

Evidence-Based Dentistry in Practice, part 3

Limiting PubMed Results to Find Relevant Research

In the November *PDT*, the formation of the PICO question was reviewed. PICO, which stands for Patient Intervention Comparison Outcome, is used by researchers to describe complex questions that affect clinical decisions. Complex or novel clinical queries require a search of the primary medical literature using the PICO format. In the May issue, translating the PICO question into terms used to search for articles related to the question was explained.

This month's focus is on what to do with the evidence once you've retrieved it. First, you will want to limit your search results to a manageable number of citations.

Unless your topic is particularly obscure, chances are PubMed will return hundreds or even thousands of citations.

To set standard limits just click on desired date range, age, language and/or species. Typically, you will want to select English language, human as species and a date range for publications. To add additional filter categories to the sidebar, click the "Show additional filters" link, select the additional categories, and then click Show. You can then apply the additional limits, by clicking on them. For example if the Species filter was selected, the set can now be limited to humans. (See Figure 1 for a screenshot of PubMed Limits.)

You can search for guidelines (remember to check out the AAPD clinical guidelines first) by limiting publication type to Guidelines. (See Figure 2 to limit by publication type.)

You can also limit your search to systematic reviews¹ for an overview of the latest research on your subject. To find systematic reviews and reviews², just scroll down list of article types.

Once your search limit is set, you can apply it to your research question. In other words, consider your research needs and review your PubMed search results to determine what articles will help you answer your question.

To quickly scan a set of citations after setting limits, sort the set by clicking on the arrow next to display settings, see Figure 3 sorting search results. Select abstract to read the abstract of each article, number of citations you would like to review per page. You may choose to further sort your citations by: date; author; journal; title.

The relevance sort order for search results is based on an algorithm that analyzes each PubMed citation that includes the search terms. For each search query, "weight" is calculated for citations depending on

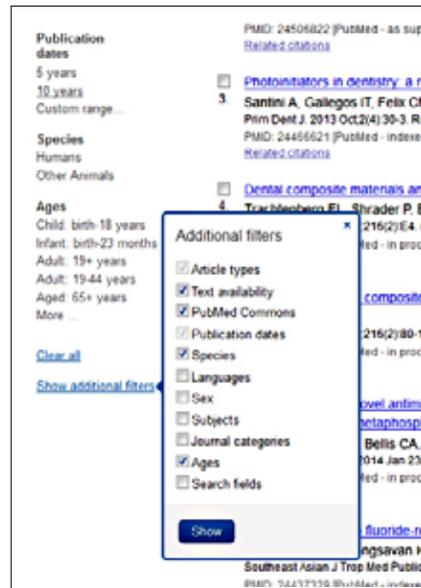


Figure 1

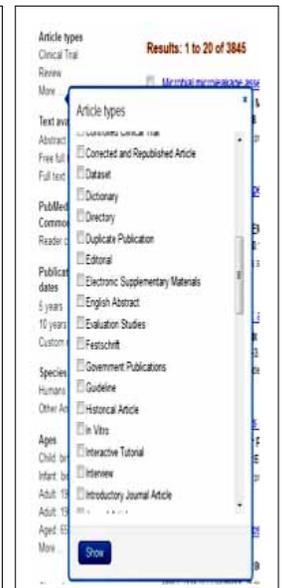


Figure 2

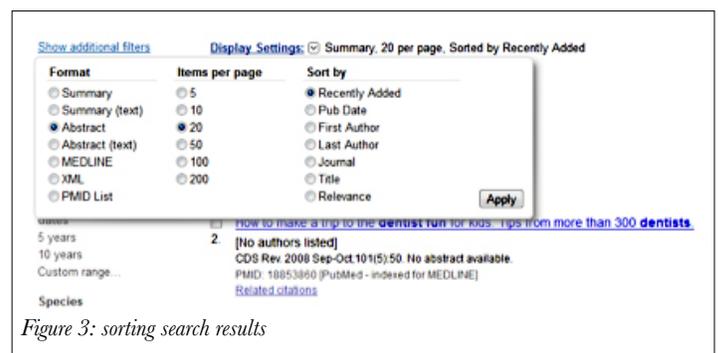


Figure 3: sorting search results

how many search terms are found and in which fields they are found. In addition, recently-published articles are given a somewhat higher weight for sorting.

The resulting set of articles limited by your requirements and sorted should be helpful for answering your clinical question.

The next article in the evidence-based dentistry series will discuss how to determine the quality of the research you are reviewing.

For further information, please contact AAPD Policy Center EBD Manager Laurel Graham at (312) 337-2169 or lgraham@aapd.org

¹A systematic review attempts to identify, appraise and synthesize all the empirical evidence that meets pre-specified eligibility criteria to answer a given research question. Researchers conducting systematic reviews use explicit methods aimed at minimizing bias, in order to produce more reliable findings that can be used to inform decision making – Cochrane Library.

²An article or book published after examination of published material on a subject. It may be comprehensive to various degrees and the time range of material scrutinized may be broad or narrow, but the reviews most often desired are reviews of the current literature. The textual material examined may be equally broad and can encompass, in medicine specifically, clinical material as well as experimental research or case reports. State-of-the-art reviews tend to address more current matters – National Center for Biotechnology Information.