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In this issue

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In the current issue of Journal of Developmental Origins of Health and Disease, we have one review article, one brief report, eight original manuscripts, and two editorials. We strongly encourage our membership to read the editorial of the DOHaD President, Lucilla Poston, who provides a society perspective and my editorial reviewing the 10th anniversary edition of the DOHaD Journal. The JDOHaD editorial team has greatly appreciated the support of the DOHaD Society and Cambridge University Press in helping the Journal in our service to science and our membership.

Review article

Environmental monitoring and the developmental origins of health and disease. Almeida et al. explore the effect of environmental contaminants during developmental life phases focusing on alterations in the epigenome and gene expression. The authors propose that environmental contaminant monitoring can aid in improving the quality of our environment and the quality of life.

Brief report

Difference between body composition of formula and breastfed infants at birth. Smith et al. measured the body composition of newborns and infants through 2 months of age among mothers formula feeding and breastfeeding. At birth, breastfed infants were heavier, though they had significantly lower fat mass and percent fat mass. These findings raise important questions regarding the true postnatal effect of breastfeeding, as the phenotype of "to be breastfed" infants may differ from those receiving formula feeding.

Original articles

Birth weight and adolescent blood pressure measured at age 12 years in the Gateshead Millennium Study. Mann et al. examined early life predictors of adolescent blood pressure among a cohort of 1029 individuals born in 1999–2000 in Northern England. After adjustment for contemporaneous BMI, there was an inverse association of standardized birth weight on systolic blood pressure. These findings emphasize the importance of modifiable lifestyle factors which influence phenotype.

Effects of intrauterine growth restriction and postnatal nutrition on pediatric asthma in Bangladesh. Nozawa et al. examined a cohort of a randomized clinical trial of nutrition interventions during pregnancy on childhood asthma at 4.5 and 10 years of age. Small for gestational age was significantly associated with an increased risk of asthma at both ages. Similarly, postnatal undernutrition (stunting) was also significantly associated with asthma. These findings indicate that both in utero and postnatal undernutrition have an influence on childhood asthma in Bangladesh.

Seasonality of births in horizontal strabismus: Comparison with birth seasonality in schizophrenia and other disease conditions. Agarwal et al. examined birth seasonality among persons with horizontal strabismus in populations from NV, USA, and Osaka, Japan. The authors demonstrated significant birth seasonality of esotropia and exotropia. The pattern of births for persons with exotropia was similar to a well-established birth seasonality of one schizophrenia subtype, suggesting that exotropia and deficit-type schizophrenia may be linked.

Fetal programming by androgen excess in rats effects ovarian fuel sensors and steroidogenesis. Abruzzese et al. assessed the effects of pregnant rat hyperandrogenization with testosterone on female offspring follicular development. Prenatally hyperandrogenized female offspring displayed irregular ovulation and anovulation with altered follicular development. These findings demonstrate that prenatal hyperandrogenization may result in impaired ovarian development.

Maternal gut microbiota is associated with newborn anthropometrics in a sex-specific manner. Sato et al. examine gut microbiota from 51 third trimester mothers. Maternal gut microbial diversity had a positive association with newborn male head circumference, though two bacterial genus showed negative associations with newborn head circumference and weight. These findings suggest that maternal gut microbiota has sex-specific effects on fetal growth.

Effect of postnatal overfeeding on the male and female Wistar rat reproductive parameters. Costa et al. induced postnatal overfeeding by litter size reduction. Small litter

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male animals demonstrated increased body weight, adiposity, and decreased relative weight of the prostate and epididymis. Female small litter animals had modification of the vaginal opening. Thus, postnatal overfeeding may alter male and female reproductive phenotype.

Profiles of gene expression in maternal blood predict offspring birth weight in normal pregnancy. McDade et al. performed genome wide transcriptional profiling of maternal blood samples in comparison to offspring birth weight. The authors demonstrated 50 transcripts that were differentially expressed in association with birth weight. These results suggest a regulatory shift in maternal white blood cell activity in association with lower offspring birth weight.

Maternal folic acid depletion during early pregnancy increases sensitivity to squamous tumor formation in the offspring in mice. Kawakubo-Yasukochi et al. maintained dams on a folic acid-depleted diet 2–3 days prior to mating and 7 days post-conception. Offspring were challenged with chemical tumorigenesis. In squamous tissues, tumorigenesis was more progressive in folic acid-depleted offspring, associated with an altered DNA methylation status. These findings suggest that maternal folic acid insufficiency during early pregnancy may promote neoplasm progression in the offspring.

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