Waipapa Taumata Rau
University of Auckland

AI tools for literature reviews

Using artificial intelligence ethically and effectively to augment your literature reviews

Monday, 06 July 2026

Ngā Ratonga Manaaki Rangahau | Research Services
Student and Scholarly Services | Te Kahu Tuaira

AI tools for literature reviews

- When to use AI for your review
  - Policy
  - Method

- How to use AI for literature review tasks

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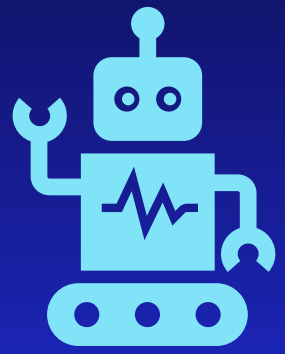


AI for literature reviews

When to use it

Pātai

What is your literature review for?

- Get an overview of the existing literature
- Form evidence-based conclusions
- Identify research gaps & build research topic
- Critically evaluate research
- Understand methodologies in your discipline
- Build critical thinking, reading and writing skills

Policy & guidelines

National

Royal Society Te Apārangi

AI for the Public Service

Health New Zealand

Policy & guidelines

National

Institutional

Policies related to GenAI use in research
University of Auckland

Data classification standards

Data management policies

Privacy policies

Ethics

Research and academic integrity policies

Policy & guidelines

National

Institutional

Policies related to GenAI use in research
University of Auckland

Generative Artificial Intelligence in Doctoral Research Guidelines:

Supporting research excellence	Research and Academic Integrity	Transparency and Accountability
Data Security and Privacy	Intellectual Property Protection	Accuracy and Bias
Te Tiriti responsibilities	Supervisor Consultation & Concerns	Candidate Preparedness

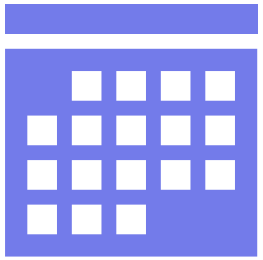
Policy & guidelines

National

Institutional

Policies related to GenAI use in research
University of Auckland

Generative Artificial Intelligence in Doctoral Research Guidelines:



September 1st 2026

Introduction to GenAI in doctoral research
University of Auckland staff intranet

Review the **Guidelines**

See support resources on **AI Essentials: AI in PG research**

Policy & guidelines

National

Institutional

Discipline practices

Policies related to GenAI use in research
University of Auckland

Published use in your discipline

Governing bodies or research societies

What do your peers or supervisors say?

Policy & guidelines

National

Institutional

Discipline practices

Publishers

Policies related to GenAI use in research
University of Auckland

Published use in your discipline

Governing bodies or research societies

What do your peers or supervisors say?

Check your target publisher or journal's author guidelines

Pātai

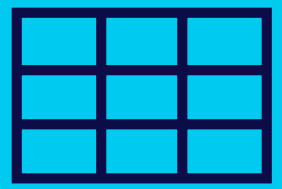
What kind of review are you doing?

Topic development

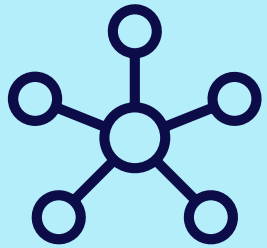
Search strategy

Literature discovery

Screening



Data extraction



Synthesis

Rigour

Transparency
Reproducibility
Unbiased
Structured approach / methodological

Completeness

Most relevant / sufficient vs all literature

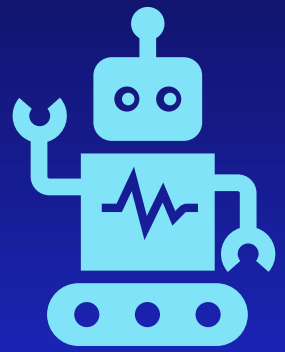
	Narrative reviews	Evidence synthesis
	Some thesis reviews Articles Grant proposals Research communications	Scoping reviews Systematic reviews Meta-analysis
Rigour	Moderate Transparent and unbiased enough to ensure robust conclusions	Strict Golden standard with strict methodologies
Completeness	Practical coverage Most relevant literature is considered	All literature No potentially relevant information is missed

Purpose & policies

Is it appropriate for your situation?

Methodology

Is it appropriate for your type of review?



AI for literature reviews

How to use it

Pātai

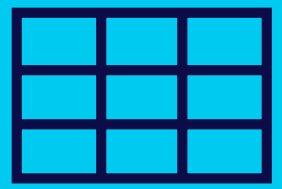
What AI tools have you heard or tried for finding literature?

Topic development

Search strategy

Literature discovery

Screening



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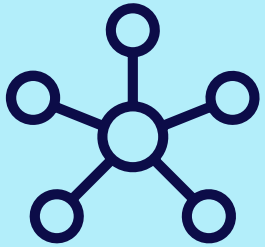


Synthesis

Topic development

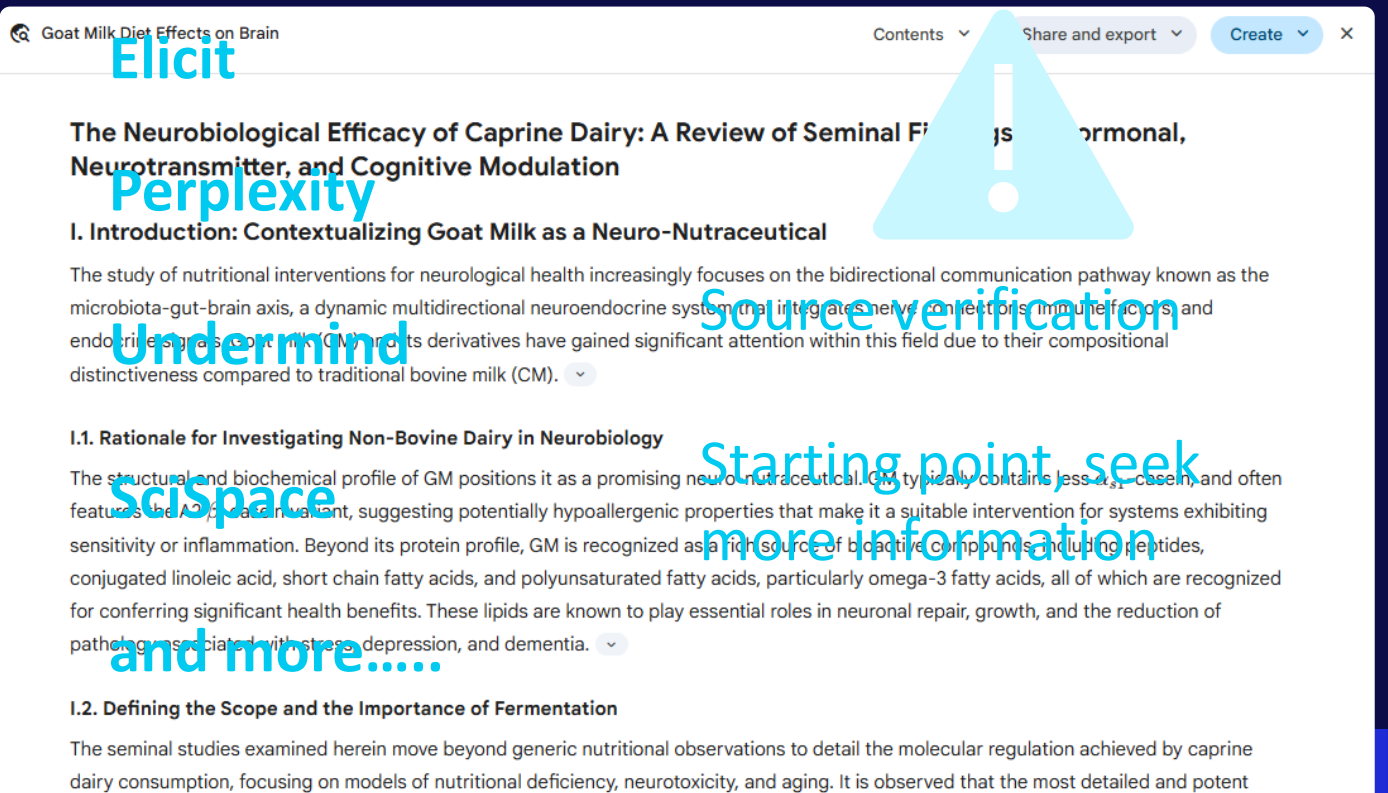
Explore recent literature & key publications

Get source-based overview of a new area

Gemini Deep Research

> Find seminal articles in the field of *xyz*, discuss their findings and their impact on the field

> I am a *xyz* researcher looking into *abc* area. Summarise the key findings and next steps for *abc* and how it relates to *xyz*



Search strategy

Get an initial search strategy to refine

Troubleshoot your search strategy

Translate your search strategy across databases

Search strategy

Gemini reasoning model

> “Create a Boolean search strategy for my research topic “*xyz*" for searches in Medline via Ovid, Scopus and Web of Science”

What’s missing?

1. Medline (via Ovid)

Medline uses **MeSH** (Medical Subject Headings) and specific field codes.

- `.mp.` searches title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms.
- `/` denotes a MeSH term.
- `exp` denotes "explode" (includes narrower terms in the hierarchy).

Search String:

1. `exp Goats/ OR exp Milk/ OR (goat* adj2 milk*).mp. OR caprine.mp.`
2. `exp Hormones/ OR hormone*.mp. OR endocrine.mp. OR cortisol.mp. OR insulin.mp. OR ghrelin.mp. OR leptin.mp.`
3. `exp Neurotransmitter Agents/ OR neurotransmitter*.mp. OR dopamine.mp. OR serotonin.mp. OR gaba.mp. OR glutamate.mp. OR (brain adj2 activat*).mp. OR (neural adj2 activ*).mp. OR fMRI.mp. OR exp Brain/`
4. `1 AND (2 OR 3)`

Tip for Ovid: If you find the "Milk" MeSH term is too broad (pulling in too much cow milk data), you can restrict line #1 to just `(goat* adj2 milk*).mp. OR caprine.mp.`.

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2. Scopus

Scopus relies heavily on "Title-Abstract-Keyword" searching (`TITLE-ABS-KEY`). It creates a very broad net.

Search String:

Search strategy

TERA

- Keyword frequency analysis of seed articles
- MeSH suggestor
- SearchRefiner for troubleshooting
- Polyglot for database translations

Literature discovery

Search databases

Search databases with your keyword search strategy

Google Scholar

PubMed®

Clarivate

Web of Science™

ProQuest Central

Ovid®

Scopus

JSTOR

Literature discovery

Search databases
Search databases with your keyword search strategy

Citation network searching
Search via citations & references to find papers similar to other papers you know, based on connection

CONNECTED PAPERS

VOSviewer

ResearchRabbit™

Litmaps®

Literature discovery

Search databases

Search databases with your keyword search strategy

Citation network searching

Search via citations & references to find papers similar to other papers you know, based on connection

AI search tools

Search by keywords, question or by using a relevant paper as an input.
Find relevant content based on semantic similarity.

perplexity

Google Scholar | Labs

SEMANTIC SCHOLAR
A free, AI-powered research tool for scientific literature

Gemini
Deep Research

Elicit

SciSpace

Consensus

Undermind

ResearchRabbit™

Literature discovery

Search databases

Search databases with your keyword search strategy

Citation network searching

Search via citations & references to find papers similar to other papers you know, based on connection

AI search tools

Search by keywords, question or by using a relevant paper as an input.
Find relevant content based on semantic similarity.

Source limitations

- Open research & metadata
- Preprints
- General web content

Biases

- Access biases
- Cultural bias
- Disciplinary biases

Hallucination

- Fabricated claims
- Inaccurate claims

Screening

What you could do:

Automated abstract screen with subsequent human verification

TERA MechaScreener (beta)

Active learning AI tools that assist you but not automate processes

ASReview Lab

Rayyan

Data extraction

Abstract data extraction
i.e. data matrix with Elicit

Full-text uploads for data extraction likely violate copyright or database-subscription licenses.

Work around: stick to public data (abstracts)

Vulnerable to hallucinations, fabricated claims.
Stick to “easy” information, verify against the source

Synthesis

Using abstracts for basic thematic analysis/grouping

High risk of hallucinations.

Abstracts lack details for proper synthesis or study critical appraisal.

Get critiques on your work

Upload your data extraction and drafting into a secure tool (e.g., NotebookLM through your institution) and as for feedback

Purpose & policies

Is it appropriate for your situation?

Methodology

Is it appropriate for your type of review?

It’s a balancing act

Benefits

- Faster workflow
- Semantic discovery across disciplines
- Helps brainstorm keywords and search strategies
- Assists workflows – screening , data extraction
- Find connections of papers

Risks

- Missed key studies
- Irrelevant or skewed results
- Weak critical engagement and synthesis
- Bias from data and tool limitations
- Limited transparency and reproducibility

So overall:

AI may support your work process, but you are responsible for the work

More University of Auckland resources:

- Research AI
- AI in literature review work flows
- AI for literature reviews workshop
- Responsible AI in research workshop
- AI Essentials

Literature review learning resources

- Finding information
- Research writing

Contact: AskUs

Any questions?

Demos >>>

Question mark image source: StorySet