Hypoxic Brain Injuries Diagnosed in Autism Spectrum Disorder and Developmental Delay

Diffusion MRIs can reveal hypoxic brain injuries missed by routine MRIs, helping diagnose birth injuries linked to severe, lifelong neurodevelopmental harm

LOS ANGELES, CA, UNITED STATES, July 16, 2025 /EINPresswire.com/ -- “Although diffusion MRI imaging often requires sedation, families and patients deserve definitive testing to rule out hypoxic brain damage that may be invisible with routine MRI. These are serious injuries and the diagnosis matters,” states Greg Vigna, MD, JD, Board Certified Physical Medicine and Rehabilitation.

> “Some children with global developmental delay and ASD, who may need lifelong, 24-hour care, have normal routine MRIs but show abnormalities on diffusion weighted MRIs consistent with hypoxic injury.”
>
> *Greg Vigna, MD*

What does Kenichi Oishi, MD, PhD from Johns Hopkins University School of Medicine, Baltimore, Maryland, say about diffusion tensor imaging (DTI) about the Prognostic Prediction of Neonatal Hypoxic-Ischemic Encephalopathy?

“Diffusion tensor imaging is one of the most powerful neuroimaging tools with which to predict the prognosis of neonatal HIE by providing microscopic features that cannot be assessed by conventional magnetic resonance imaging (MRI).”

Read Dr. Oishi’s article, “Quantification of Diffusion Magnetic Resonance Imaging for Prognostic Prediction of Neonatal Hypoxic-Ischemic Encehpalopathy” published in Developmental Neuroscience: https://karger.com/dne/article/46/1/55/843460

Dr. Greg Vigna, MD, JD, national birth injury lawyer, explains, “We have known for decades that hypoxic exposure at birth is a cause of autism spectrum disorder. Children with ASD who experienced hypoxic exposure tend to have greater impairments and require more care.”

What did Dr. Perciado report in her article published in Autism Research, “Prenatal exposure to hypoxic risk conditions in autistic neurotypical youth; Associated ventricular differences, sleep, disturbance, and sensory processing” (2024; 17:2547-2557)?

“Results from a cohort of 104 youth revealed a higher incidence of exposure to prenatal hypoxic

conditions in the autism spectrum disorder (ASD) group.

Additionally, ASD individuals with prenatal hypoxic exposure demonstrated
larger third ventricle volumes compared with both autism spectrum disorder and neurotypical control individuals without such exposure, respectively.

Furthermore, associations were identified between prenatal hypoxic exposure, third ventricle volume, sensory dysfunction, and severity of sleep disturbances. These findings suggest exposure to prenatal hypoxic risk conditions may exacerbate or modify the neurodevelopmental trajectory and symptom severity in ASD."

Read Dr. Perciado's article: https://onlinelibrary.wiley.com/doi/abs/10.1002/aur.3250


Dr. Greg Vigna

Can diffusion MRI predict clinical outcomes in hypoxic-ischemic encephalopathy?

"Numerous studies describe statistically significant associations between brain MRI and HIE outcomes, measurement of MRI brain injury alone is far from perfect in predicting the full range of long-term neurodevelopmental outcomes, regardless of the scoring system that is used," states Dr. Yvonne W. Wu, MD.

Read Dr. Wu's article, "Advancing brain MRI as a prognostic indicator in hypoxic-ischmic encephalopathy": https://pubmed.ncbi.nlm.nih.gov/37696979/

Dr. Vigna continues, "Researchers in the field of neuroradiology and pediatrics are actively working to develop valid scoring systems using MRI and diffusion weighted MRI to better predict clinical outcomes. It's clear that some signs of hypoxic brain damage are not visible with routine MRI but can be detected with diffusion weighted MRI. Some children with global developmental delay and autism spectrum disorder, who may require lifelong, 24-hour care, have normal routine MRIs but show abnormalities on diffusion weighted MRIs that are consistent with hypoxic injury. This indicates a birth injury, and those cases warrant a review of birth records to determine if there was a negligent delivery that caused harm."

Dr. Vigna concludes, "We are evaluating cases with histories that might include 1) Neonatal encephalopathy, 2) Seizures, 3) Low APGARS, 4) Emergent C-section, 5) Born blue, 6) Born flaccid, 7) Acidotic, 8) Feeding difficulties, 9) Neonatal intensive care unit (NICU), 10) Hypoxic ischemic

encephalopathy (HIE), and Babies that do not cry at birth."

Click here to read Dr. Vigna's book, "The Mother's Guide to Birth Injury."

Dr. Vigna is a California and Washington DC lawyer who focuses on neurological injuries caused by medical negligence, including birth injury. He is Board Certified in Physical Medicine and Rehabilitation. Dr. Vigna co-counsels with the Ben Martin Law Group, a national pharmaceutical injury law firm and birth injury lawyer in Dallas, Texas.

Click here to learn more: https://vignalawgroup.com/practice-areas/birth-injuries/

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