

(including Attention Deficit Hyperactivity Disorder -ADHD), but no FASD diagnosis. FASD is associated with a large number of comorbid conditions, including an 80-fold increased risk of sensorineural hearing loss. Using a contemporary UK birth cohort we examined the association between maternal alcohol consumption in pregnancy, hearing problems at age 3 and later ADHD.

Methods Analysis of the UK Millennium Cohort Study (MCS), based on 9179 children participating in 3 survey sweeps (9 months, 3, 7 years old). The main outcome was parental-reported hearing problems, at age 3. We also examined self-reported diagnosis of ADHD at age 7. Incident rate ratios (IRRs; 95% confidence intervals [CI]) were estimated using Poisson regression, according to maternal drinking in pregnancy in units per week (categorised as none, 1–7, 8–14 and 15 or more) adjusted for measures of childhood socioeconomic conditions. Analyses were conducted using Stata/SE with *svy* commands to account for the sampling design and attrition.

Results At age 3, 1328 children (14.4%) had reported a hearing problem with the most common of these being otitis media and unspecified hearing loss. Children of mothers who reported drinking 15 or more units per week of alcohol in pregnancy were twice as likely to have hearing problems compared to mothers who reported never drinking in pregnancy (aIRR1.9(95% CI[1.07, 3.39])). Risk of ADHD diagnosis at age 7 was also elevated in children of mothers who drank 15 or more units per week though this was not statistically significant at the 5% level (aIRR2.79(95% CI[0.91, 8.57])). Children with hearing problems at age 3 were 3.5 times more likely to have a diagnosis of ADHD at age 7 (aIRR3.49(95% CI[1.92, 6.32])).

Conclusion In a representative UK child cohort we found a significant prevalence of parental reported hearing problems at age 3 which was associated with high maternal alcohol consumption in pregnancy. Hearing problems were associated with a higher risk of ADHD. Self-reported data of both alcohol consumption and hearing problems is a limitation of this study. Maternal alcohol consumption is rarely captured in child health records in the UK making follow-up of potentially exposed children difficult. Further investigation in children with hearing loss could lead to earlier diagnosis of neurodevelopmental conditions, including FASD, and provide opportunities to intervene and improve outcomes.

OP55 THE IMPACT OF NEWBORN SCREENING ON OUTCOMES AND INEQUALITIES IN CYSTIC FIBROSIS: A UK REGISTRY BASED STUDY

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Background Cystic fibrosis (CF) is the commonest inherited disease in white populations, and as a classically inherited genetic disease, there is no socio-economic gradient in incidence. Despite this, we have previously demonstrated early inequalities in CF outcomes such as reduced growth and poorer lung function in children from more socio-economically disadvantaged areas. In the present study, we used data

from the UK CF Registry to examine the impact of newborn bloodspot screening (NBS), introduced in 2007, on inequalities in clinical outcomes in children with CF born in the new millennium.

Methods We carried out longitudinal analyses of data on 4117 individuals with CF born between 2000 and 2014 who are captured in the UK CF Registry. Clinical outcomes were the trajectories of lung function measured using percent predicted FEV₁ (ppFEV₁) from age five, weight and body mass index (BMI) z-scores from age one, and time to chronic *Pseudomonas Aeruginosa* (PA) infection. We developed longitudinal models for ppFEV₁, weight, and BMI and a time-to-event model for PA infection to assess the association of NBS with outcomes and potential interactions with childhood socio-economic conditions (SECs), measured by the index of multiple deprivation, whilst adjusting for sex, genotype, birth cohort, ethnicity, and pancreatic insufficiency.

Results Complete data for the analyses of the effect on lung function, weight, BMI and time to chronic PA infection were available for 2267, 3424, 3410 and 3428 individuals, respectively. About one third of the individuals were diagnosed by NBS. NBS was associated with a shallower rate of lung function decline (0.45; 95% CI 0.13 to 0.76 per year), and higher average weight trajectory intercept (0.14; 95% CI 0.06 to 0.23 standard deviations) as well as increased time to chronic PA infection. We found no significant association of NBS with the intercept for lung function or BMI; or with longitudinal trajectories of weight and BMI. There was no significant interaction between NBS and childhood SECs.

Conclusion Analyses of data from a large national CF Registry show that NBS is associated with better lung function and increased weight for all children with CF, but there is no evidence that it has narrowed health inequalities.

Smoking and youth

OP56 ABSTRACT WITHDRAWN

OP57 #DOES PARENTAL SMOKING EXPLAIN IMPACTS OF SMOKE-FREE PUBLIC PLACES LEGISLATION ON YOUTH SMOKING INITIATION IN THE UK?

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Background Evidence on the impact of the smoke-free public places legislation in the UK on youth smoking initiation is not well established. Changes in parental smoking behaviour may be a major mechanism by which smoke-free legislation impacts on youth smoking. Smoke-free legislation could also displace parental smoking behaviour into the home (by restricting alternative smoking spaces) or out of the home (by increasing awareness of risks to others from second-hand smoke exposure), potentially either strengthening or weakening its influence. We investigated how much of any impact of the legislation on youth smoking initiation could be explained by parental smoking, and whether associations between parental smoking and youth smoking initiation differed before or after the legislation.