

## Editorial

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# Editorial: The French-DOHaD society

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The French-language DOHaD Society, an affiliate society to the DOHaD Society, actually began developing before 2012, its initial official date of creation. The first organizational meeting on DOHaD was due to the inspiration of Dr Latifa Abdennebi-Najar who organized on the 3rd March 2008 at Beauvais city (France), a mini-symposium on 'Intrauterine growth retardation and metabolic programming'. This effort to gather people working on DOHaD in France has resulted in more than 50 oral and poster presentations on the DOHaD concept, with contributions from basic scientists and clinicians working in the fields of physiology, nutrition, endocrinology and metabolism, developmental biology, molecular biology and epigenetics. On 24th and 26th June 2010, Professors Laurent Storme and Umberto Simeoni hosted a second meeting, entitled 'Perinatal determinants of lifelong health' in Marseille, France, with both basic scientists and physicians presenting their research, with the aim to disseminate DOHaD science. There, a group of scientists decided to form a scientific society to act as a focus for like-minded colleagues in the French-speaking world. On the 24th January 2012 Professor Claudine Junien, elected as the President, launched the official French DOHaD society and its founding meeting in Paris. The founding members of SF-DOHaD society are: Dr Latifa Abdennebi-Najar, Dr Marie Aline Charles, Dr Pascale Chavatte-Palmer, Dr Anne Gabory, Pr Claudine Junien, Pr Umberto Simeoni, Pr Laurent Storme, Pr Anne Vambergue. The French-language DOHaD Society has now 82 members, from basic science, medicine and population health horizons, including students and young researchers. The society fosters regular biannual meetings to discuss research findings and promote the interchange of multidisciplinary ideas and expertise between laboratories on DOHaD, in close relationship with the international DOHaD Society.

Three scientific meetings have been organized, in Paris, 2012; Nantes 2014; Paris 2016, all abstracts being published in JDOHAD supplements. The fourth symposium\* will be held in Grenoble, France, on November 8–9th, 2018.

In this special issue of the *Journal of DOHaD*, we are pleased to present selected papers derived from presentations at the 3rd scientific meeting of the SF-DOHaD Society, in Paris, 2016. The articles relate to specific, high interest aspects of early nutrition and its long-term effects on health, with a special focus on breast-feeding, infant formulas characteristics, the development of the gut microbiota and the role of environmental contaminants. Maillard reaction in heated infant formulas generates advanced glycated end products (AGEs), which result from a condensation of reduced sugar and lysine-rich proteins. AGEs increase liver oxidative stress in an animal model of intrauterine growth restriction in juvenile pigs. Firmin *et al.*<sup>1</sup> address the fact that such oxidative effect appears related to a long-term decreased antioxidant defenses in the liver in IUGR animals, independently of microRNA-21 and microRNA-155 expression, two major regulators of the pathogenesis of digestive organs of IUGR offspring. Lemaire *et al.*<sup>2</sup> review the long-term metabolic effects of breast-feeding and improved formula feeding and discuss the importance of formulas protein content, lipid quantity, structure and quality, including the use of diary fat, milk fat globule membranes, a balanced omega 3:omega 6 ratio and carbohydrates content. The effect on the gut microbiome and on metabolic health of the addition of probiotics or synbiotics (prebiotics and probiotics) to the formulas results as well as a significant improvement of classic infant formulas, although breast-feeding remains the gold standard for infant nutrition. Butel *et al.*<sup>3</sup> review the role of the developing gut microbiome on long-term metabolic and immune dysregulations in detail. This group with a long-standing record of research on the microbiome develops in their review paper the characteristics of the gut microbiome development, the possible role of the previously unsuspected placental microbiome, and the potential offered by probiotics for prophylaxis or treatment of inflammatory conditions. The authors also address the use of maternal and neonatal antibiotics or cesarean section on the developing gut microbiota and health bacterial establishment. Juvet *et al.*<sup>4</sup> discuss the long-term consequences of a transient early postnatal overnutrition, typically reproduced by litter size reduction during lactation, on vascular and renal function. The contribution by Siddeek *et al.*<sup>5</sup> reviews the results of research in their group and by others on the role of epigenetics, with a special focus on non-coding, microRNAs, of the effect of overfeeding during the lactation period on the heart. Excess breast-milk intake results in left ventricle dysfunction at adulthood, that can be reversed by

caloric reduction. The deleterious effect of early exposures to environmental contaminants on the normal programming of several biologic systems is systematically reviewed by Botton *et al.*,<sup>6</sup> whose article emphasizes the importance of persistent and non-persistent pollutants on infant growth and the risk of obesity.

We welcome readers' comments regarding our manuscripts and/or the French DOHaD Society.

## References

1. Firnin S, et al. <https://sfdohad2018.sciencesconf.org>.
2. Lemaire M, *et al.*
3. Butel MJ, *et al.*
4. Juvet C, *et al.*
5. Siddeek, *et al.*
6. Botton J, *et al.*