Evidence-Based Clinical Recommendations for Pit and Fissure Sealants

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American Dental Association
Overview

- Background and rationale
- Clinical questions
- Methods
- Timeline
- Dissemination
- Commonality with CDC process
Background

- **Healthy People 2010**-- increasing the proportion of children who have received dental sealants on their molar teeth to 50%

- Sealants are currently underutilized, particularly among those at high caries risk
Background

- 2003 survey of dentists
  - Clinical questions of importance to the practice of dentistry

- 2004 EBD symposium
  - Academia, Industry, Government Agencies, Professional Organizations

- The effectiveness of dental sealants in managing or arresting carious lesions in permanent teeth.
Background

- **Pit and fissure sealants for primary caries prevention**
  - Large body of evidence for children, adolescents and young adults

- **Pit and fissure sealants for secondary caries prevention**
  - Concern about sealing over caries that is not clinically apparent
  - Effective secondary preventive measure
1. Under what circumstances should sealants be placed to prevent caries?
2. Does placing sealants over early (non-cavitated) lesions prevent progression of the lesion?
Clinical Questions

3. Are there conditions that favor the placement of resin-based vs. glass ionomer sealants in retention or caries prevention?
Clinical Questions

4. Are there any placement techniques that could improve retention and caries prevention of sealant?

- 2 vs 4 handed
- Mechanical enamel preparation
- Adhesives
Methods

- MEDLINE Search
  - Systematic Reviews
  - Clinical studies published since the systematic reviews were conducted
- Panel of Experts
- Evidence Statement
- Level of Evidence
# Level of Evidence

<table>
<thead>
<tr>
<th>Grade</th>
<th>Category of evidence</th>
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<tbody>
<tr>
<td>Ia</td>
<td>Evidence from systematic reviews of randomized controlled trials</td>
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<tr>
<td>Ib</td>
<td>Evidence from at least one randomized controlled trial</td>
</tr>
<tr>
<td>IIa</td>
<td>Evidence from at least one controlled study with out randomization</td>
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<tr>
<td>IIb</td>
<td>Evidence from at least one other type of quasi-experimental study</td>
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<tr>
<td>III</td>
<td>Evidence from non-experimental descriptive studies, such as comparative studies, correlation studies, cohort studies and case control studies</td>
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<td>IV</td>
<td>Evidence from expert committee reports or opinions or clinical experience of respected authorities</td>
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Methods

- Clinical recommendations based on the evidence statements
  - Stratified by caries risk
  - Stratified by age group

- Determination of caries risk status is necessary before implementation of primary and secondary caries prevention strategies

- Accept clinical sealant retention as a reasonable proxy for caries prevention

- Strength of the Recommendation
## Strength of the Recommendations

<table>
<thead>
<tr>
<th>Classification</th>
<th>Strength of Recommendations</th>
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<tbody>
<tr>
<td>A</td>
<td>Directly based on category I evidence</td>
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<tr>
<td>B</td>
<td>Directly based on category II evidence or extrapolated recommendation from category I evidence</td>
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<tr>
<td>C</td>
<td>Directly based on category III evidence or extrapolated recommendation from category I or II evidence</td>
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<tr>
<td>D</td>
<td>Directly based on category IV evidence or extrapolated recommendation from category I, II, or III evidence</td>
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Timeline

- Spring/summer 2007 - External review by scientific experts and stakeholders

- Summer 2007 - Comments considered by expert panel. Document revised accordingly.

- Summer/Fall 2007 - Presented to ADA Council on Scientific Affairs
Intended Use

- Tool to assist practitioners in clinical decision-making
- Dentist’s expertise
- Patient preferences
Dissemination

- ADA.org
- Submitted to the Journal of the American Dental Association
- Submitted to the Journal of Dental Education
- Submitted to the National Guideline Clearinghouse
Commonality with CDC Process

- 2004 EBD Symposium
  - The effectiveness of dental sealants in managing or arresting carious lesions in permanent teeth.

- CDC Systematic Review

- CDC representation on ADA expert panel

- ADA representation on CDC panel

- Develop parallel guidance for private practice settings and public health programs
<table>
<thead>
<tr>
<th>Name</th>
<th>Institution/Title</th>
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<tbody>
<tr>
<td>Jean Beauchamp, DDS</td>
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