



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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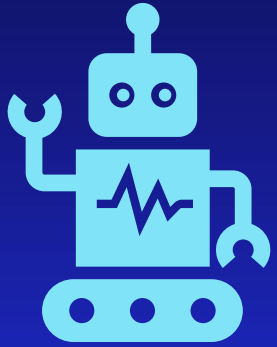


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# AI for literature reviews

## 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

## National

[Royal Society Te Apārangi](#)

[AI for the Public Service](#)

[Health New Zealand](#)

## Policy & guidelines

National

Institutional

Data classification standards

Data management policies

Privacy policies

Ethics

Research and academic integrity policies

Policies related  
to GenAI use in  
research  
University of Auckland

# 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

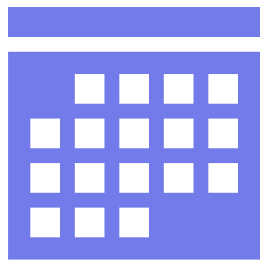
# Policy & guidelines

National

Institutional

[Policies](#) related  
to GenAI use in  
research  
University of Auckland

## Generative Artificial Intelligence in Doctoral Research Guidelines:



September 1<sup>st</sup>  
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

Published use in your discipline

Governing bodies or research societies

What do your peers or supervisors say?

Policies related  
to GenAI use in  
research  
University of Auckland

## 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



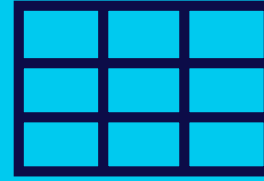
Search strategy



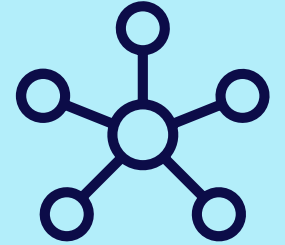
Literature discovery



Screening



Data extraction



Synthesis

Rigour

Transparency  
Reproducibility

Unbiased  
Structured approach / methodological

Completeness

Most relevant / sufficient vs all literature

## Narrative reviews

Some thesis reviews  
Articles  
Grant proposals  
Research communications

## Evidence synthesis

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



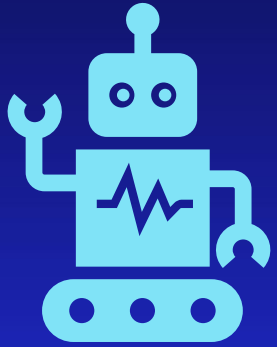
# Purpose & policies

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**



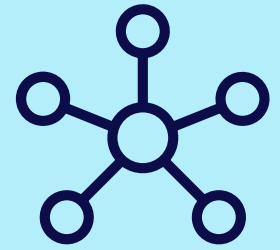
**Literature  
discovery**



**Screening**



**Data  
extraction**



**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 ”

The screenshot shows a document titled "Goat Milk Diet Effects on Brain" with a navigation bar containing "Contents", "Share and export", and "Create" buttons. The main text is titled "The Neurobiological Efficacy of Caprine Dairy: A Review of Seminal Findings on Hormonal, Neurotransmitter, and Cognitive Modulation". The document is annotated with several terms: "Elicit" (top left), "Perplexity" (top center), "Undermind" (middle left), "Source verification" (middle right), "Starting point, seek more information" (bottom right), "SciSpace" (bottom center), and "and more....." (bottom center). A large blue exclamation mark icon is overlaid on the right side of the document.

Goat Milk Diet Effects on Brain

## The Neurobiological Efficacy of Caprine Dairy: A Review of Seminal Findings on Hormonal, Neurotransmitter, and Cognitive Modulation

### I. Introduction: Contextualizing Goat Milk as a Neuro-Nutraceutical

The study of nutritional interventions for neurological health increasingly focuses on the bidirectional communication pathway known as the microbiota-gut-brain axis, a dynamic multidirectional neuroendocrine system that integrates nerve connections, immune factors, and endocrine signals. Goat milk (GM) and its derivatives have gained significant attention within this field due to their compositional distinctiveness compared to traditional bovine milk (CM).

#### I.1. Rationale for Investigating Non-Bovine Dairy in Neurobiology

The structural and biochemical profile of GM positions it as a promising neuro-nutraceutical. GM typically contains less  $\alpha_1$ -casein, and often features the A $\beta$ 2 casein variant, suggesting potentially hypoallergenic properties that make it a suitable intervention for systems exhibiting sensitivity or inflammation. Beyond its protein profile, GM is recognized as a rich source of bioactive compounds, including peptides, conjugated linoleic acid, short chain fatty acids, and polyunsaturated fatty acids, particularly omega-3 fatty acids, all of which are recognized for conferring significant health benefits. These lipids are known to play essential roles in neuronal repair, growth, and the reduction of pathologies associated with stress, depression, and dementia.

#### I.2. Defining the Scope and the Importance of Fermentation

The seminal studies examined herein move beyond generic nutritional observations to detail the molecular regulation achieved by caprine dairy consumption, focusing on models of nutritional deficiency, neurotoxicity, and aging. It is observed that the most detailed and potent



# 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.`

### 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

ProQuest Central

Web of Science™

Ovid®



Scopus





# 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





# Literature discovery

## Search databases

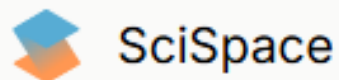
Search databases with your keyword search strategy

## 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.





# 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:

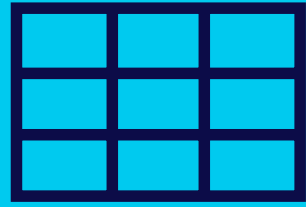
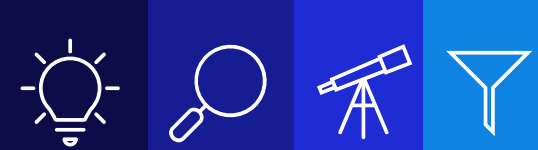
**Automated abstract screen with subsequent human verification**

**TERA MechaScreener  
(beta)**

**Active learning AI tools that assist you  
but not automate processes**

**ASReview Lab  
Rayyan**





# Data extraction

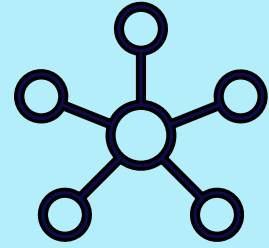
**Abstract data extraction  
i.e. data matrix with Elicit**



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 >>>