Getting the best research literature for your search.

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Contents:

- Levels of literacy.
- How to formulate a search strategy.
- Tools that one can use to refine your search.
- Know your databases.
- Introduction to Research4Life.
- Example of using HINARI and PubMed.
Hierarchy of Literacy

- Alphabetic literacy – writing name
- Functional literacy – reading and writing
- Social literacy – communication in a cultural context
- Information literacy – critical location, evaluation and use of information
- Digital information literacy – application of information literacy in the digital environment (*includes online collaboration skills)

Searching and not getting the right results?

Many researchers find it hard to find the right results for their literature searches. This could be due to:

- Suggest lack of planning
- Insufficient understanding / grasp of information landscape
- I get too many results (terms too broad?)
- I get too little results (terms too narrow?)
- The phrase I searched for doesn’t appear
- Synonyms
  - e.g. Agricultural management, environmental degradation
- Plural/singular forms
  - e.g. River, rivers
- Spelling variations
  - e.g. UK versus US
  - e.g. Bourne, borne, born; diarrhea, diarrhoea
- A word exists as variants of a root word
  - e.g. Environment, environmental, pollution, pollutants
Formulating a Search Strategy

- Before you begin your search, you must:
  1. Understand & define your information need
  2. Map the information landscape
     - Plot terms associated with the domain / sub-topics
     - Identify gaps in your knowledge
Various methods:
- Mind Maps
- Concept Clustering
- Tree Structures

These help to:
- Define focus of attention / approach (i.e. theoretical framework)
- Plot broad subject / subject terms
Example of Mind Map

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## Concept Clustering

<table>
<thead>
<tr>
<th>Concept 1</th>
<th>Concept 2</th>
<th>Concept 3</th>
<th>Concept 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antony</td>
<td>Cleopatra</td>
<td>Shakespeare, Shakespearean</td>
<td>power, politics, political, politician, rome, roman</td>
</tr>
</tbody>
</table>

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- Health implications
  - Illness
  - Diseases
    - Water-borne disease
    - Cholera

- Water pollution
  - Water
    - Rivers
  - Water sanitation

- Kenya
  - East Africa
  - Sub-Saharan Africa
Tools to refine searches.

- These are some of the tools that help in refining your search:
  - **Boolean Operators**
    - AND, OR, NOT (+,-).
  - **Truncation/Wild Cards**
    - Politic*, Organisation*.
  - **Phrase searching**
    - “Fee structure”
  - **Proximity**
    - Fee (NEAR5) structure.
  - (*Know your controlled vocabulary)
Subject Specialized Databases

- Do you know your subject database?
- Database versus portal?
- Database versus website?
- Database versus search engine?
- Database versus citation index?
- Database versus content management system?
Introduction to Research4Life
http://www.research4life.org

- Research4Life (R4L) is the collective name for four programmes: HINARI, AGORA, OARE and ARDI that provides developing countries with free or low cost access to academic and professional peer-reviewed content online.

- R4L is a public-private partnership of the World Health Organization, Food and Agriculture Organization of the United Nations, United Nations Environment Programme, Cornell and Yale Universities and the International Association of Scientific, Technical and Medical Publishers – STM. Working along with technology partners as Microsoft Corporation, Serial Solutions and others.
Who is Eligible for R4L Programmes?

Countries, areas and territories eligible for Research4Life

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization
Map Production: Health Statistics and Information Systems (HSI)
World Health Organization
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Eligibility for R4L programmes

- Country eligibility is based on four factors: Total GNI (World Bank figures), GNI per capita (World Bank figures), United Nations Least Developed Country (LDCs) List and Human Development Index (HDI). Detailed information: http://www.research4life.org/institutions/criteria/

- If your institution is in a Group A (free access) country, area, or territory, then access is free.

- If your institution is in a Group B (low-cost access) country, area, or territory, access to the Research4Life programmes costs US$ 1500 per institution per calendar year (from January through December).

- More than 100 countries, areas, and territories are eligible.
Eligible categories of institutions are:

- national universities
- research institutes
- professional schools (medicine, nursing, pharmacy, public health, dentistry)
- teaching hospitals
- government: ministries and agencies
- national medical libraries
- locally based non-governmental agencies

All permanent staff members, students and visiting faculty are entitled to access and can obtain the institutional User Name and Password.
Using PubMed via HINARI
Before logging into the Partner Publisher services websites, we will Login to the HINARI site using the URL http://www.who.int/hinari/
Once you are logged in to the HINARI Content page, access PubMed by clicking on Search inside HINARI full-text using PubMed.
Remember to access PubMed through HINARI or you will not have access to the full-text articles.
The Search box on PubMed is active. Place your search statement in the box.

In this example, we will enter a search for *malaria infections AND africa* into the Search or query box. To execute the query, click on the Search button.
Results of the search are displayed in the main body of the page in Summary Format, 20 per page and Sort by Most Recent options. This is the default setting when you complete a search.

Note the two additional filters for Free Full Text and HINARI articles. These have been created for the HINARI/PubMed searches.

Of the 5483 articles, 2499 are available via the HINARI filter and 2645 with Free full text filter (there are some overlaps).
Note the useful options in the right column of the PubMed search results:

Sort by **Relevance** option

Results by year graph

Titles with your search terms listing

Free full-text articles in PubMed Central (a U.S. National Institute of Health repository)

See next slide for **Search details box**.
Highlighted are the Search details that include all fields (keyword) for malaria, infection, infections and africa AND MeSH (Medical Subject Headings) Terms for malaria, infection and africa.

The MeSH Terms are assigned by indexers of the National Library of Medicine.
Note the additional hypertext link for Free Article and Free PMC Article. By clicking on this link, you will be redirected to the Abstract display and be able to access the full text.

Also note the bolded terms of the search – malaria, infections and Africa.
If you click on the Free Article or Free PMC Article hyperlinks, you are redirected to the Abstract Format. Click on the Full text links to the publisher's website and the full text article.
Epidemiology of coinfection with soil transmitted helminths and *Plasmodium falciparum* among school children in Bumula District in western Kenya

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Abstract (provisional)

Background Many school children living in Africa are infected with plasmodia and helminth species and are consequently at risk of coinfection. However, the epidemiology of such coinfection and the implications for coinfection for children's health remain poorly understood. This study describes the epidemiology of *Ascaris lumbricoides*-Plasmodium and hookworm-Plasmodium coinfection among school children living in western Kenya and investigates the associated risk factors. Methods As part of a randomized trial, a baseline cross-sectional survey was conducted among school children aged 5–18 years in 23 schools in Bumula District. Single stool samples were collected to screen for helminth infections using the Kato-Katz technique and malaria parasitaemia was determined from a finger prick blood sample. Demographic and anthropometric data were also collected. Results Overall, 46.4% of school children were infected with helminths, and 24.6% had plasmodia infection. The prevalence of co-infection was 14.4%. The risk of co-infection was significantly higher in children aged 5–9 years (18.6%) compared to those aged 10–18 years (10.8%) (OR 2.1, 95% CI 1.2–3.7). Conclusion The study demonstrates that the prevalence of co-infection is high among school children living in western Kenya and that this is associated with an increased risk of morbidity.
We now will check the Abstract Format bullet from the drop down menu. We have retained the 20 per page and Sort by Most Recent options.
After clicking on the **Abstract Format**, a list of all articles appears including the HINARI and publisher’s icons and/or Free Full Text icons. By clicking on the HINARI icon or the publisher’s icon, the full-text article will display.

Note that some articles will have both the HINARI and Free Full Text icons in the Abstract Format.
PubMed enhanced the Abstract display. For ‘structured abstracts’, the key headings (INTRODUCTION/BACKGROUND, METHODS AND FINDINGS, RESULTS and/or, CONCLUSIONS and KEYWORDS) are listed at the beginning of each paragraph.
At the bottom of each citation, there is the **Similar articles** option. The results of this search is 101 articles with 56 Free Full Text and 38 HINARI articles.
Thank you for your attention.