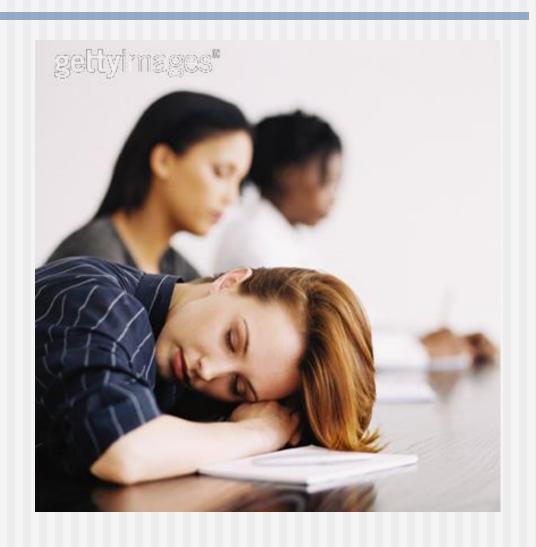
Data-mining

Some useful resources



Data Mining? "Yeah, I could use a nap..."



What We'll Discuss

- Why search
- Who should do it
- Sources
 - National Library of Medicine
 - Includes the NLM Gateway, PubMed, ClinicalTrials.gov, MEDLINE Plus, and more
 - Google
 - FDA website
 - National Guidelines Clearinghouse website
- Obtaining articles

Why Search?

- Find product data and competitive information
 - Clients often provide incomplete information
- Find new data
 - Clients may not even be aware it exists
- Learn about the latest research and where the market is headed
 - Can you ever have too much information about your client's or competitor's products?

Who should do it

You

- Consider as a value added service in any and all work you do?
- Or you could request a budget for it upfront -- it can be very time consuming
- The client
 - But will you get the information you need?

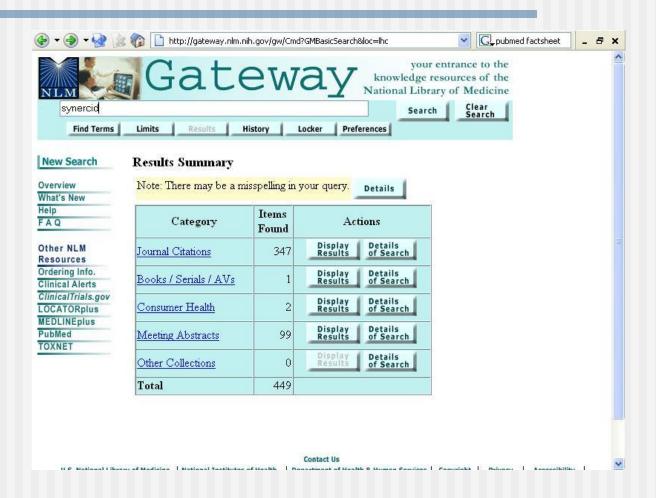
National Library of Medicine

- The NLM Gateway
 - Simultaneous multiple retrieval system for "one-stop searching"
- PubMed
 - Enormous database of citations and abstracts
- MEDLINE Plus
 - Physician and patient oriented information
- ClinicalTrials.gov
 - A great resource to check on existing clinical trials
- Health Services Research Projects in Progress -HSRProj
 - Provides research information before results are published

The NLM Gateway

- Simultaneous "one-stop searching"
 - Journal citations from 1951 to present
 - Books, Serials, AVs
 - Consumer health
 - Meeting abstracts
 - Other collections
 - HSRProj
 - OMIM
 - HSDB

Gateway – Synercid Search Results



Gateway – Thrombin-JMI Search Results



PubMed

- Where we search for research from medical journals
- 13 million citations/abstracts
- 4,500 journals
 - From 1966

- Covers
 - Medicine
 - Nursing
 - Dentistry
 - Veterinary medicine
 - Healtchcare systems
 - Preclinical sciences

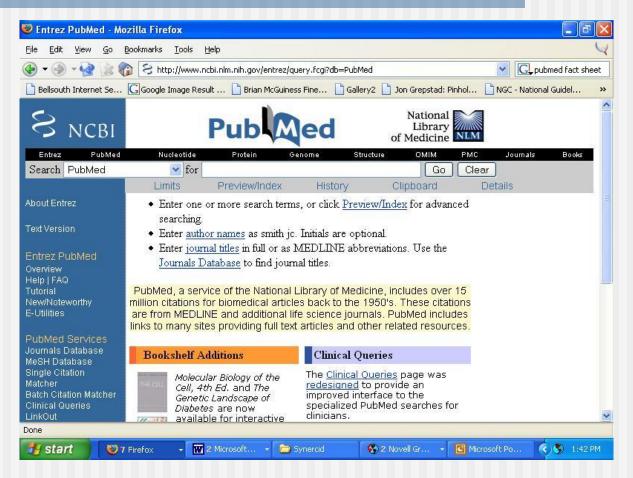
More About PubMed

- Links to other databases
 - OLDMEDLINE (1950-1965)
 - International biomedical journals
 - 1,760,000 citations
- Not all journals are strictly scientific or medical
 - We recently found a Newsweek article in PubMed
- Links (LinkOut) to the full-text of articles at participating publishers' web sites

What Can You Do in PubMed?

- Search for articles (usually abstracts)
 - By keyword
 - By author
 - By Journal, etc
- Combine searches
- Link to related articles
- Link to outside sources
 - To purchase the full article
 - Look at related books (including pages in the books)
- Clinical queries

The PubMed Homepage



http://www.ncbi.nlm.nih.gov/entrez/query.fcgi

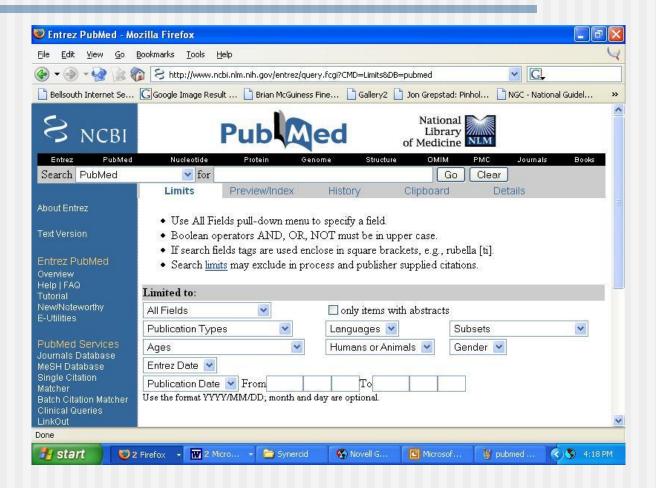
PubMed – Search Overview

- Search by keyword
 - E.g., thrombin, but you get 31,365 results
- Use a more specific keyword
 - Like "Thrombin-JMI", but now you only get 2 hits
- Additional tools
 - Limits
 - Search Field Tags
 - meSH

PubMed – Additional Tools

- Limits
 - Age, groups, gender, type of study, etc
- Search Field tags
 - Qualify terms, used in brackets [ta]
- Boolean Statements
 - And, OR, NOT
- meSH
 - The "vocabulary" of PubMed
 - Stands for Medical Subjects Headings
 - Used for indexing biomedical literature

PubMed -- Limits



PubMed -- Search Field Tags

- Search Field Tags also qualify terms
- Letters in brackets
 - Nature [ta]
 - Watson JD [au]
 - 1953 [dp]
 - "Fever of unknown origin" or [ti]

Boolean Statements

- Example: citations on DNA authored by Crick in 1993
 - Dna [mh] AND crick [au] AND 1993[dp]
- Effect of heat or humidity on surgical hemostasis
 - (heat OR humidity) AND surgical hemostasis

PubMed -- The meSH Tree

meSH organizes terms in a hierarchal manner

```
Face
Cheek
Chin
Eye
Eyebrows
Eyelids
Eyelashes
Forehead
Mouth
Lip
Nose
```

PubMed -- meSH Tutorial

http://www.nlm.nih.gov/bsd/viewlet/mesh/combining/mesh2_launcher.html

www.nlm.nih.gov/bsd/viewlet/mesh/subheadings/mesh3_launcher.html

Real world meSH example

- Thrombin-JMI use in bony ingrowth (cementless implants) in hip arthroscopy
 - On a noncemented hip, can Thrombin JMI be injected into the medullary canal of the femur and will it affect the bony ingrowth?
 - Can Thrombin JMI be put in the acetabulum and will it affect the bony ingrowth?

MEDLINE Plus

- Information on over 650 diseases and conditions
- Medical encyclopedia and dictionary
- Information on prescription and nonprescription drugs
- Links to ClinicalTrials.gov
- Links to news
- Sponsored by the NIH no ads

The MEDLINE Plus Homepage



ClinicalTrials.gov

- Information about federally funded and private human clinical trials
- Includes the trial's
 - Purpose
 - Locations
 - Participant requirements
 - Phone number

ClinicalTrials.gov Homepage

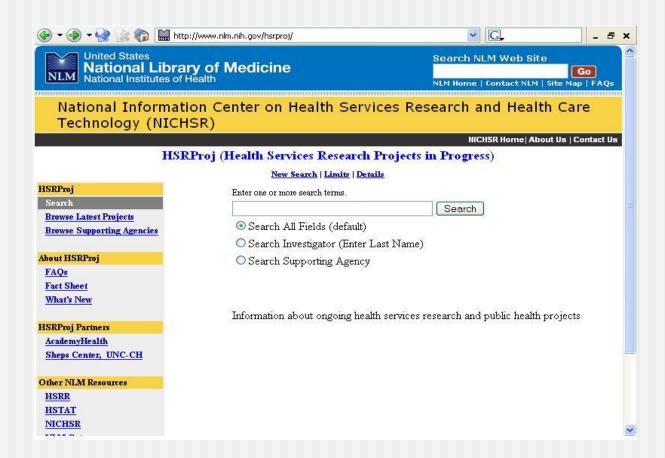


HSRProj

- Provides research-in-progress before results are available
- From ongoing grants and contracts from government or academic studies
- Retrieve:
 - Name of sponsoring agency
 - Principal investigator
 - Dates of projects, etc.

http://www.nlm.nih.gov/hsrproj/

HSRProj Homepage



Google

- Images
- Alerts
- Groups

Images From Google?

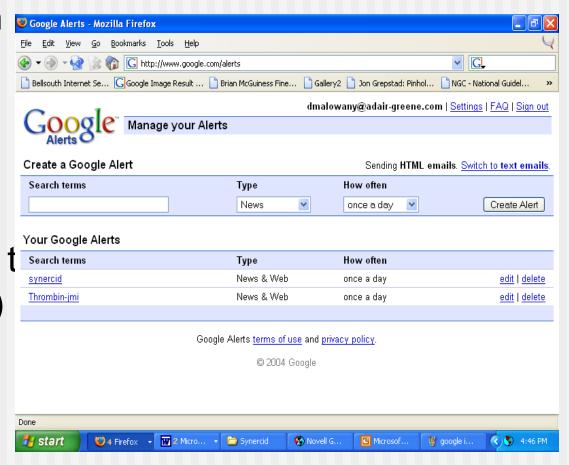
Yes, you really can find images in



http://www.google.com/imghp?hl=en&tab=wi&q=

Google Alerts

- Currently in Beta tests
- Enter keywords
- Get email updates on t keyword (s)

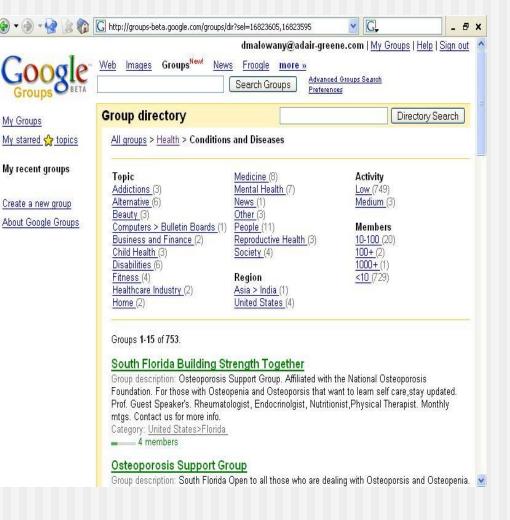


Google Groups

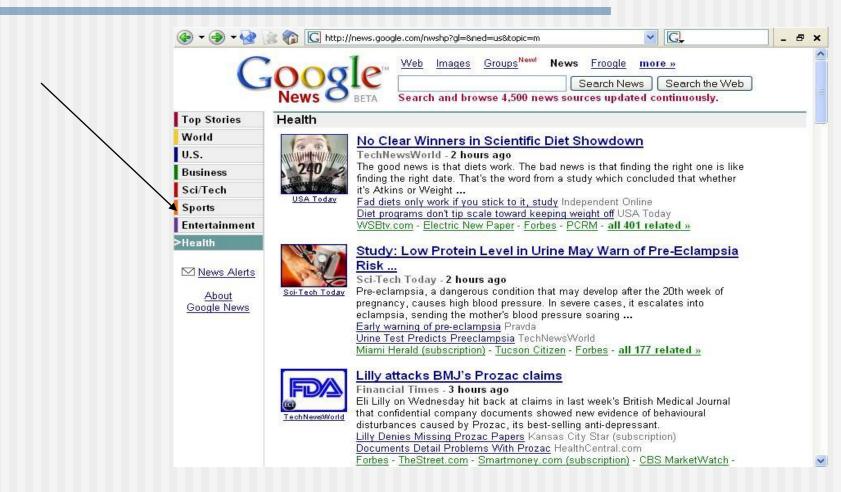
A "forum" dedicated to a Google Groups BETA specific topic and usually open to the general public

My Groups

Sometimes moderated and open only to members chosen by the moderator



Google Health News



FDA Webpage – Tons of Info.

- Contains MedWatch
 - product safety alerts
 - Alerts be sent to your email address as they happen
- Find
 - Warning Letters
 - http://www.fda.gov/foi/warning.htm
 - Approved drugs and patent information
 - Using the Electronic Orange Book database
 - http://www.fda.gov/cder/ob/default.htm
 - Devices
 - http://www.fda.gov/cdrh/index.html
 - Guidance documents
 - http://www.fda.gov/cder/guidance/guidance.htm

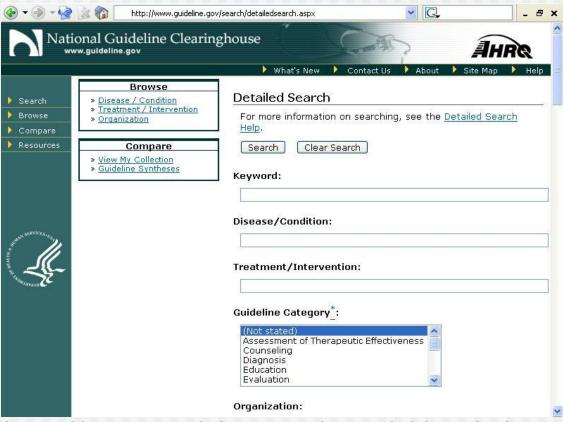
FDA Promotional Guidance



National Guidelines Clearinghouse

- A comprehensive database of evidencebased clinical practice guidelines and related documents
- Sponsored by the Agency for Healthcare Research and Quality (AHRQ)
- Updated weekly

National Guidelines Clearinghouse



http://www.guideline.gov/search/detailedse
arch.aspx

Obtaining Articles for Clients

Free Pay

Check online – sometimes PubMed has links to free articles Freemedicaljournals.com

Through Emory

\$12 normal; \$24 rush

Fax versions

Can be generated into PDF

External sources (e.g., publisher

web sites)

Prices vary (\$20-30)

PDF versions (usually)