

# Evidence-based Practice in Pediatric Physical Therapy

## Section on Pediatrics FACT SHEET



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## What Is Evidence-based Practice?

Evidence-based physical therapy practice has evolved from the move toward evidence-based medicine. Evidence-based medicine has been defined as “the integration of best research evidence with clinical expertise and patient values.”<sup>1</sup> In order for pediatric physical therapists to provide effective intervention we must become skilled at obtaining the best evidence available to inform our practice. For more information on evidence-based practice, please refer to Evidence-Based Medicine How to Practice and Teach EBM by Sackett, et al,<sup>1</sup> or visit the Center for Evidence-based Medicine’s Web site at [www.cebm.net/ebm\\_is\\_isnt.asp](http://www.cebm.net/ebm_is_isnt.asp).

There are many options available to those interested in doing a search of the literature. Most public libraries have librarians skilled in assisting beginners with learning to search databases. Many universities offer courses or assistance from resource librarians in performing searches. Community colleges often have courses on using computers for database searching. APTA has offered courses at national meetings as well as at state and regional meetings. Also, if you would like to access the links we have provided in this document electronically, see this document online at the Section’s Web site ([www.pediatricapta.org](http://www.pediatricapta.org)) under “Resources & Listserve”—click “Brochures and Fact Sheets”).

The five steps of evidence-based practice are:

1. Formulate your clinical question.
2. Obtain the evidence with literature searches.
3. Evaluate the evidence for validity and applicability.
4. Combine this evidence with clinical experience and your individual patient’s situation to determine the best course of action.
5. Examine your performance.

## Step One: Formulate Your Clinical Question

There are several resources available to guide you in formulating a clinical question. A couple of tutorials are available online at:

- Duke/University of North Carolina, Chapel Hill, at [www.hsl.unc.edu/services/tutorials/ebm/index.htm](http://www.hsl.unc.edu/services/tutorials/ebm/index.htm)
- Center For Evidence-based Medicine at [www.cebm.net](http://www.cebm.net)
- You also may want to consult Sackett’s text Evidence-Based Medicine How to Practice and Teach EBM<sup>1</sup>

## Step Two: Obtain the Evidence with Searches

There are many Web-based sources from which to obtain clinical research. A few evidence-based sites are:

- Cochrane reviews at [www.cochrane.org/reviews](http://www.cochrane.org/reviews). Cochrane reviews are meta-analyses of various topics.
- TRIPdatabase (Turning Research into Practice) at [www.tripdatabase.com](http://www.tripdatabase.com). This database takes a search and displays evidence-based links and meta-analyses, plus individual articles dealing with therapy, diagnosis, etiology, and prognosis. These links will send you to a PubMed site using the same search terms. It also provides a search via PubMed for what it calls “the big-four journals” (*Journal of the American Medical Association*, *New England Journal of Medicine*, *The Lancet*, and *British*

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*Medical Journal*). Articles published in these big-four journals are among the most highly regarded by medical practitioners and researchers because of their stringent peer-review process for acceptance for publication.

- PEDro (Physiotherapy Evidence resource) at [www.pedro.fhs.usyd.edu.au/index.html](http://www.pedro.fhs.usyd.edu.au/index.html). This database contains reviewed studies and provides scoring of the level of evidence (0-10) on the side of the reviewed study.
- Current clinical trials at [www.clinicaltrials.gov](http://www.clinicaltrials.gov). This site describes current clinical trials in a variety of health care disciplines.
- National Organization for Rare Disorders at [www.rarediseases.org](http://www.rarediseases.org).
- APTA also has several resources to assist members with evidence-based practice.
  - Hooked on Evidence at [www.apta.org/hookedonevidence/index.cfm](http://www.apta.org/hookedonevidence/index.cfm). This site has reviewed articles by therapists with commentary, although you need to be very specific with the topic of your searches (for example, “Down syndrome” and “Downs syndrome” get different results).
  - Evidence in Practice is a special section of Physical Therapy, APTA’s peer-reviewed journal. This section is both instructive and informative regarding how to translate evidence into practice. There are a few pediatric-related articles within the Evidence in Practice series that can be viewed at [www.ptjournal.org](http://www.ptjournal.org).
  - Open Door: APTA’s Portal to Evidence-based Practice at [www.apta.org](http://www.apta.org)—click on “Research” under the “Areas of Interest” navigation menu on the left hand side of the page; then click on “Open Door.” This is a benefit to members and provides access to a number of relevant journals, many with full-text articles. The research journal collections include ProQuest Health and Medical Complete, ProQuest Nursing Journals, and CINAHL.
  - *Pediatric Physical Therapy* (Journal of the Section on Pediatrics of APTA) [www.pedpt.com/pt/re/pedpt/home.htm](http://www.pedpt.com/pt/re/pedpt/home.htm) provides current full-text articles to members and archived articles (after 2 years) free to non-Section members.

There also are other Web site resources that are pediatric-specific. Although most are geared toward physicians, they often can provide useful information.

- Pediatric Critical Care Medicine at [pedscm.org/EBJournal\\_Resources.php](http://pedscm.org/EBJournal_Resources.php) has a wealth of Web resources and information on critical care.
- National Institute of Child Health and Development at [www.nichd.nih.gov/cochrane](http://www.nichd.nih.gov/cochrane) has systematic reviews related to neonatology.
- Evidence-based Pediatrics at [www.evidbasedpediatrics.com](http://www.evidbasedpediatrics.com) has information about general pediatrics.
- Evidence-based Pediatrics at the University of Michigan at [www.med.umich.edu/pediatrics/ebm](http://www.med.umich.edu/pediatrics/ebm) has helpful information, including several CATs or Critically Appraised Topics related to pediatrics.

The largest and most frequently referenced online databases are:

- Medline/PubMed ([www.ncbi.nlm.nih.gov/entrez/query.fcgi](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi)) and Medline Plus ([www.nlm.nih.gov/medlineplus/healthtopics.html](http://www.nlm.nih.gov/medlineplus/healthtopics.html)), which are a service of the National Library of Medicine and include more than 15 million citations for biomedical articles back to the 1950s.
- Ovid ([www.ovid.com](http://www.ovid.com)), which provides a searchable database of medical, scientific, and academic research information.
- CINAHL ([www.cinahl.com](http://www.cinahl.com)), which is commonly available at college campuses.

These databases are, for the most part, free online ways of looking through clinical articles. All of these databases can return a number of results during a search, but all offer ways of either limiting or expanding the information gained. Many times there are self-tutorials, including one on PubMed that show examples of how to search more effectively for the information in the database. APTA members who do not have access databases like Ovid and CINAHL may find many of the journals and articles searchable through APTA’s Open Door.

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### Step Three: Evaluate for Clinical Validity

Instructions for assessing the clinical validity of your article can be found at:

- Duke/University of North Carolina, Chapel Hill, at [www.hsl.unc.edu/services/tutorials/ebm/index.htm](http://www.hsl.unc.edu/services/tutorials/ebm/index.htm)
- Center For Evidence-based Medicine at [www.cebm.net](http://www.cebm.net)

### Step Four: Combine Evidence with Clinical Judgment

The next step is to consider your own clinical experience and judgment and that of your colleagues. Ways to access other clinicians' opinions include asking in your own clinic, in pediatric study groups, and on the Section on Pediatrics listserv (at [www.pediatricapta.org](http://www.pediatricapta.org) under "Resources & Listserv"). Now combine the research evidence, your clinical expertise, and the individual patient's situation and formulate your answer as to how to best perform (or, in some instances, not perform) the intervention for your patient.

### Step Five: Examine Your Performance

After the intervention has been completed, evaluate your performance. Were you pleased with your decision? Did the use of evidence-based practice help? Did the patient benefit from the intervention? Did you find a way of more effectively locating the information? You may even want to start your own database of effective interventions!

### Summary

Evidence-based practice is an important part of our clinical practice as physical therapists. Use of evidence-based practice is one of the primary goals of the Section on Pediatrics and the American Physical Therapy Association. We encourage APTA members to continue to use evidence-based practice and to contribute to APTA's Hooked on Evidence project, a searchable database of article extractions relevant to the field of physical therapy.

### Reference

Sackett DL, Straus SE, Richardson WS, Rosenberg W, Haynes RB. *Evidence-based Medicine: How to Practice and Teach EBM*. 2nd ed. Oxford: Churchill Livingstone; 2000.

### Other Resources

- American Physical Therapy Association [www.apta.org](http://www.apta.org)
- Section on Pediatrics, APTA [www.pediatricapta.org](http://www.pediatricapta.org)
- Center for Evidence-based Medicine [www.cebm.net/ebm\\_is\\_isnt.asp](http://www.cebm.net/ebm_is_isnt.asp)
- APTA's Hooked on Evidence [www.apta.org/hookedonevidence/index.cfm](http://www.apta.org/hookedonevidence/index.cfm)
- Evidence-based Pediatrics [www.evidbasedpediatrics.com](http://www.evidbasedpediatrics.com)
- *Pediatric Physical Therapy* [www.pedpt.com/pt/re/pedpt/home.htm](http://www.pedpt.com/pt/re/pedpt/home.htm)

### For More Information

If you have additional questions, would like to order additional copies of this fact sheet, or would like to join the Section on Pediatrics, please contact the Executive Office of the Section on Pediatrics of the American Physical Therapy Association at:

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Or visit the Section's Web site at [www.pediatricapta.org](http://www.pediatricapta.org).

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