* **Poster presentations**

**PMM.52 Lower circulating B12 in pregnancy is associated with higher maternal adiposity and insulin resistance in non-diabetic Caucasian women during and after pregnancy**

1. [**BA Knight**](http://fn.bmj.com/search?author1=BA+Knight&sortspec=date&submit=Submit)[1](http://fn.bmj.com/content/99/Suppl_1/A140.1.abstract#aff-1),[2](http://fn.bmj.com/content/99/Suppl_1/A140.1.abstract#aff-2),
2. [**BM Shields**](http://fn.bmj.com/search?author1=BM+Shields&sortspec=date&submit=Submit)[1](http://fn.bmj.com/content/99/Suppl_1/A140.1.abstract#aff-1),
3. [**AT Hattersley**](http://fn.bmj.com/search?author1=AT+Hattersley&sortspec=date&submit=Submit)[1](http://fn.bmj.com/content/99/Suppl_1/A140.1.abstract#aff-1),[2](http://fn.bmj.com/content/99/Suppl_1/A140.1.abstract#aff-2),
4. [**CR Yajnik**](http://fn.bmj.com/search?author1=CR+Yajnik&sortspec=date&submit=Submit)[3](http://fn.bmj.com/content/99/Suppl_1/A140.1.abstract#aff-3)

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**Abstract**

**Background** Recent studies from India have suggested that low vitamin B12 (<150 pmol/l) concentrations in pregnancy are associated with obesity, gestational diabetes, and permanent diabetes 5 years later.1 These associations may not be present in a Western European Caucasian population, where micronutrient deficiencies are thought to be less common.

**Aims** To assess the associations between maternal adiposity and insulin resistance (IR) and circulating serum B12 levels in a non-diabetic pregnant Caucasian population.

**Methods** Detailed anthropometric measurements and biochemistry data were available on 995 women recruited as part of the Exeter Family Study of Childhood Health.2 Height, weight, sum of skin-fold thickness (SS) and fasting bloods were taken at 28 weeks of pregnancy (+/-5 days). A subset of 567 women was followed up at 5 years post pregnancy.

**Results** The geometric mean (standard deviation range) serum concentration of B12 was 201 (159–263) pmol/l. 198(20%) had B12 <150 pmol/l. These mothers had higher (geometric mean (SD range): BMI(29.5 vs. 27.1 kg/m2), IR(1.6 vs1.2) Triglycerides (2.3 vs. 2.0 mmol/l) and SS (58.2 vs 50.2 mm), p < 0.001 for all during pregnancy, and higher BMI(26.5 vs 24.1 kg/m2), SS(54.6 vs 46.7mm), and IR(0.97 vs 0.68), p < 0.001 for all at 5 year follow up:

**Conclusions** Our study has replicated the Indian findings of associations between lower serum B12 during pregnancy and higher adiposity and insulin resistance in this non-diabetic Caucasian population. These associations may represent micronutrient deficiencies resulting from poor quality diet or absorption problems associated with obesity. These findings may have important implications for fetal and maternal health in obese pregnancies.

**References**

1. Krishnaveni GV, *et al*. Low plasma vitamin B12 in pregnancy is associated with gestational ‘diabesity’ and later diabetes. Diabetologia 52(11):2350–8
2. Knight B, Shields BM, and Hattersley AT. The Exeter Family Study of Childhood Health (EFSOCH): study protocol and methodology. Paediatric Perinatal Epidemiology 2006;20(2):172–9