How to Conduct a Literature Search
When to do a literature search?

- When you want to find out more about a given topic
- After deciding upon your research topic or research question
- Before beginning a research project or study
Why do a literature search?

1) For a paper you are writing such as an assignment, grant proposal, or manuscript
   Introduction/Discussion/References

2) To decide if your research question or project is “novel”
   It is useless to waste time, money, and resources on a project that has already been carried out

3) You will gain knowledge about your topic of interest
Why do a literature search?

4) You might find a better aspect of the topic to study

5) You might find other variables to include or measures/instruments to use
   e.g. Previously used and validated tools or surveys

6) Learn from what others have done right and wrong
   “Limitations” sections in published studies
   “Future directions” sections in published studies
Why do a literature search?

Mainly, you want to see if your research question has already been answered and if going forward with your study will ADD to the scientific literature and knowledge about the topic (not repeat what has previously been done)

You want to find where your research idea “fits” in the current research on your topic. Are there any “gaps” in the literature that need addressed?
What if it has been done before?

It’s okay if your research question has already been addressed in the literature. You can put a different spin on the question such as:

- Carry out the study in a rural population (vs. urban)
- If males have been studied, study females
- If the topic hasn’t been studied in the United States

A thorough review of the literature will tell you whether your new “spin” on the topic has merit and is worth pursuing
How to conduct a search

Literature searches are done through keywords and sometimes use Boolean operators (AND, OR, NOT)

e.g. If you wanted to study dentist’s attitudes towards patients with HIV

“dentist” AND
“attitudes” AND
“HIV”

This search will find all records containing the word ‘dentist’ as well as ‘attitudes’ and ‘HIV’ in the same source
Boolean Operators

AND = use between words to narrow your search and retrieve records containing all of the words

“mice AND mouse AND rat” – will retrieve records containing ‘mice’, ‘mouse’ AND ‘rat’

OR = use between words to broaden your search and retrieve records containing any of the words

“mice OR mouse OR rat” – will retrieve records containing EITHER ‘mice’, or ‘mouse’ or ‘rat’

NOT = use between words to narrow search and retrieve records that do not contain the term following it

“mice or mouse NOT rat” – will retrieve records containing either ‘mice’ or ‘mouse’ but no records containing ‘rat’
Boolean operators

- mouse AND rat
- mouse OR rat
- mouse NOT rat
A Fine Balance

Literature searches are a fine balance:

If your search is **too narrow**, you will get very few, if any, results

- dentist AND attitudes AND HIV AND survey AND Maine

If your search is **too broad**, you will get thousands of results

- dentist attitudes
Places to search for articles

Suggested sites for dental medicine research:

1) Medline – PubMed

2) Ebscohost databases (such as Dental & Oral Science Source, PsycINFO, Cochrane databases)

3) Scopus

4) Google Scholar
Start at Library homepage
www.une.edu/library

Click Dental Medicine subject guide
Dental Medicine

• Helpful Links
• Databases
• Catalogs
• Websites
• Contact Info

Helpful Links
• How to Find a Specific Journal Article
• Is It a Scholarly Journal or Isn't It?
• Full Text Journals
• ILLiad: Interlibrary Loan
• eBooks
• Writing the Paper & Style Manuals

Databases
Anatomy.tv
Anatomy.tv is a detailed 3D model of human anatomy. Includes features such as interactive zoom, rotation, angle, interactive layers, extensive text, MRI, clinical slides and x-rays, live action movies, animations, radiology slides, dissection videos and slides, surface anatomy videos and slides. Focuses on muscles, ligaments, nerves, veins, arteries and bones.

ClinicalKey
ClinicalKey is a clinical search engine that supports clinical decisions by making it easier to find and apply relevant knowledge. It draws from a wide range of Elsevier's current content across 30+ medical specialties, and includes medical and surgical books, top journals, drug monographs, patient education, and multimedia. It also includes First Consult – an evidence-based point-of-care decision-tool, and Procedures Consult – high-quality video, text and illustrations for top medical procedures.

Cochrane Collection Plus
Cochrane Database of Systematic Reviews

Scroll to the databases you need here
PubMed is a good starting point for dental medicine articles.
Medline PubMed


- Is a citation only database, so contains no full text articles unless supplied for free from publisher

- You can link to the full text articles that are not free if you access PubMed through UNE Library website while you are a student
Sample Topic

You have heard that tooth bleaching might impact the bond strength of composite resins. You know that many of your patients are using tooth whitening products. You want to conduct a literature review on the topic and maybe write an article for the state association newsletter.

Formulate your research question using PICO:

P = patient, problem or population
I = intervention
C = comparison or control
O = outcome
In patients with **composite resins**, does **tooth bleaching** have any effect on **bond strength**?

The PICO words in color become your keywords for your search. Stick with nouns.
The Boolean operator “AND” is inferred in a simple PubMed search so you don’t need to add it between search terms.
98 results – that’s manageable but you can narrow your results by using the filters on left.

Click article title to see abstract and full record and to link to full text.

Filters above – consider publication date, English, Humans if you want a clinical study and not in vitro.
Can Whitening Strips interfere with the Bond Strength of Composite Resins?

Fircozmand LM, Reis WL, Vieira MA, Nunes AG, Taveza RR, Tonetto MR, Bramante FS, Gandhi SH, Roma RV, Bandeia MC.

Abstract

AIM: The aim of this study was to investigate in vitro the bond strength of composite resins on enamel previously treated with whitening strips.

MATERIALS AND METHODS: A total of 48 bovine incisors were allocated to four experimental groups (n = 12 each): G1 (WSC) treated with 9.5% hydrogen peroxide whitening strips (3D White Whitestrips® Advanced Vivid/CREST), G2 (WSO) treated with 10% hydrogen peroxide whitening strips (3D WhiteTM/Oral B); G3 (WG) treated with 7.5% hydrogen peroxide gel with fluoride, calcium and potassium nitrate (White Class®/FSM); and G4 (C)-control not subjected to bleaching treatment. The specimens were subjected to bleaching over 2 weeks following the manufacturers' instructions. Following the elaboration of the composite resin test specimens, the samples were stored in artificial saliva and subsequently subjected to the micro-shear test using the universal testing machine (EMIC®). The bond strength values were analyzed by one-way ANOVA and Tukey's statistical test (9%).

RESULTS: Significant differences were observed among the investigated groups (p < 0.05). The G3-WG exhibited greater values compared with the control group and the groups treated with strips, G1-WSC and G2-WSO. Analysis of the bond interface revealed that a large fraction of the failures occurred at the enamel-resin interface.

CONCLUSION: The bond strength decreased following 14 days of treatment with bleaching strips, whereas the peroxide, calcium and fluoride increased the bond strength.

KEYWORDS: Adhesives. Dental enamel; Tooth bleaching

PMID: 26067726 [PubMed - in process]
Use Multiple Databases

• For a comprehensive literature review, multiple databases should be searched.

• Although there will be overlap, different databases index different journals so there will be unique content in each.
Suggested EBSCOhost databases

To search for information related to dental medicine:

- **Dental and Oral Science Source (DOSS)** – lots of full text
- **Cochrane Central Database of Controlled Trials** – if a clinical trial has been done on your topic, it is likely to be found here
- **Cochrane Database of Systematic Reviews** – if a Systematic Review has been done by the Cochrane Collaboration it would be here in full text
- **PsycINFO** – if your topic is related to behavioral medicine, psychology, pain etc. this is helpful
- **MEDLINE** – you can search MEDLINE via Ebsco but the search engine is not as robust as PubMed and the newest articles may not be there yet, as they originate in PubMed and get loaded monthly into Ebsco. Lots of full text articles though.
data for both providers, patients and those responsible for researching, teaching, funding and administering at all levels of the medical profession. It combines the NIH Economic Evaluation Database (NIH EED) and Health Technology Assessments (HTA) with the Cochrane Database of Systematic Reviews (CDSR), Database of Abstracts of Reviews of Effects (DARE), Cochrane Central Register of Controlled Trials and Cochrane Methodology Register.

Dentistry & Oral Science Source

Dentistry & Oral Science Source covers all facets relating to the areas of dentistry including dental public health, endodontics, facial pain & surgery, odontology, oral & maxillofacial pathology/surgery/radiology, orthodontology, pediatric dentistry, periodontology and prosthodontics. The database is updated weekly on EBSCOhost.

Exam Master

Exam Master is an efficient way to study for the USMLE, PAISE, NAPLEX, NBDE, board certification exams, and to review medical subjects.

Medline - PubMed

PubMed comprises over 24 million citations for biomedical literature from MEDLINE, life science journals, and online books. PubMed citations and abstracts include the fields of biomedicine and health, covering portions of the life sciences, behavioral sciences, chemical sciences, and bioengineering. PubMed also provides access to additional relevant web sites and links to the other NCBI molecular biology resources. PubMed is a free resource that is developed and maintained by the National Center for Biotechnology Information (NCBI), at the U.S. National Library of Medicine (NLM), located at the National Institutes of Health (NIH). PubMed Tutorials.
You can perform a search in more than one EBSCOhost database at the same time. Click Choose Databases to select the databases.
EBSCOhost Databases

Click the icon next to the database title to see a description of the database and what kind of content it searches.
EBSCOhost databases

Click the folder icon to add articles you like to a folder.

Next, open the folder to view your articles and save, print, or email the citations to yourself in the desired style (eg. AMA), then open the PDF or link out to the full text.
EBSCOhost databases

   Subjects: TOOTH whitening; ANTIOXIDANTS; LYCOPENE; ENAMEL & enameling; METALS -- Finishing
   PDF Full Text (487KB) Check for Full Text

2. Microtensile Bond Strength of a Nanofilled Composite Resin to Human Dentin after Nonvital Tooth Bleaching.
   Subjects: DENTAL bonding; STRENGTH of materials; DENTAL resins; TOOTH whitening; COMPOSITE materials; DENTIN; SCANNING electron microscopy; DENTAL research
   Show all 27 images
   PDF Full Text (326KB) Check for Full Text

Note these tools. After clicking one, you will be given a choice of citation styles such as AMA. You still need to check for accuracy.

Click the PDF icon to access the full text article. If no PDF, use Check for Full Text.
Reference lists of relevant articles are a great place to find more articles related to your topic of interest.
• Another strategy to the literature search is to follow a trail of research by finding articles that have cited a relevant article that you have.

• Or, do a topic search and find the most highly cited article on your topic – this is one you would not want to leave out of your review.
Scopus is a great place to enter a specific article title to see who has cited it. This is a way to find newer, related articles.
Click the number to see the articles that have cited this article.
Scopus: Do a topic search and find the most highly cited article on your topic
You will see the newest articles first. Next to “Sort on” click “Cited by” to see the list by most cited.
For your literature review you’d want to pay attention to these heavily cited articles on your topic. Some topics have “classic” or “seminal” work at their base.

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Year</th>
<th>Journal</th>
<th>Cited</th>
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<tr>
<td>The effects of peroxide bleaching on composite to enamel bond strength</td>
<td>Dishman, M.V., Covey, D.A., Baughan, L.W.</td>
<td>1994</td>
<td>Dental Materials</td>
<td>113</td>
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Full text not available?

Sometimes you cannot find the full-text articles in a UNE Library Database.

When this happens, try:

• From Dental Medicine subject guide click Full Text Journals link. Enter the name of the journal you need (not the article title). See if we have access to the journal for the year you need. If so, follow the link to the journal site and navigate to the year, volume, issue, and page number you need.

• If that does not work, try using Google or Google Scholar to see if by chance the article is freely available online somewhere.

• If that doesn’t work, request the article using our Interlibrary Loan service – ILLiad. Link to it from the Dental Medicine subject guide.

• Don’t pay for articles while you are affiliated with UNE; the Library can get you what you need!
• Indexes articles from web crawl
• Crawls PubMed
• Can link to full text via UNE Library using Settings
• Citation tracking
• List of sources indexed not available = not transparent = journal inclusion criteria?
Because there is no published inclusion criteria for sources included in Google Scholar, pay attention to the source of the article you want to use.

If you are unfamiliar with the source, investigate it.

For a journal evaluation template, see UNE Library website - Get Help – Writing the Paper – Scholarly Journals – Evaluate an eJournal
Now what?

• Once you have gathered all of your relevant articles...you need to read them thoroughly!

• If you plan to cite an article, be sure to read the ENTIRE manuscript, not just the abstract

• Pay special attention to **Introduction, Limitations, and Future Directions sections of articles** – these sections will tell you what is current about your topic as well as what research is still needed...

• Try to focus on the most recent articles when conducting a literature review, but older articles can be important too

• Meta-analyses, systematic reviews, and review articles can be very helpful to get summaries of research on a topic
Next Steps

• Try conducting a literature search using key terms related to your topic of interest

• Start off by finding and reading 5 – 10 articles related to your topic

• Write a few sentences or one to two paragraphs summarizing what you’ve read

• Hopefully this will help you refine or reaffirm your research questions
We’re here to help you!

Barb, Bobby, Beth and Cadence
your Reference & Instruction Librarians

- Walk-in for help or make an appointment
- email Ask A Librarian or one of us directly
- Call on the phone 207-221-4363 (PC) or 207-602-2363 (BC)

Thank you to Danielle Davidoff, PhD. for permission to adapt her presentation.