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In This Issue

This Issue of the *Journal of Developmental Origins of Health and Disease* contains an excellent Review and five Original Articles. The Review focuses on the critical topic of epigenetic alterations, specifically interacting with autoimmune diseases. Our Original Articles include three papers addressing topics of human programming, including fetal renal development, bone development, and pregnancy outcomes, whereas the animal models examine a novel model of thromboxane analog-induced IUGR, and the effects of multivitamin diets during pregnancy.

Review Article

Epigenetic alternations and autoimmune disease. Renaudineau *et al.* highlight the importance of epigenetic modifications including DNA methylation and histone modification changes in the pathogenesis of autoimmune diseases. Both human and animal studies support the hypothesis that autoimmune diseases, resulting from an inability to discriminate between self- and non-self-antigens, may be associated with epigenetic modifications.

Original Articles

Decreased urine albumin:creatinine ratios in infants of diabetic mothers: does exposure to diabetic pregnancies alter fetal renal development? Dyck *et al.* examined measures of microalbuminuria in infants and children of diabetic mothers and controls. Although infants of diabetic mothers had lower albumin:creatinine ratios during the neonatal period, there was a trend toward higher albumin:creatinine ratios at 5–19 months. These results suggest that exposure to a diabetic intrauterine environment may influence the later risk for renal disease.

Osteoprotegerin in pregnant adolescents differs by race and is related to infant birth weight *z*-score. Essley *et al.* utilized a prospective longitudinal study to examine relations between osteoprotegerin (OPG), markers of bone turnover and birth outcomes among pregnant adolescents (13–18 years of age) and their newborns. Maternal and neonatal OPG concentrations were not associated with markers of bone turnover or placental OPG expression, however neonatal OPG was inversely associated with neonatal anthroprometric measures. These findings raise the possibility of an association of pregnancy consequences with neonatal bone health and adult osteoporosis.

Biological indicators of the *in-utero* environment and their association with birth weight for gestational age. Talge *et al.* examined a subset of women who participated in the Pregnancy Outcomes and Community Health Study to examine the association of birth weight for gestational age (BW/GA) with pregnancy outcomes. Reductions in BW/GA were associated with preeclampsia, as well as abnormal maternal serum testing (alpha fetoprotein, unconjugated estriol). These findings reinforce the concept that size at birth is a composite measure representing a diversity of influences throughout pregnancy, and may be associated with specific pregnancy outcomes.

Novel thromboxane A_2 analog-induced IUGR mouse model. Fung *et al.* demonstrate a novel mouse model of IUGR utilizing the infusion of the thromboxane A_2 analog via osmotic pump. IUGR males, though growth restricted at birth, caught up to sham males by P28, while IUGR females caught up to sham females by P77. IUGR males passed the sham males in weight by P238. This report provides a useful model for the study of IUGR, and demonstrates evidence of catch-up offspring growth.

The effect of high multivitamin diet during pregnancy on food intake and glucose metabolism in Wistar rat offspring fed low-vitamin diets postweaning. Szeto *et al.* examined the impact of rat offspring born to dams fed a high-multivitamin diet during pregnancy on the risks of obesity and metabolic syndrome, when weaned to low-multivitamin diets. The authors confirm that males from high-multivitamin diet dams were predisposed to increased body weight gain. However, exposure to low-vitamin diets did not amplify the expression of metabolic syndrome.

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