**Critically Appraised Topic (CAT)**

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| **Project Team:**  |
| **9B-1** |
| **Project Team Participants:**  |
| **Christine Shi****Zach Huybrecht****Raj Patel****Ryan Nemeh** |
| **Clinical Question:** |
| **What are the treatment options for patients with tongue rings and/or experiencing chronic trauma to the periodontium?** |
| **PICO Format:** |
| **P:** |
| **Patients with vertical bone loss and recession due to intraoral tongue piercings** |
| **I:** |
| **Guided tissue regeneration** |
| **C:** |
| **Mucogingival surgery** |
| **O:** |
| **Increased probing depth reduction and clinical re-attachment** |
| **PICO Formatted Question:** |
| **In patients with vertical bone loss and recession due to intraoral tongue piercings, does guided tissue regeneration (GTR) in comparison to mucogingival surgery promote better probing depth reduction and clinical re-attachment?** |
| **Clinical Bottom Line:** |
| * **Patients need better information on the potential complications associated with tongue piercings.**
* **If their recession and/or bone loss doesn’t respond well to non-surgical SRP the surgical treatment of choice is conventional mucogingival surgery, specifically, a subepithelial connective tissue graft with a coronally advanced flap**
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| **Date(s) of Search:**  |
| **10/12/20, 10/17/20** |
| **Database(s) Used:** |
| **PubMed.gov** |
| **Search Strategy/Keywords:** |
| **Searched systematic reviews and meta-analyses on PubMed using keywords: tongue piercing, oral, gingival recession, guided tissue regeneration, mucogingival, complications** |
| **MESH terms used:** |
| **Gingival recession, oral, piercing, guided tissue regeneration** |
| **Article(s) Cited:** |
| 1. Hennequin-Hoenderdos, N., Slot, D., & Van der Weijden, G. (2015). *The incidence of complications associated with lip and/or tongue piercings: a systematic review. International Journal of Dental Hygiene, 14(1), 62–73.*
2. Chambrone, L., Sukekava, F., Araújo, M. G., Pustiglioni, F. E., Chambrone, L. A., & Lima, L. A. (2010). *Root-Coverage Procedures for the Treatment of Localized Recession-Type Defects: A Cochrane Systematic Review. Journal of Periodontology, 81(4), 452–478.* doi:10.1902/jop.2010.090540
3. Al-Hamdan, K., Eber, R., Sarment, D., Kowalski, C., & Wang, H.-L. (2003). Guided Tissue Regeneration-Based Root Coverage: Meta-Analysis. Journal of Periodontology, 74(10), 1520–1533. doi:10.1902/jop.2003.74.10.1520
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| **Study Design(s):** |
| 1. Systematic Review
2. Systematic Review
3. Meta-analysis
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| **Reason for Article Selection:** |
| 1. To provide background on complications commonly seen in patients with tongue rings. Directly applies to our patient.
2. The article does a review and statistical analysis of the treatment options for our patient. Implications include: the statistical results may help with the decision making process for the best treatment option for our patient
3. Directly answers our PICO question. It compares the surgical treatment options for gingival recession defects that our patient currently presents with
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| **Article(s) Synopsis:** |
| 1. **Methods:** Conducted in accordance with the Cochrane handbook for systematic reviews of interventions using 3 internet sources to identify papers that satisfied the study purpose: MEDLINE-PubMed, Cochrane-CENTRAL, and EMBASE. Databases searched for studies conducted through Jan 2015.

**Results:** An independent screening of 1580 unique titles and abstracts revealed 15 publications that met the eligibility criteria. The incidence of gingival recessions appeared to be 44% in subjects with a tongue piercing. For tongue piercing, the tooth injury RR was 2.77 with a 95% CI ranging from 1.99 to 3.85 (P = 0.00001) **Conclusions:** A significant relative risk was revealed between tongue piercings and an increased incidence of enamel fissures, enamel fractures and gingival recessions (especially in the lingual region of the mandibular incisors). Both lip and tongue piercings are highly associated with the risk of gingival recession, and tongue piercings are also associated with tooth injuries.**Limitations:** Non-randomized studies are likely to have a greater potential risk of bias than randomized studies.1. **Methods:** Conducted through the Cochrane Central Register of Controlled Trials using MEDLINE and EMBASE. Searched through Oct 2008

Only RCTs with a duration ≥6 months were included and resulted in 24 RCT studies that met their inclusion criteria**Results:** With respect to gingival recession (GR) change, there was a statistically significantly greater reduction in GR for subepithelial connective tissue grafts (SCTG) compared to guided tissue regeneration (GTR) bioabsorbable membrane sites (P = 0.0041). Regarding clinical attachment level changes, all comparisons failed to demonstrate significant differences among procedures.**Conclusions:** SCTGs, a CAF alone or associated with grafts or biomaterials and GTR may be used as root-coverage procedures for the treatment of recession-type defects. In cases where both root coverage and gain in the width of keratinized tissue are expected, the use of SCTG seems to be more adequate. **Limitations:** It was difficult to combine data from these trials because of a great variability of comparisons between the various procedures and the lack of a gold-standard control group. Few studies reported a follow-up period >12 monthsAccuracy of results affected by bias due to authors questionnaires or lack of another requirement. Studies including Miller Class III or IV were not included1. **Methods:** Conducted by using the National Library of Medicine computerized bibliographic database, MEDLINE from January 1990 to October 2001. Meta Analysis was performed using the weighed means for each group (GTRC vs CMGS) and a paired t-test was performed w/ 95% CI.

**Results:** Both CMGS and GTRC resulted in significant gains of clinical attachment (2.7 ± 1.2mm and 3.1 ± 1.3mm, respectively, P<0.05), but there was no difference between the two groups. Compared to GTRC, CMGS resulted in significantly (P <0.05) increased KG (2.1 mm vs. 1.1 mm), root coverage (81% vs. 74%), and percent- age of defects with complete root coverage (55% vs. 41%).**Conclusions:** Guided tissue regeneration-based root coverage can be used successfully to repair gingival recession defects with good success. Conventional mucogingival surgery, however, resulted in statistically better root coverage, width of keratinized gingiva, and complete root coverage. **Limitations:** Publication bias and English language bias were present. Non-English papers or unpublished data was not included. If a larger number of studies, with increased numbers of subjects, were available, the results of this meta-analysis would be more reliable.  |
| **Levels of Evidence:** (For Therapy/Prevention, Etiology/Harm) See <http://www.cebm.net/index.aspx?o=1025>[x]  **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[x]  **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?* + This patient will need a thorough treatment plan in order to address her recession/bone loss due to the tongue piercing and this evidence applies directly to the recommended treatment options
* Recommend non-surgical SRP to see if any clinical attachment gain/ probing depth reduction
	+ If non, or not significant would recommend patient be seen with Periodontics for connective tissue graft with coronally advanced flap surgery
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