

# Review Question

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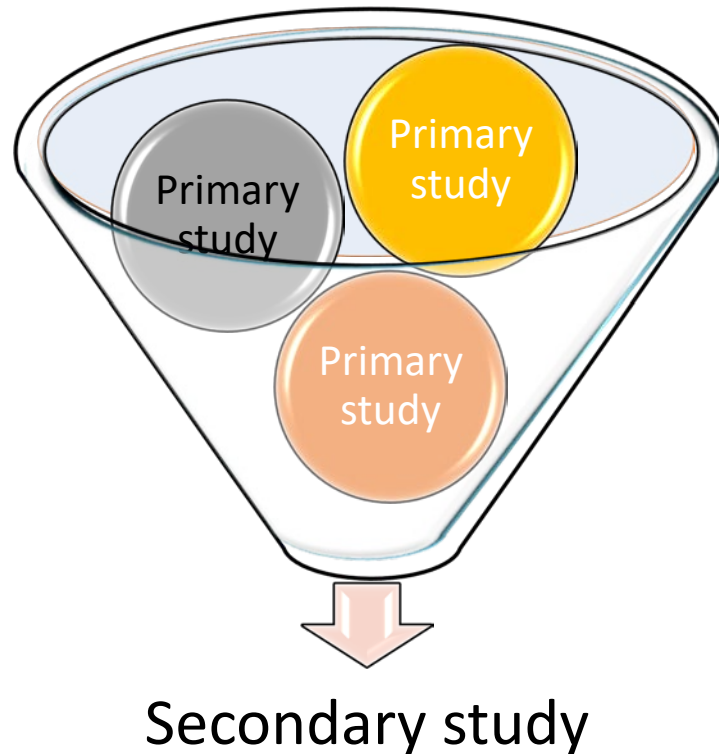
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# Introduction

- Primary studies and Secondary studies



# Systematic Review & Meta-Analysis

Systematic Review: A systematic search for evidences based on a pre-determined strategy

- High reliability
- High specificity

Meta-Analysis: Statistical methods for summarize the results

Research question

# A good research topic

- An interesting one
- There is a controversy
- Enough studies
- Considerable implementation
- Good background information

# Question components : PICO

- What types of **P**articipants?
- What types of **I**nterventions?
- What types of **C**omparisons?
- What types of **O**utcomes?
- **T**ime & type of **S**tudy

# question

- Is Hormone Replacement Therapy (HRT) in post menopause women reduce the risk of femoral fracture?

# PICO

- Population            Post menopause women
- Intervention            HRT
- Comparison group    no HRT
- Outcome                Femoral fracture risk



Question Type	<b>P</b>	<b>I</b>	<b>C</b>	<b>O</b>
	<b>Patient, Problem or Population</b>	<b>Intervention or Exposure</b>	<b>Comparison or Control</b>	<b>Example Outcome Measures</b>
Therapy (Treatment)	Patient's disease or condition.	A therapeutic measure, e.g., medication, surgical intervention, or life style change.	Standard care, another intervention, or a placebo.	Mortality rate, number of days off work, pain, disability.
Prevention	Patient's risk factors and general health condition.	A preventive measure, e.g., A lifestyle change or medication.	Another preventative measure OR maybe not applicable.	Mortality rate, number of days off work, disease incidence.
Diagnosis	Specific disease or condition.	A diagnostic test or procedure.	Current "reference standard" or "gold standard" test for that disease or condition.	Measures of the test utility, i.e. sensitivity, specificity, odds ratio.
Prognosis (Forecast)	Duration and severity of main prognostic factor or clinical problem.	Usually time or "watchful waiting".	Usually not applicable.	Survival rates, mortality rates, rates of disease progression.
Etiology (Causation)	Patient's risk factors, current health disorders, or general health condition.	The intervention or exposure of interest. Includes an indication of the strength/dose of the risk factor and the duration of the exposure.	Usually not applicable.	Survival rates, mortality rates, rates of disease progression.

# Question type matter

**Therapy**

**Prevention**

**Diagnosis**

**Prognosis**

**Etiology**

# Question type matter

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Therapy (Treatment)	Patient's disease or condition.	A therapeutic measure, e.g., medication, surgical intervention, or life style change.	Standard care, another intervention, or a placebo.	Mortality rate, number of days off work, pain, disability.

In patients with osteoarthritis of the knee, is hydrotherapy more effective than traditional physiotherapy in relieving pain?

**P:** patients with osteoarthritis of the knee

**I:** hydrotherapy

**C:** traditional physiotherapy

**O:** pain

# Question type matter

Question Type	P	I	C	O
	Patient, Problem or Population	Intervention or Exposure	Comparison or Control	Example Outcome Measures
Prevention	Patient's risk factors and general health condition.	A preventive measure, e.g., A lifestyle change or medication.	Another preventative measure OR maybe not applicable.	Mortality rate, number of days off work, disease incidence.

For obese children does the use of community recreation activities compared to educational programs on lifestyle changes reduce the risk of diabetes mellitus?

**P:** obese children

**I:** community recreation activities

**C:** educational programs on lifestyle changes

**O:** risk of diabetes mellitus

# Question type matter

Question Type	P	I	C	O
	Patient, Problem or Population	Intervention or Exposure	Comparison or Control	Example Outcome Measures
Diagnosis	Specific disease or condition.	A diagnostic test or procedure.	Current "reference standard" or "gold standard" test for that disease or condition.	Measures of the test utility, i.e. sensitivity, specificity, odds ratio.

For deep vein thrombosis is D-dimmer testing or ultrasound more accurate for diagnosis?

**P:** diagnosis of deep vein thrombosis

**I:** D-dimer testing

**C:** ultrasound

**O:** sensitivity/specificity/ other measures of accuracy

# Question type matter

Question Type	P	I	C	O
	Patient, Problem or Population	Intervention or Exposure	Comparison or Control	Example Outcome Measures
Prognosis (Forecast)	Duration and severity of main prognostic factor or clinical problem.	Usually time or "watchful waiting".	Usually not applicable.	Survival rates, mortality rates, rates of disease progression.

In healthy older women that suffer hip fractures within the year after injury what is the risk of death ?

**P:** older women with hip fractures

**I:**

**C:**

**O:** survival rate/ mortality rate

# Question type matter

Question Type	P	I	C	O
	Patient, Problem or Population	Intervention or Exposure	Comparison or Control	Example Outcome Measures
Etiology (Causation)	Patient's risk factors, current health disorders, or general health condition.	The intervention or exposure of interest. Includes an indication of the strength/dose of the risk factor and the duration of the exposure.	Usually not applicable.	Survival rates, mortality rates, rates of disease progression.

Do adults who suffer Vitamin D deficiency are at higher risk of mortality from COVID-19?

**P:** COVID-19 patients

**I:** Vitamin D deficiency

**C:** who do not suffer Vitamin D deficiency

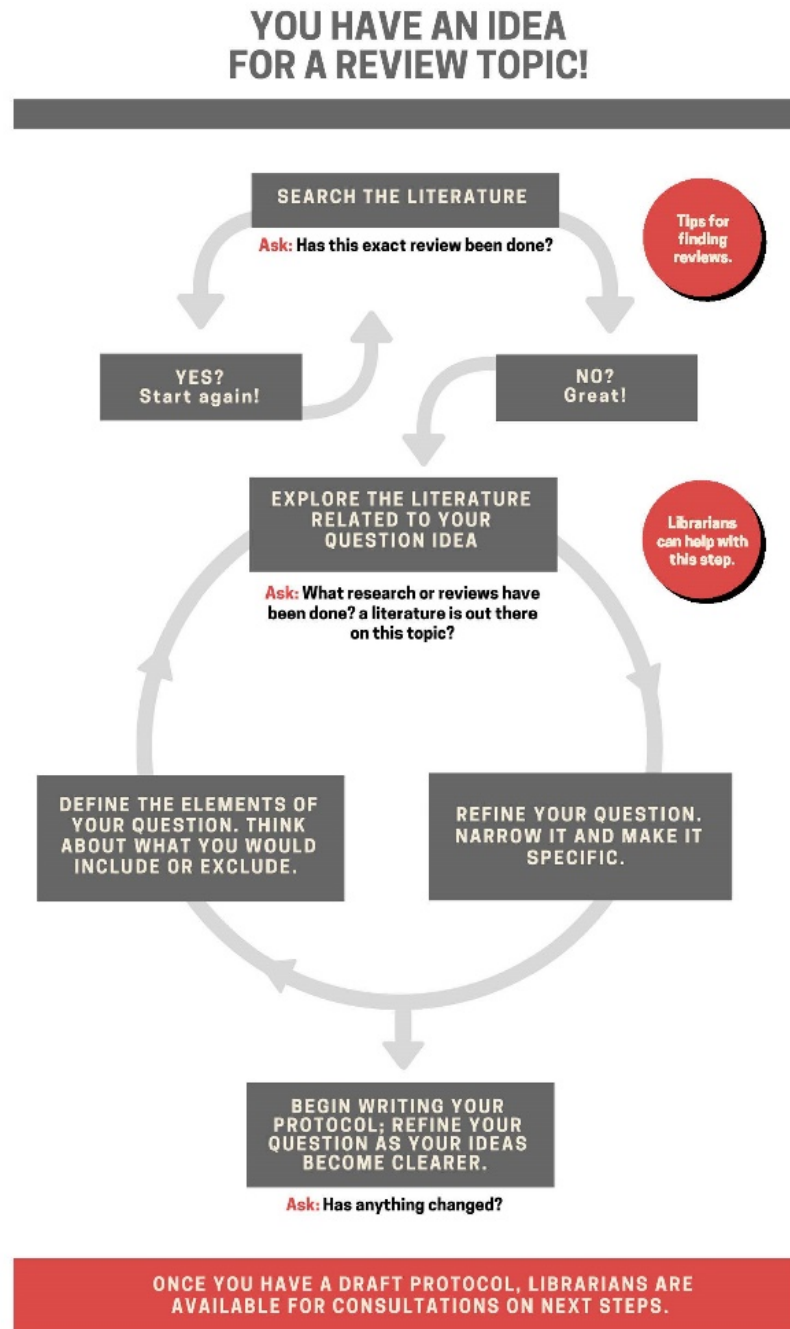
**O:** higher mortality

# Process of formulating a question

- Developing a good research question is not a straightforward process and requires engaging with the literature as you refine and rework your idea.



# Process of formulating a question



# Drafting the question:

- Does the question fit into the PICO question format?
- Have you defined all of your terms? (Even if your question does not fit into a PICO, it can be helpful to think about whether you have defined your population, intervention, etc.)
  - What age group?
  - What type or types of conditions?
  - What intervention? How else might it be described?
  - What outcomes? How else might they be described?
  - What is the relationship between the different elements of your question?

# Drafting the question:

- Do you have several questions lumped into one?
  - If so, should you split them into more than one review?
  - Alternatively, do you have many questions that could be lumped into one review?

# A good knowledge synthesis question

- Be focused on a specific question with a meaningful answer
- Retrieve a number of results that is manageable for the research team (is the number of results on your topic feasible for you to finish the review?)

# Has your review or synthesis already been done?

- It is important to make sure your project has not already been **recently** and successfully undertaken; published or in the process of being published
- Even if you do find another review or synthesis on your topic it may be sufficiently **out of date** or you may **find other defensible reasons** to perform it again.
- In addition, looking at other knowledge syntheses published around your topic may also help you refocus your question or **redirect** your research toward other gaps in the literature.

# Where to find other reviews or syntheses

- PROSPERO

The screenshot shows the PROSPERO website homepage. At the top left is the NIHR logo (National Institute for Health Research). To the right is the PROSPERO logo and the text "International prospective register of systematic reviews". Below this is a green navigation bar with links: Home | About PROSPERO | How to register | Service information | Search | Log in | Join. The main content area features a blue background with a pattern of overlapping circles. A white box contains the text: "Welcome to PROSPERO International prospective register of systematic reviews". At the bottom, a green banner reads: "PROSPERO is fast-tracking registration of protocols related to COVID-19". The browser's address bar shows "crd.york.ac.uk/prospero/".

NIHR | National Institute for Health Research

PROSPERO  
International prospective register of systematic reviews

Home | About PROSPERO | How to register | Service information | Search | Log in | Join

Welcome to PROSPERO  
International prospective register of systematic reviews

PROSPERO is fast-tracking registration of protocols related to COVID-19


<https://www.crd.york.ac.uk/prospero/> PROSPERO accepts registrations for systematic reviews, **rapid reviews** and umbrella reviews. PROSPERO **does not accept**

# Where to find other reviews or syntheses

## • Cochrane Library

The screenshot shows the Cochrane Library search results interface. On the left is a sidebar for filtering results by date. The main content area displays search filters, a summary of 498 results, and a list of results. The first result is 'Stepping down the dose of inhaled corticosteroids for adults with asthma'.

**Filter your results**

Date 

Publication date

The last 3 months ..... 11

The last 6 months ..... 17

The last 9 months ..... 28

The last year ..... 39

The last 2 years ..... 72

Custom Range:

to

Cochrane Reviews 498

[Cochrane Protocols](#) 29

Trials 21200

Editorials 10

Special Collections 0

Clinical Answers 70

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**498** Cochrane Reviews matching **corticosteroid in Title Abstract Keyword**

**Cochrane Database of Systematic Reviews**

Issue 11 of 12, November 2020

**Select all (498)**    Export selected citation(s)    **Hide all previews**

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Results per page [25](#) ▼

1  **Stepping down the dose of inhaled corticosteroids for adults with asthma**

Iain Crossingham, David JW Evans, Nathan R Halcovitch, Paul A Marsden

Intervention    Review    1 February 2017    Free access

**Show PICO's** BETA ▼    **Hide preview** ▲

**Abstract - Background**

Asthma is a condition of the airways affecting more than 300 million adults and children worldwide. National and

# Where to find other reviews or syntheses

## •Epidstemonikos

The screenshot shows the Epidstemonikos website interface. The browser address bar displays 'epistemonikos.org/en/search?q=vitamin%20D'. The website header includes the logo, navigation links (About, Help, Contact), and user options (Sign up, Login). A search bar contains the text 'vitamin D' with a search icon and links for 'Advanced search' and 'Help'. The main content area shows search results for 'vitamin D'. On the left, there are filters for 'By category' and 'By year'. The 'By category' filter is set to 'All' and lists categories: Broad Syntheses (25), Systematic Reviews (1729), Structured Summaries (224), and Primary Studies (2308). The 'By year' filter is also set to 'All' and lists: Last year, Last 5 years, Last 10 years, and Custom range. The search results are displayed as a list of items. The first result is a 'Systematic review' titled 'The relationships of vitamin D, vitamin D receptor gene polymorphisms, and vitamin D supplementation with Parkinson's disease.' It includes metadata: Year (2020), Authors (Lv L, Tan X, Peng X, Bai R, Xiao Q, Zou T - More), Journal (Translational neurodegeneration), and Links (Pubmed, DOI, PubMed Central). Below the title, it says 'Without references' and 'Show abstract'. The second result is also a 'Systematic review' titled 'Vitamin D.' with metadata: Year (2020), Authors (Martini, Nataly), and Journal (Journal of Primary Health Care).

epistemonikos.org/en/search?q=vitamin%20D

Apps Suggested Sites Apple Bing Sample size for bef... Introduction to net... DHS Analyzing DHS Data CDC Reproductive Healt... Risk Assessment - Y...

Epistemonikos About Help Contact Sign up Login

vitamin D

Advanced search Help

**By category**  
| All  
Broad Syntheses (25)  
Systematic Reviews (1729)  
Structured Summaries (224)  
Primary Studies (2308)

**By year**  
| All  
Last year  
Last 5 years  
Last 10 years  
Custom range

Results: 1-10 of 4,284

Systematic review ⚡

**The relationships of vitamin D, vitamin D receptor gene polymorphisms, and vitamin D supplementation with Parkinson's disease.**

Year » 2020  
Authors » Lv L , Tan X , Peng X , Bai R , Xiao Q , Zou T - More  
Journal » Translational neurodegeneration  
Links » Pubmed , DOI , PubMed Central

Without references [Show abstract](#)

Systematic review ⚡

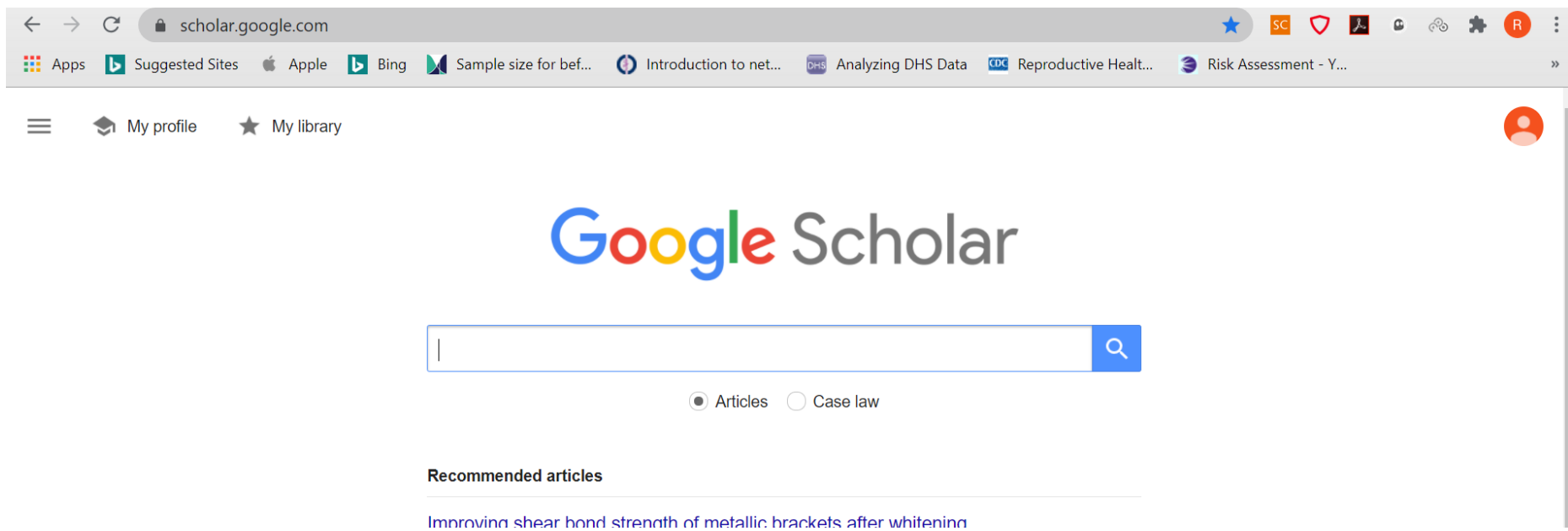
**Vitamin D.**

Year » 2020  
Authors » Martini, Nataly  
Journal » Journal of Primary Health Care



# Where to find other reviews or syntheses

- Google Scholar



The image shows a screenshot of the Google Scholar homepage in a web browser. The browser's address bar displays 'scholar.google.com'. The page features the Google Scholar logo, a search bar with a magnifying glass icon, and radio buttons for 'Articles' (selected) and 'Case law'. Below the search bar, there is a section titled 'Recommended articles' with a horizontal line, and a link to an article titled 'Improving shear bond strength of metallic brackets after whitening'.

scholar.google.com

Apps Suggested Sites Apple Bing Sample size for bef... Introduction to net... Analyzing DHS Data CDC Reproductive Healt... Risk Assessment - Y...

My profile My library

# Google Scholar

Articles Case law

**Recommended articles**

[Improving shear bond strength of metallic brackets after whitening](#)

Thank  
you! 😊