



MEDLINE/PUBMED REVIEW SHEETS 9/08

Summary of details from tutorials:

CONCEPTS OVID MEDLINE TIPS PUBMED TIPS TROUBLESHOOTING

I. CONCEPTS SHARED BY PUBMED/OVID MEDLINE

MeSH

Indexers identify topics in each article, recognizing the same topic expressed in different words.

Indexers translate **non-uniform** language of authors into **standardized MeSH Headings**.

MeSH Heading = Word or phrase from **Medical Subject Headings ("MeSH")** list, maintained by the National Library of Medicine.

Subheading = Secondary topic pre-linked to a MeSH term by an indexer

e.g. ***Aortic Rupture/su [Surgery]** where Surgery is a Subheading

MeSH + Subheading = **2 linked topics**.

In Advanced Ovid and in PubMed (MeSH Database, Full display), **pick** a Subheading from a list.

If no Subheading exactly matches a search topic, **don't select any**; Include ALL Subheadings.

Indexers assign a Subheading in preference to a freestanding MeSH.

E.g.: *Polycystic ovary syndrome/ge[Genetics] Result = 203 (last 10 years)

*Polycystic ovary syndrome and exp *Genetics Result = 4 (last 10 years)

Strengths of MeSH

Standardization - Indexers assign a standard MeSH Heading in spite of word variations (aortic rupture, ruptured aorta, rupture of the thoracic aorta). Searcher doesn't have to think of (or type) variations.

Focus/Major Topic – Find articles where indexer tagged a MeSH Heading as major topic. When you Focus (search as Major topic), you discard citations where MeSH topic is a **minor** point. This helps target results when a question has only 1 topic. For questions with 2 or more topics, 1st try without focus.

Subheadings –Link between MeSH and Subheading (2 topics) is stronger than Boolean "AND", where topics appear in same citation but may be unrelated to each other.

Explode – Search all MeSH Headings in a category. See hierarchical TREE display,

e.g. **Intestinal Diseases**

Cecal Diseases

Appendicitis

←Narrower (more specific) MeSH

Cecal Neoplasms

Colonic Diseases

Colitis (etc.)

Explode means **add indented** (more **specific**) MeSH from **Tree display**

PubMed explodes by default; Ovid MEDLINE explodes only if you check explode box.

Mapping -- **Software** feature that searches for MeSH Headings to match what you typed. For optimal mapping, type **only one** topic. This feature is lacking in web search, but is active in PubMed and Ovid MEDLINE (Advanced Ovid Search)

Mapping failure – If mapping shows no matching MeSH, try text word search. Then look at MeSH Headings assigned to best results, to see how indexers handled this topic using MeSH.

Limitations OF MeSH:

MeSH Headings don't exist for all topics.

Very recent citations don't have MeSH yet (indexing takes time).

Indexers don't assign MeSH for every word in an abstract

Indexer unpredictability - Did indexer choose same MeSH terms you would have?

Text Words

Words from **titles and abstracts** in the MEDLINE record. Text words = Author words.

Helpful if no MeSH matches a topic – e.g. Hartmann's procedure

Strengths of text word search

Instant index; up-to-date terminology; every title/abstract word searchable (even low-frequency terms); get results even if you missed the best MeSH.

Weaknesses of text words

- Risk missing information** because **authors use different words for same topic.**
- Can't use Explode, Focus, or Subheadings**, since those features only apply to MeSH

	MeSH	vs.	Text Word (Title, Abstract)
Standardization	Yes		No
Subheadings	Yes		No
Major topic	Yes		Search title only
Explode	Yes		No
Latest terminology	No		Yes
Fast indexing	No		Yes
Find low-frequency words	No		Yes

Anticipating text word variations (title/abstract words):

- Use a **truncation character** to search different word endings.
e.g. esophag* -- retrieves esophagus, esophageal, esophagitis, etc.
- SYNONYMS**: vitamin c vs. ascorbic acid renal failure vs. kidney failure
- Variant **spacing** and punctuation: RU486 RU 486 RU-486
- British spellings**, e.g., oesophag*, paediatric*
- Break up phrases?
Instead of **elder abuse**, try **abus* AND elder*** -- retrieves abuse of the elderly, elder neglect and abuse, partner abuse among the elderly, etc. ...
hartmann\$ retrieves hartmann's procedure, Hartmann resection, Hartmann's operation

Help with ideas for text word variations

- Search MeSH as major topic** (focus), then look at word variations in **titles** of results.
- Display the **MeSH Scope** note
Advanced Ovid Search – Click [i] in Tree/Mapping display; look at “Used For” list.
PubMed: open Full display in MeSH Database; look at “Entry terms”

Why Back Up Mesh With Text Words?

- Example: What is the relationship between papillomavirus and cervical cancer?
Searched MeSH: Papillomavirus, Human
Missed MeSH: Papillomavirus Infections
Text word: papillomavir* -- safety net; avoids missing relevant articles
- Example: Searched MeSH: Ebola vaccines – New MeSH created 2005
Text words: ebola and vaccin\$ -- Avoid missing pre-2005 articles.
- Very **new** and very **old** citations **lack MeSH** Headings. Text Words are necessary to find them.
- Text words can find topics skipped by the indexer (e.g. long abstract)
- Results can increase, **improving chances** that enough results remain after applying limits and locating **full text AT DREXEL**.

Adding **text words** to supplement **MESH** reduces the risk of missing good citations. When results are important, use the strengths of both MeSH and text words.

Search Process / How To Combine Mesh And Text Words

- **Analyze the question – Divide it into topics, keeping only essential ones (fewest possible)**
- **Search the most important topic first**
- **Create separate result sets for MeSH and for text words.** Why? Different thought processes
 MeSH -- use mapping; check Tree display to decide whether to explode; make focus/major topic decision; check Subheadings for exact match to search topic.
 Text words -- type synonyms, use truncation character, different spellings, spacings, etc.
- **Be sure topics in text word set match topics in MeSH set.**
- **If MeSH was focused (major topic), search text words in title only (major point).**
 Ovid example:
 1. ***Aortic Rupture/Mo(Mortality)** * =MeSH major topic
 2. **aort\$.ti. and rupture\$.ti. and (mortalit\$ or death\$).ti.** same topics in title (major topic)
 Combinations inside **parentheses** are done first.
- **Use OR to combine set numbers expressing the SAME TOPICS**, to pool results into a single set with duplicates eliminated (saves time and effort).
 3. **1 or 2**
- **Repeat the process for the next topic (if any), then combine different topics using AND.**
 - OR Computer finds items with at least one variation; eliminates duplicate results**
 Combine words or set numbers expressing the SAME TOPIC
 Ovid examples: RU486 or RU 486 or RU-486 1 or 2
 - AND Computer finds citations with both topics (or all, if >2)**
 Combine words or set numbers expressing DIFFERENT topics
 PubMed examples: #6 AND #8 diverticulit*[ti] AND colon*[ti]
- **Too many irrelevant citations? -- Make one or more topics a major point (focus).**
- **Add LIMITS**
- **If mapping fails, search text words instead**
 No MeSH for Hartmann's procedure. In Ovid, search Hartmann*.mp. In PubMed, try Hartmann* (may retrieve authors with last name Hartmann).
- **Search all MeSH and text word variations that match your topics.**
- **View MeSH Headings assigned to the best results; did you miss a good MeSH?**

Full Text Links

SFX links reveal Drexel online availability. Ovid full text links should work; others may not.
No Full Text? Before giving up, try Drexel's **Find E-Journals** link (<http://www.library.drexel.edu>).

II. OVID MEDLINE TIPS (Advanced Ovid Search)

- **Identify critical topics** of the question, and type the **most important one first**
- Type **one topic at a time**, so mapping to MeSH works optimally.
- Typing **AND** or **OR** turns off mapping, even if the "Map Term" box is checked.
- Select **ONLY ONE** MeSH from Mapping list/Tree display, or Subheadings Display will be skipped.
- **Focus** if your question has only 1 topic. For 2 or more topics, 1st try without focusing.
- **Explode to add narrower (indented) MeSH terms** to your search (check Tree display).
- **Include All Subheadings** unless a Subheading exactly matches a search topic.
- Can't find **MeSH**? Try **Text Word** search, with word variations, synonyms, etc.
- **How to search text words in Ovid:**
 - Type synonyms and other word variations in search box, combined with **OR**. This bypasses mapping and performs a "Multi-Purpose (.mp.) search in title, abstract, etc.
 E.g. autops* or post-mortem* or postmortem*
 - To search as major topic, click **TITLE**
 - If you type a word and Ovid "**Can not map**", type a field qualifier after the word: **.mp.** or **.ti.**

- **Too many irrelevant citations?**
Focus a previous **MeSH** set by typing an asterisk followed by the set number – e.g. *2
 Convert a previous **text word** set to **title** search. Type [set number].ti. – e.g. **5.ti**.
 Combine new set numbers.
- **LIMIT** to reduce large search results:
 - Review articles
 - Core Clinical Journals – NEJM, JAMA, and other frequently-used journals
 - Valid clinical evidence: Limit to **EBM Reviews**. Also, open “**More Limits**” for Publication Type = **Randomized Controlled Trial, Meta Analysis**. Or **Clinical Queries**; or **Subject Subset = Systematic Review**
- **Full text**: 1st try “Ovid Full Text” links. If none appears, click **SFX** for other Drexel full text options.
- **LOGOFF from OVID** to release the session and permit others to log in.

III. PUBMED TIPS

- **Default search (quick & dirty)**
 - PubMed maps multiple topics to MeSH Headings, but not reliably (click **Details** to confirm).
 - MeSH Headings are automatically exploded.
 - Text words are searched as well as MeSH, but **without** anticipating word variations.
 - No “major topic” search option.
- **MeSH Database**
 Better mapping to MeSH. **Full** display shows list of linkable Subheadings, “major topic” option, “no explode” option, Tree display, etc.
 - Type **one topic**, to optimize mapping to MeSH.
 - To see Full display with subheadings, etc., you may need to click blue MeSH Heading.
 - If **no Subheading exactly matches a search topic, do not check any**. PubMed searches all Subheadings by default
 - Restrict Search to **Major Topic?** Checking this yields fewer “hits” (major topic only).
 - Do Not **Explode?** Unless you click this, PubMed automatically explodes.
 - One box must be checked. Click checkbox to left of MeSH Heading if you clicked nothing else.
 - Click [**Send to**] **Search Box** with AND
 - Click [**Search PubMed**] (below search box) to perform the search and exit MeSH Database.
- **Add text words** using PubMed’s basic search.
 By default, PubMed searches all parts (“fields”) of a citation, including text words.
 - For best results, anticipate **word variations**.
 PubMed **truncation** character to search different word endings is * (asterisk).
 Warning: The asterisk prevents mapping to MeSH. Use it **only for text word** search.
 - To search in **title only**, type [**ti**] following each word. e.g. **aort*[ti] AND ruptur*[ti]**
- **For next topic** (if any) **go back into MeSH Database** to map to MeSH.
- **Combine set numbers**. Click the **History** tab in PubMed to see set numbers.
 - Results are in reverse chronologic order -- latest search result at the top.
 - Set numbers may be missing; don’t worry about it.
 - **Capitalize** AND and OR, and include the pound symbol (#).
 - Use parentheses to make search logic clear, e.g. (**#6 OR #9**) AND (**#12 OR #15**)
- **Too many irrelevant citations?**
 Search MeSH as major topic; search text words in title only; combine new sets.
- **Limits** - helpful when results are too large:
 - **Publication type** = Review; **Subset** = Core Clinical Journals
 - **Valid clinical evidence**: Publication type = Randomized Controlled Trial, Meta-Analysis. For systematic reviews, combine final set AND systematic[**sb**]. Quick & dirty method: click “Clinical Queries” on blue sidebar; click Systematic Reviews, then type a simple query.
- **Related Articles** - finds citations with MeSH and Text Words similar to the target citation.
- **Links to full text**

- **SFX links** reveal Drexel online availability. **Other links are not reliable.**
- **To see SFX Drexel Fulltext links, use the PubMed link on the Drexel Library web site.**
- **No Full Text link?** Try Drexel's **Find E-Journals** link (<http://med.library.Drexel.edu>)

IV. MDCONSULT TIP

MDConsult contains a version of MEDLINE with a "quick & dirty" search interface, **not recommended for serious searching**. Search OVID or PubMed and link to MDConsult full text.

TROUBLE-SHOOTING MEDLINE

BASIC STRATEGY:

- OVID MEDLINE, Advanced Ovid Search: Type **1 topic** at a time (most important 1st) for optimal mapping to MeSH. Then **combine** set numbers.
- PubMed: Use MeSH Database, 1 topic at a time, for optimal mapping to MeSH. Then combine set numbers.

RESULTS TOO LARGE?

- Restrict **MESH** Headings to **Focus/Major topic**.
- **Add another topic** using **AND**.
- **LIMIT** to **Review articles, recent years**, etc.
- Limit to Core Clinical Journals (OVID limit; PubMed Subset limit)
- Instead of text words (title or abstract words), search **only title** words:
OVID: topic*.ti. PubMed topic*[ti]
- With **MESH** Headings, select **one or two subheadings**, instead of all.
- Don't explode MeSH; just search the broad term.

RESULTS TOO SMALL?

- Use **Scope Notes** to find other MeSH Headings and synonyms for text word search.
- Display **MeSH Headings** of known, highly-relevant articles, and look for other MeSH Headings that had not occurred to you. Add them to the search.
- **EXPLODE** to **include narrower MeSH** headings
- Try **ALL Subheadings** instead of only specific ones
- Don't restrict to Focus/Major Topic
- Search title/abstract words **in addition to MESH** Headings.
- Instead of searching words in **titles only**, search title, abstract, etc..
- Anticipate variations when searching **title/abstract words**:
 - Search **synonyms**: vitamin C vs. ascorbic acid kidney failure vs. renal failure
 - Search different word endings using truncation character:
E.g., in Ovid, **diaphragm\$** In PubMed, **diaphragm***
to search diaphragm, diaphragmatic, diaphragms
 - Break up phrases (elder abuse vs. abus\$ and elder\$)
 - Anticipate different spacings and British spellings.
E.g. rollerblad\$ vs. roller blad\$ Esophag: vs. oesophag:
- For **drugs/chemicals**, search **Registry Number (substance name)** as well as MESH and title/abstract words.
- Check for **spelling errors**

STILL NEED HELP? Consult a **Reference Librarian**