

## In This Issue

This issue of the *Journal of Developmental Origins of Health and Disease* contains six original articles including both human and animal studies, two reviews, two brief reports and an Editorial by Morrison and Gordon on the impact of drugs, chemicals and nutrition on fetal, neonatal and adult health in a sheep model. A number of the human studies in the original articles examine the relationship between reduced fetal growth or birth weight and later life aspects of metabolic syndrome, obesity and physical activity. An additional study by Gordon *et al.* examines the role of morphine in ameliorating Neonatal Abstinence Syndrome. Studies using a mouse model examined the role of isoflavones administered during nursing on adult bone health, while developmental studies by Padmanabhan *et al.* examined the effects of prenatal exposure to excess testosterone on reproductive function in sheep and the influence of obesity.

### Editorial

**Drugs, chemicals and nutrition during pregnancy: impact on fetal, neonatal and adult health.** Drs Morrison and Gordon highlighted and briefly described the original studies in this issue that discussed early life exposure to drugs, chemicals or were associated with nutritional modifications.

### Reviews

**Screening for use of alcohol, tobacco and cannabis in pregnancy using self-report tools.** Hotham *et al.* reviewed the use of screening tools for assessing maternal substance abuse during pregnancy. Pros and cons of a variety of methods from self-assessment questionnaires to biological markers such as cotinine measurements were discussed.

**Alcohol exposure during late gestation: multiple developmental outcomes in sheep.** In this paper, Kenna *et al.* reviewed findings from their own laboratory studies examining health outcomes associated with late gestational exposure of sheep to moderate amounts of alcohol. Taken together, studies demonstrate that daily maternal alcohol intake during late gestation affected multiple organ systems that potentially increased the risk of disease in later life.

### Original Articles

**Prenatal growth and metabolic syndrome components among Chilean children.** Mardones *et al.* examined in a retrospective cohort study whether there existed an association between prenatal growth and metabolic syndrome and insulin resistance in Chilean children. The authors noted major findings of the study to be the U-shaped association between birth length

and blood pressure and the negative association with homeostasis model assessment-insulin resistance.

**Birth size and physical activity in a cohort of Indian children aged 6–10 years.** The study by Kehoe *et al.* asks the question of whether birth size and body composition is associated with physical activity in a cohort of Indian school-aged children. The study concludes there were no associations between body size and skinfold thickness at birth or physical activity in childhood.

**Prenatal exposure to selective serotonin reuptake inhibitors and risk of childhood overweight.** Using linked records from the Women's and Children's Health Network in South Australia, Grzeskowiak *et al.* conducted a retrospective cohort study investigating the association between maternal exposure to serotonin reuptake inhibitors and childhood overweight. Results demonstrate that female offspring of treated mothers were less likely to be overweight compared with those whose mothers were untreated or untreated with a psychiatric illness. Similar effects were not observed in the male offspring.

**Ineffective morphine treatment regimen for the control of Neonatal Abstinence Syndrome in buprenorphine- and methadone-exposed infants.** Gordon *et al.* conducted a prospective, non-randomized comparison study to determine if morphine is effective in ameliorating Neonatal Abstinence Syndrome (NAS) symptoms in methadone- and buprenorphine-exposed infants. Results demonstrate that the aggressive morphine regimen used in their study was not very effective in managing NAS.

**Isoflavone exposure throughout suckling results in improved adult bone health in mice.** Using a mouse model, Dinsdale *et al.* examined the effects of neonatal exposure to isoflavones (ISO) throughout the entire suckling period on bone development and bone strength. The authors reported favorable effects of early ISO treatment on lumbar vertebrae fracture load and femur outcomes. The duration of early life exposure to ISO appears to be a critical factor for predicting effects.

**Developmental programming: impact of prenatal testosterone treatment and postnatal obesity on ovarian follicular dynamics.** Using a sheep model, Padmanabhan *et al.* tested the hypothesis that prenatal exposure of females to testosterone (T) combined with an obesity diet at weaning leads to loss of cyclicity as a result of follicular depletion. At 5 months (prepubertal), prenatal T females had fewer primordial follicles and decreased depletion rates; by 21 months (post-pubertal, cycling) there was an increase in numbers of

growing follicles. Overfeeding to stimulate obesity at weaning did not exaggerate the impact of prenatal T on follicular recruitment.

### **Brief Reports**

**Developmental exposure to bisphenol A leads to cardio-metabolic dysfunction in adult mouse offspring.** Cagam-pang *et al.* examined the effects of maternal exposure to bisphenol A (BPA) during pregnancy on offspring cardiovascular function using a mouse model. The authors report sex-dependent effects on cardiac risk factors, along with increased adiposity and impaired glucose homeostasis. Findings from this toxicological study suggest that prenatal exposure to BPA may

alter offspring susceptibility for developing cardiovascular disease and/or metabolic dysfunction later in life.

**Current considerations of the effects of untreated maternal perinatal depression and the National Perinatal Depression Initiative.** Hall, in a brief communication, discussed the potential short- and long-term adverse effects on the child of maternal depression during pregnancy. A discussion ensued on the goals and focus of the Australian government's National Perinatal Depression Initiative.

Judith T. Zelikoff, Ph.D.  
Supplements and Themed Issue Editor  
DOHaDEditor@cambridge.org