

In This Issue

This issue of *Journal of Developmental Origins of Health and Disease* contains two superb reviews focusing on the programming of adult body structure. The article of Dennison *et al.* examines the role of early development and bone health, while that of Sayer *et al.* examines skeletal muscle mass. Our brief reports and original articles which explore programming outcomes in humans, including the description of the Hamamatsu Birth Cohort examining precursors of autism disorders. Importantly, this issue of the Journal includes two articles, including both animal and human studies, resulting from presentation at the DOHaD 6th World Congress in November 2009.

Reviews

Early development and osteoporosis and bone health. In this Review, Dennison *et al.* present evidence that body weight in infancy and endocrine factors are determinants of adult bone mineral content which impact on bone health. Evidence from both human and animal studies suggests that childhood growth rates may impact on the adult/elderly risk of hip fracture. This Review illustrates the impact of a condition that has marked adult morbidity and associated health care costs.

The developmental origins of sarcopenia: from epidemiological evidence to underlying mechanisms. In this Review, Sayer *et al.* examine evidence linking low birth weight with reduced muscle mass and strength in adulthood, with support for both mechanism and consequences derived from animal and human studies. Sarcopenia, the loss of skeletal muscle mass and strength with age, has had limited examination in human studies, as the focus of early studies was primarily on body weight and body mass index (BMI). More recent studies now recognize that adults with increased BMI often have reduced muscle mass, in conjunction with increased adiposity.

Original Articles

Searching for very early precursors of autism spectrum disorders: The Hamamatsu Birth Cohort for Mothers and Children. Tsuchiya *et al.* describe the Hamamatsu Cohort Study which is designed to examine autistic spectrum disorders in 1200 women and infant pairs. As the prevalence of both autism and autism spectrum disorder has been markedly increasing for the last three decades, it is has been unclear whether this is a result of the shift in diagnostic practices or a true increase in incidence. The lay literature has been replete with allegations, though unproven, of the association of autism with infant vaccination and mercury compounds, while epidemiologic literature may point to issues of low birth weight and advanced paternal age at birth.

Birth cohort patterns suggest that infant survival predicts adult mortality rates. Meza *et al.* provide support for the proposal that public health investments in maternal and child health can have broad primary prevention impact on chronic diseases of adult years. Infant survival may serve as a surrogate measure of maternal and child health. In view of the association of infant survival with adult mortality rates, the authors present a convincing argument of the broad health-care impact of improved pregnancy/neonatal care.

Presented at the DOHaD 6th World Congress, Santiago, Chile

Altered hepatic insulin signaling in male offspring of obese mice. Martin-Gronert *et al.* utilized a model of maternal diet-induced obesity in mice to examine effect on offspring hepatic insulin signaling. The murine model of maternal obesity reflects the diet consumed by many Western women prior to and during pregnancy. The results of their study demonstrate that maternal obesity leads to alterations in hepatic insulin signaling, protein expression and phosphorylation, consistent with a mechanistic approach to the development of glucose intolerance.

The utility of focus group interviews to capture dietary consumption data in the distant past: Dairy consumption in Kazakhstan villages 50 years ago. Schwerin *et al.* present a novel approach for the obtainment of quantitative estimates of dietary intake. Focusing on the impact of dairy consumption from 1949–1962, the authors sought to assess the dose of radioactive iodine for study participants, including subjects too young to recall dietary consumption. The authors utilized focus group interviews of parents and village residents who cared for children during this time, and developed age, gender, ethnicity, and village specific dairy consumption patterns. This presents an approach that may have applicability to many cohort trials.

Brief Report

Abdominal wall fat index in neonates: correlation with birth size. Alves *et al.* measured visceral adiposity in 118 newborns using abdominal wall fat index (AFI) by ultrasound. There was a statistically significant, though very weak negative correlation between the AFI and birth weight. As visceral adiposity is poorly correlated with birth weight, the AFI may have an independent predictive value in predisposition to adult disease. Thus, measurement of the AFI in all newborns may be considered for prospective studies examining health outcomes.

Michael G. Ross, M.D., M.P.H.
Editor-In-Chief
DOHaDEditor@cambridge.org