

کارگاه جستجوی پیشرفته

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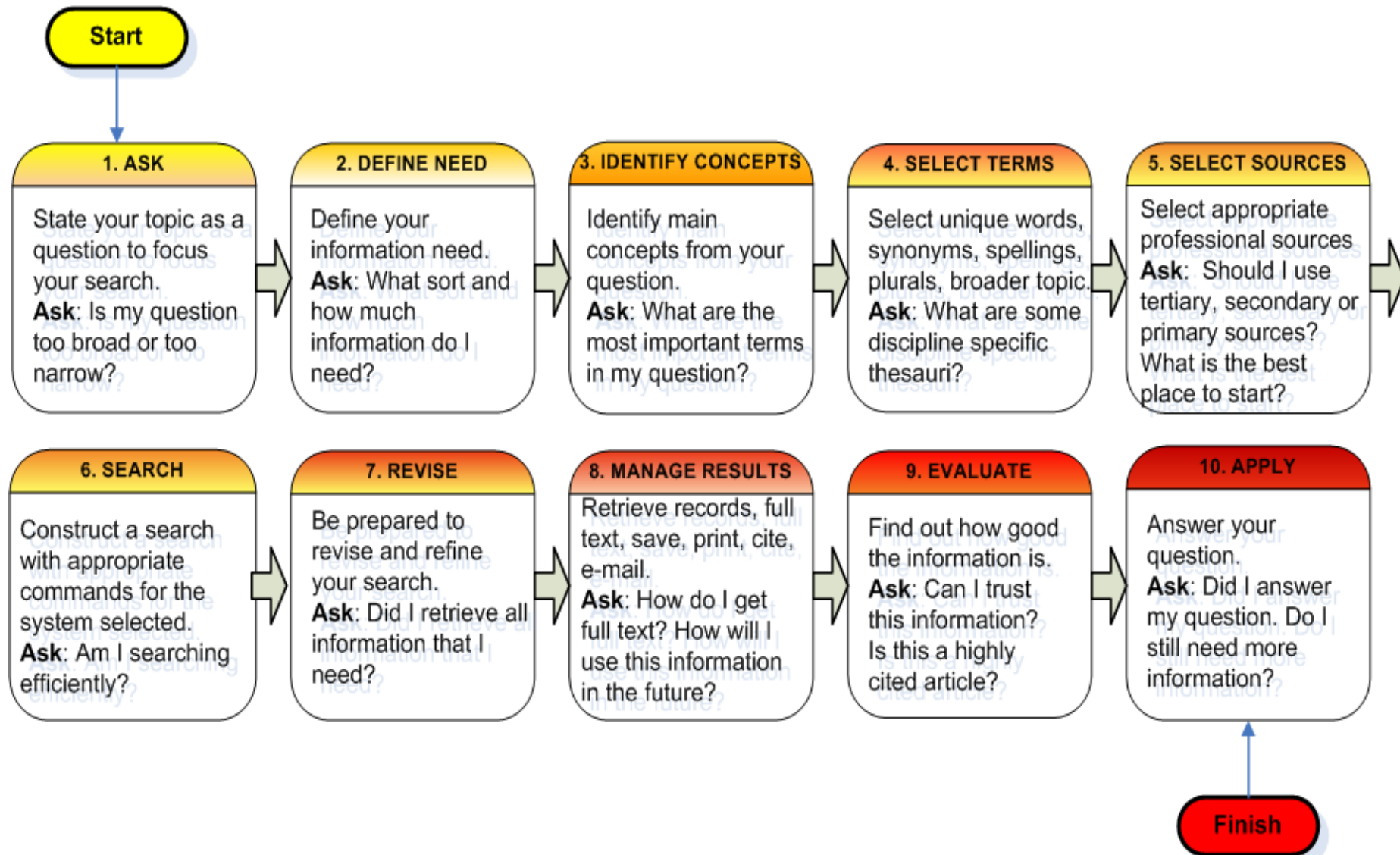
دانشیار مدیریت اطلاعات سلامت

دانشکده مدیریت و اطلاع رسانی پزشکی دانشگاه
علوم پزشکی تبریز

Why Search Strategy is Important?

- Health care includes the provision of information to consumers or professionals (reliable, accurate, up-to-date)
- Information explosion- billions of documents in the WWW; hard to find the 'needle in the hay stack' and know which source is best for a specific situation;
- Evidence-Based Practice - clinicians are not using enough evidence in practice
- Systematic search strategy should be adopted when dealing with clinical questions to avoid 'information malpractice'

Developing a Search Strategy: Process Overview



Remember: Your question drives the search strategy. There is no one best way to search. Avoid one stop searching to prevent bias.

Example (Steps 1-4)

1. Ask: What **health** problems are associated with **water pollution**?
2. Need: scholarly primary research
3. Main Concepts: health, water, pollution
4. Select terms:
 - Broader terms: ‘health’, environmental degradation’, ‘agricultural management’,
 - Synonyms:
health, illness, disease, etc.
water, rivers, lakes, sea, domestic water, etc.
pollution, ‘oil spills’, chemical, biological, toxicity, etc
 - Alternative spellings: none
 - Plurals: river(s), lake(s), disease(s)
 - Capitals: e.g. name of a specific lake, disease, region

1. Ask: Focusing your Question

- What am I looking for exactly? Question before you search!
- Test search to find out how much information is available
 - If you are finding little information - broaden the question
 - If you are finding lots of information - narrow the question

2. Define Your Need

- How much information do I need?
- What kind of information do I need?

3. Identify Main Concepts

Concept: **'Heart Attack'**

A word cloud for the concept 'Heart Attack'. The most prominent words are 'Myocardial' and 'myocardial' in a large, bold, brown font. Other words include 'attack', 'infarct', 'attacks', 'infarction', 'infarctions', 'Ischemia', 'infarcts', and 'heart' in various smaller sizes and shades of brown and gold.

Concept: **'Antibiotic'**

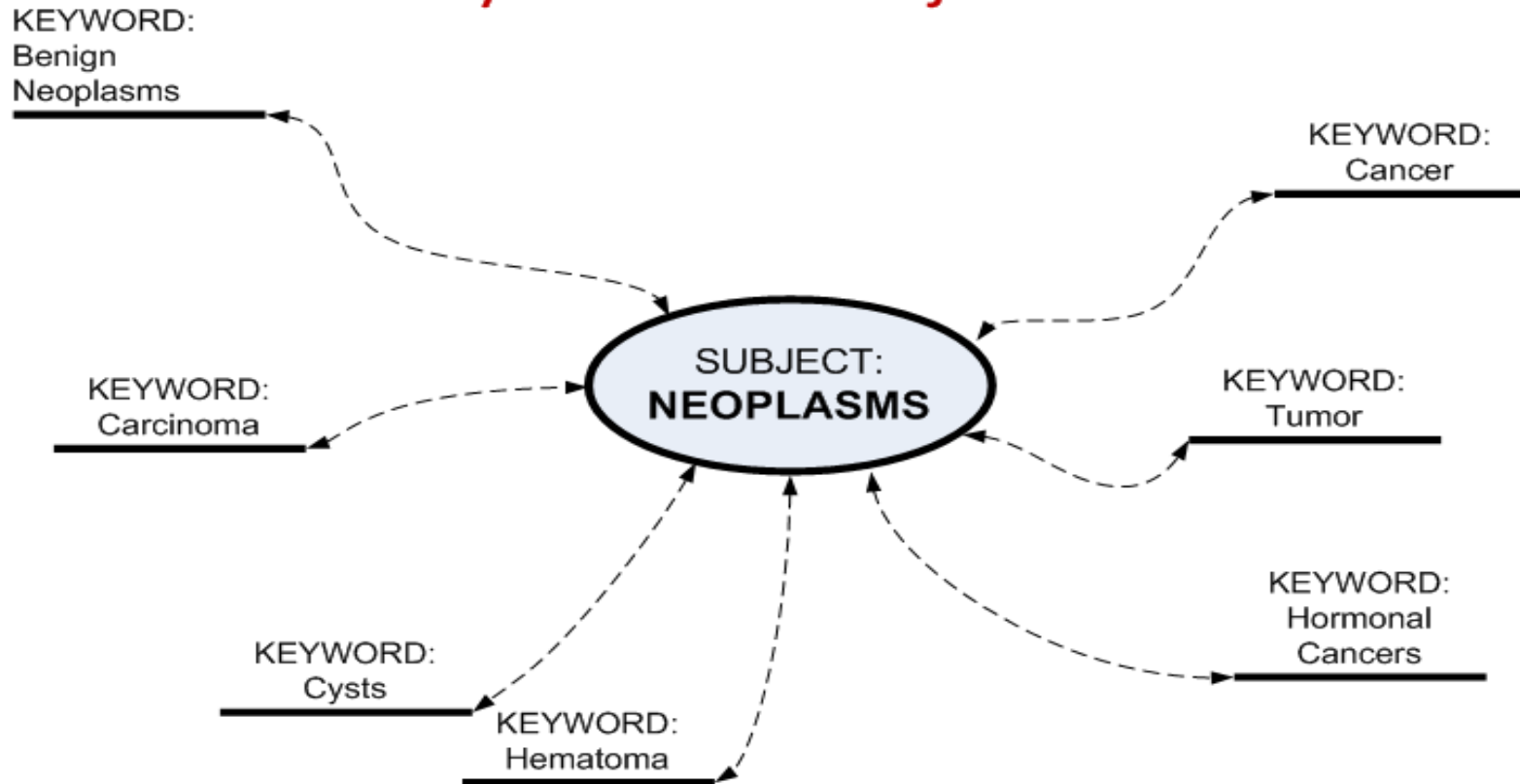
A word cloud for the concept 'Antibiotic'. The most prominent words are 'agents', 'anti-mycobacterial', and 'anti-bacterial' in a large, bold, white font. Other words include 'Cefalexin', 'antibiotics', 'antibiotic', 'Amoxicillin', 'Keflex', and 'agent' in various smaller sizes and shades of white.

4. Select Terms

- Use professional standard thesauri/controlled vocabularies
–MESH (Medical Subject Headings):

<http://www.nlm.nih.gov/mesh/MBrowser.html>

Keyword vs. Subject Search

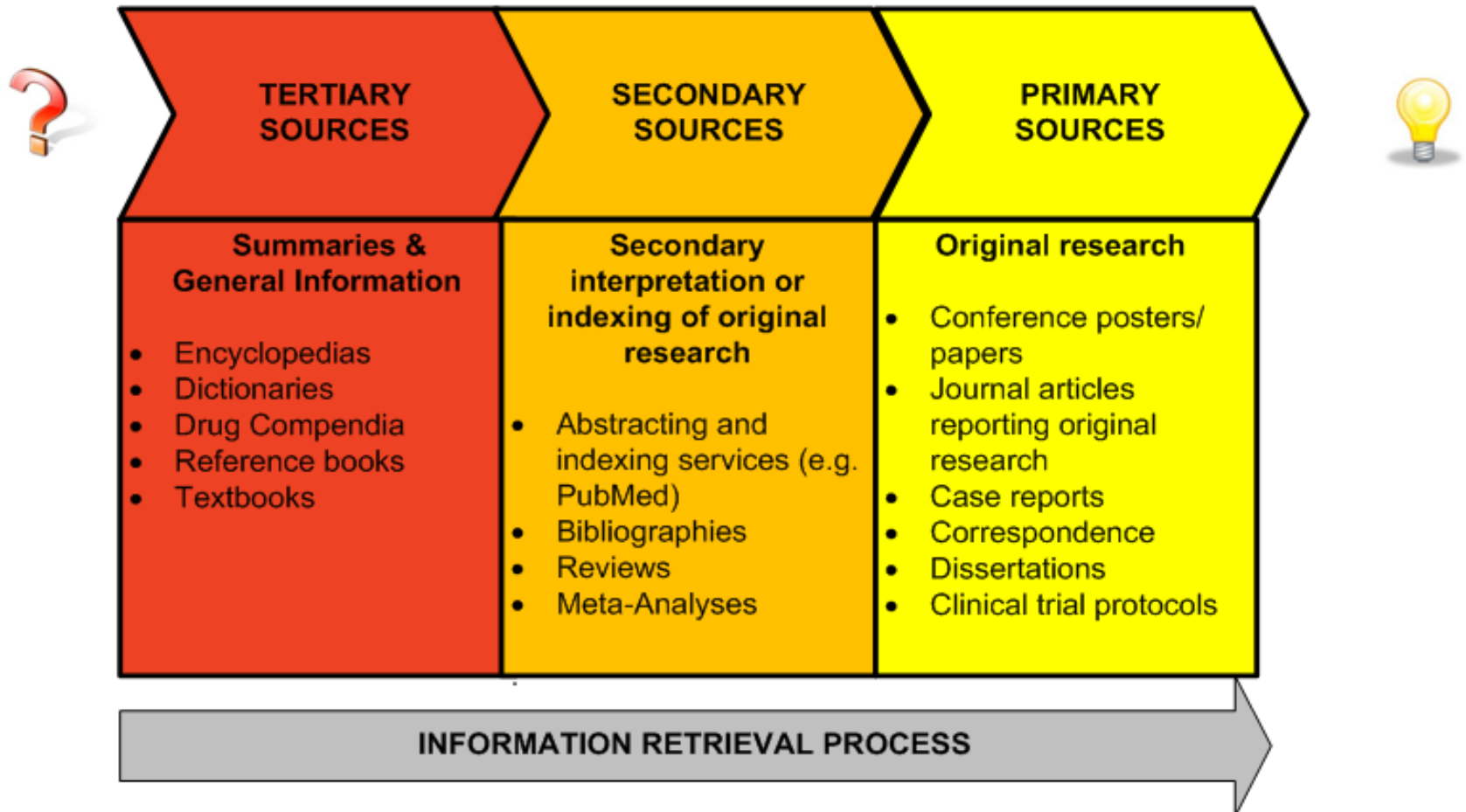


Keyword Search	Subject Search
Searches for the exact words entered.	Searches with pre-defined vocabulary
You can enter your own terms.	You need to know the exact controlled term.
Database looks for keywords anywhere.	Database looks only in the subject field.
Yields too many or too few results. Many irrelevant.	Yields more specific results most of which are relevant.

5. Select a Source

Types of Information Sources and Information Retrieval Process

Sources are considered primary, secondary, or tertiary based on the originality of their information and its proximity to the original source. When you are looking for answers you may need to consult several types. No single source is comprehensive



Tertiary Sources

ADVANTAGES	DISADVANTAGES
Easy access	Lag Time
Ease of use	Outdated
Concise	Incomplete information
Relatively inexpensive	Incorrect interpretation

Secondary Sources

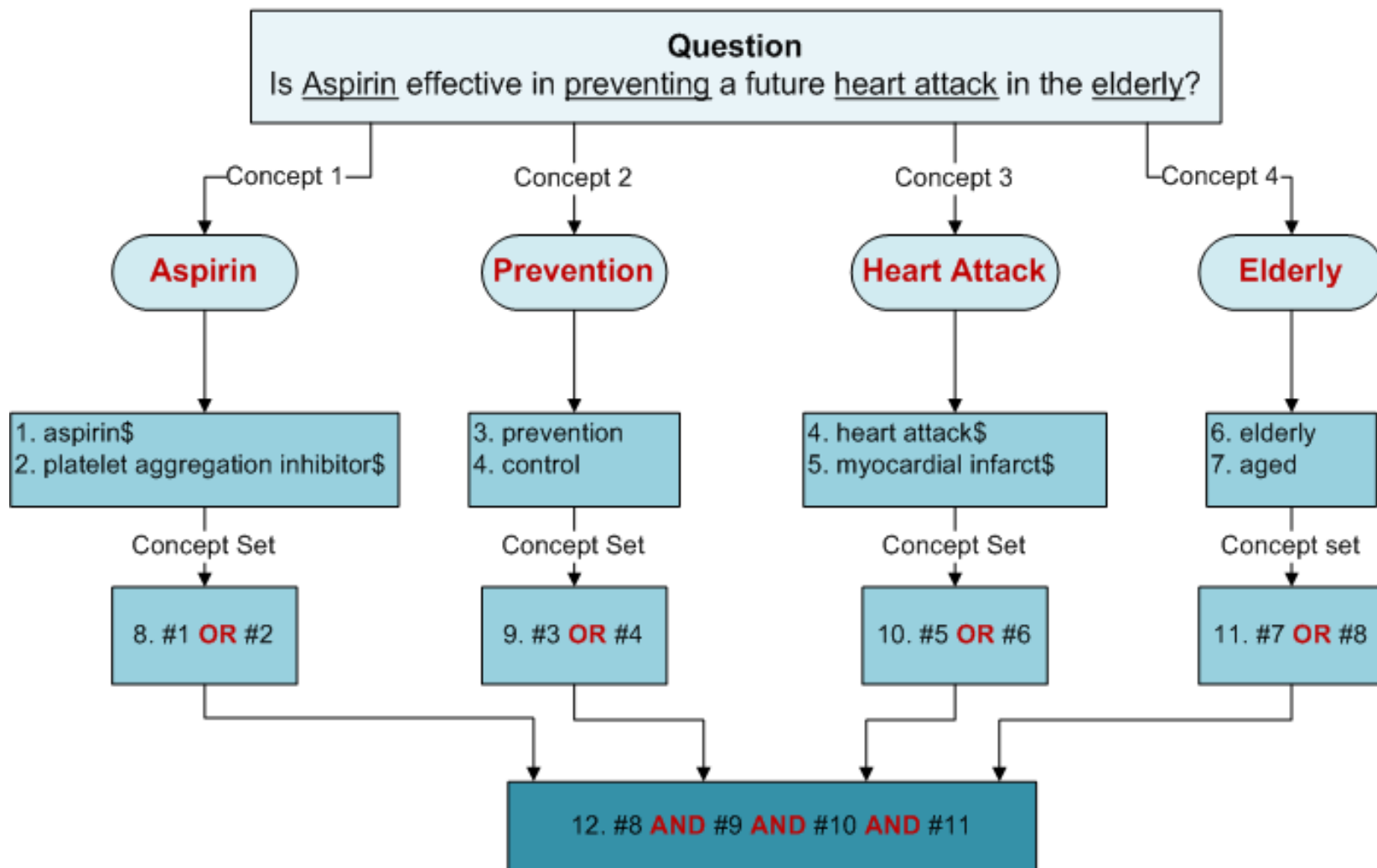
ADVANTAGES	DISADVANTAGES
Rapid access to the primary literature	Lag time
Generally high standard journals	Command language varies
Ability to perform complex searches	Proficient search skills are needed
Routine updates on selected topics (alerts)	Can be expensive

Primary Sources

ADVANTAGES	DISADVANTAGES
Original data	Large volume data
Unbiased information	Time consuming

6. Search

Construct a Search using Appropriate Commands and Best Practices



When searching enter one term/phrase at a time; keep terms in separate concept sets; combine search terms with OR first; then with AND.

7. Revise

Review and refine you search

- be prepared to review/revise your search
- keep your search terms in concept sets/zones but remember to explore subtopics
- try new sources of information
- save the search and citations for future use
- promote use of high-quality resources

8. Manage Results

- Download, print, save, e-mail results & search history
- Cite using a biomedical citation style
- Save search, set up alerts

9. Evaluate-Who? What? When? Where? Why?

- Accuracy
- Authority
- Objectivity
- Currency
- Coverage

10. Apply –Answer the question.

Accuracy, Authority, Objectivity, Currency, Coverage

Accuracy

- What is the purpose of the website?
- Is the information clear and easy to understand?

Accuracy

- Is the site generally well written? Is it free of spelling errors?
- Are statistics and other types of factual data verifiable?

Authority

- Who created the page and can you contact him/her?
- Is an author identified as being responsible for the information presented on the web site?

Authority

- What credentials are listed for the author(s) and are they qualified to provide the information?
- Who published the information?

Objectivity

- What goals/objectives does the site meet?
- How detailed is the information?
- Is the information presented objectively and with limited advertising?
- Is the sponsor of the site likely to have any particular bias?

Objectivity

- Is the content appropriate for the intended audience?
- Get a clue from the domain:
.edu = educational site
.gov = government site
.com = commercial site
.org = non-profit organization site
.net = network
.uk = United Kingdom

Currency

- When was the page created?
- How often is the site updated?
- Is the information on the page outdated?

Currency

- Are there any dead links on the page?
- Are the links current and updated regularly?

Coverage

- Does the information presented appear to be complete and comprehensive?
- Does the content appear to be factual or opinion?
- Is the information cited?
- Are links provided to other sources of information on the same topic?

Coverage

- Is it free, or is there a fee to obtain the information?
- If the page requires special software to view the information, how much are you missing if you don't have the software?

Exercise

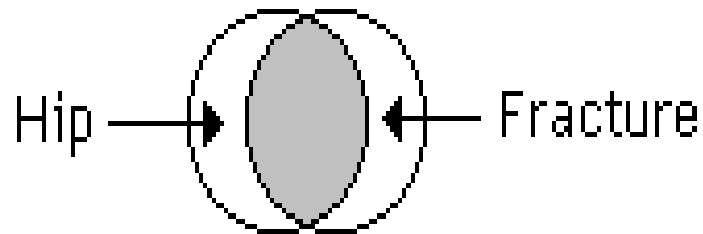
- Performance of a light fluorescence device for the detection of microbial plaque and gingival inflammation
- Studies of Automatic Dental Cavity Detection System as an Auxiliary Tool for Diagnosis of Dental Caries in Digital X-ray Image
- A Measure of Clinical Outcomes in Dental Implant Surgery Flapless Surgery versus Flap Technique in Posterior Maxilla of Post Menopause Women

Boolean (Search) Operators

- Connect terms and locate records containing matching terms
- Inserted in a search box – **AND, OR, NOT**
- Must be in UPPERCASE when used
- AND, NOT operators are processed in a left- to right sequence. These are processed first before the OR operators
- OR operators are also processed from left-to-right

AND Operator

(to combine two concepts and narrow a search)



hip **AND** fracture

the **AND** operator is used to combine two concepts e.g. hip **AND** fracture – in the shaded area; retrieves items containing all the search terms



Google™

hip AND fracture

Google Search

I'm Feeling Lucky

[Advanced Search](#)

[Preferences](#)

[Language Tools](#)

Share what you know. [Write a Knol](#).

[Advertising Programs](#) - [Business Solutions](#) - [About Google](#)

©2009 - [Privacy](#)



hip AND fracture

Search

[Advanced Search](#)
[Preferences](#)Personalized based on your web history. [More details](#)

Web

Results 1 - 10 of about 3,340,000 for [hip](#) AND [fracture](#). (0.31 seconds)[Hip fracture - Wikipedia, the free encyclopedia](#)

Jan 18, 2009 ... A **hip fracture** is a **fracture** in the proximal end of the femur (the long bone running through the thigh), near the **hip** joint. ...

en.wikipedia.org/wiki/Hip_fracture - 43k - [Cached](#) - [Similar pages](#) - [Broken Hip - Hip Fracture](#)

Jan 11, 2007 ... A **hip fracture**, also called a broken **hip**, is an unfortunate, but common injury. **Hip fractures** most often occur in elderly patients and are ...

orthopedics.about.com/cs/hipsurgery/a/brokenhip.htm - 26k - [Cached](#) - [Similar pages](#) - [Recovering from a Hip Fracture -- familydoctor.org](#)

Jun 15, 2006 ... Information about recovering from a **hip fracture**, from the American Academy of Family Physicians.

familydoctor.org/online/famdocen/home/seniors/common-older/899.html - 33k -[Cached](#) - [Similar pages](#) - [Hip Fracture: Overview - eMedicine](#)

Dec 9, 2005 ... Overview: Introduction Background Although sports injuries to the knee, ankle, and shoulder have been well documented, injuries to the ...

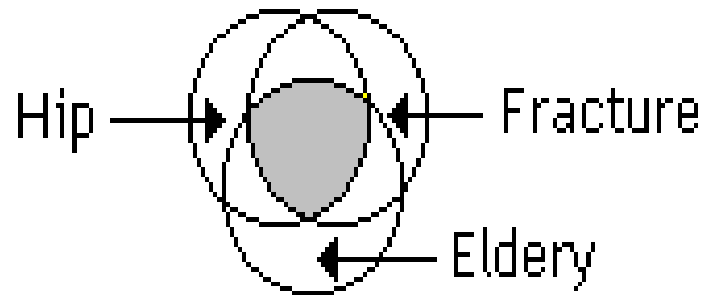
emedicine.medscape.com/article/87043-overview - 60k - [Cached](#) - [Similar pages](#) - by NS Bhatti - [All 2 versions](#)[Hip Fracture/Femoral Neck Fracture - Information about Hip ...](#)

Hip Fracture/Femoral Neck Fracture - Information about **Hip Fracture/Femoral Neck Fracture** from SurgeryDoor's Medical Conditions section.

www.surgerydoor.co.uk/medical_conditions/Indices/H/hip_fracture.htm - 20k -[Cached](#) - [Similar pages](#) - 

AND Operator

(to combine three concepts)



hip **AND** fracture **AND** elderly

the **AND** operator is used to combine three concepts e.g. hip **AND** fracture **AND** elderly – in the shaded area.

http://www.google.com/search?hl=en&q=hip+AND+fracture+AND+elderly&btnG=Sear

Google

hip AND fracture AND elderly - G...

Web Images Maps News Shopping Gmail more

hinari.trainers@gmail.com | Web History | My Account | Sign out

Google

hip AND fracture AND elderly

Search

Advanced Search

Preferences

Web Scholar

Results 1 - 10 of about 1,390,000 for hip AND fracture AND elderly. (0.66 seconds)

Hip Fracture Care

www.ClevelandClinic.org

Get the Comprehensive Guide to Hip Pain & Repair from Cleveland Clinic

Sponsored Link

Hip fractures in elderly

Get the Answers You're Looking For.

Hip fractures in elderly

www.RightHealth.com

Sponsored Links

Scholarly articles for hip AND fracture AND elderly

Effect of Risedronate on the Risk of Hip Fracture in ... - McClung - Cited by 925

Ultrasonographic heel measurements to predict hip ... - Hans - Cited by 644

Markers of Bone Resorption Predict Hip Fracture in ... - Garnero - Cited by 510

Broken Hip - Hip Fracture

Jan 11, 2007 ... A broken hip is a common injury, especially in elderly individuals. In the United States, hip fractures are the most common broken bone that ...

orthopedics.about.com/cs/hip surgery/a/brokenhip.htm - 26k - Cached - Similar pages

Elderly Patient With Hip Fracture

Background: This article describes a family physician geriatrician's perspective on the comprehensive management of hip fracture in frail elderly patients. ...

www.medscape.com/viewarticle/417810 - Similar pages

by CME Medscape - 1998 - All 2 versions

Hip Fractures - Orthogate - Improving orthopedic care, education ...

Jul 28, 2006 ... Hip fractures in children and young adults are much different. The information in this document applies only to hip fractures in the elderly ...

www.orthogate.org/patient-education/hip/hip-fractures.html - 48k -

Cached - Similar pages

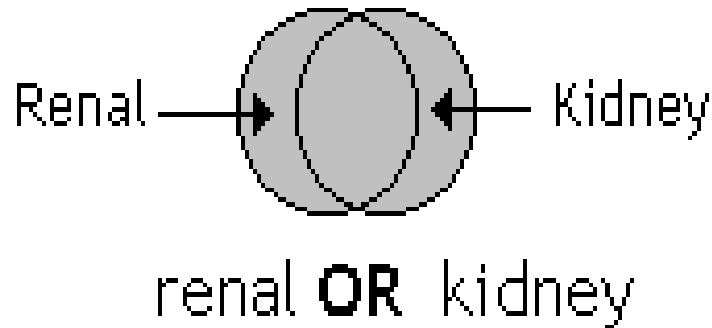
KOMO 4 Hip Fracture

In many cases, an elderly person's independent existence is impacted by a fall that causes a hip fracture, an event that can forever lessen the patient's ...

ww3.komotv.com/global/story.asp?s=1230528 - 48k - Cached - Similar pages

OR Operator

(info containing one or other term; will broaden a search)



renal **OR** kidney – in the shaded area with the overlap in the middle having both search terms; retrieves items containing either search term or both search terms

renal or kidney - Google Search - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.google.com/search?hl=en&q=renal+or+kidney&btnG=Search

Google

renal or kidney - Google Search

Web Images Maps News Shopping Gmail more

hinari.trainers@gmail.com | Web History | My Account | Sign out

Google

renal or kidney

Search

Advanced Search
Preferences

Personalized based on your web history. More details

Web News

Results 1 - 10 of about 7,790,000 for **renal** or **kidney**. (0.26 seconds)

Renal failure - Wikipedia, the free encyclopedia

Renal failure or kidney failure is a situation in which the kidneys fail to function adequately. It is divided in acute and chronic forms; either form may ...

en.wikipedia.org/wiki/Renal_failure - 63k - Cached - Similar pages

Kidney - Wikipedia, the free encyclopedia

Aug 4, 2007 ... [1] The prefix nephro- meaning **kidney** is from the Ancient Greek word nephros (νεφρός); the adjective **renal** meaning related to the **kidney** is ...

en.wikipedia.org/wiki/Kidney - 87k - Cached - Similar pages

Kidney failure (renal failure with uraemia, or azotaemia)

Feb 3, 2005 ... The function of the kidneys is, among other things, to get rid of the waste products that result from the body's metabolism.

www.netdoctor.co.uk/diseases/facts/kidneyfailure.htm - 83k - Cached - Similar pages

Chronic Renal Failure

CHRONIC KIDNEY FAILURE: WHAT YOU SHOULD KNOW. What's On This Page. What is CRF (Chronic Renal Failure)? Relevant Diagnostic Tests; Treatment Options ...

marvistavet.com/html/body_chronic_renal_failure.html - 71k - Cached - Similar pages

Kidney Failure Causes, Symptoms, Diagnosis, and Treatment ...

Prerenal causes (pre=before + renal=kidney) causes are due to decreased blood supply to the ... Renal causes (damage directly to the kidney itself) include: ...

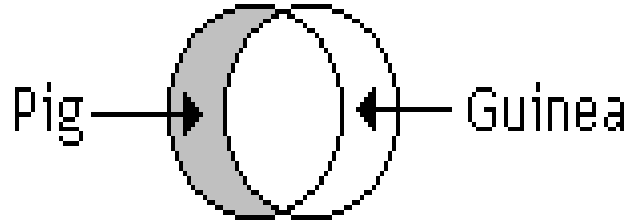
www.medicinenet.com/kidney_failure/article.htm - 62k - Cached - Similar pages

Renal Calculi (Kidney Stones) | Emory Urology | Atlanta, GA

Renal Calculi (Kidney Stones). Kidney stones are a tremendous source of pain. Some patients claim that the pain is worse than childbirth. ...

NOT Operator

(in one term or the other - will narrow a search)



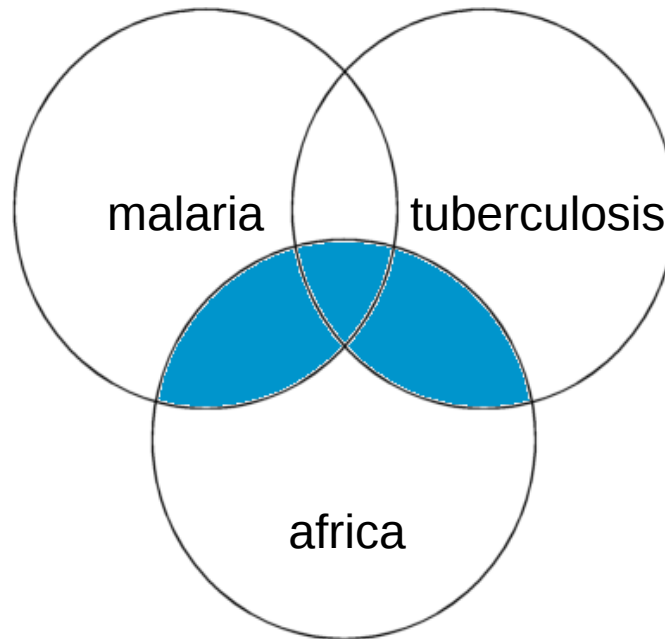
pig **NOT** guinea

pig **NOT** guinea – in the shaded area; eliminates items in 2nd term (guinea) or both terms

Other search engine functions

- Phrase or proximity searching: “...” or (...)
 - allows you to search for an exact phrase “information literacy”
prevention and (malaria parasite)
- Truncation/wildcards: *
 - allow you to search alternative spellings
child* for child OR childs OR children
parasite* for parasite OR parasites
- Alternate spellings: ?
 - can be used to substitute for characters anywhere in a word
wom?n would search for “woman” and “women”

Africa AND (malaria OR tuberculosis)



Africa AND (malaria or tuberculosis) – in the shaded area
The **(OR)** operator retains items in each term and the **AND** operator is used to combine two concepts

Nesting Concept Sets and Boolean Logic

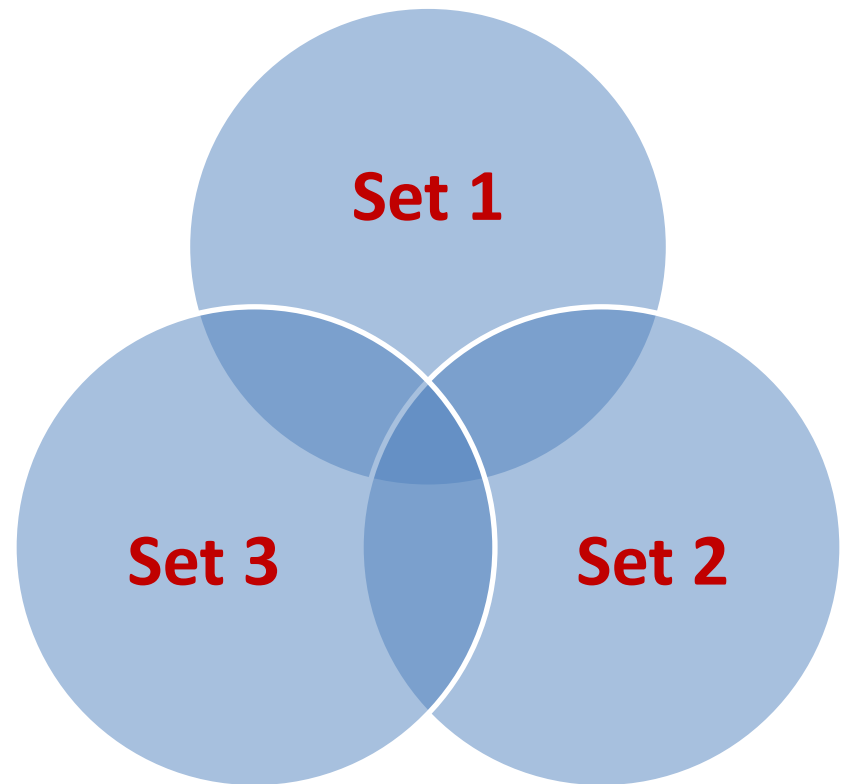
Set 1: (child\$ OR
p?diatric\$)

AND

Set 2: (otitis media
OR middle ear
infection\$)

AND

Set 3: (antibiotic\$ OR
antibacterial
agent\$)



More Search Techniques

- Field Specific Searching
 - author, title, journal, date, url, etc.
- Language Restrictions, Humans or Animals, Gender and other limits

(to be discussed in Module 4.2 – PubMed LIMITS)

- Relevancy Ranking
 - a grading that gives extra weight to a document when the search terms appear in the headline or are capitalized
 - every found document is calculated as 100% multiply by the angle formed by weights vector for request and weights vector for document found

منبع

