



PICO

PubMed & EBM

تمرین هایی برای دانشجویان پزشکی و پرستاری


پروانه مدیرامانی
رییس گروه اطلاع رسانی پزشکی
مدیریت اطلاع رسانی پزشکی و منابع علمی
دانشگاه علوم پزشکی مشهد
پاییز ۱۳۹۷

مراحل یک کاوش علمی؟

۱. فرموله کردن سوال یا مشکل (**Problem formulation**)

□ حداقل اجزای ضروری سوالی که در ذهن داریم را برای رسیدن به پاسخ مشخص کنیم

تعیین استراتژی جستجو (**Search strategy**)

متدولوژی جستجو مشخص شود. 

۲. کاوش منابع اطلاعاتی (**Literature search**)

کاوش پژوهش های مرتبط با موضوع در انواع پایگاه های اطلاعاتی و مجموعه مجلات و منابع الکترونیکی....

فرموله کردن سوال بر اساس مدل پیکو : PICO

➤ Dissecting the question into its component parts and restructuring it so that it is easy to find the answers.

➤ An essential first step in Evidence Based Medicine (EBM).

- What types of **P**articipants/**P**opulations?
- What types of **I**nterventions?
- What types of **C**omparisons?
- What types of **O**utcomes?

Source: <https://phoenixcollege.libguides.com/c.php?g=225708&p=1495891>

A pregnant woman with type 2 diabetes is concerned about the effect her current treatment may have on her pregnancy and unborn child.

The **GP** has heard that insulin pump therapy may be a more successful treatment than conventional insulin therapy. He wants to get his facts right, so searches the literature.

His question :

Are insulin pumps more effective than conventional therapies in managing type 2 diabetes in pregnant women?

A simple PICO search strategy would be:

Patient/**P**opulation

Pregnant women with type 2 diabetes

Intervention

Insulin pump therapy

Comparison

Conventional insulin therapy

Outcome

Improved management of glucose levels

استراتژی پیشرفته جستجو بر اساس مدل پیکو
واژه های مرتبط / عام و خاص

	Population	Intervention	Comparison	Outcome
Main keyword	Pregnant women and type 2 diabetes	Insulin pump therapy	Conventional insulin therapy	Improved management of glucose levels
Synonym	Pregnancy and diabetes	Insulin infusion systems	Insulin injections	Successful pregnancy
Synonym		Implantable infusion pumps		

<https://www.nlm.nih.gov/bsd/disted/nurses/simple.html>

Simple Subject Search

How do I search PubMed?



PICO

P = patient or problem

I = intervention

C = comparison

O = outcome

In patients aged 65 or older with high blood pressure, does patient education compared to no patient education encourage exercise?



P = patients aged 65 or older with high blood pressure

I = patient education

C = no patient education

O = patient participation in exercise

Keyword?

کلیدواژه ها

**high blood pressure
patient education
exercise**

Simple Subject Search

How do I search PubMed?

The screenshot shows the PubMed website interface. At the top, there is a navigation bar with 'NCBI Resources' and 'How To' dropdown menus, and a 'Sign in to NCBI' link. Below this is the 'PubMed.gov' logo and a search bar containing the text 'high blood pressure patient education exercise'. The search bar is highlighted with a red box. To the right of the search bar are buttons for 'Create RSS', 'Create alert', 'Advanced', and 'Search'. Below the search bar, there are links for 'Help' and 'Advanced'. The main content area is divided into several sections: 'Article types' (Clinical Trial, Review, Customize...), 'Text availability' (Abstract, Free full text, Full text), 'PubMed Commons' (Reader comments, Trending articles), 'Publication dates' (5 years, 10 years, Custom range...), and 'Species' (Humans, Other Animals). The 'Search results' section shows 'Items: 1 to 20 of 329' and 'Page 1 of 17'. The first result is a link to a study on 'Tunnelled central venous line-associated infections in patients with pulmonary arterial hypertension treated with intravenous prostacyclin'. The second result is a link to a study on 'Cardiac rehabilitation improves the ischemic burden in patients with ischemic heart disease who are not suitable for revascularization'. On the right side, there are sections for 'New feature', 'Sort by Relevance', 'Find related data', and 'Search details'. The 'Search details' section shows the search query: '("hypertension"[MeSH Terms] OR "hypertension"[All Fields] OR ("high"[All Fields] AND "blood"[All Fields] AND "exercise"[All Fields])

Search details?

چگونه کلیدواژه ها در پاب مد فرموله می شوند؟

PubMed.gov
US National Library of Medicine
National Institutes of Health

PubMed Search

Create RSS Create alert Advanced Help

Article types
Clinical Trial
Review
Customize ...

Text availability
Abstract
Free full text
Full text

PubMed Commons
Reader comments
Trending articles

Publication dates
5 years
10 years
Custom range...

Species
Humans
Other Animals

Clear all

Show additional filters

Summary ▾ 20 per page ▾ Sort by Most Recent ▾ Send to: ▾ Filters: [Manage Filters](#)

Search results

Items: 1 to 20 of 329 << First < Prev Page 1 of 17 Next > Last >>

[Tunnelled central venous line-associated infections in patients with pulmonary arterial hypertension treated with intravenous prostacyclin.](#)
1. Boucly A, O'Connell C, Savale L, O'Callaghan DS, Jais X, Montani D, Humbert M, Simonneau G, Sitbon O. Presse Med. 2015 Nov 4. pii: S0755-4982(15)00439-X. doi: 10.1016/j.lpm.2015.10.001. [Epub ahead of print] French. PMID: 26547673 [Similar articles](#)

[Cardiac rehabilitation improves the ischemic burden in patients with ischemic heart disease who are not suitable for revascularization.](#)
2. El Demerdash S, Khorshid H, Salah I, Abdel-Rahman MA, Salem AM. Cardiovasc Revasc Med. 2015 Jul-Aug;16(5):280-3. doi: 10.1016/j.carrev.2015.05.001. Epub 2015 May 22. PMID: 26242983 [Similar articles](#)

New feature
Try the new Display Settings option
Sort by Relevance

Find related data
Database: Select
Find items

Search details
("hypertension" [MeSH Terms] OR "hypertension" [All Fields] OR ("high" [All Fields] AND "blood" [All Fields] AND "pressure" [All Fields]))
Search See more...

ترجمه یا تفسیر واژه های جستجو توسط PUBMED

Translations:

exercise	"exercise"[MeSH Terms] OR "exercise"[All Fields]
high blood pressure	"hypertension"[MeSH Terms] OR "hypertension"[All Fields] OR ("high"[All Fields] AND "blood"[All Fields] AND "pressure"[All Fields]) OR "high blood pressure"[All Fields]
patient education	"patient education handout"[Publication Type] OR "patient education as topic"[MeSH Terms] OR "patient education"[All Fields]

Database:

PubMed

User query:

high blood pressure patient education exercise

اصطلاحنامه پزشکی مش

MeSH Terms

Medical Subject Headings (MeSH)



MeSH

MeSH (Medical Subject Headings) is the NLM controlled vocabulary thesaurus used for indexing articles for PubMed.

- دلیل استفاده از اصطلاحنامه به هنگام جستجو:
ممکن است نویسندگان مقالات از اسامی مختلف علمی برای بیان موضوعی خاص استفاده کنند، مثلاً یک نویسنده ممکن است عبارت diabetes type 1 را به کاربرد یا دیگری Insulin dependent diabetes و نویسنده سوم diabetes mellitus, sudden onset را انتخاب کند؛ در اصطلاحنامه به تمام مقالاتی که درباره موضوع خاصی هستند، یک Subject heading یا سرفصل موضوعی استاندارد نسبت داده می شود.
- موضوع استاندارد مثال فوق در اصطلاحنامه پزشکی مش Diabetes Mellitus, Insulin dependent است و تمامی مقالات مربوط به این موضوع، تحت سرفصل موضوعی فوق نمایه و جستجو می شوند.

جستجوی نظام مند اصطلاحنامه ای در مدلاین

1. Define your question.
2. Select MeSH terms that best represent your concepts.
3. Decide whether MeSH terms should include more specific terms.
4. Consider text words or key words when a MeSH term does not exist for your concept.
5. Select subheadings, if appropriate, to further define your concept.
6. Combine concepts with **AND, OR, NOT**.

<https://researchguides.uic.edu/c.php?g=252338&p=3956302>

تدوین پرسش

انتخاب مرتبط ترین و مناسب ترین کلیدواژه در MeSH

تصمیم گیری درباره انتخاب موضوع های اختصاصی تر

تعیین واژه های مرتبط با مفاهیم مورد جستجو که در MeSH نیست

در صورت نیاز انتخاب مناسب ترین موضوع فرعی subheading

ترکیب مفاهیم با عملگرهای بولی And/OR/NOT

ادامه... جستجوی نظام مند اصطلاحنامه ای در مدلاین

7. Refine your search by limiting to age, sex, human, etc.

8. Select appropriate research method terms to retrieve literature with clinical relevancy.

9. Review search results.

10. Examine MeSH terms of particularly relevant articles in your retrieval. Rerun search using these terms.

11. Use the "Related citations" feature in PubMed.

12. Run search in other databases, as appropriate.

<https://researchguides.uic.edu/c.php?g=252338&p=3956302>

پالایش نتایج جستجو براساس سن، جنسیت و نظایر آن

انتخاب واژه هایی متناسب با روش تحقیق برای یافتن منابع مرتبط بالینی

مروری بر نتایج جستجو

جستجوی مجدد براساس کلیدواژه های MeSH تعدادی از مقالات مرتبطی که یافتید

از ویژگی "مآخذ مرتبط" یا Related citation در PubMed استفاده کنید.

پایگاه های معتبر دیگر را نیز جستجو کنید.

تمرین اول

An elementary school nurse has noticed an increase in unhealthy eating habits among the students in her school during her career.

She is interested in beginning a health promotion program in her school to encourage healthy eating.

۱- بر اساس الگوی پیکو، مفاهیم را تعیین کنید:

P= Patient, population or problem

I = Intervention

C = Comparison

O= Outcome

۲- پرسش را براساس الگوی پیکو بنویسید:

۳- در جستجوی ساده پاب مد، چگونه جستجو می کنید؟

بر اساس الگوی پیکو، مفاهیم را تعیین کنید:

- P= Patient, population or problem
School-aged children.
- I = Intervention
A health promotion program.
- C = Comparison
No health promotion program.
- O= Outcome
Healthier eating habits.

پرسش را براساس الگوی پیکو بنویسید:

- In school-aged children, how can health promotion activities affect healthy eating compared to no health promotion?

در جستجوی ساده پاب مد، واژه های جستجو چیست؟

students health promotion nutrition

Simple Subject Search

How do I search PubMed?

Narrowing your Search

NCBI Resources How To Sign in to NCBI

PubMed.gov PubMed Search

Create RSS Create alert Advanced Help

Filters کاربرد

Article types: Summary 20 per page Sort by Most Recent Send to Filters: [Manage Filters](#)

Clinical Trial
Review
Customize ...

Text availability: Abstract Free full text Full text

PubMed Commons: Reader comments Trending articles

Publication dates: 5 years 10 years Custom range...

Species: Humans Other Animals

[Clear all](#)

Search results

Items: 1 to 20 of 329 << First < Prev Page 1 of 17 Next > Last >>

[Tunnelled central venous line-associated infections in patients with pulmonary arterial hypertension treated with intravenous prostacyclin.](#)
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PMID: 26547673
[Similar articles](#)

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El Demerdash S, Khorshid H, Salah I, Abdel-Rahman MA, Salem AM.
Cardiovasc Revasc Med. 2015 Jul-Aug;16(5):280-3. doi: 10.1016/j.carrev.2015.05.001. Epub 2015 May 22.
PMID: 26242983
[Similar articles](#)

New feature
Try the new Display Settings option

Sort by Relevance

Find related data
Database: Select
[Find items](#)

Search details
("hypertension"[MeSH Terms] OR "hypertension"[All Fields] OR ("high"[All Fields] AND "blood"[All Fields] AND "pressure"[All Fields])

[Search](#) [See more...](#)

Narrowing your Search

NCBI Resources How To Sign in to NCBI

PubMed.gov
US National Library of Medicine
National Institutes of Health

PubMed high blood pressure patient education exercise Search

Create RSS Create alert Advanced Help

Article types
Clinical Trial
Review
Customize ...

Text availability
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Free full text
Full text

PubMed Commons
Reader comments
Trending articles

Publication dates
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Species
Humans
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Clear all

Show additional filters

Summary 20 per page Sort by Most Recent Send to Filters: Manage Filters

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Presse Med. 2015 Nov 4. pii: S0755-4982(15)00439-X. doi: 10.1016/j.lpm.2015.10.001. [Epub ahead of print] French.
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[Similar articles](#)

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Cardiovasc Revasc Med. 2015 Jul-Aug;16(5):280-3. doi: 10.1016/j.carrev.2015.05.001. Epub 2015 May 22.
PMID: 26242983
[Similar articles](#)

[Effects of the Pulmonary Hypertension Manual \(PulHMan\) on](#)

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Try the new Display Settings option

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Search See more.

availability
Abstract
Free full text
Full text

PubMed
Commons
Reader comments
Trending articles

Publication
dates
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[Clear all](#)

[Show additional filters](#)

Additional filters

- Article types
- Text availability
- PubMed Commons
- Publication dates
- Species
- Languages
- Sex
- Subjects
- Journal categories
- Ages
- Search fields

availability
Abstract
Free full text
Full text

PubMed
Commons
Reader comments
Trending articles

Publication
dates
5 years
10 years
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Species
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Other Animals

[Clear all](#)

[Show additional filters](#)

Additional filters

- Article types
- Text availability
- PubMed Commons
- Publication dates
- Species
- Languages
- Sex
- Subjects
- Journal categories
- Ages
- Search fields

P = patients aged 65 or older with high blood pressure
I = patient education
C = no patient education
O = patient participation in exercise

Custom range...

Species
 Humans
 Other Animals

Journal categories
 Core clinical journals
 Dental journals
 MEDLINE
 Nursing journals

Ages
 Child: birth-18 years
 Infant: birth-23 months
 Adult: 19+ years
 Adult: 19-44 years
 Aged: 65+ years
 Customize

Clear all

Show additional filters

2. [ischemic heart disease who are not sui](#)
 El Demerdash S, Khorshid H, Salah I, A
 Cardiovasc Revasc Med. 2015 Jul-Aug;16(5):21
 10.1016/j.carrev.2015.05.001. Epub 2015 May
 PMID: 26242983
[Similar articles](#)

[Effects of the Pulmonary Hypertensio](#)

3. [Awareness of Exercise in Patients with](#)
 P... Ramachandran P, Maiya AG.
 pii: S1443-9506(2015)00000-0
 ahead of prin

[Aortic stenosis: Changing Disease Co](#)

4. [Rashedi N, Otto CM.](#)
 J Cardiovasc Ultrasound. 2015 Jun;23(2):59-69
 2015 Jun 26. Review.
 PMID: 26140146 **Free PMC Article**
[Similar articles](#)

[Hip osteoarthritis: patients with comple](#)
 5. [exceptional improvements following int](#)
 Wainwright TW, Immins T, Middleton RC
 BMJ Case Rep. 2015 Feb 12;2015. pii: bcr2014



Items: 1 to 20 of 132

Filters activated: Aged: 6

[Hip osteoarthritis: pat](#)
 1. [exceptional improver](#)
 Wainwright TW, Immir
 BMJ Case Rep. 2015 Feb
 2014-208529.
 PMID: 25678618
[Similar articles](#)

Text availability
 Abstract
 Free full text
 Full text

PubMed Commons
 Reader comments
 Trending articles

Publication dates
 5 years
 10 years
 Custom range...

Species
 Humans
 Other Animals

Journal



Species
 Humans
 Other Animals

Journal categories
 Core clinical journals
 Dental journals
 MEDLINE
 Nursing journals

Ages
 Child: birth-18 years
 Infant: birth-23 months
 Adult: 19+ years
 Adult: 19-44 years
Aged: 65+ years
 Customize ...

Clear all

2. [African American w](#)
 Cooper KC, King M
 J Christ Nurs. 2015 Jan-
 PMID: 25585468
[Similar articles](#)

[Effectiveness of a t](#)
 2. [Hypertension cont](#)
 Rodrig
 Lipsit
[Hypertension](#) 2015 Fe
 pub 2014 Nov 17.
 PMID: 25403606
[Similar articles](#)

[Gender differences](#)
 4. [Improvement Progr](#)
 Kent LM, Morton DF
 J Nutr Educ Behav. 201



Search details page

Result:

21

Translations:

exercise	"exercise"[MeSH Terms] OR "exercise"[All Fields]
high blood pressure	"hypertension"[MeSH Terms] OR "hypertension"[All Fields] OR ("high"[All Fields] AND "blood"[All Fields] AND "pressure"[All Fields]) OR "high blood pressure"[All Fields]
patient education	"patient education handout"[Publication Type] OR "patient education as topic"[MeSH Terms] OR "patient education"[All Fields]
aged[MeSH]	"aged"[MeSH Terms]

Database:

PubMed

User query:

high blood pressure patient education exercise AND ("last 10 years"[PDat] AND jsubsetn[text] AND

تمرین دوم

- **Students health promotion nutrition**

جستجوی خود را به موارد زیر محدود کنید:

published in the last 5 years
Nursing Journals.
Ages to 6-12 years.

<https://www.nlm.nih.gov/bsd/disted/nurses/cq.html>

تمرین سوم برای therapy

What is the evidence for the use of antibiotics for treating otitis media in children?

#1 Otitis Media[MeSH]	Explode the MeSH term Otitis Media to include all types. (PubMed explodes automatically).
Drug Therapy [sh]	Add the subheading Drug Therapy to focus in on this specific aspect of the subject.
#2 Anti-Bacterial Agents [MeSH]	Explode the MeSH term Anti-Bacterial Agents.
#1 AND #2	Combine terms with AND to retrieve articles dealing with both subjects. (We found over 1,500.)
Randomized Controlled Trial [pt]	Using the Limits feature select Randomized Controlled Trial as the Type of Article for clinically relevant studies.
All Child: 0-18 years	Limit the search to the specific age group concerned.
English	Limit the search to English if you wish to eliminate foreign language articles. (We now have about 90 citations in our results list.)
Clinical Queries	Copy your search into PubMed's Clinical Queries feature and see how many systematic Reviews are found. Or simply choose Systematic Reviews from the Subsets in the Limits feature.

تمرین چهارم برای diagnosis

Are there any evidence based articles on the differential diagnosis of Alzheimer's Disease?

#1 Alzheimer Disease [majr]	Limit the MeSH term to Major focus.
#2 Sensitivity and Specificity [MeSH]	Explode the MeSH term to include more specific terms such as Predictive Value of Tests.
#3 Differential Diagnosis [MeSH]	Differential Diagnosis is a useful MeSH term with closely related diseases.
#1 AND #2 AND #3	Combine terms with AND.
Clinical Trials [PT]	Limit using Clinical Trial as Type of Article.

یک جستجوی نمونه برای Prognosis

What is the prognosis for a successful pregnancy in a young woman with Systemic Lupus Erythamatosus?	
#1 Lupus Erythematosus, Systemic [majr]	Limit the MeSH term to Major Focus.
#2 Pregnancy [MeSH] OR Pregnancy Outcome [MeSH]	OR related terms.
#3 Cohort Studies [MeSH]	Select Cohort Studies for a Prognosis Search.
#4 Prognosis [MeSH]	The MeSH term Prognosis is effective in this search.
(#1 AND #2) AND (#3 OR #4)	Combine search history terms with AND and OR. "Nest" combined terms with parentheses.
Published in the Last: 3 years	Limit the search to recent articles.

فایده اطلاعات حاصل از **مطالعات هم گروهی**: می تواند در تشخیص عوامل خطر در یک بیماری جدید مؤثر باشد. این مطالعات یک سری مشاهدات طولی که در طی یک زمان مشخص به صورت انفرادی انجام می شود و اطلاعاتی که در یک مدت معین جمع آوری شده اند را در اختیار ما قرار می دهد.

یک جستجوی نمونه برای Etiology

Does hormone replacement therapy increase the risk for pulmonary embolism in postmenopausal women?

#1 Pulmonary Embolism [majr]	Limit the MeSH term to Major Focus.
etiology [sh] OR epidemiology [sh]	Attach subheadings useful in etiology questions.
#2 Hormone Replacement Therapy [MeSH]	Explode Hormone Replacement Therapy, which includes Estrogen Replacement Therapy.
#1 AND #2	AND combines these concepts.

یک جستجوی نمونه برای Clinical Prediction Guides

Are there any evidence based practice guidelines on the use of mammography in screening for breast cancer?

#1 Breast Neoplasms [majr]	EXPLODE the MeSH term Breast Neoplasms and Limit to Major Focus.
#2 Mammography [majr]	EXPLODE the MeSH term Mammography and Limit to Major Focus.
#1 AND #2	Combine terms with AND to retrieve articles dealing with both concepts.
Practice Guideline[pt] OR Guideline[pt] OR Consensus Development Conference[pt]	Limit the search to these publication types to find published evidence/consensus on this practice.
Change Databases and Rerun Search	Check other databases such as The Cochrane Library or the National Guideline Clearinghouse (www.guidelines.gov) to find published guidelines.

کلیدواژه های مناسب و مرتبط در PubMed برای یک جستجوی مبتنی بر شواهد

Medical Subject Headings:

- Clinical Trials
- Confidence Intervals
- Cost-Benefit Analysis
- Decision Making
- Decision Trees
- Diagnosis
- Guidelines
- Odds Ratio
- Outcome Assessment
- Practice Guidelines
- Predictive Value of Tests
- Probability
- Prospective Studies
- Sensitivity and Specificity
- Survival Analysis
- Treatment Outcome

کلیدواژه های مناسب و مرتبط در PubMed برای یک جستجوی مبتنی بر شواهد

Publication Types:

- Clinical Trial
- Consensus Development Report
- Controlled Clinical Trial
- Guideline
- Meta-Analysis
- Multicenter Study
- Practice Guideline
- Randomized Controlled Trial
- Review

کلیدواژه های مناسب و مرتبط در PubMed برای یک جستجوی مبتنی بر شواهد

Subheadings:

- adverse effects
- diagnosis
- drug therapy
- etiology
- mortality
- prevention and control
- therapeutic use
- therapy

منابع مورد استفاده

- Phonix College LibGuides.
<https://phoenixcollege.libguides.com/c.php?g=225708&p=1495891>
- Pubmed for nurses.
<https://www.nlm.nih.gov/bsd/disted/nurses/cq.html>
- The University of Illinois at Chicago LibGuides.
<https://researchguides.uic.edu/c.php?g=252338&p=3956302>