

In This Issue

This fourth Issue of *Journal of Developmental Origins of Health and Disease* contains two excellent reviews. The review by Catalano examines the impact of gestational diabetes as well as maternal obesity on offspring metabolic dysregulation. In their review, Hoy *et al.* examine the early development of the kidney, including maternal and neonatal factors that influence kidney development. Our original articles explore the effects of programming in rats, mechanistic studies of adipokines in humans and several epidemiological and intervention studies. This issue contains one original article resulting from the presentation at the DOHaD 6th World Congress in Santiago, Chile, in November 2009.

Reviews

The impact of gestational diabetes and maternal obesity on the mother and her offspring: In this first review, Catalano describes the effects of gestational diabetes on both maternal and offspring outcomes. The neonate of the gestational diabetic is at increased risk of adiposity and birth injury and has long-term consequences including a greater prevalence of childhood obesity and glucose intolerance. Importantly, the review examines literature indicating that obese women impose a similar risk of neonatal complications including adiposity and offspring metabolic dysregulation. The similarity of metabolic abnormalities and offspring consequences between maternal GDM and maternal obesity emphasize the need for optimal care of women before and during pregnancy.

The early development of the kidney and implications for future health: In this review, Hoy *et al.* examine the development of the human kidney, including nephrogenesis and signaling mechanisms. The authors review the multiplicity of fetal and maternal environmental alterations which may impact on renal development, including prematurity, low birth weight, glucocorticoid administration and nutrient deficiencies. Findings illustrate how early life experiences may impact on renal development and ultimately adult hypertension, cardiovascular risk and predisposition to renal disease.

Original articles

Cross-fostering and improved lactation ameliorates deficits in endocrine pancreatic morphology in growth-restricted adult male rat offspring: Siebel *et al.* utilize their established model of bilateral uterine vessel ligation to create fetal growth restriction. In earlier studies, the authors demonstrated that growth-restricted newborns express impaired glucose tolerance as adults. In this study, the authors examine differences in pancreatic gene expression and pancreatic mass dependent

upon the cross-fostering paradigm (to control dams or to dams having undergone uterine vessel ligation). The results suggest that improved nutrition during the lactation period may ameliorate prenatally determined compromised organ function.

Maternal high fat diet during critical windows of development alters adrenal cortical and medullary enzyme expression in adult male rat offspring: Connor *et al.* examine the effects of maternal high fat diet on adrenal gene expression, demonstrating marked changes in pertinent adrenal mRNA levels dependent upon the level and window of exposure to maternal high fat diet.

Risk factors for sedentary behavior in young adults: similarities in the inequalities: Fernandes *et al.* utilize a series of regression models to examine risk factors for sedentary behavior, a finding present in nearly 50% of a Brazilian birth cohort studied at 23–25 years of age. The results suggest that sedentary behavior is more prevalent in individuals born with low birth weight only if they had a higher educational level. The authors discuss the interaction of early development and associated demographic variables in determining an individual's disposition to sedentary behavior.

Maternal supplementation with vitamin A or β -carotene and cardiovascular risk factors among pre-adolescent children in rural Nepal: Stewart *et al.* examine the effect of weekly supplementation with vitamin A and/or β -carotene in women before, during and after pregnancy, in rural Nepal. Children aged 9–13 years were examined to assess the impact of maternal supplementation on biomarkers of chronic disease. Despite the previously demonstrated benefit of vitamin A supplementation on maternal morbidity in this population, there was no demonstrated impact of maternal supplementation with vitamin A or β -carotene on pre-adolescent cardiovascular risk factors.

Romantic attachment in young adults with very low birth weight – The Helsinki study of Very Low Birth Weight Adults: Pyhälä *et al.* utilize a Helsinki cohort of very low birth weight infants to examine the attachment patterns-related romantic relationships as young adults. The authors demonstrated that very low birth weight adults exhibited a lower level of attachment related anxiety. The authors discuss the complex interactions of physical, psychological and social factors which may influence romantic attachments. This paper was originally presented at the DOHaD 6th World Congress in Santiago, Chile, in November 2009.

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