OCULUS *Optometry CUrriculum for Lifelong Learning through ErasmUS*

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“Thanks to Catherine Suttle, City, University of London and the Erasmus Plus-funded OCULUS group for providing this resource”

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EBP Workshop

Catherine Suttle

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In this session

- We are going to:
  - Use an ophthalmic practice-related scenario to find evidence
  - Follow the first two steps of the EBP process:
    - Ask
    - Acquire

  Tomorrow you will go through this process yourself

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How we will do this

- Using a clinical scenario, we will formulate an answerable question using the PICO method
- Find evidence, starting at the highest level and working down

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What is an ‘answerable’ question?

- We can pose a question, but it might be too vague or ambiguous to find a specific answer.
  - Example: Does homeopathy work?
- On the other hand, we can pose a specific question for which we can find information targeting that particular question
  - Example: Is homeopathy effective in the treatment of chronic open angle glaucoma?

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Use of the ‘PICO’ method

- This method helps us to ensure we include all important concepts in the question
- The method often needs to be modified in order to include relevant concepts
  - For example, your scenario may include no intervention (I), and you may not want to include a comparison (C).
  - You may be interested in a diagnostic test, or perhaps in prevalence or prognosis of a particular condition.
  - See the EBOptometry web site for more on this

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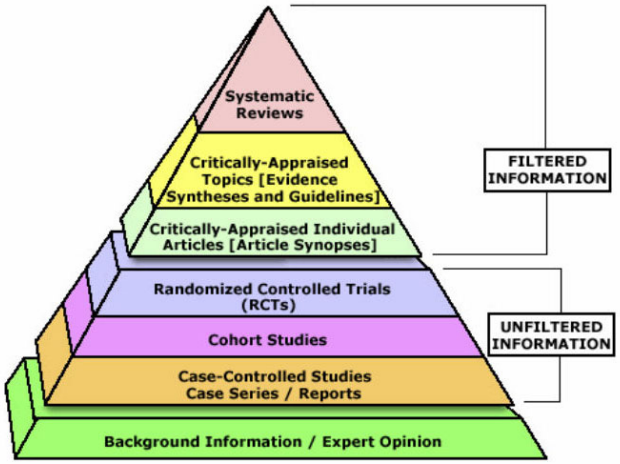
Where do we look for evidence?

- Start at the top of the pyramid and work down if necessary
- Start with one or more of these (or other) resources:
  - www.cochrane.org/
  - www.trip.com
  - www.ncbi.nlm.nih.gov/pubmed



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How do we look for evidence?

- We use key words taken from our question
- Narrow or broaden the search as needed
- For example, for the question:
  - Is acupuncture effective as a treatment for glaucoma?
  - I might use the keywords acupuncture, effectiv* and glaucoma

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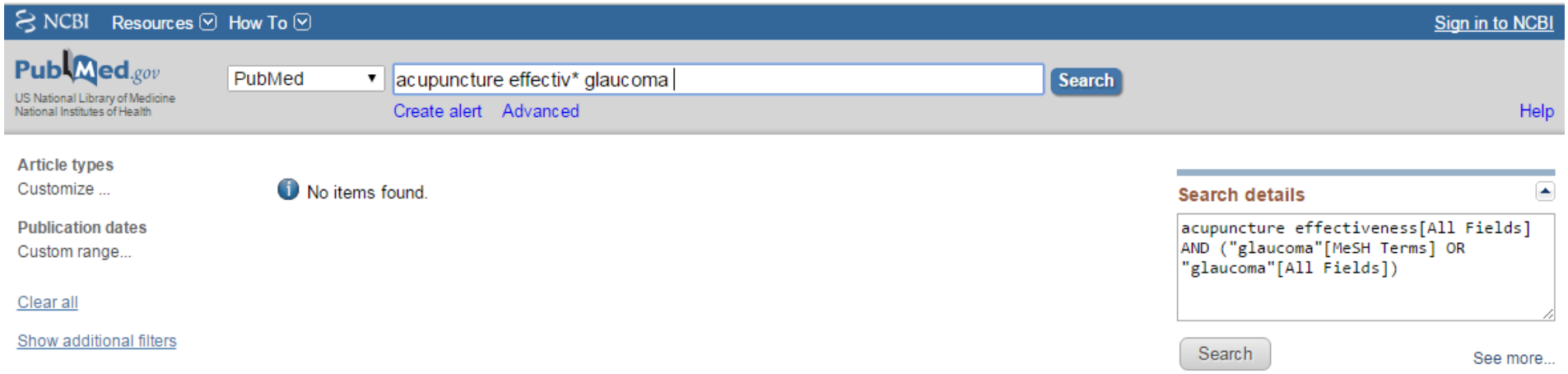
No results are found with these search terms. The search was too narrow, and needs to be broadened.



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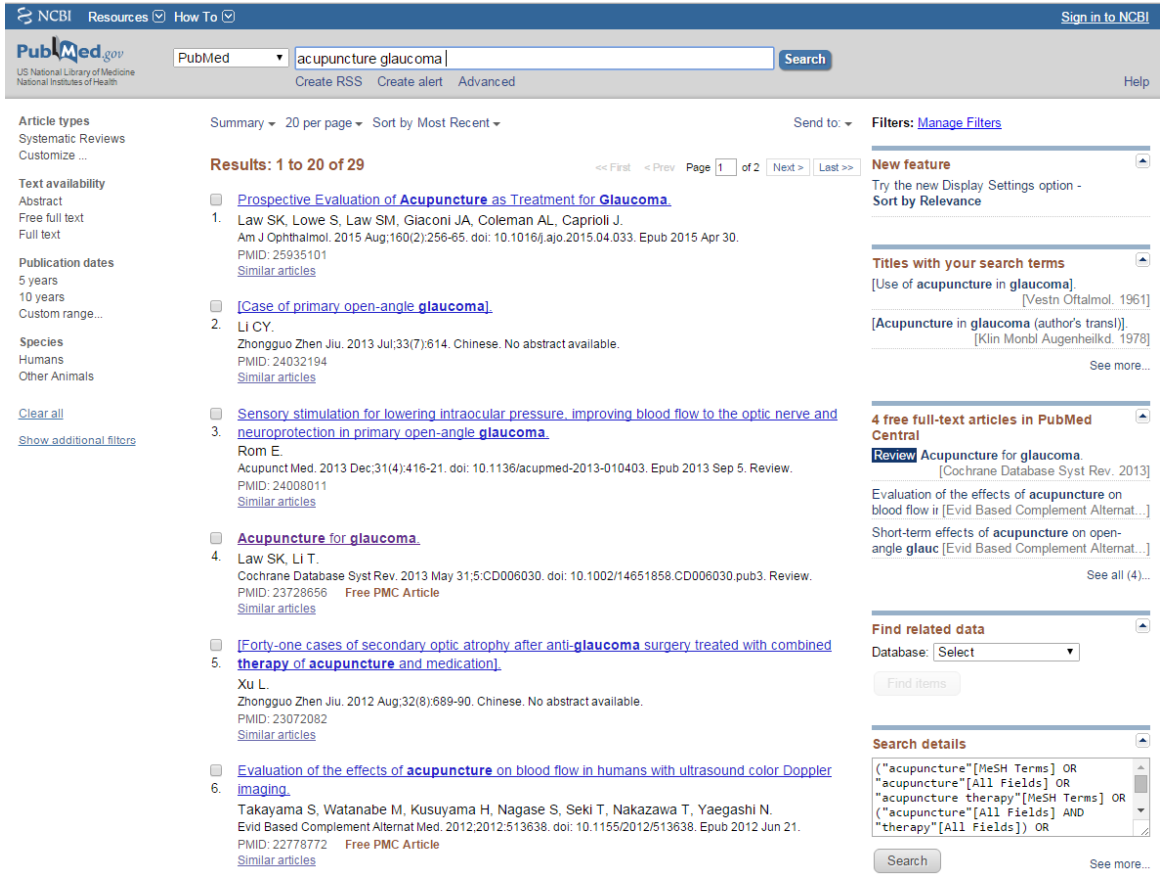
Now we might try *acupuncture glaucoma* and see what comes up.
29 is a fairly manageable number, but we could narrow this down a bit to include only high level evidence.



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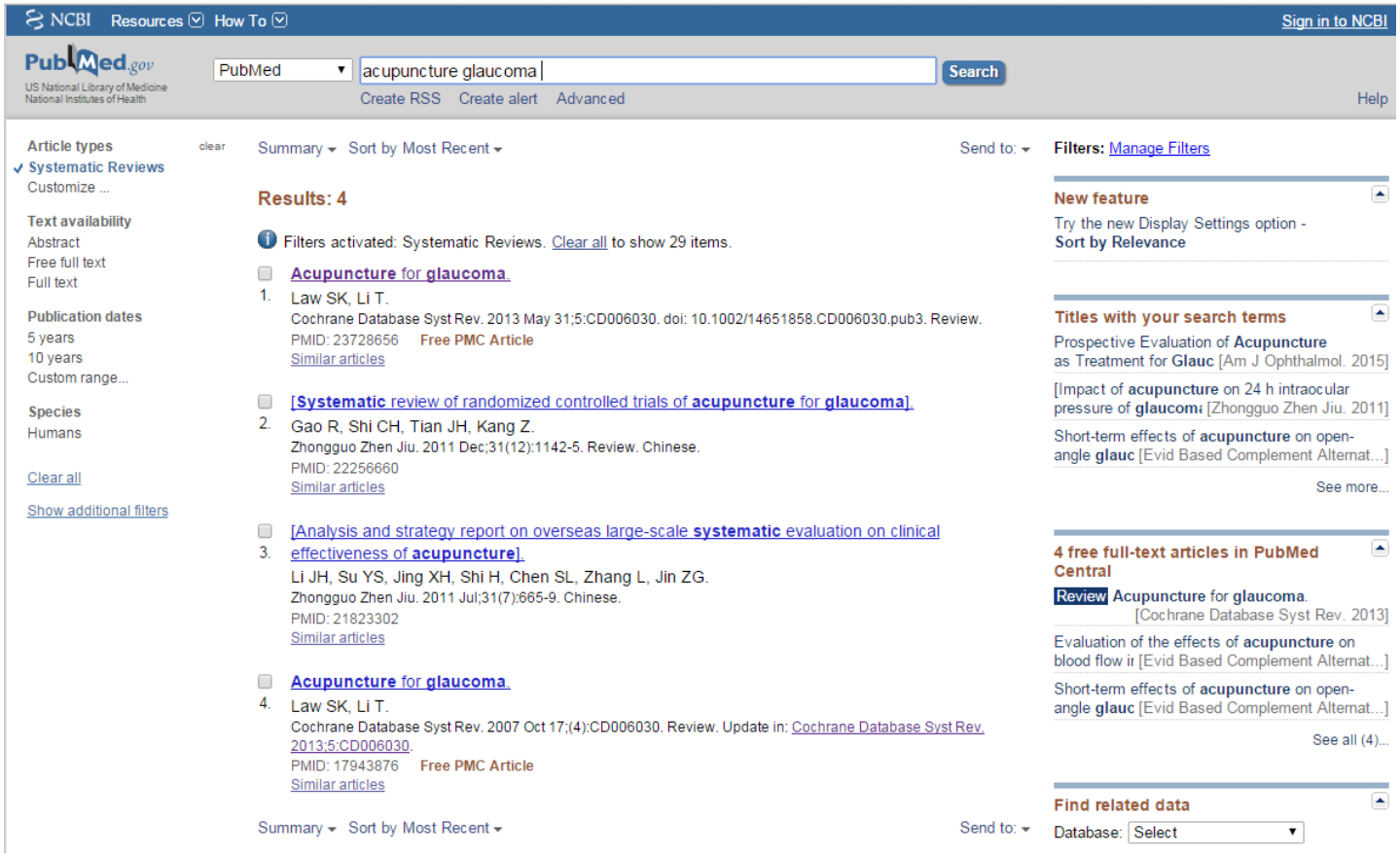
Great – some systematic reviews – and the most recent is available via ‘open access’.



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An example clinical scenario

- True story!
- A patient contacted the clinic to ask about some treatment she had heard about called *perceptual learning* which could improve reading in presbyopes, and asked whether we offered this, and what we thought of it.

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Next, we need to refine the scenario into a question

- Patient, population, problem?
- Intervention, or test?
- Comparison?
- Outcome?

- Have a go – talk with your partner(s) and decide on each of these components

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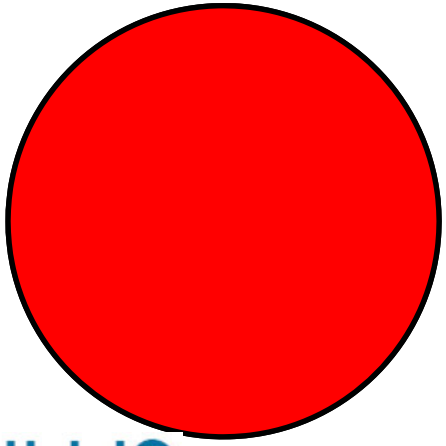

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Our question and key words

- So our question could be:
- Does perceptual learning improve near acuity in presbyopes?

- This suggests the following key words
  - Perceptual learning
  - Near acuity
  - Presbyope or presbyopia
- We can use these key words in our search for evidence

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The Cochrane database has only one article, which is not relevant.

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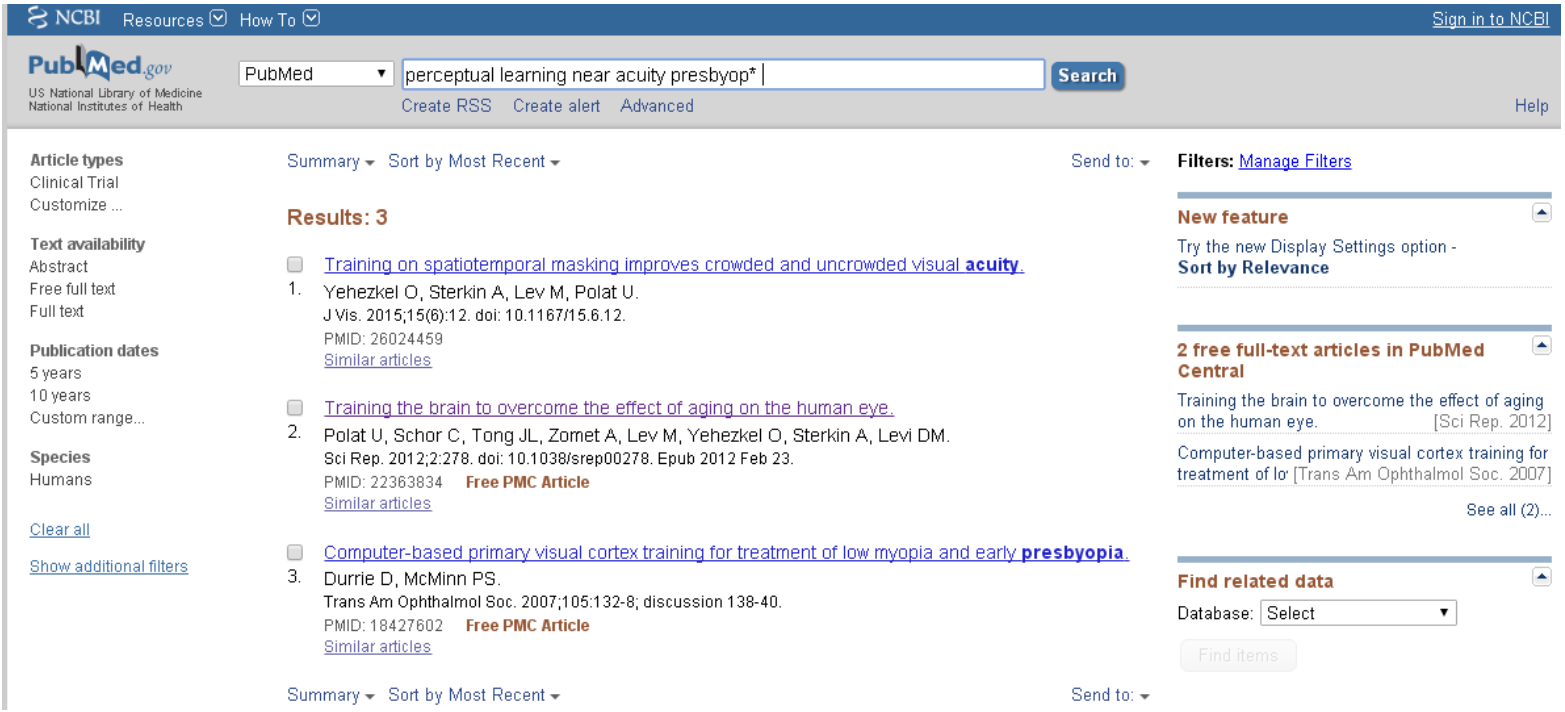
A few research papers are available on Pubmed. What level of evidence are they? Are they relevant? Are they available?



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This article describes relevant research which seems to be the highest level available on this question – so we could appraise this one.

NCBI Resources How To Sign in to NCBI

PubMed.gov
US National Library of Medicine
National Institutes of Health

PubMed Search
Advanced Help

Abstract Send to:

Sci Rep. 2012;2:278. doi: 10.1038/srep00278. Epub 2012 Feb 23.

Training the brain to overcome the effect of aging on the human eye.

Polat U[1], Schor C, Tong JL, Zomet A, Lev M, Yehezkel O, Sterkin A, Levi DM.

Author information

Abstract

Presbyopia, from the Greek for aging eye, is, like death and taxes, inevitable. Presbyopia causes near vision to degrade with age, affecting virtually everyone over the age of 50. Presbyopia has multiple negative effects on the quality of vision and the quality of life, due to limitations on daily activities - in particular, reading. In addition presbyopia results in reduced near visual acuity, reduced contrast sensitivity, and slower processing speed. Currently available solutions, such as optical corrections, are not ideal for all daily activities. Here we show that perceptual learning (repeated practice on a demanding visual task) results in improved visual performance in presbyopes, enabling them to overcome and/or delay some of the disabilities imposed by the aging eye. This improvement was achieved without changing the optical characteristics of the eye. The results suggest that the aging brain retains enough plasticity to overcome the natural biological deterioration with age.

PMID: 22363834 [PubMed - indexed for MEDLINE] PMCID: PMC3284862 **Free PMC Article**

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Review Physiology of aging and its influence on the contact lens pres [J Am Optom Assoc. 1991]

Review Presbyopia and the dentist: the effect of age on clinical vision. [Int Dent J. 1990]

See reviews...

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Cited by 12 PubMed Central articles

Editorial: Improving visual deficits with perceptual learning. [Front Psychol. 2015]

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Now you try:

- Think of a clinical question you would like to answer
- Form an answerable question
- Identify key words from that question to form the basis of a search
  - [Here, you are conducting the first step, Ask]

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