



## EDITORIAL

# Child feeding and nutrition: a contemporary view

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From a conceptual point of view, food and nutrition are complementary constructs. They comprise a set of processes that range from food intake to the assimilation of its components by cells. They are different phenomena, but they need to occur harmoniously. To be fully understood, they require a systemic approach, an interdisciplinary view, which goes beyond the traditional biomedical paradigm.

The knowledge acquired in recent decades has contributed to a broader view of these processes and how different factors work to ensure adequate food and nutrition. Studies in animal, epidemiological, and clinical models point to the period in which the seeds for healthy nutrition are planted – the first 1,000 days of life, from conception to two years of age are crucial.<sup>1</sup> But what happens in this period can be moderated and modulated throughout the course of life.<sup>2</sup>

Different aspects related to food and nutrition are covered in this supplement. These are review articles focused on problems of public health interest and also on clinical problems, aiming to share a contemporary view of different aspects related to the act of feeding and nourishing.

Why the concern about food and nutrition in the first years of life? The Developmental Origin of Health and Disease (DOHaD) theory explains how factors acting from the initial moments of intrauterine life and in the first years of life can influence and change the course of the development process and generate health problems for the individual throughout their life. It results from the interaction between nature and the environment. A classic example is how intrauterine growth restriction associated with an adequate supply of postnatal nutrients would be a risk factor for chronic non-communicable diseases (the case of obesity and its comorbidities) in the future (the thrifty phenotype hypothesis). The environment would act through epigenetic

mechanisms, modifying gene expression, leading to different phenotypes. However, the way the authors approach problems related to health and disease in the field of public and clinical health based on this knowledge is still little used and needs to be optimized.<sup>3</sup>

This supplement aims to update professionals who deal with children and adolescents in relation to these two topics.

In the first article, entitled “Early-life nutrition and adult-life outcomes”, the authors present the theoretical bases and results of empirical studies that point to the long-term effects of poor diet and malnutrition in early life on adult health conditions.<sup>4</sup> In another article,<sup>5</sup> the authors expand this view by addressing the “Transgenerational transmission of eating habits” and emphasize that “the generational transmission of eating habits is related to the home, community and school environment, mainly during the first years of life, and can exert the modulation of habits during all stages of life”. This adds to the until recently dominant knowledge focused more on physiological and metabolic aspects by including behavioral aspects as capable of generational transmission, the behavioral heredity as described by Jablonka & Lamb in the book *Evolution in four dimensions*.<sup>6</sup>

Poor nutrition includes different clinical situations: deficit (malnutrition), excess (obesity) and situations in which there are no evident clinical manifestations (“hidden hunger”). In the article “Child undernutrition in Brazil: the wound that never healed”,<sup>7</sup> the authors present a scenario of concern and conclude that “faced with the scenario of spending freezes for a social security system that was not even properly constituted, in 2019 the authors observed that hunger, food insecurity, extreme poverty, and acute malnutrition (wasting) in children under 5 years of age reached the worst levels in the historical series. Moreover, child mortality has not shown a significant reduction since

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2015 and basic sanitation is progressing at a slow pace, maintaining large regional disparities”.

In “What causes obesity in children and adolescents?”,<sup>8</sup> the authors present the different factors that explain the emergence of obesity in childhood and adolescence with a multidisciplinary approach. They show how the interaction between biological factors and the environment contribute to the increase in the number of cases and how worrying the current scenario is both at an individual and public health level. On the other hand, it opens up several perspectives for interventions at the two mentioned levels. Hidden hunger, related to micronutrient deficiency, which may be found in cases of malnutrition, obesity and even in individuals classified as having normal weight, is addressed in the article “Hidden hunger - a narrative review”.<sup>9</sup>

A very current topic that remains little discussed is the “Use of dietary supplements by children and adolescents”.<sup>10</sup> Supplements are often used without a prescription or adequate advice from a healthcare professional. The authors emphasize in the conclusion of the article that “It is essential that pediatricians advise parents and patients about their indications, risks, and benefits, prescribing them when necessary. Remember there is no need for healthy children to use dietary supplements”.

An increase in the consumption of processed and ultra-processed foods has been observed. Often the onset occurs at a young age to the detriment of a diet based on fresh and/or minimally processed foods. The authors of the article “Ultra-processed food consumption and children and adolescents’ health”<sup>11</sup> conclude that “the findings of this review disclose associations between the consumption of ultra-processed foods and harmful health outcomes in childhood and adolescence, such as overweight, obesity, physical inactivity, cardiovascular diseases and periodontal diseases”. Hence the need for professionals who care for children and adolescents to be aware of the harmful effects of these foods to be able to provide adequate advice to families. But other aspects related to food and how it is packaged must be known. In the article “Food packaging and endocrine disruptors”,<sup>12</sup> the authors evaluate the contamination of food packaging by endocrine disruptors. An aspect that is often overlooked when it comes to children’s nutrition and they emphasize “Although packaging materials are essential for the transport and storage of food, many of them are associated with chemical contamination. As it is not possible to exclude them from our routine, it is important to develop research aimed at identifying the endocrine disruptors present in them, including the effects of chronic exposure; and that regulatory agencies and industry come together to reduce or prevent this risk. Additionally, consumers must be instructed on how to purchase products, handle them and prepare them to reduce the migration of chemical substances into food.”

Recently, the United Nations Children’s Fund (UNICEF) took a position on the relationships between industries that sell baby food and health professionals and how conflicts of interest are established.<sup>13</sup> It is a reality, and a broad discussion is necessary, so that relationships between food industries and health professionals are clear and respect ethical limits. In the article “Marketing and child feeding”,<sup>14</sup> different aspects related to the marketing of children’s foods are reported and strategies to reduce their influence on parents

and health professionals are discussed. In the conclusions, the authors point out that “pediatricians need to have good humanistic and scientific training so that they can make the best choices in relation to the children (and families) for whom they care. The initial training is important, but the speed at which new information appears in the field of medicine requires constant updating”.

The last two articles deal with topics that are of close interest to clinicians. An ever-present concern when prescribing an exclusion diet for food allergies is whether nutrition will be compromised. The article “Elimination diet in food allergy: friend or foe?”<sup>15</sup> aimed to review and discuss the diet in children with food allergies, emphasizing nutritional aspects as an approach strategy. The authors conclude that “the elimination diet is fundamental to avoid reactions to food allergies, but it imposes enemies as nutritional risks and emotional burdens, so a multidisciplinary effort is necessary”. Throughout the article, different aspects are highlighted that are often neglected when drawing up the therapeutic and follow-up plan.

The supplement ends with the article “Diagnosis and treatment of eating disorders in children and adolescents”.<sup>16</sup> An important clinical problem, which is a matter of concern and being diagnosed at increasingly earlier ages. Diagnosing and managing eating disorders adequately minimizes complications and improves the quality of life of affected children and adolescents.

Reading these articles will certainly contribute to the updating of pediatricians and other health professionals concerned with creating optimal conditions for healthy growth and development, since good nutrition is a pivotal aspect for this to happen.

## Conflicts of interest

The authors declare no conflicts of interest.

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