FINDING & USING SCIENTIFIC LITERATURE

VM 150
September 18, 2017
After this week you will be able to...

1. Design a search strategy for answering a research or clinical question.
2. Identify reliable places to search for scientific literature.
3. Judge the appropriateness of a resource.
4. Describe the main findings of a resource.
Getting Help

Course Guide available at http://libguides.lib.msu.edu/vm150

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MSU Libraries Ask A Librarian Services http://www.lib.msu.edu/contact/askalib/
SEARCH TIPS & TRICKS
Before You Begin Searching

• Is your topic clear and concise?
• What types of resources do you hope to find?
• What alternatives will you consider if these resources do not exist?
• Who is your audience?
• What is the purpose for your search?
The PICO format can be used to help organize your search terms and plan a search strategy.

PICO stands for:

P = Patient
I = Intervention
C = Comparison*
O = Outcome

* Will not always have a comparison or co-intervention
Search Techniques

- Truncation *
- Quotation Marks “…”
- Parentheses (...) 
- Search Connectors (AND, OR, NOT)
- Limits/Filters

These basic techniques can be used in most databases.
Truncation & Quotation Marks

**Truncation**
- A symbol that searches for words with multiple word endings
- * is the most popular
- Examples:
  - Gene* = gene, genes, genetic, genetics, genetically
  - Ethic* = ethic, ethics, ethical, ethically

**Quotation Marks**
- Searches for the exact phrase inside the quotes
- Words will be searched exactly how they are entered (spelling matters!)
- Example: animal welfare vs. “animal welfare”
Parentheses

• Use to indicate which terms to search together
• Similar to math, what is inside the parentheses will be searched first
• Example: (bovine AND mastitis) AND vaccine

Search Connectors

• Used to connect various keywords
• AND narrows
• OR broadens
• NOT excludes keywords
**Search Connectors**

- **Genetic AND Engineering**
  All terms/phrases must be present

- **Genetic OR Engineering**
  Only one of the terms/phrases must be present

- **Genetic NOT Engineering**
  The term/phrase connected by NOT will be excluded
Limits (or Filters)

Use filters to limit your results based on specific criteria.

- Language (English)
- Publication date
- Peer reviewed (articles reviewed by experts)
- Publication type
  - Reviews provide in-depth overview of the existing literature on a topic. They often have good citation lists.
I am trying to understand the relationship between food, insulin, and exercise in dogs with diabetes.
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PICO: Patient, Intervention, Comparison, Outcome

P = Diabetic dogs

I = Increased exercise

C = Decreased food intake

O = Increased insulin production
I am trying to understand the relationship between food, insulin, and exercise in dogs with diabetes.

Identifying Keywords

P = Diabetic dogs
I = Increased exercise
C = Decreased food intake
O = Increased insulin production

Keywords:
Dogs, canine, diabetes
Exercise, physical activity
Diet, food reduction
Insulin
I am trying to understand the relationship between food, insulin, and exercise in dogs with diabetes.

Building a Search Strategy

Keywords:

P = Diabetic dogs
I = Increased exercise
C = Decreased food intake
O = Increased insulin production

Search Strategy:
(dog OR canine) AND (exercise OR diet*) AND (insulin)
I am trying to understand the relationship between food, insulin, and exercise in dogs with diabetes.

Limiting Results

Keywords:
- P = Diabetic dogs
- I = Increased exercise
- C = Decreased food intake
- O = Increased insulin production
- Dogs, canine, diabetes
- Exercise, physical activity
- Diet, food reduction
- Insulin

Search Strategy:
(dog OR canine) AND (exercise OR diet*) AND (insulin)

Limits/Filters:
- English (language)
- Review articles
DEVELOPING YOUR SEARCH STRATEGY
Sample Questions

Get into groups of 3-4.

Your group will be assigned one of the sample questions.

Follow the steps on the Developing Your Search Strategy handout.

Use the provided index cards and markers to assemble keywords, connectors, etc. into a search strategy.

Search techniques available at http://libguides.lib.msu.edu/vm150/search

1. What is the latest information regarding the use of Tamiflu for the treatment of parvovirus in dogs?
2. Is there a risk of causing glaucoma if atropine is used topically in the eye for severe corneal ulcer and cataract in cats?
3. Is robenacoxib superior to meloxicam in improving patient comfort in dogs diagnosed with a degenerative joint disease?
4. In small animal surgery are alcoholic hand rubs superior to scrubbing brushes and antimicrobial soap at reducing bacterial counts?
5. Is alpha-casozepine successful at reducing anxiety in dogs?
CHOOSING WHERE TO SEARCH
Where should I search?

- Depends on the type of information you are looking for and the question being asked
- Important to consider who the information is for
  - Will search different places when looking for research for a colleague versus patient care information for a client
Databases, Websites, and More

• Veterinary and Medical Databases
  – Always connect through the MSU Libraries
• Databases from Other Disciplines
  – Helpful for multidisciplinary topics
• Google Scholar
  – More in a minute...
• “Grey” Literature (not published in traditional formats)
  – Association publications, corporate white papers
• Websites
  – Caution! Will discuss reliability of websites in detail next time
A word about Google Scholar...

- Is a search engine vs. a human curated database
- Publishers submit information for inclusion, rather than it being determined by the material itself
- Includes more than just articles
- All subject areas covered
- Searches the full text of items

Google Scholar can be set up for MSU Access, making it easier to get the full text of items through the Libraries.
Keep in Mind....

• There is no right or wrong way to search
• It can be helpful to start broad and modify your search strategy one step at a time
• It is possible to add too many criteria and end up with no results
• You may need to search in more than one resource to find information
• If searching multiple locations, try to as consistent as possible so results are comparable
• Your search will change over time, depending on the information you find
• Searching is a skill – you will feel more confident the more you practice
Using Your Search Strategy in the Databases
SEARCHING WITH A PURPOSE

Activity #2
**Searching With A Purpose**

Use your search strategy from Activity #1 to work through the *Searching with a Purpose* handout.

Choose one of the items you found (journal article, webpage, etc.) and be prepared to discuss it in class on Wednesday.

Links to the resources to search are on the guide at [http://libguides.lib.msu.edu/vm150/activities](http://libguides.lib.msu.edu/vm150/activities)

1. Copy down your question and search strategy from Activity #1.
2. Use the search strategy to search either PubMed, CAB Abstracts, or VetMed Resource (Search #1).
3. Refine your search based on your results from Search #1. (Search #2)
4. Try your search again in a different resource (Search #3).
   b. Another veterinary medicine database
   c. Google Scholar
   d. Website
5. Select one item to reflect on and discuss in class on Wednesday.