



# Information Search 1: MEDLINE

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# Workshop Objectives

- Literature Review
- Search Strategy
- Information Resources
- Medline Database

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# LR Research Purposes

- To confirm that it is a new research.
- To provide a **context**.

## Proposal

Introduction  
Problem Orientation

## Final Report

Introduction, Discussion

Original Article

Review Article

Book

# Importance of Literature Review

- Explain the **methods** of previous studies
- Explain the **tools** of previous researches
- Reveal the **results** of previous researches
- Expose any **deficiencies** in previous studies

# Stages of Literature Review

## 1. Problem formulation

To identify the general topic, its equivalent and components for designing appropriate search strategy

## 2. Literature search

Finding information materials relevant to the subject area

## 3. Data evaluation

Determining the literature of significant contribution to the topic

## 4. Analysis & interpretation

Discussing the findings and conclusions of pertinent literature and write it as a chapter, a section or even a full paper

# How to refer to the used Literature?

- International Committee of Medical Journal Editors ([www.icmje.org](http://www.icmje.org))
- Uniform Requirements for Manuscripts Submitted to Biomedical Journals ([www.nlm.nih.gov/bsd/uniform\\_requirements.html](http://www.nlm.nih.gov/bsd/uniform_requirements.html))
- Vancouver, Harvard, APA, ...

# How to plan the best search strategy

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**Expand Your Search**

**Limit Your Search**

**Refine Your Search**

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موسسه سنجش و اندازه‌گیری  
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تهران

# Search Techniques

- Operators
- Symbols
- Help section

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# Boolean Logics

Shaded areas indicate retrieval



Search Statement

stress **AND** anxiety

Types of records retrieved

Documents that have **both** stress **AND** anxiety



stress **OR** anxiety

Documents that have **either** stress **OR** anxiety



stress **NOT** anxiety


Documents that have stress **but NOT** anxiety

# Truncation

- \* An aster allows you to search by a root word.
  - Child\* will retrieve children, childhood, childlike
  - Behav\* will retrieve behave, behavioral, behaviour, etc.

# Wildcard

- ? A question mark replaces a character anywhere in a word, except the first character.
- Example: to search for both woman and women simultaneously, you could enter Wom?n

- 
1. Think about your search topic by asking:  
What do I want to do?
  1. Pick the right Information Resources according to the extent of search.
  2. Analyze your topic to specific keywords and phrases.
  3. Apply synonyms, equivalents, variant spellings or endings, truncation to your initial keywords.
  4. Use appropriate logic operators.

# Example

روشهای تشخیص لوکمی در کودکان مبتلا به سندرم داون

روشهای تشخیص لوکمی در کودکان مبتلا به سندرم داون

(leukemia OR “blood cancer” OR “hematological disorders” OR “blood dyscrasia”) AND (“down syndrome” OR “21 trisomy”) AND child\* AND diagnosis

# Information Resources

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# What kind of Information

- specialized information
- valid information
- related information
- updated information
- exact information

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# Information Resources

## ■ National Resources

[www.iranmedex.com](http://www.iranmedex.com)

[www.magiran.com](http://www.magiran.com)

[www.irandoc.ac.ir](http://www.irandoc.ac.ir)

[www.srlst.com](http://www.srlst.com)

[www.medlib.ir](http://www.medlib.ir)

[www.sid.ir](http://www.sid.ir)

## ■ International Resources

[www.pubmed.com](http://www.pubmed.com)

# Information Resources

- Books & Booklets
- Journals & Articles
- Dissertations & Thesis
- Congress Proceedings
- Databases & Indexes

# Information Database

- A collection of information organized in such a way that a computer program can quickly select desired pieces of data.
- Traditional databases are organized by *files, records, fields*.

# Information Database

In an information database:

- a **field** is a single piece of information;
- a **record** is one complete set of fields;
- and a **file** is a collection of records.

# Database

**Record**

field

field

field

**Record**

field

field

field

**Record**

field

field

field

# Example

- A **telephone book** is a **file**,
- It contains a combination of **records**,
- Each of which consists of three **fields** e.g. name, address, telephone number
- Each one include a set of **character** including letter, number, symbol

# Database Structure

- Database

- File

- Record

- Field

- Character

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# General Database (Comprehensive Database)

- Medical Sciences

Medline, Embase

- All Sciences

ISI Web of Science, Scopus

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# Specialized Database

## (Subject Specified Database)

- Biological Abstracts
- International Pharmaceutical Abstract
- PsychInfo
- CINAHL
- Chemical Abstracts
- Agricola
- Econlite

# Bibliographic Database

A bibliographic databases is a collection of **bibliographic information**

- Medline
- Embase
- Chemical Abstracts
- Biological Abstracts

# Citation Database

A citation databases is a collection of both **bibliographic and citation information**

- Web of Science
- Scopus

# Search Tips

- Choose proper keywords
- Search in General Databases
- Search in Specialized Database
- Search in other web resources, Googling
- Retrieve proper abstracts
- Search in Electronic Journal Collections
- Retrieve proper Full texts

# Avoid Bias

- Fulltext Bias
- Language Bias
- Database Bias
- Publication Bias
- ...

# Publication Bias

A phenomenon in clinical literature in which positive results have a better chance of being

- published
- published earlier
- published in journals with higher IF
- cited

*Dubben HH, BMJ 2005;331:433 .*

# Publication Bias

- Conclusions exclusively based on published studies, can be misleading.
- They might be more widespread and more likely to have adverse consequences for patients than publication of deliberately falsified data.

*Dubben HH, BMJ 2005;331:433 .*



# Managing Publication Bias

- Thesis
- Research Reports
- Registries
- Grey Literature

# MEDLINE DATABASE

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# MEDLINE

- Dr. John Shaw Billings  
(1838-1913) US Army Surgeon  
general & First Director of the NLM
- Established Index Medicus in 1890
  - Author Index
  - Subject Index
- A National Library of Medicine (NLM)  
Product
- The most important bibliographic  
database in Medical sciences
- Backfiles to 1966.

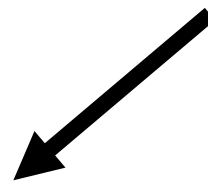
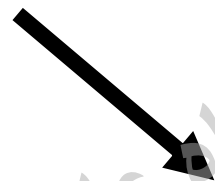


**Medical Literature  
Analysis And Retrieval  
System**

**MEDLARS**

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**MEDLARS ON LINE**



**MEDLINE**

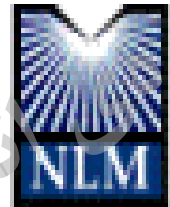
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# MEDLINE Fact Sheet

Producer	National Library of Medicine, Washington, DC.
Subjects	medicine, dentistry, nursing, preclinical sciences, health care systems, veterinary medicine
Size	+5500 journals indexed; +21 million references
Scope	Journals from 70 countries (>50% US)
Languages	+30
Abstracts	included for >75% of references; author-written
Coverage	1966 – present



National  
Library  
of Medicine



# PUBMED DATABASE

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# PubMed

- the free public interface to MEDLINE
- access to bibliographic information in MEDLINE and other life science journals
- back to the 1950s
- including **In-process citations** which provide a record for an article before it is indexed with MeSH and added to MEDLINE
- links to **full text articles**, **free PMC articles** and other **related citations**



# PubMed Structure

- Records

- Fields

- Titles (TI)
    - Authors (AU)
    - Language (LA)
    - Journal Title(JT)
    - Source (SO)
    - Medical Subjects Headings (MESH)
    - .....

# Access to PubMed

PubMed is available via **Entrez retrieval system**. It was developed by the **National Center for Biotechnology Information (NCBI)** at the **National Library of Medicine (NLM)** located at **National Institutes of Health (NIH)**.

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## PubMed

PubMed comprises more than 22 million citations for biomedical literature from MEDLINE, life science journals, and online books. Citations may include links to full-text content from PubMed Central and publisher web sites.

- ### Using PubMed
- [PubMed Quick Start Guide](#)
  - [Full Text Articles](#)
  - [PubMed FAQs](#)
  - [PubMed Tutorials](#)
  - [New and Noteworthy](#)

- ### PubMed Tools
- [PubMed Mobile](#)
  - [Single Citation Matcher](#)
  - [Batch Citation Matcher](#)
  - [Clinical Queries](#)
  - [Topic-Specific Queries](#)

- ### More Resources
- [MeSH Database](#)
  - [Journals in NCBI Databases](#)
  - [Clinical Trials](#)
  - [E-Utilities](#)
  - [LinkOut](#)

<http://www.ncbi.nlm.nih.gov/pubmed>  
<http://www.pubmed.com>

# Search in PubMed

- Basic Search
- Advanced Search
- MeSH Search

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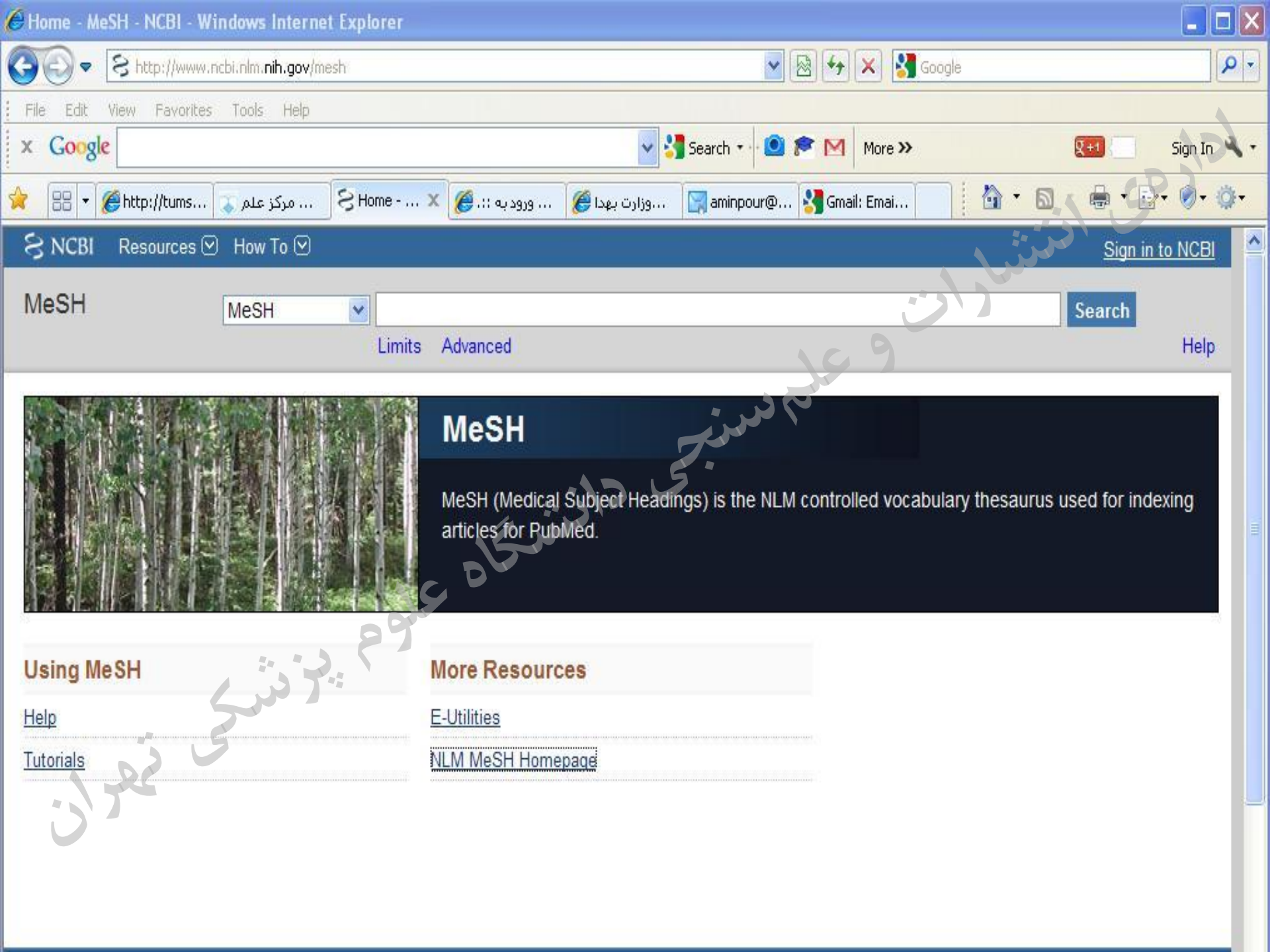
# مقالات در مورد شیوع سرطان مغز

Prevalence AND “Brain Cancer”

Prevalence AND “Brain Tumor”

Prevalence AND “Brain Neoplasm”

Prevalence AND (“Brain Cancer” OR “Brain Tumor” OR “Brain Neoplasm”)



MeSH

MeSH

Search

Limits Advanced

Help



# MeSH

MeSH (Medical Subject Headings) is the NLM controlled vocabulary thesaurus used for indexing articles for PubMed.

## Using MeSH

[Help](#)

[Tutorials](#)

## More Resources

[E-Utilities](#)

[NLM MeSH Homepage](#)

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# MeSH

MeSH (Medical Subject Headings) is the NLM controlled vocabulary thesaurus used for indexing articles for PubMed.

Subject → Keyword → MeSH

**M**edical **S**ubjects **H**eadings





**U.S. National Library of Medicine**  
National Institutes of Health

Contact NLM

The World's Largest Medical Library



Medical Subject Headings

[MeSH Home](#) | [About MeSH](#) | [MeSH Browser](#) | [MeSH Files](#) | [Staff](#) | [Suggestions](#)

Home > Library Catalogs and Services > MeSH



### MeSH Browser

- [Online searching](#) of MeSH vocabulary
- [About the MeSH Browser](#)
- [Suggestions](#) for authors' keywords



### All About MeSH

- [MeSH Fact Sheet](#)
- [Publications and presentations](#) by MeSH staff
- [Introduction to MeSH](#)
- [Information from Previous Years](#)
- [MeSH 50th Anniversary](#)



### MeSH Vocabulary Suggestions

- [MeSH vocabulary suggestions](#)



### What's New

**NEW!**

- [2013 MeSH Files Available](#)

### Related Efforts

- [Unified Medical Language System \(UMLS®\)](#)
- [NLM Classification](#)
- [RxNorm](#)
- [DailyMed](#)



# MeSH Categories

1. **Anatomy [A]**
2. **Organisms [B]**
3. **Diseases [C]**
4. **Chemicals and Drugs [D]**
5. **Analytical, Diagnostic and Therapeutic Techniques and Equipment [E]**
6. **Psychiatry and Psychology [F]**
7. **Phenomena and Processes [G]**
8. **Disciplines and Occupations [H]**

# MeSH Categories

9. **Anthropology, Education, Sociology and Social Phenomena [I]**
10. **Technology and Food and Beverages [J]**
11. **Humanities [K]**
12. **Information Science [L]**
13. **Persons category [M]**
14. **Health Care [N]**
15. **Publication Characteristics [V]**
16. **Geographicals [Z]**