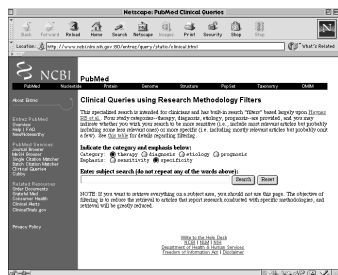


**PubMed clinical queries:** a Web tool for filtered retrieval of citations relevant to evidence-based practice.



This resource review evaluates the “Clinical Queries” function of PubMed, a component of the MEDLINE search interface developed by the U.S. National Center for Biotechnology Information, a division of the National Library of Medicine (NLM). PubMed is a free, Web-based, public MEDLINE search interface developed in cooperation with biomedical literature publishers to facilitate access to literature citations and linkages to full-text journals at the Web sites of participating publishers. This review considered the following clinical scenario:

*A 62-year-old man presents for routine follow-up of hypogonadism. After an attempt at transdermal patch therapy resulted in excessive skin irritation, he has been receiving periodic testosterone enanthate injections. He recently heard about a testosterone gel preparation that would be more convenient for him and wonders whether it would be an effective alternative. You conduct a quick search to find information from well-designed studies.*

One benefit of PubMed is its ability to yield productive searches without requiring familiarity with the Medical Subject Heading (MeSH) vocabulary that is the basis of MEDLINE citation indexing. The Clinical Queries function extends this benefit by filtering retrieval to a smaller subset of methodologically sound studies meeting evidence-based standards in 4 categories relevant to adult general medicine: therapy, diagnosis, etiology, and prognosis. The search filters are largely based on the work of Haynes and colleagues (1) in which various combinations of text words and MeSH terms are combined to optimize retrieval of methodologically sound clinical studies. Balancing the number and relevance of citations across a wide variety of clinical topics is accomplished by allowing searches that are more sensitive (more relevant citations retrieved) or more specific (more irrelevant citations excluded). The operating characteristics of these search filters are available at the PubMed Web site (<http://www.ncbi.nlm.nih.gov/entrez/query/static/clinicaltable.html>).

For the scenario above, the Clinical Queries function was used to search for the term “testosterone gel” and to select the options “therapy” and “specificity.” 5 citations were retrieved, the first a relevant randomized controlled trial (RCT) showing improved sexual function, mood, muscle strength, and body composition measurements in hypogonadal men treated with transdermal testosterone gel. No link to full text was available from the publisher. 3 of the citations dealt with studies in women; 1 dealt with boys. Use of the “Related Articles” button for the first citation revealed 101 additional citations; several appearing on the first screen also represented relevant RCTs. When the search was repeated with an emphasis on “sensitivity,” 31 citations were obtained with additional relevant citations as well as others dealing with less relevant issues, including basic mechanisms, pharmacokinetics, specific patient populations, animal studies, and in vitro effects.

The Clinical Queries feature of PubMed is a useful resource for rapidly filtering and displaying methodologically sound and clinically relevant citations on therapy, diagnosis, etiology, and prognosis from the MEDLINE database. It has considerable utility for busy clinicians needing rapid access to original study data to support clinical decisions. Among its limitations are the incomplete access to full-text articles and the lack of a critical-appraisal component for selected citations.

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**Reference**

1. Haynes RB, Wilczynski N, McKibbon KA, et al. Developing optimal search strategies for detecting clinically sound studies in MEDLINE. *J Am Med Inform Assoc.* 1994;1:447-58.

**Ratings:**

Methods/Quality of information: ★★★★★

Clinical usefulness: ★★★☆☆

**Editor’s note**

The research staff at McMaster University in Canada has undertaken a study funded by the NLM to update and expand the methodologic search filters found in the Clinical Queries function of PubMed. Search filters will be developed and validated for more purpose categories, including treatment/quality improvement, diagnosis, prognosis, etiology, clinical prediction guides, economics, and qualitative studies (7 vs 4 categories in the previous study), and by hand searching a larger journal set to establish the gold standard (172 vs 10 journal titles in the previous study). Hand searching of the 172 journal titles is under way. Aside from MEDLINE, methodologic search filters will be developed for EMBASE/Excerpta Medica, PsycLIT, and CINAHL. Look for the results of this endeavor in the latter part of 2001.