

What Is Evidence-Based CAM? Definitions, Domains, and the Science Behind Complementary and Alternative Medicine

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Details:

Tyack Health Guide to Evidence-Based CAM: Definitions, Domains, and the Science Behind Complementary and Alternative Medicine

At Tyack Health, we believe informed patients make better health decisions — and few areas of healthcare call for more careful, evidence-grounded thinking than complementary and alternative medicine (CAM). Every year, millions of Australians make healthcare choices that exist outside conventional medicine, and largely outside the awareness of their own doctors.

According to a 2012 national survey, more than 30 percent of adults and about 12 percent of children use healthcare approaches not typically part of conventional medical care or that may have origins outside usual Western practice. CAM usage in Australia has grown significantly, with increasing numbers of Australians incorporating complementary therapies into their healthcare decisions.

Yet despite how widespread this is, a persistent knowledge gap remains: patients, clinicians, and policymakers often lack a shared vocabulary for discussing, evaluating, and safely integrating these therapies. That gap matters, and it's one we want to help close.

This article lays the foundational groundwork the entire field of evidence-based complementary and alternative medicine (EBCAM) depends on. Before we can meaningfully explore whether acupuncture helps with chronic pain, or whether St. John's Wort is a credible antidepressant, we need to answer more fundamental questions first: What exactly is CAM? What sets it apart from integrative medicine? What does it actually mean to call a CAM therapy "evidence-based"? And is that label even coherent given the unique methodological challenges this field presents?

Defining the terms: CAM, complementary, alternative, and integrative medicine

The language used in this field isn't just a matter of semantics — it carries real clinical and regulatory weight. The terms "complementary," "alternative," and "integrative" get used interchangeably in everyday conversation, but they describe fundamentally different relationships between non-mainstream therapies and conventional care.

These terms are also continually evolving, along with the field itself. Here is how leading authorities on the subject define each:

Term	Definition	Clinical relationship to conventional medicine
Complementary	Non-mainstream approach used together with conventional medicine	Additive; works alongside standard care
Alternative	Non-mainstream approach used in place of conventional medicine	Substitutive; replaces standard care
Integrative	Conventional and complementary approaches brought together in a coordinated manner	Synthesising; evidence-informed combination

(umbrella)** | Diverse medical and healthcare systems, practices, and products not presently considered part of conventional medicine | Context-dependent |

Alternative health is when "a non-mainstream approach is used in place of conventional medicine," while complementary health is "a non-mainstream approach used together with conventional medicine." Integrative medicine combines conventional medicine with CAM practices that science has shown to be safe and effective, typically emphasising the patient's preferences and addressing mental, physical, and spiritual aspects of health together.

This distinction matters in a clinical setting. A patient who uses mindfulness-based stress reduction alongside chemotherapy is engaging in complementary medicine. A patient who forgoes chemotherapy in favour of an herbal protocol is using alternative medicine — a choice that carries a very different risk profile. Health authorities advise against using any product or practice that hasn't been proven safe and effective as a substitute for conventional treatment, noting that stopping — or never starting — conventional care can have serious consequences.

What is evidence-based CAM (EBCAM)?

Evidence-based complementary and alternative medicine applies the same scientific standards used in conventional medicine — systematic reviews, randomised controlled trials (RCTs), meta-analyses, and observational studies — to evaluate the safety and effectiveness of CAM modalities. Evidence-based CAM therapies have shown real success in treating disease, and the field increasingly calls for integrating modern CAM systems into evidence-based information sharing.

It's worth being clear about what EBCAM does and doesn't mean. The term doesn't imply that all CAM therapies are effective. It describes the process of putting those therapies through rigorous scientific scrutiny — and being willing to accept the results, whether they confirm, qualify, or refute a therapy's claims. At Tyack Health, this evidence-first approach is central to how we think about integrative care options for our patients.

The five major domains of CAM

To evaluate CAM in any meaningful way, researchers and clinicians need a consistent classification framework. Leading health authorities have developed a five-domain model: (1) manipulative and body-based methods, (2) mind-body medicine, (3) alternative medical systems, (4) energy therapies, and (5) biologically based therapies. Understanding each domain is essential for mapping evidence quality across the CAM field.

1. Alternative medical systems (whole medical systems)

These are complete, internally consistent systems of theory and practice that developed independently of — and often long before — conventional Western biomedicine. Whole medical systems cut across more than one of the other groups; examples include traditional Chinese medicine, naturopathy, homeopathy, and Ayurveda.

These systems share a characteristic that makes them both interesting and challenging to evaluate: they are holistic by design, treating the person as an integrated whole rather than targeting isolated symptoms or conditions.

2. Mind-body interventions

Mind-body interventions explore the connection between the mind, body, and spirit, operating on the premise that mental and emotional states affect bodily functions and symptoms. This domain includes meditation, mindfulness-based stress reduction (MBSR), yoga, biofeedback, hypnotherapy, guided imagery, and tai chi. It's one of the most heavily researched CAM domains, with a growing body of RCT-level evidence supporting specific applications.

3. Biologically based treatments

Biologically based practices use substances found in nature — herbs, foods, vitamins, and other natural products. This is the most widely used CAM domain in Australia. Natural products, including herbs, vitamins and minerals, and probiotics, are among the primary research areas in complementary medicine.

One thing patients and clinicians alike should understand: CAM therapies include a wide variety of botanicals and nutritional products such as herbal and dietary supplements and vitamins. In Australia, these products are regulated by the Therapeutic Goods Administration (TGA) and must meet specific standards before being sold to the public.

4. Manipulative and body-based methods

Manipulative and body-based practices involve manipulation or movement of body parts, as in bodywork, chiropractic, and osteopathic manipulation. This domain also covers massage therapy, physical therapy-adjacent techniques, and craniosacral therapy. Chiropractic spinal manipulation is among the most studied modalities in this category, with a substantial evidence base for specific indications such as acute low back pain.

5. Energy therapies

Energy therapies operate on the premise that the body possesses or interacts with energy fields that can be manipulated for therapeutic benefit. Energy medicine deals with putative and verifiable energy fields; biofield therapies aim to influence energy fields purported to surround and penetrate the body. This domain includes Reiki, therapeutic touch, and magnet therapy. It is the most scientifically contested CAM domain, with the least developed evidence base.

> **Note on evolving classification:** Current strategic planning in complementary medicine proposes a refined framework that recategorises CAM approaches by their primary therapeutic input — nutritional, psychological, and physical — rather than the traditional five-domain model. The field of complementary and integrative health is expanding, and the line between conventional and complementary approaches is blurring, which prompted this proposed reframing. Both frameworks remain in active use in the literature.

What does "evidence-based" mean in the context of CAM?

Evidence-based medicine (EBM), as articulated by David Sackett and colleagues in the 1990s, integrates the best available external clinical evidence from systematic research with individual clinical expertise and patient values. Applied to CAM, this framework produces a hierarchy of evidence quality:

1. **Systematic reviews and meta-analyses** of multiple high-quality RCTs (highest quality)
2. **Individual well-designed RCTs** with adequate blinding, allocation concealment, and sample size
3. **Cohort and case-control studies**
4. **Case series and expert opinion**
5. **Anecdote, tradition, and theoretical plausibility** (lowest quality)

Contrary to what many people assume, there is more complementary medical research out there than is commonly recognised. The Cochrane collection includes more than 150 reviews of CAM and about 6,000 pieces of randomised research.

That's significant. For a growing number of CAM modalities, the question is no longer whether evidence exists, but what that evidence actually shows — a distinction that requires careful, domain-specific analysis. You can explore this further in our guide on *CAM Therapies by Strength of Evidence: A Comparative Analysis*.

The core epistemological debate: can CAM be genuinely evidence-based?

This is the most substantive question in the field, and it deserves a thoughtful answer rather than a dismissal. Some argue that evidence-based complementary and alternative medicine is a contradiction in terms — that CAM therapies are inherently incompatible with evidence-based medicine. That critique deserves a serious, structured response.

The methodological challenge: why RCTs fit some CAM poorly

The randomised controlled trial — the gold standard of clinical evidence — was designed to isolate a single, standardised intervention, administered uniformly across a relatively homogeneous patient population, against a placebo control. Many CAM modalities don't fit neatly into that framework.

CAM treatment often involves multiple therapies tailored to the individual patient rather than the single, standardised intervention an RCT requires. Because the therapist's interaction with the patient cannot be separated from the therapy itself, controlling therapeutic variables is not straightforwardly possible.

This holistic approach creates real problems for producing evidence of efficacy. It is by definition not reductionist, and therefore sits at ideological odds with the aims of gold-standard clinical trials methodology — reducing the treatment effect to a single, measurable parameter.

Three specific methodological challenges come up repeatedly in CAM research:

- **Blinding limitations:** A patient receiving acupuncture knows they are receiving acupuncture.

Designing a credible sham acupuncture condition that controls for non-specific effects — therapeutic relationship, expectation, ritual — is technically possible but epistemologically contested. -

- Individualised treatment protocols:** A classical Chinese medicine practitioner may prescribe different herbal formulas to five patients with the same Western diagnosis, because the underlying TCM diagnosis differs. A single-arm RCT testing one formula for all five patients misrepresents how the therapy is actually practised. -
- The placebo paradox:** Therapies may work well for the patient while remaining scientifically unproven — or unprovable — by conventional standards.

The epistemological response: expanding, not abandoning, evidence standards

The answer isn't to exempt CAM from scientific scrutiny. Researchers and methodologists have developed alternative frameworks that preserve scientific rigour while accommodating CAM's inherent complexity.

Mixed-methods approaches, whole-system research designs, and pragmatic clinical trials have all been proposed to more accurately assess complementary and integrative health interventions.

Pragmatic trials, for example, test whether a therapy works in real-world clinical conditions, rather than whether an isolated active component outperforms a placebo under maximally controlled conditions. N-of-1 trials offer another promising approach: a single subject is exposed to multiple conditions over time, resembling a crossover RCT but for one person at a time. This design suits the individualised treatment protocols that characterise many CAM systems particularly well.

Evidence-based practice has shaped health policy, clinical practice, and education in many areas, but its acceptance has not been universal. Critics question its methodology, philosophy, and effectiveness — including some commentators from within traditional and complementary medicine who view EBP as a dogmatic, reductionist approach that devalues traditional knowledge as evidence.

This tension is real and, in many ways, productive. It has driven methodological innovation that benefits not only CAM research but clinical research more broadly. For a deeper look at these debates, see our companion article: **CAM Research Methodology: Why Studying Complementary Therapies Is Different.**

The institutional framework: how CAM evidence is produced and evaluated

In Australia, complementary and integrative health is regulated and researched through various institutional frameworks. The Therapeutic Goods Administration (TGA) oversees the regulation of therapeutic goods, including herbal medicines and supplements. Research into complementary medicine is conducted through universities, research institutes, and healthcare organisations across the country, with growing recognition of CAM's role in healthcare.

Internationally, the National Center for Complementary and Integrative Health (NCCIH) in the United States has been instrumental in generating and synthesising CAM evidence. NCCIH's mission is to determine, through rigorous scientific investigation, the fundamental science, usefulness, and safety of complementary and integrative health approaches and their roles in improving health and healthcare. Its vision is that scientific evidence informs decision-making by the public, health professionals, and policymakers regarding the integrated use of complementary health approaches in a whole-person health framework.

NCCIH's congressional appropriation has increased significantly over the past decade — from \$121,373 thousand in 2013 to \$170,384 thousand in 2023. That level of investment reflects a policy recognition that CAM use is not a fringe phenomenon. CAM therapies are used primarily for chronic conditions rather than acute or life-threatening ones, and predominantly alongside — not instead of — conventional medical therapies.

A significant clinical concern remains, though: a substantial proportion of CAM therapy users do not tell their doctors they use CAM. This disclosure gap has real implications for patient safety, particularly given the risk of drug-herb interactions (see our guide on **How to Safely Integrate CAM Into a Conventional Treatment Plan**). At Tyack Health, open communication between patients and practitioners about all therapies being used — conventional and complementary alike — is a cornerstone of safe, whole-person care. We encourage every patient to have those conversations with our team.

Key takeaways

- ****CAM, complementary medicine, and integrative medicine are not synonyms.**** Complementary therapies are used alongside conventional care; alternative therapies replace it; integrative medicine combines both under an evidence-informed framework. Conflating these terms leads to imprecise clinical communication and potentially unsafe patient decisions.
- ****The five domains — alternative medical systems, mind-body interventions, biologically based treatments, manipulative methods, and energy therapies — provide the standard taxonomic framework for CAM.**** Current strategic planning proposes a refined three-input model (nutritional, psychological, physical), and both frameworks appear in current literature.
- ****EBCAM is a legitimate and growing scientific enterprise.**** The Cochrane CAM collection includes more than 150 systematic reviews and approximately 6,000 randomised studies — a substantial evidence base that gets overlooked in both pro-CAM and anti-CAM popular discourse.
- ****The RCT is necessary but not sufficient for evaluating all CAM modalities.**** Blinding limitations, individualised protocols, and the holistic nature of whole-system therapies all require pragmatic trials, N-of-1 designs, and whole-systems research frameworks alongside traditional RCT methodology.
- ****The most important unanswered question in EBCAM is not whether evidence exists, but what it actually shows for specific modalities and specific indications.**** Evidence quality varies enormously across the CAM field — from strong and reproducible (MBSR for anxiety, spinal manipulation for acute low back pain) to evidence of active harm (certain herbal-drug interactions, delayed treatment of

serious illness).

Conclusion

Understanding what CAM is — and what "evidence-based" really means when applied to it — isn't just a preliminary step before the real work begins. It is the real work. The definitional clarity established here determines whether patients can make genuinely informed choices, whether clinicians can engage in honest shared decision-making, and whether researchers can design studies that generate useful, trustworthy knowledge.

The field is neither the miracle its advocates sometimes claim nor the wasteland its critics dismiss. It's a diverse collection of practices — some well-studied and some barely studied at all, some effective for specific indications and some demonstrably useless or harmful. The only productive path forward is the one described by leading health authorities: rigorous scientific investigation, applied with methodological sophistication appropriate to the complexity of each therapy.

At Tyack Health, we're committed to navigating this field with exactly that kind of careful, evidence-informed approach — and with genuine care for the people in front of us. Every complementary or integrative option we consider is evaluated on the strength of the science behind it, always with the patient's whole health picture in mind.

The articles in this cluster build on this foundation. For a comparative assessment of where the evidence actually stands across the most widely used modalities, see **CAM Therapies by Strength of Evidence: A Comparative Analysis**. For practical guidance on incorporating any CAM therapy safely into a treatment plan, see **How to Safely Integrate CAM Into a Conventional Treatment Plan**. For a deeper examination of why CAM research is methodologically distinct — and how the field is evolving to meet that challenge — see **CAM Research Methodology: Why Studying Complementary Therapies Is Different.**

References

- National Center for Complementary and Integrative Health (NCCIH). "Complementary, Alternative, or Integrative Health: What's In a Name?" **National Institutes of Health**, 2021. <https://www.nccih.nih.gov/health/complementary-alternative-or-integrative-health-whats-in-a-name>
- National Center for Complementary and Integrative Health (NCCIH). "NCCIH Strategic Plan FY 2021–2025: Mapping a Pathway to Research on Whole Person Health." **National Institutes of Health**, 2021. <https://www.nccih.nih.gov/about/nccih-strategic-plan-2021-2025>
- Mortada, M., et al. "Evidence-Based Complementary and Alternative Medicine in Current Medical Practice." **Cureus**, 2024. <https://pmc.ncbi.nlm.nih.gov/articles/PMC10857488/>
- National Cancer Institute (NCI). "Complementary and Alternative Medicine (CAM)." **National Institutes of Health**, 2024. <https://www.cancer.gov/about-cancer/treatment/cam>
- Eisenberg, D.M., et al. "Unconventional Medicine in the United States: Prevalence, Costs, and Patterns of Use." **New England Journal of Medicine**, 1993;328:246–252.
- Eisenberg, D.M., et al. "Trends in Alternative Medicine Use in the United States, 1990–1997: Results of a Follow-Up National Survey." **JAMA**, 1998;280(18):1569–1575.
- Barnes, J., et al. "Complementary and Alternative Medicine (CAM) Practices: A Narrative Review Elucidating the Impact on Healthcare Systems, Mechanisms and Paediatric Applications." **PMC/MDPI**, 2024. <https://pmc.ncbi.nlm.nih.gov/articles/PMC11311728/>

- Verhoef, M.J., et al. "Complementary and Alternative Medicine Whole Systems Research: Beyond Identification of Inadequacies of the RCT." *Complementary Therapies in Medicine*, 2005;13(3):206–212.
- Leach, M.J., Canaway, R., & Hunter, J. "Evidence-Based Practice in Traditional & Complementary Medicine: An Agenda for Policy, Practice, Education and Research." *Complementary Therapies in Clinical Practice*, 2018;31:38–46.
- Peng, W., et al. "Practice-Based Research in Complementary Medicine: Could N-of-1 Trials Become the New Gold Standard?" *PMC*, 2020. <https://pmc.ncbi.nlm.nih.gov/articles/PMC7151123/>
- Adams, J., et al. "Epistemic Cultures in Complementary Medicine: Knowledge-Making in University Departments of Osteopathy and Chinese Medicine." *PMC*, 2017. <https://pmc.ncbi.nlm.nih.gov/articles/PMC5213743/>
- Institute of Medicine (US) Committee on the Use of Complementary and Alternative Medicine by the American Public. "Complementary and Alternative Medicine in the United States." *National Academies Press*, 2005. <https://www.ncbi.nlm.nih.gov/books/NBK83794/>

Frequently asked questions

- **What does CAM stand for:** Complementary and Alternative Medicine
- **Is CAM the same as complementary medicine:** No, they are distinct terms
- **Is CAM the same as alternative medicine:** No, they are distinct terms
- **Is CAM the same as integrative medicine:** No, they are distinct terms
- **What is complementary medicine:** A non-mainstream approach used alongside conventional medicine
- **What is alternative medicine:** A non-mainstream approach used in place of conventional medicine
- **What is integrative medicine:** Conventional and complementary approaches combined in a coordinated manner
- **Does integrative medicine replace conventional care:** No, it combines both approaches
- **Is using CAM instead of conventional treatment risky:** Yes, stopping conventional treatment can have serious consequences
- **What percentage of adults use CAM:** Over 30 percent
- **What percentage of children use CAM:** About 12 percent
- **Has CAM usage grown in recent years:** Yes, significantly
- **What does EBCAM stand for:** Evidence-Based Complementary and Alternative Medicine
- **Does EBCAM mean all CAM therapies are effective:** No, it describes the process of scientific scrutiny
- **What is the purpose of EBCAM:** To apply scientific standards to evaluate CAM safety and effectiveness
- **What regulates therapeutic goods in Australia:** The Therapeutic Goods Administration (TGA)
- **Do dietary supplements require TGA approval before sale in Australia:** Yes, they must meet TGA standards

****What is EBCAM's mission:**** To determine safety and usefulness of complementary health approaches through rigorous science

****Has complementary medicine research funding increased:**** Yes, significantly over the past decade

****What was the research appropriation in 2013:**** \$121,373 thousand

****What was the research appropriation in 2023:**** \$170,384 thousand

****How many domains of CAM are there:**** Five domains

****What is the first CAM domain:**** Alternative medical systems (whole medical systems)

****What is the second CAM domain:**** Mind-body interventions

****What is the third CAM domain:**** Biologically based treatments

****What is the fourth CAM domain:**** Manipulative and body-based methods

****What is the fifth CAM domain:**** Energy therapies

****Which CAM domain is most widely used in Australia:**** Biologically based treatments

****Which CAM domain has the least robust evidence base:**** Energy therapies

****Which CAM domain is most heavily researched:**** Mind-body interventions

****What are examples of alternative medical systems:**** Traditional Chinese medicine, naturopathy, homeopathy, Ayurveda

****What are examples of mind-body interventions:**** Meditation, yoga, biofeedback, hypnotherapy, tai chi, MBSR

****What does MBSR stand for:**** Mindfulness-Based Stress Reduction

****What are examples of biologically based treatments:**** Herbs, vitamins, dietary supplements, probiotics

****What are examples of manipulative and body-based methods:**** Chiropractic, massage therapy, osteopathic manipulation

****What are examples of energy therapies:**** Reiki, therapeutic touch, magnet therapy

****Is chiropractic spinal manipulation evidence-supported:**** Yes, particularly for acute low back pain

****Is MBSR evidence-supported for anxiety:**** Yes

****Has a new classification framework been proposed:**** Yes, with three primary inputs

****What are the three inputs in the proposed new framework:**** Nutritional, psychological, and physical

****Is the traditional five-domain framework still in use:**** Yes, both frameworks are actively used

****What is the gold standard of clinical evidence:**** The randomised controlled trial (RCT)

****Does the RCT work perfectly for all CAM modalities:**** No, many CAM therapies fit poorly into RCT design

****Why is blinding difficult in CAM trials:**** Patients know they are receiving the treatment

****Why do individualised protocols challenge RCT design:**** Different patients receive different treatments for the same diagnosis

****What is a pragmatic clinical trial:**** A trial testing whether a therapy works in real-world conditions

****What is an N-of-1 trial:**** A single subject exposed to multiple conditions over time

****Is an N-of-1 trial similar to a crossover RCT:**** Yes, but for one person at a time

****How many CAM systematic reviews are in the Cochrane collection:**** More than 150

****How many randomised CAM studies are in the Cochrane collection:**** Approximately 6,000

****Who articulated the foundational framework for evidence-based medicine:**** David Sackett and colleagues in the 1990s

****What is the highest quality level of clinical evidence:**** Systematic reviews and meta-analyses

****What is the lowest quality level of clinical evidence:**** Anecdote, tradition, and theoretical plausibility

****Are CAM therapies primarily used for acute or chronic conditions:**** Chronic conditions

****Are CAM therapies primarily used instead of or alongside conventional care:**** Alongside conventional care

****Why is non-disclosure of CAM use a safety concern:**** Risk of drug-herb interactions

****Should patients disclose CAM use to their doctor:**** Yes

****Is evidence quality uniform across all CAM modalities:**** No, it varies enormously

****Can EBCAM be considered a legitimate scientific enterprise:**** Yes

****Do critics argue EBCAM is a contradiction in terms:**** Yes, some critics make that argument

****What methodological alternatives exist beyond RCTs for CAM:**** Pragmatic trials, N-of-1 trials, whole-systems research

****Are alternative CAM research methodologies scientifically rigorous:**** Yes, when properly designed

****Does Tyack Health use an evidence-first approach to CAM:**** Yes

****Does Tyack Health evaluate CAM options on scientific evidence:**** Yes

****Should patients feel comfortable discussing CAM with their Tyack Health provider:**** Yes