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Introduction Respiratory infections in childhood have been related to reduced adult lung function, but few studies have examined the timing and type of infection. We hypothesised that lower respiratory tract infections (LRTIs) compared with upper respiratory tract infections (URTIs) and early compared with later infections would have a stronger association with adult lung function.
Methods The Barry Caerphilly Growth study collected information on childhood infections (URTI, LRTI and gastrointestinal infections) from birth to 5 years on 14 occasions. Subjects were traced at 25 years of age and had lung function (FEV1, FVC, FEV1/FVC, FEF25-75, and PEFR).
Results 581 subjects had acceptable data for both FEV1 and FVC. Childhood LRTIs (0–5 years) but not URTIs or gastrointestinal infections were negatively associated with all lung function measures except FVC ($p<0.05$) and showed a dose-response effect. LRTIs in the first year of life and between 2 and 5 years were predictive of PEFR (significant interaction with age at infection $p=0.02$) but only the former predicted FEV1, FEV1/FVC and FEF25-75 in multivariable models for example, β coefficient for >1 LRTI between 0 and 1 year and FEF25-75 −0.306 (95% CI 0.523 to −0.089, $p=0.006$) compared with −0.021 (95% CI −0.324 to 0.282, $p=0.89$) for exposure between 2 and 5 years.
Conclusion LRTIs but not URTIs are associated with an obstructive lung function deficit, especially under 1 year, either due to primary infection-related airways damage or a secondary effect reflecting abnormal airway development. The former explanation, if true, may contribute to socioeconomic differences in obstructive airways disease irrespective of smoking behaviour.

O2-4.5 PREVENTION OF GESTATIONAL DIABETES MELLITUS AND NEWBORN'S HIGH BIRTHWEIGHT BY LIFESTYLE COUNSELLING –A CLUSTER-RANDOMISED CONTROLLED TRIAL

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Introduction To examine, whether gestational diabetes mellitus (GDM) or newborns' high birthweight can be prevented by lifestyle counselling.
Methods A cluster-randomised trial in 14 municipalities, where 2271 women were screened at 8–12 weeks' gestation. Euglycaemic (N=399) women with at least one GDM risk factor were included. Intervention included individual intensified counselling on physical activity, diet and weight gain at five antenatal visits. Main outcome measures were incidence of GDM and newborns' birthweight adjusted for gestational age. Multilevel analyses took into account cluster, maternity clinic and nurse level influences in addition with other covariates. Compliance to the individual behavioural objectives varied from 39 to 85.9% depending on the objective and week's gestation.
Results 23.3% (50/216) of women in the intervention group and 20.2% (36/179) in the usual care group were diagnosed for GDM ($p=0.49$). Birthweight was lower in the intervention than in the usual care group (absolute effect −133 g, 95% CI −231 to −35, $p=0.008$) as were also birthweight per gestational age (absolute effect −3.08; 95% CI −5.3 to −0.9, $p=0.006$) and proportion of large for gestational age newborns (26/216, 12.1% vs 34/179, 19.7%, $p=0.042$). The effect sizes were significant after taking cluster, maternity clinic, nurse, age, education, sex of the newborn, parity, pre-pregnancy BMI and smoking into account.
Conclusions Intervention was effective in controlling birthweight of the newborns, but not GDM. Offering lifestyle counselling especially for women at risk for GDM is important in order to prevent high birthweight and the related health problems.

O2-4.6 THE BI-DIRECTIONAL RELATIONSHIPS BETWEEN DIABETES MELLITUS AND DEPRESSION: EVIDENCE FROM TWO COHORT STUDIES BASED ON THE SAME POPULATION

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Introduction It has been argued that the relationship between depression and diabetes is bi-directional, but this hypothesis has not been explicitly tested. We conducted two separate cohort studies, based on Taiwan's National Health Insurance claims, to determine the bi-directional prospective relationships between depression and type 2 diabetes.
Methods The first cohort analysis identified all 390 011 diabetic patients in 2000 and the same number of randomly selected non-diabetic beneficiaries. The second cohort analysis identified 5847 depressive patients and a random sample of non-depressive beneficiaries of the same number in 2000. The subsequent information on incident depression and diabetes was retrieved from ambulatory cares from 2000 to 2006. We evaluated the age-and sex-specific relative hazards of depression/diabetes in relation to diabetes/depression with Cox proportional hazard regression model adjusted for potential confounders.
Results The first cohort analysis noted a covariate adjusted HR of 1.43 (95% CI 1.38 to 1.48) for incident depression among diabetes. The second cohort analysis noted that the depressive patients experienced significantly elevated HR (2.02, 95% CI 1.80 to 2.27) for incident diabetes.
Conclusion The two cohort studies provided support for the bi-directional prospective relationships between diabetes and depression, with a stronger association noted for the depression predicting onset of diabetes. We also noted that the bi-directional relationships were most obvious in younger (<35 years) patients, regardless of gender.