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In this Issue

In this issue of *Journal Developmental Origins of Health and Disease* we have two review articles and five original articles. The reviews focus on early-life effects on programming of longevity as well as depression. The original articles include three examining human programming, with two of the studies utilizing the Amsterdam Born Children and their Development cohort, and two original animal research studies.

Reviews

Early-life nutritional programming of longevity. Vaiserman examines the role of early-life diet in the development of aging-related chronic disease and ultimately life span. The author focuses on early-life events including low birth weight, early exposure to famine and seasonal nutritional effects, as well as mechanisms including epigenetic impacts on organ development, metabolic status and endocrine programming. Importantly, Vaiserman discusses potential interventions including options for reversing epigenetic marks and preventative approaches in the prenatal and postnatal periods.

Prenatal risk factors of depression: a critical review of evidence and potential mechanisms. Braithwaite *et al.* reviews the evidence indicating that an adverse intrauterine environment may be a risk factor for later life depression. The author specifically addresses the impact of low birth weight, maternal under nutrition, maternal psychological distress and select environmental toxins. Biological mechanisms may include programming of the HPA access, sympathetic nervous system and immune systems.

Original Articles

Increased maternal BMI is associated with infant wheezing in early life: a prospective cohort study. de Vries *et al*. utilized a community-based cohort in (Amsterdam Born Children and their Development cohort) to examine the association of maternal pre-pregnancy BMI with offspring early-life wheezing. The authors demonstrated that pre-pregnancy BMI was directly related to risks of baby wheezing, though this was not mediated by maternal cortisol levels. Importantly, the authors demonstrated that the duration of exclusive breastfeeding was associated with reduced early-life wheezing.

No associations of prenatal maternal psychosocial stress with fasting glucose metabolism in offspring at 5–6 years of age. van Dijk *et al*. examined the association of maternal prenatal psychosocial stress with blood glucose metabolism in offspring at 5–6 years of age. The authors did not find evidence for an association between psychosocial stress and offspring glucose metabolism at this early age. They discuss that evidence linking prenatal stress is mainly available from animal studies. The authors recognized that it is possible a programming effect was not found because maternal social stress during pregnancy does not exhort sufficient strain on the offspring, or alternatively, these effects may first emerge later in offspring life.

Civil unrest linked to intrauterine growth restriction in western Kenya. Dybjer *et al.* examined birth weight data during the time of the Mount Elgon crisis in Western Kenya (2006–2008). During this period, civilians caught between the violence of the local gorilla militia and the Kenyan police operation, we exposed to widespread stress and malnutrition. The results demonstrated that deliveries occurring in the region of greatest stress resulted in markedly lower birth weight than deliveries occurring in the controlled region. The study is evidence of the impact of civil unrest on infant birth weight and potentially offspring programming.

Maternal aging affects life performance of progeny in a Holstein dairy cow model. Astiz *et al.* examined 404 high-producing Holstein dairy cows through birth and lactation. The single most important factor influencing the milk yield of daughters was maternal age, with high-yielding cows born from the youngest mothers and low-yielding cows born from the oldest mothers. Milk fat and protein yield correlated significantly with yields between the first and second lactations. These finding have important implications for management practices in dairy farms as well as potential human implications of breastfeeding in older mothers.

Supplementation with methyl donors during lactation to high-fat-sucrose-fed dams protects offspring against liver fat accumulation when consuming an obesogenic diet. Cordero *et al*. examined the affect of methyl donor supplementation during maternal lactation on offspring provided a high fat, high sucrose diet beginning at week 12 of life. Mothers were also randomized to high fat, high sucrose diets or controlled diets during the lactation period. The authors demonstrated that maternal high fat, high sucrose diet during lactation influenced the response to the offspring adult obesogenic diet. Dietary methyl donor supplementation in lactating mothers reduced offspring hepatic fatty accumulation but increased adipose accumulation. The authors report complex interactions between the maternal diet and methyl donor supplementation in regards to hepatic liver lipid metabolism genes. These results provide increasing evidence of the influence of maternal diet and methyl donor supplementation during lactation on offspring metabolism.

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