
Jane L. Forrest, EdD, RDH
USC School of Dentistry

Pam Overman, EdD, RDH
UMKC School of Dentistry
Workshop Objectives

1. Identify components of EBDM and structuring a PICO question
2. Discuss what constitutes the evidence and the value of systematic reviews
3. Identify key features of PubMed and how they relate to levels of evidence
4. Compare a PubMed traditional search with a PubMed Clinical Queries search
5. Discuss how EB searching can be incorporated into the curriculum
What is Evidence-Based Practice?

**EBP** is the integration of best research evidence with clinical expertise and patient values (Sackett et al, 2000)

- Not unique to medicine or any specific health discipline
- Does not replace clinical expertise or patient input; adds another dimension to the decision-making process
Evidence-Based Decision Making Process

- Scientific Evidence
- Experience and Judgment
- Clinical/Patient Circumstances
- Patient Preferences or Values

©2001 Forrest, NCDHR
Why do we need to use EBDM?

1. Variations in practice patterns
2. Clinicians tend to practice the same as they were taught in school
   - Need to keep up-to-date throughout professional career
3. Public is learning how to better evaluate research (Studies in Confusion)
4. Manage the information overload
   - Now have technology to access relevant clinical findings
Professionals Have Increased Access to Relevant Clinical Findings

- Now possible with development of online databases and your computer to quickly access relevant clinical evidence.
  - MEDLINE (PubMed), Cochrane Library, and CINAHL

- Evidence-Based Journals
  - Journal of Evidence-Based Dental Practice, Evidence-Based Dentistry

- Professional Journals - Systematic Reviews
  - J Clinical Perio, Community Dent & Oral Epidemiology
  - JADA, BDJ, Caries Research, JPHD, J Clinical Dentistry

- Internet Search Engines – scholar.google.com

- Point of Care - ACP Pier, Dynamed, First Consult, InfoRetriever, MDConsult, UpToDate, via use of PDAs
Purpose of EBDM

The use of an evidence-based approach in clinical practice is intended to close the gap between what is known and what is practiced with the goal of improving patient care based on informed decision-making.
II. What Constitutes the Evidence?

EBDM is about solving clinical problems and involves 2 fundamental principles:*

1. Evidence alone is never sufficient to make a clinical decision (see definition)

2. A hierarchy of evidence exists to guide clinical decision-making so that the highest level of evidence is considered for a given question

Based on ability to control for bias and to demonstrate cause and effect in humans.
What does an RCT Looks Like?

Clinical trials that involve at least

- 1 test/experimental treatment or intervention and
- 1 control treatment = placebo or no treatment,
- Concurrent enrollment and follow-up of the test- and control-treated groups,

and

- Participants are assigned to groups through a random process, such as the use of a random-numbers table. Monitored longitudinally for endpoint of interest.
Randomized Controlled Studies

Study subjects

Whitening Strips

Treatment Group

Control Group

Follow-up

Strip w/o active ingredient

How many shades improvement?

Patients

Random assignment

Compare results

©Guide to Research Methods  http://library.downstate.edu/ebm/2200.htm
What is a Cohort Study?

- A study in which individuals who presently have a certain condition/exposure are compared with another group who do not have the condition/exposure.
- Groups are monitored over time for the endpoint of interest - they do not yet have the disease or condition of interest.
- A treatment/intervention/exposure is not given by the investigator.
Cohort Studies

Group of interest (e.g. smokers)

Follow over time

Comparison group (e.g. non-smokers)

Follow over time

Compare outcomes

©Guide to Research Methods  http://library.downstate.edu/ebm/2400.htm
What is a Case Control Study?

- Patients who **already have a certain condition** (endpoint of interest) **are compared with controls** (people who do not have the endpoint of interest), e.g., a lung cancer study
  - Asked how much they smoked in the past
  - Answers compared with controls without the condition
- Less reliable than either **RCT** or **Cohort studies**. Statistical relationship between two conditions does not mean that one condition actually caused the other.
  - E.g., lung cancer rates are higher for people without a college education (who tend to smoke more), does not mean that can reduce cancer risk just by getting a college education.
Case Control - Retrospective Study Design

Persons with and without the disease of interest (e.g., lung cancer) are identified at the initiation of the study. Information is then collected looking backward in time to identify potential exposures or risk factors (e.g., tobacco) that could have contributed to getting the disease.
What is a Systematic Review?

- Scientific investigation that uses rigorous methods to review original research, i.e., *reviews of research*.
- Synthesizes results from multiple trials addressing the same question.
- When statistically combined = Meta-analysis.
- Provides a clear summary of the current best evidence on a specific topic.
- Provides a way of *managing large quantities of information* & keeping current with new research.

Guide to Research Methods  http://library.downstate.edu/ebm/2700.htm
Primary vs. Secondary Research

**Primary Research**
- Individual Research Studies
  - Study 1
  - Study 2
  - Study 3
  - Study 4

**Secondary Research**
- Reviews of Already Conducted Research
- Systematic Review & Meta-Analysis
  - Synthesized Results
    - Statistical Analysis of Synthesized Results
Why Systematic Reviews?

• Dissemination of useful research is a problem
• Increasing volume of variable-quality research to sift through
• Most clinicians do not have access to a number of different journals
• Health professionals do not regularly obtain clinically useful material from published journal articles

(2)
A, The black circle represents the underlying truth. The white square represents the pooled estimate from a systematic review of all the evidence. The small shaded circles represent the results of individual studies. B, The white circles represent the results of studies that the reviewers failed to identify because the studies were not published. Note the error in the pooled estimate represented by the gap between the pooled estimate (white square) and the underlying truth (black circle).

Guyatt G, Rennie D. Users’ guides to the medical Literature: A manual for EBCP. 2002
Intravenous Streptokinase Therapy in Acute Myocardial Infarction

Individual RCT and Overall Meta-Analysis Results

Odds Ratio (Log Scale)

Cumulative Mantel-Haenszel method

Odds Ratio (Log Scale)

# Clinical Evidence Levels & Causality

<table>
<thead>
<tr>
<th>Level of Evidence</th>
<th>Study Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Systematic review</strong> of RCTs (Therapy/Prevention)</td>
</tr>
<tr>
<td></td>
<td>a Randomized controlled trial</td>
</tr>
<tr>
<td>2</td>
<td><strong>Systematic review</strong> of Cohort study (Prognosis)</td>
</tr>
<tr>
<td></td>
<td>a Cohort study</td>
</tr>
<tr>
<td>3</td>
<td><strong>Systematic review</strong> of Case-control</td>
</tr>
<tr>
<td></td>
<td>a Case control study</td>
</tr>
<tr>
<td>4</td>
<td>Case series, Poor quality Cohort &amp; Case control</td>
</tr>
<tr>
<td>5</td>
<td>Expert opinion without explicit critical appraisal</td>
</tr>
<tr>
<td>NA</td>
<td>Animal studies / Laboratory studies</td>
</tr>
</tbody>
</table>

[Center for EBM](http://www.cebm.net/levels_of_evidence.asp#levels)
Examples of Using EB Methodology

• Updating the AHA Guidelines for the Prevention of Infective Endocarditis
• ADA Guidelines on Professionally Applied Topical Fluoride and EB Recommendations for Use of Sealants
• Canadian DHA on Tooth brushing and on Commercially Available OTC Rinsing Products
Evidence-based clinical recommendations for the use of pit-and-fissure sealants
A report of the American Dental Association Council on Scientific Affairs
**TABLE 1**

System used for grading the evidence.*

<table>
<thead>
<tr>
<th>GRADE</th>
<th>CATEGORY OF EVIDENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>la</td>
<td>Evidence from systematic reviews of randomized controlled trials</td>
</tr>
<tr>
<td>lb</td>
<td>Evidence from at least one randomized controlled trial</td>
</tr>
<tr>
<td>IIA</td>
<td>Evidence from at least one controlled study without randomization</td>
</tr>
<tr>
<td>IIb</td>
<td>Evidence from at least one other type of quasiexperimental study, such as time series analysis or studies in which the unit of analysis is not the individual</td>
</tr>
<tr>
<td>III</td>
<td>Evidence from nonexperimental descriptive studies, such as comparative studies, correlation studies, cohort studies and case-control studies</td>
</tr>
<tr>
<td>IV</td>
<td>Evidence from expert committee reports or opinions or clinical experience of respected authorities</td>
</tr>
</tbody>
</table>

* Amended with permission of the BMJ Publishing Group from Shekelle and colleagues.\(^{81}\)
**TABLE 2**

System used for classifying the strength of the recommendations.*

<table>
<thead>
<tr>
<th>CLASSIFICATION</th>
<th>STRENGTH OF RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Directly based on category I evidence</td>
</tr>
<tr>
<td>B</td>
<td>Directly based on category II evidence or extrapolated recommendation from category I evidence</td>
</tr>
<tr>
<td>C</td>
<td>Directly based on category III evidence or extrapolated recommendation from category I or II evidence</td>
</tr>
<tr>
<td>D</td>
<td>Directly based on category IV evidence or extrapolated recommendation from category I, II or III evidence</td>
</tr>
</tbody>
</table>

* Amended with permission of the BMJ Publishing Group from Shekelle and colleagues.81
Skills Needed to Apply the EBDM 5-Step Process

1. Convert information needs/problems into clinical questions so that they can be answered, e.g., writing a specific PICO question

2. Conduct a computerized search with maximum efficiency for finding the best external evidence with which to answer the question

3. Critically appraise the evidence for its validity and usefulness (clinical applicability)

4. Apply the results of the appraisal, or evidence, in clinical practice

5. Evaluate the process and your performance
Pam - Do PICO and 4 Cases

Fill out PICO Worksheet; will be useful when PubMed is reviewed
EBDM Process and Skills

Guide for Finding the Evidence: Skills 1 & 2
2 types of Questions: Background and Foreground

- **Background**
  - Broad general knowledge question
  - Asks who, what, where, when, how, why
  - Broad scope and search
  - Used to find the details needed for a foreground (PICO) question
  - Identifies articles that provide more specific details to a broad question

- **Foreground (Well-Built)**
  - Specific knowledge about a specific patient or situation
  - 4-part question: P-I-C-O
  - Specific scope and search
  - Structured to find a precise answer using a computerized search
  - Identifies valid evidence to answer a specific question
Step 1. Asking a good clinically relevant & focused question

- Starts with a patient problem or question
- Structured to answer a specific question
- Phrased to facilitate a search - provides key search terms; type of study

- Patient Problem or Question
- Intervention
- Comparison (Intervention)
- Outcome

= PICO
In children with active tooth decay living in fluoridated areas, does fluoride toothpaste, as compared to non-fluoride toothpaste, result in fewer cavities?

In patients with destructive periodontal disease, is guided tissue regeneration as compared to open flap debridement more effective in regenerating periodontal tissue?

In children with active tooth decay living in fluoridated areas, does fluoride toothpaste, as compared to non-fluoride toothpaste, result in fewer cavities?

In patients with destructive periodontal disease, is guided tissue regeneration as compared to open flap debridement more effective in regenerating periodontal tissue?

PICO Questions

- Give scenarios: whitening, spit tobacco, premedication, ONJ
- Complete the PICO Search strategy forms for each case
1. Define your question using PICO by identifying: Problem, Intervention, Comparison Group and Outcomes.

Your question should be used to help establish your search strategy.

Patient/Problem____________________________________
Intervention____________________________________
Comparison____________________________________
Outcome____________________________________

2. Write out your question:____________________________________

3. Type of question/problem: Circle one: Therapy/Prevention Diagnosis Etiology
   Prognosis Economics Quality

4. Type of study (Publication Type) to include in the search: Check all that apply:
   □ Meta-Analysis          □ Systematic Review          □ Randomized Controlled Trial
   □ Clinical Trial         □ Practice Guideline         □ Review
   □ Cohort Study           □ Case Control Study         □ Case series or Case Report
   □ Editorials, Letters, Opinions □ Animal Research □ In Vitro/Lab Research

5. List main topics and alternate terms from your PICO question that can be used for your search
   __________________________________________________________

   List your inclusion criteria—gender, age, year of publication, language

   List irrelevant terms that you may want to exclude in your search

   List where you plan to search, i.e. EBM Reviews, MEDLINE, HealthSTAR, CINAHL, PubMed
Mr. Logan

- Your new patient, Mr. Jim Logan, is a 43-year old marketing executive. His chief complaint is the discoloration of his front teeth. He would like them whitened within one week before he attends his 25-year high school reunion. When reviewing his health history and behaviors, you learn that Mr. Logan is a coffee drinker and recently stopped smoking. Upon examination, you determine his only treatment needs are preventive care and suggest you re-evaluate the discoloration after the appointment since the stain could be removed during his prophylaxis.
- After the prophylaxis, Mr. Logan still believes his teeth could be whiter and you suggest making him custom trays for use with an at-home whitening/bleaching system. He questions you about the differences between the custom tray approach and using the Crest Whitestrips, which can be purchased at the local grocery store at considerably less cost.
- You are not familiar with the scientific literature on the whitening strips or the timeframe for how quickly they work. You tell Mr. Logan you know the bleaching procedures you have suggested are safe, effective, and can produce the desired outcomes within one week. However, you tell him you will be glad to investigate the Crest Whitestrips option so each of you are fully informed about the pros and cons of each method before selecting a treatment. To find the answer, you must define Jim’s question so it facilitates an efficient search of the literature.
Eric Blackstone

Eric Blackstone is a twenty-seven year old bartender who has used chewing tobacco for 9 years. He is a frequent user who chews almost five hours a day. Eric knows he can’t quit by will power alone because he has tried in the past. He wants to know if using a nicotine patch or receiving behavioral counseling can help him permanently quit.
Case Scenarios - Mr. Kramer

• The health history of a new patient, Mr. Kramer, reveals that he had a prosthetic cardiac valve placed 4 months ago. Also, you learn that he is allergic to penicillin. Typically, amoxicillin is used, however an alternative regimen is needed for individuals with a penicillin allergy.

• Knowing that Clindamycin or Erythromycin may be possible alternatives, a search is conducted to determine the antibiotic and regimen most appropriate to prescribe prior to Mr. Kramer having periodontal scaling and root planing.
Mrs. Wyatt Scenario

Mrs. Wyatt is a 52 year-old woman whose chief complaint is a persistent burning sensation, moderate pain on the anterior 2/3 of her tongue and a metallic taste. She reports continuous symptoms during the day and is beginning to have trouble falling asleep at night. This has been going on for the past 8 months and she has seen 2 other dentists and a physician who have not been able to solve her problem or relieve her symptoms. They even have gone as far as telling her that there’s nothing wrong, it’s all in her head and she will have to live with it, which is not an acceptable solution for her.

Upon examination you note there are no lesions or obvious possible causes. Based on her reported symptoms and clinical examination you determine she has burning mouth syndrome and discuss this with her. Not being familiar with the most effective therapy regimens, you tell Mrs. Wyatt you will get back to her within a day after you’ve had a chance to look up the most current scientific information.
Jane: Review PubMed Features
III. PubMed Key Features

- Home Page
- MeSH (whitening example)
- Boolean Operators
- History Page
- Limits Feature
- Clinical Queries
PubMed Home Page

1 = Query Box for Comprehensive Search

2 = Feature Tabs

Tutorials

MeSH Database

Clinical Queries Feature for Searching

Side Bar Links

About Entrez
Text Version

Entrez PubMed
Overview
Help | FAQ
Tutorials
New/Noteworthy
E-Utilities

PubMed Services
Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
Special Queries
LinkOut
My NCBI

Related Resources
Order Documents
NLM Mobile
PubMed Side Navigation Bar

- Tutorial (Boolean Operators)
- MeSH Database
- Clinical Queries*

MeSH

- MeSH is NLM's controlled vocabulary used for indexing articles in PubMed.
- MeSH terminology provides a consistent way to retrieve information that may use different terminology for the same concepts.
MeSH is the U.S. National Library of Medicine's controlled vocabulary used for indexing articles for MEDLINE/PubMed. MeSH terminology provides a consistent way to retrieve information that may use different terminology for the same concepts.

- Use the MeSH database to find Medical Subject Heading Terms and build a search strategy.

MeSH database tutorials:

- Searching with the MeSH Database
- Combining MeSH Terms
- Applying Subheadings and other features of the MeSH Database
Tooth Bleaching

The use of a chemical oxidizing agent (sometimes in combination with heat) to lighten tooth discolorations. (Boucher's Clinical Dental Terminology, 4th ed, p34)
Year introduced: 1972(1971)

Subheadings: This list includes those paired at least once with this heading in MEDLINE and may not reflect current rules for allowable combinations.

- adverse effects
- classification
- contraindications
- economics
- ethics
- history
- instrumentation
- methods
- psychology
- standards
- statistics and numerical data
- trends
- utilization
- veterinary

- Restrict Search to Major Topic headings only.
- Do Not Explode this term (i.e., do not include MeSH terms found below this term in the MeSH tree).

Entry Terms:
- Bleaching, Tooth
- Tooth Bleachings

Previous Indexing:
- Mottled Enamel/therapy (1966-1970)
- Root Canal Therapy (1966-1970)
- Tooth Discoloration/therapy (1966-1970)

All MeSH Categories
- Analytical, Diagnostic and Therapeutic Techniques and Equipment Category
- Dentistry
- Esthetics, Dental
- Tooth Bleach
To get started with PubMed, enter one or more search terms.

Search terms may be topics, authors or journals.

The NIH Public Access Policy May Affect You

Does NIH fund your work?

Then your manuscript must be made available in PubMed Central

How?

If you publish in one of these journals, they will take care of the whole process.

If you publish anywhere else, deposit the manuscript in PubMed Central via one of the options described at publicaccess.nih.gov.

Note: Other funding organizations, including HHMI, Wellcome Trust and the MRC also require papers to be made freely available through PMC.

PubMed is a service of the U.S. National Library of Medicine that includes over 18 million citations from MEDLINE and other life science journals for biomedical articles back to 1948. PubMed includes links to full text articles and other related resources.
1: **In vitro efficacy and risk for adverse effects of light-assisted tooth bleaching.**
Bruzell EM, Johnsen B, Aalerud TN, Dahl JE, Christensen T.
PMID: 19255679 [PubMed - in process]
Related Articles

2: **Tooth whitening: What you should know.**
[No authors listed]
PMID: 19255185 [PubMed - in process]
Related Articles

3: **Effects of tooth whitening and orange juice on surface properties of dental enamel.**
Ren YF, Amin A, Malmstrom H.
J Dent. 2009 Feb 21. [Epub ahead of print]
1: In vitro efficacy and risk for adverse effects of light-assisted tooth bleaching.
Bruzell EM, Johnsen B, Aalerud TN, Dahl JE, Christensen T.
PMID: 19255679 [PubMed - in process]
Related Articles

2: Single site meta-analysis of 6% hydrogen peroxide whitening strip effectiveness and safety over 2 weeks.
Gerlach RW, Barker ML, Karpinia K, Magnusson I.
J Dent. 2009 Feb 21. [Epub ahead of print]
PMID: 19233534 [PubMed - as supplied by publisher]
Related Articles

3: In Vitro Evaluation of the Effectiveness of Bleaching Agents Activated by Different Light Sources.
Lima DA, Aguiar FH, Liporoni PC, Munin E, Ambrosano GM, Lovadino JR.
J Prosthodont. 2009 Jan 30. [Epub ahead of print]
Boolean Operators

- Means of combining or eliminating search terms, concepts and/or articles, or sets using the logical operators
- AND, OR, NOT
- Must be capitalized for PubMed

**AND:** Combines only sets that contain BOTH terms.

**OR:** Combines sets that contain at least one of the terms

**NOT:** Excludes sets that contain the stated term
**AND** - Combines only sets that contain **BOTH** terms.

Crest Whitestrips  **AND**  Custom tray bleaching
**OR**-Combines sets that contain at least one of the terms

- Tooth bleaching
- OR
- Tooth whitening

- Tooth bleaching
- Tooth whitening
**NOT** - Excludes sets that contain the stated term even when it includes both terms

Crest Whitestrips **NOT** Toothpaste
Feature Tabs

Click on this tab to be brought to the History page that will detail each step of the search.
History Page illustrating each Search Query and How Searches were Combined

1. Substitute the Search # rather than writing out the terms again.
2. Use the # symbol and CAPITALIZE the word “OR”
One of PubMed's key features is the 'Limits' feature

Helpful in filtering citations so they can be sorted by level of evidence. This feature also is used when conducting a Clinical Queries PubMed search!
The "Limits" feature page, (continues on the next slide)
Other Options scrolling down the "Limits" feature page
PubMed Limits Feature

Relate to Levels of Evidence. Can expedite your searching.

Type of Article
- Clinical Trial
- Editorial
- Letter
- Meta-Analysis
- Practice Guideline
- Randomized Controlled Trial
- Review

More Publication Types
- Addresses
- Bibliography
- Biography
1. In vitro efficacy and risk for adverse effects of light-assisted tooth bleaching.
   Bruzell EM, Johnsen B, Aalerud TN, Dahl JE, Christensen T.
   PMID: 19255679 [PubMed - in process]
   Related Articles

2. Tooth whitening: What you should know.
   [No authors listed]
   PMID: 19255185 [PubMed - in process]
   Related Articles

3. Effects of tooth whitening and orange juice on surface properties of dental enamel.
   Ren YF, Amin A, Malmstrom H.
   J Dent. 2009 Feb 21. [Epub ahead of print]
1: Home-based chemically-induced whitening of teeth in adults.
Hasson H, Ismail AI, Neiva G.
PMID: 17054282 [PubMed - indexed for MEDLINE]
Related Articles

2: Effectiveness of dentist-prescribed, home-applied tooth whitening. A meta analysis.
Niederman R, Tantraphol MC, Slinin P, Hayes C, Conway S.
PMID: 12167948 [PubMed - indexed for MEDLINE]
Related Articles  Free article at journal site
Accessing Clinical Queries from the PubMed Home Page

1 = Query Box for Comprehensive Search

2 = Feature Tabs

Tutorials

MeSH Database

Clinical Queries Feature for Searching
Access from PubMed Home Page

PubMed Clinical Queries

This page provides the following specialized PubMed searches for clinicians:

- Search by Clinical Study Category
- Find Systematic Reviews
- Medical Genetics Searches

After running one of these searches, you may further refine your results using PubMed's **Limits** feature.

Results of searches on these pages are limited to specific clinical research areas. For comprehensive searches, use PubMed directly.

Search by Clinical Study Category

This search finds citations that correspond to a specific clinical study category. The search may be either broad and sensitive or narrow and specific. The search filters are based on the work of Haynes RB et al. See the filter table for details.

**Search**

<table>
<thead>
<tr>
<th>Category</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>etiology</td>
<td>narrow, specific search</td>
</tr>
<tr>
<td>diagnosis</td>
<td>broad, sensitive search</td>
</tr>
<tr>
<td>therapy</td>
<td></td>
</tr>
<tr>
<td>prognosis</td>
<td></td>
</tr>
<tr>
<td>clinical prediction guides</td>
<td></td>
</tr>
</tbody>
</table>

Find Systematic Reviews

For your topic(s) of interest, this search finds citations for systematic reviews, meta-analyses, reviews of clinical trials, evidence-based medicine, consensus development conferences, and guidelines.

For more information, see Help. See also related sources for systematic review searching.

**Search**
PubMed Clinical Queries

Type in tooth whitening and click on Go
17 higher level of evidence citations vs. 1706 of every type of article using traditional search
Use of Limits with Find Systematic Review Results: from 17 citations to 2 in two steps

1. **Home-based chemically-induced whitening of teeth in adults.**
   Hasson H, Ismail AI, Neiva G.
   PMID: 17054282 [PubMed - indexed for MEDLINE]
   Related Articles

2. **Effectiveness of dentist-prescribed, home-applied tooth whitening. A meta analysis.**
   Niederman R, Tantraphol MC, Slinin P, Hayes C, Conway S.
   PMID: 12167948 [PubMed - indexed for MEDLINE]
   Related Articles  Free article at journal site
Find Systematic Reviews

For your topic(s) of interest, this search finds citations for systematic reviews, meta-analyses, reviews of clinical trials, evidence-based medicine, consensus development conferences, and guidelines.

For more information, see Help. See also related sources for systematic review searching.

Search Crest Whitestrips

Go
Comparative clinical trials and the changing marketplace for oral care: innovation, evidence and implications.

**Gerlach RW, Biesbrock AR.**

Health Care Research Center, The Procter & Gamble Company, Mason, OH 45040-9462, USA. gerlach.rw@pg.com

The development of a trayless bleaching system (Crest Whitestrips) and a novel battery-powered toothbrush (Crest SpinBrush) has fueled growth in the bleaching and power toothbrush markets. Beyond offering convenient, low-cost options for patients, the effectiveness of each product is supported by a robust clinical program. New comparative research involving these products expands evidence on the clinical meaningfulness of the benefits of this whitening system and powered toothbrush for patient care.

PMID: 12512984 [PubMed - indexed for MEDLINE]
What if there are no SRs?

For many clinical topics, there may not be a systematic review or other secondary research available. In these cases, use the ‘Search by Clinical Study Category’ Clinical Query to identify individual studies.

In order to use this search tool it is helpful to have an understanding of the type of question you are asking and the research method or study design that will provide the highest level of evidence.
This page provides the following specialized PubMed searches for clinicians:

- Search by Clinical Study Category
- Find Systematic Reviews
- Medical Genetics Searches

After running one of these searches, you may further refine your results using PubMed's Limits feature.

Results of searches on these pages are limited to specific clinical research areas. For comprehensive searches, use PubMed directly.

Search by Clinical Study Category

This search finds citations that correspond to a specific clinical study category. The search may be either broad and sensitive or narrow and specific. The search filters are based on the work of Haynes RB et al. See the filter table for details.

Search

---

Find Systematic Reviews
<table>
<thead>
<tr>
<th>Type of Question</th>
<th>Methodology of Choice¹</th>
<th>Question Focus²,³</th>
<th>Why Study?²,³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Therapy/Prevention</td>
<td>Systematic Review [SR] or Meta-Analysis [MA] of RCT’s</td>
<td>Study effect of therapy or test on real patients; allows for comparison between intervention group and control groups for a particular condition. Largest volume of EB Literature</td>
<td>To select treatments, if any that do more good than harm that are worth the effort and cost.</td>
</tr>
<tr>
<td></td>
<td>Individual Randomized Controlled Trial</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SR of Cohort Studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnosis</td>
<td>SR or MA of Controlled Trials (Prospective cohort study)</td>
<td>Measures reliability of a particular diagnostic measure for a disease against the “gold standard” diagnostic measure for the same disease. Sensitivity and specificity of the measures are compared.</td>
<td>To select and interpret diagnostic methods or tests. To determine the degree to which a test is reliable and useful.</td>
</tr>
<tr>
<td></td>
<td>Controlled Trial (Prospective-compare tests with a reference or “gold” standard test)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Etiology, Causation, Harm</td>
<td>SR or MA of RCT’s</td>
<td>Compares a group exposed to a particular agent with an unexposed group. Important for understanding prevention and control of disease.</td>
<td>To identify causes of a disease or condition including iatrogenic forms. To determine relationships between risk factors and possible causes of a disease or condition.</td>
</tr>
<tr>
<td></td>
<td>Individual RCT</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SR of Cohort Studies Cohort Study (Prospective data collection with formal control group)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prognosis</td>
<td>SR of Inception Cohort Studies</td>
<td>Follows progression of a group with particular disease and compares with a group without the disease. Groups must be as similar as possible and must have good follow-up&gt;80% of each group.</td>
<td>To estimate clinical course or progression of a disease or condition over time and anticipate likely complications.</td>
</tr>
<tr>
<td></td>
<td>Inception Cohort Study (All have disease but free of the outcome of interest)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Retrospective Cohort</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
This page provides the following specialized PubMed searches for clinicians:

- Search by Clinical Study Category
- Find Systematic Reviews
- Medical Genetics Searches

After running one of these searches, you may further refine your results using PubMed's Limits feature.

Results of searches on these pages are limited to specific clinical research areas. For comprehensive searches, use PubMed directly.
<table>
<thead>
<tr>
<th>Category</th>
<th>Optimized For</th>
<th>Sensitive/Specific</th>
<th>PubMed Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>therapy</td>
<td>sensitive/broad</td>
<td>99%/70%</td>
<td>((clinical[Title/Abstract] AND trial[Title/Abstract]) OR clinical trials[MeSH Terms] OR clinical trial[Publication Type] OR random*[Title/Abstract] OR random allocation[MeSH Terms] OR therapeutic use[MeSH Subheading])</td>
</tr>
<tr>
<td>therapy</td>
<td>specific/narrow</td>
<td>93%/97%</td>
<td>(randomized controlled trial[Publication Type] OR (randomized[Title/Abstract] AND controlled[Title/Abstract] AND trial[Title/Abstract]))</td>
</tr>
<tr>
<td>diagnosis</td>
<td>specific/narrow</td>
<td>64%/98%</td>
<td>(specificity[Title/Abstract])</td>
</tr>
<tr>
<td>etiology</td>
<td>sensitive/broad</td>
<td>93%/63%</td>
<td>(risk*[Title/Abstract] OR risk*[MeSH:noexp] OR risk*[MeSH:noexp] OR cohort studies[MeSH Terms] OR group*[Text Word])</td>
</tr>
<tr>
<td>etiology</td>
<td>specific/narrow</td>
<td>51%/95%</td>
<td>((relative[Title/Abstract] AND risk*[Title/Abstract]) OR (relative risk[Text Word]) OR risks[Text Word] OR cohort studies[MeSH:noexp] OR (cohort[Title/Abstract] AND stud*[Title/Abstract]))</td>
</tr>
<tr>
<td>prognosis</td>
<td>specific/narrow</td>
<td>52%/94%</td>
<td>(prognosis*[Title/Abstract] OR (first[Title/Abstract] AND episode[Title/Abstract]) OR cohort[Title/Abstract])</td>
</tr>
</tbody>
</table>
Search by Clinical Study Category

This search finds citations that correspond to a specific clinical study category. The search may be either broad and sensitive or narrow and specific. The search filters are based on the work of Haynes RB et al. See the filter table for details.

**Search**

<table>
<thead>
<tr>
<th>Category</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>etiology</td>
<td>narrow, specific search</td>
</tr>
<tr>
<td>diagnosis</td>
<td>broad, sensitive search</td>
</tr>
<tr>
<td>therapy</td>
<td></td>
</tr>
<tr>
<td>prognosis</td>
<td></td>
</tr>
<tr>
<td>clinical prediction guides</td>
<td></td>
</tr>
</tbody>
</table>
1: A randomized CIE L*a*b* evaluation of external bleaching therapy effects on fluorotic enamel stains.
Knösel M, Attin R, Becker K, Attin T.
PMID: 19088953 [PubMed - indexed for MEDLINE]
Related Articles

2: Spectrophotometric evaluation of the efficacy of a new in-office bleaching technique.
Benbachir N, Ardu S, Krejci I.
Applying Limits to the 235 citations
Search by Clinical Study Category

This search finds citations that correspond to a specific clinical study category. The search may be either broad and sensitive or narrow and specific. The search filters are based on the work of Haynes RB et al. See the filter table for details.

Search

Crest Whitestrips AND custom tray bleaching

Go

<table>
<thead>
<tr>
<th>Category</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>etiology</td>
<td>narrow, specific search</td>
</tr>
<tr>
<td>diagnosis</td>
<td>broad, sensitive search</td>
</tr>
<tr>
<td>therapy</td>
<td></td>
</tr>
<tr>
<td>prognosis</td>
<td></td>
</tr>
<tr>
<td>clinical prediction guides</td>
<td></td>
</tr>
</tbody>
</table>
Randomized controlled trial of professional at-home tooth whitening in teenagers.
Donly KJ, Segura A, Henson T, Barker ML, Gerlach RW.
PMID: 18069511 [PubMed - indexed for MEDLINE]
Related Articles

Clinical trial comparing two daytime hydrogen-peroxide professional vital-bleaching systems.
Gerlach RW, Zhou X.
PMID: 15645893 [PubMed - indexed for MEDLINE]
Related Articles

Comparative response of whitening strips to a low peroxide and potassium nitrate bleaching gel.
Gerlach RW, Zhou X, McClanahan SF.
Am J Dent. 2002 Sep;15 Spec No:19A-23A.
PMID: 12512987 [PubMed - indexed for MEDLINE]
Related Articles

Vital bleaching with two at-home professional systems.
Karpinia KA, Magnusson I, Sagel PA, Zhou X, Gerlach RW.
Am J Dent. 2002 Sep;15 Spec No:13A-18A.
PMID: 12512986 [PubMed - indexed for MEDLINE]
Related Articles
No One Way to Conduct a Search

- Crest Whitestrips AND custom tray bleaching (4 citations) vs.

- Tooth whitening (235 citations) vs.

- Tooth whitening (1706 doing traditional search)
Eric Blackstone is a twenty-seven year old bartender who has used chewing tobacco for 9 years. He is a frequent user who chews almost five hours a day. Eric knows he can’t quit by will power alone because he has tried in the past. He wants to know if using a nicotine patch or receiving behavioral counseling can help him permanently quit.
1: [Snuff is put in the corner undeservedly]
Axéll T.
PMID: 19235326 [PubMed - indexed for MEDLINE]
Related Articles

2: Quitting Cigarettes Completely or Switching to Smokeless: Do U.S. Data Replicate the Swedish Results?
Tob Control. 2009 Jan 23. [Epub ahead of print]
PMID: 19168476 [PubMed - as supplied by publisher]
1: **Pharmacotherapies for smoking cessation: a meta-analysis of randomized controlled trials.**
PMID: 18625984 [PubMed - indexed for MEDLINE]
[Related Articles](PubMed - indexed for MEDLINE)
[Free article in PMC](PMC)
[at journal site](Journal Site)

2: **Nicotine replacement therapy for smoking cessation.**
Stead LF, Perera R, Bullen C, Mant D, Lancaster T.
PMID: 18253970 [PubMed - indexed for MEDLINE]
[Related Articles](PubMed - indexed for MEDLINE)

3: **Interventions for smokeless tobacco use cessation.**
Ebbert JO, Montori V, Vickers KS, Enwin PC, Dale LC, Stead LF.
1: Tobacco, Smokeless

The powdered leaves of Nicotiana tabacum which are either inhaled through the nose, chewed, or stored in cheek. Includes any product of tobacco that is not smoked.

Year introduced: 1991 (1986)

**Subheadings:** This list includes those paired at least once with this heading in MEDLINE and may not reflect all allowable combinations.

- administration and dosage
- adverse effects
- analysis
- chemistry
- classification
- drug effects
- economy
- isolation and purification
- metabolism
- pharmacokinetics
- pharmacology
- poisoning
- standards
- supply
- toxicity

- Restrict Search to Major Topic headings only.
- Do Not Explode this term (i.e., do not include MeSH terms found below this term in the MeSH tree).

**Entry Terms:**

- Smokeless Tobacco
- Oral Tobacco
- Chewing Tobacco
- Snuff

**All MeSH Categories**

- Organisms Category
- Plants
  - Plant Families and Groups
    - Angiosperms
      - Solanaceae
      - Tobacco
    - Tobacco, Smokeless
1: Multiple distinct risk loci for nicotine dependence identified by dense coverage of the complete family of nicotinic receptor subunit (CHRN) genes.
PMID: 19259974 [PubMed - as supplied by publisher]
Related Articles

Cancer Epidemiol Biomarkers Prev. 2009 Mar 3. [Epub ahead of print]
Webb MS.
Health Psychol. 2008 May;27(3 Suppl):S271-82. Review.
PMID: 18979980 [PubMed - indexed for MEDLINE]
Related Articles

2: Family and carer smoking control programmes for reducing children's exposure to environmental tobacco smoke.
PMID: 18843622 [PubMed - indexed for MEDLINE]
Related Articles

3: Systematic review and meta-analysis of combination therapy for smoking cessation.
Shah SD, Wilken LA, Winkler SR, Lin SJ.
Search History Illustrating the use of Limit Feature Options

<table>
<thead>
<tr>
<th>Search</th>
<th>Most Recent Queries</th>
<th>Time</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>#5</td>
<td>Search smokeless tobacco cessation Limits: published in the last 3 years, Humans, Male, Meta-Analysis, English, Adult: 19-44 years</td>
<td>14:30:25</td>
<td>9</td>
</tr>
<tr>
<td>#4</td>
<td>Search smokeless tobacco cessation Limits: Humans, Male, Meta-Analysis, English, Adult: 19-44 years</td>
<td>14:29:36</td>
<td>32</td>
</tr>
<tr>
<td>#3</td>
<td>Search smokeless tobacco cessation Limits: Humans, Meta-Analysis, English, Adult: 19-44 years</td>
<td>14:28:46</td>
<td>46</td>
</tr>
<tr>
<td>#2</td>
<td>Search smokeless tobacco cessation Limits: Humans, Meta-Analysis, English</td>
<td>14:26:39</td>
<td>141</td>
</tr>
<tr>
<td>#1</td>
<td>Search smokeless tobacco cessation</td>
<td>14:24:26</td>
<td>14451</td>
</tr>
</tbody>
</table>
1: Evidence for endogenous formation of N'-nitrosonornicotine in some long-term nicotine patch users.
   Stepanov I, Carmella SG, Han S, Pinto A, Strasser AA, Lerman C, Hecht SS.
   PMID: 19246447 [PubMed - in process]
   Related Articles

2: [Smoking cessation with Nicotine replacement therapy (NRT) - a scientific Update.]
   Mulzer KH, Lichtenschopf A, Homeier I, Groman E.
1: Systematic review and meta-analysis of combination therapy for smoking cessation.
Shah SD, Wilken LA, Winkler SR, Lin SJ.
PMID: 18826906 [PubMed - indexed for MEDLINE]
Related Articles

2: The effect of a nicotine patch on cigarette craving over the course of the day: results from two randomized clinical trials.
Shiffman S, Ferguson SG.
1: **Interventions for smokeless tobacco use cessation.**
Ebbert JO, Montori V, Vickers KS, Erwin PC, Dale LC, Stead LF.
PMID: 17943813 [PubMed - indexed for MEDLINE]

2: **Treatments for spit tobacco use: a quantitative systematic review.**
Ebbert JO, Rowland LC, Montori VM, Vickers KS, Erwin PJ, Dale LC.
Clinical Queries Search

Find Systematic Reviews

For your topic(s) of interest, this search finds citations for systematic reviews, meta-analyses, reviews of clinical trials, evidence-based medicine, consensus development conferences, and guidelines.

For more information, see Help. See also related sources for systematic review searching.

Search: chewing tobacco cessation
1: Using the National Health Interview Survey to understand and address the impact of tobacco in the United States: past perspectives and future considerations.


PMID: 19055824 [PubMed - in process]
Related Articles Free article in PMC | at journal site


Walsh RA.
1: **Nicotine replacement therapy for smoking cessation.**
Stead LF, Perera R, Bullen C, Mant D, Lancaster T.
PMID: 18253970 [PubMed - indexed for MEDLINE]
Related Articles

2: **Interventions for smokeless tobacco use cessation.**
Ebbert JO, Montori V, Vickers KS, Erwin PC, Dale LC, Stead LF.
Find Systematic Reviews

For your topic(s) of interest, this search finds citations for systematic reviews, meta-analyses, reviews of clinical trials, evidence-based medicine, consensus development conferences, and guidelines.

For more information, see Help. See also related sources for systematic review searching.

Search: chewing tobacco cessation AND nicotine patch AND behavior coui

Go
1: Interventions for smokeless tobacco use cessation.
Ebbert JO, Montori V, Vickers KS, Erwin PC, Dale LC, Stead LF.
PMID: 17943813 [PubMed - indexed for MEDLINE]
Related Articles

2: Interventions for smokeless tobacco use cessation.
Ebbert JO, Rowland LC, Montori V, Vickers KS, Erwin PC, Dale LC, Stead LF.
PMID: 15266527 [PubMed - indexed for MEDLINE]
Related Articles

3: Smoking cessation in a blue-collar population: results from an evidence-based pilot program.
Ringen K, Anderson N, McAfee T, Zbikowski SM, Fales D.
PMID: 12382249 [PubMed - indexed for MEDLINE]
Related Articles

Fiore MC, Jorenby DE, Baker TB, Kenford SL.
PMID: 1304736 [PubMed - indexed for MEDLINE]
Related Articles
Find Systematic Reviews

For your topic(s) of interest, this search finds citations for systematic reviews, meta-analyses, reviews of clinical trials, evidence-based medicine, consensus development conferences, and guidelines.

For more information, see Help. See also related sources for systematic review searching.

Search: smokeless tobacco cessation AND nicotine patch AND behavior c

Go
1: Sex differences in long-term smoking cessation rates due to nicotine patch.
Perkins KA, Scott J.
PMID: 18629735 [PubMed - indexed for MEDLINE]
Related Articles

2: Interventions for smokeless tobacco use cessation.
Ebbert JO, Montori V, Vickers KS, Erwin PC, Dale LC, Stead LF.
Find Systematic Reviews

For your topic(s) of interest, this search finds citations for systematic reviews, meta-analyses, reviews of clinical trials, evidence-based medicine, consensus development conferences, and guidelines.

For more information, see Help. See also related sources for systematic review searching.

Search smokeless tobacco AND nicotine patch AND behavior counseling
1. **Interventions for smokeless tobacco use cessation.**
   Ebbert JO, Montori V, Vickers KS, Erwin PC, Dale LC, Stead LF. 
   PMID: 17943813 [PubMed - indexed for MEDLINE] 
   Related Articles

2. **Interventions for smokeless tobacco use cessation.**
   Ebbert JO, Rowland LC, Montori V, Vickers KS, Erwin PC, Dale LC, Stead LF. 
Pam: Review next 2 case scenarios

Mr. Kramer & Mrs. Wyatt
Scenario

• The health history of a new patient, Mr. Kramer, reveals that he had a prosthetic cardiac valve placed 4 months ago. Also, you learn that he is allergic to penicillin. Typically, amoxicillin is used, however an alternative regimen is needed for individuals with a penicillin allergy.

• Knowing that Clindamycin or Erythromycin may be possible alternatives, a search is conducted to determine the antibiotic and regimen most appropriate to prescribe prior to Mr. Kramer having periodontal scaling and root planing.
Find Systematic Reviews

For your topic(s) of interest, this search finds citations for systematic reviews, meta-analyses, reviews of clinical trials, evidence-based medicine, consensus development conferences, and guidelines.

For more information, see Help. See also related sources for systematic review searching.

Search: Prevention of Endocarditis
Items 1 - 20 of 103


Best practice policy statement on urologic surgery antimicrobial prophylaxis.

2: Khader RN, Rosenberg M; American Heart Association.

The 2007 American Heart Association guideline for the prescription of antibiotic prophylaxis:

3: Fischer J.

Preventing infective endocarditis--taking the evidence to heart.
S D Med. 2007 Sep;60(9):359-60. No abstract available. PMID: 17987868 [PubMed - indexed for MEDLINE]

4: Reimer-Kent J.

Infective endocarditis: a review and update of a clinical enigma.
PMID: 18501225 [PubMed - indexed for MEDLINE]

Classification of Recommendations and Levels of Evidence

Classification of Recommendations:
Class I: Conditions for which there is evidence and/or general agreement that a given procedure or treatment is beneficial, useful, and effective.
Class II: Conditions for which there is conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of a procedure or treatment.
Class IIa: Weight of evidence/opinion is in favor of usefulness/efficacy.
Class IIb: Usefulness/efficacy is less well established by evidence/opinion.
Class III: Conditions for which there is evidence and/or general agreement that a procedure/treatment is not useful/effective and in some cases may be harmful.

Level of Evidence:
Level of Evidence A: Data derived from multiple randomized clinical trials or meta-analyses.
Level of Evidence B: Data derived from a single randomized trial or nonrandomized studies.
Level of Evidence C: Only consensus opinion of experts, case studies, or standard of care.
## Regimens for a dental procedure.

<table>
<thead>
<tr>
<th>SITUATION</th>
<th>AGENT</th>
<th>REGIMENT: SINGLE DOSE 30-60 MINUTES BEFORE PROCEDURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>Amoxicillin</td>
<td>2 grams</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 milligrams per kilogram</td>
</tr>
<tr>
<td>Unable to Take Oral Medication</td>
<td>Ampicillin OR Cefazolin or ceptriazone</td>
<td>2 g IM* or IV†</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 g IM or IV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 mg/kg IM or IV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 mg/kg IM or IV</td>
</tr>
<tr>
<td>Allergic to Penicillins or Ampicillin Oral</td>
<td>Cephalexin OR Clindamycin OR Azithromycin or clarithromycin</td>
<td>2 g</td>
</tr>
<tr>
<td></td>
<td></td>
<td>600 mg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>500 mg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/kg</td>
</tr>
<tr>
<td>Allergic to Penicillins or Ampicillin and Unable to Take Oral Medication</td>
<td>Cefazolin or ceftiraxone OR Clindamycin</td>
<td>1 g IM or IV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>600 mg IM or IV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20 mg/kg IM or IV</td>
</tr>
</tbody>
</table>

* IM: Intramuscular.
† IV: Intravenous.
‡ Or other first- or second-generation oral cephalosporin in equivalent adult or pediatric dosage.
§ Cephalosporins should not be used in a person with a history of anaphylaxis, angioedema.
Traditional PubMed Search

vs. 103 found using Clinical Queries feature
1: ACOG Committee Opinion No. 421, November 2008: antibiotic prophylaxis for infective endocarditis.
American College of Obstetricians and Gynecologists Committee on Obstetric Practice.
PMID: 18978128 [PubMed - indexed for MEDLINE]
Related Articles

Nishimura RA, Carabello BA, Faxon DP, Freed MD, Lytle BW, O'Gara PT, O'Rourke RA, Shah PM.
PMID: 18702976 [PubMed - indexed for MEDLINE]
Related Articles

3: Infective endocarditis and the new AHA guideline.
Akpunonu BE, Bittar S, Phinney RC, Taleb M.
1997 Guidelines identified
Mrs. Wyatt Scenario

Mrs. Wyatt is a 52 year-old woman whose chief complaint is a persistent burning sensation, moderate pain on the anterior 2/3 of her tongue and a metallic taste. She reports continuous symptoms during the day and is beginning to have trouble falling asleep at night. This has been going on for the past 8 months and she has seen 2 other dentists and a physician who have not been able to solve her problem or relieve her symptoms. They even have gone as far as telling her that there’s nothing wrong, it’s all in her head and she will have to live with it, which is not an acceptable solution for her.

Upon examination you note there are no lesions or obvious possible causes. Based on her reported symptoms and clinical examination you determine she has burning mouth syndrome and discuss this with her. Not being familiar with the most effective therapy regimens, you tell Mrs. Wyatt you will get back to her within a day after you’ve had a chance to look up the most current scientific information.
Find Systematic Reviews

For your topic(s) of interest, this search finds citations for systematic reviews, meta-analyses, reviews of clinical trials, evidence-based medicine, consensus development conferences, and guidelines.

For more information, see Help. See also related sources for systematic review searching.

Search burning mouth syndrome Go
Results of using the 'Find Systematic Reviews' Clinical Queries

1. Patton LL, Siegel MA, Benoliel R, De Laat A.
   
   Management of burning mouth syndrome: systematic review and management recommendations.
   PMID: 17379153 [PubMed - indexed for MEDLINE]

2. Zakrzewska JM, Forssell H, Glenny AM.
   
   Interventions for the treatment of burning mouth syndrome.
   PMID: 15674897 [PubMed - indexed for MEDLINE]

3. List T, Axelsson S, Leijon G.
   
   Pharmacologic interventions in the treatment of temporomandibular disorders, atypical facial pain, and burning mouth syndrome. A qualitative systematic review.
   PMID: 14737874 [PubMed - indexed for MEDLINE]

4. Zakrzewska JM, Forssell H, Glenny AM.
   
   Interventions for the treatment of burning mouth syndrome: a systematic review.
   J Orofac Pain. 2003 Fall;17(4):293-300. Review.
   PMID: 14737873 [PubMed - indexed for MEDLINE]
Again, what if there are no SRs?

For many clinical topics, there may not be a systematic review or other secondary research available. In these cases, use the ‘Search by Clinical Study Category’ Clinical Query to identify individual studies.
Search by Clinical Study Category

This search finds citations that correspond to a specific clinical study category. The search may be either broad and sensitive or narrow and specific. The search filters are based on the work of Haynes RB et al. See the filter table for details.

Search burning mouth syndrome

<table>
<thead>
<tr>
<th>Category</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>etiology</td>
<td>narrow, specific search</td>
</tr>
<tr>
<td>diagnosis</td>
<td>broad, sensitive search</td>
</tr>
<tr>
<td><strong>therapy</strong></td>
<td></td>
</tr>
<tr>
<td>prognosis</td>
<td></td>
</tr>
<tr>
<td>clinical prediction guides</td>
<td></td>
</tr>
</tbody>
</table>
Lack of efficacy of alpha-lipoic acid in burning mouth syndrome: A double-blind, randomized, placebo-controlled
PMID: 18675569 [PubMed - as supplied by publisher]

Topical clonazepam in stomatodynia: a randomised placebo-controlled study.
PMID: 15109507 [PubMed - indexed for MEDLINE]

PMID: 14720197 [PubMed - indexed for MEDLINE]

[Effect of millimeter therapy in burning mouth syndrome]
PMID: 12839637 [PubMed - indexed for MEDLINE]

Antimicrobial activity of garlic, tea tree oil, and chlorhexidine against oral microorganisms.
Search by Clinical Study Category

This search finds citations that correspond to a specific clinical study category. The search may be either broad and sensitive or narrow and specific. The search filters are based on the work of Haynes RB et al. See the filter table for details.

Search: burning mouth syndrome

<table>
<thead>
<tr>
<th>Category</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>etiology</td>
<td>narrow, specific search</td>
</tr>
<tr>
<td>diagnosis</td>
<td>broad, sensitive search</td>
</tr>
<tr>
<td>therapy</td>
<td></td>
</tr>
<tr>
<td>prognosis</td>
<td></td>
</tr>
<tr>
<td>clinical prediction guides</td>
<td></td>
</tr>
</tbody>
</table>
Again, to help find the most relevant citations, use the 'Limits' feature.
Limits: Humans, Randomized Controlled Trial, English

Items 1 - 11 of 11


Traditional Search by just typing in the phrase "Burning mouth syndrome".
Again, to help find the most relevant of the 567 citations, use the 'Limits' feature.
PubMed Feature: HISTORY page

Allows you to see the searches performed and to combine searches

- Search History will be lost after eight hours of inactivity.
- Search numbers may not be continuous; all searches are represented.
- To save search indefinitely, click query # and select Save in My NCBI.
- To combine searches use #search, e.g., #2 AND #3 or click query # for more options.

<table>
<thead>
<tr>
<th>Search</th>
<th>Most Recent Queries</th>
<th>Time</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>#7</td>
<td>Search #1 Limits: Humans, Case Reports, English</td>
<td>22:44:10</td>
<td>80</td>
</tr>
<tr>
<td>#6</td>
<td>Search #3 OR #4</td>
<td>22:42:54</td>
<td>27</td>
</tr>
<tr>
<td>#4</td>
<td>Search burning mouth syndrome Limits: Humans, Clinical Trial, English</td>
<td>22:41:24</td>
<td>27</td>
</tr>
<tr>
<td>#3</td>
<td>Search burning mouth syndrome Limits: Humans, Randomized Controlled Trial, English</td>
<td>22:40:58</td>
<td>11</td>
</tr>
<tr>
<td>#2</td>
<td>Search burning mouth syndrome Limits: Humans, Meta-Analysis, English</td>
<td>22:40:38</td>
<td>1</td>
</tr>
<tr>
<td>#1</td>
<td>Search burning mouth syndrome</td>
<td>22:40:13</td>
<td>567</td>
</tr>
</tbody>
</table>
PubMed Limits Feature

Relate to Levels of Evidence. Can expedite your searching.

- Type of Article
  - Clinical Trial
  - Editorial
  - Letter
  - Meta-Analysis
  - Practice Guideline
  - Randomized Controlled Trial
  - Review
  - More Publication Types
    - Addresses
    - Bibliography
    - Biography

Meta-Analysis
Systematic Reviews
Randomized Controlled Trials
Cohort Studies
Case Control Studies
Case Reports
Ideas, Editorials, Opinions
Narrative Review
<table>
<thead>
<tr>
<th>Type of Article</th>
<th></th>
<th>Type of Article</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Biography</td>
<td></td>
<td>Guideline</td>
<td></td>
</tr>
<tr>
<td>Case Reports</td>
<td></td>
<td>Historical Article</td>
<td></td>
</tr>
<tr>
<td>Classical Article</td>
<td></td>
<td>Interview</td>
<td></td>
</tr>
<tr>
<td>Clinical Conference</td>
<td></td>
<td>Journal Article</td>
<td></td>
</tr>
<tr>
<td>Clinical Trial, Phase I</td>
<td></td>
<td>Lectures</td>
<td></td>
</tr>
<tr>
<td>Clinical Trial, Phase II</td>
<td></td>
<td>Legal Cases</td>
<td></td>
</tr>
<tr>
<td>Clinical Trial, Phase III</td>
<td></td>
<td>Legislation</td>
<td></td>
</tr>
<tr>
<td>Clinical Trial, Phase IV</td>
<td></td>
<td>Multicenter Study</td>
<td></td>
</tr>
<tr>
<td>Comment</td>
<td></td>
<td>News</td>
<td></td>
</tr>
<tr>
<td>Congresses</td>
<td></td>
<td>Newspaper Article</td>
<td></td>
</tr>
<tr>
<td>NIH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Controlled Clinical Trial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected and Republished Article</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dictionary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directory</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duplicate Publication</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation Studies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Festschrift</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government Publications</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guideline</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Clinical Queries Feature - Shortcut to Relevant Evidence

- Uses evidenced-based filters to quickly and effectively access relevant articles using structured algorithms that streamline the process of searching the literature.

- Using the "Find Systematic Reviews" Clinical Query, an individual with limited searching skills can find relevant evidence by typing in a main topic or specific interest and automatically be given citations of relevant SRs.
PubMed
http://pubmed.gov

• Use Clinical Queries "Find Systematic Reviews" for a quick EB filter
• Use Clinical Queries "Search by Clinical Study Category" for individual types of studies
• Use Limits to narrow search to highest levels of evidence
• Use Help or Tutorial if you get stuck
• Use MeSH browser to identify key terms
• Type search terms in search box Go
• Use History to combine searches
Jane & Pam

Feel free to add more examples
Part V. Integrating EBDM into Curriculum and Clinical Practice
So What Do We Know About What Works?

• Standalone and integrated teaching are both effective in improving *knowledge*
• Clinically integrated teaching of EBM is the only approach likely to bring about changes in critical appraisal skills, attitudes and behavior, which ultimately may benefit patient care
• Faculty must find ways to integrate teaching Critical Appraisal into routine clinical practice
• Teaching should take place in ‘real time’ to both teach EBM skills and improve care with the best available evidence
• Faculty must act as role models
• Introduce EB assessments that measure EB learning
• Provide opportunities to use EB skills in clinical settings
Common Themes → Best Practices Model

- Need to teach EB theoretical principles and all five skills in the process (not just searching)
- Need to use relevant clinical scenarios in teaching the application of skills, and most importantly
- **Need to transition classroom simulations to routine practice on the clinic floor in making patient care decisions**
- Need faculty development programs & support for making and implementing curricular changes
- Importance of having the needed resources, time and infrastructure
PubMed® Online Training

• PubMed Tutorial

The PubMed Tutorial is based on the NLM’s one-day PubMed training course.

• Quick Tours

The following are brief animated tutorials with audio for using PubMed. Running times are rounded to the nearest minute. Click on the link to launch the tour.

Searching PubMed

• Search PubMed for an Author (3 min., June 2005)
• Searching PubMed by Author and Subject (1 min., revised December 2007)
• PubMed Simple Subject Search (2 min., June 2008)
• Search for a Journal (5 min, June 2007)
• Retrieving Citations from a Journal Issue (1 min., December 2005)

PubMed's MeSH Database

My NCBI

• Retrieving Your My NCBI Username or Password (approx. 2 min., September 2008)
• Saving Searches (approx. 4 min., revised October 2008)
  ○ Changing Saved Searches (approx. 3 min., October 2008)
• Collections (approx. 3 min., revised October 2008)
  ○ Editing Collections (approx. 4 min., revised October 2008)
• Creating Your Bibliography (approx. 3 min., September 2008)
# Internet Resources for Clinical Decision Making

## Tutorials and Skill Development Resources

<table>
<thead>
<tr>
<th>Tutorial/Resource</th>
<th>URL</th>
</tr>
</thead>
</table>
| SUNY Health Sciences Evidence based Medicine Course from SUNY Downstate Medical Center and The Evidence Pyramid | [http://library.downstate.edu/EBM2/contents.htm](http://library.downstate.edu/EBM2/contents.htm)  
[http://library.downstate.edu/EBM2/2100.htm](http://library.downstate.edu/EBM2/2100.htm) |
| Evidence Based Nursing, Indiana University-Purdue University Indianapolis          | [http://www.ulib.iupui.edu/subjectareas/nursing/EBN-Tutorial](http://www.ulib.iupui.edu/subjectareas/nursing/EBN-Tutorial) |
| Evaluating Internet Sources & Sites: a tutorial, Purdue University               | [http://www.lib.purdue.edu/ugrl/staff/sharkey/interneteval/](http://www.lib.purdue.edu/ugrl/staff/sharkey/interneteval/) |
ISBN-10: 0-7817-6533-1  
Evidence-based Decision Making for Dental Professions, First Edition
Jane Forrest
Syrene Miller
Michael G. Newman
Pam Overman
ISBN: 978-0-7817-6533-6

- Instructor Ancillary Content
- Student Ancillary Content
- Sample Materials & Ancillary Information
- Links
- Login & Code Activation

This concise, hands-on text is designed to provide dental hygiene and dentistry students and pract method for making evidence-based decisions in practice.

The authors intend to develop a concise, yet complete, text on incorporating evidence-based decis (EBDM) into dental practice. The authors first teach basic principles of EBDM. The remaining chap apply each step in the EBDM process to their study and practice.

Each chapter includes learning objectives, an end-of-chapter quiz, and exercises to help readers ge of the material
Brownstone Diploma Updates available. Updates are available for the Brownstone Diploma Test Generator if you have the latest version of Internet Explorer. Get the updates.

Instructor Ancillary Content: Evidence-Based Decision Making: A Translational Guide for Dental Professionals

Chapter Ancillary Content: Textbook Materials

- **Chapter 01**: Introduction to Evidence-Based Decision Making
  - PowerPoint Presentations (364 K)
  - Quiz Answer Key (26 K)
  - Quiz (21 K)

- **Chapter 02**: PICO: Asking Good Questions
  - PowerPoint Presentations (450 K)
  - Quiz Answer Key (26 K)
  - Quiz (25 K)

- **Chapter 03**: Research Design and Sources of Evidence
  - PowerPoint Presentations (612 K)
  - Quiz Answer Key (20 K)
  - Quiz (17 K)

- **Chapter 04**: Levels of Evidence
  - PowerPoint Presentations (800 K)
Quiz 3

1. Explain why a single research study does not constitute 'the evidence'.

2. All of the following are considered primary sources of evidence EXCEPT:
   a. RCT
   b. Cohort Study
   c. Meta-analysis
   d. Case Report

3. Which of the following is considered a secondary source of evidence?
   a. RCT
   b. Cohort Study
   c. Meta-analysis
   d. Case Report
   e. Case Control Study

4. Experimental research differs from non-experimental research in that it:
   a. Makes observations without intervening
   b. Focuses retrospectively
   c. Studies rare diseases
   d. Tests cause and effect
   e. Has no control group
Critical Thinking Questions

a. Explain why a RCT is not always the appropriate research design to use.

b. Provide an example of when you would first conduct a traditional literature search prior to looking for a systematic review or meta-analysis.
Assignment Module

The Assignment feature of the Continuing Education Section allows you to create assignments for Students (or members of your team). Once you have created an assignment, you will receive an assignment number (that you provide to your students). Students enter the assignment number when they submit their scores for credit. From this page, you can create new assignments, review existing assignments (and check scores).

What would you like to do:

- CREATE NEW ASSIGNMENT
- REVIEW EXISTING ASSIGNMENTS

< Previous
http://www.dentalcare.com/soap/conteduc/index.htm
Select Topic:

- [Select topic]
- All topics
- Amalgams
- Anatomy
- Anesthesia and Pain Control
- Basic Science
- Caries Prevention
- Child Abuse Identification & Reporting
- Dentistry for the Medically Compromised
- Domestic Violence
- Emergency Training/CPR
- Esthetic Dentistry
- General Dentistry
- Geriatric Dentistry
- HIV/AIDS
- Implants
- Infectious Disease Control
- Operative Dentistry
- Oral Medicine, Oral Diagnosis
- Oral Pathology
- Orthodontics
- Patient Education/Motivation
- Pediatric Dentistry
- Periodontics
- Physical Evaluation
- Practice Management
- Prevention of Medical Errors
- Prosthodontics – Removable
- Radiology
- Research Methodology
- Special Patient Care
- Sports Dentistry
- Tobacco Oral Health Effects

Stage of Curriculum (students):

- [Select Stage – see below]
- All stages
- Pre-Matriculation
- Pre-Clinical
- Pre-Clinical Advanced

If you were given an assignment number by your professor, enter it above to show the assigned course.
P&G CE - Create Course Assignment

Create New Assignment

This module allows you to select specific courses to assign to your students or team members. After pressing 'SUBMIT' below, please provide the Assignment Number to the course participant. You can use the Review Assignments link above to track assignments and completions.

Select Type of Assignment:
- Standard CE Course

Select Topic:
- [Select Topic]

Select Course:
- Evidence-Based Decision Making: Introduction and Formulating Good Clinical Questions [311]

Course ID: 311 (VIEW COURSE)
Course Title: Evidence-Based Decision Making: Introduction and Formulating Good Clinical Questions

The primary learning objectives for this course are to: 1) increase your knowledge of evidence-based concepts, principles and skills, and 2) specifically how to formulate a good clinical question in order to find relevant evidence to answer that question.

Abstract:

Start Date: MM/DD/YYYY format. Date to begin accepting submissions.
End Date: Submissions after this date will not be accepted. Leave blank to keep assignment open indefinitely.

Click SUBMIT to create a new assignment based on this course.

Submit
Assignment Created Successfully!

Assignment Number: 9071  <<< Provide this code to students to use when submitting their completed test for credit.

Course ID: 311

Course Title: Evidence-Based Decision Making: Introduction and Formulating Good Clinical Questions

Abstract: The primary learning objectives for this course are to: 1) increase your knowledge of evidence-based concepts, principles and skills, and 2) specifically how to formulate a good clinical question in order to find relevant evidence to answer that question.

RETURN TO MAIN MENU
Review Existing Assignments
You can use the Review Assignment feature to track assignments and completions as well as view a listing of the assignments you have created. The magnifying glass icon will show you the completions for each assignment. Click here to view.

After an assignment number is created, the following instructions should be given to your students for accessing the assignment in the Student Corner:

- Make sure to have the assignment number handy
- Click on the "CE menu" icon located on the top menu bar
- Type the assignment number in the "Assignment Number" field and click on "Show Course List"
- Provide the assignment number after you have submitted your test sheet
Making decisions about patient care is difficult. Timely access to the current relevant literature is crucial to the practice of evidence-based decision making. Health care providers who are inundated with new scientific findings need better, more efficient ways to stay on top of the latest advances in clinical science so they can provide the most effective and appropriate care.

EBDM recognizes that clinicians can never be completely current with all conditions, medications, materials or available products, and provides a mechanism for assimilating current research findings into everyday practice in order to provide the best possible care. Thus, scientific evidence is considered by the practitioner in the context of an individual patient’s circumstances when it is appropriate.

What is Evidence-Based Decision-Making?

Evidence-Based Decision Making (EBDM) is the formalized process and structure for efficient online searching to effectively find relevant evidence, and
Division of Oral Health

http://www.cdc.gov/OralHealth/

Oral Health Resources

NEW Working Together to Manage Diabetes
Updated materials for dental professionals, optometrists, podiatrists, and pharmacists that can help these health care professionals and people with diabetes “team up” to prevent or delay complications from this disease. From the National Diabetes Education Program.

NEW Periodontal Disease Surveillance
A supplement to the Journal of Periodontology (July 2007) addresses the feasibility of using self-reported measures for periodontal disease surveillance. Epidemiologists and other professionals who rely on oral health surveillance measures can access selected full-text articles.

Results from the 1999–2004 National Health and Nutrition Examination Survey (NHANES)
National Center for Health Statistics releases new oral health report, with the latest statistics on tooth decay, use of dental sealants, total tooth loss, and more.
Diabetes and Oral Health

Publications

- Diabetes and Oral Health: Treating the Patient with Diabetes Mellitus
  A special issue of the Journal of the American Dental Association that includes an article written by NIDCR staff. Also includes information on diabetes diagnosis and management, the influence of diabetes on periodontal (gum) tissues, the effect of periodontal treatment on diabetes, and how to lower the risk of developing diabetes and its complications.
- Prevent diabetes problems—Keep your teeth and gums healthy
- Diabetes: Dental Tips

National Oral Health Information Clearinghouse (NOHIC)

A resource for special care patients

- About NOHIC
- What is Special Care?
- Oral Health, Cancer Care, and You
- Order Publications
### Top 150 Drug Name Searches on RxList

<table>
<thead>
<tr>
<th>Rank</th>
<th>Drug Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hydrocodone*</td>
</tr>
<tr>
<td>2</td>
<td>Lexapro</td>
</tr>
<tr>
<td>3</td>
<td>Vicodin</td>
</tr>
<tr>
<td>4</td>
<td>Xanax</td>
</tr>
<tr>
<td>5</td>
<td>Adderall</td>
</tr>
<tr>
<td>6</td>
<td>Effexor</td>
</tr>
<tr>
<td>7</td>
<td>Zoloft</td>
</tr>
<tr>
<td>8</td>
<td>Paxil</td>
</tr>
<tr>
<td>9</td>
<td>Wellbutrin</td>
</tr>
<tr>
<td>10</td>
<td>Bextra</td>
</tr>
<tr>
<td>11</td>
<td>Neurontin</td>
</tr>
<tr>
<td>12</td>
<td>Lipitor</td>
</tr>
<tr>
<td>13</td>
<td>Percocet</td>
</tr>
<tr>
<td>14</td>
<td>Oxycodone</td>
</tr>
<tr>
<td>15</td>
<td>Vioxx</td>
</tr>
<tr>
<td>16</td>
<td>Ambien</td>
</tr>
<tr>
<td>17</td>
<td>Ambien</td>
</tr>
<tr>
<td>18</td>
<td>Ambien</td>
</tr>
<tr>
<td>19</td>
<td>Ambien</td>
</tr>
<tr>
<td>20</td>
<td>Ambien</td>
</tr>
<tr>
<td>21</td>
<td>Ambien</td>
</tr>
<tr>
<td>22</td>
<td>Ambien</td>
</tr>
<tr>
<td>23</td>
<td>Ambien</td>
</tr>
<tr>
<td>24</td>
<td>Ambien</td>
</tr>
<tr>
<td>25</td>
<td>Ambien</td>
</tr>
<tr>
<td>26</td>
<td>Ambien</td>
</tr>
<tr>
<td>27</td>
<td>Ambien</td>
</tr>
<tr>
<td>28</td>
<td>Ambien</td>
</tr>
<tr>
<td>29</td>
<td>Ambien</td>
</tr>
<tr>
<td>30</td>
<td>Ambien</td>
</tr>
<tr>
<td>31</td>
<td>Ambien</td>
</tr>
<tr>
<td>32</td>
<td>Ambien</td>
</tr>
<tr>
<td>33</td>
<td>Ambien</td>
</tr>
<tr>
<td>34</td>
<td>Ambien</td>
</tr>
<tr>
<td>35</td>
<td>Ambien</td>
</tr>
<tr>
<td>36</td>
<td>Ambien</td>
</tr>
<tr>
<td>37</td>
<td>Ambien</td>
</tr>
<tr>
<td>38</td>
<td>Ambien</td>
</tr>
<tr>
<td>39</td>
<td>Ambien</td>
</tr>
<tr>
<td>40</td>
<td>Ambien</td>
</tr>
<tr>
<td>41</td>
<td>Ambien</td>
</tr>
<tr>
<td>42</td>
<td>Ambien</td>
</tr>
<tr>
<td>43</td>
<td>Ambien</td>
</tr>
<tr>
<td>44</td>
<td>Ambien</td>
</tr>
<tr>
<td>45</td>
<td>Ambien</td>
</tr>
<tr>
<td>46</td>
<td>Ambien</td>
</tr>
<tr>
<td>47</td>
<td>Ambien</td>
</tr>
<tr>
<td>48</td>
<td>Ambien</td>
</tr>
<tr>
<td>49</td>
<td>Ambien</td>
</tr>
<tr>
<td>50</td>
<td>Ambien</td>
</tr>
<tr>
<td>51</td>
<td>Ambien</td>
</tr>
<tr>
<td>52</td>
<td>Ambien</td>
</tr>
<tr>
<td>53</td>
<td>Ambien</td>
</tr>
<tr>
<td>54</td>
<td>Ambien</td>
</tr>
<tr>
<td>55</td>
<td>Ambien</td>
</tr>
<tr>
<td>56</td>
<td>Ambien</td>
</tr>
<tr>
<td>57</td>
<td>Ambien</td>
</tr>
<tr>
<td>58</td>
<td>Ambien</td>
</tr>
<tr>
<td>59</td>
<td>Ambien</td>
</tr>
<tr>
<td>60</td>
<td>Ambien</td>
</tr>
<tr>
<td>61</td>
<td>Ambien</td>
</tr>
<tr>
<td>62</td>
<td>Ambien</td>
</tr>
<tr>
<td>63</td>
<td>Ambien</td>
</tr>
<tr>
<td>64</td>
<td>Ambien</td>
</tr>
<tr>
<td>65</td>
<td>Ambien</td>
</tr>
<tr>
<td>66</td>
<td>Ambien</td>
</tr>
<tr>
<td>67</td>
<td>Ambien</td>
</tr>
<tr>
<td>68</td>
<td>Ambien</td>
</tr>
<tr>
<td>69</td>
<td>Ambien</td>
</tr>
<tr>
<td>70</td>
<td>Ambien</td>
</tr>
<tr>
<td>71</td>
<td>Ambien</td>
</tr>
<tr>
<td>72</td>
<td>Ambien</td>
</tr>
<tr>
<td>73</td>
<td>Ambien</td>
</tr>
<tr>
<td>74</td>
<td>Ambien</td>
</tr>
<tr>
<td>75</td>
<td>Ambien</td>
</tr>
<tr>
<td>76</td>
<td>Ambien</td>
</tr>
<tr>
<td>77</td>
<td>Ambien</td>
</tr>
<tr>
<td>78</td>
<td>Ambien</td>
</tr>
<tr>
<td>79</td>
<td>Ambien</td>
</tr>
<tr>
<td>80</td>
<td>Ambien</td>
</tr>
<tr>
<td>81</td>
<td>Ambien</td>
</tr>
<tr>
<td>82</td>
<td>Ambien</td>
</tr>
<tr>
<td>83</td>
<td>Ambien</td>
</tr>
<tr>
<td>84</td>
<td>Ambien</td>
</tr>
<tr>
<td>85</td>
<td>Ambien</td>
</tr>
<tr>
<td>86</td>
<td>Ambien</td>
</tr>
<tr>
<td>87</td>
<td>Ambien</td>
</tr>
<tr>
<td>88</td>
<td>Ambien</td>
</tr>
<tr>
<td>89</td>
<td>Ambien</td>
</tr>
<tr>
<td>90</td>
<td>Ambien</td>
</tr>
<tr>
<td>91</td>
<td>Ambien</td>
</tr>
<tr>
<td>92</td>
<td>Ambien</td>
</tr>
<tr>
<td>93</td>
<td>Ambien</td>
</tr>
<tr>
<td>94</td>
<td>Ambien</td>
</tr>
<tr>
<td>95</td>
<td>Ambien</td>
</tr>
<tr>
<td>96</td>
<td>Ambien</td>
</tr>
<tr>
<td>97</td>
<td>Ambien</td>
</tr>
<tr>
<td>98</td>
<td>Ambien</td>
</tr>
<tr>
<td>99</td>
<td>Ambien</td>
</tr>
<tr>
<td>100</td>
<td>Ambien</td>
</tr>
<tr>
<td>101</td>
<td>Ambien</td>
</tr>
<tr>
<td>102</td>
<td>Ambien</td>
</tr>
<tr>
<td>103</td>
<td>Ambien</td>
</tr>
<tr>
<td>104</td>
<td>Ambien</td>
</tr>
<tr>
<td>105</td>
<td>Ambien</td>
</tr>
<tr>
<td>106</td>
<td>Ambien</td>
</tr>
<tr>
<td>107</td>
<td>Ambien</td>
</tr>
<tr>
<td>108</td>
<td>Ambien</td>
</tr>
<tr>
<td>109</td>
<td>Ambien</td>
</tr>
<tr>
<td>110</td>
<td>Ambien</td>
</tr>
<tr>
<td>111</td>
<td>Ambien</td>
</tr>
<tr>
<td>112</td>
<td>Ambien</td>
</tr>
<tr>
<td>113</td>
<td>Ambien</td>
</tr>
<tr>
<td>114</td>
<td>Ambien</td>
</tr>
<tr>
<td>115</td>
<td>Ambien</td>
</tr>
<tr>
<td>116</td>
<td>Ambien</td>
</tr>
<tr>
<td>117</td>
<td>Ambien</td>
</tr>
<tr>
<td>118</td>
<td>Ambien</td>
</tr>
<tr>
<td>119</td>
<td>Ambien</td>
</tr>
<tr>
<td>120</td>
<td>Ambien</td>
</tr>
<tr>
<td>121</td>
<td>Ambien</td>
</tr>
<tr>
<td>122</td>
<td>Ambien</td>
</tr>
<tr>
<td>123</td>
<td>Ambien</td>
</tr>
<tr>
<td>124</td>
<td>Ambien</td>
</tr>
<tr>
<td>125</td>
<td>Ambien</td>
</tr>
<tr>
<td>126</td>
<td>Ambien</td>
</tr>
<tr>
<td>127</td>
<td>Ambien</td>
</tr>
<tr>
<td>128</td>
<td>Ambien</td>
</tr>
<tr>
<td>129</td>
<td>Ambien</td>
</tr>
<tr>
<td>130</td>
<td>Ambien</td>
</tr>
<tr>
<td>131</td>
<td>Ambien</td>
</tr>
<tr>
<td>132</td>
<td>Ambien</td>
</tr>
<tr>
<td>133</td>
<td>Ambien</td>
</tr>
<tr>
<td>134</td>
<td>Ambien</td>
</tr>
<tr>
<td>135</td>
<td>Ambien</td>
</tr>
<tr>
<td>136</td>
<td>Ambien</td>
</tr>
<tr>
<td>137</td>
<td>Ambien</td>
</tr>
<tr>
<td>138</td>
<td>Ambien</td>
</tr>
<tr>
<td>139</td>
<td>Ambien</td>
</tr>
<tr>
<td>140</td>
<td>Ambien</td>
</tr>
<tr>
<td>141</td>
<td>Ambien</td>
</tr>
<tr>
<td>142</td>
<td>Ambien</td>
</tr>
<tr>
<td>143</td>
<td>Ambien</td>
</tr>
<tr>
<td>144</td>
<td>Ambien</td>
</tr>
<tr>
<td>145</td>
<td>Ambien</td>
</tr>
<tr>
<td>146</td>
<td>Ambien</td>
</tr>
<tr>
<td>147</td>
<td>Ambien</td>
</tr>
<tr>
<td>148</td>
<td>Ambien</td>
</tr>
<tr>
<td>149</td>
<td>Ambien</td>
</tr>
<tr>
<td>150</td>
<td>Ambien</td>
</tr>
</tbody>
</table>
Evidence-based Practice: Not just a New Term for an old Concept

Practitioners need

1) More efficient and effective online searching skills to find relevant evidence, and

2) Critical appraisal skills to rapidly evaluate the evidence for its validity and applicability.
Potential Rewards of EBDM

**Greater confidence**

- That clinical judgments in caring for individual patients are well-founded
- That practice is continually informed and strengthened by current research findings
- That therapies and advice suggested in treatment plans are scientifically defensible

Modified from P. Imrey 2002
Any Questions?

Thank You!