

In This Issue

This issue of the *Journal of Developmental Origins of Health and Disease* includes both a themed issue and a series of important original manuscripts.

Perinatal programming of gut microbiota and immunity.

The preface of Dr Kozyrskyj and Dr Sloboda describe both the review articles and the original manuscripts included in the microbiome and immunity themed issue. I encourage all of you to read this piece, as it identifies the critical importance of gut microbiota.

This issue also contains six manuscripts, including four original research papers and two brief reports.

Adult male mice conceived by *in vitro* fertilization exhibit increased glucocorticoid receptor expression in fat tissue.

Simbulan *et al.* have expanded their previous studies exploring the effects of *in vitro* fertilization (IVF) on fetal growth alterations in mice. In the present study, the authors demonstrate that glucocorticoid receptor expression is increased in both inbred and outbred blastocysts following *in vitro* culture, as well as in the adipose tissue of the adult male mice born from IVF. The authors further demonstrated that lipolysis and triglyceride synthesis genes were upregulated in the adipose tissue indicating the activation of the glucocorticoid receptor. These findings have important significance for the effects of IVF, likely a result of epigenetic mechanisms.

Pregnancy outcomes and the use of two standards to assess adequacy sequence of maternal body mass index in early gestation.

Mardones *et al.* compared birth length and birth weight outcomes of two independent maternal weight charts using a perspective study of women in Santiago, Chile. The results suggest that the Rosso and Mardones maternal weight gain chart had a higher sensitivity for prediction of birth length and body weight, suggesting that it would support its use in Latin American countries.

Ouabain rescues rat nephrogenesis during intrauterine growth restriction by regulating the complement and coagulation cascades and calcium signaling pathway.

Chen *et al.* explored the association of intrauterine growth restriction (IUGR) with reduced nephron numbers. The authors previously demonstrated that ouabain protects the development of the IUGR kidney. In the present study, the authors examined differentially expressed genes in response to IUGR with and

without ouabain treatment. The results demonstrated that maternal undernutrition disrupts the complement and coagulation cascades and calcium signaling pathways, which may be protected by ouabain treatment.

A genetic study of steroid-resistant nephrotic syndrome: relationship between polymorphism -173 G to C in the MIF gene and serum level MIF in children.

Ramayani *et al.* sought to examine why some though not all nephrotic syndrome patients respond to glucocorticoid treatment. The authors investigated the association between MIF gene and serum MIF concentrations in nephrotic syndrome patients. The results demonstrated that the allele frequency of C-allele is higher in steroid-resistant nephrotic syndrome and there was a trend toward an association between genotypes and serum MIF disturbances. These findings may aid in identifying patients likely to respond to steroid treatment.

Maternal pelvic size, fetal growth and risk of stroke in adult offspring in a large Swedish cohort.

Heshmati *et al.* assessed whether maternal pelvic size was associated with risk of stroke in offspring, using a Swedish birth cohort. The authors demonstrated that female offspring whose mother had a flat pelvis had an increased risk of thrombotic stroke, whereas a smaller difference between select pelvic diameters were associated with hemorrhagic stroke. The authors suggest that smaller pelvis in women may impact the health of the offspring.

Vitamin D fortification and seasonality of birth in type I diabetic cases: D-tect study.

Jacobsen *et al.* assessed whether gestational age and early infancy exposure to margarine fortification with vitamin D, initiated in Denmark during 1961–1985, was associated with seasonality of birth in Danish type I diabetic patients. The authors found no indications of seasonality of births in males exposed to fortification. However, the diabetes hazards in males unexposed to margarine fortification and born in the spring were higher than in males born in autumn. These studies suggest that early life exposure to low-dose vitamin D from fortified margarine eliminates the seasonality of birth in type I diabetes male patients.

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