

Link between preterm birth and educational attainment explored in UK primary and secondary schoolchildren

August 17 2022



Three pupils studying with calculators. Credit: Karolina Grabowska, Pexels, CC0 (<https://creativecommons.org/publicdomain/zero/1.0/>)

All children born before full term are more likely to have poorer

attainment during primary school compared with children born full term (39–41 weeks), but only children born very preterm—before 32 weeks—remain at risk of poor attainment at the end of secondary schooling, according to a new study published this week in the open-access journal *PLOS ONE* by Neora Alterman, Maria Quigley of Oxford Population Health, U.K., and colleagues.

Preterm birth, defined as birth before 37 complete weeks of gestation, accounts for approximately 11% of births globally. Previous studies have shown that [children](#) born preterm are at higher risk of poorer academic attainment in primary school compared with children born at [full term](#). However, few studies have followed these children through secondary school, or examined the full spectrum of gestational ages at birth.

In the new study, the researchers used data on children born in England from 2000–2001 who were surveyed in the population-based UK Millennium Cohort Study. Of 11,695 children in that sample, the authors analyzed data on attainment in primary school (at age 11) for 6,950 pupils, and information on secondary school attainment (at age 16) for 7,131 pupils.

At the end of primary school, 17.7% of children had not achieved the expected level in both English and mathematics. Compared to full term children, children born before 32 weeks or at 32–33 weeks were more than twice as likely not to meet these benchmarks (adjusted relative risk; aRR = 2.06, 95% CI 1.46–2.92; aRR = 2.13, 95% CI 1.44–3.13). Children born late preterm, at 34–36 weeks, or early term, at 37–38 weeks, were at smaller increased risk of not achieving expected attainment (aRR = 1.18, 95% CI 0.94–1.49; aRR = 1.21, 95% CI 1.05–1.38).

At the end of [secondary school](#), 45.2% of pupils had not passed at least five General Certificate of Secondary Education (GCSE) examinations

including English and mathematics. Following adjustment, children born very preterm, before 32 weeks, had a 26% elevated risk of not passing five GCSEs (aRR = 1.26, 95% CI 1.03–1.54), with 60% of students in this group not achieving five GCSEs. However, children born at any gestation between 32 and 38 weeks were not at elevated risk compared to children born at full term. Further studies are needed in order to confirm this result.

The authors conclude that children born very preterm may benefit from screening for cognitive and language difficulties prior to [school](#) entry to guide the provision of additional support during schooling.

The authors add, "Our study showed that birth at any gestational age earlier than full term was associated with poorer attainment at the end of [primary school](#). However, at the end of compulsory education, these pupils had similar outcomes to their peers, except for pupils born at less than 32 weeks, who remained at risk of low attainment."

More information: Gestational age at birth and academic attainment in primary and secondary school in England: Evidence from a national cohort study, *PLoS ONE* (2022). [DOI: 10.1371/journal.pone.0271952](https://doi.org/10.1371/journal.pone.0271952)

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Citation: Link between preterm birth and educational attainment explored in UK primary and secondary schoolchildren (2022, August 17) retrieved 6 May 2024 from <https://medicalxpress.com/news/2022-08-link-preterm-birth-explored-uk.html>

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