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Editorial

Editorial Note on Child Development Stages

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EDITORIAL

Although the human brain is formed before birth, it continues to develop for at least 20 years. Four main developmental stages are described: before birth; birth to five years; five to 10 years; and 10 to 20 years. Specific developmental skills are attained by an individual at each of these stages. Familiarization by carers and healthcare professionals of what is normal for each stage will aid in the identification of potential problems in a child's cognitive development.

As most parents and caregivers are aware, feeding children a nutritionally balanced diet can be challenging. Children are born with a biological predisposition to prefer sweet and to avoid bitter foods such as green leafy vegetables. It has been hypothesized that this predisposition evolved to attract children to energy-dense foods while discouraging the consumption of toxins. Although this may have enhanced survival in environments historically characterized by food scarcity, it is clearly maladaptive in many of today's food environments where children are surrounded by an abundance of sweet-tasting, unhealthful foods and beverages that place them at risk for excessive weight gain. Because overweight or obese children tend to become overweight or obese adults who are at risk for a range of cardiovascular diseases, it is of primary importance to develop effective evidence-based strategies to promote the development of healthy eating styles.

Fortunately, accumulating evidence suggests that, starting before birth and continuing throughout development, there are repeated and varied opportunities for children to learn to enjoy the flavors of healthful foods. Because flavors are transmitted from the maternal diet to amniotic fluid and breast milk, mothers who consume a variety of healthful foods throughout pregnancy and lactation provide their infants with an opportunity to learn to like these flavors. This in turn eases the transition to healthful foods at weaning. In contrast, infants fed formula learn to prefer its invariant flavor profile, which differs from breast milk, and may initially be less accepting of flavors not found in formula. This process can continue throughout weaning and into childhood if infants are repeatedly exposed to a variety of healthful foods, even if they initially dislike them. These early-life sensory experiences establish food preferences and dietary patterns that set the stage for lifelong dietary habits.

Early development in Autism Spectrum Disorder (ASD) through comparative study of some key monogenic syndromic models of ASD in humans. Using this method, as well as referring to relevant work in idiopathic ASD, we address three complimentary areas:

(i) Patterns of ASD behavioural phenotype expression across genetic syndromes, as a way of addressing gene-phenotype correlations

(ii) Longitudinal developmental trajectories toward autism in early childhood, as a way of addressing developmental specificity

(iii) Experimental intervention trials, for treatment and mechanism discovery.

The comparative approach does not highlight striking phenotypic specificity, but early studies were often limited and more methodologically sophisticated recent studies may suggest subtle distinctions. Longitudinal studies are at an early stage but can build on the substantive work on early prodromal development of idiopathic ASD. Translational intervention trials to date have not found candidate treatments and we argue that a new generation of more ambitious experimental mechanism trials is needed. This field now has the opportunity to combine comparative prospective longitudinal developmental studies with in-depth cross-syndrome phenotyping and linked ambitious targeted mechanistic interventions in a way that could be mutually informing and maximize the potential of syndromic models to illuminate the pathophysiology of ASD.

Proper nutrition during childhood is necessary to: allow adequate growth and development, achieve optimal physical and psychic performance, maintain and improve health and recover more easily in disease processes. The first months of life (the infant stage) are a stage in which many rapid changes take place (anthropometric, body composition, maturation of organs and systems), which suppose a high demand from nutritional point of view, in the quantitative aspect and especially in the qualitative aspect. After infant stage, preschool children feeding is an opportunity to acquire healthy habits and introduce new foods, textures, flavors, colors, etc., which will favor the autonomy and development of the individual, as well as being essential to maintain growth and development.

There is a strong association between food poverty and stunting

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among children aged 6-11 months, while assets poverty and subjective poverty have stronger relationships with under nutrition at older age (24 months or older for assets poverty, and 12 months or older for subjective poverty). The effect of expenditures poverty does not reach statistical significant in any age group. These findings shed light on the degree of vulnerability of urban poor infants and children and on the influences of various aspects of poverty measures.