Locating Evidence

A sample database search for the clinical question:

What is the effectiveness of CPM therapy following knee replacement in achieving optimal range of motion?

Susan Kaplan Jacobs/Health Sciences Librarian
Bobst Library 9th Floor, room 907A
email: susan.jacobs@nyu.edu  phone: 212-998-2432
STEP 1: Write out your clinical question:

*What is the effectiveness of CPM therapy following knee replacement in achieving optimal range of motion?*

For questions of therapy/intervention, use the **PICO** formula to identify the following **elements** in your question:

- **Patient/Problem:**
- **Intervention:**
- **Comparison:**
- **Outcome:**
What is the effectiveness of CPM therapy following knee replacement in achieving optimal range of motion?

- **Patient/Problem:**
  - knee replacement

- **Intervention:**
  - cpm therapy

- **Comparison:**
  - other therapy; no therapy?

- **Outcome:**
  - Optimal range of motion
What is the effectiveness of CPM therapy following knee replacement in achieving optimal range of motion?

- **Patient/Problem:**
  - knee replacement

- **Intervention:**
  - cpm therapy

- **Comparison:**
  - other therapy; no therapy?

- **Outcome:**
  - Optimal range of motion

**TIP:** Consider **Patient/Problem** and **Intervention** first when planning your search strategy and selecting database search terms.

[look for the **Comparison** and **Outcome** when you browse abstracts and review full text of articles]
STEP 2: Select a specialized database

From the libraries home page, http://www.library.nyu.edu/ select Articles via Databases, then choose a database from the A to Z list
For this question we will start with **Medline/PubMed**
Total knee replacement AND cpm therapy AND arthroplasty, replacement, knee AND motion therapy, continuous passive/
Search Steps Schematically...

In PubMed: click on the Details, to view mapping
Search Steps Schematically...

arthroplasty, replacement, knee AND motion therapy, continuous passive/

Publication type: meta analysis OR review OR randomized controlled trial [Medline]

AND narrows

OR expands

In Medline/PubMed, use the Limits link to apply categorical limits, such as age groups, publication types, dates…
A PubMed search query on knee replacement AND cpm therapy, is translated to the MeSH headings:

Arthroplasty, replacement, knee
AND
motion therapy, continuous passive
(View the Details in bottom right of screen to see how your query was translated. Or use the MeSH browser to locate terms and scope notes: http://www.ncbi.nlm.nih.gov/sites/entrez?db=mesh )

Query Translation:

("arthroplasty, replacement, knee"[MeSH Terms]
AND
("motion therapy, continuous passive"[MeSH Terms])

Result:

71
Once you have conducted your initial search, select **Limits** to begin to reduce search results by level of evidence.

1. **The role of physiotherapy after total knee arthroplasty.**
PMD: 18582230 [PubMed - indexed for MEDLINE]
Related Articles

2. **Effectiveness of prolonged use of continuous passive motion after total knee arthroplasty.**
   Lenssen TA, van Steyn MJ, Criens YH, Waltjé EM, Rodermond HM, van der Heijden GJ. 
   BMC Musculoskeletal Disorders. 2008 Apr 29;9:60. 
PMD: 18442423 [PubMed - indexed for MEDLINE]
Related Articles  Free articles in PMC | at journal site

3. **What is the interest of early knee mobilization after total knee arthroplasty?**
   Paysant J, Jardin C, Blau D, Coudeyre E, Revel M, Rannou F. 
PMD: 18221816 [PubMed - indexed for MEDLINE]
Related Articles
Scroll through Limits to select one or more Article Types, Age groups if appropriate, etc. Then select the “Go” button.
Effectiveness of prolonged use of continuous passive motion (CPM), as an adjunct to physiotherapy,

Lennox TA, van Steyn MJ, Crijns YH, Waltje EM, Reox GM, Geesink RJ, van den Brakel J.

University Hospital Maastricht, Department of Physiotherapy, Maastricht, The Netherlands. allen@maastrichtuniversity.nl

BACKGROUND: Adequate and intensive rehabilitation is an important requirement for successful total knee arthroplasty. Continuous Passive Motion (CPM) should be implemented in the first rehabilitation phase after surgery, there is substantial evidence of its application. A Cochrane review on this topic concluded that short-term use of CPM leads to greater knee range of motion. Research should concentrate on the treatment period during which CPM should be administered. Many studies of prolonged CPM use in the home situation as an adjunct to standardised PT. Efficacy was assessed in terms of faster improvement in patients with knee osteoarthritis undergoing knee flexion impairment were randomised over two treatment groups. The experimental group received CPM + PT for 17 consecutive days; the control group received the same treatment during the in-hospital phase (i.e., about four days), followed by PT alone (usual care) in the first 17 days to three months after surgery, both groups received standardised PT. The primary focus of rehabilitation was functional recovery of the knee. RESULTS: Prolonged use of CPM slightly improved short-term RoM in patients with limited RoM at the time of discharge to a semi-standard PT programme. Assessment at 6 weeks and three months after surgery found no long-term effects of this intervention on benefits of the improved RoM at any of the outcome assessed. Routine use of prolonged CPM in patients with limited RoM performance was detected. TRIAL REGISTRATION: NCT00599343.

Publication Types:
- Comparative Study
- Randomized Controlled Trial

MeSH Terms
- Aged
- Arthroplasty, Replacement, Knee/rehabilitation*
- Arthroplasty, Replacement, Knee/trends
- Female
- Follow-Up Studies
- Humans
- Male
- Middle Aged
- Motion Therapy, Continuous Passive/methods*
- Motion Therapy, Continuous Passive/trends

Here is a sample Medline record that meets all the search criteria:

Arthroplasty, replacement, knee [MeSH] AND motion therapy, continuous passive [MeSH] AND publication type: Randomized controlled trial
Title: Effectiveness of prolonged use of continuous passive motion (CPM), and...
If an article is not available full text or hard copy in the libraries Bobcat catalog, click to order via Interlibrary Loan.
Locating the full text of articles...

• Look for a link from citation to “full text” or
• Search Bobcat to locate Bobst holdings
  http://www.bobcat.nyu.edu/
  – journals may be held in print on the 9th floor Current
    Periodical Shelves, bound in the stacks by call number,
    electronically, or on microform on A-level

  – journals may be linked electronically in Bobcat

• Interlibrary loan:
  http://library.nyu.edu/services/ill.html
Evidence is hierarchical. Explore the resources linked to the pyramid at: http://tinyurl.com/nyupyramid
PubMed® Advanced Search, Limits, and Homepage Changes coming to PubMed in early February include:

* Advanced search page will be streamlined
* A link to Clipboard will be added to the homepage, if applicable
* A new Limits page with additional limits for dates and search field tags

**PubMed Limits**

The Limits page is available from a link above the search box on all PubMed pages, including the PubMed homepage. The homepage will also include a link to the Clipboard if citations have been added (see Figure 1).

![PubMed homepage](image)

Figure 1: PubMed homepage with new Limits and Clipboard links.
Limits: raising the level of evidence

• **In CINAHLPlus**, click on **Search Options** tab to limit to Publication type: “research” **OR** “systematic review” or try the **Clinical Queries**

• **In Medline/PubMed**, use the **Limits** link to apply categorical limits, such as age groups, publication types, dates…

• **Use Medline/PubMed “Clinical queries”** or Medline/Ovid **Additional Limits** button to select from “clinical queries” Clinical queries include the ability to search for systematic reviews or limit to a clinical study category. More info at: [http://www.nlm.nih.gov/bsd/pubmed_subsets/sysreviews_strategy.html](http://www.nlm.nih.gov/bsd/pubmed_subsets/sysreviews_strategy.html)

• **In PsycINFO**, click on **Limit a Search, limit by Methodology**; try using Clinical Queries.

• **View a slide show on LIMITS:** Magnet in a Haystack: filtering the literature for research studies. [http://tinyurl.com/nyuhealthslides](http://tinyurl.com/nyuhealthslides)
Expanding a search

• use the **OR** operator
  – MESH terms or key words: arthroplasty, replacement, knee **OR** KA **OR**…TKA **OR**…

  **OR** expands the search by retrieving citations with *either* term

  – Publication type: meta analysis **OR** review [Medline]
  – Publication type: “research” **OR** “systematic review” [CINAHL]
In CINAHL Plus, click on “Search Options” to limit to Publication type:
“research” OR “systematic review”
• **In PsycINFO:** Limit to Empirical Study OR Experimental Replication OR Followup study OR Longitudinal study OR Meta analysis OR Prospective study OR Retrospective study OR Treatment Outcome Study

• **In Alt Healthwatch:** go to *Advanced* search, then limit to *scholarly* (*peer reviewed*) articles.
More tools for narrowing a search...

• Attach subheadings
  – arthroplasty, replacement, knee/rh [rehabilitation]
  – occupational therapy/td [Trends]
  – phantom pain/dt [Drug Therapy]

• Apply limits
  – publication type (e.g., clinical trial, review)
  – year(s) of publication (yr=1998), language, age group
  – each database offers different limits
Getting more help:

• **Watch slide show:**
  
  Magnet in a Haystack: filtering the literature for research studies.  
  [http://tinyurl.com/nyuhealthslides](http://tinyurl.com/nyuhealthslides)

• **Citing your sources in APA style:**
  
  [http://nyu.libguides.com/citations](http://nyu.libguides.com/citations)

• **Health Resources Page**
  
  [http://nyu.libguides.com/health](http://nyu.libguides.com/health)