**Abstract O-058 Figure 1** Group differences in surface area change between SGA young adults and controls. The mapping of cortical surface area reduction in SGA young adults and controls is shown on the reconstructed cortical surface. Cortical areas with statistically significant difference between groups are shown in colour, and the colour scale shows the dynamic range of the statistically significant changes (in p-values), red to yellow represents an increasing expansion of the cortex in SGA group to fit the template, thus surface area reduction in these areas compared with controls. All significant clusters survived FDR correction at p < 0.05. No areas with surface area expansion (blue areas) were found in the SGA group compared with controls.

**Background/aims** Being born small-for-gestational-age (SGA), a proxy for fetal growth restriction (FGR), has been related to poor school performance, lower academic achievement and cognitive problems. The aim of this study was to investigate whether young adults born SGA at term had reduced brain volumes, cortical surface area and/or cortical thickness, and whether brain morphometry measures were related to cognitive functioning.

**Methods** In this population-based follow-up study at age 20, 58 term-born SGA (birthweight < 10th centile, mean: 2915 g) and 81 non-SGA controls (birthweight > 10th centile, mean: 3707 g) were included. MRI-examinations at 1.5 T were obtained in 47 SGA and 61 control subjects. Image analysis was performed by the FreeSurfer, version 5.1. IQ was assessed by Wechsler Adult Intelligence Scale 3rd edition (WAIS-III).

**Results** Total brain volume was smaller in the SGA than in the control group (-5.6%; p < 0.001). This reduction included most structures, but relative volumes were the same. Cortical surface area was significantly reduced in the SGA group compared with controls in multiple regions across the cerebral cortex, especially in the frontal, parietal and temporal lobes compared with controls (Figure). The reduction in surface area in the SGA group was most pronounced in the anterior cingulate gyri bilaterally. No associations were found between brain measures and IQ measures in either group.

**Conclusions** Young adults born SGA at term have a global reduction in brain volume and regional reductions in cortical surface area. This may have long-term consequences for cognitive functioning.

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**Abstract O-059 Figure 1** VPT participants solve significantly fewer trials as the level of planning demands increases.