



E2 The Vanishing Zero Revisited

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After attending this presentation, attendees will understand what used to be considered “residue” from poisoning changes to the issue of “how much is normal?”

This presentation will impact the forensic community and/or humanity by demonstrating a breakthrough in technology or scientific information which may render past science invalid.

Through the last two centuries, forensic science techniques have rapidly evolved for identifying and measuring small (milligram), smaller (microgram) and now vanishingly tiny (femtogram) quantities of toxicants and other forensically relevant substances. Drugs and poisons never thought to be present in the body unless taken or administered are being found as “normals” (at ultra trace levels) due to “manufacture” by the body or from ubiquitous traces present in the environment. Thus, what used to be considered “residue” from poisoning changes to the issue of “how much is normal?” (i.e., how much is “too much?”).

The implications of this phenomenon are directly relevant to expert forensic testimony in cases where the scientific basis of evidence is challenged in *Frye/Daubert* Admissibility Hearings. Even when scientific evidence passes the tests of relevant general acceptability, wide use producing reliable results and valid laboratory technical procedures, a breakthrough in technology or scientific information may render past science invalid.

Poisons, Test Methods, Admissibility