



How is the PICO framework used in health technology assessment (HTA)?

QUICK RECAP

Clinical effectiveness refers to how well a health technology works in **real-world** conditions compared to existing options. It is determined by identifying all relevant evidence, assessing its quality, and analysing the findings to understand the impact of the health technology on patient outcomes, such as symptoms and quality of life.



What is the PICO framework?

PICO stands for **Population**, **Intervention**, **Comparison** and **Outcome**. Before a health technology assessment (HTA) begins, the **PICO** framework is used to define the **research question** that the HTA will answer. It also helps to create clear search terms that can be used to find the **best available evidence** to inform the HTA.

Population



- How would you describe this group of patients?
- Do they have a particular medical condition or co-morbidities?
- What is their age, sex, ethnicity, geographic location?
- Do they have any other important characteristics?

Clearly defining the population makes the research more relevant and applicable to a particular group of individuals.

Intervention

- What is the health technology under evaluation?
- Is it a drug, vaccine, medical device, implant, surgical procedure, etc.?
- How long is it used for (duration) and how often (frequency)?
- How is it used (mode of delivery)?

Identifying a specific intervention allows researchers to assess its effectiveness or impact.



Comparison (also known as Comparator)

- Is there an existing health technology already being used in clinical practice?
- Which health technology is likely to be replaced by the intervention?

Comparators are the alternative health technologies that represent current routine care for a health condition. If no alternatives are available, the comparator may be best supportive care or no treatment.

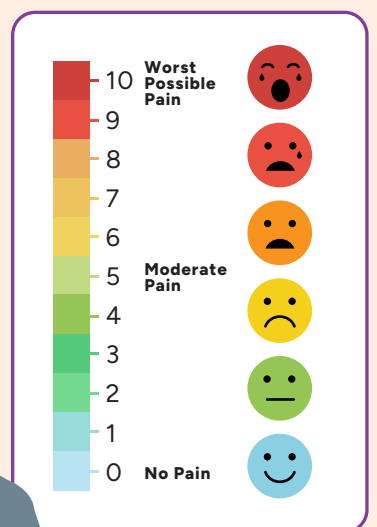
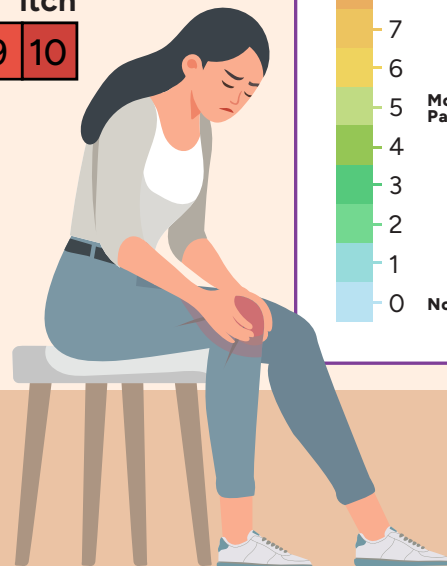
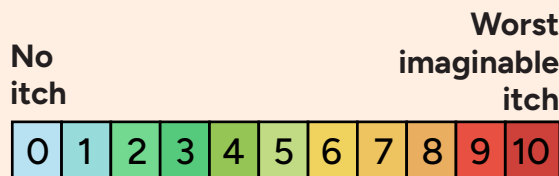
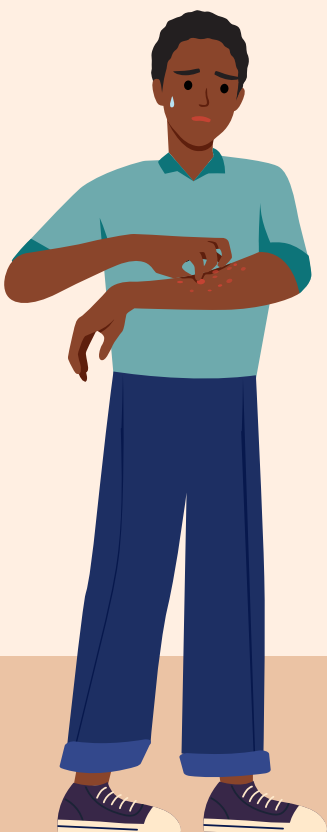
Comparators allow decision-makers to compare how well the intervention works relative to existing options.



Outcome

- What should be measured to assess the effectiveness or impact of the intervention? For example, will the intervention eliminate or relieve symptoms? Improve survival? Reduce the number of adverse events?

Even within the same population, individuals can have different priorities. Outcomes should be measurable, clinically meaningful, and reflect what matters most to patients, especially when trade-offs are involved.





How can I use the PICO framework if I would like to research a topic?

Now it's your turn to try it out using the example below.

George has osteoarthritis in his knee. The pain makes it hard for him to do his daily activities, even though he has been taking Drug A. His doctor mentioned a new medicine called Drug X that might help, but George wants to find out how well it works compared to Drug A before deciding whether to switch treatments.

Using the PICO framework, help George identify key search terms to create a focused question to explore the evidence.

Write down your answer

Population	
Intervention	
Comparison	
Outcome	

When you are ready, [click here](#) to see the suggested answer on the next page.



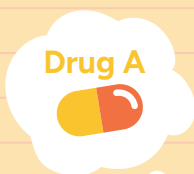
ANSWERS

How can I use the PICO framework if I would like to research a topic?

Answer	
Population	Adults with knee osteoarthritis
Intervention	Drug X
Comparison	Drug A
Outcome	Reduced knee pain, improved ability to do daily activities

Using these elements, you can create a focused question like this:

"For **adults with knee osteoarthritis** (P), does **Drug X** (I) **reduce knee pain and improve a patient's ability to do daily activities** (O) compared with **Drug A** (C)?"



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