Journal of Developmental Origins of Health and Disease

www.cambridge.org/doh

In This Issue

Cite this article: Ross M. (2021) In This Issue. *Journal of Developmental Origins of Health and Disease* **12**: 1–2. doi: 10.1017/S2040174420001099

In This Issue

February 2021

This issue of J DOHaD contains 13 original research manuscripts, 1 review article, an editorial, and a letter to the editor in response to one of our papers. The manuscripts reflect the increasing quality of papers submitted to J DOHaD, for which we thank our authors and reviewers.

Editorial

Unheard, unseen, and unprotected: DOHaD council's call for action to protect the younger generation from the long-term effects of COVID-19. Roseboom and coauthors have written a very timely editorial emphasizing the need for health research and programs addressing COVID-19 and DOHaD-related issues. The authors emphasize that little is known regarding the differential effects of the pandemic on women and children. They raise critical questions regarding direct and indirect biologic and clinical effects of exposure to COVID-19.

Review article

Water, sanitation, and hygiene (WASH) in sub-saharan africa and associations with undernutrition and governance in children under 5 years of age: a systematic review. Momberg *et al.* performed a systematic review to investigate the association of WASH nutritional status and governance in children from birth to 5 years of age. Despite an extensive review, the authors found only 46 articles addressing this specific issue. They provide suggestions for policymakers and investigators regarding terminologies and study design to further explore the linkage between WASH and childhood nutritional status.

Original papers

Maternal cardiometabolic factors in genetic ancestry influence epigenetic aging of the placenta. Workalemahu and colleagues examine whether maternal factors including obesity and weight gain influence placental DNA methylation and epigenetic age acceleration. The authors found important associations between maternal cardiometabolic factors and placental epigenetic aging which may be gender-specific.

Birth weight associated with dual energy-X-ray absorptiometry-determined muscle/bone unit in young healthy women from the Nutritionist Health Study. Valente *et al.* determined if the birth weight was associated with muscle/bone development in young women from a Brazilian cohort. The results demonstrated that birth weight is positively associated with muscle/bone unit as quantified by DXA parameters, providing additional evidence for the effect of the intrauterine environment on musculoskeletal health.

Latent factors of adverse childhood experiences in adult-onset asthma. Ospina and colleagues performed a cross-sectional data analysis of the Alberta ACE survey to examine the relationship between adverse childhood experiences and adult asthma. The results demonstrate that sexual abuse, relational violence, and a negative home environment were predictive of adult asthma. These findings emphasize the importance of developmental origins of adult asthma based on childhood adversities.

Effects of preterm birth induced with or without exogenous glucocorticoids on the ovine glucose–insulin axis. Bansal *et al.* compared lambs born preterm following labor induced with exogenous glucocorticoids as compared to a progesterone synthesis inhibitor. Preterm lambs of both groups had an altered glucose–insulin axis, though induction of preterm birth without exogenous glucocorticoids more adversely affected the pancreas and liver. These findings have implications for the administration of preterm exogenous glucocorticoids for fetal maturation.

Mediation of the association between maternal prepregnancy overweight/obesity and childhood overweight/obesity by birth anthropometry. Stevens and co-authors develop models for the association of in utero exposure to maternal overweight/obesity and childhood overweight/obesity. The results suggest that only a small percentage of the effect of maternal prepregnancy BMI on offspring overweight/obesity occurs through offspring anthropometry at birth.

Understanding how maternal social and biological factors are related to fetal growth in an urban South African cohort. Prioreschi *et al.* identified social and biological drivers of fetal growth by examining associations with household-level factors, preconception health, and pregnancy factors. The authors demonstrated that maternal BMI was positively associated with

© The Author(s), 2021. Published by Cambridge University Press in association with the International Society for Developmental Origins of Health and Disease.

CAMBRIDGE UNIVERSITY PRESS

outcome parameters in males and females, while gestational weight gain and GDM were predictors of abdominal growth. The authors conclude that fetal growth is predicted by maternal biological factors.

Optimal delivery timing for dizygotic twins : the short- and long-term perspective. Imterat and coauthors investigate the impact of delivery timing in dizygotic twins on short- and long-term offspring morbidity. The authors compared delivery at 37–37-6/7 to greater than or equal to 38 and 0/7 weeks, finding nonsignificant differences in short term and later pediatric morbidity at these windows of term age.

A heretical view: rather than a solely placental protective function, placenta 11 beta-hydroxysteroid dehydrogenase 2 also provides substrate for fetal peripheral cortisol synthesis in obese pregnant Ewes. Ghnenis and colleagues hypothesize that obese sheep pregnancy would show increased placental 11 beta-hydroxysteroid dehydrogenase 2 expression. Study results demonstrated that maternal and fetal cortisol levels were higher in obese versus controls. This and additional data provide evidence for an increase 11 beta-HSD activation suggesting a mechanism for an ACTH independent increase in circulating cortisol in fetuses of obese ewes.

Administration of ursolic acid to newborn pups prevents dietary fructose-induced nonalcoholic fatty liver disease in Sprague-Dawley Rats. Mukonowenzou and co-authors examine whether ursolic acid intake by newborn pups prevented nonalcoholic fatty liver disease in pups fed high fructose diet from postnatal day 6. The authors demonstrated that fructose consumption, both early life and adulthood, promoted lipid accumulation in the female liver. Early life ursolic acid intake significantly reduced the hepatic lipid accumulation in both male and female rats.

The tissue-specific aspect of genome-Y DNA methylation in newborn and placental tissues: implications for epigenetic epidemiologic studies. Herzog *et al.* examined the tissue specificity of genome-wide DNA methylation in newborn and placental tissues. Specifically, the authors examined umbilical cord WBCs, mononuclear cells, umbilical vein endothelial cells, and placental tissues. Enrichment analyses demonstrated that HUVEC and placental differentially methylated regions were involved in embryogenesis/early development and regulation of gene expression.

Association between mercury and cord serum and sex-specific DNA methylation in cord tissues. Nishizawa-Jotaki and co-authors investigated the relationship between prenatal mercury exposure and DNA methylation. The authors demonstrated one methylated locus positively associated with mercury concentration in male but not female offspring, suggesting that prenatal mercury exposure may affect the epigenetic status of males.

Embryonic exposures to mono-2 ethylhexyl phthalate-induced larval steatosis in zebrafish independent of Nrf2a signaling. Sant and colleagues examined the effect of the plasticizer and toxicant in zebrafish embryology. The authors determined the effect of MEHP on wild type and Nrf2a mutant zebrafish embryos with evidence of MEHP-induced liver vacuolization. These data demonstrate that MEHP may increase the risk for hepatic steatosis, though Nrf2a does not play a major role in the resulting phenotype.

Preconception nutrition: building advocacy and social movements to stimulate action. Vogel *et al.* describe four key actions that can be taken by members of DOHaD to demonstrate leadership in the global agenda for preconception nutrition. The authors suggest that these actions show the potential to develop into a preconception nutrition social movement.

Letter to the editor

All readers are encouraged to read and/or respond to the letter to the editor from Professor Lucilla Poston in regard to the paper by Vogel *et al.*

Respectfully,

Michael Ross, MD, MPH
Editor-in-Chief

https://doi.org/10.1017/S2040174420001099 Published online by Cambridge University Press