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In This Issue

This issue of the *Journal of Developmental Origins of Health and Disease* contains one review, four brief reports and three original articles. The review examines consequences of early-life exposure to substance abuse while the brief reports and original articles include aspects of environmental toxin exposure, and studies of programming in humans and animals.

Review

Long-term health consequences of early-life exposure to substance abuse: an epigenetic perspective. Vaiserman examined the effects of maternal substance abuse during pregnancy and early newborn life on both short- and long-term health consequences, which may include cognitive deficits, malignancy and metabolic syndrome, among others. Focusing on maternal alcohol, cigarette smoking and psychoactive drug exposure, the author makes a convincing case of epigenetic mechanisms which contribute to developmental programming.

Brief Reports

Sex-specific associations of maternal prenatal testosterone levels with birth weight and weight gain in infancy. Voegtline *et al*. examined the association between maternal salivary testosterone with birth weight and infant weight gain through 6 months of age. The authors demonstrated that elevated maternal morning testosterone was associated with lower birth weight *Z*-scores and greater infant weight gain through 6 months of age. These studies highlight the importance of fetal testosterone exposure and the need for an understanding of the maternal and placental physiology which may contribute to increased testosterone levels.

Renal echo-3D and microalbuminuria in children of diabetic mother: a preliminary study. Cappuccini and colleagues examined renal cortex volume (as a surrogate for glomerular number) and microalbuminuria in children of diabetic and non-diabetic mothers. The offspring of diabetic mothers demonstrated a significant reduction of renal cortex volume and higher albumin excretion, suggesting that maternal diabetes may alter fetal renal development. These findings have important implications for the management of maternal diabetes during pregnancy.

Maternal diet-induced obesity in swine with leptin resistance modifies puberty and pregnancy outputs of the adult offspring. Gonzalez-Bulnes *et al*. examined effects of maternal under- and overnutrition during pregnancy on puberty and reproductive function of Iberian pigs. Both maternal under and overnutrition induced significantly precocial puberty in female offspring. During pregnancy, females born from underfed mothers demonstrated a significantly lower number of offspring than both control and overfed groups. These results have important implications for both human health and livestock production.

Periconceptional undernutrition in sheep leads to decreased locomotor activity in a natural environment. Donovan and co-authors exposed pregnant sheep to undernutrition from 60 days before conception through 30 days of gestation, and examined voluntary locomotor activity in offspring at 18 months of age (48 h assessment). The results demonstrated that offspring of undernourished ewes demonstrated less distance walked than did controls, suggesting that periconceptual undernutrition may program rates of voluntary physical activity.

Original Articles

Prenatal exposure to phthalates is associated with decreased anogenital distance and penile size in male newborns. Bustamante-Montes and co-authors examined the association between prenatal exposure to phthalate metabolites with anogenital distance in penile measurements in newborns from Mexico. A significant inverse association was observed between maternal phthalate exposure (as assessed by urine samples) and male offspring anogenital measurements. These findings suggest that phthalates action as anti-androgen endocrine disruptors may have significant impact on male reproductive development.

Does the developmental plasticity hypothesis have application to Irish Travellers? Findings from the all Ireland Traveller Health Study birth cohort 2008–2011. Hamid *et al*. examined a unique birth cohort of Irish Travellers, a minority group with high incidence of chronic disease. The infant mortality rate of 12.0/1000 births was nearly four times that of the general population. Although the authors assessed only 1 year follow-up, these results indicate significant early-life consequences in this population which may have impacts on adult health and disease.

The effect of antenatal factors and postnatal growth on serum adiponectin levels in children. Boyne and colleagues examined a birth cohort of women from the West Indies,

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Jamaica from 1992 to 1994 through adolescence. Though antenatal factors were not determinants of childhood adiponectin levels, hypoadiponectinaemia was a marker for adverse cardiometabolic profiles.

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