

# Tips and tricks in performing a systematic review

## CHAPTER 4:

### *Building a PICO search strategy*

After identifying keywords that reflect your topic of interest,<sup>1</sup> you need to use them to search for articles by building a 'query' more commonly known as a search string/strategy.

Successful search strategies are usually highly structured and built around a PICO framework. Population Intervention Comparison Outcome (PICO) frameworks help the searcher group search terms into thematic groups. PICO is very good at identifying medical literature where systematic reviewing is common, this is because the medical model of research can typically be defined by; a specific population for example, children; an intervention, for example, exercise regime; the type of comparison, for example, randomised control trial; and outcome, for example, weight control.

If you were to use the following headings and list all other synonyms relating to those headings for example, CHILDREN — paediatric, adolescent, etcetera; EXERCISE — physical activity, dance, sport, etcetera; RCT — randomise, comparison, etcetera; and WEIGHT CONTROL — fat, adiposity, BMI, etcetera, you would end up with four lists of terms. If you took one term from each group and then searched for all four terms in a query you would hopefully retrieve articles relating to an exercise intervention in children where one of the outcomes was weight loss.

The trick with a PICO framework is that it searches for all possible combinations of search terms, if you have five search terms in each group it searches 5!<sup>4</sup> that is, 207 360 000 combinations. To link the search terms together logical Boolean operators are required. All search terms under one heading are linked by a Boolean

OR, that is, this term or that term, and each group is linked by a Boolean AND, that is, this group of terms and that group of terms.

Fortunately, specific groups of search terms have been identified that locate specific types of literature. One such hedge was pioneered in Cochrane reviews and is used to locate randomised control trials; the Cochrane Highly Sensitive Search Strategy is well documented and widely used.<sup>2</sup> Other groups of hedges exist and find articles that focus on therapy, diagnosis, review, prognosis, causation (aetiology), economics, cost, clinical prediction guides, and qualitative studies.<sup>3</sup>

Next Chapter: Implementing a search and managing the results.

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# Top Tips in 2 minutes

## HIV

Over 63 500 adults now live with HIV in the UK. There are over 31 500 GPs. That's about two each — who are yours?

HIV is not confined to London and the major cities, and highly-active antiretroviral therapy has transformed health outcomes. Later diagnosis is related to poorer health, but a significant proportion of people who are diagnosed late with HIV infection have been in contact with healthcare professionals in the preceding year with symptoms which, in retrospect, were likely to be related.

We can make a difference.

Lengthy pre-test counselling is not required, unless a patient requests or needs this. The minimum requirement is to provide an opportunity for pre-test discussion to ensure there is informed patient consent to the test.

HIV is a chronic disease with effective treatment which considerably improves the quality and quantity of life. We won't be able to diagnose it if we do not think about it, nor will we be able to diagnose it if we do not ask about it. We need to become more aware and more comfortable to invite discussion as we would do with any other chronic disease.

The test, if negative, does not need to be disclosed on applications for insurance, so how about it? This top tip helps to make it a more straightforward part of our consultation.

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