## BOOLEAN OPERATORS

**FOR ELECTRONIC DATABASE & INTERNET BROWSER SEARCHING**

SHADING REPRESENTS THE OUTCOME OF THE BOOLEAN OPERATION

<table>
<thead>
<tr>
<th>Operator</th>
<th>Description</th>
<th>Example</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AND</strong></td>
<td>Finds records which contain both terms.</td>
<td>hip AND fracture</td>
<td>The terms may occur anywhere in the record unless restricted using the IN operator (see page 3). Sets of terms may be combined in addition to single terms.</td>
</tr>
<tr>
<td><strong>OR</strong></td>
<td>Finds records which contain either or both terms.</td>
<td>renal OR kidney</td>
<td>The terms may occur anywhere in the record unless restricted using the IN operator (see page 3). Set of terms may be combined in addition to single terms.</td>
</tr>
<tr>
<td><strong>NOT</strong></td>
<td>Finds records containing one term but not another.</td>
<td>pig NOT guinea</td>
<td>Use NOT carefully, you may unintentionally discard useful records.</td>
</tr>
<tr>
<td><strong>Mixing</strong></td>
<td>Operators are allowed. Use parentheses to specify the proper combination.</td>
<td>Renal Failure</td>
<td>This strategy will retrieve records containing either the</td>
</tr>
<tr>
<td>failure AND (renal OR kidney)</td>
<td>combination renal failure or kidney failure.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Renal ➔Kidney ➔ Failure</td>
<td>Without parentheses the AND operation is done first because processing proceeds from left to right.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>failure AND renal OR kidney</td>
<td>This strategy will retrieve records containing either the pair of words renal failure or any record with the word kidney.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| family N5 violence or family W5 violence | Many Internet search engines and databases use proximity operators. Proximity operators vary from resource to resource. by itself limits the terms to the same sentence. N# can be used to specify exactly how many words can be between the search terms in what every order. W# looks for terms in the order you put them in the search box. (Useable with ESBSCHost but not PubMed). **If you use with ( ) put “(renal n3 fail*)” OR “(kidney n3 fail*)”” (renal or kidney) W5 fail*” will not work. These searches will bring up records with the term family within five words of violence. |

---

**EXAMPLE MEDLINE RECORD**

Terms may be restricted to specific fields using the field labels shown on the left.*

1: Lynch HT et al. Hereditary breast cancer: par...[PMID: 18086272]

- PMID - 18086272
- OWN - NLM
- STAT - MEDLINE
- DA - 20080111
- DCOM - 20080221
- PUBM - Print-Electronic
- IS - 1524-4741 (Electronic)
- DP - 2008 Jan-Feb
Hereditary breast cancer (HBC) accounts for as much as 10% of the total BC burden. Most of these cases will be found to be due to a BRCA germline mutation. An estimated additional 15-20% of those affected with BC will have one or more first- and/or second-degree relatives with BC. ....

Department of Preventive Medicine and Public Health, Creighton University School of Medicine, Omaha, Nebraska 68178, USA. htlynch@creighton.edu

Lynch, Henry T
Lynch HT
Silva, Edibaldo
Silva E
Snyder, Carrie
Snyder C
Lynch, Jane F
Lynch JF
eng
Journal Article
Research Support, N.I.H., Extramural
Research Support, Non-U.S. Gov't
Review
Breast J
The breast journal
0 (BRCA1 Protein)
0 (BRCA1 protein, human)
BRCA1 Protein/genetics
BRCA1 Protein/genetics
BRCA2 Protein/genetics
Breast Neoplasms/*diagnosis/*genetics
Genetic Heterogeneity
*Genetic Predisposition to Disease
Humans
# Useful Features for Medline Searching

## Restricting to specific fields

Records in Medline and other databases are organized by fields. Each field is assigned a field label. These labels are shown on the sample Medline record on the previous page. The IN operator is used to restrict a search term to a particular field. In PubMed you may type “[TI]” after your term. In EBSCOHost, you can use the pull down menu to select a field. MESH option found in the PUBMED pull down menu arrow and EBSCOHost links to Mesh and CINAHL Headings from the top Blue menu bar.

<table>
<thead>
<tr>
<th>Field Label</th>
<th>Field Name</th>
<th>Search Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>AU</td>
<td>Author</td>
<td>Lynch HT or Lynch-H* [AU]</td>
</tr>
<tr>
<td>TI</td>
<td>Title</td>
<td>xylitol [TI] AND plaque[TI]</td>
</tr>
<tr>
<td>LA</td>
<td>Language</td>
<td>Click on “Limits” tab under search box</td>
</tr>
<tr>
<td>PY</td>
<td>Publication Year</td>
<td>Click on “Limits” tab under search box</td>
</tr>
<tr>
<td>AD</td>
<td>Author’s Address</td>
<td>Creighton [AD]</td>
</tr>
<tr>
<td>(primary author only)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TG</td>
<td>Check Tags¹</td>
<td>Click on “Limits” tab; human is a common choice</td>
</tr>
<tr>
<td>PT</td>
<td>Publication Type²</td>
<td>Click “Limits” tab; choosing “Journal Article will remove editorials, commentaries, letters leaving “Clinical Trials, Reviews, &amp; other articles.</td>
</tr>
<tr>
<td>MESH</td>
<td>Medical Subject Headings³</td>
<td>Lung Neoplasms [MESH] or [MH]</td>
</tr>
<tr>
<td>MAJR</td>
<td>Major Medical Subject Heading⁴</td>
<td>Lung Neoplasms [MAJR]</td>
</tr>
</tbody>
</table>

¹Check tags are topics of potential interest, regardless of the general topic of the article. The most frequently used check tags are: Human, Animal, Case-Report, Comparative-Study, Female, Male.

²Publication type characterizes the nature of the information or the manner in which it is conveyed. The following are the most frequently used publication types: Clinical-Trial, Review-Literature, Review-of-Reported-Cases, Review-Academic, Review-Multicase, Review-Tutorial, and Twin-Study.
MESH” (Medical Subject Headings in Medline) and CINAHL Headings (CINAHL) are subject fields added in each of these database containing terms that describe the topics discussed in the paper. The terms are standardized and provide better consistency and accuracy when used as search terms. Use the “Mesh Database” function to search using MESH.

MAJR are MESH headings designated as the main or major topics of the paper. Using MJME will reduce your retrieval and leave you with records to papers with a significant focus on your topic. For EBSCOHost use the search boxes’ pull down menu to select fields or keywords.

## Truncation Characters

**The asterisk truncation symbol (*) is used to retrieve all terms with a common initial spelling.** It serves as a substitute for a string of zero or more characters.

For example, child* retrieves child, children, childhood, etc.

Be careful when using truncation. Don’t truncate short word roots. Using cat* for cat or cats will also retrieve catastrophe, catatonia, catch, category, catholic, etc....

Truncation can be used in both PubMed and EBSCOHost.

**SPECIAL NOTE**

**The wild card operator (?) is used as a substitute for zero to one character.** It may be used within a word or at the end of a word. You may use more than one and the effect is additive: two (??) will represent zero to two characters. *This is only available in EBSCOHost but not PubMed.*

**Within a word:**

“?” will replace a letter & “#” can be used for alternate spellings or:

wom?n = woman or woma

P#ediatrc = pediatric or paediatric

**At the end of a word** (controlled truncation):

level? = level or levels – but not leveling or leveled

dog? = dog or dogs – but not dogma