

PUBMED HANDS ON INSTRUCTION

One of the most important features of PubMed/Medline is the controlled vocabulary used for indexing articles, the **Medical Subject Headings** or MeSH terms. They permit searching independently of the exact words an author used in his title or abstract (e.g. Down syndrome, Mongolism and Trisomy 21 are all indexed under Down Syndrome). Indexers add circa 12 Mesh terms to an article. An average number of three is characterised as important or Major MeSH Term; they determine the focus of an article and are marked with an *. MeSH terms are also valuable in searching subjects with subdivisions (e.g. Liver diseases → Liver neoplasms→ Liver cell adenoma)
Attention: references most recently added to PubMed are not yet labeled with MeSH terms. Additional searching with text words is therefore recommended.

Demonstration search to be worked out:

Search literature about the connection between Ultraviolet Light and Melanoma.

- Dissect the question in its components
- Search every component comprehensively (firstly the main component), modify if necessary, and combine the results afterwards
- After searching a term, use the Details-button to see how PubMed translated the query; try to get the appropriate MeSH term. In free text searching, including synonyms and word variants is essential.
- If the combination results in too many hits, choose limits, e.g. limit to recent years

Workout of the above question:

1. Type *melanoma*, and press <enter> or click Go.

How many hits? On how many pages?

Click Details to check if a MeSH term was included.

2. Clear the query box, type *ultraviolet*, press <enter> or click Go.

How many hits?

Click Details. Was a MeSH term included?

If not, try alternatives to find the appropriate MeSH term:

3. Type *ultra violet*, press <enter> or click Go.

Was a MeSH term included? Is this an appropriate term?

Remove the botanical (viola-)terms from the Details box; so you end up with *ultra[All Fields] AND violet[All fields]*.

Click the Search button below the box. How many hits?

► Words searched via the query box are not always mapped to an appropriate MeSH term. It is important to find and use an appropriate MeSH term. That is why we take a look into the MeSH database.

4. If necessary, click History to see the blue colored bar at the left side of the screen. Click MeSH database in this bar. Type *ultraviolet*, <enter>. A first set of MeSH terms and substance names is shown, all with a relation to ultraviolet.

Mark the appropriate term Ultraviolet Rays in its check box.

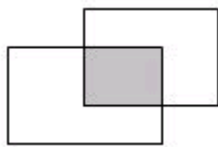
Open the pulldown menu Send to and click **Search Box with AND**.

A new screen opens; click the button Search PubMed. Your search term is transmitted from MeSH database to PubMed, the results are shown immediately. How many hits?

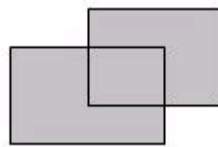
5. Complete your Ultraviolet search by typing *uv* in the query box. MeSH term included? How many hits?

6. Click History; the sets of your search history are shown. These are likely 6 sets. Remove the viola-set (search term *ultra violet*) since you do not want the set with the botanical term: Click the #set number, choose under Options: Delete and click OK.

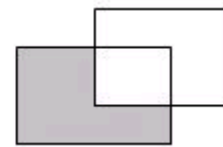
Now it is time to make combinations. Setnumbers and Boolean operators AND, OR and NOT are used for this (see scheme below).



#1 AND #2
e.g. Melanoma AND uv



#1 OR #2
e.g. uv OR ultraviolet rays



#1 NOT #2
#1 WITHOUT
overlap of #2

Clear the query box.

Make a combination of the 4 ultraviolet variants including the #, using OR (this means any of the 4 variants is OK so the result is a sum). Your query should look like #3 OR #4 OR #5 OR #6. (capital OR between spaces) Use your own relevant set numbers. How many hits?

This UV combination has a new set number.

7. Now you combine the uv-set with the melanoma-set, using AND (this means both concepts need to be covered in the combination, so you reduce the result) How many hits?

The search looks completely done. However you realise melanoma may be associated with sunlight, without UV being mentioned. So you decide to include sunlight to get more hits.

8. Type *sunlight* in the query box. How many hits? MeSH term included? (see Details)

► Although *sunlight* is a MeSH term, you take a look in the MeSH database to get more information about the term.

9. Click MeSH database in the left blue bar. Type *sunlight*, <enter> or click Go. Scroll down to view the hierarchical subject tree. Searching Sunlight means automatically including the indented terms Ultraviolet Rays and Infrared Rays (this is called “exploding”). You are not interested in Infrared Rays. You already searched UV Rays; so you tick **Do NOT explode this term** (above the category tree). In the pulldown menu Send to: click **Search Box with AND**, then click the button PubMed Search. How many hits?

Because you use this as an equivalent to the UV variants, you combine this Sunlight set with **OR** to add to the UV set. Total of hits in this new set:

10. The UV/sunlight set has again to be combined to melanoma. Attention: **AND** is the operator to use between these concepts. How many hits?
Make a note of this new set number for later use:

11. Displaying references:

- ▶ You can vary the format in the scrolldown menu Display (default is Summary). When a reference is “indexed by Medline” the MeSH terms are visible in the Citation format.
- ▶ The number of references per screen (default 20) can be expanded in the scrolldown menu Show.

12. Your search resulted in many references. You are going to emphasise the melanoma component by modifying it.

Click MeSH Database (left blue bar), type *melanoma*, <enter>.

Click the underscored term Melanoma and scroll down.

Tick **Restrict Search to Major Topic Headings only**.

Open pulldown menu: Send to > Search Box with AND, then click PubMed Search.

In the Query Box you see “Melanoma”[Majr]. Add to this: *OR melanoma[ti]* and click Go or press <enter>. Now you search for melanoma as Major Mesh term or as title word. How many hits?

The combination of this condensed Melanoma set with the UV/sunlight set has to be made.

Click History. Combine the new melanoma set to the UV/sunlight set with **AND**.

How many hits?

13. Limiting your results step by step.

- ▶ Several limits can be applied at the same time. To demonstrate reductions in hits we apply limits step by step here.

Use the set you created in question 10: type its set number including # in the query box.

Click the tab Limits, scroll to Languages and tick **English** and (more languages) **Dutch**.

Click Go. How many hits? Your chosen limit is shown in a yellow bar.

14. Click Limits (your limit in Language stays active) and scroll to **Dates > Published in the last** > pulldown menu to **Specify date range (YYYY/MM/DD)** and click.

Only fill in the first yearbox: 2000 and click Go. How many hits?

15. Click Limits again (former limits stay active), scroll down to Ages and tick **All Adult: 19+ years**. Click Go. How many hits?

► The tab Review on your reference screen already shows the number of review articles in the set. To create a single set with reviews, it is necessary to use a Limit.

16. Click Limits, scroll down to Type of Article and tick **Review**. Click Go. How many hits?

► We return to the set formed in question 10, to perform a search on articles by a specific author within this set, B. Armstrong.

17. Clear all active Limits by emptying the tickbox. Your set number formed in question 10 should be in the Search Box. Then again tick Limits, scroll to **Search by Author** and click Add Author. A new search box Author Name is presented; insert: *armstrong b* and click Go. How many hits?

Study the resulting references. Most authors are BK Armstrong. Apparently PubMed searches for all authors with one or more initials all starting with B.

► BK Armstrong may concern another person than B Amstrong. It is possible to search for author names with specifically one initial.

18. Clear the Search Box from *AND (amstrong b[auth])*, so only the set number formed in question 10 remains.

Repeat your limiting action of question 17, but insert this time: *armstrong b@*

The result are articles by B Armstrong within your set. How many hits?

19. Searching for Journals and limiting to a specific journal

You look for articles about your subject published in *British Journal of Dermatology*.

Click Journal Database (left blue bar), insert in the presented search box: *British dermatology* and <enter> or click Go.


Scroll to British Journal of Dermatology and click **Links** (right side of the screen), then click PubMed.

Your journal search is transported to PubMed. How many hits?

Combine this set with your subject set (result from question 10). How many hits?


20. Link to fulltext articles

Choose a recent reference from the last formed set. Clicking the authors names shows the AbstractPlus format, including the icon .

► If  does not show up, your did not log in via the Walaeus Library Homepage. Please do so now. (<http://www.lumc.nl/1060/> ; Ga snel naar> PubMed). Your search history will be saved when logging in again on the same computer within 8 hours.

Click this icon to read about the fulltext availability of this reference.


21. No fulltext availability, other options

Close the SFX page. In your last set, choose a reference from publication year 1992 or older. In this reference, click the icon . You conclude it is not fulltext available. The next option is to search U-CAT (Leiden University OPAC). Clicking Beschikbaarheid shows the available volumes in print and their location.

22. Limiting to Free full text articles (no Walaeus licence needed)

Typ the set number resulting from question 10 in the Search Box. Click Limits, scroll to **Free Full Text** and click Links to free full text. Click Go. How many hits?

These articles are freely available for anyone on the internet. In Display Summary format

they are represented with a green strip icon .

23. Selecting references

On the History screen, choose a set by clicking the underscored number of hits (Result). The set is presented in Summary format. For your selection, tick 5 references at random. In the pulldown menu **Send to**, click Clipboard. You are notified that items were added to your Clipboard and the Clipboard tab has an *. Clicking on the Clipboard tab shows your selected references, which can be sorted, printed or downloaded.

► **Send to Clipboard** transports your selected references to Clipboard. When no selection is made (no items ticked), the whole set will be added to Clipboard, with a maximum of 500 references.

► During one session your Clipboard items will be presented with green numbers in any set you use.

24. Sorting references

On the History screen, choose a set smaller than 500 hits to display on the Reference screen by clicking the underscored Result. To sort these by Journal title or Author name use the pulldownmenu **Sort by**.

25. Downloading references

On the History screen, choose a set of about 20 references. The set is presented on the Reference screen. Choose the presentation format you want in the pulldown menu **Display**. In the pulldownmenu **Send to** choose File > Save. Define the Folder you want the file to be saved in.

THIS INSTRUCTION IS FOR YOUR INFORMATION ONLY, PLEASE DO NOT DOWNLOAD THIS FILE.

26. Printing references

Open a set on the Reference screen. Choose your presentation format with **Display**. Scroll down the **Send to** menu and click Printer.

THIS INSTRUCTION IS FOR YOUR INFORMATION ONLY, PLEASE DO NOT PRINT THIS SET.

► Using the print command will only affect references on the visible screen. When your set exceeds the default of 20, use the **Show** pulldown menu to increase the number. When a selection is made by ticking several references, this selection will be printed.

27. E-mailing references

Choose a set or a selection of references. In the pulldown menu **Send to** click E-mail and act according to instructions.

28. Identifying a specific reference

► Sometimes you need to check an incomplete reference, or you want to identify a reference for importing into a software program like Reference Manager.

E.g. you are looking for: D.L. Davis, International trends in cancer mortality in France, West Germany, Italy, Japan. England and Wales and the USA, in *Lancet*, 1990, Aug. 25; 336, pp. 474-481.

Click Single Citation Matcher (left blue bar). In the boxes presented, insert **Date** 1990, **First page** 474 and **Author Name** Davis. Click Go.

The reference presented is ready for processing like mentioned above.

29. My NCBI: Registration and logging in.

► **My NCBI** allows you to save searches and clipboard sets, set up e-mail alerts for new content, choose filter tabs and highlight search terms. Registration is free.


On the icon My NCBI (top right) click Register. Act according to instructions. If you already have an account, click Sign in.

The icon My NCBI (top right) shows **Welcome** <username>. Click History. Your session and search history is still active for further processing.

30. Start an alert

On the History screen, choose your definitive set. When presented on the Reference screen, choose the option *Save Search*. On the Save Search screen, type an appropriate name for your search and tick Yes at *Would you like to receive e-mail updates of new search results?* On the next screen, fill in your specifications for the alert.

31. Install Tabs with subsets

The default Tab *Reviews* can be expanded with other tabs. On the Reference screen, click . If not yet signed in on My NCBI, you are prompted to do so. Choose maximum 5 out of 8 options for tabs by ticking.

32. Highlighting search terms

Click My NCBI (left blue bar). Click User Preferences. Choose your highlighting colour.