

PubMed Labs: A new test site for improving literature search

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NCBI, NLM, NIH

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Disclaimer

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Funding: supported by NIH Intramural Program, National Library of Medicine

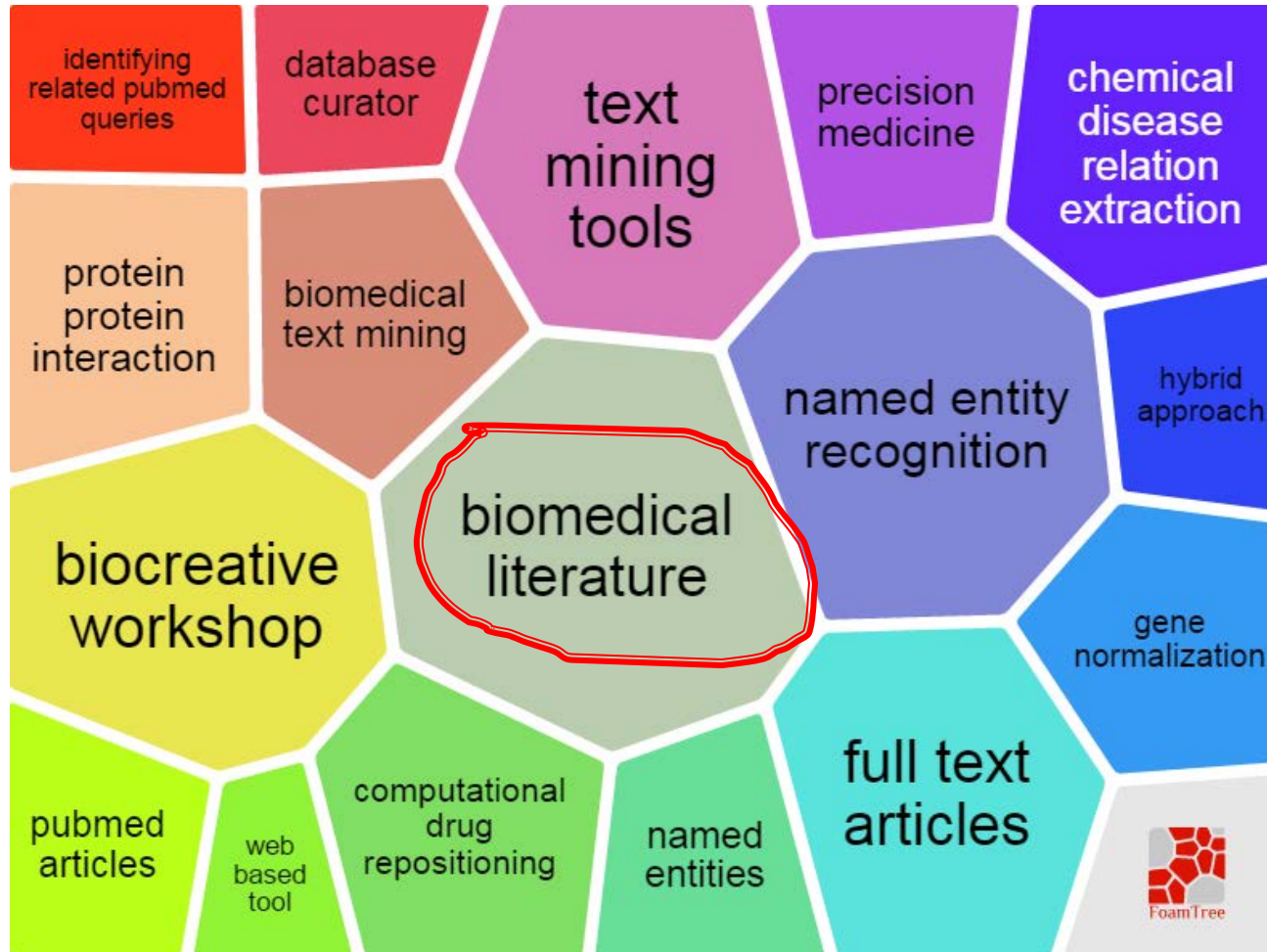


What is NCBI, NLM, NIH?

- National Center for Biotechnology Information (NCBI)
- Created in 1988 by U.S. congress
- A division of the National Library of Medicine (NLM), one of the institutes of National Institutes of Health (NIH)
- Located at NIH main campus in Bethesda, Maryland

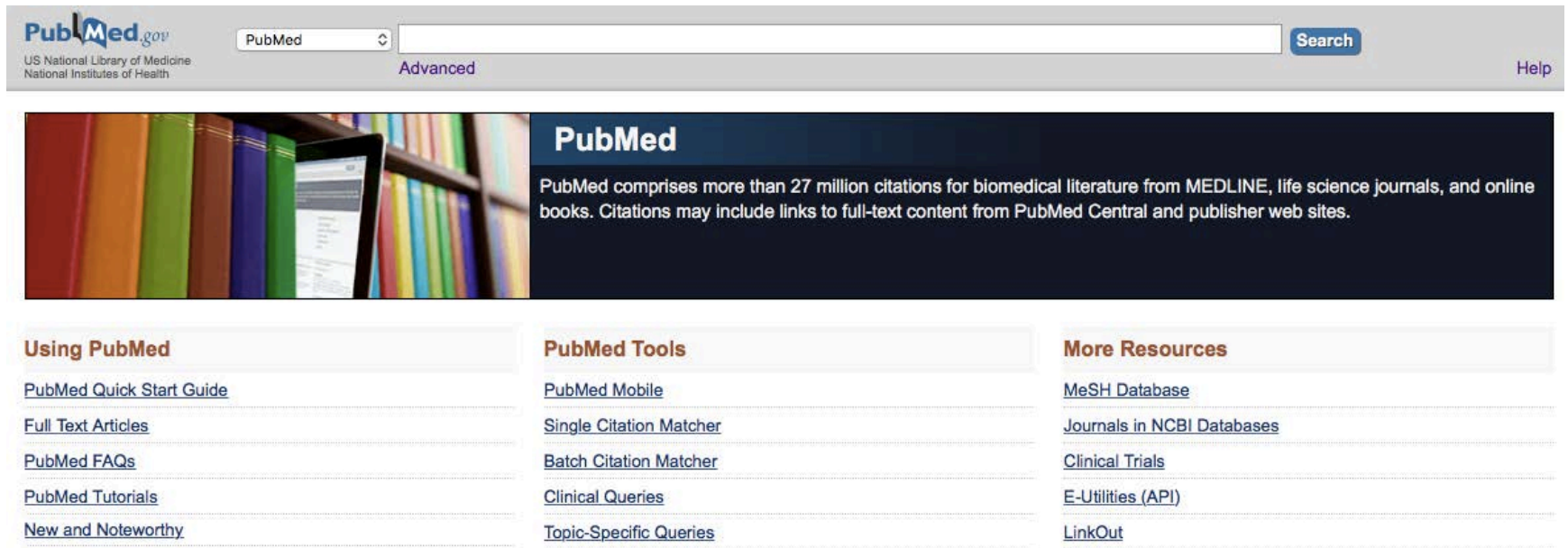


Text Mining Research@NCBI



PubMed

Literature is the primary repository of knowledge



The screenshot shows the PubMed website interface. At the top, there is a search bar with a dropdown menu set to 'PubMed' and a 'Search' button. Below the search bar, there is a banner image of a bookshelf with a tablet displaying the PubMed website. To the right of the image, the text reads: 'PubMed comprises more than 27 million citations for biomedical literature from MEDLINE, life science journals, and online books. Citations may include links to full-text content from PubMed Central and publisher web sites.'

Using PubMed

- [PubMed Quick Start Guide](#)
- [Full Text Articles](#)
- [PubMed FAQs](#)
- [PubMed Tutorials](#)
- [New and Noteworthy](#)

PubMed Tools

- [PubMed Mobile](#)
- [Single Citation Matcher](#)
- [Batch Citation Matcher](#)
- [Clinical Queries](#)
- [Topic-Specific Queries](#)

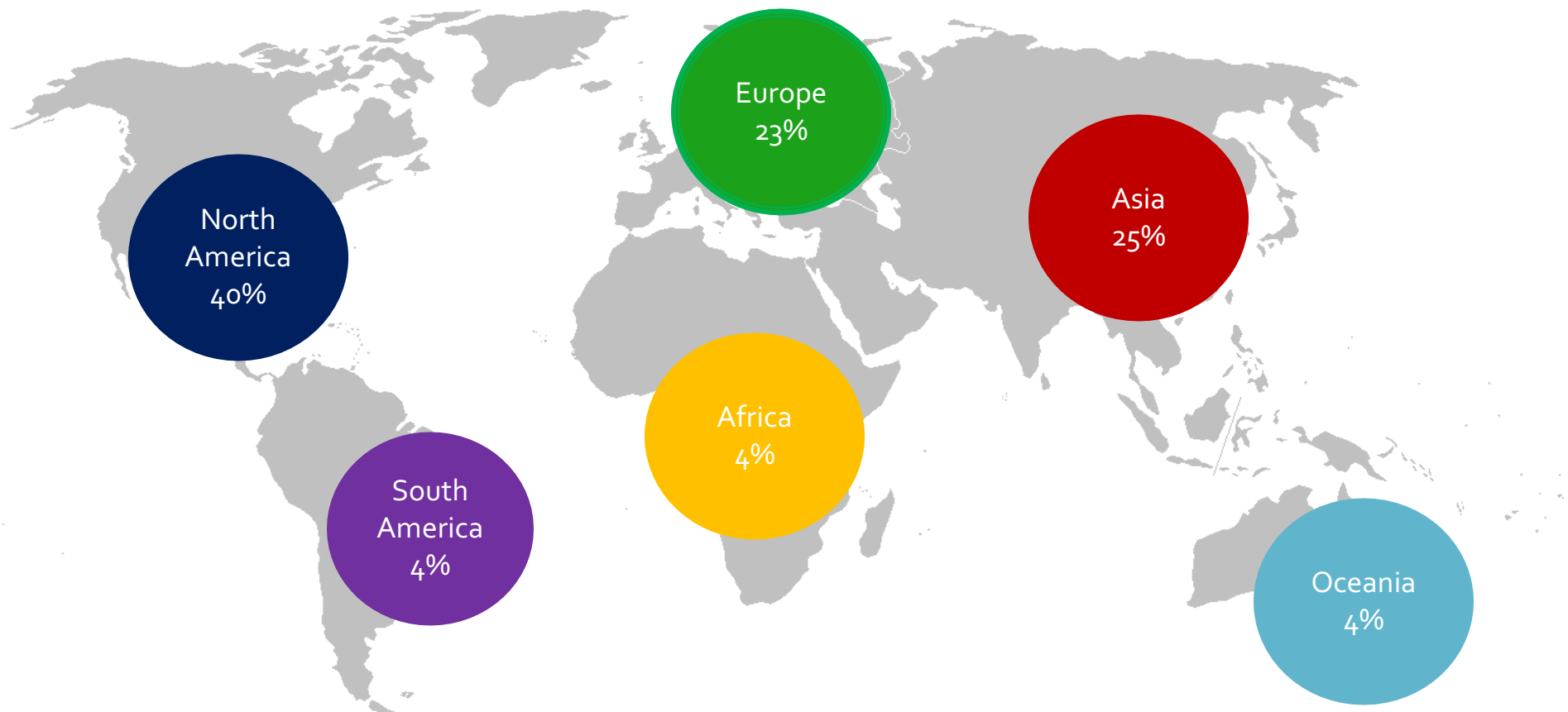
More Resources

- [MeSH Database](#)
- [Journals in NCBI Databases](#)
- [Clinical Trials](#)
- [E-Utilities \(API\)](#)
- [LinkOut](#)

If I have seen further it is by standing on the shoulders of giants – Newton

PubMed Daily Usage

- 27+ million articles
- 2.5 million users daily
- ~ 3 million searches
- 9 million page views



NCBI Literature Resources

- PubMed
- PubMed Central (PMC)
- PubMed Health
- Bookshelf
- NIHMS
- ClinicalTrials.gov
- PubMed Labs



What is PubMed Labs?

- PubMed Labs is a **test site** where we are *experimenting* with **new features** and tools that eventually may be incorporated in PubMed, in their current or a revised form based on the **input** we receive. Please try the site and *let us know* what you think.

Motivation

- To improve **search quality**: help users to find the most relevant & high-quality information efficiently
- To improve **usability**: help users to have better experience with their literature needs

IDEAS AND OPINIONS

Annals of Internal Medicine



The National Library of Medicine: Accelerating Discovery, Delivering Information, Improving Health

Patricia Flatley Brennan, RN, PhD



Search

Try [otitis media treatment](#) [koonin e crispr](#) [influenza vaccine effectiveness](#)


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Feedback

Search Results Page



influenza vaccine effectiveness

×

Search

TEXT AVAILABILITY

☐ Abstract

☐ Free full text

☐ Full text

ARTICLE TYPE

☐ Review

☐ Clinical trial

PUBLICATION DATE

☐ 1 year

☐ 5 years

☐ 10 years

Reset all filters

2,361 results

Sort by

Best match

Most recent

Influenza vaccine effectiveness in the 2011-2012 season: protection against each circulating virus and the effect of prior vaccination on estimates.
Ohmit SE, et al. Clin Infect Dis 2014.
BACKGROUND: Each year, the US **Influenza Vaccine Effectiveness** Network examines the **effectiveness** of **influenza vaccines** in.... Overall adjusted **vaccine effectiveness** was 47% (95% confidence interval [C...

Effectiveness of seasonal **influenza vaccine** in community-dwelling elderly people: a meta-analysis of test-negative design case-control studies.
Darvishian M, et al. Lancet Infect Dis 2014.
BACKGROUND: The application of test-negative design case-control studies to assess the **effectiveness** of **influenza vaccine**... confounding bias by risk factors is limited by design. We aimed to assess the...

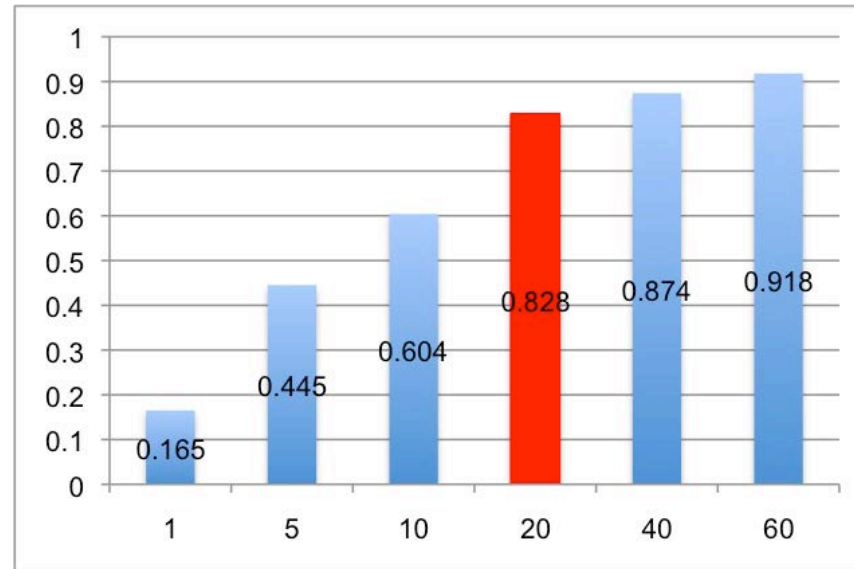
Efficacy and effectiveness of live attenuated **influenza vaccine** in school-age children.
Coelingh K, et al. Expert Rev Vaccines 2015 - Review.
Evidence of high efficacy of live attenuated **influenza vaccine** (LAIV) from randomized controlled trials is strong for... that included 'FluMist', 'LAIV', 'CAIV', 'cold adapted **influenza vaccine**', 'live attenuated...

Why relevance search?



Today's user search behavior

- “The best place to hide a dead body is page 2 of Google search results”



Most (>80%) clicks happened in top 20 positions.

Over half of PubMed queries return more than 20 results.

New relevance search (2017)



Best matches for otitis media treatment:

[Otitis media: diagnosis and treatment.](#)

Harmes KM et al. Am Fam Physician. (2013)

[Effectiveness of conservative treatment in the management of secretory otitis media.](#)

Malik SA et al. J Ayub Med Coll Abbottabad. (2014)

[Complementary and alternative medicine for pediatric otitis media.](#)

Levi JR et al. Int J Pediatr Otorhinolaryngol. (2013)

[Switch to our new best match sort order](#)

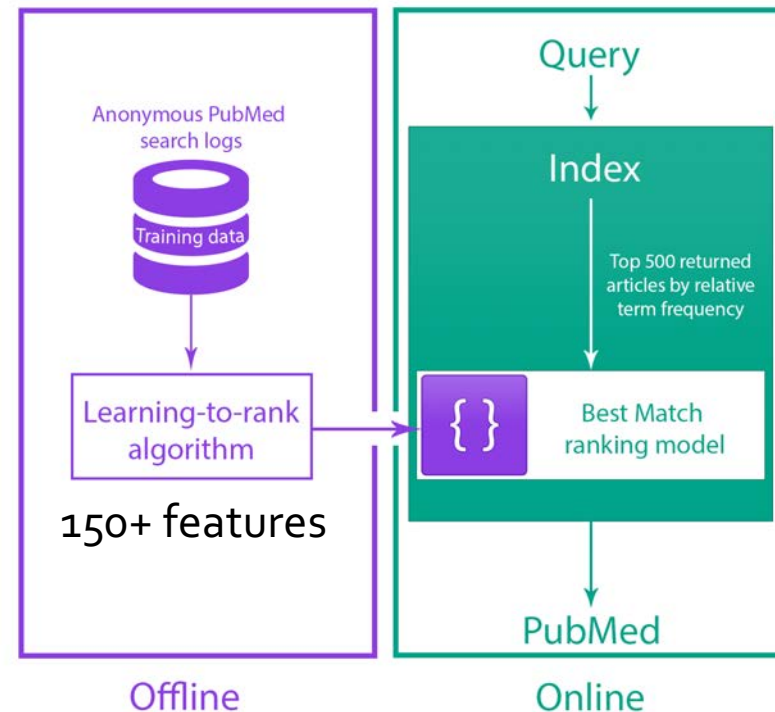
Search results for **otitis media treatment**

Format: Summary ▾ Sort by: **Best Match** ▾ Per page: 20 ▾


Search results

Items: 1 to 20 of 16584

1. [Otitis media: diagnosis and treatment.](#)
Harmes KM, Blackwood RA, Burrows HL, Cooke JM, Harrison RV, Passamani PP.
Am Fam Physician. 2013 Oct 1;88(7):435-40. Review. Erratum in: Am Fam Physician. 2014 Mar 1;89(5):318. Dosa error in article text.
PMID: 24134083 [Free Article](#)
[Similar articles](#)



Snippets (w/ highlighted keywords)

×Search

TEXT AVAILABILITY

☐ Abstract

☐ Free full text

☐ Full text

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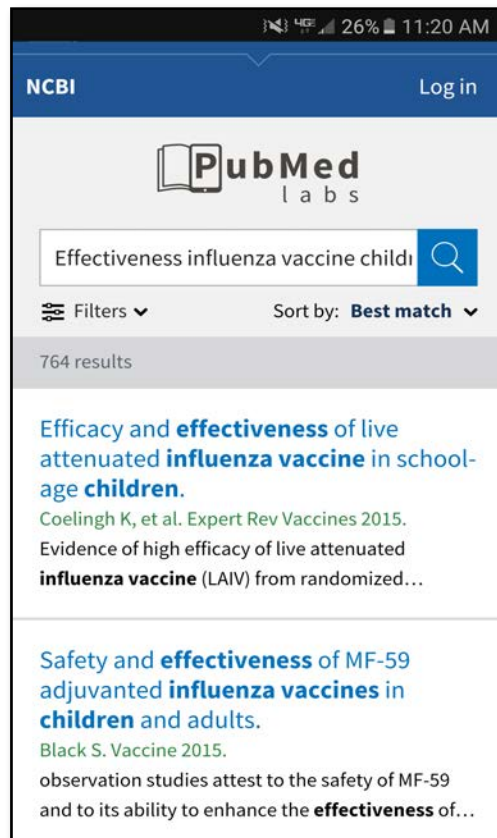
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[show details](#)

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Better support for mobile devices

■ DESKTOP ■ MOBILE ■ TABLET [3%]



PubMed Labs is a MVP

- **Minimum Viable Product**

- Only include core features
- Build it cheaply and quickly
- Evaluate it with real users using controlled experiments
- Iteratively improve it

- **FAQ: Why are some PubMed functions (e.g. MyNCBI) missing in PubMed Labs?**

Please note that PubMed Labs includes only a limited set of features, and not the full set of PubMed tools. Fear not – the absence of a PubMed tool in PubMed Labs does not mean it is planned for elimination.

User input is critical

- User interviews
- Direct user comments
- A/B testing
 - Controlled experiments with real users
 - Randomly split traffic btw 2 groups
 - A (Related article) vs. B (Similar article)

Summary

- Labs is NOT the new PubMed but rather
 - MVP with limited features
 - Sandbox for trying new features
 - Platform for seeking user input
- Current & future work
 - To conduct a/b tests
 - To include additional search functions

Acknowledgments



NLM & NCBI Leaderships

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And many others at NLM/NCBI and beyond!!



Thanks! QA

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<https://pubmed.gov/labs>