PICO
Evidence-Based Practice Clinical Question / Search Plan Worksheet

**Clinical problem:**

| P | Describe your patient, or population (age, sex, race, past medical history, etc.), or problem. The disease or condition, or the main topic of your question: |
| I | What intervention or action are you considering – treatment, diagnostic test, etc.? Is there a specific issue you would like to investigate? |
| C | Are you trying to compare or decide between two options – therapies, drugs, a drug and no medication or placebo, or two diagnostic tests? Or what is your control. Tip: There could be no comparison. |
| O | What is the outcome you would like to achieve? What are you trying to do for the patient? Relieve or eliminate symptoms? Reduce the number of adverse events? Improve function? |

**Well-built clinical question:** (Among P does I versus C affect O?)
### What type of question?
- [ ] Background/information gathering
- [ ] Foreground/Focused

### Number of Citations needed:
- [ x ] A few very relevant articles
- [ ] 10-100
- [ ] Over 100
- [ ] Exhaustive research

### Search Terms (list subject terms, synonyms, abbreviations, acronyms, variant spellings for each concept)

#### Concept 1 (P)

**OR**

**OR**

#### AND Concept 2 (I)

**OR**

**OR**

#### AND Concept 3 (O)

**OR**

**OR**

### Databases to search
- [ ] MEDLINE (Ovid)
- [ ] CINAHL (Ebsco)
- [ ] EMBASE (Ovid)
- [ ] PsycINFO (Ebsco)
- [ ] ERIC (Ebsco)
- [ ] LLBA (Proquest)
- [ ] Cochrane Database of Systematic Reviews
- [ ] Database of Abstracts of Reviews of Effects (DARE)
- [ ] Web of Science
- [ ] PEDro, OT Seeker, SpeechBITE
- [ ] Other

- [ ] Human only
- [ ] Male
- [ ] Female

### Age groups
- [ ] All ages
- [ ] Infant, Newborn – 1 month
- [ ] Infant, 1 month – 2 years
- [ ] Child, Preschool 2 – 5 years
- [ ] Child, 6 – 12 years
- [ ] Adolescent, 13 – 18
- [ ] Adult, 19 - 44
- [ ] Middle aged, 45 – 64
- [ ] Aged, 65-79
- [ ] Aged, 80 and over

### Years to be searched:
- [ ] Current to 1 year
- [ ] Current to 5 year
- [ ] Current to 10 year
- [ ] Current to 1946
- [ ] Other, specify:

- [ ] Abstracts only
- [ ] Electronic full text only

- [ ] English only
- [ ] Other languages:
### Article Indexes & Databases search worksheet

1. **Define your question**
   - Your topic should be fairly specific.

2. **Analyse your topic into concepts**
   - Usually 2 or 3 concepts give the best results.

3. **Choose database(s)**
   - Look in the Article Indexes list under the Subject Guide for your discipline to find the most relevant databases.

4. **Choose descriptors or subject headings applicable in this database.**
   - Combine synonyms *within* a concept group with **OR**. Combine different concepts with **AND**.
   - Different databases may have different subject headings for the same concept.
   - In databases that don't use descriptors or subject headings, or when you can't find a subject heading for the concept, use **keywords**.
   - When using keywords, remember to search for synonyms, spelling variations (British vs. American), plurals, etc.

5. **Limit your retrieval**
   - If you're getting too many hits, try using the limits to narrow your results.
   - Some databases allow you to limit by date, by age group, by publication type, by language etc.

### Limit options:

<table>
<thead>
<tr>
<th>Concept A</th>
<th>Concept B</th>
<th>Concept C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AND</strong></td>
<td><strong>AND</strong></td>
<td><strong>AND</strong></td>
</tr>
<tr>
<td><strong>OR</strong></td>
<td><strong>OR</strong></td>
<td><strong>OR</strong></td>
</tr>
</tbody>
</table>

### Helpful Tips:
- The *scope note* feature is often useful in finding out the definitions of subject headings.
- Take note of and use the subject headings used in the articles you find most relevant to build better searches on your topic.
- In some databases, you can use *subheadings* and the *focus/major topic* feature to further narrow your subject headings.

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**Internal Use**

T:\ Woodward\Teaching\Publications\Handouts\ArticleIndexesAndDatabasesWorksheet\ArticleIndexesAndDatabasesWorksheet.docx

**Contact** Charlotte Beck | http://directory.library.ubc.ca/people/view/34

**Updated: 10-May-19 | Page 1**

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**THE UNIVERSITY OF BRITISH COLUMBIA**

Library
Woodward Library
Building a Search Strategy in Ovid Medline

A. SEARCHING

1. Type in first single idea (e.g. your P concept)
   a) Subject heading searching
      A list of possible MeSH (Medical Subject Heading) terms is given.

      Before choosing a MeSH term, check:

      **Scope note:** click on the i for information
      - Scope: Does the definition match my meaning?
      - History note: When was this subject heading introduced? Does it cover my time period?
      - Are there any alternative suggestions? Words in CAPS are related MeSH
      - Used for: What are keyword synonyms covered by this subject heading?

      Tree: click on blue underlined word to link to the tree
      - Is this the most specific subject heading to use?
      - Is it better to go broader?
      - Should I use the Explode feature?
      - Should I use the Focus feature?

      If subject heading(s) is chosen, click **Continue**

      A list of subheadings that qualify the search term is given.
      - Do I need just one aspect of the topic?
      - Will narrowing it down now be too soon?
      - To choose all either click on the check box or click Continue

      Your results will be displayed in the Search History box.

b) Keyword searching

No suitable subject heading? Wanting to search for material not yet indexed?
Select **keyword.mp.** and click Search

**Tools to use with keyword searching:**

**Truncation:** " Variant endings after the stem:
  child" = children, childhood, childlike, childbirth
  Balance* = balance, balancing, balances, balanced etc.

**Wildcard:** ? = Additional letter in Canadian spelling colo?r; p?ediatric
  # = replaces 1 character wom#n

**Proximity**

adjn Describes the relationships of words to each other:
  Seat adj5 wheelchair = find the word "seat" within 5 words of the word "wheelchair".
Do the same process with your second single idea (e.g. your I concept)
SEARCH RESULTS are listed by result set #

B. COMBINING results

Build your search strategy using:

OR

To combine similar concepts eg. Subject heading set OR Keyword set

AND

To combine different concepts eg results from P AND results from I

C. LIMIT or refine search results

Limits define human characteristics
  Age, gender, race
Limits define publication characteristics
  Language, date published, type of research

D. Review RESULTS
  Look at Abstract
  Click on UBC elink to see fulltext
  Print
  Export to Refworks, Endnote etc.

Tip: Check the Subject headings of relevant articles for ideas to improve your search

E. SAVE search history to re-run your search or to set up alerts
Ovid Medline Search strategy explained:

PICO Analysis: Among people 65 years and older with stroke (P) do commercial video games (I) improve balance (O)?

<table>
<thead>
<tr>
<th>Set #</th>
<th>Search term</th>
<th>Results</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stroke rehabilitation/</td>
<td>10689</td>
<td><em>P</em> concept using subject heading (MeSH). In Ovid the &quot;/&quot; identifies this as MeSH. This subject heading was introduced in 2016.</td>
</tr>
<tr>
<td>2</td>
<td>Exp Stroke/</td>
<td>113068</td>
<td>Another MeSH for P. <em>Exp</em> = Explode which means the more specific terms listed in the hierarchical tree are combined with OR.</td>
</tr>
<tr>
<td>3</td>
<td>Stroke or cerebrovascular accident* or cerebral vascular accident* or cva*.mp.</td>
<td>254568</td>
<td>This is a keyword search. In Ovid .mp indicates that the term is searched in many places – title, abstract etc. The truncation symbol &quot;*&quot; finds variant endings to the root accident e.g. accidents it could also pick up accidental, accidentally.</td>
</tr>
<tr>
<td>4</td>
<td>1 or 2 or 3 [P stroke]</td>
<td>274639</td>
<td>Results of subject heading and keyword searches in sets 1-3 are combined with OR to create a set of all the results related to the P concept.</td>
</tr>
<tr>
<td>5</td>
<td>Video games/</td>
<td>4121</td>
<td>The following sets are related to the I concept. The most specific subject heading available for either of the specified software is video games/</td>
</tr>
<tr>
<td>6</td>
<td>Wii or Kinect or Nintendo or xbox.mp</td>
<td>1530</td>
<td>Specific brand names and software of suitable interventions combined with OR</td>
</tr>
<tr>
<td>7</td>
<td>Exergam* or wii-habilitation.mp</td>
<td>427</td>
<td>Types of rehabilitation that use electronic gaming software combined with OR</td>
</tr>
<tr>
<td>8</td>
<td>5 or 6 or 7 [I software]</td>
<td>5341</td>
<td>The three sets containing I results are combined with OR</td>
</tr>
<tr>
<td>9</td>
<td>4 and 8 [Stroke and Wii etc.]</td>
<td>279</td>
<td>This set is the result of combining the P sets with the I sets with AND to retrieve studies that include both concepts</td>
</tr>
<tr>
<td>10</td>
<td>Postural balance/</td>
<td>19740</td>
<td>This is the MeSH term for the O concept, balance</td>
</tr>
<tr>
<td>11</td>
<td>Balance or equilibrium.mp.</td>
<td>348177</td>
<td>These are the Keyword terms for the O concept balance.</td>
</tr>
<tr>
<td>12</td>
<td>10 or 11 [O Balance]</td>
<td>348177</td>
<td>These are the combined results for the O concepts.</td>
</tr>
<tr>
<td>13</td>
<td>9 and 12 [Stroke and Wii and Balance]</td>
<td>70</td>
<td>This set combines the pain outcome O with the results of P and I using AND</td>
</tr>
<tr>
<td>14</td>
<td>Limit 13 to &quot;All Aged (65 and over)&quot;</td>
<td>18</td>
<td>The appropriate age group limit for the question is applied at the end of the search. Limits apply to Population criteria e.g. age, gender or Publication criteria e.g. date, language, type.</td>
</tr>
<tr>
<td>15</td>
<td>Limit 14 to &quot;Systematic review&quot;</td>
<td>0</td>
<td>By applying the limit Publication Type: Systematic Review the search resulted in 0 hits.</td>
</tr>
<tr>
<td>16</td>
<td>Limit 13 to &quot;Systematic review&quot;</td>
<td>12</td>
<td>Limit was re-applied to an earlier set.</td>
</tr>
</tbody>
</table>
## Database Commands

<table>
<thead>
<tr>
<th>Database</th>
<th>Truncation</th>
<th>Wildcard symbols</th>
<th>Phrase</th>
<th>Proximity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OVID databases</strong></td>
<td>* or $ or :</td>
<td>?</td>
<td>#</td>
<td>No quotation marks needed for most phrase searching.</td>
</tr>
<tr>
<td>Medline</td>
<td></td>
<td>Examples: physio$ will find: physiology, physiological, physiotherapy,...</td>
<td></td>
<td>Example: IIVO?r P?diatric wom#n</td>
</tr>
<tr>
<td>Embase</td>
<td></td>
<td></td>
<td></td>
<td><strong>Example:</strong> seat* adj5 wheelchair seat6 = 5 words between wheelchair and seat or seating etc.</td>
</tr>
<tr>
<td>EBM reviews</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(incl. Cochrane)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HaPi</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PubMed</strong></td>
<td>*</td>
<td></td>
<td></td>
<td><strong>&quot;your phrase&quot;</strong></td>
</tr>
<tr>
<td></td>
<td>Note: truncation stops automatic mapping to MeSH and shows first 600 possible variations of endings</td>
<td></td>
<td></td>
<td>Note: phrase searching stops automatic mapping to MeSH</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Proximity searching not available in PubMed</td>
</tr>
<tr>
<td><strong>EBSCOHOST databases</strong></td>
<td>*</td>
<td>#</td>
<td>?</td>
<td><strong>&quot;your phrase&quot;</strong></td>
</tr>
<tr>
<td>Academic Search</td>
<td></td>
<td>Examples: IIVO#r P#diatric</td>
<td></td>
<td>Nn or Wn (N= Near, W= Within and &quot;n&quot; is the number of words)</td>
</tr>
<tr>
<td>Complete</td>
<td></td>
<td>Example: won#n</td>
<td></td>
<td>Example: seat6 n5 wheelchair = 5 words between wheelchair and seat or seating etc.</td>
</tr>
<tr>
<td>CINAHL</td>
<td></td>
<td></td>
<td></td>
<td>Seat6 w5 wheelchair = seat or seating etc. is 5 words before wheelchair.</td>
</tr>
<tr>
<td>Mental Measurement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yearbook</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psyinfo</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPORTDiscus</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Web of Science</strong></td>
<td>*</td>
<td></td>
<td></td>
<td><strong>&quot;your phrase&quot;</strong></td>
</tr>
<tr>
<td></td>
<td>Web of Science allows left-sided truncation as well as right-sided.</td>
<td></td>
<td></td>
<td><strong>NEAR/x</strong></td>
</tr>
<tr>
<td></td>
<td>Example: *statin will find: atorvastatin, simvastatin, pravastatin...</td>
<td></td>
<td></td>
<td>You can specify x number of words; or if you just type NEAR, the default range is within 15 words.</td>
</tr>
</tbody>
</table>

For Google and Google Scholar search commands, please see our guide: [http://guides.library.ubc.ca/greylitforhealth](http://guides.library.ubc.ca/greylitforhealth)
Build a Search in Medline (Ovid) worksheet

1. Identify which concepts are P, I, and O
   P
   I
   O

2. Choose your search terms
   - Find the Medical Subject Heading (MesH)
     P Explode? YES ___ NO ___
     I Explode? YES ___ NO ___
   - What keyword* will you use? Will you include truncation?
     P
     I

> Combine these results with OR

> Combine these results with OR

> Combine these 2 sets with AND

> Find the Medical Subject Heading (MesH)
   O Explode? YES ___ NO ___
   - What keyword* will you use? Will you include truncation?
     O

> Combine these results with OR

> Combine this set with the previous AND

3. What limits will you use to refine your search?

4. What type of research will you include in your review?

5. Save your search history: Make an account and click on Save all and give your search a name.