New Year, new PubMed

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Abstract:
Aim of this contribution is to present the latest additions to the worldwide known PubMed interface, concerning a better visualization of results list; a new format for the Advanced search which has merged the old labels' options; new features about saving collections and searches via MyNCBI and about creating one's own bibliography.

During the whole 2008, many new features have been added to the traditional PubMed interface, fostering more effective and faster searches. PubMed has been modified frequently over the years to optimize retrieval or provide add-value information. In the undergoing process of change, let's start from the new ATM (Automatic Term Mapping) and the new "sensors".

A "boost" for PubMed search: the new Automatic Term Mapping (ATM).

In the continuing process of reviewing and enhancing the already powerful PubMed search engine, the release of the new ATM marks a milestone. Remember that ATM means the way which the system translates your query into, as shown in the Details box. PubMed has been enabled to recognize author names, journal titles, and MeSH vocabulary terms that are simply typed in the Search box, without adding any search tags like [AU], [TA] etc. In the past, in a similar case PubMed performed just a subject search, mapping the entered keyword to the MeSH vocabulary and searching for it like a [Text Word], that's to say in the title, abstract, and other fields, not author nor journal title. This caused thousands of citation-type searches to fail: a search like "scoliosis negrini" would have retrieved 0 items. Automatic Term Mapping has been modified to be more inclusive: the new ATM have been augmented to include an "All Fields" search, so the new ATM addresses the problem by removing the old field restrictions. In the new system, query terms can be found in both MeSH terms and every PubMed citation field (e.g. author, journal title, substance name etc.). The entered keyword is as usual mapped to the MeSH vocabulary to perform a subject search, but then it is searched using the [All Fields] search tag, ensuring a broader search. In the case of multi-word terms, each single word is searched alone and then gathered with AND. This approach solves also the question of the proximity of the words in a query: if you had entered "gene therapy", with the old ATM you wouldn't have found an article dealing with "gene silenced therapy", while the new ATM search for single term retrieves it. According to the National Library of Medicine available statistics, this new ATM has noticeably improved searching PubMed. No doubt that the search is more effective, but it could also result broader. If you would like your retrieval to be more focused you might use search tags with your terms (the list in PubMed Help: Search Field Descriptions and Tags, http://tinyurl.com/rtrhr**)**, or try using the new Advanced search (see below) where you can specify the fields to search in.
Moreover, if the entered keyword happens to be also the title of a journal, the system retrieves all the items published in this journal, and separates them in a yellow highlighted box. The new search for "scoliosis negrini" gives back 44 results, 16 of which published in «Scoliosis» as a journal title (fig. 1). That's because a "Citation Sensor" has been added. It is a new extremely useful PubMed feature that matches searches with citations. It recognizes combinations of search terms that are characteristic of citation searching, e.g., volume/issue numbers, author names, journal titles, and publication dates, which it then matches to citations. Please note that the "Citation Sensor" will not work with terms entered with the search tag [AU].

A similar tool is the "Drug sensor", introduced in July. This sensor detects whether a drug name is included in a user's search, and if so, presents excerpts of information from other resources, namely the *PubMed Clinical Q&A* [http://www.ncbi.nlm.nih.gov/bookshelf/br.fcgi?book=ebm], a collection of evidence-based medicine summaries useful to learn more about current treatment practices and the level of evidence that supports them. It is based on published systematic review and edited by Drug Effectiveness Review Project (DERP, http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=derp.TOC) from Oregon Health & Sciences University, which compares classes of medicines.

The new "Gene Sensor" will soon join the two, featuring a check of the entered query: if it detects the symbol for a gene found in the Gene database, a "Gene Information" box displays above the results list with links to information and the full report in the Gene database.
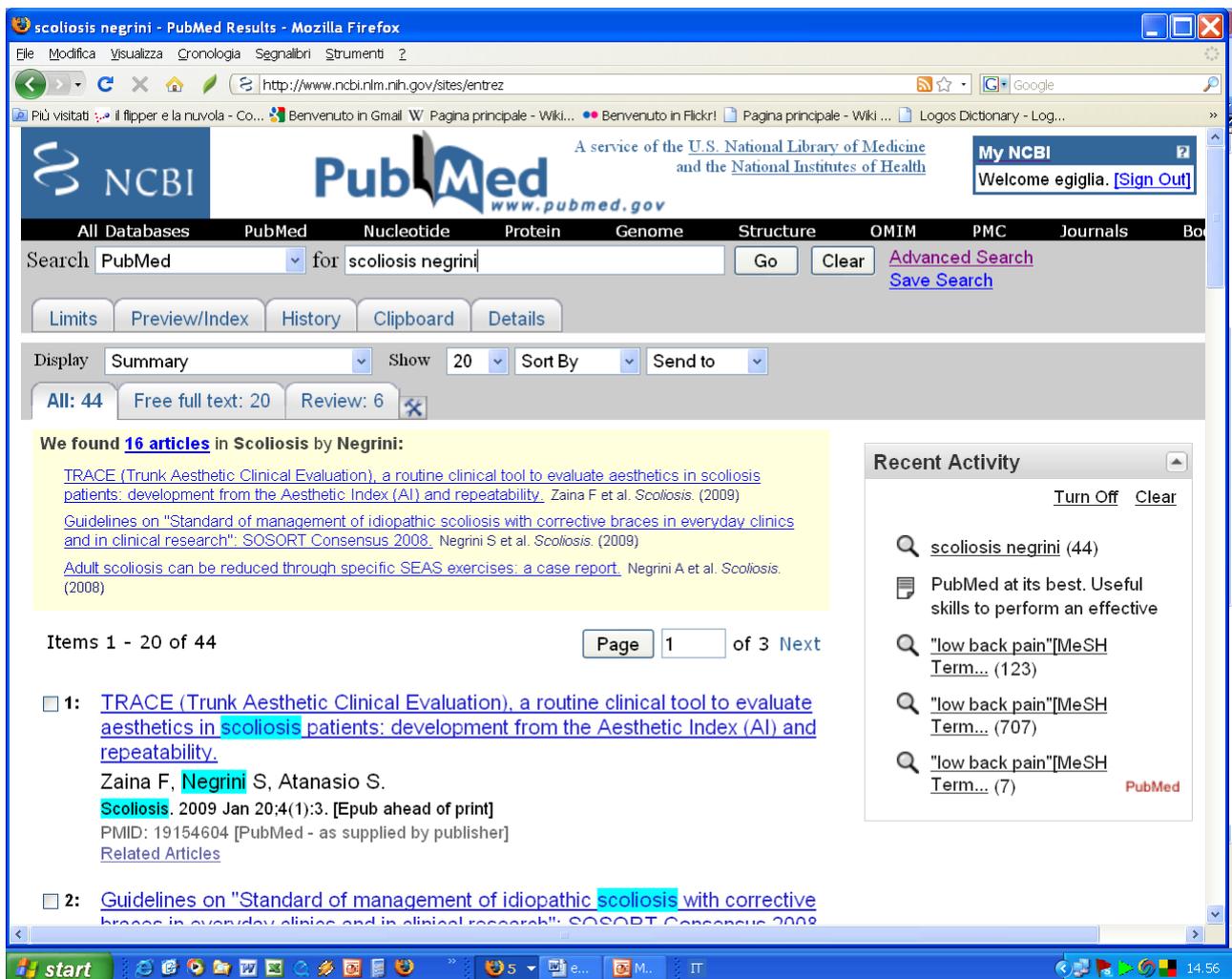

Fig. 1: the new PubMed search retrieving also author's name and journal title.

New display for search results
As to November, 2008, the results list showed first the link to the names of the authors. The positions of author names and the title of the article have been reversed, to improve the streamline of the Web page as well as to make it easier to scan titles. The article title now displays on top and constitutes the link to the AbstractPlus format, while authors' names appear under the title, and are no longer browseable. The icons that indicated availability of an abstract or free full text and used to display to the left of the citation have been removed. If PubMed does not have an abstract, this is shown in the Summary display. The indication "Free article in PMC" appears in green next to the "Related Articles" link if the case. The link for "Related Articles" has been moved under the PMID

number, and appears in a lighter colour, like the PubMed status. The "Links" menu came up to be rarely used, so it has been removed.

A new feature has been added: the "Recent activity" box, which tracks your browsing activity, i.e. your recent database searches and document views. You can choose to turn it off or clear it whenever you want.

An Advanced search that merge…

The Advanced Search screen has assumed many of the functions applied by skilled advanced searchers, such as the use of Limits, Preview/index, History, Clipboard and Details. That's why the corresponding tabs in the homepage visualization will be retired in the near future, nor will they be updated: e.g. future changes will be made only to the "Limit" feature within the Advanced Search screen.

A link for the Clipboard is already appearing to the right of the Search box on the PubMed screen when the Clipboard has content: this will replace the function of the tab asterisk when the tab label will be deleted.

The new Advanced search homepage displays now five sections, each one collapsible if not used, just by clicking on the ▬ box on the upper left of the section.

The first section, *PubMed History,* tracks the list of your queries in PubMed, and allows you as usual to re-run them, to combine them with Boolean operators, to save them in MyNCBI Searches, operating by the sequence number appearing on the left like a link. If you run more than five searches, you can choose to collapse the list by the "More history/Less history" button on the lower right end.

In the *Search by Author, Journal, Publication Date, and more* section, the new link "Add More Citation Search Fields" brings up boxes pre-set to aid with citation searching (Title, Volume, Issue, and Pagination). Please notice that, with the new ATM and the "Citation sensor" described above, many citation searches work if you enter citation data directly into the PubMed Search box. This section remains also useful to search and combine substance names or genes. By clicking on the "index" button on the right of each search box you will be displayed the list of the matching terms. Here you can choose only one of them. If you need a multiple choice, please go down to the *Index of fields and fields values* and use the CTRL key to select more than one. All the terms entered here could be added to the main Search box by Boolean operators. You need to clear off your previous keywords in the main Search box if you want to start a new search.

The *Limit by topics, languages and journal groups* section addresses the needs of a narrower search, like the "Limits" label before. All the previous limits are displayed – free full text, gender, age range, type of article, subsets, and languages - although in a different order. As usual, all the flagged limits are active until de-selected. Here you have to operate e.g. if you want to find only systematic reviews, or practice guidelines, or meta-analysis and so on.

The fourth section, *Index of fields and fields values,* features as the previous "Preview/Index" to view the index of entered keyword – or at least the entered root, listing all the terms starting with those letters, to help your choice. As already shown, here you can use the CTRL key to perform a multiple choice between the listed terms matching your query. The selected terms will be added to the main Search box with an AND, OR, NOT button.

A new section at the bottom, *Queries*, provides links to the Clinical Queries; Special Queries; MeSH database and Journal database, opening the same pages as from the left navigation toolbar.

MyNCBI revised, and so the steps to save

MyNCBI displays a new homepage interface. Upon signing in, it shows a summary of and links to the contents of one's personal account, e.g. the preferences and filters selected, along with the saved searches, collections and the new "bibliography" feature.

Preferences is used both for "Common Preferences" (e.g. to change the account password, enter an e-mail address, select how links are displayed, and turn on highlighting of search terms in results…) and "PubMed Preferences" (to set options for the display of single citations or to apply PubMed search filters).

Search Filters display the selected filters to manage the results list (e.g. if you need collected under a label all the Systematic reviews, all the Free Full text items…) and provides a link to the filters page to modify yours selections.

My Saved Data include: **Saved Searches**, **Collections**, and the new **Bibliography** feature, as shown in fig. 2.

My Saved Searches

In this section you can manage your Saved searches: to run a saved search into PubMed without update limits, just click on the search name. Use the "Manage" link to open the list, then, to check only for new items, flag the checkbox next to the name of the search and click the "Show What's New" button; to create a schedule to receive e-mail updates or make changes to updates currently set, use the "Edit" link.

My Collections

In this section you can access your saved collections: to display a collection in PubMed, click on the collection name. Use the "Manage" link to open the list, to view the collection contents and remove items or to change the name of the collection, use the "Edit" link; to merge two or more collections, use the "Merge" button.

My Bibliography

This new feature makes it easy for authors to search, collect and store citations for their publications in PubMed, up to 1500 citations. Authors publishing under different names can include up to two name variants in the saved search. Authors may choose to differentiate their lists of citations, using the "Other Citations" button, which works the same as My Bibliography.
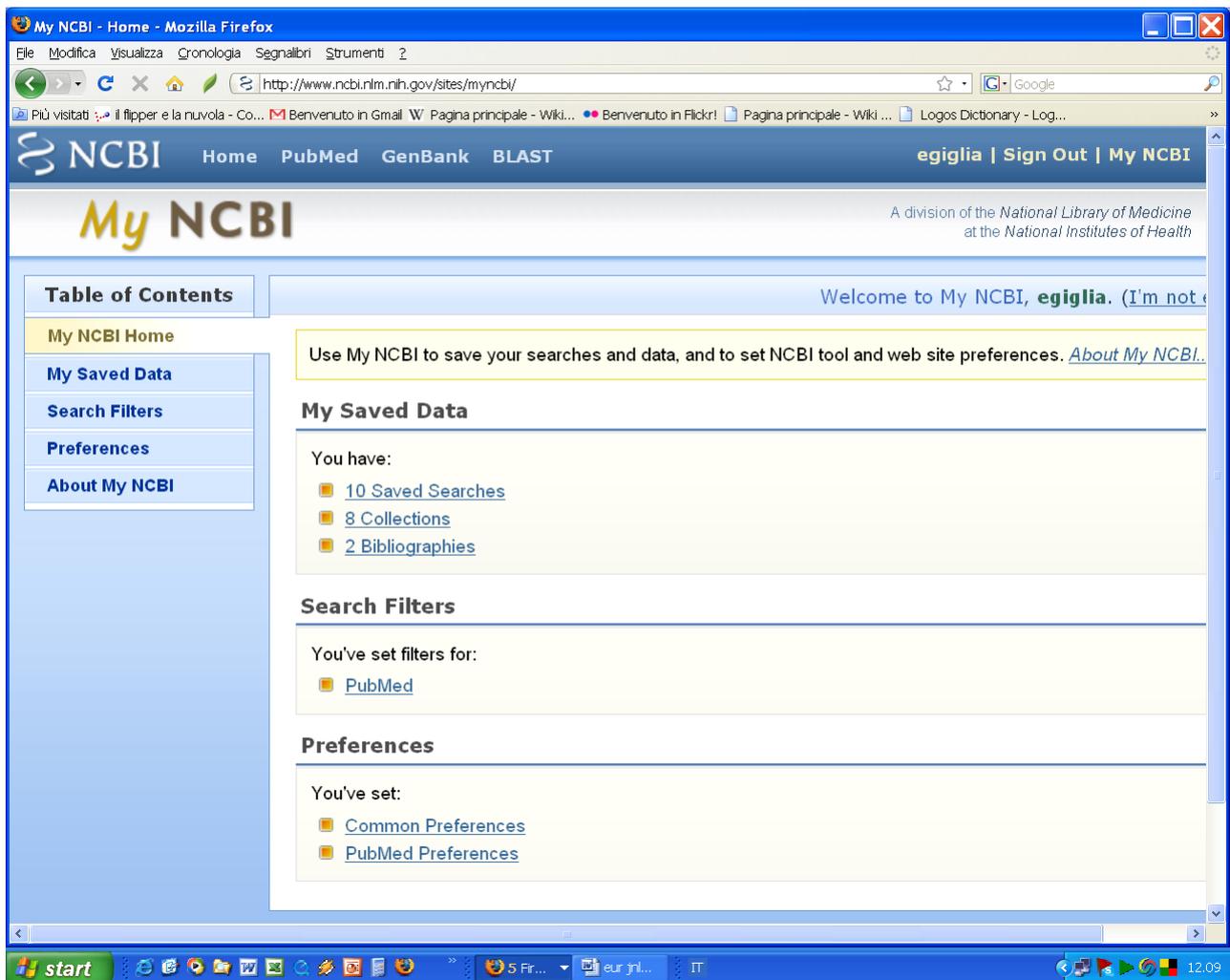
Fig. 2: new interface for MyNCBI homepage.

Changes have been made also in the steps to save results and items of interest.

With this new release, you don't need anymore to store temporarily your selected results in the Clipboard before sending them to a collection. The option "Collection" has been added to the "Send to" pull-down menu, so with only one click you can get them added to MyNCBI-Collection. If you're not logged in, you are prompted to do so.