CLOSER (UCL) - Written evidence (PRT0023)

1. About us:

1.1. CLOSER, the home of longitudinal research[1], is the UK's partnership of leading social and biomedical longitudinal population studies and works to increase their visibility, use and impact. Our partner studies[2] comprise national and regional studies from across the UK. CLOSER partner studies include the British Birth Cohort Studies, ONS Longitudinal Study, Millennium Cohort Study, the Longitudinal Studies of Young People in England, Growing Up in Scotland, the Avon Longitudinal Study of Parents and Children, Understanding Society – the UK Household Longitudinal Study, and more.

1.2. CLOSER has been funded by the UKRI Economic and Social Research Council (ESRC) since 2012 and is based at the UCL Social Research Institute.

2. Our reason for submitting evidence:

2.1. CLOSER represents multiple longitudinal population studies across the UK. These national scientific assets follow the same people and households over time, often from birth, collecting a wide array of data and information about study participants, which enable researchers and policymakers to explore people's complex lives and how changes in society affect health, community and education. CLOSER's strategic position in the research landscape and birds' eye view of the UK's longitudinal population studies makes it an ideal vehicle for identifying and communicating evidence to inform policy.

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[1] https://www.closer.ac.uk
[2] https://www.closer.ac.uk/timeline/

2.2. The UK's longitudinal population studies are recognised as vital sources of evidence on how early circumstances and experiences affect people across their life, providing insights into individual short and long-term change and the relationship between different elements of people's complex lives that cannot be obtained from any other data sources. They allow researchers to explore how different groups vary, and how and why people's lives change, enabling a greater understanding of the difference between causal relationships and correlation.

2.3. Several UK longitudinal population studies have collected data about preterm birth and the long-term outcomes of being born preterm, including:

- The Avon Longitudinal Study of Parents and Children (ALSPAC)[3]
- Born in Bradford (BiB)[4]
- The 1970 British Birth Cohort (BCS70)[5]
- The Millennium Cohort Study (MCS)[6]
- The 1958 National Child Development Study (NCDS)[7]
- Understanding Society: The UK Household Longitudinal Study (UKHLS)[8]

2.4. Research using these studies has identified risk and predictive factors for preterm birth, including socioeconomic disadvantage, hardships in early life, parents being born preterm themselves, and mothers' health. As longitudinal population studies follow individuals over their life course, they provide unique evidence for the long-term impacts of being born preterm, including increased risk of health problems (particularly respiratory conditions) in

[3] https://closer.ac.uk/study/alspac-children-90s/
[4] https://closer.ac.uk/study/born-in-bradford/
[5] https://closer.ac.uk/study/1970-british-cohort-study/
[6] https://closer.ac.uk/study/millennium-cohort-study/
[7] https://closer.ac.uk/study/1958-national-child-development-study/
[8] https://closer.ac.uk/study/understanding-society/

childhood, lower educational achievement and learning difficulties at school, and difficulties with social relationships in adolescence. The longest running studies have also identified increased risk for preterm babies of certain health conditions in middle age. Research on the parents of preterm children also reveals a higher risk of mental health problems, particularly in the first year of their child's life.

2.5. Our response draws on data and evidence from UK longitudinal population studies to provide insights on the following questions in the call for evidence:

- The ethnic and socioeconomic inequalities seen in relation to preterm birth and how these could be reduced.
- The prediction of preterm birth, including through screening and the use of new technologies.
- Longer-term impacts, care and support for preterm babies and their families.
- Data collection and monitoring in relation to preterm birth, including variation in the recording of data.

3. The ethnic and socioeconomic inequalities seen in relation to preterm birth and how these could be reduced.

- There are some differences between ethnicities in the rate of preterm birth.
    - Pakistani babies were more likely to be born preterm than White British babies in both the MCS and BiB cohorts [1].
    - A lower risk of preterm birth (<37 weeks) was seen with increasing ethnic density of greater than 50% for Black African, Black Caribbean, Bangladeshi, Indian and Pakistani mothers across the UK [2].

- Socioeconomic disadvantage is associated with higher risks of preterm birth.
    - Risk of preterm birth was higher for mothers with lower income, lower education, and poor social support, and those who were unemployed and who didn't own their house [3].
    - For mothers in Bradford, feeling financial strain was associated with a 45% increase in preterm births (<37 weeks) – a similar risk magnitude to smoking during pregnancy [4].
- There are some differences in social and behavioural risk factors between different ethnicities and groups.
    - Obesity in otherwise healthy White British women was protective against preterm birth, but this was not the case for other ethnic groups [4].
    - In Bradford, no overall association was found between health behaviours and preterm birth; however, the odds for preterm birth were higher for Pakistani mothers who smoked during pregnancy and were inactive [5].
    - Babies conceived during Ramadan were not more likely to be born preterm, compared to babies conceived at other times of the year [6].

4. The prediction of preterm birth, including through screening and the use of new technologies.

- Parental age and gestational age are predictors of preterm birth in their children.
    - Preterm births are more likely in adolescent mothers [7-9].
    - Preterm births are more likely for babies whose mothers and fathers were themselves born preterm. The risk was

particularly high for babies whose mothers had hypertension and had been preterm themselves [8].

- Women who experienced multiple hardships during early life and adolescence have an increased risk of preterm birth.
    - The most impactful hardships during the mothers' early lives were lack of parental interest in their education, experiencing violence or mental health problems, contact with social services, not getting on with one's father, and family history of alcoholism [10].
- Measuring blood pressure from 28 weeks gestation did not help predict preterm birth [11].
- Mother's health and certain health behaviours could indicate a higher risk of preterm birth.
    - Women with a limiting long-standing illness are more likely to have a preterm birth [12].
    - Increased clinical subfertility was associated with increased risk of preterm birth. Pregnancies resulting in preterm birth tended to take 15% longer to conceive [13].
    - No association was found between risk of preterm birth and any level of alcohol consumption before or during pregnancy in the BiB cohort, although binge drinking during the second trimester was associated with babies being small for gestational age [14].
    - Also in the BiB cohort, women who drank a large number of sugar-sweetened drinks daily had higher odds of a preterm delivery; however, no association was found with daily consumption of artificially sweetened drinks [15].
- No consistent relationship was seen between household crowding and mould or dampness in the home and preterm birth [16].

5. Longer-term impacts, care and support for preterm babies and their families.

Longitudinal population studies are uniquely placed to track the long-term and life course impacts of early life circumstances on a range of outcomes, including health, education, and behaviour.

- Being born preterm is associated with an increased risk of health problems in childhood, particularly asthma and wheezing.
    - Health outcomes at ages 3 and 5 years were worse for preterm (<38 weeks) babies than full-term babies, including decreased growth and weight gain, increased number of hospital admissions, and higher presence of longstanding illness or disability and asthma or wheeze [17]. The risk of health problems was highest with very early term babies; however, as there are a larger number of late preterm and early term babies, these children have a bigger impact on health services.
    - Children who were born preterm have an increased risk of wheeze and asthma medication use [18], particularly a wheeze in early childhood that disappears by age 7 or 11, or wheeze that persists from early to later childhood [19]. The odds of being diagnosed with asthma are also increased for children born to mothers who experienced hypertensive disorders of pregnancy [20].
    - Children born moderately preterm (33-34 weeks) had significantly lower lung function values at age 8-9 years, to a similar degree than those born very preterm (25-32 weeks), although most of this detriment was reduced by age 14-17 years. Late preterm born children had similar lung function to full-term born children [21].

- There are also associations with increased risk of health problems for preterm babies into adulthood.
    - At age 44-45 years, adults who were born preterm were more likely to experience high blood pressure [22]. They were also at increased risk of chronic widespread pain, although the association disappeared when accounting for childhood behavioural problems and adult psychiatric disorders [23].
- Children born preterm tend to be at higher risk of poor cognitive abilities and conditions such as ADHD, although the evidence is mixed. Breastfeeding preterm babies for at least 2 months may be beneficial to cognitive development.
    - Cognitive ability was found to be related to the entire range of gestational age, with increasing prematurity associated with decreased cognitive ability at age 3, 5, and 7 years in the MCS. Those born very preterm have the highest risk of lower ability, but the increased risk is still seen in those born at early term (37-38 weeks) [24, 25].
    - Although children born preterm (<37 weeks) who lived in poverty had the poorest cognitive outcomes, living in poverty did not magnify the adverse effect of being preterm on cognitive development [24].
    - Longer gestation was significantly associated with increased IQ at age 5 years in four longitudinal population studies based in the UK, USA, Ireland, and Australia [26].
    - Little evidence was found for a reduction in IQ, memory, or attention measures in school aged children born preterm (32-36 weeks) in ALSPAC [27].
    - In the MCS, very and moderately preterm children demonstrated significantly lower working memory scores at age 11 years compared with full-term children. Very preterm children also

showed delays in verbal ability at age 3 years, but this delay dissipated by age 11, indicating catch up effects [28].

- There is an increased risk of Attention Deficit Hyperactivity Disorder (ADHD) among children born preterm (<37 weeks) [29].
- Higher rates of mother-reported emotional problems and hyperactivity in childhood and adolescence for babies born moderate/late preterm (32-36 weeks) versus full-term children have increased in the MCS (born in 2000-2002) compared to older cohorts born in 1958 (NCDS) and 1970 (BCS70). However, there was no difference in self-reported emotional problems in adolescence between pre- and full-term children across these cohorts [30].
- In a group of white preterm (28-36 weeks) born children in the MCS, those who were breastfed for at least 2 months showed increases in various cognitive abilities compared to those who were never breastfed [31].

- Preterm born children are at higher risk of lower achievement at school and experiencing learning difficulties and this has long-term consequences into adulthood. There is particular disadvantage for children attending school a year earlier due to being born preterm.
  - Preterm children have increased risk of poor performance in the Foundation Stage Profile (an assessment of early learning goals carried out after the first year of school) [32], but the effects are small in comparison to other risk factors, such as sex, age within the school year, and mother's education level [33].
  - Children born preterm, particularly late preterm (32/34-36 weeks), showed increased risk of poor performance with reading, writing, and maths at Key Stage 1 level (age 5-7 years) [34-37]

and poor writing and mathematics performance at age 11 years [35].

- Being born preterm was associated with decreased wealth at age 42 years in two cohorts born in 1958 and 1970, with the association mediated by decreased intelligence, reading, and, in particular, mathematics attainment in middle childhood (age 7-11), as well as decreased educational qualifications in young adulthood [38].
- Although preterm children had on average lower Key Stage performance than term-born children, they showed "catching up" in each progressive assessment during the first years of school with the gap in performance decreasing between Key Stages 1, 2, and 3 [39].
- Children starting school a year earlier than anticipated (due to being born preterm) were less likely to achieve good performance on the Foundation Stage Profile when compared to other preterm children, summer-born children, and preterm summer-born children who started in their anticipated school year [32]. These children were also at increased risk of learning difficulties and lower school performance at Key Stage 1 [40] and the need for special educational support at age 16 years [41]. This highlights the "double disadvantage" of being born preterm and attending school a year earlier due to being born preterm.

- Preterm born teenagers experience some social wellbeing and competence difficulties compared to full-term born peers.
  - Adolescents born very or moderately/late preterm did not show differences from full-term born peers in general wellbeing, family, school and physical-appearance-related wellbeing, and global self-esteem but did report lower wellbeing in relationships

with friends in data from UK, Swiss and German longitudinal population studies [42].

    - Gestational age was found to be associated with social competence from early childhood into mid-adolescence (age 3-14 years). Very preterm born children experienced the most difficulties with appropriate social behaviour and active social participation throughout this period, while moderate/late preterm and early term born children showed more problems than full-term born children at age 7 years, but these had resolved by age 14 years [43].

- Children born preterm may be at a higher risk of movement problems but do not partake in less physical activity than their peers. Physical activity is protective for mental health across gestational ages.
    - Moderate or late preterm (32–36 weeks) infants were at increased risk of developing coordination problems and cerebral palsy than term peers, but when restricting to infants born at normal birthweight without complications the association reduced substantially [44]. This suggests that other pregnancy- and childbirth-related causal pathways are likely involved.
    - Children born preterm are found to be just as physically active as their peers throughout childhood [45, 46].
    - Physical activity was found to have a universal protective effect against experiencing peer problems or low mental health for preterm and full-term born teenagers [47].

Longitudinal population studies also provide evidence about long-term impacts on the parents of preterm babies. Evidence shows detriments to the mental health of parents, particularly mothers, during the first year following the birth of a preterm baby.

- The risk of psychological distress for parents when their baby was aged 9 months was higher among those whose babies were born very

preterm (<32 weeks). There was also an increased risk for fathers of moderate preterm babies and mothers of early term babies, but not mothers of moderate or late preterm babies [48].

- Higher depression scores are significantly more common in mothers of infants born preterm up to 8 months after birth, even after controlling for depression during pregnancy [49].
- In the UKHLS, parents of children born preterm or with low birthweight were found to have lower life satisfaction than term-born parents for at least 6 months after the birth, with mothers more affected than fathers [26].

6. Data collection and monitoring in relation to preterm birth, including variation in the recording of data.

- Multiple longitudinal population studies (LPS) in the UK have collected information about preterm birth, some even from multiple generations.
- There is variation in the detail of the data as the studies were not set up with the purpose of specifically monitoring preterm birth and outcomes.
    - For example, data collected in LPS about preterm birth commonly does not include the reason for early delivery, such as whether it was planned and induced or spontaneous.
    - Very preterm born babies are also sometimes excluded from the study due to ethical concerns or practical reasons around the recruitment processes.
- However, their wider focus and duration mean LPS have data covering a large range of outcomes for preterm babies across their lives, through infancy, childhood, adolescence, and into adulthood.
    - The data about the lives of the study members includes topics and is at a level of detail not captured in other data sources such

as health records and other routinely collected administrative data.

- The committee has heard the importance of the pre-pregnancy period for the risks of preterm birth; however, all the birth cohort studies featured in this evidence submission began recruiting and collecting data after pregnancy or after the birth of the child.
    - The regional studies Born in Bradford and the Avon Longitudinal Study of Parents and Children both recruited women into the study while they were pregnant. The other birth cohort studies featured in this evidence submission all recruited after the study participant was born.
    - The UKHLS featured in this submission is a panel study and follows whole households over time. This means it collects data about some women who then later become pregnant, and it asks questions to these women about health and health behaviours during pregnancy.
    - The Southampton Women's Study[9], an LPS not featured in this submission, is the only birth cohort in Europe that recruited mothers prior to conception of the child; however, there has not been research published on preterm birth using this data.
- LPS have large sample sizes that aim to represent the population at national and regional levels, so the proportion of preterm births in each study generally aligns with the proportion seen across the UK population.
    - As the prevalence of preterm birth is relatively low, the absolute numbers of preterm born individuals in each study can be small and therefore result in underpowered and more unreliable analyses.

[9] https://closer.ac.uk/study/southampton-womens-survey/

- However, the scale of the largest LPS still mean detailed life course data on a larger number of preterm born individuals than may be achieved in smaller, targeted studies. For example, the Millennium Cohort Study included 1,496 preterm babies born at <37 weeks gestation[10].

- LPS can provide uniquely valuable evidence on the risk factors for preterm birth and the long-term life course impacts for preterm born babies. However, the current suite of LPS in the UK has limited data on pre-pregnancy and birth experiences.
    - New LPS with preterm birth monitoring and outcomes built-in from the outset would help fill this evidence and data need but require the support of long-term funding and data infrastructures.

References

1. Uphoff, E.P., K.E. Pickett, and J. Wright, *Social gradients in health for Pakistani and White British women and infants in two UK birth cohorts.* Ethnicity & Health, 2016. **21**(5): p. 452-467.
2. Pickett, K.E., et al., *Ethnic density effects on maternal and infant health in the Millennium Cohort Study.* Social Science & Medicine, 2009. **69**(10): p. 1476-1483.
3. Snelgrove, J.W. and K.E. Murphy, *Preterm birth and social inequality: assessing the effects of material and psychosocial disadvantage in a UK birth cohort.* Acta Obstetricia et Gynecologica Scandinavica, 2015. **94**(7): p. 766-775.
4. Stacey, T., et al., *Ethno-Specific Risk Factors for Adverse Pregnancy Outcomes: Findings from the Born in Bradford Cohort Study.* Maternal and Child Health Journal, 2016. **20**(7): p. 1394-1404.

[10] Weighted. Unweighted N = 1,478.

5. Petherick, E.S., et al., *Ethnic differences in the clustering and outcomes of health behaviours during pregnancy: results from the Born in Bradford cohort.* Journal of Public Health, 2016.

6. Daley, A., et al., *Are babies conceived during Ramadan born smaller and sooner than babies conceived at other times of the year? A Born in Bradford Cohort Study.* Journal of Epidemiology and Community Health, 2017. **71**(7): p. 722-728.

7. Pevalin, D., *Outcomes in childhood and adulthood by mother's age at birth: evidence from the 1970 British Cohort Study*, in *ISER Working Paper Series*. 2003.

8. Hennessy, E. and E. Alberman, *Intergenerational influences affecting birth outcome. II. Preterm delivery and gestational age in the children of the 1958 British birth cohort.* Paediatric and Perinatal Epidemiology, 1998. **12**(S1): p. 61-75.

9. Marvin-Dowle, K., et al., *Impact of adolescent age on maternal and neonatal outcomes in the Born in Bradford cohort.* BMJ Open, 2018. **8**(3): p. e016258.

10. Harville, E.W., et al., *Childhood Hardship, Maternal Smoking, and Birth Outcomes.* Archives of Pediatrics & Adolescent Medicine, 2010. **164**(6).

11. Macdonald-Wallis, C., et al., *Antenatal blood pressure for prediction of pre-eclampsia, preterm birth, and small for gestational age babies: development and validation in two general population cohorts.* BMJ, 2015. **351**(nov17 5): p. h5948-h5948.

12. Šumilo, D., et al., *Prevalence and impact of disability in women who had recently given birth in the UK.* BMC Pregnancy and Childbirth, 2012. **12**(1): p. 31.

13. Joffe, M. and Z. Li, *Association of time to pregnancy and the outcome of pregnancy **Supported by Birthright, London, United Kingdom.* Fertility and Sterility, 1994. **62**(1): p. 71-75.

14. Cooper, D.L., E.S. Petherick, and J. Wright, *The association between binge drinking and birth outcomes: results from the Born in Bradford cohort study.* Journal of Epidemiology and Community Health, 2013. **67**(10): p. 821-828.

15. Petherick, E.S., M.I. Goran, and J. Wright, *Relationship between artificially sweetened and sugar-sweetened cola beverage consumption during pregnancy and preterm delivery in a multi-ethnic cohort: analysis of the Born in Bradford cohort study.* European Journal of Clinical Nutrition, 2014. **68**(3): p. 404-407.

16. Harville, E.W. and F.A. Rabito, *Housing conditions and birth outcomes: The National Child Development Study.* Environmental Research, 2018. **161**: p. 153-157.

17. Boyle, E.M., et al., *Effects of gestational age at birth on health outcomes at 3 and 5 years of age: population based cohort study.* BMJ, 2012. **344**(mar01 2): p. e896-e896.

18. Leps, C., C. Carson, and M.A. Quigley, *Gestational age at birth and wheezing trajectories at 3–11 years.* Archives of Disease in Childhood, 2018. **103**(12): p. 1138-1144.

19. Kotecha, S.J., et al., *Comparison of the Associations of Early-Life Factors on Wheezing Phenotypes in Preterm-Born Children and Term-Born Children.* American Journal of Epidemiology, 2019. **188**(3): p. 527-536.

20. Kelly, L., et al., *The association between hypertensive disorders of pregnancy and childhood asthma.* Pediatric Research, 2022. **92**(4): p. 1188-1194.

21. Kotecha, S.J., et al., *Effect of late preterm birth on longitudinal lung spirometry in school age children and adolescents.* Thorax, 2012. **67**(1): p. 54-61.

22. Cooper, R., K. Atherton, and C. Power, *Gestational age and risk factors for cardiovascular disease: evidence from the 1958 British*

birth cohort followed to mid-life. International Journal of Epidemiology, 2009. **38**(1): p. 235-244.

23. Littlejohn, C., et al., *Is there an association between preterm birth or low birthweight and chronic widespread pain? Results from the 1958 <scp>B</scp>irth Cohort Study.* European Journal of Pain, 2012. **16**(1): p. 134-139.

24. Beauregard, J.L., et al., *Preterm Birth, Poverty, and Cognitive Development.* Pediatrics, 2018. **141**(1): p. e20170509.

25. Poulsen, G., et al., *Gestational Age and Cognitive Ability in Early Childhood: a Population-based Cohort Study.* Paediatric and Perinatal Epidemiology, 2013. **27**(4): p. 371-379.

26. Eves, R., et al., *Association of Birth Weight Centiles and Gestational Age With Cognitive Performance at Age 5 Years.* JAMA Network Open, 2023. **6**(8): p. e2331815.

27. Odd, D.E., A. Emond, and A. Whitelaw, *Long-term cognitive outcomes of infants born moderately and late preterm.* Developmental Medicine & Child Neurology, 2012. **54**(8): p. 704-709.

28. Fitzpatrick, A., J. Carter, and M.A. Quigley, *Association of Gestational Age With Verbal Ability and Spatial Working Memory at Age 11.* Pediatrics, 2016. **138**(6): p. e20160578-e2016.

29. Murray, E., et al., *Are fetal growth impairment and preterm birth causally related to child attention problems and ADHD? Evidence from a comparison between high-income and middle-income cohorts.* Journal of Epidemiology and Community Health, 2016. **70**(7): p. 704-709.

30. Bilgin, A., et al., *Changes in emotional problems, hyperactivity and conduct problems in moderate to late preterm children and adolescents born between 1958 and 2002 in the United Kingdom.* JCPP Advances, 2021. **1**(2).

31. Lewallen, L.P., *Breastfeeding is important for cognitive development in term and preterm infants.* Evidence Based Nursing, 2012. **15**(3): p. 85.

32. Pettinger, K.J., et al., *Starting school: educational development as a function of age of entry and prematurity.* Archives of Disease in Childhood, 2019: p. archdischild-20.

33. Quigley, M.A., et al., *Early term and late preterm birth are associated with poorer school performance at age 5 years: a cohort study.* Archives of Disease in Childhood - Fetal and Neonatal Edition, 2012. **97**(3): p. F167-F173.

34. Chan, E. and M.A. Quigley, *School performance at age 7 years in late preterm and early term birth: a cohort study.* Archives of Disease in Childhood - Fetal and Neonatal Edition, 2014. **99**(6): p. F451-F457.

35. Copper, C., et al., *Educational achievement to age 11 years in children born at late preterm and early term gestations.* Archives of Disease in Childhood, 2023. **108**(12): p. 1019-1025.

36. Peacock, P.J., et al., *Early school attainment in late-preterm infants.* Archives of Disease in Childhood, 2012. **97**(2): p. 118-120.

37. Russell, G., et al., *Predictors of word-reading ability in 7-year-olds: analysis of data from a U.K. cohort study.* Journal of Research in Reading, 2018. **41**(1): p. 58-78.

38. Basten, M., et al., *Preterm Birth and Adult Wealth:Mathematics Skills Count.* Psychological Science, 2015. **26**(10): p. 1608-1619.

39. Odd, D., D. Evans, and A.M. Emond, *Prediction of school outcome after preterm birth: a cohort study.* Archives of Disease in Childhood, 2019. **104**(4): p. 348-353.

40. Odd, D., D. Evans, and A. Emond, *Preterm Birth, Age at School Entry and Educational Performance.* PLoS ONE, 2013. **8**(10): p. e76615.

41. Odd, D., D. Evans, and A. Emond, *Preterm Birth, Age at School Entry and Long Term Educational Achievement.* PLOS ONE, 2016. **11**(5): p. e0155157.

42. Bilgin, A., et al., *Subjective Well-Being and Self-Esteem in Preterm Born Adolescents: An Individual Participant Data Meta-Analysis.* Journal of Developmental & Behavioral Pediatrics, 2021. **42**(8): p. 613-620.

43. Hosozawa, M., et al., *Gestational age on trajectories of social competence difficulties into adolescence.* Archives of Disease in Childhood, 2021. **106**(11): p. 1075.

44. Odd, D.E., et al., *Movement outcomes of infants born moderate and late preterm.* Acta Paediatrica, 2013. **102**(9): p. 876-882.

45. Spiegler, J., M. Mendonca, and D. Wolke, *Prospective Study of Physical Activity of Preterm Born Children from Age 5 to 14 Years.* The Journal of Pediatrics, 2019. **208**: p. 66-73.e7.

46. Lowe, J., et al., *Physical Activity in School-Age Children Born Preterm.* The Journal of Pediatrics, 2015. **166**(4): p. 877-883.

47. Brylka, A., et al., *Physical Activity, Mental Health, and Well-Being in Very Pre-Term and Term Born Adolescents: An Individual Participant Data Meta-Analysis of Two Accelerometry Studies.* International Journal of Environmental Research and Public Health, 2021. **18**(4): p. 1735.

48. Carson, C., et al., *Risk of psychological distress in parents of preterm children in the first year: evidence from the UK Millennium Cohort Study.* BMJ Open, 2015. **5**(12): p. e007942.

49. Drewett, R., et al., *Failure to thrive in the term and preterm infants of mothers depressed in the postnatal period: a population-based birth cohort study.* Journal of Child Psychology and Psychiatry, 2004. **45**(2): p. 359-366.

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