

Practical Guide

Top Reliable Databases in Medical Sciences: A Practical Guide

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A B S T R A C T

In the rapidly expanding field of medical sciences, accessing accurate and up-to-date information is essential for clinicians, researchers, and students. This practical guide aims to identify the most reliable medical databases and provide strategies for effective information retrieval. Experts reviewed databases like PubMed, Cochrane Library, Embase, Scopus, Web of Science, Clinical Key, and UpToDate to see how trustworthy, broad, user-friendly, and frequently updated they are. The guide highlights the unique strengths and limitations of each database and offers practical tips for search optimisation. By equipping users with the knowledge to select and utilise the right databases, this guide supports evidence-based practice, academic research, and lifelong learning in medical education.

Keywords: Medical Databases, Evidence-Based Medicine, Information Retrieval, Pubmed, Cochrane, Medical Research, Clinical Decision-Making

Introduction

Searching for scientific resources in medical sciences is an important step in finding available information in a field of study, work, or research. Although students/physicians/researchers/etc. are studying, working or starting a project to discover a new topic, they still need to search for related texts to improve the scientific level, find new treatment options or develop research processes.¹ You can search for scientific information in the medical sciences field through articles, reports, books, and documents.

²On the other hand, the most relevant information may be scattered and impossible to search in each of them; hence, this paper provides the audience with a list of the top reliable databases for searching scientific resources in medical sciences for ease of access.

Bibliographic databases^{2,3}

Bibliographic databases enable people to scan large volumes of information quickly. There are databases in

both print and digital-online form that cover the field of biomedicine.

Printed copies

Index Medicus (US National Library of Medicine): The Medicus Concise Index was published by the National Library of Medicine from 1970 to 1997 and covered approximately 2,900 journals in the biomedical sciences, clinical medicine, psychology, and dentistry.

- **Excerpta Medica:** It offers 32 sections each year and covers a range of subjects in the fields of medicine and life sciences, including biochemistry, physiology, anatomy and, microbiology, as well as most clinical areas. Excerpta Medica is similar to Medicus Index; the difference is that Excerpta Medica is an article abstracting service while Medicus Print Index is an indexing service. The indexing service provides article "address" by citing journal and article title, volume, issue, year of publication, pages. But the service of

providing abstracts of articles, in addition to citation, also provides a summary of the content of the article.

Electronic copies

- **Cochrane Library:** It is the premier source for evidence-based information on the effectiveness of health care interventions. Cochrane compiles the data in collaboration with the NHS Review and Publishing Center and associated organizations. This electronic library includes the Cochrane Systematic Reviews Database (full text of completed reviews plus protocols for review in preparation) and Effectiveness Review Abstracts Database (abstracts from other systematic reviews).
- **EMBASE:** It is the electronic equivalent of printed *Excerpta Medica*, a bibliographic database developed by Elsevier Science in the Netherlands, and major source of literature on biomedical and pharmaceutical research. EMBASE provides comprehensive coverage of pharmacy and pharmacology, toxicology, clinical and experimental medicine, life sciences, biotechnology and medical engineering, health policy and management, public health, employment and environment, psychiatry and forensic sciences.
- **Global Health:** It is a bibliographic database produced by CABI that contains biochemistry and public health research resources from 1910 to 1983. This database has hundreds of thousands of abstracts from journals that are no longer published; As a result, it provides a historical context of international public health issues.
- **MEDLINE:** It is the electronic equivalent of the printed *Index Medicus*, a bibliographic database created by the US National Library of Medicine and the most widely used database for information retrieval in biomedicine and health. MEDLINE provides broad subject coverage with an emphasis on clinical medicine and biomedical research. It also covers dentistry, nursing, chemistry, pharmacology, biological and physical sciences, microbiology, nutrition, health care delivery, psychiatry and psychology, environmental health, social sciences and education. PubMed also acts as an online interface to MEDLINE.

Online databases^{3,4}

- **AIDS DRUGS:** deals with descriptive information about agents being tested in AIDS-related clinical trials.
- **AIDSLINE:** A bibliographic citation of literature published on AIDS since 1980.
- **AIDSTRIALS:** Contains detailed information on AIDS-related clinical trials.
- **AMED (alternative medicine):** An alternative medicine database for doctors, therapists, medical researchers and practitioners looking to learn more about alternative therapies - including complementary medicine, physical therapy, occupational therapy, rehabilitation, palliative care, and more.
- **APA PsycInfo:** It is an electronic bibliographic database providing abstracts and citations to the scholarly literature in the psychological, social, behavioral, and health sciences. The database includes material of relevance to psychologists and professionals in related fields such as psychiatry, management, business, education, social science, neuroscience, law, medicine, and social work.
- **AVLINE:** Contains bibliographic citations covering ethics and public policy issues in health care and biomedical research.
- **BioMed Central:** It is a large collection of scientific, technological and medical journals published by BioMed Central EMBASE: *Excerpta Medica*. It lists several thousand journals in the fields of health, medicine, and biomedical engineering, with selective coverage for nursing, dentistry, veterinary medicine, psychology, and alternative medicine.
- **BIOSIS Previews:** Life sciences and biomedical research covering pre-clinical and experimental research, methods and instrumentation, animal studies, and more.
- **CANCER LIT:** A bibliographic record of documents related to cancer.
- **CCRIS:** related to carcinogenesis, tumor progression and mutagenicity test results.
- **CHEMID:** A dictionary of compounds of regulatory and biomedical interest.
- **CHEMLINE:** Contains dictionary files related to chemistry.
- **Child Development & Adolescent Studies:** Produced by NISC, it is an up-to-date resource for referencing the current and historical literature on child growth and development up to age 21. Book reviews and abstracts from hundreds of journals and bibliographies index thousands of technical reports, books, book chapters, theses and dissertations related to the biomedical and social sciences worldwide.
- **CINAHL:** An essential tool for nursing research Covers nursing, public health, alternative/complementary medicine, health science librarianship, and 17 allied health disciplines.
- **CLINICAL ALERT:** Significant findings from the National Institutes of Health and clinical trials that can affect morbidity and mortality are published in it.
- **DART:** Contains resources on biological, chemical, and physical factors that may cause birth defects.
- **DBIR:** A multi-component database of information on a wide range of biotechnology-related resources.
- **DENTALPROJ:** Contains a database of ongoing dental research projects.

- **Dentistry & Oral Sciences:** Source is a special database for dentistry and oral health. The diverse and unique resources available in this database include many magazines and publications in the field of dentistry, which are available to users in full text.
- **DIRLINE:** A directory of information sources including organizations, research, resources, project databases, and electronic bulletin boards related to health and biomedicine.
- **DOCLINE:** Refers to the online document request and reference network of the National Library of Medicine.
- **Elsevier:** Its products include scientific journals, Science Direct e-journal collection, news and current opinions in the form of publications and online citation databases named Scopus, Solution and Clinical Key for physicians. It publishes more than 430,000 articles annually in 2,500 journals. Its archives contain more than 13 million documents and writings and 30 thousand e-books.
- **EMICBACK:** Database contains citations to publications related to chemical, biological and physical agents that have been tested for genotoxic activity.
- **ETICBACK:** A bibliographic database containing citations to literature on factors that may cause birth defects.
- **GENE-TOX:** A database of chemicals that have been tested for mutagenicity.
- **GIDEON:** It is an evidence-based resource in the field of diagnosis, treatment and education of tropical and infectious diseases as well as their prevalence and microbiology. This database can be used to diagnose, treat and track information on more than 350 infectious diseases worldwide.
- **Google Scholar:** Google's search engine can be used to find articles from a wide range of academic publishers, professional associations, preprint repositories and universities, as well as scholarly articles published on the "open" web.
- **Histline:** deals with citations in the history of medicine and related sciences, specialists, people, drugs and periodical diseases, and geographical areas.
- **HSDB:** Contains toxicological information related to the environment, emergency situations, and regulatory affairs.
- **HStar:** A citation database of health services research resources.
- **International Pharmaceutical Abstracts:** This contains indexes and summaries of pharmaceutical and medical journals around the world. This database covers all spectrums of information related to pharmaceuticals and drug therapy.
- **IRIS:** A database of potentially toxic chemicals.
- **Isabel:** It is used by doctors around the world to aid in differential diagnoses. By entering the usual information of a treatment session, doctors can access a list of possible diagnoses and can use them to reach a correct final diagnosis.
- **MEDLINE:** This database provides access to top-tier biomedical and health journals. Covering a wide range of subjects, it is an essential resource for doctors, nurses, health professionals and researchers engaged in clinical care, public health and health policy development. It includes full-text access to over 2,300 journal titles. Accumulated Medicus Index citations prior to 1966 are also included.
- **Nursing Reference Center Plus:** is a special database for nurses that nurses can get the best skills in their work through this database that provides the main nursing resources and evidence-based information in this field.
- **Ovid MEDLINE:** This database contains more than 38 million references to biomedical and life sciences literature. The primary component of Ovid MEDLINE is MEDLINE. In addition to MEDLINE content, Ovid MEDLINE includes citations that are being processed for MEDLINE, citations that are out-of-scope from MEDLINE journals, "ahead of print" citations that precede the article's final publication in a MEDLINE journal, and more.
- **PDQ:** It is a medical data query system designed to assist physicians in treating cancer patients.
- **Popline:** Cites global texts on population and family planning.
- **PsycINFO:** Created by the American Psychological Association (APA), this database contains millions of abstracts, citations, and summaries of journal articles, book chapters, books, and theses dating back to the 1600s.
- **PubMed:** It is a free literature database that contains more than 38 million references to biomedical and life sciences literature. The primary component of PubMed is MEDLINE, which is produced by the National Library of Medicine in the U.S. and contains more than 31 million references from over 5,200 scholarly journals published around the world.
- **Rehabilitation & Sports Medicine Source:** It is a sports medicine database. The resources available in this database include rehabilitation and medical journals, which include topics such as orthopedics, physiology, physiotherapy, nutrition, and many other issues in this field.
- **Rtcs:** contains toxicity information for approximately 95,400 substances.
- **Scientific & Medical ART Image base:** It is suitable for students and instructors of anatomy, physiology, biology and other life sciences and has a growing collection of over 24,000 quality images and animations on anatomy, physiology, surgery, pathology, diseases,

trauma Embryology, histology and other medical subjects.

- **Scopus:** It is an abstract and citation database of reviewed literature in the fields of science, mathematics, engineering, technology, health and medicine, social sciences, and arts and humanities.
- **Serline:** A serial bibliographic record related to biomedical issues.
- **Sequences Databases:** Contains information about genes, DNA, protein subsets, and nucleotide sequence databases.
- **SPORTDiscus:** It provides full-text content from many of the most prestigious journals in sports studies and sports medicine. Subject coverage includes fitness, health and sports studies.
- **Toxline:** A collection of resource information related to toxicity studies including carcinogenicity and environmental pollution.
- **Toxlit:** Contains resource information on toxicological, pharmacological, biochemical and physiological effects of drugs and other chemicals.
- **Toxnet:** It is a computerized system of toxicology databases.
- **TRI:** This is a collection of non-bibliographic database of annual releases of toxic chemicals to the environment and the amount of their transport to disposal sites.
- **Trifacts:** Contains factual information about health, environmental effects, safety and handling of most TRI-listed chemicals.
- **Up to Date:** It is an electronic data source, which presents detailed information about patient care and clinical cases (clinical symptoms, laboratory methods, and diagnosis and treatment of diseases). Every year, more than 80 million patient cases are evaluated by the research teams of Up to Date. In addition, data on the database is updated every four months.
- **ViDAL Consult:** It improves patient safety by making the most complete drug information available. Users of this database can quickly access the information of a medicine by using this resource; also, by knowing the risks of drugs for patients, they can make the best decisions when prescribing.
- **Web of Science:** It indexes thousands of high-quality, peer-reviewed journals and provides complete bibliographic data, full abstracts, and links to references and cited articles.

United Nations databases⁵

- **Unicef:** This site contains a database containing indicators of the latest version of science development in different nations of the world.
- **Unfpa:** The State of World Population, since 1997 is available for download from this site.
- **UNAIDS:** Some potentially useful quantitative facts can

be found in figures and trends related to HIV/AIDS, as well as HIV epidemiology, by region.

- **UN Department of Humanitarian Affairs:** This database provides access to the financial tracking database in Lotus format, which uses a 14-point system to track humanitarian aid from donors globally, by country and year.
- **UNDP:** The United Nations Development Program is a United Nations agency tasked with helping countries eliminate poverty and achieve sustainable economic growth and human development. It emphasizes on developing local capacity towards long-term self-sufficiency and prosperity.
- **FAO:** In this site, chronological and online data on production, trade, food balance, food aid shipments, fertilizers and pesticides, land use and irrigation, forest products, fishery products, population and cars. Agricultural tools are found in it.
- **WHO:** The World Health Organization provides a wealth of information over the Internet, including a very user-friendly PHN database called WHOSIS (WHO Statistical Information System), which contains databases on global indicators of health for all. It is organized by region and country and includes sources, indicator definitions, trends and reference years.

Attention

Apart from the databases provided, there are many other resources available on the Internet, which are increasing rapidly every day. But the question will always be there, can they be trusted as reliable scientific sources? It is difficult to answer this question because if the audience wants to use these sources, they must have high skills in evaluating the quality of information.

Conclusion

As time passes, the ability of medical science databases to collect and connect data increases rapidly. These databases are capable of collecting, storing, and analyzing high-volume, diverse data to provide more useful information for audience use. Therefore, these databases are a powerful and essential tool for storing, organizing, and retrieving data related to medical sciences, and their use can bring many advantages, including organization, ease of access, updating, and easy sharing through the Internet. Although searching for sources publicly on the Internet has made this process very easy for the audience, it is certainly not wise to limit the search to every source that becomes available. Therefore, in order to access reliable scientific resources in medical sciences, it is necessary for the audience to conduct their search only in reliable databases and not limit it to a few internet pages or databases that do not have certain credibility.

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