

# Alternative resources

- Sometimes a general internet search is needed when other resources do not provide the needed answers
- Criteria used to determine the quality of online material
  - Is the source credible without promoting one particular treatment?
  - Is the information accurate and current?
  - Does the site link to other nonaffiliated sites that consistently provide good information?
  - Is the information appropriately detailed and referenced?
  - Is it possible to identify and contact the author?
- <https://medlineplus.gov/evaluatinghealthinformation.html>

# Search Engines

- Search engines are programs that search documents for specified keywords and return a list of the documents where the keywords were found.
- A *search engine* is a general class of programs, however, the term is often used to specifically describe systems like Google, Bing and Yahoo! Search that enable users to search for documents on the World Wide Web.

- Search engines are the key to finding specific information on the vast expanse of the World Wide Web. Without sophisticated search engines, it would be impossible to locate anything on the Web without knowing a specific URL.

# Drawbacks..

- Not 100% accurate or specific
- irrelevant pages
- Time consuming

# Why to evaluate online resources?

- On the Internet anyone can pose as an authority.
- There are no standards or controls on the accuracy of information available via the Internet.
- The Internet can be used by anyone as a sounding board for their thoughts and opinions

# Cont.

- Because of this variety, evaluation is essential. You need to find out if your resources are high-quality or not. Although all information needs to be evaluated, pay special attention to the information you find on websites

# 1. How did you find the page?

- Was it found via a search conducted through a search engine? Unlike library databases, the accuracy and/or quality of information located via a search engine will vary greatly.
- Was it recommended by a faculty member or another reliable source?
- Was it cited in a scholarly or credible source?
- Was it a link from a reputable site?

## 2. What is the site's domain?

- Decoding the URL:
- **.org** :An advocacy web site, such as a not-for-profit organization.
- **.edu** :A site affiliated with a higher education institution.
- **.gov**: A federal government site.



## 2. What is the site's domain?

In general websites maintained by governmental agencies (.gov) educational entities (.edu) or professional and nongovernmental organizations (.org) tend to provide higher-quality reliable and accurate health information

# Cont.

- **.com** : A business or commercial site.
- **.net**:A site from a network organization or an Internet service provider.;
- **.il.us** :A state government site, this may also include public schools and community colleges.
- **.uk** (United Kingdom) : A site originating in another country (as indicated by the 2 letter code).
- **~**:The tilde usually indicates a personal page.

# 3. Who is the author of the site?

- Is the author's name visible? Does the author have an affiliation with an organization or institution?
- Does the author list his or her credentials? Are they relevant to the information presented?
- Is there a mailing address or telephone number included, as well as an e-mail address?

# 4. Is the information accurate and objective?

- Are sources of factual information or statistics cited? Is there a bibliography included?
- Does the page exhibit a particular point of view or bias?
- Is the site objective? Is there a reason the site is presenting a particular point of view on a topic?

# cont

- Does the page contain **advertising**? Is there a relationship between the advertising and the content? or is the advertising simply providing financial support for the page?

# 5. Is the page current?

- this is both an indicator of the timeliness of the information and whether or not the page is actively maintained
- Is the information provided current?
- When was the page created?
- Are dates included for the last update or modification of the page?
- Are the links current and functional?

## 6. Does the page function well?

- The ease of use of a site and its ability to help you locate information you are looking for are examples of the site's functionality:
- Is the site easy to navigate? options to return to the home page, tops of pages, etc.?
- Is the site searchable?
- Does the site include a site map or index?

# 7. Is this what you need?

- Is the information relevant to your topic and assignment?
- Who is the intended audience?(customers?)
- Is the material presented at an appropriate level?  
(No magic words?)
- Is the information complete? Is it unique?



# Evaluating content of internet based medication and Health information

1. Content
2. Currency
3. Author/source
4. References/documentation
5. Site design and organization

# 1. Content

- Appropriate level for the intended audience
- Accurate, complete information presented in a logical manner that is balanced and neutral
- Evidence of peer-review or editorial board.
- Overly positive or emotional words should be avoided

Ex: “Amazing results”, “miracle treatment”

- No grammatical or spelling errors
- Opinions labeled as opinions and not presented as facts
- Conclusions should be concise with factual information
- Any hyperlinks should link to relevant and reputable websites

## 2. Currency

- Date
- Review information presented
- Checking reference list

# 3. Author

- The author of the website should be identified with credentials and appropriate background
- If the author is an organization it should be reputable, and should present information related to its function
  - Ex: American Cancer Society providing chemotherapy information
- Educational purposes not product promotion
- Free of bias

# 4. References

- Complete citations so that information can be verified
- Reputable sources
- Therapy related information should refer to clinical trials in humans

# 5. Site design

- Easy navigation
- Index or topic outline for lengthy topics
- Overly flashy graphics should be avoided
- There should be a disclaimer that the health information is not intended as medical advice or to replace a healthcare provider
- Privacy policy should be available

# TIP:

- **AAOCC** criteria.
- **A: Authority** – publisher
- **A: Accuracy**- error free, statistics, evidence, references, citations.
- **O: Objectivity** -purpose, author's intentions, bias, fact vs. opinion
- **C: Currency** current information, still valid, subsequent research.
- **C: Coverage**- relevant, intended audience, complete information.

# For further information

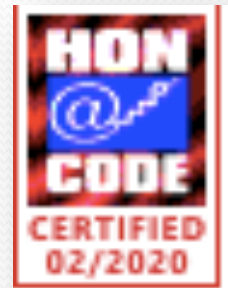
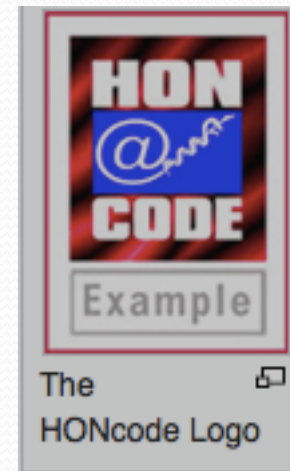
- Medical library association

[www.mlanet.org/resources/userguide.html](http://www.mlanet.org/resources/userguide.html)

- National library of medicine MedlinePlus

[www.nlm.nih.gov/medlineplus/healthywebsurfing.html](http://www.nlm.nih.gov/medlineplus/healthywebsurfing.html)

- HONcode





# Useful sites for clinicians

- Government websites
  - [www.ahrq.gov](http://www.ahrq.gov)
  - [www.cdc.gov](http://www.cdc.gov)
  - [www.clinicaltrials.gov](http://www.clinicaltrials.gov)
  - <http://dietarysupplements.nlm.nih.gov/dietary>
  - [www.fda.gov](http://www.fda.gov)
  - [www.healthfinder.gov](http://www.healthfinder.gov)
  - [www.nlm.nih.gov/medlineplus](http://www.nlm.nih.gov/medlineplus)
  - [www.cancer.gov](http://www.cancer.gov)
  - <http://nccam.nih.gov>
  - <http://toxnet.nlm.nih.gov>

# Cont.

- Non-government websites
  - [www.docguide.com](http://www.docguide.com)
  - [www.mdconsult.com](http://www.mdconsult.com)
  - [www.medscape.com](http://www.medscape.com)
  - [www.rxlist.com](http://www.rxlist.com)
  - <http://nationalstandard.com>
- For remote access to resources on Birzeit library
  - [https://sslvpn.birzeit.edu/dana-na/auth/url\\_default/welcome.cgi](https://sslvpn.birzeit.edu/dana-na/auth/url_default/welcome.cgi)

PLEASE **DON'T**  
CONFUSE YOUR  
**GOOGLE SEARCH**  
WITH MY

**MEDICAL DEGREE** 🔍

# Drug Evaluation and Regulation

- Drugs are regulated in many countries by governmental agencies. In the US by the FDA.
- Before a new drug can be approved for regular therapeutic use in humans, a series of animal and experimental human studies must be carried out.
- Safety and efficacy! (even before human testing).
- The cost of developing a new drug, including false starts and discarded molecules, is often several hundred million dollars.


# The development and testing process required for a new drug

- Preclinical studies (in vitro, animal testing).  
(0-4 years )IND.
- Clinical testing (4-10 years.)

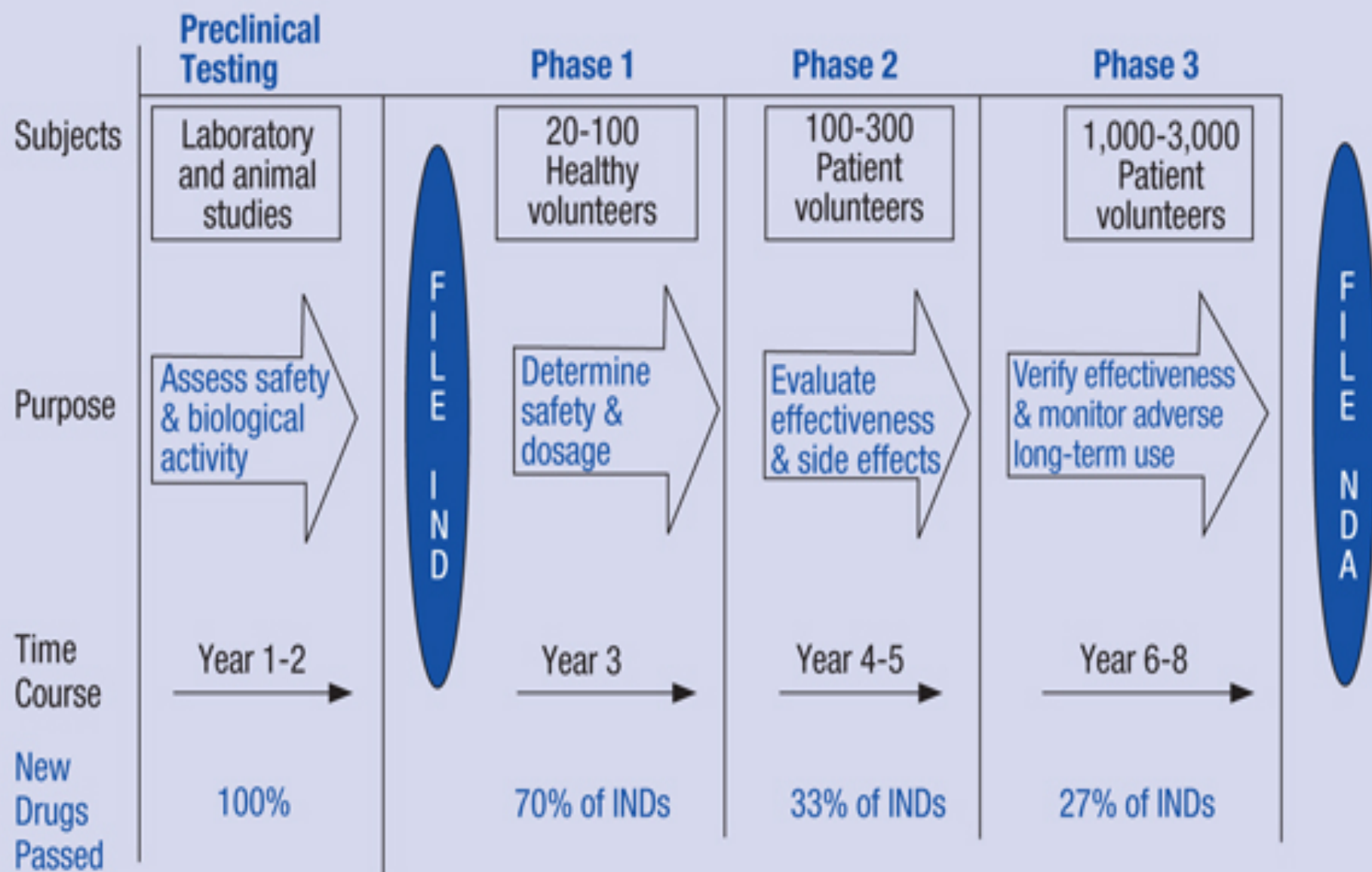
Phase 1 : healthy subjects : safety, pharmacokinetics  
(20-100 subjects)

Phase 2: patients (100-200) : efficacy

Phase 3: 1000-6000 patients. Double blind study.  
Efficacy, drug metabolism.

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- Postmarketing : 20 years infrequent side effect or toxicity reporting.
  - 20 years patency then generics become available.
  - Generics require bioequivalent studies.

# The FDA Drug Approval Process



**It takes a new drug eight or more years of testing before gaining FDA approval.**