**S6 Fig.** One-stage IPD meta-analysis: offspring lipoprotein, lipids and metabolite differences in means in SD units per 1-SD higher maternal (pink), paternal (blue) or offspring (green) BMI, meta-analysed across ALSPAC and NFBC86 cohorts.

### Lipoprotein subclasses

#### Extremely large VLDL
- **Particle concentration**
- **Total lipids**
- **Phospholipids**
- **Total cholesterol**
- **Cholesterol esters**
- **Free cholesterol**
- **Triglycerides**

#### Very large VLDL
- **Particle concentration**
- **Total lipids**
- **Phospholipids**
- **Total cholesterol**
- **Cholesterol esters**
- **Free cholesterol**
- **Triglycerides**

#### Large VLDL
- **Particle concentration**
- **Total lipids**
- **Phospholipids**
- **Total cholesterol**
- **Cholesterol esters**
- **Free cholesterol**
- **Triglycerides**

#### Medium VLDL
- **Particle concentration**
- **Total lipids**
- **Phospholipids**
- **Total cholesterol**
- **Cholesterol esters**
- **Free cholesterol**
- **Triglycerides**

#### Small VLDL
- **Particle concentration**
- **Total lipids**
- **Phospholipids**
- **Total cholesterol**
- **Cholesterol esters**
- **Free cholesterol**
- **Triglycerides**

#### Very Small VLDL
- **Particle concentration**
- **Total lipids**
- **Phospholipids**
- **Total cholesterol**
- **Cholesterol esters**
- **Free cholesterol**
- **Triglycerides**

#### IDL
- **Particle concentration**
- **Total lipids**
- **Phospholipids**
- **Total cholesterol**
- **Cholesterol esters**
- **Free cholesterol**
- **Triglycerides**

#### Large LDL
- **Particle concentration**
- **Total lipids**
- **Phospholipids**
- **Total cholesterol**
- **Cholesterol esters**
- **Free cholesterol**
- **Triglycerides**

#### Medium LDL
- **Particle concentration**
- **Total lipids**
- **Phospholipids**
- **Total cholesterol**
- **Cholesterol esters**
- **Free cholesterol**
- **Triglycerides**

#### Small LDL
- **Particle concentration**
- **Total lipids**
- **Phospholipids**
- **Total cholesterol**
- **Cholesterol esters**
- **Free cholesterol**
- **Triglycerides**

---

SD difference in offspring metabolite concentration (95%CI) per 1-SD of BMI increment.

- **P ≥ 0.003**
  - Mother
  - Offspring
  - Father

- **P < 0.003**
  - Mother
  - Offspring
  - Father
SD difference in offspring metabolite concentration (95% CI) per 1-SD of BMI increment.
In parental models, associations were adjusted for parental age, smoking status, education, head of household social class, maternal parity, offspring’s age at blood collection, sex and cohorts membership. In offspring models, associations were adjusted for offspring’s age at blood collection, sex, head of household social class and cohorts membership. Results are shown in SD-scaled concentration units of outcome and error bars denote 95% CI. 

VLDL=very-low-density lipoprotein; IDL=intermediate-density lipoprotein; LDL=low-density lipoprotein; HDL=high-density lipoprotein; C= cholesterol; MUFA=monounsaturated fatty acids; PUFA=polyunsaturated fatty acids.