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In This Issue

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This issue of JDOHaD includes 11 original articles, two interesting review articles, an editorial addressing COVID and DOHaD and a letter to the editor. Among the original reports, two articles examine effects of maternal stress on offspring on birth outcomes and childhood behavior.

Editorial

Developmental origins of health and disease, resilience and social justice in the COVID era. Penkler and coauthors suggest that DOHaD society members can make important contributions to addressing issues of inequality and improving community resilience in response to COVID-19. The authors discuss how DOHaD can align research and policy recommendations with a social justice perspective.

Review articles

Two-eyed seeing and developmental origins of health and disease studies with indigenous partners. Liberda et al discuss issues surrounding the findings that mortality of indigenous persons is greater than that of non-indigenous counterparts. The authors discuss "two-eyed seeing" principles of ownership, control, access and possession, and community-based participatory research.

Epigenetics and DOHaD: how translation to predictive testing will require a better public understanding. Lynch and colleague provide an overview linking epigenetics, DOHaD and noncommunicable diseases. The authors emphasize that future research should explore the public's awareness and understanding of epigenetics. This review is a companion article to the original manuscript of Lynch (below).

Original articles

Public knowledge and opinion of epigenetics and epigenetic concepts. In this original report associated with the companion review article, Lynch and coauthors present the findings of the Australian public's understanding of epigenetic concepts. The authors note that the DOHaD theory was more accurately understood than that of the first thousand days or epigenetics.

Metabolic programming in offspring of mice fed fructose during pregnancy and lactation. Magenis and colleagues assess the effects on offspring of female mice treated with fructose during pregnancy and lactation. Maternal fructose exposure resulted in offspring demonstrating genotoxicity and oxidative stress as well as nutritional and metabolic changes associated with increased food consumption and metabolic syndrome. The authors emphasize that high fructose consumption during pregnancy may be harmful to the offspring.

Effects of maternal-controlled exercise on offspring adiposity and glucose tolerance. Platt et al allocated female mice to home cage, sedentary and exercise groups and offspring were subjected to oral glucose tolerance testing and body composition analysis. Despite their hypothesis, the authors found no significant differences in offspring glucose tolerance or body composition associated with maternal exercise. The authors emphasize that further research is necessary to clarify potential advantages of controlled exercise during pregnancy.

Birth weight and subsequent risk for thyroid and autoimmune conditions in postmenopausal women. Monahan and coauthors utilize the Women's Health Initiate to examine an association between birth weight and thyroid and autoimmune diseases. Women whose birthweight was greater than or equal to 10 pounds are at an increased risk for underactive thyroid and lupus, and a decreased risk for an overactive thyroid. Birth weight was not associated with other thyroid or autoimmune disorders.

Effects of maternal exposure to acute stress on birth outcomes: A quasi-experiment study. Ahmed and coauthors examine the effects of maternal exposure to the January 19, 1998 Quebec ice storm on birth outcomes. After adjusting for maternal and sociodemographic characteristics, there were no differences between exposed and unexposed mothers. These results suggest that acute maternal hardship may not have substantial effect on adverse birth outcomes.

Maternal childhood trauma and prenatal stressors are associated with child behavioral health. Ahmad and coauthors utilize the CANDLE Study of 1503 mother-child dyads to assess the effects of maternal childhood trauma. Findings indicate that maternal childhood trauma, socioeconomic risk and intimate partner violence were positively associated with child

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socioemotional and behavioral problems at age one. These findings support the importance of prenatal screening and early intervention to promote child behavioral health.

Newborns physiological differences in low- and high-altitude settings of Ecuador. Asas-Jinde and Gonzalez-Andrade studied 204 full-term newborns, comparing those born at low- and high-altitude settings. The high-altitude cohort had increased RBC, hematocrit and hemoglobin, though lower pH. The authors conclude that high-altitude intensifies physiological changes in hematological and arterial blood gas parameters.

The impact a Mediterranean diet in the third trimester of pregnancy has on neonatal body fat percentage. Ashwin et al utilize the ORIGINS Project to assess the effects of Mediterranean diet adherence (MDA) on body fat percentage of the infant. Infants born to mothers with high MDA had a body fat percentage of 11.3%, whereas infants born to mothers with low MDA had a higher body fat percentage of 13.3%. These findings suggest a potential benefit of MDA though future studies are needed to determine if these changes persist throughout later life.

The significance of maternal asymptomatic bacteriuria during pregnancy on long-term offspring infectious hospitalizations. Nae and coauthors utilized a population-based cohort of over 200,000 deliveries of which over 5,000 were diagnosed with asymptomatic bacteriuria during pregnancy. Total long-term infectious hospitalizations were higher among children born to mothers who were diagnosed with asymptomatic bacteriuria. The authors suggest that these findings can be explained by altered microbiota, bacterial invasion and attenuated immune and cytokine responses.

Childhood waist growth curves and adult diabetes. Carli et al utilize the Fels Longitudinal Study to examine childhood waist growth curves. The results demonstrate that distinct childhood groups, based on waist size, are identifiable by 4 years of age with groups exhibiting larger waist size having higher risk of adult diabetes. These findings emphasize the importance of trends in childhood weight and growth rates.

Birthweight-for-gestational-age Z-scores are associated with early childhood cardiometabolic health in the Peri/Postnatal Epigenetic Twin Study. Ashtree and coauthors evaluate the association for birth weight-for-gestational age Z-scores with childhood cardiometabolic health in twins. The authors demonstrate that birthweight-for-gestational-age Z-scores are associated with height, weight and BMI at 18 months and 6 years of age, but not with blood pressures. These findings are consistent with previous results in singletons.

Letter to the editor

Reconsidering the "non-recanalization theory" of the gut. De Bakker et al raise concerns with the recently published manuscript of gut lumen formation defect. The authors of the letter believe that the manuscript figure represents not an occluded gut, but an embryonic kidney, and that it is not vacuoles, but rather Bowman's capsule depicted. The letter authors further emphasize that the gut is formed as an open tube which remains open throughout embryonic development while gut atresias can be explained by insufficient vascular perfusion leading to narrowing or obliteration.

Michael G. Ross, MD, MPH
Editor-in-Chief

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