Evidence-Based Dentistry Lecture Series

Advanced Searching in PUBMED & Applying PICO in EBD

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NUS Medical Library

23 July 2018
Which of the following is correct?

A. I can perform the most comprehensive search using MeSH terms alone.
B. I can find the latest articles using keywords alone.
C. I must use a combination of MeSH terms and keywords in every search.
Recap: Steps to Conduct Your Search

1. Identify key concepts of your question
2. Always search for MeSH terms first
3. If there are no MeSH terms, use keywords
4. Combine MeSH terms and keywords for a complete search
5. Use “AND” or “OR” to either narrow or widen your search
6. Filter your results last (e.g. language; article type; age)
This Lesson (23 July: hands-on)

- Recap of MeSH terms
- Advanced Searching in PubMed
- Scenario
- PICO
- Search strategy (Comprehensive search)
- Search results → How to apply to patient
See how PubMed executes your search
**Search Details**

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**5 concepts identified**

<table>
<thead>
<tr>
<th>Translations:</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>topical fluoride</td>
<td>&quot;fluorides, topical&quot;[MeSH Terms] OR (&quot;fluorides&quot;[All Fields] AND &quot;topical&quot;[All Fields]) OR &quot;topical fluorides&quot;[All Fields] OR (&quot;topical&quot;[All Fields] AND &quot;fluoride&quot;[All Fields]) OR &quot;topical fluoride&quot;[All Fields]</td>
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<tr>
<td>pit and fissure sealants</td>
<td>&quot;pit and fissure sealants&quot;[MeSH Terms] OR (&quot;pit&quot;[All Fields] AND &quot;fissure&quot;[All Fields] AND &quot;sealants&quot;[All Fields]) OR &quot;pit and fissure sealants&quot;[All Fields]</td>
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<tr>
<td>dental caries</td>
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<tr>
<td>prevention</td>
<td>&quot;prevention and control&quot;[Subheading] OR (&quot;prevention&quot;[All Fields] AND &quot;control&quot;[All Fields]) OR &quot;prevention and control&quot;[All Fields] OR &quot;prevention&quot;[All Fields]</td>
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<tr>
<td>teenagers</td>
<td>&quot;adolescent&quot;[MeSH Terms] OR &quot;adolescent&quot;[All Fields] OR &quot;teenagers&quot;[All Fields]</td>
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*In Basic Search, PubMed maps out the MeSH terms. Keywords are searched in “All Fields”.*
Strategies for Finding Evidence

Advanced/Comprehensive Search

- Subject Heading
- Keywords
- Filters
- Types of Study Design (20 Aug 2018)
Medical Subject Heading (MeSH)

Advanced/comprehensive search:
- Subject heading
- Keywords
- Filters
- Types of study design

“Dental caries” is the designated subject heading for the concept.
Localised destruction of the tooth surface initiated by decalcification of the enamel followed by enzymatic lysis of organic structures and leading to cavity formation. If left unchecked, the cavity may penetrate the enamel and dentin and reach the pulp.

Year introduced: DENTAL CARIES CONTROL was heading 1965-1966

PubMed search builder options

- analysis
- anatomy and histology
- blood
- chemically induced
- chemistry
- classification
- complications
- congenital
- diagnosis
- diagnostic imaging
- diet therapy
- drug effects
- drug therapy
- economics
- embryology
- enzymology
- epidemiology
- ethnology
- etiology
- genetics
- history
- immunology
- instrumentation
- metabolism
- microbiology
- mortality
- nursing
- organization and administration
- parasitology
- pathology
- physics
- physiopathology
- prevention and control
- psychology
- radiotherapy
- rehabilitation
- statistics and numerical data
- surgery
- therapy
- transmission
- urine
- veterinary
- virology

Add to search builder AND

Search PubMed
“Is **topical fluoride** treatment or **fissure sealants** more effective in **tooth decay prevention** in **teenagers**?”

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<thead>
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<th>P</th>
<th>I</th>
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</thead>
<tbody>
<tr>
<td>Keywords</td>
<td>adolescents OR teenagers OR teens OR youths</td>
<td>topical fluorides OR fluoride varnishes</td>
<td>pit fissure sealants OR fissure sealants OR dental sealants OR tooth sealants</td>
</tr>
</tbody>
</table>
By default, search is executed in “All Fields”.

Click on “Search” to go to PubMed results page.

Click on “Add to history” to remain in Advanced Search Builder.
**PubMed Advanced Search Builder**

### History

<table>
<thead>
<tr>
<th>Search</th>
<th>Add to builder</th>
<th>Query</th>
<th>Items found</th>
<th>Time</th>
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<tbody>
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<td>77</td>
<td>02:52:29</td>
</tr>
</tbody>
</table>

- **Click to see PubMed results**
- **Click to download search strategies**
- **Download history**
- **Clear history**
Filters in PubMed

Search results
Items: 1 to 20 of 68

1. **School-based dental sealant programmes may be effective in caries prevention.**
   - Himida T, Promise U.
   - PMID: 28339038
   - Similar articles

2. **Evidence-based Clinical Practice Guideline for the Use of Pit-and-Fissure Sealants.**
   - [No authors listed]
   - PMID: 28206888
   - Similar articles

3. **Pit and fissure sealants or fluoride varnishes?**
   - Paglia L.
   - PMID: 27755403
   - Similar articles

4. **Evidence-based clinical practice guideline for the use of pit-and-fissure sealants: A report of the American Dental Association and the American Academy of Pediatric Dentistry.**

Sort by:
- Best match
- Most recent

Find related data
- Database: Select

Search details
- "fluorides, topical"[MeSH Terms] OR ("fluorides"[All Fields] AND "topical"[All Fields]) OR "topical fluorides"[All Fields] OR ("topical"[All Fields]

Search

Recent Activity
PubMed: Useful EBD Filters

- Systematic Reviews of RCTs
- RCTs
- Other Controlled Clinical Trials
- Observational Studies (Cohort and Case-Control)
- Case Studies, Anecdotes, Bench Studies, Personal Opinion

Clinical Practice Guidelines

Article types:
- Practice Guideline
- Randomized Controlled Trial
- Systematic Reviews
Any Questions?
Mrs Tan, a mother of a 8-year-old girl walks into the dental clinic. Her daughter has dental caries on the occlusal surface of the lower right first molar. The dentist removes the caries from the tooth. After removing the caries, the cavity preparation extends slightly into dentine. The dentist plans to restore the caries with a tooth-coloured restoration (posterior composite resin). Mrs Tan feels that the “traditional silver fillings” are better as they are stronger and will last longer. She asks the dentist for his opinion. How can the dentist respond to Mrs Tan using the principles of Evidence-Based Dentistry?