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In This issue

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This issue of the *Journal of Developmental Origins of Health and Disease* contains themed publications from the Tenth World Congress on Developmental Origins of Health and Disease, Rotterdam, the Netherlands in 2017. The accompanying editorial by Professor Vincent Jaddoe discusses the highlights of the meeting, which focused on "Life course health and disease: observations, experiments and interventions", while addressing the translational challenges for DOHaD. In addition to the themed articles, this issue contains one brief report and six original manuscripts.

Brief report

Effects of sleep restriction during pregnancy on lipids and glucose homeostasis of female offspring submitted to ovariectomy. Argeri et al. assessed the metabolic profile of female offspring from sleep-restricted maternal rats during the last week of pregnancy, and the superimposed effects of ovariectomy. Sleep restriction groups had elevated levels of triglycerides, low-density lipoprotein, and basal glucose values, suggesting that sleep restriction during pregnancy may be a risk factor for the development of cardiovascular disease in adult female offspring.

Original manuscripts

Sexual dimorphism on aortic remolding in rat's offspring from diabetic mothers and the role of flaxseed oil in this effect. Vicente and colleagues determined whether vascular effects of maternal diabetes are transmitted to offspring and whether flaxseed oil as a source of omega-3 fatty acid may prevent the programming effects. Flaxseed oil supplementation resulted in offspring with thicker intima-media aortic thickness than controls, preserving aortic elastic fiber deposition. Although the effects of maternal hyperglycemia on aortic intima-media thickness were modest, flaxseed oil demonstrated a gender-specific improvement in aortic anatomy.

Secular trends 2013–2017 in overweight invisible dental decay in New Zealand preschool children: Influence of ethnicity, deprivation, and the under-5-energize nutrition and physical activity programme. Rush and coauthors examined a cohort from the under-5-energize (U5E) study of 4-year-old children in New Zealand. Between 2015 and 2017, dental decay was more likely in children who were Maori, living in high deprivation, and male, but less likely if attending the U5E program. These results suggest that early life intervention is effective in reducing dental decay, but socioeconomic disparities need to be further addressed.

In-utero sFLT-1 exposure differentially effects gene expression patterns in the fetal liver. Stojanovska et al. examined the effect of maternal sFLT-1 on fetal liver physiology. Dams were exposed to adenoviral sFLT-1 delivery. Fetuses exposed to high sFLT-1 concentrations in utero showed fetal growth restriction, and fetal liver microarray demonstrated enrichment of key genes for fatty acid metabolism. These findings demonstrate that high sFLT-1 concentrations during pregnancy may have detrimental effects on fetal liver fatty acid metabolism genes.

Testosterone measured from amniotic fluid and maternal plasma shows no significant association with directional asymmetry in newborn digit ratio (2D:4D). The relative length of the second and fourth fingers may be an index of prenatal androgen and estrogen exposure. Richards and colleagues utilized 106 Portuguese mothers who underwent amniocentesis. Newborn 2D:4D was negatively correlated with amniotic testosterone in females, but not in males. These results provide initial data suggesting that the in-utero androgen environment may impact female digit development.

A test of famine-induced developmental programming in utero. Catalano and coauthors applied timed series regression methods to the life span of Swedes born between 1750 and 1800. The authors did not demonstrate that famine induced shortened life span among birth cohorts. Rather, birth cohorts exposed in utero to famine live longer lives than otherwise expected. The authors discuss important differences between developmental programming and evolutionary theory.

Birth size is not associated with depressive symptoms from adolescents to middle age: results from the Northern Swedish cohort study. Rajaleid et al. examined a cohort of 947 individuals from Northern Sweden for the association of birth weight and ponderal index with depressive symptoms from age 16 to 43. The authors did not find any relationship between birth measures and depressive symptoms, leading to the conclusion that size at birth is not associated with later life depressive symptoms in this cohort.

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