INTRODUCTION and HISTORY

- The National Library of Medicine™ (NLM™) has been indexing the biomedical literature, since 1879, to help provide health professionals access to information necessary for research, health care, and education.

- Beginning in the 1960s, NLM's computer-based Medical Literature Analysis and Retrieval System (MEDLARS®) has allowed rapid access to a vast store of references to biomedical information.

- MEDLARS is still used for preparing bibliographic printed publications, such as, *Index Medicus*®, the monthly subject/author guide to biomedical literature. *Index Medicus* began in 1880 as the *Index Catalog of the Library of the Surgeon General's Office*.

MEDLINE is the National Library of Medicine's premier bibliographic database containing citations and author abstracts from over 4,000 biomedical journals published in the United States and in other countries.

- MEDLINE currently contains over 10 million references dating back to 1966.
- New material is added weekly.
- Over 80% of the citations are published in the English Language.
- Over 80% of the citations are included with the published abstract.
- The scope of MEDLINE includes such diverse topics as microbiology, delivery of health care, nutrition, pharmacology and environmental health. The categories covered in MEDLINE include everything from anatomy, organisms, diseases, psychiatry, psychology and the physical sciences.

PREMEDLINE™ is a database designed to allow access to citations while they are undergoing the process of being indexed for MEDLINE.

- MEDLINE's in-process database providing basic citation information and abstracts before the citation is assigned controlled vocabulary subject headings.
- The citation then proceeds to NLM's quality assurance staff to be checked for errors.
- Citations are removed from PREMEDLINE once they have been promoted to MEDLINE.

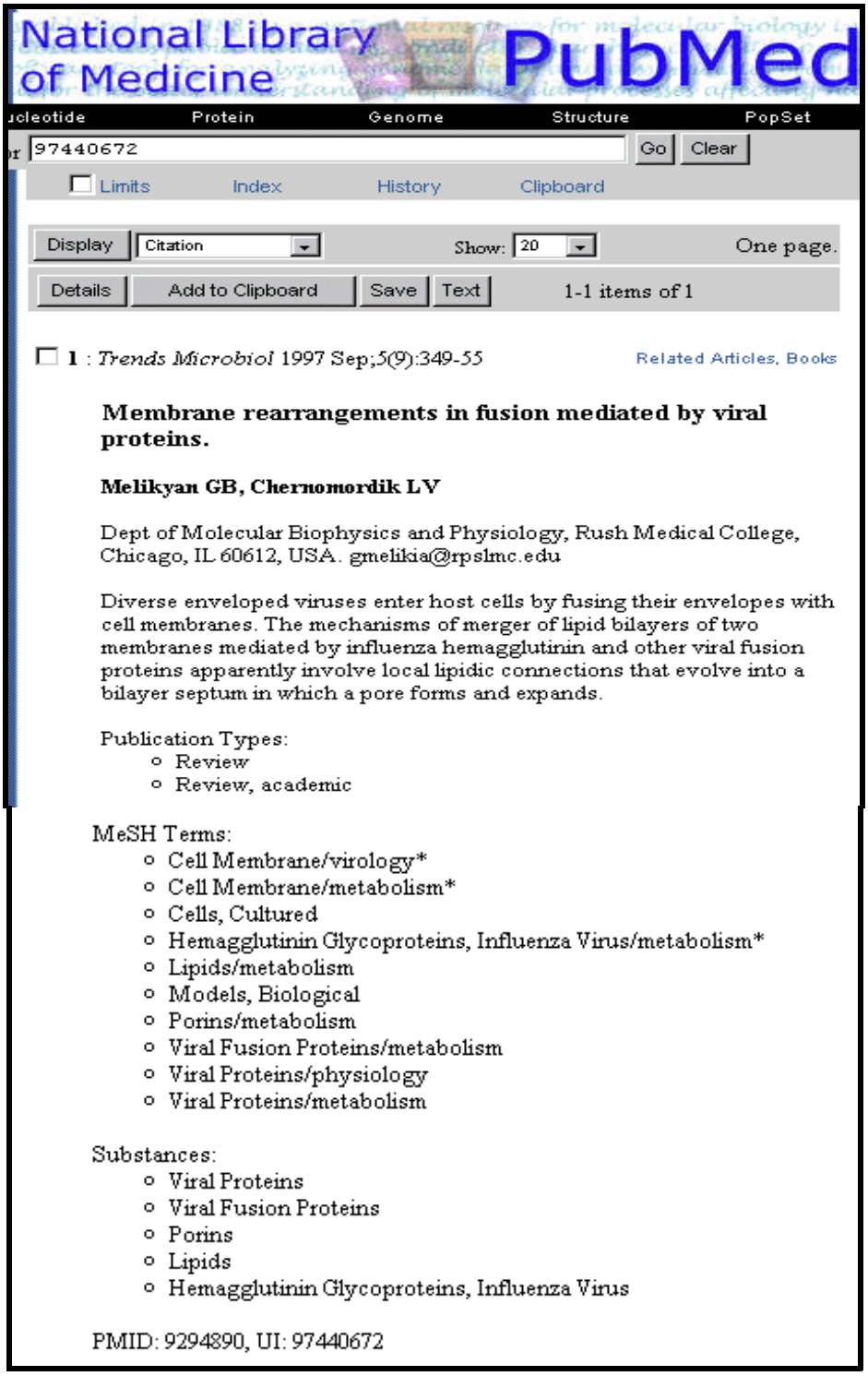
MEDLINE - Basic Bibliographic Citation

One MEDLINE citation represents one journal article and is composed of fields that provide specific information (Title, Author, Language, etc.) about the journal article. The following information is generally provided:

- Title of the journal article
- Names of the Authors (up to 25 authors may appear on a MEDLINE record)
- Abstract published with the article
- Controlled Vocabulary Search Terms (MeSH headings)
- Journal Source Information
- First Author Affiliation
- Language in which the article was published
- Publication Type (description of the type of article, e.g., Review, Letter, etc.)

Sample MEDLINE citations from the National Library of Medicine's PubMed and Internet Grateful Med retrieval systems follow.

PubMed MEDLINE citation:



National Library of Medicine PubMed

ucleotide Protein Genome Structure PopSet

97440672 Go Clear

Limits Index History Clipboard

Display Citation Show: 20 One page.

Details Add to Clipboard Save Text 1-1 items of 1

1 : *Trends Microbiol* 1997 Sep;5(9):349-55 Related Articles, Books

Membrane rearrangements in fusion mediated by viral proteins.

Melikyan GB, Chernomordik LV

Dept of Molecular Biophysics and Physiology, Rush Medical College, Chicago, IL 60612, USA. gmelikia@rpslmc.edu

Diverse enveloped viruses enter host cells by fusing their envelopes with cell membranes. The mechanisms of merger of lipid bilayers of two membranes mediated by influenza hemagglutinin and other viral fusion proteins apparently involve local lipidic connections that evolve into a bilayer septum in which a pore forms and expands.

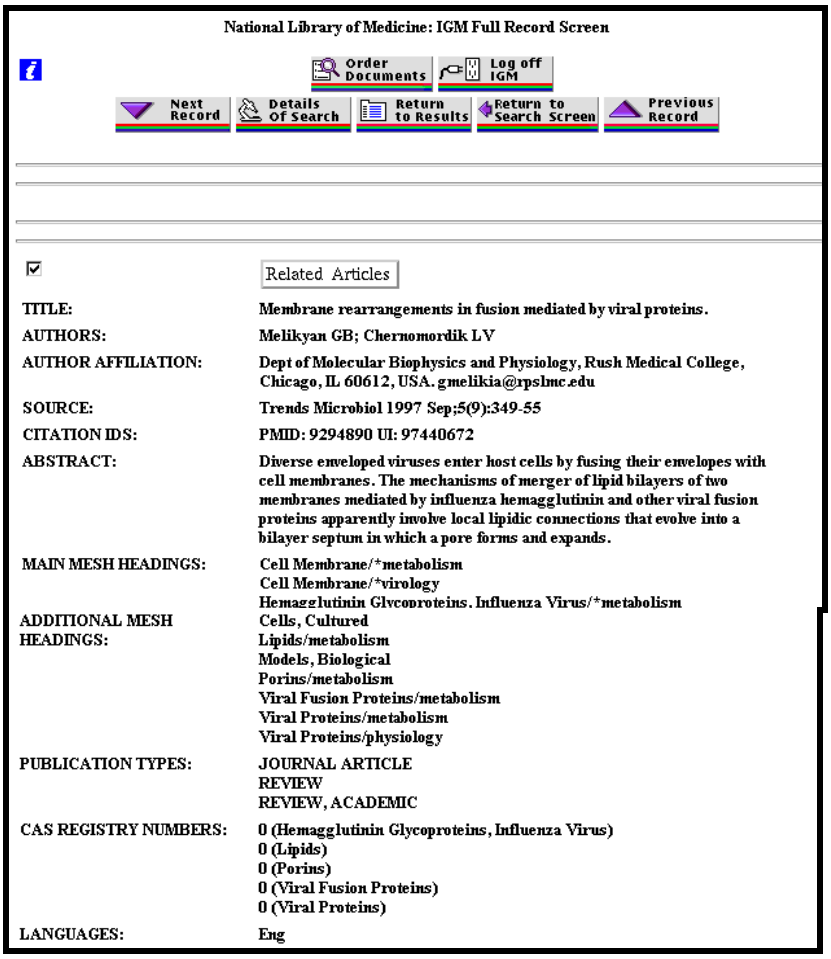
Publication Types:
- Review
- Review, academic

MeSH Terms:
- Cell Membrane/virology*
- Cell Membrane/metabolism*
- Cells, Cultured
- Hemagglutinin Glycoproteins, Influenza Virus/metabolism*
- Lipids/metabolism
- Models, Biological
- Porins/metabolism
- Viral Fusion Proteins/metabolism
- Viral Proteins/physiology
- Viral Proteins/metabolism

Substances:
- Viral Proteins
- Viral Fusion Proteins
- Porins
- Lipids
- Hemagglutinin Glycoproteins, Influenza Virus

PMID: 9294890, UI: 97440672

Internet Grateful Med MEDLINE citation:



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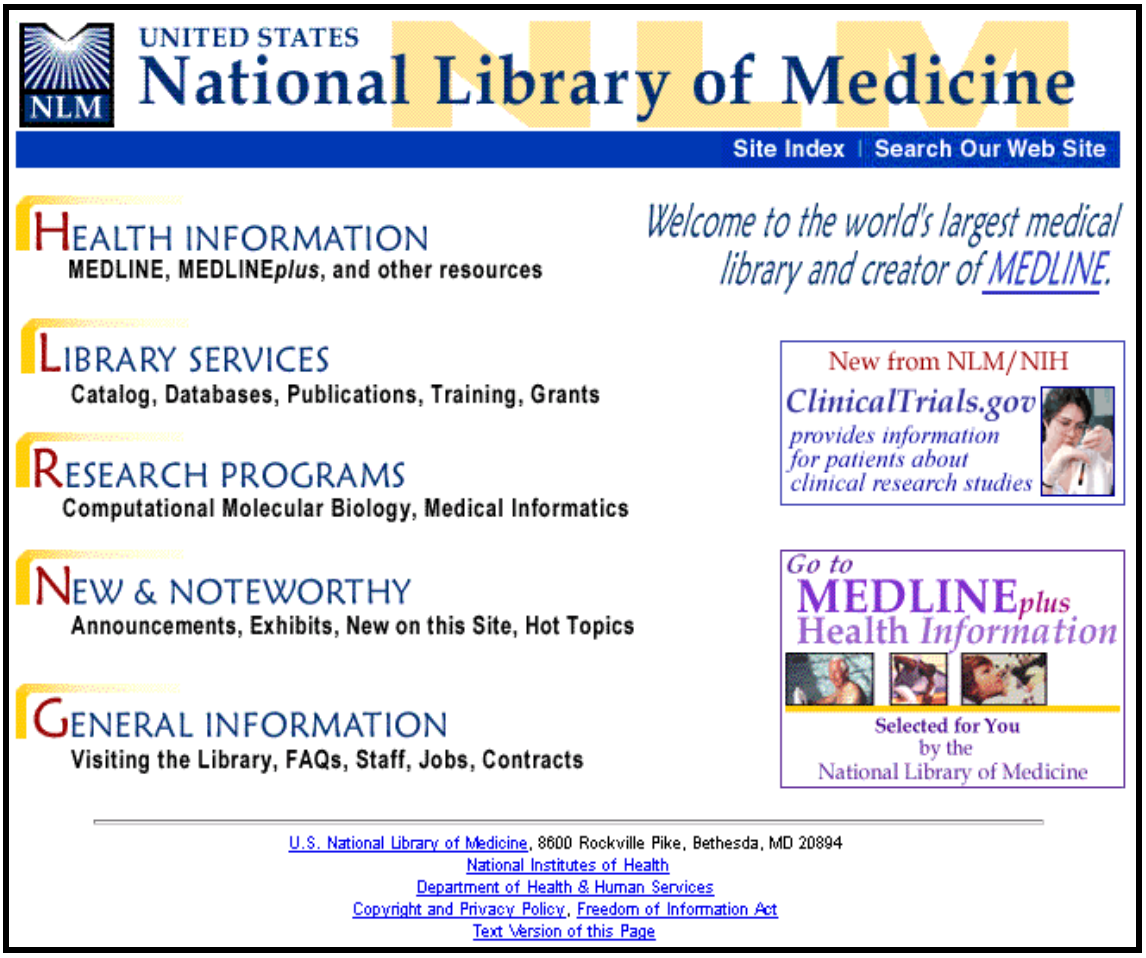
Related Articles

TITLE:	Membrane rearrangements in fusion mediated by viral proteins.
AUTHORS:	Melikyan GB; Chernomordik LV
AUTHOR AFFILIATION:	Dept of Molecular Biophysics and Physiology, Rush Medical College, Chicago, IL 60612, USA. gmelikia@rpslmc.edu
SOURCE:	Trends Microbiol 1997 Sep;5(9):349-55
CITATION IDS:	PMID: 9294890 UI: 97440672
ABSTRACT:	Diverse enveloped viruses enter host cells by fusing their envelopes with cell membranes. The mechanisms of merger of lipid bilayers of two membranes mediated by influenza hemagglutinin and other viral fusion proteins apparently involve local lipidic connections that evolve into a bilayer septum in which a pore forms and expands.
MAIN MESH HEADINGS:	Cell Membrane/*metabolism Cell Membrane/*virology Hemagglutinin Glycoproteins, Influenza Virus/*metabolism
ADDITIONAL MESH HEADINGS:	Cells, Cultured Lipids/metabolism Models, Biological Porins/metabolism Viral Fusion Proteins/metabolism Viral Proteins/metabolism Viral Proteins/physiology
PUBLICATION TYPES:	JOURNAL ARTICLE REVIEW REVIEW, ACADEMIC
CAS REGISTRY NUMBERS:	0 (Hemagglutinin Glycoproteins, Influenza Virus) 0 (Lipids) 0 (Porins) 0 (Viral Fusion Proteins) 0 (Viral Proteins)
LANGUAGES:	Eng

Free MEDLINE Searching

- Introduced on June 26, 1997
- Available through the NLM Web Site: **http://www.nlm.nih.gov**
- From NLM Web site, click on the **MEDLINE** link on the right and then choose either of two interfaces: **PubMed** and **Internet Grateful Med**



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The National Network of Libraries of Medicine®

Medical libraries throughout the United States are joined together in a network. The purpose of the National Network of Libraries of Medicine (NN/LM®) is to provide health science practitioners, investigators, educators, and administrators in the United States with timely, convenient access to biomedical and health care information resources.

- The network is administered by the National Library of Medicine.
- It consists of eight Regional Medical Libraries (major institutions under contract with the National Library of Medicine), more than 140 Resource Libraries (primarily at medical schools), and some 4,500 Primary Access Libraries (primarily at hospitals).
- The Regional Medical Libraries administer and coordinate services in the network's eight geographical regions.

Take Note:

NN/LM Web Site: **http://www.nnlm.nlm.nih.gov**

Toll-free phone number: **1-800-338-7657**

Document Delivery

Loansome Doc® offers full-text document ordering. This feature is part of both PubMed and Internet Grateful Med.

DOCLINE® is the computerized interlibrary loan system that is the foundation for Loansome Doc.

Take Note:

More information on Loansome Doc and DOCLINE may be found on factsheets found at the NLM Web Site:

Loansome Doc: www.nlm.nih.gov/pubs/factsheets/loansome_doc.html
DOCLINE: www.nlm.nih.gov/pubs/factsheets/docline.html

NLM Technical Bulletin

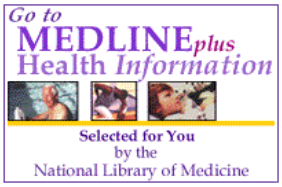
- A bi-monthly newsletter published for NLM online searchers.
- The *NLM Technical Bulletin* keeps searchers apprised of:
  - changes and enhancements to NLM retrieval systems
  - changes to MeSH vocabulary
  - tips for searching
- The *Technical Bulletin* is published electronically on the NLM Web site. Its URL is:

http://www.nlm.nih.gov/pubs/techbull/tb.html

Consumer Information

- On October 22, 1998 NLM launched a consumer health home page called **MEDLINE*plus*®**
- It was designed to direct consumers to resources containing information that will assist this group of users to research their health questions.
- The pages are designed for educational use only and are not intended to replace advice from a health professional.
- These pages provide a carefully selected list of resources, not a comprehensive catalog.

Click on the **MEDLINE*plus*** image on the right-hand side of the NLM home page:



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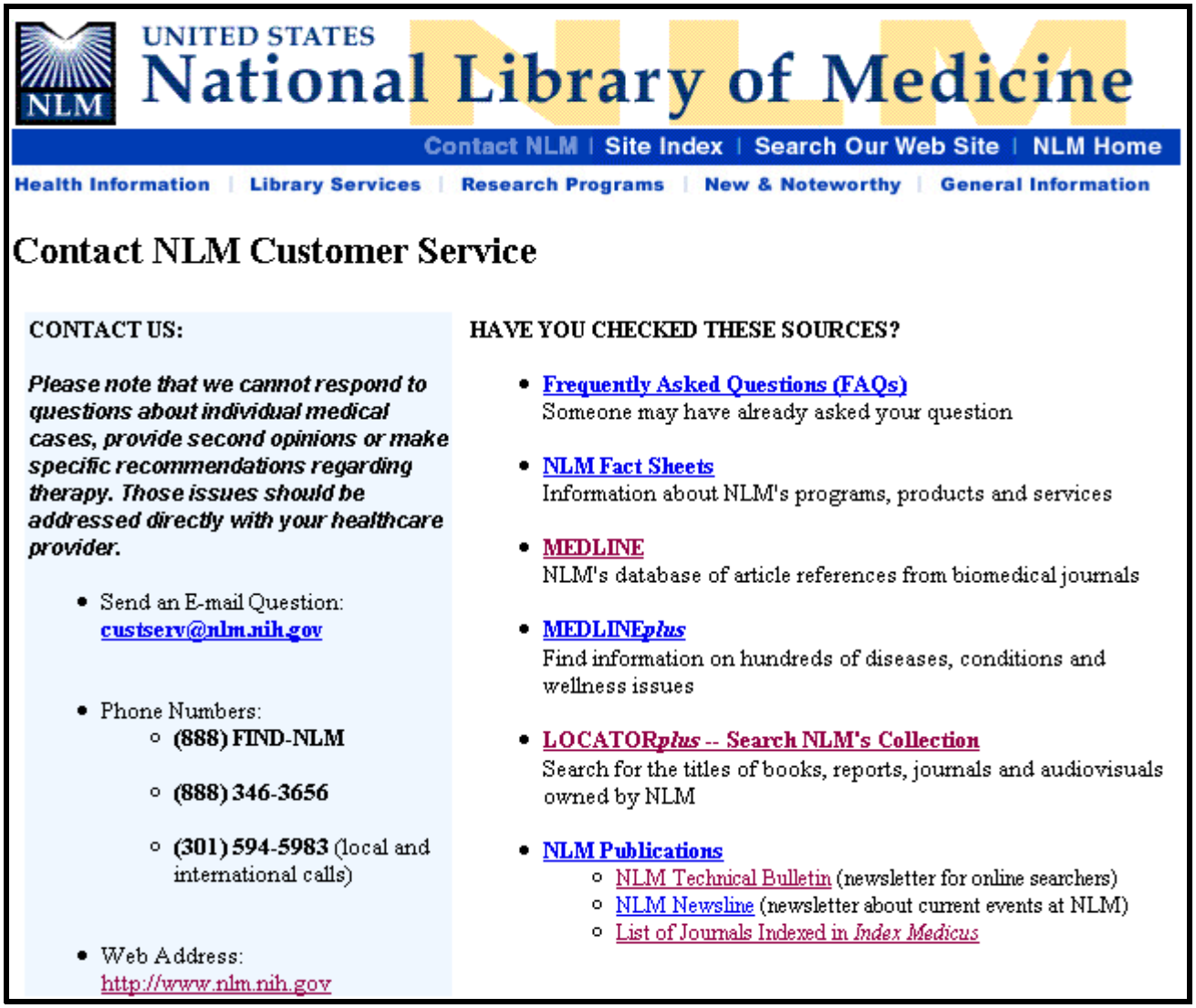
Toll-Free Phone	**1-888-FINDNLM** (1-888-346-3656)
	Monday-Friday 8:30 AM - 9:00 PM ET
	Saturday 10:00 AM - 5:00 PM ET
	(closed Sundays & Federal holidays)

Click on **General Information**; then click on **Contact NLM** in the tool bar area:

You will be taken to this screen:  



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- Send an E-mail Question: custserv@nlm.nih.gov
- Phone Numbers:
  - **(888) FIND-NLM**
  - **(888) 346-3656**
  - **(301) 594-5983** (local and international calls)
- Web Address: http://www.nlm.nih.gov

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- **Frequently Asked Questions (FAQs)**
  Someone may have already asked your question
- **NLM Fact Sheets**
  Information about NLM's programs, products and services
- **MEDLINE**
  NLM's database of article references from biomedical journals
- **MEDLINE*plus***
  Find information on hundreds of diseases, conditions and wellness issues
- **LOCATOR*plus* -- Search NLM's Collection**
  Search for the titles of books, reports, journals and audiovisuals owned by NLM
- **NLM Publications**
  - NLM Technical Bulletin (newsletter for online searchers)
  - NLM Newsline (newsletter about current events at NLM)
  - List of Journals Indexed in *Index Medicus*

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Use this mailing list to remind you when new information has been added to the NLM Web site. For example:

- When articles have been added to the *NLM Technical Bulletin* Web site
- When the training manuals have been revised
- Other important NLM announcements and events

Go to **http://www.nlm.nih.gov/nn.html** *or*

Click on **New and Noteworthy** from the NLM home page.
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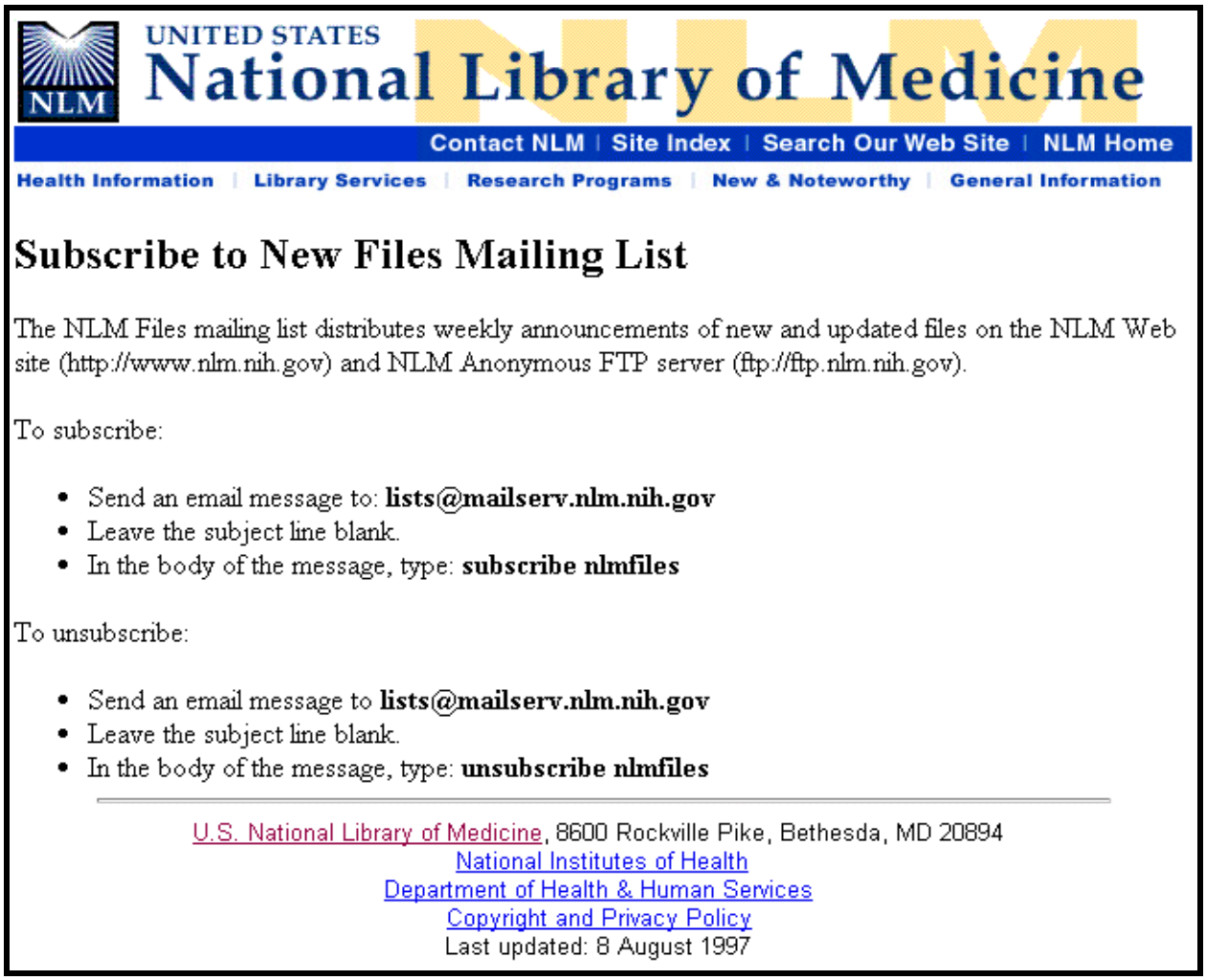

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Medical Subject Headings (MeSH) Vocabulary

What is MeSH?

- Acronym for **Medical Subject Headings**
- Authority list for subject analysis of biomedical literature at NLM
- Used for indexing journal articles for *Index Medicus,* MEDLINE and also used for cataloging books and audiovisuals
- The MeSH controlled vocabulary is a distinctive feature of MEDLINE
- Used by searchers
- Revised annually
- MeSH gives uniformity and consistency to the indexing of the biomedical literature
- MeSH is similar to key words on other systems
- MeSH terms are arranged in a hierarchial categorized manner called the MeSH Tree Structures

Examples of MeSH Headings:

- Body Weight
- Kidney
- Dental Cavity Preparation
- Self Medication
- Radioactive Waste
- Brain Edema

MeSH Publications

Medical Subject Headings (MeSH) are found in three NLM publications:

Medical Subject Headings - Annotated Alphabetic MeSH
Medical Subject Headings - Tree Structures
Permuted Medical Subject Headings

Medical Subject Headings - Annotated Alphabetic MeSH

- Lists all 18,000+ headings and synonyms
- Includes annotations.
- Republished each year to include the addition of new MeSH terms.

Medical Subject Headings - Tree Structures

- Each MeSH heading in the *Annotated MeSH* has at least one alphanumeric string known as a tree number, which is listed immediately below the heading.

- The *Medical Subject Headings - Tree Structures* publication lists each MeSH heading represented by its tree number(s) as it exists in the MeSH hierarchy.

- The trees are a hierarchial rearrangement of the MeSH terms, from the most general term to the most specific term in one or more of the following 15 subject categories:

A Anatomy
B Organisms
C Diseases
D Chemicals and Drugs
E Analytical, Diagnostic, and Therapeutic Techniques and Equipment
F Psychiatry and Psychology
G Biological Sciences
H Physical Sciences
I Anthropology, Education, Sociology and Social Phenomenon
J Technology, Industry, Agriculture
K Humanities
L Information Science
M Named Groups
N Health Care
Z Geographicals

Permuted Medical Subject Headings

- Alphabetic index that lists each significant word that appears in every MeSH heading.
- Indented under each word, is a list of all the MeSH headings and cross-references in which that word appears.
- Often considered to be the"gateway" to NLM's medical vocabulary.
- Assists locating MeSH headings if only one word of the subject is known
- Expedites locating a multi-word MeSH heading by using a common word from that MeSH heading
- Provides another source to consult when you are searching for an unfamiliar or complicated topic.

Take Note:

Ordering information is available at:
http://www.nlm.nih.gov/mesh/pubs.html

Using the MeSH Publications

***Medical Subject Headings - Annotated Alphabetic List*: Interpreting a MeSH Heading Annotation**

1 **Family Planning**
2 N2.421.143.401+

3 /legis: consider also FAMILY PLANNING POLICY CATALOG: /geog /form

68; BIRTH CONTROL was see under CONTRACEPTION 1975, was see under FAMILY PLANNING 1968-74, was heading 1963-67

use FAMILY PLANNING to search BIRTH CONTROL 1966-75

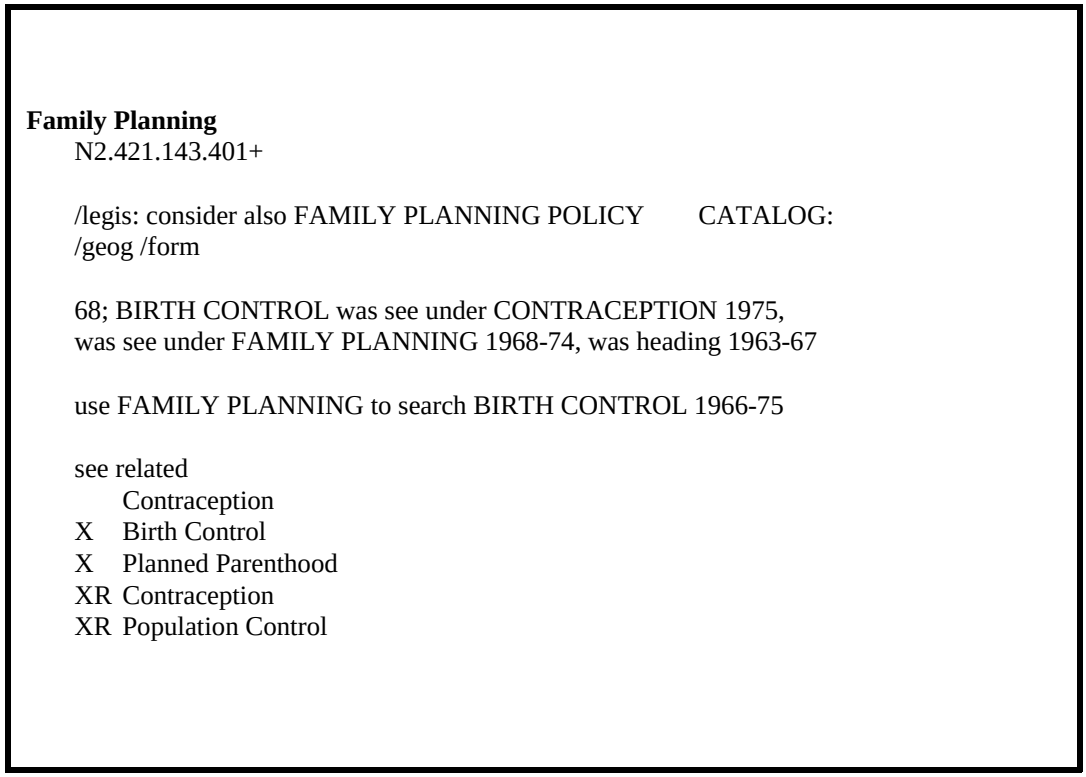
see related
Contraception
X Birth Control
X Planned Parenthood
XR Contraception
XR Population Control

LEGEND

1 The MeSH heading, also called the "descriptor," is the first entry of the annotation.

2 The number beneath the MeSH heading is the tree number. Tree numbers indicate the location of the MeSH heading in the tree structure listed in the *Medical Subject Headings - Tree Structures* publication. The "+" following the tree number indicates that more specific headings are listed beneath this MeSH heading within that tree.

3 The *Indexing Annotation* provides a brief informative note for the guidance of the indexer and searcher.



Family Planning
N2.421.143.401+

/legis: consider also FAMILY PLANNING POLICY CATALOG:
/geog /form

4 68; BIRTH CONTROL was see under CONTRACEPTION 1975,
was see under FAMILY PLANNING 1968-74, was heading 1963-67

5 use FAMILY PLANNING to search BIRTH CONTROL 1966-75

6 see related
Contraception
X Birth Control
X Planned Parenthood

7 XR Contraception
XR Population Control

4 The *History Note* gives brief information regarding the year the MeSH heading was introduced and any changes over the years. If no date is given, the heading was a MeSH heading before 1965. Many MeSH entries have been changed over the years. Parentheses around a date indicate how far back that term can be used to search the concept.

5 The *Online Note* provides information for online searchers.

6 See related - additional heading(s) suggested for consideration in selecting search terms.

consider also - roots of other terms to consider.

7 *Cross References* appear at the bottom of the annotation, listing related terms to consider when searching.

X - "See References" are synonyms for the MeSH heading; sometimes referred to as a entry terms; think of X as a "=" sign.

XR - "See Related" references are additional MeSH headings to consider for your search strategies.

Indexing with MeSH Headings

- The NLM indexers examine articles and assign the most specific MeSH heading(s) appropriate to describe each major concept discussed.
- When there is no single specific MeSH heading for a concept, the indexer will use the closest, more general MeSH heading available.
- The indexer will assign as many MeSH headings as appropriate to cover the topics of the article (generally 5 to 15).
- The NLM indexing staff indexes directly onto a computer screen.
- Information the indexer provides includes:

topic of article
age group of population studied
human vs. animal studies
male vs. female studies
type of article (e.g., Review article)

Article Title:
Membrane rearrangements in fusion mediated by viral proteins.

Abstract:
Diverse enveloped viruses enter host cells by fusing their envelopes with cell membranes. The mechanisms of merger of lipid bilayers of two membranes mediated by influenza hemagglutinin and other viral fusion proteins apparently involve local lipidic connections that evolve into a bilayer septum in which a pore forms and expands.

MeSH Terms:
Cell Membrane/virology*
Cell Membrane/metabolism*
Cells, Cultured
Hemagglutinin Glycoproteins, Influenza Virus/metabolism*
Lipids/metabolism
Models, Biological
Porins/metabolism
Viral Fusion Proteins/metabolism
Viral Proteins/physiology
Viral Proteins/metabolism

Subheadings further describe a particular aspect of a MeSH heading.

Subheading definitions appear in the introductory pages of the *Annotated MeSH*.

Asterisks (*) indicate MeSH concepts that are the ***main*** points (3-4 on average).

You can limit your search to articles where a particular concept is the main point.

Subheading Explosions

- Related subheadings have been grouped together in hierarchies.
- This allows you to search using a grouping called a subheading explosion.
- An inverted triangle beside a subheading in the *Annotated MeSH* indicates that a subheading is available as an explosion:

> **▼/therapy**
>
> **subhead only; for general or unspecified therapy & multiple therapies; for tissue therapy & therapy with biological products; not for drug therapy (=/drug therapy), nor for diet therapy (=/diet therapy) nor for surgical therapy (= /surgery), nor for radiotherapy (= /radiotherapy), nor for rehabilitative therapy (=/rehabilitation); indexing policy: Manual 19.8.72; DF: /ther or /TH**
>
> **66; used with Category C & F 1966-74; C & F3 1975-87; C, F3 & SMOKING 1988; C, F3 & SMOKING+ 1989; C & F3 1990 forward**
> **search policy: Online Manual: use: main heading/TH or TH (SH) or SUBS APPLY TH**

- Not all subheadings have been placed in these groupings - some do not logically fit.

Take Note:

A listing of subheading explosions appears in the introductory pages of *Annotated MeSH* and on the following pages of this workbook.

SUBHEADINGS

Abnormalities	AB	Manpower	MA
Administration & Dosage	AD	Metabolism	ME
Adverse Effects	AE	Methods	MT
Agonists	AG	Microbiology	MI
Analogs & Derivatives	AA	Mortality	MO
Analysis	AN	Nursing	NU
Anatomy & Histology	AH	Organization & Administration	OG
Antagonists & Inhibitors	AI	Parasitology	PS
Biosynthesis	BI	Pathogenicity	PY
Blood	BL	Pathology	PA
Blood Supply	BS	Pharmacokinetics	PK
Cerebrospinal Fluid	CF	Pharmacology	PD
Chemical Synthesis	CS	Physiology	PH
Chemically Induced	CI	Physiopathology	PP
Chemistry	CH	Poisoning	PO
Classification	CL	Prevention & Control	PC
Complications	CO	Psychology	PX
Congenital	CN	Radiation Effects	RE
Contraindications	CT	Radiography	RA
Cytology	CY	Radionuclide Imaging	RI
Deficiency	DF	Radiotherapy	RT
Diagnosis	DI	Rehabilitation	RH
Diagnostic Use	DU	Secondary	SC
Diet Therapy	DH	Secretion	SE
Drug Effects	DE	Standards	ST
Drug Therapy	DT	Statistics & Numerical Data	SN
Economics	EC	Supply & Distribution	SD
Education	ED	Surgery	SU
Embryology	EM	Therapeutic Use	TU
Enzymology	EN	Therapy	TH
Epidemiology	EP	Toxicity	TO
Ethnology	EH	Transmission	TM
Etiology	ET	Transplantation	TR
Genetics	GE	Trends	TD
Growth & Development	GD	Ultrasonography	US
History	HI	Ultrastructure	UL
Immunology	IM	Urine	UR
Injuries	IN	Utilization	UT
Innervation	IR	Veterinary	VE
Instrumentation	IS	Virology	VI
Isolation & Purification	IP		
Legislation & Jurisprudence	LJ		

Families of Subheading Explosions

adverse effects
- poisoning
- toxicity

analysis
- blood
- cerebrospinal fluid
- isolation & purification
- urine

anatomy & histology
- blood supply
- cytology
  - pathology
  - ultrastructure
- embryology
  - abnormalities
- innervation

chemistry
- agonists
- analogs & derivatives
- antagonists & inhibitors
- chemical synthesis

complications
- secondary

cytology
- pathology
- ultrastructure

diagnosis
- pathology
- radiography
- radionuclide imaging
- ultrasonography

embryology
- abnormalities

epidemiology
- ethnology
- mortality

etiology
- chemically induced
  - complications
  - secondary
- congenital
- embryology
- genetics
- immunology
- microbiology
  - virology
- parasitology
- transmission

metabolism
- biosynthesis
- blood
- cerebrospinal fluid
- deficiency
- enzymology
- pharmacokinetics
- urine

microbiology
- virology

organization & admin
- economics
- legislation & jurisprudence
- manpower
- standards
- supply & distribution
- trends
- utilization

pharmacology
- administration & dosage
- adverse effects
  - poisoning
  - toxicity
- agonists
- antagonists & inhibitors
- contraindications
- diagnostic use
- pharmacokinetics

physiology
- genetics
- growth & development
- immunology
- metabolism
  - biosynthesis
  - blood
  - cerebrospinal fluid
  - deficiency
  - enzymology
  - pharmacokinetics
  - urine
- physiopathology
- secretion

statistics & numer data
- epidemiology
  - ethnology
  - mortality
- supply & distribution
- utilization

surgery
- transplantation

therapeutic use
- administration & dosage
- adverse effects
- contraindications
- poisoning

therapy
- diet therapy
- drug therapy
- nursing
- prevention & control
- radiotherapy
- rehabilitation
  - surgery
  - transplantation

Pharmacological Action Explosions

Every chemical MeSH heading has been assigned one or more headings which describe its pharmacological action (PA).

- Beginning in 1996, indexers add the appropriate pharmacological action MeSH heading as well as the specific chemical MeSH heading to a citation when the action of the chemical is being discussed in the article.

Example:

Here are the pharmacological actions established for the MeSH Heading, ASPIRIN:

MeSH Heading	Aspirin
Pharmacological Action	Anti-Inflammatory Agents, Non-Steroidal
Pharmacological Action	Cyclooxygenase Inhibitors
Pharmacological Action	Platelet Aggregation Inhibitors

- A citation to an article that discusses **aspirin used as an anti-inflammatory agent** will be assigned both

  Aspirin
  Anti-Inflammatory Agents, Non-Steroidal

- A citation to an article that discusses **aspirin used to inhibit blood clotting** will be assigned both

  Aspirin
  Platelet Aggregation Inhibitors

The *Tree Structures* do not include each chemical under the Pharmacological Action MeSH headings.

- To allow searching on groups of chemicals, tables of chemicals with specific pharmacologic actions were created (see example below).

- These exploded headings can be used to retrieve citations indexed for a specific pharmacological action as a class of chemicals as well as articles discussing chemicals which perform that pharmacological action.

- An alphabetic list of the Pharmacological Action Explosions may be found in the front pages of the *Tree Structures.* This alphabetic listing additionally shows each chemical under the Pharmacological Action Pre-Explosion.

Example of a Pharmacological Action Pre-Explosion from the introductory pages of the *Tree Structures*:

Platelet Aggregation Inhibitors
Alprostadil
Aspirin
Dipyridamole
Disintegrins
Epoprostenol
Iloprost
Ketanserin
Mopidamol
Procainamide
Ticlopidine
Trapidil

- An alphabetic list of chemicals with assigned pharmacological action headings also may be found in the front pages of the *Tree Structures*:

Aspirin
Anti-Inflammatory Agents, Non-Steroidal
Cyclooxygenase Inhibitors
Platelet Aggregation Inhibitors

Chemical Name of Substance

- Indicates the preferred name for a chemical or drug; may also be a MeSH heading.
- Available on records added to MEDLINE since mid-1980.
- May be a multiply-occurring field.

CAS Registry Number/EC Number

- Unique 5- to 9-digit number in hyphenated format representing either the Chemical Abstracts number or the E.C. number from the Enzyme Nomenclature.
- Appears only on records added to MEDLINE since mid-1980.
- May be a multiply-occurring field.

Age Group MeSH Headings

These are MeSH headings which specify the age of human subjects that are discussed in the article:

Infant, Newborn	Birth to 1 month
Infant	1 to 23 months
Child, Preschool	2 to 5 years
Child	6 to 12 years
Adolescence	13 to 18 years
Adult	19 to 44 years
Middle age	45 to 64 years
Aged	65+

Publication Types

- Publication Types describe the type of material being indexed.
- The most common type is Journal Article. Other Publication Types include:

  Clinical Trial
  Comment
  Practice Guidelines
  Retracted Publication
  Retraction of Publication
  Review
  Twin Study

- A list of Publication Types, along with definitions, appears in the introductory pages of the *Annotated MeSH*.
- Publication Types also appear in the main body of the *Annotated MeSH*.

MeSH Browser

- Allows you to look through the MeSH vocabulary to see if there is a MeSH term for a particular concept.

- Gives you access to the database of NLM's vocabulary terms. You will ***not*** be searching or retrieving MEDLINE records.

Where is it?

- The MeSH browser is introduced on this page of NLM's site:

  http://www.nlm.nih.gov/mesh/meshhome.html

- The link to the current MeSH browser (http://www.nlm.nih.gov/mesh/99MBrowser.html) is provided.

- A fuller description of this tool may be found at: (http://www.nlm.nih.gov/mesh/mbinfo.html).

What can I search?

- The Browser allows you to search the 3 types of MeSH records:

  1. MeSH Headings (Descriptors)
  2. Supplementary Concept Records (formerly known as Supplementary Chemical Records)
  3. Qualifers (Subheadings) terms

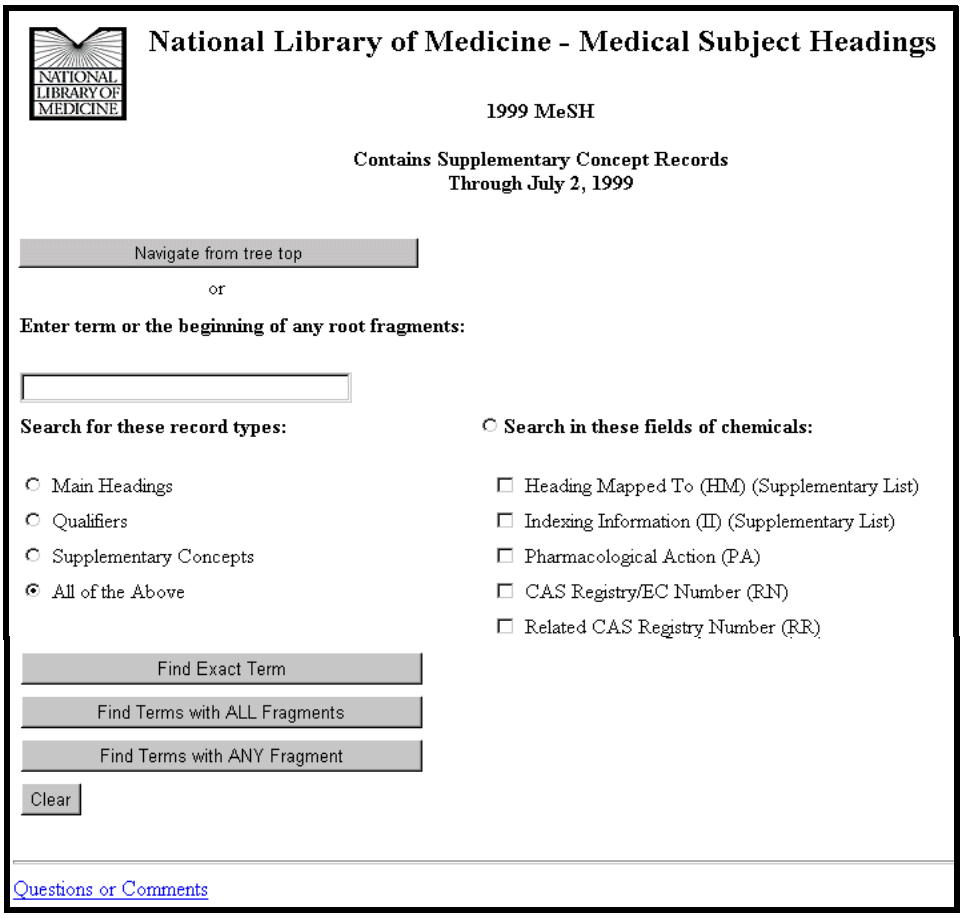
How do I search?

- The initial MeSH Browser screen, shown on the next page, presents two ways of finding the MeSH term for a concept.

  1. You can work down (navigate) from the top of the tree
  2. Enter a term or root to be searched.

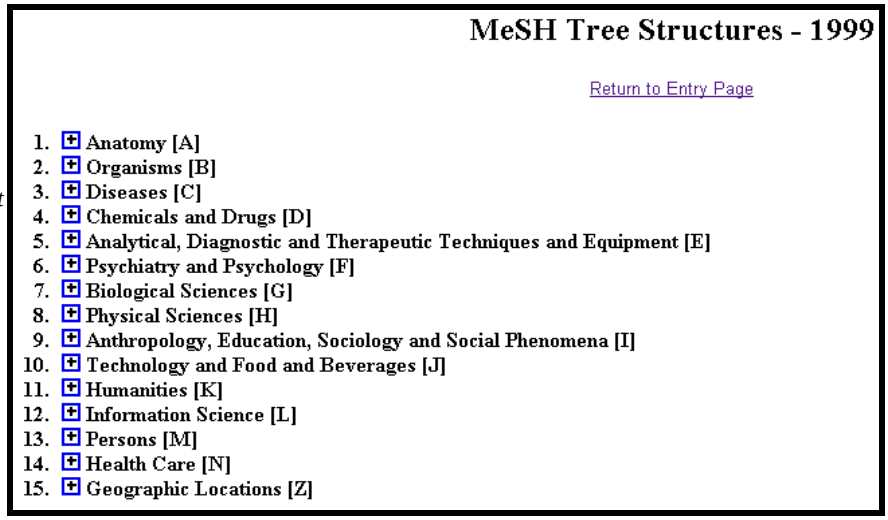
Navigate from the top of the tree

*Let's start by using the **Navigate** button.*

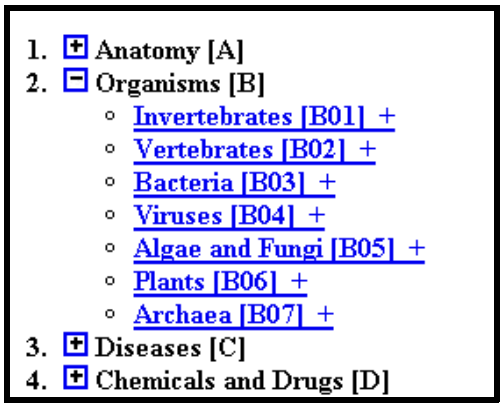


The first level shows the fifteen broad categories in MeSH:

When you click on the plus sign to the left of a term, you will open that category and see the concepts grouped here (see below).



Beginning at this level you can select a term and see detailed information about that concept, or continue down, or branch out.



If you click on a term you will go to a page that shows the positions of the hierarchy or tree in which the term is placed.

At the top of this page a record provides information about the term.

MeSH Descriptor Data

Return to Entry Page

MeSH Heading	Helicobacter pylori
Record Type	D
Entry Term	Campylobacter pylori
Tree Number	B03.440.500.550
Tree Number	B03.825.400.550
Allowable Qualifiers	CH CL CY DE EN GD GE IM IP ME PH PY RE UL VI
Annotation	do not confuse X ref CAMPYLOBACTER PYLORI of the genus HELICOBACTER with CAMPYLOBACTER JEJUNI of the genus CAMPYLOBACTER; infection: coord IM with HELICOBACTER INFECTIONS (IM)
Previous Indexing	Campylobacter (84-90)
Scope Note	A newly classified spiral bacterium active as a human gastric pathogen. It is a gram-negative, urease-positive, curved or slightly spiral organism initially isolated in 1982 from patients with lesions of gastritis or peptic ulcers in Western Australia. Helicobacter pylori was originally classified in the genus CAMPYLOBACTER, but RNA sequencing, cellular fatty acid profiles, growth patterns, and other taxonomic characteristics indicate that the micro-organism should be included in the new genus HELICOBACTER. It has been officially transferred to Helicobacter gen. nov. (see Int J Syst Bacteriol 1989 Oct;39(4):297-405).
History Note	91
Unique ID	D016480

MeSH Tree Structures

Bacteria [B03]
Gram-Negative Bacteria [B03.440]
Helicobacter [B03.440.500]
▶ Helicobacter pylori [B03.440.500.550]

Bacteria [B03]
Spiral and Curved Bacteria [B03.825]
Helicobacter [B03.825.400]
▶ Helicobacter pylori [B03.825.400.550]

The data in a **MeSH Descriptor Record** may include:

- The MeSH Heading used for the concept.
- The Record Type: D for Main (MeSH) Headings
- Entry Term: Synonyms or concepts included by this term.
- Tree Number: The place holder(s) in the numbered hierarchy
- Allowable Qualifiers: Subheadings that are logical in combination with this term.
- See Also: Related terms that may be of interest
- Entry Combination: Conversion rules for Descriptors and Qualifers
- Annotation: Guidelines for indexers and searchers
- Previous Indexing: Terms that may have been used to index this concept in the years prior to the year that this term was introduced.
- Scope Note: An explanation or definition of this concept to help in understanding it's usage as an index term.
- History Note: The year this concept was introduced into MeSH. Includes historical changes over time.
- Unique ID: A unique number assigned for internal use. MeSH Heading UIs start with the letter D (for Descriptor) e.g., D001419

Supplemental Concept Record

Name of Substance	quindoxin
Record Type	C
Registry Number	2423-66-7
CAS Type 1 Name	quinoxaline, 1,4-dioxide
Related Number	30967-52-3 (hydride)
Related Number	34533-48-7 (ion(1-))
Related Number	37141-85-8 (ion(1+))
Entry Term	Grofas
Entry Term	ICI 8173
Entry Term	quinoxaline-di-N-oxide
Entry Term	quinoxaline 1,4-dioxide
Entry Term	1,4-dihydroxyquinoxaline
Heading Mapped to	*QUINOXALINES
Pharm. Action	MUTAGENS
Pharm. Action	ANTIBIOTICS
Indexing Information	GROWTH/drug effects
Previous Indexing	CYCLIC N-OXIDES (72-76)
Source	Vet Rec 90(7):187;1972
Source	Contact Dermatitis 1(4):256;1975
Source	Antimicrob Agents Chemother 13(5):770;1978
Source	Chem Pharm Bull (Tokyo) 1979;27(8):1954
Source	Med Weteryn 33(11):688;1977
Thesaurus ID	Negwer, 5th ed, #702
Thesaurus ID	USAN 1980, p.276
Frequency	22
Note	RN given refers to parent cpd; structure in Negwer, 5th ed, #702
Date of Entry	720101
Revision Date	830727
Unique ID	C003282

See next page for details.

The data in a **Supplemental Concept record** may include:

- Name of Substance: For example: quindoxin
- Record Type: C for Supplemental Concepts
- Registry Number: For example: 2423-66-7
- CAS Type 1 Name: The systematic name of a chemical which defines its structure, e.g., quinoxaline, 1,4-dioxide
- Related Number: A unique number assigned to chemicals by the Chemical Abstract Service, or a code for enzymes assigned by the Commission on Biological Nomenclature. Related Number: Registry Numbers for salts and/or stereoisomers as well as it's relation to the "parent" chemical.
- Entry Term: Synonyms that can be used for searching this concept.
- Heading Mapped to: The Descriptor used for indexing this chemical in MEDLINE.
- Pharm. Action: An action of a drug or chemical as reported in the literature, e.g., MUTAGENS; ANTIBIOTICS
- Indexing Information: Other MeSH terms that an indexer should consider using. Previous Indexing: MeSH terms used before the current descriptor became available, and also terms removed from the HM field over time.
- Source: Citations to articles in which the chemical has been identified, e.g., Contact Dermatitis 1(4):256;1975
- Thesaurus ID: An authoritative reference where the chemical is listed, e.g., USAN 1980, p.276
- Frequency: The number of times the chemical has been identified in MEDLINE journals.
- Note: RN given refers to parent cpd; structure in Negwer, 5th ed, #702
- Date of Entry: The date (YYMMDD) the record was added to the system.
- Revision Date: The date (YYMMDD) of the last major revision to this record.
- Unique ID, beginning with "C" for Supplementary Chemical Concept, e.g., C003282

MeSH Qualifier (subheading) record

Subheading	therapy
Record Type	Q
Entry Version	THER
Abbreviation	TH
Scope Note	Used with diseases for therapeutic interventions except drug therapy, diet therapy, radiotherapy, and surgery, for which specific subheadings exist. The concept is also used for articles and books dealing with multiple therapies.
Grateful Med Note	consider Surgery (sh), Drug Therapy (sh), Radiotherapy (sh), or + for subheading group
Annotation	subhead only; for general or unspecified therapy & multiple therapies; for tissue therapy & therapy with biological products; not for drug therapy (=/drug therapy), nor for diet therapy (=/diet therapy), nor for surgical therapy (=/surgery), nor for radiotherapy (=/radiotherapy), nor for rehabilitative therapy (=/rehabilitation); indexing policy: Manual 19.8.72; DF: /ther or /TH
Online Note	search policy: Online Manual; use: main heading/TH or TH (SH) or SUBS APPLY TH
History Note	66; used with Category C & F 1966-74; C & F3 1975-87; C, F3 & SMOKING 1988; C, F3 & SMOKING+ 1989; C & F3 1990 forward
Entry Term	disease management
Entry Term	treatment
Date of Entry	731227
Revision Date	940708
Date Established	660101
Unique ID	Q000628

The data in a **MeSH Qualifier (subheading) record** includes:

- Subheading: The name of the qualifier,e.g., therapy
- Record Type: Q for qualifiers.
- Entry Version: Another way of entering this term for indexers, e.g., THER
- Abbreviation: A short form for this term, e.g., TH
- Scope Note: Instructions to the indexers and catalogers about the use of this term.
- Annotation: Description of what the use of this term implies. Includes when not to use the term.
- Online Note: Information helpful for searchers
- History Note: The year, e.g., 66; the subheading was introduced along with changes over time.
- Entry Term: Synonyms for use
- Date of Entry: The date (YYMMDD) the record was added to the system.
- Revision Date: The date (YYMMDD) of the last major revision to this record.
- Date Established: The date (YYMMDD) the qualifier was established.
- Unique ID: A unique number assigned for internal use. Qualifier UIs start with the letter Q, e.g., Q000628.

Use the **Return to Entry Page** link to go back to the Browser's initial screen.

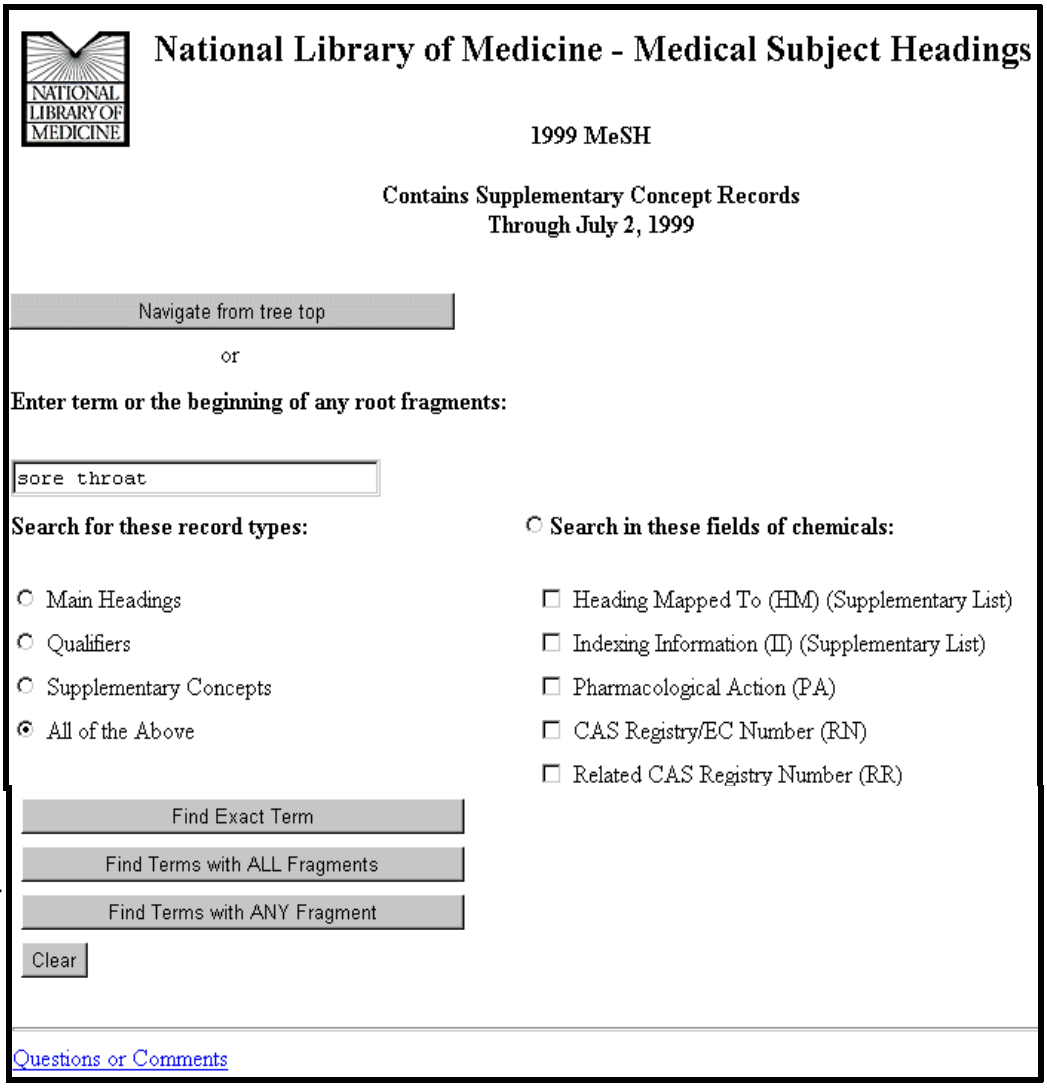
Take Note:

Enter a specific term

Enter term here.

Choose a record type OR use the default, "All of the Above."

Click on one of these buttons to begin browsing.



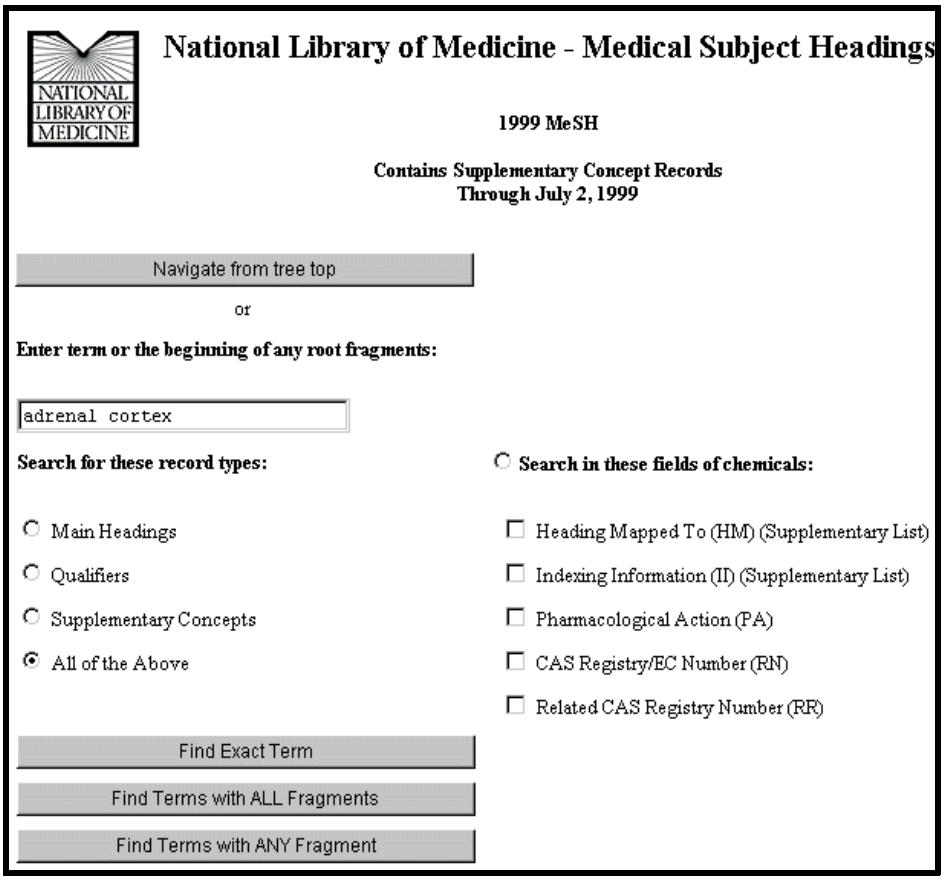
Find Buttons

Find Exact Term button

- Enter “adrenal cortex” and click on the Find Exact Term button.

Enter term here.

*Click the **Find Exact Term** button.*



The MeSH Browser will look for an exact match with a MeSH term:

National Library of Medicine - Medical Subject Headings

1999 MeSH

MeSH Descriptor Data

Return to Entry Page

MeSH Heading	Adrenal Cortex
Record Type	D
Entry Term	Adrenal Cortex Effects
Tree Number	A06.407.071.140
Allowable Qualifiers	AB AH BS CH CY DE EM EN GD IM IN IR ME MI PA PH PP PS RA RE RI SE SU TR UL US VI
Annotation	PITUITARY-ADRENAL SYSTEM is available; also available are the 3 zonae of the cortex: ZONA GLOMERULOSA (outer), ZONA FASCICULATA (middle) & ZONA RETICULARIS (inner)
Previous Indexing	Adrenal Glands (66-74)
Scope Note	The outer layer of the adrenal gland. It secretes mineralocorticoids, androgens, and glucocorticoids.
Online Note	search ADRENAL GLANDS 1966-74
History Note	78(75)63-67; was see under ADRENAL GLANDS 1968-77
Unique ID	D000302

MeSH Tree Structures

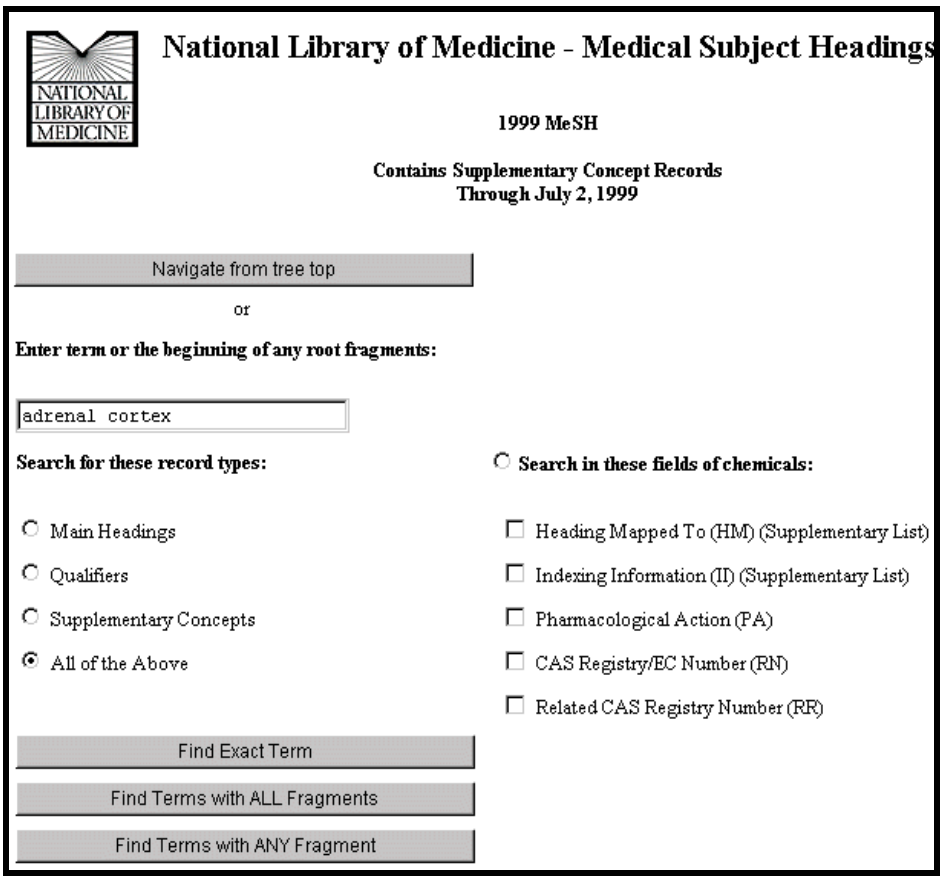
Endocrine System [A06]
- Endocrine Glands [A06.407]
  - Adrenal Glands [A06.407.071]
    - ▶ Adrenal Cortex [A06.407.071.140]
      - Zona Fasciculata [A06.407.071.140.950]
      - Zona Glomerulosa [A06.407.071.140.960]
      - Zona Reticularis [A06.407.071.140.970]
    - Adrenal Medulla [A06.407.071.265]

Find Terms with ALL Fragments button

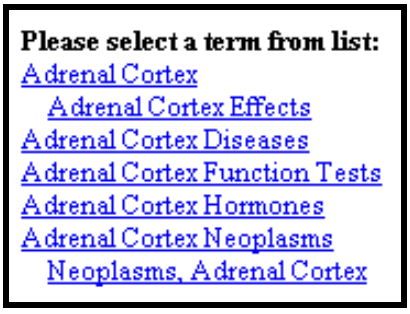
- Enter “adrenal cortex” and click on the Find Terms with ALL Fragments button:

Enter term here.

*Click the **Find Terms with ALL Fragments** button.*



The Browser will show you terms that contain ***all*** the words or word-fragments you entered:

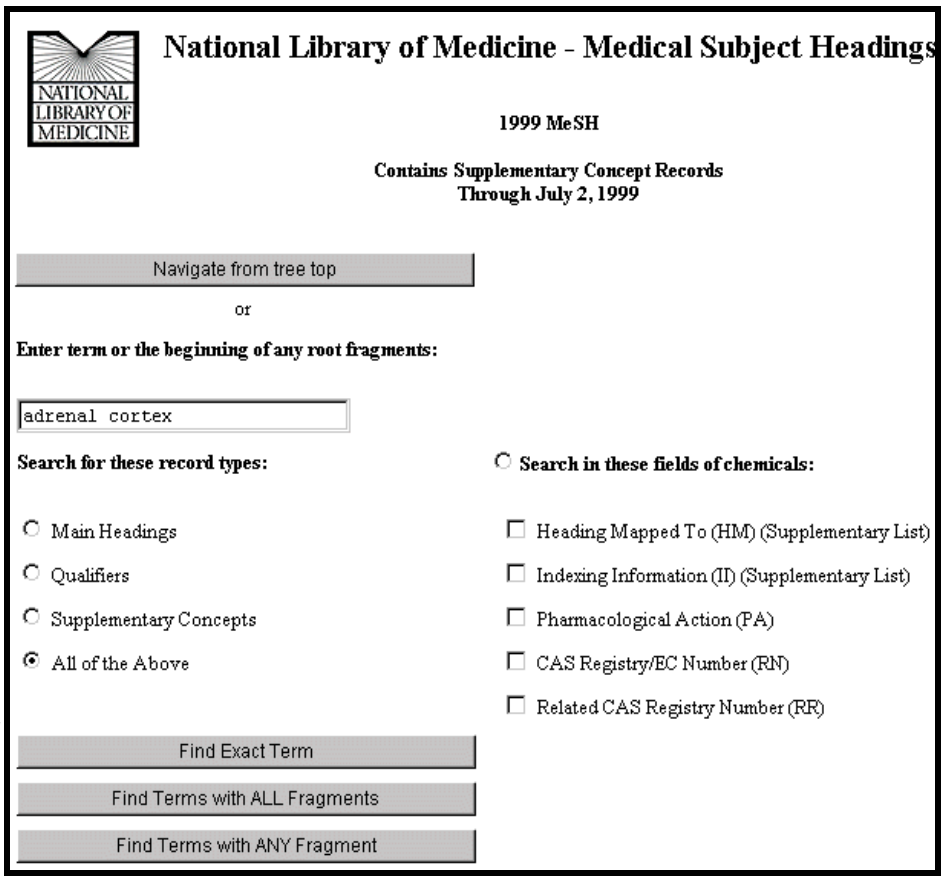


Find Terms with ANY Fragment button

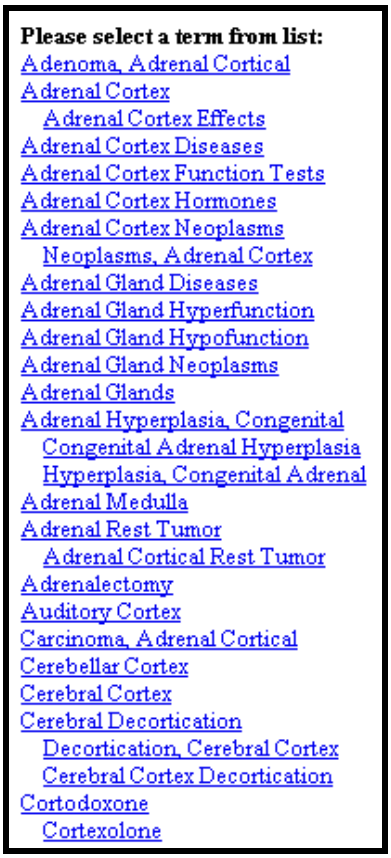
- Enter “adrenal cortex” and click on Find Terms with ANY Fragment button:

Enter term here.

*Click the **Find Terms with ANY Fragments** button.*

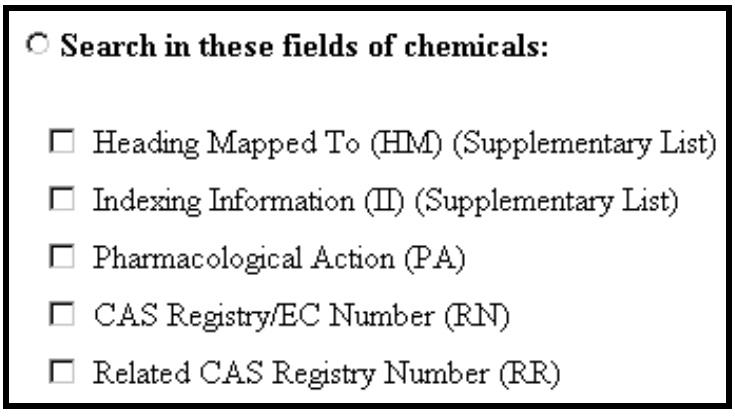


The Browser will show you terms that contain any of the words or word fragments:



Supplementary Concepts

- When searching Supplementary Concepts, you can search specific fields:



Practice Exercises

1. Use the MeSH Browser to find the answers to these questions:

   a. Can you use the term "Hypertension" to describe high pressure in the eye? What phrase of the Annotation explains this?

   b. How far back can you search with the MeSH term, "Recombinant DNA?"

   c. What ages are included by the term, "Child, Preschool?"

   d. What is the preferred MeSH term for "drooling?"

2. Pretend you are a MeSH Indexer. Use the MeSH Browser and select MeSH terms that address these titles of articles listed below. When possible include an appropriate subheading (see list of subheadings p. B13).

   a. Causes of Adult-Onset Diabetes

   b. Management of Breast Cancer

   c. The nursing care of Hemophiliacs

   d. Treating Depression with Prozac (Fluoxetine)

   e. Brain Toxicity from Zinc

Suggested Answers:

1. Use the MeSH Browser to find the answers to these questions:

   a. Can you use the term "Hypertension" to describe high pressure in the eye? What phrase of the Annotation explains this?

      No. "not for intracranial or intraocular pressure"

   b. How far back can you search with the MeSH term, "Recombinant DNA?"

      1977

   c. What ages are included by the term, "Child, Preschool?"

      A child between the ages of 2 and 5.

   d. What is the preferred MeSH term for "drooling?

      Sialorrhea

2. Pretend you are a MeSH Indexer. Use the MeSH Browser and select MeSH terms that address these titles of articles listed below. When possible include an appropriate subheading (see list of subheadings p. B-7).

   a. Causes of Adult-Onset Diabetes

      Diabetes Mellitus, Non-Insulin-Dependent/etiology

   b. Management of Breast Cancer

      Breast Neoplasms/therapy

   c. The nursing care of Hemophiliacs

      Hemophilia A/nursing

   d. Treating Depression with Prozac (Fluoxetine)

      Depression/drug therapy
      Fluoxetine/therapeutic use

   e. Brain Toxicity from Zinc
      Brain/drug effects
      Zinc/toxicity

Boolean Logic

Boolean logic is a system of logic that symbolically represents relationships between entities.

Boolean Operators are:

AND
OR
NOT

Logical Operator **AND**:

- Used to retrieve a set in which each citation contains all search terms
- Each term is combined with the others by the **AND** operator
- Use **AND** when you want articles on the intersection of multiple terms

Example: **salmonella AND hamburger**

Logical Operator **OR:**

- Used to retrieve a set in which each citation contains at least one of the search terms.
- Each term is combined with others by the **OR** operator.
- Use **OR** when you want to pull together articles on similar topics.

Example: **football OR hockey OR soccer**

Logical Operator **NOT**

- Retrieves a set from which citations to articles containing specified search terms following the **NOT** have been excluded.
- Use **NOT** when you want to exclude citations to articles about a certain topic.
- Use the **NOT** operator with caution; you might eliminate relevant articles

Example: **arthritis NOT letter**

N O T E S

Boolean Operators Exercise

Construct search statements for each of the requests below using the appropriate Boolean operators and the controlled vocabulary terms given.

Vocabulary:
Letter
Elbow
Esophagus
Eyebrow
Hypertension
Satcher D
Varmus H

1. You are looking for information on the eyebrow, elbow or esophagus.

2. Find the articles co-authored by Harold Varmus and David Satcher.

3. We want articles about hypertension but exclude letters to the editor.

Suggested Answers

1. You are looking for information on the eyebrow, elbow or esophagus.

eyebrow OR elbow OR esophagus

2. Find the articles co-authored by Harold Varmus and David Satcher.

varmus h AND satcher d

3. We want articles about hypertension but exclude letters to the editor.

hypertension NOT letter