

MEDPILOT: integrated effective medical searches

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Abstract

Biomedical searching strategies are ever more complex in the nowadays “information deluge” context. MEDPILOT is a service freely offered by ZB MED – Deutsche Zentralbibliothek für Medizin (German National Medical Library) based on an effective meta-search engine. It runs searches in Medline/PubMed and in many other biomedical sources, and allows further refinements and clustering of results.

MEDPILOT: all you need to know

At the beginning our digital context was referred to as “information overload”. Now we’re facing an actual “information deluge”, with more and more sources available on the Web, and a new article appearing in PubMed every 36 seconds [1]. Meta-searching (i.e. searching multiple sources at the same time, with only one query) seems to be a successful answer, provided that the whole system is based on an effective search engine and a reliable and useful knowledge base.

MEDPILOT (<http://www.medpilot.de/>) is a service freely offered by ZB MED – Deutsche Zentralbibliothek für Medizin (German National Medical Library), with a German and an English interface. The ambitious subheading says “All you need to know”, because the system runs searches in Medline/PubMed and many other biomedical or academic sources, library catalogues included. Most of the resources are Open Access or free on the Web; a search within toll-access databases is also provided, listing of course in the results page only the abstract or the brief information free of charge: this is the case of EMBASE, BIOSIS, many publishers’ platforms, and EBM databases (e.g. DARE and DSR for systematic reviews). If any researchers’ institution subscribes to these databases, they can access to the full results; in any case, many Document Delivery/Pay per view services are available on the market, included the ZB MED one. Document Delivery is the only domain liable to charges; otherwise the MEDPILOT service is completely free.

Simple search: how to elaborate your results

In the streamlined homepage, you find just a Google-like search box and the “Search” button. You can type your keyword, taking notice that you can use either English or different languages and you can connect your keywords with the Boolean operators AND (to narrow your search, OR to widen it, NOT to exclude one term). By default, the system runs an AND search, in each field, i.e. Title, Author, Source etc. (which is called an “Open Search”). If you need a more complex strategy, then choose the “Advanced Search” feature, which allows you to combine a query by Title, Author, MeSH term, Publisher, Date and so on. A list of results is then provided, coming from each of the searched databases; a list of all the searchable sources is also available (<http://tinyurl.com/4h3k77m>). In the central section, results are ordered by relevance and then basically clustered under two labels: “Search area Medicine-Health” and “Other databases”; clicking on which you can display the corresponding items [fig. 1]. A small icon near the title gives information about the document type (book, article, online resource and so on); on the lower right end a link provides the .pdf of the Table of Contents of the monograph or the abstract or the journal homepage if possible, with a red icon if the journal has a subscription based access, or a green one if the journal is Open Access and thus freely available to anyone. From a drop-down menu on the

right upper side of the page, you can also select your sorting options: by default, items are ranked by relevance; possible options are year descending or ascending.

Fig. 1 MEDPILOT results

At a glance, on the left side of the page, you can find your results clustered, in order to immediately access only those of interest, or combing and refining them via further selections. There are two kinds of grouping: on the upper side you can select more technically by: Year, Document Type, Language, Database, effectually limiting your search. Each cluster is collapsible, if not suitable. In the screenshot in Fig. 1, a wide, basic search for “stroke rehabilitation” was run. Within these left clusters of results, you can directly find: by Year, 43 results in 2011, 934 in 2010 and so on; by Document Type, 10,675 articles, 1,106 monographs, 8 journals, 4 online resources. You can also see that the core of the results comes from Medline/PubMed: MEDPILOT might be a useful tool to run a search within PubMed in a more immediate way. You might elaborate your results by applying further filters at this level, with the advantage that the results page displays a common space where to elaborate your findings.

Semantic clustering: how to refine your search

On the lower left side of the results page, more interesting semantic/conceptual clusters are offered: by Conditions, Anatomy, Investigation, Therapy, Personal Health, Nutrition, Drugs as shown in Fig. 2. These clusters allow further refinements of your search, based on further conceptual in-depth steps, or facets. The system translates such a refinement in successive AND queries, narrowing your search.

Fig. 2 MEDPILOT results, semantic clusters

After running the search “stroke rehabilitation”, we can at a glance access only the results concerning a cluster within the main topic, e.g. “Therapy”, whose first items refer to “exercise therapy”. With two clicks, we have now effectively limited our original basic search, going down from 11,854 to an half 6,016. Please notice that, once selected “exercise therapy”, also the clusters by Year, Document Type and so on display reloaded according to the new context: 17 items in 2011, 493 in 2010; 5,241 articles and so on.

Semantic clusters themselves are context-sensible: if you run a search by “adolescent idiopathic scoliosis”, a new cluster named “Drugs” appears [Fig. 3]. If you further select the “methotrexate” sub-cluster, you limit your search from the initial 3,145 results to 4.

In the same way, a search for “cerebral palsy” gives 26,189 results, which fall to 429 when activated the cluster “Nutrition” and the sub-cluster “dietary fats”.

Fig. 3 MEDPILOT results, semantic clusters

You can refine your search by successively applying further limits. In the “adolescent idiopathic scoliosis” example, we can go from 3,145 results to our 9 of interests by selecting “thoracic vertebrae” in the “Anatomy” cluster, “braces” in the “Therapy” one, “activities of daily living” in “Personal Health”.

My MEDPILOT: how to save searches and results

With the My MEDPILOT feature, you can save search results. To temporarily save them, individual records can be put into the bookmark, simply by flagging the check box (Bookmarks) at the bottom of the displayed record you want to save. The record automatically is marked in bookmarks. To

view your selections, click on the link Bookmarks from the Feature tabs. This bookmark can be sent via E-Mail in different data formats (TXT, HTML, RIS, XML).

It is also possible to definitely save results. You need first to freely register and then log in. Once logged in, your results will be saved to your personal bookmark. Every time you log in you will be able to view your saved records in your personal bookmark.

With the “Literature Search Agent” feature within My MEDPILOT you can save your search and automatically re-run it, with e-mail notification of the update. At the bottom left end of the clusters in the results page, a “Set up” link displays in order to manage, modify or delete your Literature Search Agent settings.

It is also possible to export the bookmarked list of articles in different formats to different Reference manager tools, in order to manage citations or create bibliographies.

[1] Velterop, J Science publishing: the different interests of record keeping and knowledge transfer, Open Access Open Data conference, Cologne 13/14 Dec. 2010, available at <http://www.slideshare.net/oaod2010/jan-velterop-nanopublications-record-keeping-knowledge-transfer>.
