

## In This Issue

This issue of the Developmental Origins of Health and Disease (DOHaD) contains a commentary by Mark Hanson and 10 original articles, including three systemic reviews. Dr Hanson provides a superb review of the DOHaD Society's 9th International Congress in November 2015 and the importance of non-communicable diseases to the health and well-being of society. The commentary concludes with a delineation of the critical targets for DOHaD research, education and advocacy, which are both applicable to high and low income countries. Readers are encouraged to review the commentary and targets.

### Original Manuscripts

**Aerobic capacity as a mediator of the influence of birth weight and school performance.** Garcia-Hermoso examined adolescent aerobic capacity and muscular strength in relation to birth weight and school performance in children aged 12–13 years. The results demonstrated that the relationship between birth weight and school performance was dependent upon aerobic fitness, suggesting a modifiable benefit of physical fitness programs.

**In utero betamethasone affects  $3\beta$ -hydroxysteroid dehydrogenase and inhibin- $\alpha$  immunoexpression during testis development.** Pedrana *et al.* examined the effects of maternal betamethasone in fetal and newborn lamb testicular tissue. Prenatal betamethasone increased postnatal inhibin- $\alpha$  and reduced  $3\beta$ -hydroxysteroid dehydrogenase suggesting an adverse effect on spermatogenesis.

**25-hydroxyvitamin D status of pregnant women is associated with the use of antenatal vitamin supplements and ambient ultraviolet radiation.** Jones *et al.* examined an Australian cohort of pregnant women in which the prevalence of vitamin D deficiency (13.9%) was less than that reported in other studies. The authors suggest that ambient light and vitamin D supplementation contribute to the low rate of deficiency.

**A cohort of Indigenous Australian women and their children through pregnancy and beyond: the Gomeri gaaynggal study.** In this manuscript, Ashman *et al.* describe the establishment and process of the Gomeri gaaynggal study, the largest Indigenous pregnancy-through-early-childhood international cohort. Recruitment for this study is ongoing and results will provide insight regarding the early life origins of chronic disease in Indigenous Australians.

**Epicardial fat thickness, an emerging cardiometabolic risk factor, is increased in young adults born preterm.** Bassareo *et al.* examined 30 offspring born extremely low birth weight as compared with normal infants. Epicardial fat thickness was significantly higher in former preterm subjects and was associated with an increase in left ventricular mass. The authors propose that epicardial fat thickness may provide an easy to measure tool to predict adult cardiovascular events.

**Birth characteristics in all-cause mortality: a sibling analysis using the Uppsala Birth Cohort multigenerational study.** Juarez *et al.* analyzed the relation between perinatal health and all-cause mortality using a cohort of over 12,000 singletons born between 1915 and 1929. The associations with mortality had effects concentrated in infancy, childhood and adult life, emphasizing the critical importance of birth outcomes and maternal health.

**Early ovarian follicular development in prepubertal Wistar rats acutely exposed to androgens.** Paixao *et al.* utilized prepubertal Wistar rats acutely exposed to androgens to examine follicular morphology and development. The number of antral follicles was higher in the androgen-exposed groups. These results suggest that initial follicular development under hyperandrogenic conditions may alter both primary and secondary follicle development.

### Systematic Reviews

**Hypertensive disorders during pregnancy and health outcomes in the offspring: a systematic review.** Pinheiro *et al.* performed a systematic review to assess the effect of hypertensive disorders of pregnancy on offspring cardiovascular, immune and/or neurologic health. The results demonstrated that gestational hypertension is directly associated with increased offspring blood pressure while preeclampsia is associated with lower offspring cognitive functioning. These results indicate the importance of both diagnosis and treatment, as well as prevention of gestational hypertension and preeclampsia.

**Low birth weight, very birth low weight and extremely low birth weight in African children aged between 0 and 5 years old: a systematic review.** Tchamo *et al.* reviewed existing literature relating low birth weight growth to neurodevelopmental outcome in mortality in young African children. Surviving very low birth weight and extremely low birth weight infants showed an increased risk of death, growth retardation and delayed neural development. The authors emphasized the

importance of post-neonatal interventions to minimize these early life effects of very low birth weight.

**Prenatal maternal mental health and fetal growth restriction: a systematic review.** Lewis *et al.* examined the studies reporting the relationship between maternal depression, anxiety or stress during pregnancy and fetal growth utilizing ultrasound. The authors demonstrated significant associations between maternal mental health, particularly anxiety, and reduced fetal head growth, though other fetal growth

parameters showed inconsistent findings. Several of the studies suggest that maternal cortisol dysregulation associated with maternal mental disorders may contribute to fetal growth restriction.

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