

The Avon Longitudinal Study of Parents and Children (ALSPAC) is a transgenerational prospective observational study investigating influences on health and development across the life course. It has collected information on genetic, epigenetic, biological, psychological, social and other environmental exposures in relation to a diverse range of health, social and developmental outcomes. Recruitment sought to enrol pregnant women in the Bristol area of the UK during 1990–92. There were 13761 women (contributing 13867 pregnancies) recruited. This was extended to include additional children eligible using the original enrolment definition up to the age of 18 years. The children from 14541 pregnancies were recruited in 1990–92, increasing to 15247 pregnancies by the age of 18 years. The resource comprises a wide range of phenotypic and environmental measures in addition to biological samples, genetic and epigenetic information and linkage to health and administrative records. The study is celebrating its 21<sup>st</sup> Anniversary this year and over 700 peer-reviewed articles have been published using data from ALSPAC. The study has made contributions to understanding across a range of disciplines, exposures and outcomes. The presentation will present my view of the key contributions the study has made to date.

## 204 REGIONAL DIFFERENCES IN PERI- AND NEONATAL OUTCOMES OF EXTREMELY PRETERM INFANTS IN SWEDEN (EXPRESS)

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**Background** The EXPRESS study has shown favourable peri- and neonatal outcomes of extremely preterm infants (EPT, < 27 weeks) in Sweden compared with similar studies.

**Objective** To determine whether there are differences in peri- and neonatal outcomes in spite of favourable national rates and whether outcomes can be related to regional differences in the use of perinatal interventions.

**Methods** Population-based prospective study of all EPT children born in Sweden from April 1, 2004, to March 31, 2007. Of 1011 births, 707 were born alive and 497 survived to one year. Each region was assigned a perinatal activity score (PAS) based on the rate of selected perinatal interventions. Mortality rates were calculated, adjusted for background factors and related to PAS.

**Results** There were few regional differences in demographic background data. PAS varied from 74 to 100 (median 82) between regions. When 3 regions with the highest PAS (median 98) were compared with 4 regions with lower PAS (median 79), the following adjusted odds ratios (AOR) were found for infants born at 22–26 weeks: Perinatal death, AOR 0.6 (95%CI 0.4–0.8), infant mortality 0.6 (95% CI 0.4–0.9). There was no increase in the odds for survival with severe neonatal morbidity; AOR 0.7 (95% CI 0.5–1.0). When stratified by gestational age, increased survival was confined to infants born at 22–24 weeks. Regional differences were nullified when early deaths (< 12 hours) were excluded.

**Conclusions** There are differences in peri- and neonatal outcomes between regions in Sweden which can be explained by the intensity of perinatal interventions.

## 205 LUNG FUNCTION IN ADULTS BORN PRETERM - THE HELSINKI STUDY OF VERY LOW BIRTH WEIGHT ADULTS

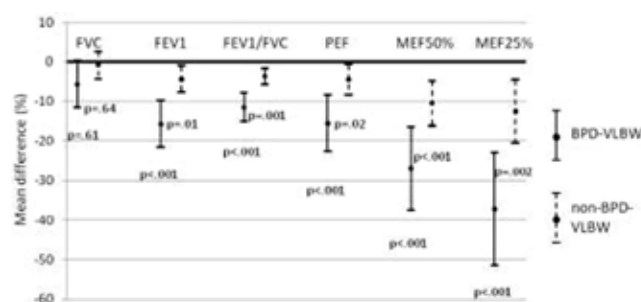
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**Background and aims** Adolescents born at very low birth weight (< 1500g, VLBW) have higher rates of respiratory symptoms and reduced lung function as compared with those born at term. Only few studies, however, have extended to adult life. We studied the association of preterm birth at VLBW with lung function in young adults.

**Methods** We used spirometry (Medikro®) to measure pulmonary function in 160 VLBW subjects and in 162 term-born controls (mean age 22.5 years) as a part of the Helsinki Study of Very Low Birth Weight Adults. BPD was diagnosed by a clinician based on Northway's criteria.

**Results** Figure 1 shows the mean values and differences in lung function tests between the groups. Forced expired volume in 1 second (FEV1), the FEV1/FVC (forced vital capacity) ratio, peak expiratory flow (PEF), maximal expiratory flow at 25% or 50% (MEF25% and 50%) were lower in adults born at VLBW than in those born at term. This finding was strongest in VLBW adults with a history of BPD but was present also in VLBW adults with no history of BPD.



**Abstract 205 Figure 1** The mean difference in lung function test between VLBW adults with or without bronchopulmonary dysplasia [BPD] (error bars) and term born controls (zeroline) adjusted for age, sex, height, BMI, parental education, maternal smoking during pregnancy, current daily smoking of the subject, and the frequency of leisure-time conditioning physical activity

The mean difference in lung function test.

**Conclusions** Reduced FEV1/FVC, PEF and MEF<sub>25–50%</sub> suggest a medium and small airway obstruction among young adults born at VLBW. While this finding is strongest among BPD survivors, it is present also among VLBW adults with no history of BPD. This may be a risk factor for later obstructive pulmonary disease.

## 206 NEONATAL INFECTION AND 5-YEAR NEURODEVELOPMENTAL OUTCOMES OF VERY PRETERM INFANTS: THE EPIPAGE STUDY

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**Background and aims** To determine if neonatal infections are associated with increased risks of adverse neurodevelopment at 5 years of age in a population-based cohort of very preterm children.

**Methods** We included all live births between 22 and 32 weeks of gestation from 9 regions in France in 1997 (EPIPAGE study). Of the 2665 live-births, 2193 were eligible for follow-up evaluation at 5 years of age, 1769 had a medical examination and 1495 a cognitive