

# **Analysis of causes that led to baby Stryker Eoghan Burke's sudden death**

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## **Abstract**

Stryker is a 55-day-old white male infant who was found dead in his bed on September 6, 2005. Based on the finding of methanol (20 mg/dL) and formic acid (23.2 mg/dL) in a blood sample taken from his heart at the time of autopsy, his parents were accused of poisoning him with methanol. My investigation reveals that the baby died as a result of severe hyponatremia. He had a critically low serum sodium level of 114 mmol/L (normal range: 135-145 mmol/L). Moreover, the gross and microscopic examinations of the brain showed evidence of edema and hypoxia and these lesions are reported in people suffering from hyponatremia.

My investigation also reveals that there is no evidence that the baby suffered from methanol poisoning. He did not show any symptom of methanol poisoning prior to his death. His brain, spinal cord, eyes and optic nerves, heart, lungs, liver, kidneys, pancreas, and other tissues were examined grossly and microscopically and no lesion was observed that indicated intoxication with methanol.

It is likely that the methanol and formic acid detected in Stryker's blood resulted from the contamination of the blood with formalin used to fix tissues. This fixative contains 1 to 1.5% methanol and 3 to 4% formaldehyde. The oxidation of formaldehyde to formic acid is facilitated by formaldehyde dehydrogenase present in the red blood cells.

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*Keywords:* Acidosis; Alcohol dehydrogenase; brain edema; formic acid; formaldehyde dehydrogenase; growth retardation; head circumference; hyperbilirubinemia; hyperkalemia; hyponatremia; hypoxemia; hypoexmia; methanol poisoning; pneumothorax; pulmonary edema; sepsis; stillbirth.