

Physical Activity and Motor Outcomes After Neonatal Therapeutic Hypothermia

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Background: Children treated with therapeutic hypothermia (TH) after neonatal hypoxic-ischemic encephalopathy (HIE) are at risk of motor difficulties, which may affect physical activity (PA).

Objectives: To describe based-measured PA, participation in organised PA, and screen time in early adolescents treated with neonatal TH, and to explore how PA relates to motor competence and neurodevelopmental characteristics.

Methods: Thirty-seven children (mean age 11 years) who received TH for HIE at Karolinska University Hospital (2007–2009) participated in this cross-sectional study. PA was assessed using accelerometers and motor competence with the Movement Assessment Battery for Children-2. Parents reported information on organised PA, screen time, and completed the Five to Fifteen-R questionnaire (FTF-R).

Results: The children were engaged in a mean of 59 minutes/day of moderate-to-vigorous PA (MVPA) and spent substantial time in sedentary (~9.5 hours/day). In total, 73% were engaged in organised PA, while 41% reached WHO's recommendation of 60 minutes of MVPA per day. MVPA showed a weak positive association with answers from the FTF-R's subdomain hyperactivity/impulsivity ($\tau = 0.292$, $p = 0.018$). Children classified with motor difficulties performed less MVPA (46 min/day) compared with their peers (63 min/day, $p = 0.026$).

Conclusion: Children treated with neonatal TH were generally active in organised PA, but children with motor difficulties achieved less time in MVPA. Efforts to promote daily activity and reduce sedentary time may be particularly important for children with motor difficulties.

References

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