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Balanced diet in early childhood sets course for lifelong health

Nutrition in the first 1,000 days of life has an enormous impact across a person's entire lifetime. And it all begins in the womb. How breast milk can reduce the risk of childhood obesity, the role played in food tolerance by the introduction of solid foods, and other factors which influence common metabolic disorders in children will be among the topics under discussion at the 10th Congress of the European Academy of Paediatric Societies (EAPS) that takes place between 17 and 20 October at the Austria Center Vienna.

“Advances in paediatric and adolescent medicine are currently moving at a rapid pace. They help us to better understand the immune system, metabolism, and interactions with genetics. This is crucial because nutritional intake during a person's first 1,000 days of life shapes their entire life – and to a much greater extent than we previously thought,” says Professor Berthold Koletzko, Head of the Division of Metabolic & Nutritional Medicine at the Dr von Hauner Children's Hospital, University of Munich, and President of the European Academy of Paediatrics. Newborn screening has a key role to play because it is possible to detect numerous metabolic disorders at an early stage, which spares those affected from considerable suffering.

Development of metabolic and immune systems begins in the womb

In light of the fact that the human body grows incredibly fast during the first two years of life at a time when organs and tissues are also developing, the nutrients that a child receives during this time have a profound effect on their future health. “You can think of it like wiring a computer – the way that everything is set up to begin with determines how it functions later on. The child of an obese mother, for example, will have a significantly higher risk of becoming overweight or obese themselves in later life because conditions in the womb are already influencing the way that the child's body functions,” explains Koletzko.

Breast milk - the best food for all babies, including preterm infants

Nutrition continues to play a central role after birth. “Their mother's own milk remains the best source of nutrition for babies. This is especially true for preterm infants, as it offers protection against various conditions including serious intestinal diseases. This is why we strongly advocate for expressing milk for mothers of premature babies at a time when their baby is too weak to nurse without support. This breast milk is then fortified with additional protein and nutrients – which premature babies need in greater quantities than their full-term counterparts,” Koletzko explains. If a mother is unable to provide her own milk for whatever reason, they can be given donated breast milk that is fortified with nutrients, or infant formula specifically for preterm babies.

Influence of breastfeeding on obesity

Once a baby achieves a healthy birth weight, the lower protein content of breast milk compared with formula helps prevent excessive weight gain. As a result, breastfed babies are at a lower risk of developing obesity. "Involving almost 10,000 children, our studies show that children who were breastfed had a 25% lower risk of being overweight and a 30% lower risk of obesity in school age," says Koletzko. The risk of later obesity was not only reduced by breastfeeding but also by using infant formula with a low protein content, as well as avoiding cow's milk as a drink during the first year of life.

Introducing solid foods as the key to food tolerance

In the past, parents were often advised to delay introducing solid foods and avoid allergenic foods to reduce the risk of intolerance. But now, recent studies have revealed that introducing solid foods at an early stage can actually help to reduce the risk of allergies. "The immune system seems to have a critical window between the ages of four and six months for developing tolerance. Introducing foods like eggs, pureed nuts, wheat, and fish during this period can prevent up to 60% of food allergies from developing later in childhood," Koletzko emphasises.

Type of delivery as a risk factor for diabetes and immune disorders

The type of birth also affects children's metabolism. Babies born vaginally are exposed to beneficial maternal lactic acid bacteria in the birth canal, while those delivered by caesarean section are exposed to germs and antibiotics from the hospital, which leads to a different composition of gut bacteria. The latter leads to a different bacterial colonisation of the intestines, which is associated with an elevated risk of illness later on. The altered gut microbiome for babies born by caesarian section is associated with a 20-30% higher risk of diabetes, obesity, and immune disorders. "In light of this, I would like to see caesarean sections limited to cases of medical necessity only. And that equates to somewhere in the region of 10-12% of all births. In many European countries, though, more than one in three babies are delivered via C-section," Koletzko notes.

Sometimes less is more

Maintaining a healthy gut microbiome in children and avoiding disruption to it is crucial. "Overuse of antibiotics in early childhood can increase the risk of diarrhoea and potentially diabetes and autoimmune diseases, too, while also contributing to antibiotic resistance. So it is essential that these important drugs are only used when they are really needed," says Koletzko. "We now know that common childhood infections, such as ear infections and respiratory infections, are largely caused by viruses. Since antibiotics do not stop viruses, they should not be given to children in such cases," he explains. The European Academy of Paediatrics has developed a set of guidelines designed to ensure that antibiotics are used only when absolutely necessary.

Diabetes and high cholesterol the most common metabolic disorders in children

Diabetes (type 1) affects around one in 400 children, and one in 250 newborns suffers from

an inherited condition that leads to high cholesterol levels. As a result, paediatricians are particularly focused on detecting these common metabolic disorders at an early stage. Treatment typically involves dietary adjustments and, in many cases, medication.

About IAKW-AG and the EAPS Congress

Internationales Amtssitz- und Konferenzzentrum Wien, Aktiengesellschaft (IAKW-AG) is responsible for maintaining the Vienna International Centre (VIC) and operating the Austria Center Vienna (ACV). The Austria Center Vienna is Austria's largest conference centre. With 21 halls, 134 meeting rooms and some 26,000m² of exhibition space, it is one of the top players on the international conference circuit.

The 10th Congress of the European Academy of Paediatric Societies (EAPS) is organised by the European Academy of Paediatrics (EAP) and the European Society for Paediatric Research (ESPR). Representing 53 national paediatric societies and 14 subspeciality groups, the EAP is the united voice for child health and paediatric medicine in Europe. The congress covers the latest advances in paediatrics, including neonatology, physical and mental health conditions, diagnosis, and treatment innovations. EAPS is organized by Kenes Group for EAP and ESPR.

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