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
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
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:

Switch to our new best match sort order

Anonymous PubMed search logs
Training data
Learning-to-rank algorithm
150+ features

Query
Index
Top 500 returned articles by relative term frequency
Offline
Best Match ranking model
PubMed
Online

Search results
Items: 1 to 20 of 16584
Format: Summary
Sort by: Best Match

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


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

Kathleen Coelingh, Ifedapo Rosemary Olajide ... Ram Yogev

PubMed: 26372891

Abstract

Evidence of high efficacy of live attenuated influenza vaccine (LAIV) in small and large controlled trials is strong for children aged 5 to 11 years. We reviewed the published literature from January 2005 to June 2014 that included 'FluMist', 'LAIV', 'live attenuated influenza vaccine', 'live attenuated seasonal influenza vaccine', '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...
Better support for mobile devices

DESKTOP  MOBILE  TABLET [3%]

76%  21%  3%

NCBI

PubMed

Efficacy and *effectiveness* of live attenuated *influenza vaccine* in school-age children.
Evidence of high efficacy of live attenuated influenza vaccine (LAIV) from randomized…

Safety and *effectiveness* of MF-59 adjuvanted *influenza vaccines* in children and adults.
Black S. Vaccine 2015.
Observation studies attest to the safety of MF-59 and to its ability to enhance the *effectiveness* of…

Live Attenuated Influenza Vaccine in School-Age Children

Abstract

Evidence of high efficacy of live attenuated influenza vaccine (LAIV) from randomized controlled trials is strong for children 2-6 years of age, but fewer data exist for older school-age children. We reviewed the published data on efficacy and effectiveness of LAIV in children ≥5 years. QUOSA (Elsevier database) was searched for articles published from January 1990 to June 2015. That included "Live Attenuated" or "LAIV" in title.
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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And many others at NLM/NCBI and beyond!!
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https://pubmed.gov/labs