Training materials – for participants

Training: "Advanced search and verification of medical information"

The training was conducted by: infobrokerska.pl

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1. **Information retrieval strategy:**

   Notes worth considering when searching for information:

   1. Setting search goals:
      1. definition of guidelines
   2. Keyword determination
      1. Well-chosen keywords are 80% of search success!
      2. Keywords can be:
         1. One-word terms, e.g. overweight;
         2. Two-word terms, e.g. childhood illnesses;
         3. Three-word terms, e.g. Body Mass Index;
         4. Four-word terms, e.g. numerical methods of nonlinear equations.
   3. Specify the territorial and time range of the search
      1. **Coverage**: Poland
      2. **Range**: up to 5 years back
   3. Determination of starting points:
      1. www.google.pl
      2. www.duckduckgo.com
      3. NFZ
      4. Eurostat
      5. WHO
   6. Gathering of information
   7. Evaluation of information

2. How to become a Google ninja?

Google Search Category Lists:

- o Google Advanced Search: [LINK](#)
- o Google Scholar Search: [LINK](#)
- o Google Book Search: [LINK](#)
- o Google Patents Search: [LINK](#)
- o Google Dataset Search: [LINK](#)

With the help of the following advanced search operators (symbols, words) we can increase the precision of search results. The following infographic was prepared by INFOBROKERSKA.PL indicates several useful operators for advanced search:

BECOME A GOOGLE NINJA

quotation mark

" "

use whenever you want to search for the whole phrase or when the word order is important to you

minus

-

use when you want to eliminate a word from the set you are looking for

OR

OR

allows you to search for one or the other keyword

two dots

..

allow you to limit the number range of e.g. dates or amounts

asterisk

*

is used to find the missing word, it replaces the word in the searched phrase

site:

site:

thanks to this command you can search for any word in a specific webpage

filetype:

filetype:

is a command to limit the search results to a specific file, e.g. pdf, doc, xls, ppt

inurl:

inurl:

is a command to limit the search results to a specific file, e.g. pdf, doc, xls, ppt

link:

link:

command to find links hidden under the searched word

intitle:

intitle:

allows you to search for a word in the title of a web page

Figure 1 The graphic was created based on the materials provided by infobrokerska.pl

3. ALTERNATIVE SEARCH ENGINES

A. HORIZONTAL / UNIVERSAL - General thematic search engines:
a. https://www.bing.com
b. https://yandex.com
c. https://duckduckgo.com
d. https://www.lycos.com
e. https://www.gigablast.com

B. VERTICAL / SPECIALIZED - Search engines dedicated to a specific field or a specific type of network resources:
a. Video
b. graphics
c. FTP files
d. scientific resources
e. Business
f. devices connected to the network
g. Patents
h. Books
i. People

Examples of scientific resource search engines:

I. MICROSOFT ACADEMIC LINK
II. JURN LINK
III. FREE FULL PDF - LINK
IV. WOLFRAM ALPHA- LINK

4. **RESOURCES - DEEP WEEB:**

- o Medical documents
- o Legislation
- o Scientific reports
- o Pages with paid access
- o Statistics
- o Primary research data
- o Database
- o Financial documents
- o Government Resources
- o Social Media
- o Intranet

SCIENTIFIC BASE	LINK	DESCRIPTION
WORLDWIDESCIENCE.ORG	LINK	global scientific search engine
BASE	LINK	Enables advanced search Content providers are indexed
MEDNAR	LINK	provides a comprehensive search of many verified sources of medical information
EUROSTAT	LINK	It provides high-quality statistics and data on Europe.
WORLD HEALTH ORGANIZATION:	Main base: LINK Regional databases, e.g. for Europe: LINK	The WHO resources are an excellent example of the specific information architecture in the resources of UN institutions.

5. **OPEN DATA**

A. **EUROPEAN DATA PORTAL - LINK**
   - o Official European data portal by sector

BAZY NAUKOWE - OPEN ACCESS I KOMERCYJNE

SCIENTIFIC BASE	LINK	DESCRIPTION
OPEN ACCESS JOURNALS SEARCH ENGINE (OAJSE)	LINK	Allows you to search for English-language publications from various fields around the world
DIRECTORY OF OPEN ACCESS JOURNALS (DOAJ)	LINK	the independent database contains more than 16,500 peer-reviewed open access journals from all fields of science, technology, medicine, social sciences, arts, and humanities.
OPEN DOAR	LINK	Provides free, open access to academic results and resources
OPEN ACCESS OXFORD ACADEMIC	LINK	is guided by the mission of supporting the wide dissemination of high-quality academic research
OPEN AIRE	LINK	ensuring unrestricted, barrier-free, open access to publicly funded research results in Europe
SCIENCEDIRECT.COM	LINK	Contains a collection of publications in the field of physical sciences and engineering
LINICALKEY.COM	LINK	The publications concern the field of natural, medical, and exact sciences.
PUBMED	LINK	a free resource to support the search and retrieval of biomedical and life sciences literature to improve health – both globally and personally.
EMBASE	LINK	unique database of medical literature,
COCHRANE LIBRARY	LINK	is a collection of databases that contain various types of high-quality, independent evidence that aid in health care decision-making.
PLOSONE	LINK	Publications concern almost all fields of science.
TRIP	LINK	Search engine for clinical trials and guidelines for good practices with categorization by a pyramid of evidence levels
PEDRO		Search engine for clinical trials and guidelines for good practices in the field of physiotherapy
MESH	LINK	Term finder in MeSH trees
OPEN SCIENCE COALITION	LINK	Open educational, scientific, and cultural resources
POLISH MEDICAL BIBLIOGRAPHY	LINK	It registers Polish scientific, clinical and professional literature in the field of medicine and related sciences, health care organizations, as well as popular in the field of health education.[1]
POLISH SCIENTIFIC BIBLIOGRAPHY	LINK	Polish Scientific Bibliography is a portal of the Ministry of Education and Science collecting information about publications of Polish scientists, publishing achievements of scientific units, and about Polish and foreign journals[2]

6. VERIFICATION OF INFORMATION AND SCIENTIFIC EVIDENCE

EVIDENCE BASE MEDICINE - Evidence-based medicine or evidence-based medicine. It supports doctors by allowing precise and accurate use of available scientific evidence in everyday clinical practice.

EBM – steps:

1. Formulate a rational question that can be answered using the available information resources.
2. Find the best available evidence relating to your research results.
3. Critically evaluate the evidence and verify its quality.
4. Apply the evidence according to your knowledge and respect for the patient's values.
5. Evaluate the effectiveness and efficiency of the treatment process - repeat and improve.

Figure 2 The EMB evidence pyramid - the graphic was created based on the materials provided by infobrokerska.pl