

**Pediatrics · Educational evidence summary**

Why pediatric dose does not map directly to adult anticholinergic scores

This pediatric review addresses why pediatric dose does not map directly to adult anticholinergic scores.

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A dose and a category are different kinds of information

A pediatric prescription may be expressed in relation to weight, an absolute amount, or a formulation-specific volume. An anticholinergic scale may assign a category to the ingredient without modeling any of those details. Both records can be useful, but they cannot be combined by an invented arithmetic rule and presented as a validated child-specific score.

This explainer addresses that measurement problem. It does not calculate a pediatric dose, estimate blood exposure, or adjust any source-native value. The purpose is to show why preserving dose context and preserving the original category are compatible requirements.

What an ordinal category means

An ordinal system places observations into ordered classes according to a source's method. The order does not guarantee equal numerical spacing or a fixed ratio between categories. A higher category therefore cannot automatically be interpreted as a particular multiple of pharmacologic activity or clinical risk.

The categories also belong to a source version. A number with the same appearance in another scale may have a different evidence basis or coverage. Averaging them does not create a more accurate pediatric measure; it creates a new quantity whose meaning has not been established.

What a dose record contributes

Dose information helps describe what was actually administered. It needs the exact product, concentration or strength, route, schedule, and relevant time period. A volume without concentration is incomplete, and a prescription instruction is not always proof of actual administration.

These details can be crucial for clinical assessment even when the source category remains unchanged. An ingredient-level classification may simply be insensitive to dose variation by design. The right response is to retain both records, not to make the category appear dose-sensitive through ad hoc multiplication.



Why a weight ratio does not supply validation

Dividing an adult category according to a child's weight assumes a quantitative relationship the ordinal method did not provide. It also assumes that the same transformed number has the same clinical interpretation in a different population. Neither assumption follows from the ability to calculate a ratio.

A valid dose-based method would need to define the exposure quantity, the relevant product and route, the population, and the outcome relationship. Those are scientific design requirements. They cannot be recovered from a category alone, and this article does not claim that UnifiedACB has established them for all pediatric medicines.

Duration is another separate dimension

A source category may stay constant whether a medicine is used briefly or for a longer period. That does not mean duration is clinically irrelevant. It means the source observation does not necessarily model it. Multiplying the category by days of use would create another unvalidated transformation.

If a research question concerns cumulative exposure, the method should explicitly define how dose, duration, interruptions, and actual use are represented. It should then be evaluated against the intended outcome. A method designed for one question should not be relabeled as a universal burden score.

Route and formulation complicate the bridge

The same ingredient may appear in different preparations whose administration histories cannot be reduced to a single daily number without additional assumptions. Source labels may also be less specific than the products used in children. The public dataset retains cautions against inferring route and formulation details that the source did not state. [UnifiedACB public evidence dataset, v3.0 RC12 final](#)

A correct ingredient match therefore does not establish product-level exposure equivalence. The clinical record should preserve the preparation, while the evidence record should preserve the source's actual level of specificity. If they do not align, the limitation should be stated explicitly.

Thresholds are not rescued by a dose adjustment

Suppose an adult study used a particular threshold for its own analysis. Changing the underlying categories according to pediatric dose does not preserve the threshold's original meaning. The transformed distribution, measurement error, and relationship to the outcome may all differ.

If such a method is proposed for research, it should be described as a new candidate method, with explicit assumptions and a separate validation plan. It must not overwrite the source-native observations or appear in the public interface as an established pediatric risk value.

What a pediatric evidence summary should show instead

Show the original medication classification, source version, and evidence state. Separately record the child's actual product and exposure history when available. Add pediatric outcome evidence at its studied scope, and state when the exact regimen or population is not covered.



If dose materially changes the applicability of a product-specific statement, ask for the relevant dose information. That clarification can improve interpretation without changing the original scale value. If dose is not known, label it as unknown rather than infer it from a typical regimen.

A research proposal may reasonably ask whether dose or duration improves exposure measurement. To answer it, the proposed measure would need a clearly defined formula, a rationale for each component, and evaluation against a specified outcome in an appropriate population. Comparing the proposal with an established source method would then be a study question. Implementing a weight ratio in a calculator would not itself provide that evaluation, even if the arithmetic is correct.

Reporting separate descriptors is often more informative while those questions remain open. A study table could identify the source and version, the medication contributors, the available dose information, the exposure interval, and unresolved products. Readers could then see which part of the exposure is known without mistaking a compact number for a complete pharmacologic model. Any future validated measure should be introduced under its own name and evidence basis, not silently substituted for the published categories already shown.

Limits and conclusion

This article does not argue that dose is unimportant. It explains why a dose record is not the missing equation needed to turn an adult ordinal category into a pediatric score. The scientifically defensible approach is to retain the original value, preserve exposure context, and require an explicit, evaluated method before claiming a quantitative pediatric interpretation.

References

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Explore the evidence

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Disclosure

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