

Rapid Recovery Hyperbarics

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Mild Oxygen Deprivation

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This article describes how even mild oxygen deprivation can cause significant problems. Lowered intelligence and language abilities are serious handicaps in life. Most OB's will not even be aware of this issue, and it's going to be up to you to bring it to their attention. HBOT will reverse this problem, especially if performed as soon as possible after birth. A small price to pay to avoid a life time of compromised ability. Given the safety of HBOT, I believe it's worthwhile to give every newborn several HBOT treatments to maximize their health.

EVEN MINOR RISK OF OXYGEN DEPRIVATION AT OR IMMEDIATELY AFTER BIRTH MAY PLACE PREMATURE BABIES AT GREATER RISK FOR COGNITIVE AND LANGUAGE PROBLEMS, PROPORTIONATE TO THE DEGREE OF "HYPOXIA"

WASHINGTON - Birth is a time of peril for the human brain, especially in pre-term infants. For vulnerable "preemies," biochemical signs of reduced blood oxygen levels (hypoxia) soon after birth are associated with lower IQs and language skills. In 2001, premature babies were 12 percent of U.S. births - the highest level in 20 years, due in part to more multiple pregnancies, induced labor, and older mothers. The January issue of Neuropsychology, published by the American Psychological Association (APA) reports on links among pre-term birth, risk for birth hypoxia and cognitive problems, and reveals how the risk threshold for brain damage in preterm babies could be lower than thought.

Psychologists compared the intellectual and language development of five- and six-year olds, all of whom had been born prematurely. Half the group were, during or immediately following birth, at slight to moderate risk for hypoxia. The other half had no such risk, although they resembled the risk group on other early risk factors and on socio-demographic characteristics. Despite the relatively small difference between the groups in the degree of risk, the authors report that the two groups "diverged significantly" in their development.

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The relationship between mild to moderate birth hypoxia and later cognitive abilities contradicts established wisdom that regards severe oxygen deprivation as the threshold for brain damage in an "all or nothing" manner. The findings add to other recent evidence of a continuum of brain injury due to asphyxia around birth.

The researchers, at Wayne State University, The University of Memphis, and Baptist Memorial Hospital in Memphis, studied 52 children. All had been born at or before 36 weeks (normal term is about 40 weeks). Twenty six of the children were at slight to moderate risk of perinatal hypoxia, as measured by higher blood acidity within two hours of birth (lower than normal arterial blood pH). The other 26 children in the comparison group were at lower perinatal risk.

Co-authors Tracy Hopkins-Golightly, Ph.D., Sarah Raz, Ph.D., and Craig J. Sander, M.D. tested all 52 children at an average age of six on intelligence and language (receptive and expressive) skills.

There was a significant relationship between blood pH soon after birth and later cognitive and language skills. For example, the pre-term group, with mild to moderate acidosis, scored about 10 to 11 points lower on verbal and visuospatial tests than the low-risk pre-term group - a large discrepancy. Such data, say the authors, reveal that even a minor risk for hypoxia around birth may have a "discernible influence on the course of cognitive development."

Says Raz, now at Wayne State University in Detroit, "most neonatologists would probably not expect to find a statistically significant relationship between degree of acidosis measured soon after birth and performance on cognitive tests in preschool and early school-age children, when acidosis is only mild to moderate, at worst".

Although it is well-known that premature babies tend to have more cognitive problems than full-term infants, scientists want to tease out the specific complications -- from a host of many - that cause the most trouble. A good way to do that is to compare two groups of preterm infants, who share the risks of

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pregnancy, delivery and the vulnerable postnatal period, but who differ in terms of one single, special risk factor (such as birth hypoxia).

Structural or functional imaging, such as MRI, may shed light on which brain areas are the most vulnerable to damage by hypoxia in the preterm infant. For now the authors speculate that, in babies born prematurely, even minor risk may be associated with damage to the periventricular white matter, deep inside the brain.

By linking birth complications to specific cognitive problems occurring later, scientists hope to understand the brain's vulnerability to insult during early human development. Furthermore, knowledge of how early risk factors affect cognitive abilities may help doctors to evaluate the effectiveness of medical interventions that support preterm infants during and after birth.

Article: "Influence of Slight to Moderate Risk for Birth Hypoxia on Acquisition of Cognitive and Language Function in the Preterm Infant: A Cross-Sectional Comparison With Pre-Term Birth Controls," Tracy Hopkins-Golightly, Ph.D., University of Memphis; Sarah Raz, Ph.D. University of Memphis and Wayne State University; and Craig J. Sander, M.D., Baptist Memorial Hospital; *Neuropsychology*, Vol. 17, No. 1.

