PubMed, a tool for professionals?

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PubMed is a PORTAL

What is a portal?

• A reference site
• Panel of resources
• Services
• In a field
Resources?

⇒ Biomedical resources
⇒ Medline
⇒ Other DB
⇒ Tools:
  Journals Database, MeSH Database, Single Citation Matcher, Clinical Queries, My NCBI (Cubby), accès à des DB...
⇒ Links to NLM

PubMed.org

Related resources
**Entrez PubMed**

- **Text Version**
- **Overview** Description of PubMed.
- **Help**
- **FAQ**
- **New/Noteworthy**: Brief announcements highlighting recent enhancements and changes to the PubMed, Journals, and MeSH database.

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**PubMed services**

- **Journals Database**: 4800 titles
- **MeSH Database**: 22,000 words
- **Single Citation Matcher**
- **Clinical Queries**: Filters to aid clinicians to search literature for relevant clinical articles
- **LinkOut accès**: Links to relevant web accessible resources (also full text)
- **My NCBI**: Customize your search experience (queries, update...)

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Related ressources

• **TOXNET®**: information resources and services in toxicology, environmental health, chemistry, and HIV/AIDS.

• **Consumer Health**: carefully selected links to Web resources with health information.

And also...

• **Clinical Alerts**: NIH-funded clinical trials

• **Clinical trials**: updated information about federally and privately supported clinical research in human volunteers
**Nucleotide**: sequence database (includes GenBank)

**Protein**: sequence database

**Genome**: whole genome sequences

**Structure**: three-dimensional macromolecular structures

**Taxonomy**: organisms in GenBank

**OMIM, Online Mendelian Inheritance in Man**: This database is a catalog of human genes and genetic disorders

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**MEDLINE**?

- **Bibliographical database**
  - 4800 biomedical journals
  - USA and 70 other countries

- **17 000 000 articles**

- **Developed by**:
  - NCBI (National Center for Biotechnology Information)
  - NLM (National Library of Medicine)
  - Editors in biomedical field

- **From 1950 to 2007**

- **Free access since 1997**
Medline is a Database

- Defined information: Bibliographic refs
- Organised: Data structure
- Controled: Indexation of the articles

=> Rules
=> Structure = Records and Fields

How do they make Medline?

- Articles are indexed
- Descriptors = Specific and appropriate terms (meSH)
- = From 15 to 25
- Other descriptors:
  - Age groups, population, human vs animals, publication type, etc...
MeSH

- Is a thesaurus: structured information
- Produced by the National Library of Medicine (NLM) since 1960
- 22 000 words
- Subheadings
- Structure = rules = knowing how to use it

Structure

A. Anatomy
B. Organisms
C. Diseases
D. Chemical and Drugs
E. Analytical, Diagnostic and Therapeutic Techniques and Equipment
F. Psychiatry and Psychology
G. Biological Sciences
H. Natural Sciences

I. Anthropology, Education, Sociology and Social Phenomena
J. Technology, Industry, Agriculture
K. Humanities
L. Information Science
M. Named Groups
N. Health Care
V. Publication Characteristics
Z. Geographic Locations
**Why using MeSH vocabulary?**

- => win time
- => be precise
- => manage synonymy
- => helps you to write your request

3 possibilities:

1. word = **descriptor**
2. word = **synonym**
3. word ≠ **descriptor** ≠ **synonym**
**SYNONYMS**

**Related terms**
Pharmacologic Action / Drug info

- « drug and chemical » termes
- No branch with all drug particular effects
  - All antioxidans
- All MeSH Categories
  - Chemicals and Drugs Category +
- **Aspirin**
  - Registry Number: 50-78-2
  - Pharmacological Action : liste
    - Anti-Inflammatory Agents, Non-Steroidal
    - Fibrinolytic Agents
    - Platelet Aggregation Inhibitors
    - Cyclooxygenase Inhibitors

**ASPIRIN**

- Cas number
- synonyms

Pharmacological action
PLASTIC SURGERY OF FACE

Search
Limiters: Keywords, History

Published Search

Display Format: Text, Graph, Grid

Search History

Relevant: search history

Facets

Search: search bar

Filter: filtering options

Limit: limiting options

Sort: sorting options

Advanced: advanced search options

Clear: clear search history

Search

Results: search results

1 entry

Entry Title

Entry Text

LUMINOUS

FACIAL

The anterior portion of the head that includes the skin, muscles, and structures of the forehead, eyes, nose, mouth, cheeks, and jaw.

Subheading: This list includes those terms at least once with this heading in MEDLINE and may not reflect current rates for all diseases.

- asymmetric
- anatomy and histology
- blood supply
- collagen
- drug effects
- embryology
- histology
- immunology
- intervention
- metabolism
- microenvironment
- morphology
- pathology
- physiology
- radiology
- radiographics
- reconstructive imaging
- surgery
- tarsorrhaphy
- craniofacial genetics

Restrict Search to Major Topic headings only

Do Not Employ this term (i.e., do not include MeSH terms found below this term in the MeSH tree)

Entry Terms

FACIAL

All MeSH Terms

Anatomy Category
- Body Region
- Head

Body Region
- Neck
- Other

Head
- Ear
- Eyebrows
- Forehead
- Nose
- Other
- Face

Eye
- Eyelashes
- Eyebrows
- Eyelids

Nose
- Nose
- Other

Anatomy Category
- Body Region
- Head

Body Region
- Neck
- Other
- Face
- Other

Entry Terms

Entry Title

Entry Text
WHY?

- **WITH « no explosion » 1683 answers**
- **WITHOUT : 4122 answers**
  - Lip/surgery*, Lip Neoplasms/surgery
  - Eyebrows*, Forehead/surgery*
  - Skin Aging/drug effects*
  - Mandible/pathology, Mandible/surgery*
  - Maxilla/pathology, Maxilla/surgery*
CONCLUSIONS MeSH

• **Structured search**
• **Usefull = definition, synonyms**
• **More info : drug and chemical**
• **Helps you to write your request**

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Searching in PubMed

• **Simple request**
  - subject (MeSH), author

• **Advanced**
  - «Limits»
  - «History»

• **Tools : Single Citation Matcher, Journal DB, «Preview Index»**
Basic rules

• English !!
• Blanks between words
• Don’t use stopwords - complications after...with,...
• Brackets !!!
  – 1,4-bis chloromethyl benzene

\[\text{NOT}\]

– 1,4-bis (chloromethyl) benzene

Why ?

1,4-bis chloromethyl benzene

\["1,4-\text{bis(chloromethyl)benzene}\][\text{Substance Name}] \text{ OR } 1,4-bis chloromethyl benzene[\text{Text Word}]

BUT

1,4-bis (chloromethyl) benzene

\![1[\text{All Fields}] \text{ AND } 4-bis[\text{All Fields}]] \text{ AND } \text{chloromethyl}[\text{All Fields}] \text{ AND } ("\text{benzene}"[\text{MeSH Terms}] \text{ OR } \text{benzene}[\text{Text Word}])\]
• Syntax: \textit{word [field]}
  - Brown[Au]
  - Tooth Extraction[mesh]
  - French[la]
  - vitamin b1[Text Word]
  - ...

\textbf{AUTHORS IN MEDLINE?}

• Bone = 688 095 but Bone [au] 1493
• Wang = 145 352
• Zhou [AU] = 32 967
• Collins cité 29 706
• D Collins cited 1562 times
  – Collins D [AU] cited 1170 times
  – "Collins David"[Author] cited 74 times
Translation?

  Office Québécois de la Langue Française = 3 million words – Fr-Eng-Latin

- [http://ist.inserm.fr/basismesh/mesh_contact.s.html](http://ist.inserm.fr/basismesh/mesh_contact.s.html)

Treatment of the Hospital-acquired infections by the hygiene of hands

- MESH:
  - nosocomial = cross Infections
  - Hygiene ?
  - Hand = item nr 20 = handwashing
- ("Handwashing"[Mesh]) AND ("Cross Infection"[Mesh])
- Via subheadings
  - ("Cross Infection/prevention and control"[Mesh])
How to reduce the answers !!!

2000 articles

General concept

Refine search

500 articles

Particular concept

50 articles

LIMITS

=> LIMIT A SEARCH

=> CHOOSE:

- Publication Types
- Languages
- Age Groupes
- Studies on Human or Animal
- Gender male ou female ()
- date : Publication Date
- PubMed Entrez Date
- References with abstract

=> …
HYPERTENSION DRUG THERAPY

USING LIMITS

Parameters include:
- Limits for search
  - Date range: Published, Added to PubMed
  - Language: English
  - Species: Specific categories such as Humans
  - Topic: Specific categories such as Drugs

Filter options allow for narrowing the search results to specific criteria.
<table>
<thead>
<tr>
<th>Languages</th>
<th>English</th>
<th>French</th>
<th>German</th>
<th>Italian</th>
<th>Japanese</th>
<th>Russian</th>
<th>Spanish</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Meta Languages</th>
<th>African</th>
<th>American</th>
</tr>
</thead>
</table>

<table>
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<tr>
<th>Type of Article</th>
<th>Clinical Trial</th>
<th>Case Report</th>
<th>Review</th>
</tr>
</thead>
</table>

<table>
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<tr>
<th>Ages</th>
<th>Newborn: 0-1 month</th>
<th>Infant: 1-12 months</th>
<th>Child: 1-12 years</th>
<th>Adolescent: 13-18 years</th>
</tr>
</thead>
</table>

<table>
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<tr>
<th>Adult: 19-44 years</th>
<th>Middle Aged: 45-64 years</th>
<th>Middle Aged + Aged: 65 years</th>
<th>Aged: 65+ years</th>
<th>80+ years</th>
</tr>
</thead>
</table>

**Tag Terms**

<table>
<thead>
<tr>
<th>Default Tag</th>
<th>All Paths</th>
</tr>
</thead>
</table>

**Search Filters**

- Language: English
- Type of Article: Clinical Trial
- Ages: Adult: 19-44 years
- Language: English
- Type of Article: Clinical Trial
- Ages: Adult: 19-44 years

**Search Results**

Managing your references

1. Managing your references

2. Managing your references

3. Managing your references

4. Managing your references

5. Managing your references

6. Managing your references

File

Printer

Clipboard

E-Mail

…

Managing your references

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History

- Holds up to 100 searches and links
- 8 hours
- Retouch a query
- Combine queries
D Jacobsen wrote something about methanol poisoning in 2003.
Writing my request in PubMed?

- Drug Therapy Asthma Children
- Unerupted Wisdom Teeth Pathology Adolescent
- Complications Teeth Removal
- Poisoning with Methanol in Wine
- Drug Therapy After Renal Transplant
- Child Hygiene and Tartar
Conclusions

- PubMed portal is a professional tool
- Knowing information retrieval tools
  - Bool algebra, brackets, thesaurus...
- Be creative
  - Different ways of searching
  - Vocabulary/synonyms ...
- PubMed portal has limits