



SBS/AHT IS A SCIENTIFIC HYPOTHESIS

If retinal hemorrhages, subdural hematoma, and cerebral edema are present [and other causes, such as high speed motor vehicle accident, are ruled out], presume baby was abusively shaken.

Guthkelch, 2 Brit. Med. J. 431 (1971)

But see Guthkelch, 12 Hous. J. Health Law & Policy 201 (2012)

SBS/AHT IS A SCIENTIFIC HYPOTHESIS (continued)

- ▶ Two Necessary Sub-Hypotheses:
 - ▶ 1. Violent shaking by a human can cause subdural hematoma, retinal hemorrhage, and brain swelling without causing other injuries (i.e., neck fracture) (“Forward-looking” hypothesis)
 - ▶ 2. Given an infant with the triad of symptoms (and no other injuries), one can reliably “diagnose” violent, abusive shaking (“Backward-looking” hypothesis).

REASONS TO DOUBT

Mimics: Strokes (i.e. VST), Birth Trauma (and rebleeds), Other sources of Elevated ICP, Short Falls (including observed and videoed short falls)

Biomechanics: Humans cannot generate necessary forces through shaking; Violent shaking would injure neck (and/or trunk); Short Falls produce greater forces than shaking.

Lucid Intervals: They exist, proponents now forced to admit it (though some still testify the old way).

Observed and Videoed Shaking: But no triad.

PROBLEMS WITH THE SBS/AHT LITERATURE

Circularity

Statistical Fallacies

Heavy Reliance on Confessions

The Latest Thing: AHT/SBS Surveys



THE SKEPTICISM IS GROWING

Courts Recognize the Diagnosis is Controversial, Evidence Is Lacking

- ▶ **Cavazos v. Smith, 565 US 1 (2011)** (three justices recognize “the commonly held opinion that the finding of [SDH and RH] in an infant was strong evidence of SBS was unsustainable”)
- ▶ **Del Prete v. Thompson 10 F Supp 3d 907 (ND Ill 2014)** (federal judge describes SBS/AHT as arguably “more an article of faith than a proposition of science”)
- ▶ **MM v. Prosecutor-General, B 3438-12 (2014)** (Swedish Supreme Court concludes SBS/AHT hypothesis insufficient to justify criminal conviction)
- ▶ **People v. Ackley, 497 Mich 381 (2015)** (state supreme court unanimously notes “prominent controversy within the medical community regarding the reliability of SBS/AHT diagnoses”)
- ▶ **In re Yarbrough Minors, 314 Mich App 111 (2016)** (observing “science swirling around” SBS is “highly contested.”)
- ▶ **Commonwealth v. Epps, 53 NE3d 1247 (Mass 2016)** (state supreme court unanimously observes “significant medical and scientific support” that shaking alone cannot cause the triad and that short falls can)

THE SKEPTICISM IS GROWING (cont)

▶ 2016 PCAST Report:

“PCAST notes that there are issues related to **the scientific validity of other types of forensic evidence** that are beyond the scope of this report but require **urgent attention**—including notably arson science and abusive head trauma commonly referred to as “**Shaken Baby Syndrome.**”

“We note, finally, that neither experience, nor judgment, nor good professional practices . . . can substitute for actual evidence of foundational validity and reliability. . . Similarly, **an expert’s expression of confidence based on personal professional experience or expressions of consensus among practitioners** about the accuracy of their field **is no substitute** for error rates estimated from relevant studies.”

THE SKEPTICISM IS GROWING (cont.)

- ▶ DOJ Federal Grant to the Michigan Innocence Clinic (2016)--we now have 8 active SBS cases either in litigation or under active investigation

The Swedish SBU Report, 2016 (English Translation 2017),

Published at *Acta Paediatrica*, 22 (2017)

Considered 3773 Articles, Including 1065 In "Full Text"

Found Massive Problems In Literature, Including Circularity

Only 2 Articles Had "Moderate Quality" But Both Relied On Confessions

Executive Summary:

"There is limited scientific evidence that the triad and therefore its components can be associated with traumatic shaking (low quality evidence)."

"There is insufficient scientific evidence on which to assess the diagnostic accuracy of the triad in identifying traumatic shaking (very low quality evidence)."

THE NEXT WAVE OF CHALLENGES: *Daubert*

Example:

These particular retinal hemorrhages are “very very highly specific for repetitive acceleration deceleration.”

These retinal hemorrhages combined with a subdural hematoma, “in the absence of a motor vehicle collision or some type of severe crush injury, that would be highly, highly specific . . . [s]o probably close to 100% [for SBS/AHT] if you exclude those other causes.”

What is the error rate for these assertions?

Where is the scientifically valid literature for these assertions?

Daubert meant to end the practice of *ipse dixit*.

The Proponents Fight Back

- ▶ “The Triad Is A Strawman”
- ▶ “Clinical Judgment Trumps Biomechanics”
- ▶ “No Sane Person Can Doubt AHT Exists”
- ▶ “The Skeptics Are Doing This For the Money”
- ▶ “The Skeptics Deny The Existence Of Child Abuse”
- ▶ “Most Doctors Still Believe In It”
- ▶ “The SBU Report Is Way Too Restrictive (And Was Part Of A Nefarious Conspiracy)”

FURTHER RESOURCES

▶ **BOOKS:**

- ▶ Randy Papetti, *The Forensic Unreliability Of The Shaken Baby Syndrome* (Academic Forensic Pathology International 2018)
- ▶ Deborah Tuerkheimer, *Flawed Convictions: "Shaken Baby Syndrome" And The Inertia Of Injustice* (Oxford 2014)

▶ **ARTICLE:**

- ▶ Findley, et al., *Shaken Baby Syndrome, Abusive Head Trauma, and Actual Innocence: Getting It Right*, 12 Houston J. Health L. & Policy 209 (2012)

▶ **DOCUMENTARY FILMS:**

- ▶ *The Syndrome* (2014)
- ▶ *Scenes Of A Crime* (2012)

▶ **INNOCENCE NETWORK SHAKEN BABY FELLOW**

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