



## **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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