**Critically Appraised Topic (CAT)**

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| **Project Team:** |
| **5A “Dude, where’s my teeth?”** |
| **Project Team Participants:** |
| **Taylor McElwee, Wasef Mahmoud, Tatiana McBride, Mariah Kane** |
| **Clinical Question:** |
| **What is the etiology of CMT?** |
| **PICO Format:** |
| **P:** |
| **Congenitally missing 2nd premolars** |
| **I:** |
| **Extracting deciduous second molar** |
| **C:** |
| **Retaining deciduous molar** |
| **O:** |
| **Better restorative option/management** |
| **PICO Formatted Question:** |
| **Among patients with congenitally missing second premolars, does extracting the deciduous second molar (allowing the first molar to drift) versus retaining the deciduous molar for as long as possible (then seen a pros solution) lead to better restorative management?** |
| **Clinical Bottom Line:** |
| **What treatment should the patient have going forward to allow the best restorative option considering his congenitally missing second premolars?** |
| **Date(s) of Search:** |
| **11/4/2020; 11/5/2020** |
| **Database(s) Used:** |
| **PubMed and Google Scholar** |
| **Search Strategy/Keywords:** |
| **Focused on congenitally missing premolars, specifically second premolars; restorative management; retaining deciduous molar and extraction.** |
| **MESH terms used:** |
| **Congenitally missing premolars, management, outcome, permanent missing premolar, rehabilitation, preservation of deciduous teeth** |
| **Article(s) Cited:** |
| * **Terheyden, H., & Wüsthoff, F. (2015). Occlusal rehabilitation in patients with congenitally missing teeth-dental implants, conventional prosthetics, tooth autotransplants, and preservation of deciduous teeth-a systematic review. *International journal of implant dentistry*, *1*(1), 30. https://doi.org/10.1186/s40729-015-0025-z** |
| **Study Design(s):** |
| **Systematic Review** |
| **Reason for Article Selection:** |
| * **This report directly relates to the PICO question and addresses treatment of CMT** |
| **Article(s) Synopsis:** |
| * **In patients with CMT does:**   + **Dental implants, autotransplants, conventional prosthetics on teeth, or preservation of deciduous teeth have a better survival outcome** * **Electronic search with a total of 63 relevant studies** * **Survival rate; failure rate:** * **Implants: 95.3% and 3.317%** * **Autotransplants: 94.4% and 1.061%** * **Deciduous teeth: 89.6% and 0.908%** * **Conventional prostheses: 60.2% and 5.144%** * **Therefore:** * **implants had the best outcome (however, not in patients younger than 13)** * **Autotrasplant and deciduous teeth had very low failure rates and would be appropriate treatment options for children** * **Conventional prosthetics had low survival rates and high failure rates compared to the rest of the options and would not be recommended based on this study** * **Limitations:** * **Implants were included in the study as a potential treatment option which is not part of the PICO question** * **Some of the studies included were retrospective** * **Low number of studies** * **Some cases used data from patient reported outcomes** * **Therefore, the outcomes of this study need to be looked at with caution** |
| **Levels of Evidence:** (For Therapy/Prevention, Etiology/Harm)  See <http://www.cebm.net/index.aspx?o=1025>  **1a** – Clinical Practice Guideline, Meta-Analysis, Systematic Review of Randomized Control Trials (RCTs)  **1b** – Individual RCT  **2a** – Systematic Review of Cohort Studies  **2b** – Individual Cohort Study  **3** – Cross-sectional Studies, Ecologic Studies, “Outcomes” Research  **4a** – Systematic Review of Case Control Studies  **4b** – Individual Case Control Study  **5** – Case Series, Case Reports  **6** – Expert Opinion without explicit critical appraisal, Narrative Review  **7** – Animal Research  **8** – In Vitro Research |
| **Strength of Recommendation Taxonomy (SORT) For Guidelines and Systematic Reviews**  See article **J Evid Base Dent Pract 2007;147-150**  **A** – Consistent, good quality patient oriented evidence  **B** – Inconsistent or limited quality patient oriented evidence  **C** – Consensus, disease oriented evidence, usual practice, expert opinion, or case series for studies of diagnosis, treatment, prevention, or screening |
| **Conclusion(s):** |
| **How does the evidence apply to this patient?**   * **The literature available does show that retaining the deciduous molar has a better survival rate and lower failure rate when compared to extracting, space maintaining, and put prosthetic on later** * **However, this should looked at with caution as there was a small amount of studies available** * **Specialist consult: recommended to retain as well**   **Based on the above considerations, how will you advise your D4?**  **-retain deciduous molar** |