of this concept during their residency training. In all treatment planning scenarios, the majority would treatment plan extraction of only the affected tooth or teeth. There are significant differences between specialties in their recommendation for second molar substitution based on clinical characteristics other than the affected tooth such as occlusal analysis, angulation of 2nd permanent molars, stage of development of 2nd permanent molars, and presence of the 3rd permanent molar.

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