A Clinician's Guide to Medical Misinformation:

EVALUATING THE EVIDENCE

ISSUE 2 OF A 3-PART SERIES

Critically evaluating scientific evidence is essential to ensure clinical decisions are based on credible, unbiased, and methodologically sound information. Not all evidence is equally reliable, and flawed or misleading data can impact patient care and policy. This tool offers a streamlined framework to assess the validity of evidence and identify red flags such as bias, conflicts of interest, or poor methodology.

SOURCE CREDIBILITY

Defining characteristics of source credibility categories are shown below. The algorithm will aid in classifying a source into these categories.

LOW	MODERATE	HIGH
Unsupported, biased, non-transparent, or unverifiable information.	Potential bias. Requires corroboration or new evidence.	Verified, peer-reviewed, aligned with scientific consensus.

START HERE

1 Is the source of the information identifiable?

- NO → **LOW Credibility**
  - Unverifiable source.
- YES ↓

2 Is the source a peer-reviewed publication, reputable scientific institution, or professional organization?

- NO → **MODERATE Credibility**
  - Consider alternate verification methods.
  - Proceed only if corroborated.
- YES → NEXT PAGE

Unverifiable or Non-Reputable Sources

- No author or organization listed.
- Anonymous blog, forum, or social media post.
- Publisher not affiliated with academic, governmental, or clinical institutions.
- Published in a predatory or non-peer-reviewed journal.
- No impact factor, editorial transparency, or peer review process.

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3 Is the purpose of the information clearly stated?

YES

NO

4 Is the information based on empirical data, systematic methodology, and sound scientific rationale?

YES

NO

Evaluate for Bias or Conflicts of Interest

- Authored without independent oversight.
- Product promotion disguised as scientific evidence.
- Selective reporting of positive outcomes only.
- Emotionally persuasive language rather than objective tone.
- Lack of funding disclosure or conflict transparency.

LOW Credibility

- Not evidence-based.
- Do not proceed without verification.

5 Does the information align with the current body of scientific knowledge and clinical guidelines?

NO

Investigate Discrepancy

New Findings?

Methodological Flaws or Bias?

Not Evidence-Based or Methodologically Flawed

- No empirical data or statistical analysis.
- Relies on anecdotes or testimonials.
- Lack of methods section or unclear methodology.
- Methodological flaws: inadequate controls, poor randomization, lack of blinding, selective outcome reporting.
- Misleading graphs, small sample size, or weak study design.

LOW Credibility

MODERATE Credibility

- Assess for potential bias before continuing.

NO

6 Are conflicts of interest or funding sources disclosed?

YES

YES

7 Can the methods and results be reproduced or verified by others?

NO

LOW Credibility

YES

HIGH Credibility

- Trustworthy evidence

Sources: Keselman A, et al. Evaluating the Quality of Health Information in a Changing Digital Ecosystem. J Med Internet Res. 2019 Feb 8;21(2):e11129; West P. Literature Evaluation. American College of Clinical Pharmacy. Available at: https://www.accp.com/docs/bookstore/psap/p5b05samplemod2.pdf; Kington RS, et al. Identifying Credible Sources of Health Information in Social Media: Principles and Attributes. 2021. Available at: https://nam.edu/perspectives/identifying-credible-sources-of-health-information-in-social-media-principles-and-attributes.

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