

ClinicalTrials.gov Search Tools: A Quick Guide for Systematic Reviewers

Kylie E Hunter¹, Christina Robinson², Jimithy E Hawkins³, Erica Lake⁴

¹ NHMRC Clinical Trials Centre, The University of Sydney, Faculty of Medicine and Health, NSW, Australia.

² Clinicaltrials.gov Product Owner, National Library of Medicine, Bethesda, Maryland, United States.

³ Clinicaltrials.gov Senior Product Manager, National Library of Medicine, Bethesda, Maryland, United States.

⁴ Health Sciences Librarians Outreach Specialist, Network of the National Library of Medicine Region 6, Hardin Library for the Health Sciences, University of Iowa, Iowa City, Iowa, United States.

Interfaces available	<ul style="list-style-type: none"> - Two interfaces: Basic Search and Expert Search - Complex command line searches may also be built in the Other terms input field
Indexing	<ul style="list-style-type: none"> - Condition/disease input field: registrants are encouraged to use MeSH terms or Unified Medical Language System (UMLS) terms that can be mapped to MeSH - All other fields: no ontologies are used
Specific field searches (free text)	<ul style="list-style-type: none"> - Yes, free text searching is available for these data fields: Condition/disease, Other terms, Intervention/treatment, Location (default display) - In the expanded More Filters search interface, free text searching is available for Title and/or Title Acronym, Outcome measure, Sponsor and/or Collaborator, Study IDs, and Facility Name - The fields of the study record that will be searched for these terms is available at Search Areas, e.g. terms entered in Condition/disease will be searched for in 7 data fields (Condition, BriefTitle, OfficialTitle, ConditionMeshTerm, ConditionAncestorTerm, Keyword, and NCTId) - Free text searching is also available in Expert Search
Operators	<p><i>Boolean Operators</i></p> <ul style="list-style-type: none"> - (AND, OR, NOT), must be in upper case <p><i>Context operators</i></p> <ul style="list-style-type: none"> - Control how search terms are evaluated - 4 types: COVERAGE, EXPANSION, AREA, SEARCH - Format: OPERATOR[Parameter]search term; operator must in capitals and parameter must be in exact case <ol style="list-style-type: none"> 1. COVERAGE - degree to which search term needs to match the field text; 4 parameter options: FullMatch, StartsWith, EndsWith, Contains Example: COVERAGE[FullMatch]heart 2. EXPANSION - degree to which search term can be expanded; 5 parameter options: None, Term, Concept, Relaxation, Lossy Example: EXPANSION[None]obesity 3. AREA – specify which search areas to search; parameters = search areas Example: AREA[InterventionName]aspirin 4. SEARCH - specify subsection of the study structure to be searched Example: heart attack AND SEARCH[Location](AREA[LocationCity]Portland AND AREA[LocationState]Maine) <p><i>Source operators</i></p> <ul style="list-style-type: none"> -Find studies -3types: MISSING, RANGE, ALL - Format: OPERATOR[Parameter]search term; operator must in capitals and parameter must be in exact case <ol style="list-style-type: none"> 1. MISSING - finds study records that have no values in the search area specified as a parameter; Contains Example: AREA[ResultsFirstPostDate]MISSING 2. RANGE - finds study records in the search area that have a value greater than or equal to the first parameter (e.g., 01/01/2015) and less than or equal to the second parameter (e.g. MAX) in the search area.; 5 parameter options: None, Term, Concept, Relaxation, Lossy Examples: RANGE[MIN,MAX], RANGE[BEGIN_DATE, END_DATE], RANGE[MIN_VALUE, MAX_VALUE] 3. ALL – retrieves all study records in the database. Example: ALL

Based on Table 2 in Hunter KE, Webster AC, Page MJ, Willson M, McDonald S, Berber S, Skeers P, Tan-Koay AG, Parkhill A, Seidler AL. Searching clinical trials registers: guide for systematic reviewers. *BMJ*. 2022 Apr 26;377:e068791. doi: 10.1136/bmj-2021-068791. PMID: 35473822.

Last updated October 16, 2024

ClinicalTrials.gov Search Tools: A Quick Guide for Systematic Reviewers

Kylie E Hunter¹, Christina Robinson², Jimithy E Hawkins³, Erica Lake⁴

¹ NHMRC Clinical Trials Centre, The University of Sydney, Faculty of Medicine and Health, NSW, Australia.

² Clinicaltrials.gov Product Owner, National Library of Medicine, Bethesda, Maryland, United States.

³ Clinicaltrials.gov Senior Product Manager, National Library of Medicine, Bethesda, Maryland, United States.

⁴ Health Sciences Librarians Outreach Specialist, Network of the National Library of Medicine Region 6, Hardin Library for the Health Sciences, University of Iowa, Iowa City, Iowa, United States.

	-Further details: Constructing Complex Search Queries
Truncation	-Not available
Wildcards	-Not available
Phrase searching	- Yes, use quotation marks, e.g. "Metastatic Breast Cancer" - Note: can turn off synonyms and search for an exact case-sensitive phrase by typing the command EXPANSION[None]"phrase" in the Condition/disease input field
Punctuation	- Apostrophes and hyphens are generally ignored and all variations are automatically searched - The modernised site is still developing search sensitivity - punctuation can possibly matter; use OR operator to ensure full retrieval
Case sensitive	-Yes, for Boolean operators (must be in capitals) and operator parameters (must be in exact case)
Nested searching	-Yes, using parentheses
Filters	- Normalized filters are available by radio patterns or tick box options for Study Status, Sex, Age, Accepts healthy volunteers, Study Phase, Study Type, Study Results, Study Documents, Funder Type, and FDAAA 801 Violations - Can also filter by manually entering age range and Location
Combining search strings	- Yes, in the Other terms input field and in Expert Search using operators and parentheses
Maximum search string length	-Limitations are based on URL length restrictions of browser or user agent; see https://saturncloud.io/blog/what-is-the-maximum-length-of-a-url-in-different-browsers/
Date limits	- Yes, by Study start, Primary completion, Results first posted, Last update posted, and Study completion - Can search by any study record date input field using the AREA operator.
Order in which results are displayed	- Default order by relevance - Option to change to "Newest First" (Study First Post Date) - Option to sort by any numeric or date input field with the /studies API endpoint
Saved searches	-No, but RSS feeds can be set up to receive regular updates - As an alternative, can use browser to bookmark a Search Results page or label it a Favorite; updates will be automatic every time the page is opened
Download / export formats	-RIS, CSV, JSON, FHIR JSON, and zipped JSON
Identifying unpublished trial results	<i>Will retrieve studies where data provider did not add a reference with type RESULT</i> -Type the command AREA[ReferenceType]NOT RESULT in the Other terms input field and apply the Study Results-With results filter
Synonyms	-Yes, for Condition/disease search terms -Can turn off synonyms by typing the command EXPANSION[Term]"keyword or phrase"

Based on Table 2 in Hunter KE, Webster AC, Page MJ, Willson M, McDonald S, Berber S, Skeers P, Tan-Koay AG, Parkhill A, Seidler AL. Searching clinical trials registers: guide for systematic reviewers. *BMJ*. 2022 Apr 26;377:e068791. doi: 10.1136/bmj-2021-068791. PMID: 35473822.

Last updated October 16, 2024