

**Foundations · Educational evidence summary**

Why there is no universal anticholinergic burden gold standard

This foundation article explains why there is no universal anticholinergic burden gold standard.

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What would a gold standard have to do?

A gold standard would provide a defensible reference for the quantity being measured. The difficulty begins with defining that quantity. Is the target receptor activity, exposure to a medication list, a symptom, future cognition or the benefit of changing treatment? One instrument cannot be assumed to answer all of these simply because each question involves anticholinergic medicines.

Could a blood or laboratory assay be the standard?

An assay provides a measurement under its specified conditions. It does not automatically represent every clinically relevant tissue or outcome. The [radioreceptor study](#) and the [ADS association study](#) address different relationships between medication evidence and measured activity. Their findings are useful precisely when their measurement targets remain clear.

A laboratory result can help establish plausibility or test a construct. To make it the reference for a clinical outcome, additional evidence would need to show that this is an appropriate use. A more biological-looking number does not eliminate that requirement.

Is the most widely used scale the best reference?

Widespread use can make studies easier to compare and can produce a larger body of experience with an instrument. It does not, by itself, establish that the instrument is the most accurate for every population or outcome. Use patterns may reflect familiarity, accessibility or historical adoption as well as scientific performance.

For a research question, the choice should be justified by the intended construct, available medication data, population and endpoint. The method should be prespecified and its limitations reported. Popularity can inform feasibility; it is not a substitute for validation.



Would agreement among many scales settle the question?

Agreement describes the classifications available. Several scales may draw on overlapping earlier publications or lists, so their agreement is not necessarily independent replication. A majority vote cannot establish how much activity reaches a patient or whether a particular clinical outcome will occur.

The [UnifiedACB dataset](#) preserves source-specific values so that agreement and disagreement remain inspectable. It does not convert the number of matching scales into a probability that the medication is harmful. That would require a separately justified evidence model.

Does a larger medication list make a better standard?

Broader coverage may be useful for a given formulary, but coverage and validity are different properties. A list can include many medications while lacking evidence for a particular patient population or outcome. A smaller list can have clear scope without answering questions about medicines it does not contain.

The [KABS development report](#) shows how local medication availability influences list construction. That adaptation can improve applicability to one setting while leaving transfer to another setting as a separate question. The source's intended scope is more informative than its size alone.

Could clinical outcomes provide one universal standard?

Clinical outcomes matter, but they are not interchangeable. A measure associated with physical function has not automatically been validated for delirium, urinary symptoms or long-term cognition. Even within one outcome, definitions, exposure windows and patient characteristics can differ.

An intervention question is different again. Whether a classification identifies an exposure concern is not the same as whether reducing that classification improves health. The [medication-appropriateness trial](#) illustrates the need to define an intervention and its measured endpoints rather than infer benefit from a number alone.

What should a clinician or researcher use instead?

Use a clearly named method for a clearly stated purpose. Inspect its source version, medication coverage and evidence in the relevant population. Report missing entries, keep clinical criteria separately labeled and examine whether actual dose or timing is necessary for the question.

For a medication review, the absence of a universal standard does not make the evidence useless. It makes careful interpretation necessary. A classification can identify a question worth discussing without claiming to be the final answer about treatment or causation.

What would meaningful progress look like?

Progress would include better-defined exposure measures, transparent identity and missing-data rules, reproducible comparisons, and outcome studies matched to intended use. A new combined



score would need to earn its interpretation through that work. Naming or averaging existing categories would not supply the missing validation.

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