

Developmental Origins of Health and Disease

Second Edition

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Edited by

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Preface

When the first edition of this book was published in 2006, the Developmental Origins of Health and Disease (DOHaD) was a relatively new concept; the book was more of a ‘placeholder’, a challenge to the scientific community to consider a widening body of evidence and build upon it. More than 15 years later, and often couched in more amenable descriptors such as the ‘life course of health and disease’, health care providers increasingly argue for a greater emphasis on physical and mental health in early life, warranted by the later health benefits accrued. This is because the spread of the DOHaD message, the field and the knowledge base has expanded quite remarkably in the intervening years. As described in this second edition, a new evidence base from epidemiological studies, and animal models, provides compelling argument that adverse exposures during vulnerable stages of developmental plasticity for the foetus, infant and child impact on ‘lifelong health’. Climate change and perturbations in the infant gut microbiome are now added to the list of potentially modifiable ‘hazards’. Importantly, the public health message now extends to the health of the parents before conception, and the vulnerability of both parental gametes.

Lesser advances have been made in preventing, or indeed reversing, the consequences of these early life insults. To develop effective, targeted interventions, it is helpful to understand biological mechanism. Some advances have been made, for example, in identifying structural and functional changes in developing organs. The epigenome is also widely implicated, but methodological issues confound interpretation, and the interaction between hereditary genomic traits and environmental exposures remains unquantified. In short, there remains too much uncertainty about responsible biological pathways to adequately inform intervention design. Increasingly, the DOHaD community recognizes the naivety of intervening to improve just one early life exposure, when economic deprivation, mental health, physical health, climate and the built environment are all inevitably intertwined. Complex interventions on a systems level are called for to make meaningful inroads into lifelong health, inevitably requiring ‘buy-in’ from government. This, the greatest challenge, is a key message to be conveyed by this edition.