PubMed Labs: A new test site for improving literature search

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NCBI, NLM, NIH

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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
Literature is the primary repository of knowledge

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

North America 40%

South America 4%

Europe 23%

Asia 25%

Africa 4%

Oceania 4%
NCBI Literature Resources

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

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Influenza vaccine effectiveness in the 2011-2012 season: protection against each circulating virus and the effect of prior vaccination on estimates.


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.


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.


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?

27M articles
1M each year
2 per minute

Image: goo.gl/FLCjZP
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:
- Effectiveness of conservative treatment in the management of otitis media.
- Complementary and alternative medicine for pediatric otitis media.

Switch to our new best match sort order

150+ features
**Snippets (w/ highlighted keywords)**

**PubMed**

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Efficacy and Effectiveness of Live Attenuated Influenza Vaccine in School-Age Children

Kathleen Coelingh, Ifedapo Rosemary Olajide ... Ram Yoge

Evidence of high efficacy of live attenuated influenza vaccine (LAIV) in controlled trials is strong for children. We reviewed the published literature on vaccines aimed at children aged 5 years. QUOSA (Elsevier database) that included 'FluMist', 'LAI vaccine', 'live attenuated influenza vaccine', 'live attenuated controlled trials, effectiveness of live attenuated influenza vaccine in school-age children. LAIV has considerable efficacy.

Keywords: effectiveness; efficacy; influenza vaccine; live attenuated influenza vaccine; school-age children.

DOI: 10.1586/14760584.2015.1078732

Related articles

Safety, Immunogenicity and Efficacy of Intranasal, Live Attenuated Influenza Vaccine
Data supporting the use of the live attenuated influenza vaccine (LAIV) in children and adults is

MeSH terms
Better support for mobile devices

Efficacy and effectiveness of live attenuated influenza vaccine in school-age children.
Evidence of high efficacy of live attenuated influenza vaccine (LAIV) from randomized...
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)
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
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https://pubmed.gov/labs