PA Professions: Interpreting the Evidence
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Objectives:

• Learn how to find articles within specific journals using PubMed’s Single Citation Matcher tool, PubMed filters, and MeSH terms
  o Acceptable journals for the group oral assignment are:
    ▪ Annals of Internal Medicine
    ▪ JAAPA
    ▪ JAMA
    ▪ New England Journal of Medicine
    ▪ Pediatrics

• Evaluate the quality of journal articles using critical appraisal resources
  o Worksheets, analysis resources, and a document on understanding research studies are located in the PA LibGuide

Getting to PubMed:

From either the library’s homepage OR the PYAS 6551 tab of the PA LibGuide, click the link to PubMed.

Resources

Library Catalog
Databases
Electronic Journals
Electronic Books
DynaMed Plus
UpToDate
PubMed
LibGuides/Subject Portals
Alumni Portal
Information for Authors
Predatory Publishing

Don’t forget: Always use one of these links to PubMed so you can see what we have in our holdings!
Finding Your Article

These step-by-step instructions with screenshots will show you how to do the following:

- **Step 1:** narrow a PubMed search to one specific journal at a time
- **Step 2:** combine the searches for all four journals using the Advanced Search tool
- **Step 3:** narrow your search to certain types of articles within a certain publication timeframe using filters
- **Step 4:** explore medical subject headings (MeSH) to narrow your search to a specific topic and add this to your journals search using the Advanced tool
- **Step 5:** (finally!) download the PDF of the article to send to Ms. Fort for approval

**Step 1: Narrow search to one journal at a time**

- Click the link to the Single Citation Matcher tool in the center of PubMed’s homepage.

![Screenshot of PubMed homepage](image1)

This part of the URL lets you know you that you’ll be able to see what we have access to.

- Enter the name of the first journal. A dropdown will automagically suggest titles for you as you type. Select the journal you want, then click Search.

![Screenshot of PubMed Single Citation Matcher](image2)
- Your results load in a new screen, and this search has been saved in your Search History.
- When you want to get back to the PubMed homepage, click the logo beside the search bar.

![PubMed search results](image)

- Repeat this Single Citation Matcher search for each of the allowed journals.
Step 2: Combine searches using Advanced Search

- Once you’ve done all five searches, click Advanced.

All of the searches we’ve done are saved here in the Search History. Now we’re going to combine them.
- Click “Add” for each search you want to combine into one.
Change the **Boolean operator** in the dropdown from “AND” to “OR” to search for ALL of these journals combined, then click **Search**.

![Boolean operator dropdown](image)

**Step 3: Narrow the results**

- Click on **Clinical Trial** to narrow results to only these types of articles.
- Customize the publication date so that we’re only looking at articles from the past three years (ish).

![Clinical Trial filter](image)

That’s a lot of results, but don’t panic! We’re about to use the filters on the left to narrow them down.
Other article types you may want to consider for this assignment are:

### Study Characteristics
- Case Reports – No
- Clinical Conference – No
- Clinical Trial
  - Clinical Trial, Phase I
  - Clinical Trial, Phase II
  - Clinical Trial, Phase III
  - Clinical Trial, Phase IV
- Controlled Clinical Trial
- Randomized Controlled Trial
- Pragmatic Clinical Trial
- Observational Study – Yes
- Comparative Study – Yes
- Consensus Development Conference – No
- Consensus Development Conference, NIH – No
- Evaluation Studies – Yes
- Meta-Analysis – No
- Multicenter Study – Yes
- Scientific Integrity Review – No
- Twin Study – Yes
- Validation Studies – Yes

### Support of Research
- Research Support, Non-U.S. Gov’t – Yes
- Research Support, U.S. Government – Yes
  - Research Support, American Recovery and Reinvestment Act – Yes
  - Research Support, U.S. Gov’t, Non-P.H.S. – Yes
  - Research Support, U.S. Gov’t, P.H.S. – Yes

To view all of these options, click “Customize” under Article Types:

These are organized in their “MeSH Tree” order—more about that later!

Phew! Much better.
Step 4: Exploring medical subject headings (MeSH)

- Go back to the PubMed homepage and click on MeSH Database.

  This is a different database than PubMed, which we were just searching, but the website will look similar.
  - Medical Subject Headings are a **controlled vocabulary** of tags attached to citations. They are **standardized** to make searching easier.
  - MeSH terms are organized into trees with the broader term at the top, and narrower terms that branch out below it. Terms can also belong to more than one tree. See this example for “stroke”:

```
All MeSH Categories
  Diseases Category
    Nervous System Diseases
      Central Nervous System Diseases
        Brain Diseases
          Cerebrovascular Disorders
            Stroke
              Brain Infarction
                Brain Stem Infarctions +
                Cerebral Infarction +
                Stroke_Lacunar

All MeSH Categories
  Diseases Category
    Cardiovascular Diseases
      Vascular Diseases
        Cerebrovascular Disorders
          Stroke
            Brain Infarction
              Brain Stem Infarctions +
              Cerebral Infarction +
              Stroke_Lacunar
```
Let’s search for “heart attack”:

The controlled (standardized) vocabulary means that PubMed takes us to the official MeSH term for a heart attack: myocardial infarction.

Click “Add to search builder” and then “Search PubMed,” and you will search PubMed for this MeSH term.

We have a reasonable number of results because our filters are still active. These will stay active until you clear them.

Effect of direct intramyocardial autologous stem cell grafting in the subacute phase after myocardial infarction.


PMID: 29582623
Similar articles
Let’s bring everything together. Click Advanced to view your search history.

Add the search for “Myocardial Infarction”[Mesh] to the search you did of all five journals plus the filters.

Keep this as “AND”

Make sure you get the search with the filters!

Hit that Search button and....

Ahh. Much better!

If you still have too many results, search for a narrower MeSH term.

If you don’t get any results, search for a broader MeSH term.
Step 5: Pick your article and download the PDF.

- Changing the format to “Abstract” will make it easy to see which articles we have access to, and will give you more information about each article.

- Below each abstract there are buttons that tell you if we have access to it.

- Hit the JAMA button or the LSUHSC-S Electronic button to get to the article, and download the PDF.

(Hint: We have access to all of the journals you are searching today!)
Analyzing/Critiquing Your Article

Once you have selected an article, you need to analyze the quality of the research for your oral presentation.

Let’s review what you will need to do for your assignment:

- Present the hypothesis and purpose
- Explain the type of statistics used and the methods of analysis
- Summarize the conclusion
- Answer the question: Will this help you in clinical practice?

Head over to your Physician Assistant LibGuide and click on the “PYAS 6551” tab where you will find worksheets, analysis resources, and a document on understanding research studies. These resources will help you think about what questions to ask yourselves as you analyze the article. Just because it is on PubMed doesn’t mean that it is necessarily a good study. Be critical about the methods and the results! You want to make sure you are always using the highest quality research when you are treating your patients.

Happy searching! If you get stuck or have any questions, please feel free to email me or stop by my office and we can look at it together.