



<b>Title</b>	<b>Is better nutrition in childhood in a developing population associated with better cognitive function in later adulthood?: The Guangzhou Biobank Cohort Study</b>
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lasting benefits for cognitive development and maintenance, with corresponding implications for healthy aging. These findings support the biological evidence for a cognitively protective role of endogenous oestrogen and may add insight to the ongoing debate regarding the cognitive effects of Hormone Replacement Therapy. However, any attempts to modify these factors will need to consider any potential detrimental effects, such as increased risk of cardiovascular disease and breast cancer with younger age of menarche and loss of the beneficial effects of breast feeding for the mother and baby. Acknowledgements: The University of Hong Kong (HKSAR), Guangzhou Public Health Bureau (China), Guangzhou Science and Technology Bureau (China), The University of Birmingham (UK).

### P-2A-38

#### Is better nutrition in childhood in a developing population associated with better cognitive function in later adulthood?: The Guangzhou Biobank Cohort Study

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**Objective:** There is growing evidence that early life exposures, such as childhood socioeconomic status, are related to later adulthood cognition. However, the specific aspect of early conditions underlying this association is not clear. Animal protein intake is positively associated with earlier walking in infants. Dietary supplementation with meat in infants and children in developing countries results in better cognitive function, independent of iron status. Protein energy supplementation with vegetables, milk and sugar (not meat) given from birth to 24 months in developing populations is associated with better cognitive function in early adulthood (mean age 32 years), especially amongst women. Inadequate childhood nutrition is associated with poor short term academic and cognitive outcomes. However, it is not known whether childhood nutrition has life long effects on cognitive function. We examined the association of childhood meat eating with adulthood cognitive function in southern China where the older population lived through significant hardship during their early years.

**Methods:** Multivariable linear regression was used in a cross-sectional study of 20,086 Chinese men and women aged  $\geq 50$  years from the Guangzhou Biobank Cohort Study (phases 2 and 3) 2005–8. We assessed the association of childhood meat eating with amnesic-MCI and delayed 10-word recall

score. The 10-word recall is a test of new learning ability from the CERAD (Consortium to Establish a Registry for Alzheimer's Disease) test battery which has been validated as a culturally and educationally sensitive tool for identifying dementia in population based research in developing countries. Amnesic-MCI was defined as a delayed recall score of 3 or less out of 10, corresponding to 1 standard deviation below the mean.

**Results:** Adjusted for age, sex and education, childhood meat eating 1–6 days per week and daily childhood meat eating were associated with a higher 10-word recall score (number of words recalled = 0.08 [95% confidence interval = 0.02 to 0.13] and 0.24 [0.16 to 0.33] respectively) and with lower odds of amnesic-MCI (odds ratio = 0.80 [95% confidence interval = 0.72 to 0.89] and 0.79 [0.67 to 0.94] respectively). Additional adjustment for childhood and adulthood socioeconomic position and current physical activity attenuated these findings, however daily childhood meat eating remained associated with a higher 10-word recall score (0.17 [0.08 to 0.26]).

**Conclusions:** A diet that includes a small amount of daily meat in childhood (after infancy) may have long-term positive effects on cognitive function. If confirmed, these results highlight the importance of adequate childhood nutrition. Alternatively childhood meat eating may reflect a generally more cognitively protective childhood environment and nutrition. Irrespective, these findings also emphasise the childhood and adolescent antecedents of adult disease, with corresponding public health implications for healthy aging. Future research should examine the role of childhood exposures in long term cognitive development and if a role for childhood meat eating is verified, should elucidate the type and quantity of macro and micro nutrients that may be cognitively protective and the biological mechanisms behind these effects, so that preventive strategies can be implemented. Acknowledgements: The University of Hong Kong (HKSAR), Guangzhou Public Health Bureau (China), Guangzhou Science and Technology Bureau (China), The University of Birmingham (UK).

### P-2A-39

#### Transgenerational effects of prenatal synthetic glucocorticoid exposure on molecular regulation of the pituitary gland

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**Objective:** Approximately 10% of pregnant women are at risk of preterm labour. Almost 50% of infants born preterm develop respiratory distress syndrome (RDS). Pregnant women at risk of premature delivery are administered