Development and disability

**G73** AN INTERIM ANALYSIS OF UK DATA FROM A NATIONAL PROSPECTIVE COMPARATIVE STUDY OF FIVE YEAR OLD CHILDREN (AND THEIR FAMILIES) BORN AFTER INTRACYTOPLASMIC SPERM INJECTION (ICSI) OR NATURAL CONCEPTION

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**Aims:** To investigate the physical and neurodevelopmental wellbeing of ICSI conceived 5 year olds, compared with naturally conceived controls.

**Methods:** Children were singleton, first born and Caucasian. A paediatrician and a psychologist performed a comprehensive assessment of these children. The psychologist was blinded to conception type. A sociodemographic, medical and developmental history was ascertained whilst the child was assessed using WPPSI-R, McCarthy, and Bene-Anthony family relations tests. After this, a physical examination was performed of the paediatrician including visual testing, pure tone audiometry, measurement of growth and ascertainment of congenital abnormalities.

**Results:** For this interim analysis 138 study and 105 control children have been assessed. A range of sociodemographic factors, including social class, parental level of education, maternal smoking and parental drinking were comparable between groups. Maternal age of study children, 34.2 years, was significantly older than in the control group, 31.7 years (p=0.0001). There was no sex bias although the study children, 3.08 years, were slightly older than control children, 3.0 years (p=0.01) and the study children were born slightly more mature. Growth parameters were not statistically different at examination. Hospital admissions were similar and the occurrence of major childhood illnesses and surgery were non-different. At this stage, combined major and minor congenital abnormality rates were also comparable (ICSI 38/138, control 19/105). WPPSI-R, McCarthy and Bene-Anthony scores were comparable and around the mean for age.

**Conclusions:** Despite continuing concerns about the safety of this invasive form of in-vitro fertilisation, our findings to date suggest ICSI conceived 5 year olds are similar to their matched naturally conceived controls.

**G74** OUTCOME AT TWO YEARS OF VERY LOW BIRTH WEIGHT (VLBW) INFANTS IN THE EAST ANGLIAN REGION: 1993–1997

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**Introduction:** Advances in treatment have led to increasing survival rate and potentially changing outcome for VLBW infants. Reliable and comparable methods of follow-up are required to monitor disability. This collaborative regional study uses a nationally recommended data set to describe the health and functional status of VLBW children at the age of two years.

**Methods:** Maternal and neonatal data were prospectively collected on a common database for all infants born weighing less than 1500 gms from 1993 to 1997, to mothers resident in the former East Anglian region at the time of birth. Follow-up at two years post-term was co-ordinated centrally and carried out locally by designated paediatricians using recommended data forms. If not able to attend, the Health Visitor (HV) or GP were asked to complete the forms.

**Results:** Of the 1243 children born alive, 958 (77%) survived to the age of two years. Follow-up data were available in 947 (99%), in 85% from a paediatrician and in 14% from their HV or GP. 1% were lost to follow-up. 248 (26%) were multiple births. Of those followed, mild or no disability was identified in 770 (81.1%, CI 79.6%-84.1%), moderate in 104 (11.1%, CI 9.1%-12.9%) and severe in 73 (7.7%, CI 6.2%-9.4%). 45 (4.7%, CI 3.6%) children had cerebral palsy, quadriplegia in 18, and 128 (13.5%) developmental delay. Severity of disability was associated with gestational age (p<0.005) but not multiple birth. Of those with severe disability, 53 (5.6%) were unable to walk, 33 (3.5%) had no or very limited vocalisation, nine were blind and 5 (0.5%) had sensorineural hearing loss requiring aids, 2 remained on oxygen treatment. The height of 15 was more than 3 SDs below the mean. 177 (18%) were referred to one or more community services; 16% to speech therapy, 14% to physiotherapy and 8% to Special Education.

**Conclusions:** This collaborative project achieved a high follow-up rate and provides a model for routine audit and the provision of timely, geographically relevant information for parents and professionals.

**G75** THE LONGTERM OUTCOME OF FAILURE TO THRIVE IN INFANCY: A SYSTEMATIC REVIEW

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**Aims:** To systematically review the literature to ascertain the long-term outcomes for failure to thrive (FTT)

**Methods:** A literature search was carried out on the MEDITINE, Cochran, Cinahl and Psychlit databases for cohort studies and randomised controlled trials on infants with FTT. Outcomes of interest were growth, developmental and behavioural measures, and indicators of child abuse at the age of at least 3 years.

**Results:** 23 studies (15 hospital and 8 community based) were found meeting the inclusion criteria. Nine studies had a matched comparison group, in which 6 had assessments blind to the anthropometric status of the child. Length of follow up ranged from 8 months to 12 years. Most studies were of cases identified retrospectively with follow up rates of 47-100%. The prospective cohort studies had follow up rates of 64–88%. In all studies the majority of children attained height and weight in the normal range. Only 4% met the criteria for failure to thrive. Only a minority of children required medical or social intervention, and the risks to the child were not determined to be at risk. The only community cohort found academic and IQ tests to be no different from controls.

**Conclusions:** The literature indicates that the majority of children experiencing FTT in infancy seem to do well in all respects, particularly in community cohorts. This finding throws current criteria and screening for FTT into some question. Large well designed cohort studies are required to determine which subgroups of infants with poor weight gain are at risk for growth, development and socially, and to ascertain the weight monitoring is a worthwhile form of surveillance.

**G76** IMPROVING MENTAL HEALTH AMONG CHILDREN AND THEIR PARENTS THROUGH PARENTING PROGRAMMES IN GENERAL PRACTICE: A RANDOMISED CONTROLLED TRIAL

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**Aims:** To assess the effectiveness of a parenting programme in improving the behaviour of children and the mental health of their parents in a representative general practice population.

**Methods:** A randomised controlled trial in 3 urban General Pracices. The participants are parents of children aged 2–8 years who scored in the upper 50% on a behaviour inventory in 116 families. Forty six of the children scored in the clinical range for behaviour problems, the remainder in the normal range. The intervention is Webster-Stratton’s 10-week health visitor led parenting programme. The following validated questionnaires were used: child behaviour was measured using the Eyberg Child Behaviour Inventory and Goodman Strengths and Difficulties Questionnaire; and parents’ mental health was measured using the General Health Questionnaire and Abidin’s Parenting Stress Index. The families were followed up for a year.

**Results:** The intervention significantly reduced child behaviour problems and improved positive child behaviours at the immediate and 6 month post intervention follow up. There were no effects seen among families with clinical and non-clinical range children. At one year follow up, differences between control and intervention groups were not significant, possible reasons for this are gained from interviews with the parents at the immediate post intervention stage. Data showed that many from the intervention group felt a lack of support after the parenting programme finished and expressed a need for further sessions. Many others felt the intervention should have been extended to their partner (where there was one) in order that they could adopt a sound approach. Improvements in the mental health of parents in the intervention group were not statistically different from those in the control group, however, qualitative data showed that parents gained in confidence, felt less stressed and gained more cooperation from their children.

**Conclusion:** This intervention could make an important contribution to mental health promotion and to public health on a population
STAFFORD MODELS OF EARLY DIAGNOSIS OF AUTISM AND AUTISTIC SPECTRUM DISORDERS (PERVERSIVE DEVELOPMENTAL DISORDERS)

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Aim: It is increasingly apparent that early diagnosis & intensive early intervention may considerably benefit children with Pervasive Developmental Disorders (PDD). However, there is uncertainty about the way to achieve comprehensive early diagnosis of PDD. In an earlier study (JAMAA, June 27, ‘01) we had shown that efficient total screening and diagnosis of a population of preschool children may be achieved by a system of early referral of low threshold developmental problems followed by staged screening and assessment. The current study extends the previous work with inclusion of subsequent birth cohorts.

Method: The study was conducted in Stafford in 2001. The total population of children born between 1992 and 1998 in one NHS area was screened. Health professionals in contact with young children (Health Visitors, Speech Therapists, Paediatricians) were encouraged to refer children with developmental problems to a multidisciplinary team. The children were screened for significant developmental problems defined as moderate delay in two or more areas (speech and language, personal social, motor, play skills, attention and/or behaviour) or severe delay in one area. Screen positive children underwent multidisciplinary assessment followed by Autism Diagnostic Interview (ADI-R) of suspected case.

Results: Out of a total population of 26403 children born between 1992 and 1998, 1205 were referred and 170 children were diagnosed to have a PDD. Average age of diagnosis was 38 months. Population prevalence of combined PDD was 64.4 per 10000 (95 CI 55.1–74.8).

Conclusion: Preschool children with PDD can be comprehensively identified by a system of early referral of non-PDD specific developmental problems followed by staged screening and assessment.

A STUDY OF THE IMPACT OF OBSTETRIC FACTORS ON AUTISM IN A UK MULTIPLEX SAMPLE


Aim: To evaluate the significance of perinatal complications in the development of pervasive developmental disorders (PDD) within a sample of non-twin sibling pairs.

Method: These 87 multiplex UK families, recruited via clinicians and a direct mailing of the membership of the various UK autistic societies, are part of a larger sample included in the International Molecular Genetic Study of Autism (IMGSA). This study is using affected relative pairs and linkage analysis to identify the susceptibility genes for autism. Within each pair, both individuals had a PDD; the diagnosis was confirmed by the administration of the Autism Diagnostic Interview (ADI) and Autism Diagnostic Observational Schedule (ADOS). When possible, cognitive function (performance and verbal IQ) was assessed using the Ravens, BPVS or Mullens schedules. An obstetric interview was completed with the mother about each pregnancy. When information was missing from the parental interview, it was obtained by consulting the medical notes. Prenatal, perinatal, postnatal and total optimality scores were calculated and correlated with measures of severity of PDD.

Results: Analysis of single interview items and total optimality scores failed to find a statistically significant correlation between obstetric complications and severity of PDD.

Conclusions: This study indicates that mild perinatal adversity does not contribute to the severity of expression of PDD in sibling pairs selected for sharing a genetic susceptibility to PDD.

MIDDLE EAR DISEASE AND SPEECH RECOGNITION IN 7 YEAR OLDS

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Otis media with effusion (OME) is a common problem in young children, known to cause fluctuating hearing loss that may delay speech development. There is uncertainty as to whether there are long-term effects on the ability to listen and to recognise speech, particularly in background noise. This study aimed to establish whether a significant history of middle ear disease affects speech recognition in 7-year-olds.

In order to establish whether a significant history of middle ear disease affects speech recognition in 7-year-olds, we conducted a study to determine the effect of middle ear disease on speech recognition. In this study, children with a history of middle ear disease were compared to children without a history of middle ear disease. The ability to recognise sentences in noise was determined by the signal-to-noise ratio (SNR) required to score 71% correct. All parents had been sent a questionnaire incorporating the Childhood Middle Ear Disease and Hearing Questionnaire developed by the Medical Research Council’s Institute of Hearing Research.

COSTS FOR A GEOGRAPHICALLY DETERMINED COHORT OF ADOLESCENTS BORN AT LESS THAT 29 WEEKS GESTATION

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Aim: To measure and explore the variation in the societal costs of a group of 15–16 year olds born at less than 29 weeks gestation.

Methods: A retrospective cohort study using data collected in the Northern Region of England during 1999–2000. Resource utilisation data were collected during the course of face-to-face interviews conducted with the parents of 54 of the 58 surviving adolescents born at less than 29 weeks gestation in 1983. Unit costs for resources used by the adolescents were obtained from published sources and expressed in £ sterling (2000–1 prices). Unit costs were combined with resource volumes to obtain a net cost per adolescent over a one-year period. The main disability measure was the adaptive behaviour composite score from the Vineland Adaptive Behaviour Scales survey form. Cost comparisons were made between groups of adolescents according to their level of disability. In addition, a stepwise multiple linear regression analysis was performed in order to identify clinical and sociodemographic predictors of costs.

Results: Mean total costs for 15–16 year olds were estimated at £2602 (£2437, £2767) for 38 adolescents without disability, £6919 (£2750, £16588) for 6 adolescents with mild disability, £4613 (£1707, £2769) for 38 adolescents with moderate disability and £29662 (£27225, £352099) for 5 adolescents with profound disability. A stepwise multiple linear regression analysis was performed in order to identify clinical and sociodemographic predictors of costs. The results revealed that the following variables were associated with a significant increase in one year's societal costs: attendance of child at a special school (P < 0.001), high parental educational attainment (P < 0.001), Caucasian racial background (P = 0.003) and mild, severe or profound disability (P = 0.013). The overall significance of the regression analysis was good with an R² of 0.899 and an F statistic of 102.855 (P = 0.000).

Conclusion: This study suggests that the increased care costs associated with preterm birth persist into adolescence.

THE HOPES PROJECT (HOLISTIC ORGANISATIONS IN PARTNERSHIP FOR EMOTIONAL STRENGTH)

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Aims: To promote the emotional health of children using a multi-agency prevention strategy within schools.
Abstract G82

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* Levels significantly higher than expected from IOTF cutoffs, Chi² goodness of fit p<0.001

Background: The emotional challenges to which children are exposed continue to increase including social and family disadvantage, bullying and drugs. Emotional ill health impacts on academic achievement, behaviour and overall health.

Method: A multi-agency group, led by a paediatrician, involving head teachers, a young person leaving care, educational psychologists and the team manager of the Leaving Care Team, developed a novel child friendly tool - a cartoon strip, illustrating children in a socially challenging school scenario. This tool was designed to help children verbalize emotions, develop empathy and encourage an emotional understanding of social situations. 14 teachers were trained to use the tool, which was then piloted with 300 children, aged 5-16 years, from 1 special need and 3 mainstream schools. School-excluded children were also piloted. Results: Qualitative data from the children’s responses showed that the tool triggered a discussion using emotional language in all groups of children. The children’s ideas varied with their ages and educational placement. In addition the children’s comments have been used in an interactive learning process to design a second cartoon.

Conclusions: We present an innovative approach, which can be used in the school curriculum to increase children’s emotional understanding, increasing their resilience to potential emotional stresses thereby protecting their mental health.

Results: Of the 608 children last measured in 1998, 500 were traced to local schools. 315 were measured. There was no difference in earlier BMI between those who consented and those who did not. An appreciable increase was found for all measures, including BMI. Percentage of overweight and obese children remained as high as at the end of primary school. * Levels significantly higher than expected from IOTF cutoffs, Chi² goodness of fit p<0.001.

Conclusions: Although the numbers of overweight and obese children have changed little since primary school, the increase in BMI for the population as a whole has continued to rise. The implications for public health are evident.

G82 WHAT’S HAPPENED TO OUR INCREASINGLY OBESE PRIMARY SCHOOL CHILDREN NOW THEY HAVE GONE TO SECONDARY SCHOOL


Aims: To determine whether the rising levels of obesity previously observed in a cohort of primary school children have persisted into secondary school

Methods: Children who had participated in the APPLES health promotion project during primary school from 1996–1998 were traced to their secondary schools and were invited to be measured by the same expert auxologist who had measured them previously. Height, weight and triceps measures were obtained, and BMI and z scores were calculated. The percent of children falling into overweight and obese categories according to international criteria were calculated.

Results: Of the 608 children last measured in 1998, 500 were traced to local schools. 315 were measured. There was no difference in earlier BMI between those who consented and those who did not. An appreciable increase was found for all measures, including BMI. Percentage of overweight and obese children remained as high as at the end of primary school. * Levels significantly higher than expected from IOTF cutoffs, Chi² goodness of fit p<0.001.

Conclusions: Although the numbers of overweight and obese children have changed little since primary school, the increase in BMI for the population as a whole has continued to rise. The implications for public health are evident.

G83 HOW EFFECTIVE IS THE BCG VACCINATION?

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Aims: To calculate the efficacy of BCG vaccination in an outbreak of tuberculosis at a school in Leicester.

Methods: Screening for tuberculosis was offered to 1200 students aged 11 to 16 years during a large outbreak of tuberculosis at a community college. The BCG status of students was determined from previous records, and/or the presence of a BCG scar. Heat tests results and diagnoses of active tuberculosis and latent tuberculosis infection were recorded. The efficacy of BCG vaccination was calculated using case control analysis.

Results: Conventional and molecular epidemiological evidence supports a point source outbreak, the source case being a student with sputum smear positive cavitary disease, infectious for ten months. 1127 students were screened. 71 students were treated for tuberculosis, and 249 were treated for latent tuberculosis infection. 93% of the students at the school belonged to non-white ethnic groups and 307 of 1127 (27%) students tested had positive Heat tests. 85% of students had a history of previous BCG immunisation. The efficacy of BCG vaccine was 42% (95% Confidence interval [6 to +68%].

Conclusions: This outbreak provided a unique opportunity to evaluate the efficacy of BCG vaccination in this population of students. The implications of this for the continued use of BCG in the national immunisation programme are discussed.