

When Three Small Abnormalities Become One Large Disease

Absurd Health Institute · Hypothesis and mechanistic perspective

Central hypothesis

Three individually modest constraints may combine nonlinearly to create substantial symptoms. The hypothesis is not that every mildly abnormal lab matters, but that interacting bottlenecks can become clinically consequential when they converge on the same physiological task.

The biological route

Consider oxygen delivery: modest anemia, impaired microvascular flow and increased tissue metabolic demand may each be tolerated alone but together narrow oxygen reserve. Likewise, reduced solute intake, antidiuretic signaling and excess water can combine to cause hyponatremia. Nonlinearity arises when each additional constraint removes compensatory options from the system.

A deeper interrogation

Nonlinearity can be demonstrated with a thought experiment in oxygen delivery. Mild anemia reduces oxygen content. A modest reduction in capillary recruitment can impair distribution. A simultaneous rise in tissue demand may leave little buffer against exertional hypoxia. Each alteration alone could be tolerated, yet all three acting on the same limiting pathway could impair function. Another mechanism appears in hyponatremia: low dietary solute reduces free-water excretion capacity, excess water increases demand on that capacity, and antidiuretic hormone changes how much water is retained. This is more than piling up borderline test results. To make the concept rigorous, the interacting abnormalities must be functionally connected, an interaction should be quantified and simpler common-cause explanations should be considered. Mild thyroid variation, low-normal vitamins and unrelated food exposures should not be assembled into a causal fairy tale merely because symptoms are complex. The power of the model lies in predicting clinically significant effects from individually modest, mechanistically convergent constraints.

Alternative explanations and limits

This model could encourage excessive causal stories drawn from normal biological variation or incidental lab findings. Several mild abnormalities often co-occur because of one common cause, and interactions must be distinguished from simple addition or confounding.

What would change the conclusion?

An appropriate analysis specifies the shared limiting process and estimates interaction on a biologically meaningful scale. If each variable independently explains the outcome and interaction terms add no explanatory or predictive value, the “three small abnormalities” thesis fails in that case.

The distinctive prediction

True interaction should outperform additive prediction under a defined physiological model. The most useful cases are those where all three deficits converge on one limiting process rather than simply co-occur in a complex patient.

Clinical interpretation

The clinical value is a disciplined search for converging constraints, not ordering expansive panels or treating every borderline number. Meaningful interventions still require demonstrated causal relevance.

Selected scientific reading

Contextual background, not direct validation of the proposed hypothesis.

Angleys H et al. The effects of capillary transit time heterogeneity on brain oxygenation. J Cereb Blood Flow Metab. 2015.
<https://pmc.ncbi.nlm.nih.gov/articles/PMC4420854/>

Joshi R, Chou S-Y. Beer Potomania: A View on the Dynamic Process of Developing Hyponatremia. Cureus. 2018.
<https://pmc.ncbi.nlm.nih.gov/articles/PMC6150768/>

Pyrkov TV et al. Longitudinal analysis of blood markers reveals progressive loss of resilience and predicts human lifespan limit. Nat Commun. 2021.
<https://www.nature.com/articles/s41467-021-23014-1>

Editorial note: Original theoretical perspective, not an original clinical study, validated diagnosis, or treatment protocol.