

# Neonatal Encephalopathy: Diffusion MRI and MR Spectroscopy Predictive of Outcome

*Diffusion MRI and MR spectroscopy can predict neurodevelopmental outcomes in newborns with encephalopathy, aiding in early intervention and care planning*

SANTA BARBARA, CA, UNITED STATES, October 10, 2024 /EINPresswire.com/ -- "This is an

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*Greg Vigna, MD, JD*

important study because it shows Diffusion MRI and MR spectroscopy of newborns after therapeutic cooling has predictive value as to outcomes when it relates to adverse outcomes, including moderately/severely delayed development and significant psychomotor development and/or mental developmental index," states Greg Vigna, MD, JD, national birth injury and malpractice attorney.

What did Dr. Csilla Andorka report in "The Predictive Value of MRI Scores for Neurodevelopmental Outcome in Infants with Neonatal Encephalopathy" published in Pediatric Research, 18 April 2024?

"A more detailed MRI scoring system had a better predictive value for motor, cognitive, and composite outcomes.

While hypoxic-ischemic brain injuries in the deep grey matter and cerebellum were predictive of adverse outcomes, white matter injury including cortical involvement was not associated with any of the outcome measures at 2 years of age.

Structured MRI evaluation based on validated scores may aid future clinical research, as well as inform parents and caregivers to optimize care beyond the neonatal period."

Read Dr. Andorka's article: <https://www.nature.com/articles/s41390-024-03189-1>

[Dr. Greg Vigna, MD, JD](#), national birth injury attorney, Board Certified in Physical Medicine and Rehabilitation, states, "The importance of early diffusion-weighted imaging (DWI) scans and MR spectroscopy for babies with neonatal encephalopathy as to predicting outcome is evolving quickly. Clearly, early identification for babies with mild neonatal encephalopathy who may

benefit from therapeutic cooling is the most important question, at this point.”

Dr. Vigna comments, “Dr. Andorka’s work is very important, but the clinical outcomes correlated to the objective finding on DTI and MR spectroscopy were moderate to severe cognitive and motor impairment. The measure of cognition that was correlated to objective findings on MRI was to identify children with cognition where only 36% of children would have an IQ of greater than 85 at school age.”

Dr. Vigna adds, “The neonates in this study had moderate to severe neonatal encephalopathy, and findings at the cerebellum and deep grey matter correlated with serious adverse outcomes. Neonates with mild neonatal encephalopathy may experience significant disability and may not be receiving the benefit of therapeutic cooling. Early diagnostic imaging with DTI and MR spectroscopy is becoming increasingly important for this understudied group as prognosis of this group is important to planning and early intervention.”

Dr. Vigna states, “Mild hypoxic-ischemic encephalopathy and mild neonatal encephalopathy is clearly a neglected group, and studies are in progress to guide therapy given that up to 25% have mild to moderate disability at 2 years.”

Read Geraldine Boylan’s article on what is known about mild HIE:

<https://www.sciencedirect.com/science/article/pii/S0378378218301245>

Read about the validity of the Bayley-II Mental Development Index for outcomes measures:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6070417/>

[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. [Ben Martin Law Group](#) is a national pharmaceutical injury and birth injury law firm in Dallas, Texas. The attorneys are product liability and medical malpractice attorneys, and they represent neurological injuries across the country.

Click here to learn more: <https://vignallawgroup.com>

Greg Vigna, MD, JD



Dr. Greg Vigna

Vigna Law Group

+1 800-761-9206

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