Critically Appraised Topic (CAT)

Project Team:
3B-5
Project Team Participants:
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Clinical Question:
In adolescent patients, how does reduced fluoride affect caries incidence rates?
PICO Format:
P:
Adolescent patients
I:
Fluoride use/therapy
C:
No therapy
O:
Reduced caries incidence rate
PICO Formatted Question:
In adolescent patients, does the use of fluoride as compared to no fluoride reduce the caries incidence rate?
Clinical Bottom Line:
Fluoride therapy is proven to reduce caries incidence rates, ample evidence in multiple different delivery methods
Date(s) of Search:
10/30, 11/2, 11/4
Database(s) Used:
PubMed
Search Strategy/Keywords:
Fluoride, water fluoridation, fluoridated toothpaste, adolescents, caries incidence
MESH terms used:
Adolescent, dental caries, fluoride, caries control, topical fluoride, fluoridated toothpaste, caries incidence, child
Article(s) Cited:
https://pubmed.ncbi.nlm.nih.gov/20091655/ https://pubmed.ncbi.nlm.nih.gov/27472005/ https://pubmed.ncbi.nlm.nih.gov/28702056/
Study Design(s):
Systematic Review, Meta Analysis

Reason for Article Selection:
Relevance to clinical question/ case, relevance to fluoride use in children, high levels of evidence
Article(s) Synopsis:
Fluoride therapy whether via water fluoridation, dentifrice, or rinses is proven to decrease caries incidence rates in adolescent patients. The decreased caries incidence is dependent on the concentration of fluoride used.
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):
Ample evidence exists to demonstrate the positive outcomes associated with fluoride use. With cases like ours, this evidence can be helpfult to educate anti-fluoride parents.