

In This Issue

This issue of the *Journal of Developmental Origins of Health and Disease* contains a special themed issue arising from the 2015 Australia and New Zealand Developmental Origins of Health and Disease (DOHaD) scientific meeting. The editorial by Dr Dickinson and Dr Morrison provides an excellent review and introduction to the themed papers. In addition to these papers, this journal issue has a commentary by the President of the International DOHaD Society reviewing the focus and accomplishments of the 9th International DOHaD Congress. The commentary of Bay and Vicars reviews the increasingly recognized importance of the adolescent life phase, with a particular focus on the critical role of schooling and education. This journal issue includes five additional original articles, including two review articles and three research reports.

Review Articles

Food contaminates and programming of type II diabetes: recent findings from animal studies. Firmin *et al.* emphasized that *in utero* exposure to chemical toxicants may be secondary to exposures within the food matrix. Programming of type II diabetes as a result of food toxicant exposure may result from chemicals including bisphenol A, phthalate esters, pesticides and food additives. The authors emphasize the importance of prioritizing hazardous food compounds with regards to their potential programming effects.

Protein undernutrition during development and oxidative impairment in the central nervous system (CNS): potential factors in the occurrence of metabolic syndrome and CNS disease. Ferreira *et al.* review the role of the mitochondrion as an organelle susceptible to early metabolic programming. The authors review the association between nutritional status during development, particularly protein undernutrition, and mitochondrial dysfunction resulting in oxidative alteration in adulthood.

Original Articles

Placental restriction in multifetal pregnancies increases spontaneous ambulatory activity during daylight hours in young adult fetal sheep. Kaur *et al.* examined the effect of placental growth restriction in sheep and offspring physical activity as adolescents and young adults. Although placental restriction did reduce size at birth, it did not reduce offspring spontaneous ambulatory activity. In fact, daytime spontaneous activity was greater in restricted placental offspring than control adults. The authors discuss potential mechanisms for this unexpected response.

Effect of a diet intervention during pregnancy on dietary behavior in the randomized controlled Norwegian Fit for Delivery study. Hillesund *et al.* examined women enrolled in the Norwegian Fit for Delivery study in which randomized diet interventions were provided during pregnancy. As measured in late pregnancy, the intervention group had more favorable dietary behavior, indicating a benefit of dietary counseling. These findings raise important implications for early pregnancy dietary programs.

Spontaneous intrauterine growth restriction due to increased litter size in the guinea pig programs postnatal growth, appetite and adult body composition. Horton *et al.* examined newborn birth weight and catch-up growth associated with the varied spontaneous litter size among guinea pigs. As expected, the birth weight of pups from larger litters was reduced compared with singletons. These relatively growth-restricted newborns displayed faster neonatal and juvenile growth rates, which were positively correlated with adiposity in adult males. Thus, spontaneous intrauterine growth restriction replicates results of induced growth restriction in other species with regards to perinatal programming.

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