

# Understanding the causes of neurological abnormalities that result from premature birth

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In the February issue of the *American Journal of Pathology*, new research from the University of Chicago shows motor abnormalities frequently associated with low birth weight babies could originate due to peripheral nerve defects.

"There has been a lot of focus on the central nervous system and we know that these infants do not myelinate the brain well, meaning they don't produce the multi-layer membrane that surrounds nerve cells as robustly as normal birth weight babies," explained study author Brian Popko, PhD, Jack Miller Professor of Neurological Disorders in the Department of Neurology and Director of the University of Chicago Center for Peripheral Neuropathy.

The study suggests that [preterm infants](#) may experience delayed development and myelination of the peripheral nervous system that could contribute to motor and neurological deficits experienced in adulthood, according to the lead author Ben Clayton, PhD, a former graduate student in Popko's lab.

"It is thought the reason that there are these abnormalities within the central nervous system is secondary to the fact that they are not as well oxygenated as a normal birth weight baby because their lungs have not developed to the extent that normal birth weight babies do," said Popko.

Due to advances in medicine and treatment many of these infants now survive, but with new complications stemming from [developmental abnormalities](#). Researchers are now trying to understand the link between hypoxia (low oxygen), myelination, and the observed nervous system defects.

"This study suggests that the motor abnormalities [low birth weight](#) babies develop could originate due to peripheral nerve defects as well as central [nervous system](#) defects," said Popko. "We need to take this into consideration when we are thinking about therapeutic approaches."

Provided by University of Chicago Medical Center

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