

THE ECOSYSTEM OF EVIDENCE

Navigating the future
of the ecosystem of evidence

Artificial intelligence and digital transformation
in research and healthcare

11th EBHC International Conference
Taormina, 21st – 24th October 2026

#EBHC2026

30th GIMBE 1996-2026 EVIDENCE FOR HEALTH

Evidence with Purpose

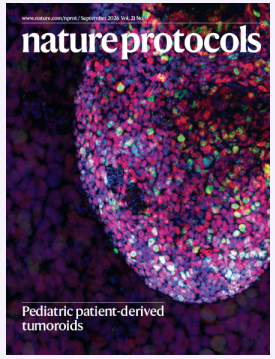
What it means, and why it matters now

Rupa Sarkar

EDITOR-IN-CHIEF, COCHRANE COLLABORATION

My journey to Cochrane

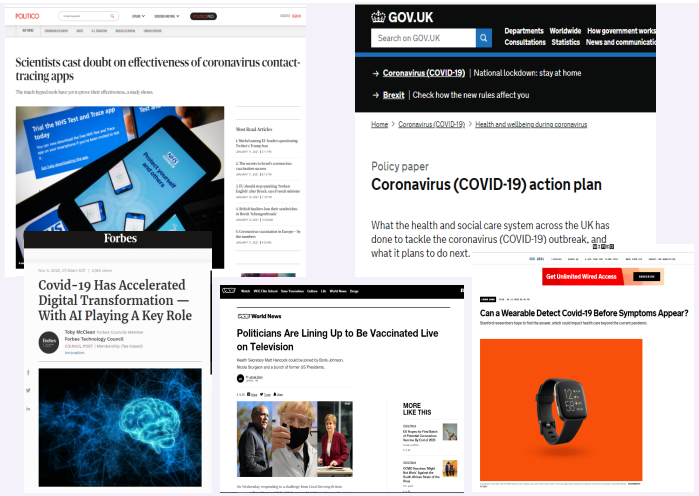




Founding Editor-in-Chief, *The Lancet Digital Health* (2018–2026). Previously Chief Editor, *Nature Protocols*.



Contributed to regulatory thinking on AI in clinical development



Contributed to technology and public-health policy during COVID-19

Background as a molecular biologist
PhD, Cancer Research & Stem Cell Regeneration
Imperial College London and Postdoctoral research on embryonic development at AECOM in NY

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A story about evidence with purpose

April 2026.
A Cochrane review set out to answer a question millions of families and clinicians are asking:

Are the new Alzheimer's drugs safe and do they help patients?

Amyloid-beta-targeting monoclonal antibodies for MCI or mild dementia due to Alzheimer's disease. Cochrane Database of Systematic Reviews, 2026.

What the review found

17

randomised trials

20,342

people with early Alzheimer's

Little to no

at 18 months, less than one point on a 70-point scale (0.85 on ADAS-Cog) in thinking or daily function

+107

more people per 1,000 had scans showing brain swelling (ARIA-E). Most had no symptoms.

CRITIQUE

Senior researchers called for retraction, arguing authors should not have pooled older antibodies with lecanemab and donanemab.

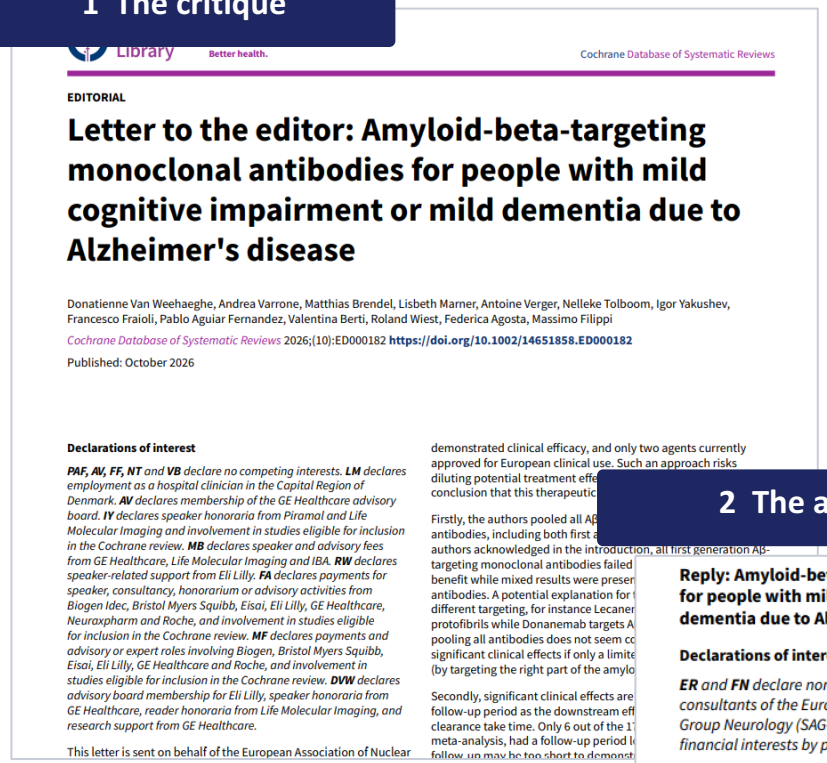
MEANWHILE

In June 2026, Italy's medicines agency confirmed it would not reimburse lecanemab or donanemab. Europe and UK EMA and MHRA still approve.

Sources: Nonino F et al. Cochrane Database of Systematic Reviews 2026, DOI: 10.1002/14651858.CD016297 Snyder H et al., Alzheimer's & Dementia, 2026; AIFA press release, 26 June 2026.

The debate, in the open

1 The critique



Cochrane Library Better health.

Cochrane Database of Systematic Reviews

EDITORIAL

Letter to the editor: Amyloid-beta-targeting monoclonal antibodies for people with mild cognitive impairment or mild dementia due to Alzheimer's disease

Donatienne Van Weehaeghe, Andrea Varrone, Matthias Brendel, Lisbeth Marner, Antoine Verger, Nelleke Tolboom, Igor Yakushev, Francesco Fraioli, Pablo Aguiar Fernandez, Valentina Berti, Roland Wiest, Federica Agosta, Massimo Filippi

Cochrane Database of Systematic Reviews 2026;(10):ED000182 **https://doi.org/10.1002/14651858.ED000182**

Published: October 2026

Declarations of interest

PAF, AV, FF, NT *and* ***VB*** *declare no competing interests.* ***LM*** *declares employment as a hospital clinician in the Capital Region of Denmark.* ***AV*** *declares membership of the GE Healthcare advisory board.* ***IY*** *declares speaker honoraria from Piramal and Life Molecular Imaging and involvement in studies eligible for inclusion in the Cochrane review.* ***MB*** *declares speaker and advisory fees from GE Healthcare, Life Molecular Imaging and IBA.* ***RW*** *declares speaker-related support from Eli Lilly.* ***FA*** *declares payments for speaker, consultancy, honorarium or advisory activities from Biogen Idec, Bristol Myers Squibb, Eisai, Eli Lilly, GE Healthcare, Neuraxpharm and Roche, and involvement in studies eligible for inclusion in the Cochrane review.* ***MF*** *declares payments and advisory or expert roles involving Biogen, Bristol Myers Squibb, Eisai, Eli Lilly, GE Healthcare and Roche, and involvement in studies eligible for inclusion in the Cochrane review.* ***DVW*** *declares advisory board membership for Eli Lilly, speaker honoraria from GE Healthcare, reader honoraria from Life Molecular Imaging, and research support from GE Healthcare.*

This letter is sent on behalf of the European Association of Nuclear

demonstrated clinical efficacy, and only two agents currently approved for European clinical use. Such an approach risks diluting potential treatment effe

conclusion that this therapeutic

Firstly, the authors pooled all Aβ antibodies, including both first a

authors acknowledged in the introduction, all first generation Aβ-targeting monoclonal antibodies failed

benefit while mixed results were preser

antibodies. A potential explanation for

different targeting, for instance Lecaner

protofibrils while Donanemab targets A

pooling all antibodies does not seem co

significant clinical effects if only a limite

(by targeting the right part of the amylo

Secondly, significant clinical effects are

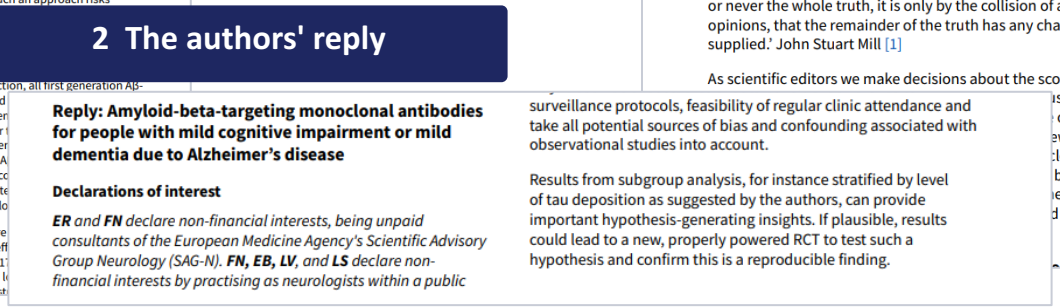
follow-up period as the downstream eff

clearance take time. Only 6 out of the 1

meta-analysis, had a follow-up period l

follow-up may be too short to demonst

2 The authors' reply



Reply: Amyloid-beta-targeting monoclonal antibodies for people with mild cognitive impairment or mild dementia due to Alzheimer's disease

Declarations of interest

ER *and* ***FN*** *declare non-financial interests, being unpaid consultants of the European Medicine Agency's Scientific Advisory Group Neurology (SAG-N).* ***FN, EB, LV,*** *and* ***LS*** *declare non-financial interests by practising as neurologists within a public*

surveillance protocols, feasibility of regular clinic attendance and take all potential sources of bias and confounding associated with observational studies into account.

Results from subgroup analysis, for instance stratified by level of tau deposition as suggested by the authors, can provide important hypothesis-generating insights. If plausible, results could lead to a new, properly powered RCT to test such a hypothesis and confirm this is a reproducible finding.

3 Our editorial



Cochrane Library Trusted evidence. Informed decisions. Better health.

Cochrane Database of Systematic Reviews

EDITORIAL

Competing values, conflicting views: evidence and debate in Alzheimer's disease

Toby Lasserson, Rupa Sarkar

Cochrane Database of Systematic Reviews 2026;(10):ED000180 **https://doi.org/10.1002/14651858.ED000180**

Published: October 2026

'…since the general or prevailing opinion on any subject is rarely or never the whole truth, it is only by the collision of adverse opinions, that the remainder of the truth has any chance of being supplied.' John Stuart Mill [1]

As scientific editors we make decisions about the scope, impact

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of the review [7]. Our decision to publish this letter was driven by its novel argument about the role of biomarkers and reference to harms, alongside more familiar criticisms, such as the decision to combine data across different medicines as a class effect. The Cochrane Library has historically published comments and responses alongside reviews, but we believe that response to criticism on a review as topical as this should be citable and more visible to users.

The letter from Van Weehaeghe et al highlights three points of contention shared with other published criticism: the synthesis of data from studies testing medicines with varying degrees of success in amyloid clearance conceals true differences between them; the interpretation of the effect on cognitive function is overly negative; and the review has ignored differences in patient

"Transparency informs debate and rarely ends it."

Van Weehaeghe D et al., Letter, and Nonino F et al., Reply, Cochrane Database Syst Rev 2026, ED000182. Lasserson T, Sarkar R, Editorial, Cochrane Database Syst Rev 2026, ED000180.

Hospital at home

Uncertainty is not the end point.

2008

The review finds similar mortality to hospital care, but key questions about moving patients between home and hospital

Next

Those gaps shape a large UK randomised trial, commissioned to answer them

2024

The updated review includes the trial: similar mortality, and fewer people moving into residential care

2024

A companion qualitative synthesis (52 studies, 13 countries) shows what makes services work in practice

Not every review changes practice today. But every review should shape the evidence that changes practice tomorrow.

Sources: Shepperd S et al. and Wallis J et al., Cochrane Database of Systematic Reviews, 2024 (and earlier versions).

The environment has changed

Everything is changing, from how evidence is made, to how it's discovered and used

MORE

More research to identify, assess and synthesise.

FASTER

New evidence can make yesterday's synthesis incomplete.

MESSIER

Integrity concerns complicate the evidence base.

AI-MEDIATED

AI is changing production and use of evidence.

In 1994 Doug Altman wrote 'The scandal of poor medical research', BMJ 1994.

Thirty years on, I think we are further from what he asked for, not closer.

Bias was the main issue then. Now research misconduct sits beside it, and AI can amplify it as easily as it can help catch it.

What I've heard

TRUST

Protect independence, rigour and transparency.

SPEED

Evidence that arrives too late may fail its purpose.

PROPORTIONALITY

Only add complexity to our methods when it improves the review.

USEFULNESS

Don't stop at 'what does the evidence say?' Say what it means for the decision.

PEOPLE

Author, patient, clinician and community experience matters.

GLOBAL RELEVANCE

Priorities should reflect health need, not only research capacity.

People still trust Cochrane. What they're asking is for us to be quicker and clearer about what our Review findings mean.

What Cochrane means now

An evidence activist organisation

WHAT IT MEANS

Standing up for what the evidence shows when it's contested, and publishing it even when it makes us unpopular.

WHAT IT DEMANDS

Embracing risk on uncertain questions, and never asking for more research without asking for better research.



Cochrane Library
Trusted evidence.
Informed decisions.
Better health.

Cochrane Database of Systematic Reviews

EDITORIAL

What Cochrane means now

Rupa Sarkar

Cochrane Database of Systematic Reviews 2026;(8):ED000179 **https://doi.org/10.1002/14651858.ED000179**

Published: August 2026

Never has there been so much information available, and never has it been harder to know what to trust. We face an expanding tide of 'AI slop', computer-generated content, produced at scale, largely unverified, sometimes persuasive, and frequently wrong. The need for trusted, rigorous, independent evidence is becoming existential. It is in this context that I am stepping into the role of Editor in Chief of Cochrane.

As health care faces new challenges and unprecedented opportunities, Cochrane is beginning a new editorial series examining some of the defining issues of our time, from misinformation and artificial intelligence (AI), to bias, competing interests and trust in research. These pieces are an invitation to think together about what Cochrane is, what it must become, and how we ensure that our high-quality evidence continues to improve lives by supporting better decisions in health.

most. That is precisely Cochrane's job; to be the institution willing to give the unwelcome message before the wave of confidence breaks, not after. Living up to that ideal means we have to both reaffirm and evolve our mission. There are five ways in which I want to do that, though I admit that the framing that follows is neater than the reality, which will always be messier and more iterative.

First, we strengthen editorial leadership and accountability. Trust depends not only on rigorous methods but also on clear responsibility for decisions. That means consistent, transparent, strategically aligned editorial judgement, applied earlier in the process and concentrated where expertise genuinely adds value, not spread thinly across every stage in a way that slows everything down without improving anything. We've started making improvements, but this remains a work in progress.

WHY I THINK THIS

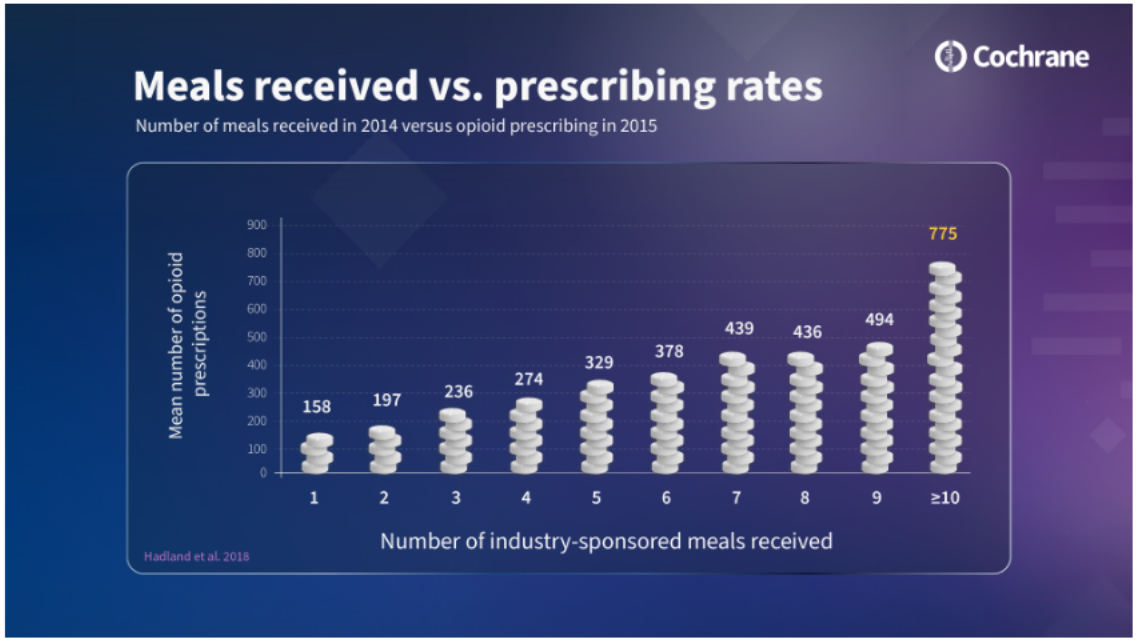
- There is more information than ever, and less agreement about what to trust.
- Cochrane's independent voice is crucial to say what the evidence shows, and what it doesn't.
- Cochrane has done that for more than 30 years. To stay relevant, we need to do it faster while maintaining trust.

Editorial priorities

1	**Deliver timely, trusted evidence**	Six-month submission to publication target 2027; rapid/living pathways where decisions cannot wait.
2	**Transform author experience**	Communication, predictable timelines, fewer review cycles.
3	**Increase impact**	Stronger implications, guideline partnerships, global prioritisation.
4	**Lead trustworthy AI adoption**	Automate routine work, set standards.
5	**Lead in methods**	Make requirements proportionate and implementable. Simplify where added complexity does not materially improve the results.

Why independence matters

Industry marketing changes what doctors prescribe



This infographic details the number of meals received in 2014 versus opioid prescribing in 2015, based on Hadland et al. (2018). It visualises the meals received by physicians and the subsequent prescribing rates.

GIFTS AND PAYMENTS

Less appropriate, more frequent and probably more costly prescribing

FREE MEALS

More meals, more of that company's drug. Even for opioids

CONFLICT-OF-INTEREST POLICIES

Needed to make prescribing more appropriate

"Doctors think they can't be bought for the price of a sandwich."

Dr Barbara Mintzes, lead author

Sources: Mintzes B, Bero L et al. Cochrane Database Syst Rev 2026, CD013423.pub3 (93 studies); Cochrane news, 9 October 2026. Infographic based on Hadland et al. 2018.



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Our editorial strategy

Protect what makes Cochrane trusted.

Change what makes trusted evidence too slow, too hard to produce, or too hard to use.

A globally relevant Cochrane



Community Priorities

- Global representation and leadership across Cochrane
- Mentorship pathways to build the next generation
- Support for early-career researchers, ensuring viable publication timelines and genuine roles in the future of Cochrane
- Meaningful public and patient engagement, that is appropriately supported and not tokenistic

Not open. Not verifiable. Not faster — yet.



A personal take on science and society

World view

By Rupa Sarkar

Why AI can't be trusted to write scientific reviews

The production of the highest-quality literature reviews requires the judgement and expertise of people.

Artificial-intelligence tools are being touted as a means to conduct rapid reviews of scientific literature. At the London-based publisher the Cochrane Collaboration, where I became editor-in-chief in March, we specialize in health-related systematic reviews: the highest-quality syntheses of all the available research. We are testing ways to use AI to increase our reviews' efficiency and scale. But, in our experience, the current tools are far from ready for mainstream adoption, and the assumption that machines can replace humans on all methodological tasks is flawed.

The stakes are high. Systematic reviews and other types of evidence synthesis inform clinical practice, public-health guidance and policy decisions that affect entire populations. Errors could give false hope to patients or lead health systems to waste money on ineffective or unsafe interventions.

Current AI models typically replicate the step-by-step processes by which people conduct systematic reviews: identifying suitable studies from disparate sources; extracting relevant data for analysis; and, finally, writing up the report. The idea is to replace the work of humans.

But conducting systematic reviews is not a purely computational task. Human specialists are needed to define meaningful review questions, evaluate relevance, interpret results and understand clinical or policy implications. Context and subjective nuance are seldom well-represented in AI models' training data, and the models' tendency to hallucinate — that is, to fabricate information — means that their outputs need to be verified by human experts.

Efforts at Cochrane show the limitations of using AI in place of people. We've been evaluating tools that support study screening and data extraction. These are time-consuming processes to conduct manually, particularly when primary data are not readily accessible and must be drawn from multiple sources or inferred from published results.

But we've found that most of the tools available were developed by private companies. This is problematic for reviews that evaluate drugs and medical devices, because these need to be independent of industry. What's more, few AI models are open source, with most relying on opaque, proprietary 'black box' processes. This means there's no way to examine whether a tool might disproportionately include trials with results favourable to one drug company.

And, on the practical side, tools in the current generation require long training periods for both the AI and the human operator before they yield reliable results. So far, we've found that, for each review, the whole process takes longer than doing the work manually.

> "Developers should start building systems that allow humans and AI to work together effectively."

In my view, to realize the full potential of AI, it's crucial that tool developers, authors and evidence users move away from using it to generate individual reviews. Instead of mimicking human processes, developers should start building systems that allow humans and AI to work together effectively to assess studies.

Where AI excels is in managing large volumes of information consistently. There is an overwhelming volume of research, spread across journals, preprint servers and repositories. Resources such as PubMed and Cochrane's CENTRAL database help to collate information, but data availability, accessibility, formats and associated metadata vary widely across journals. AI is well placed to build standardized, structured data sets from these disparate sources — a hugely labour-intensive process for people.

Consider how this might help when it comes to reviews of, say, malaria treatments. Currently, one group of experts conducting a review of treatments for children and another reviewing treatments for adults perform screening and data extraction separately. A central resource of all studies related to malaria treatments, established using AI and verified by humans, would remove these common steps for both groups — and others — cutting days of manual work for the average systematic review.

Another area in which AI excels is integrity efforts, such as automated management of retracted papers and fraud detection, which work best when applied across vast data sets. A single clinical trial often leads to several publications — and retraction of one indicates the need for extra scrutiny of the rest. At Cochrane, we hope to use AI to help authors to check their reviews for fraudulent or problematic studies. This could help authors to rethink the reviews, or lead to updates of existing publications.

Whatever the role of AI in evidence synthesis, our experiences show that it's crucial for publishers and policymakers to retain the ability to evaluate tools critically, and to be alert to potential commercial pressures. Study selection is central to research integrity: if a tool disproportionately includes pharmaceutical studies with positive results, this would clearly bias the results.

And developers must follow the principles for responsible use of AI in evidence synthesis (RAISE), co-developed by my colleagues at Cochrane (see go.nature.com/49yrof2). These state that people must remain responsible for decisions, and that AI use must be transparent, justified and evidence based. It must not compromise methodological rigour, ethics or equity.

AI has real potential to strengthen evidence synthesis, but only if we use these tools to support — not replace — the expertise of scientists.

Rupa Sarkar is editor-in-chief of the Cochrane Collaboration, based in London, UK. e-mail: rsarkar@cochrane.org

Not faster — yet

Training and set-up (e.g. writing and testing prompts and checking outputs) currently outweigh the time saved.

Not verifiable

Currently ways to check results are limited

Not open

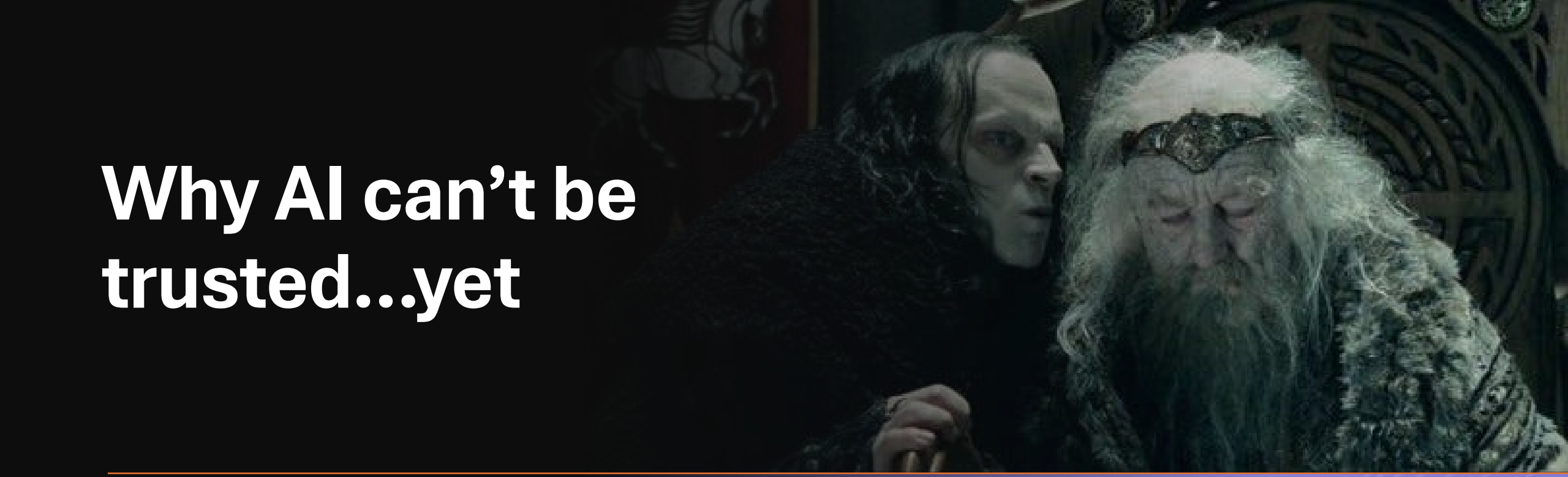
Most tools are built by private companies on opaque, proprietary processes.

Every tool earns its place

A new risk-of-bias tool, a GRADE update, a random-effects model: we ask each for evidence of accuracy, reliability, transparency, value and feasibility.

AI is no different.

Why AI can’t be trusted…yet



AI: setting the standards

AI should support, not replace, the principles that underpin rigorous evidence synthesis

NOW / TEST

- Screening
- Data extraction
- Consistency checks
- Statistical checking

COMMUNITY ROLE

- Clinical judgement
- Risk of bias
- Certainty assessment
- Interpretation

COCHRANE'S ROLE

- Validation principles
- Benchmark datasets
- Transparent reporting
- Risk-based safeguards

CESAR

Cochrane's Evaluation of Semi-Automated Review Methods — a platform study within ongoing reviews.

1. AI tool selection process, following an open call for proposals
2. Contracts with AI tool developers, including data protection and IP safeguards
3. Protocol and evaluation methods — published in full

RAISE AI governance framework embedded at every stage

CESAR tests AI against human reviewers inside real reviews: pilot complete, 8 teams active, protocol published.

Sources: Gartlehner G et al. (2026) CESAR protocol, J Clin Epidemiol 112390; Devane D et al., HIET-1, J Clin Epidemiol 2025/26.

Responsible AI: a shared job

1. **Responsible AI in Evidence synthesis 1:** Recommendations for practice
2. **Responsible AI in Evidence synthesis 2:** Building and evaluating evidence synthesis tools
3. **Responsible AI in Evidence synthesis 3:** Selecting and using evidence synthesis tools

No one organisation can solve responsible AI alone.

Scan for the RAISE papers

Researchers stay responsible for their research

AI must not compromise rigour, must be reported transparently, and must be used with human oversight. The real question isn't what AI can do. It's what we can trust it to do. Choosing a tool means owning its output, and its consequences.

Source: Thomas J et al. (v3, March 2026) RAISE: recommendations for practice, OSF; Flemyng E et al. (2025) Cochrane Database Syst Rev, position statement.

A Cochrane review is not just a review.

Cochrane's value isn't just the review. It's the commitment to keep evidence current, connected, and trustworthy.

Evidence hub

Map topic areas and priority questions
Connect evidence and identify gaps
Maintain a living, reusable repository

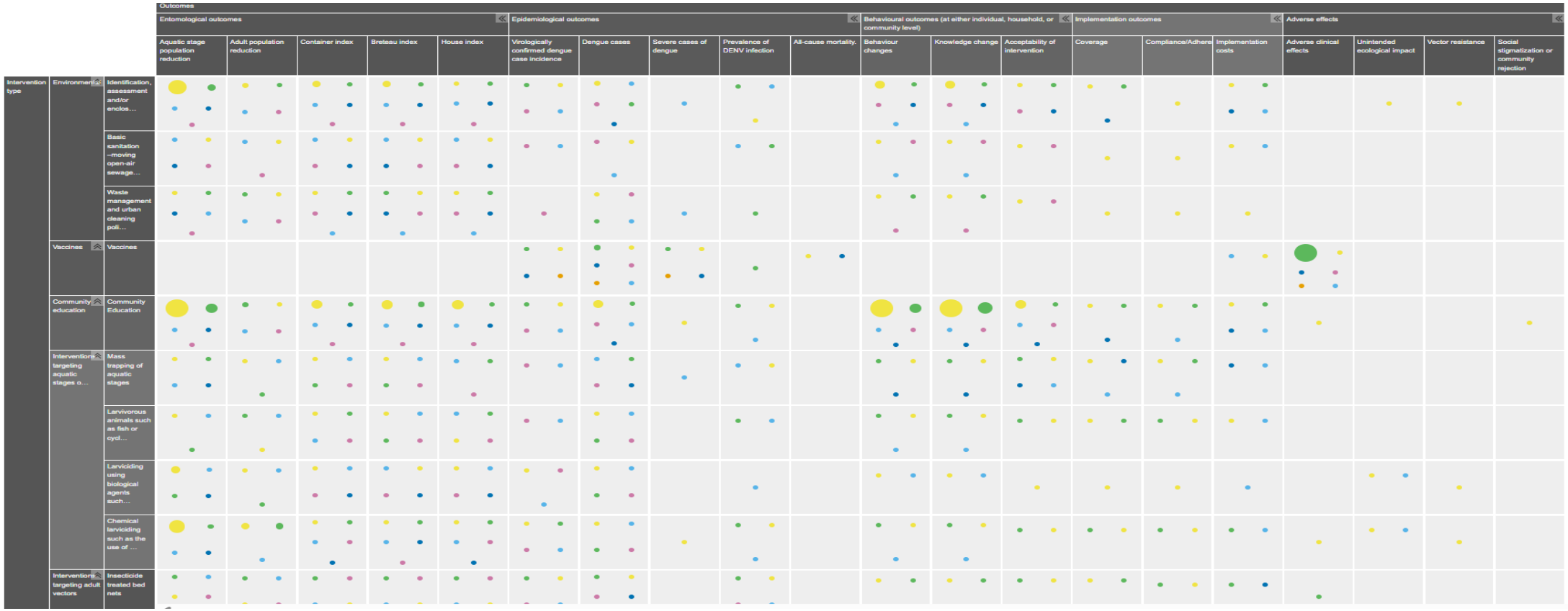
AI benchmark

Compare AI-supported and human tasks
Test quality, bias, traceability and reliability
Define where expert judgement must lead

The hub improves what AI can use. The benchmark tests what AI can do.

Source: Cochrane Research, Development and Innovation programme, 2026.

Mapping the gaps: dengue



https://resources.cochrane.org/sites/resources.cochrane.org/files/uploads/DengueEGM_Version4_27thMarch2026.html

Mapping the gaps: dengue

Plenty of research. Too little synthesis.

187 studies

on community education alone, and still little evidence that it reduces spread

Adult vaccines

the biggest gap: almost no synthesised evidence. Reviews are now being commissioned

> **“The main issue isn’t that we lack dengue prevention research.”**
> Dr Bruno Guedes, co-lead author

Sources: Cochrane evidence and gap map of dengue prevention, Cochrane Database Syst Rev 2026, CD016299; Cochrane news, 24 August 2026. Interactive map: filter by intervention and outcome.

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Evidence with purpose

1. Answering the questions people are actually asking.
2. Saying what the evidence means
3. Treating uncertainty as the starting point
4. Holding AI to the same standard as every other method.

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