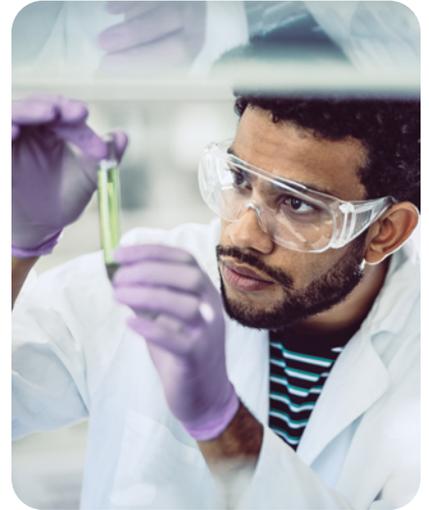


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Accredited Educational Programs

Dietary Management of EoE: More Than Just Food Allergen Avoidance.....	1
The Journey to Food-Based Tube Feedings in Adult and Pediatric Patients.....	1
Pediatric Nutrition in Practice.....	1
Probiotics in Pediatric Nutrition: How Should We Be Counseling Parents?.....	2
Therapeutic Diets for IBD: What is the Evidence?	2
Why Do We Need Dietary Therapy in Chron’s Disease in an Era of Biologics? Part 1.....	2
Why Do We Need Therapeutic Diets in Chron’s Disease in an Era of Biologics? Part 2	2
14th Advances in Pediatric Nutrition	3

NNI Workshop and Conference Videos

Diagnosis and Management of Cow’s Milk Protein Allergy in Infants and Children	4
Early Interventions and Long Lasting Effect on Childhood Allergies: The GINI Study 20 Year Results.....	4
The GUT Microbiome and Lifestyle: Are Children at Risk?.....	4
The Highs and Woes of Parenting	4
How Do Maternal Diet and Infant Complementary Feeding influence Food Allergy.....	5
How to Make Nutritious Diets More Affordable, Accessible, and Adequate.....	5
Human Milk Oligosaccharides and the Preterm Infant: Clinical Relevance.....	5
Importance Of Transformative Years From 5 to 15 Years Old.....	6
Nutritional Needs During The First 1000 Days to Support Growth During Infancy And Toddlerhood: The Influence of Maternal Health.....	6
Probiotics For Functional Gastrointestinal Disorders.....	6

NNI Publications, Articles, and Books

Annales 79.1 - Pediatric Issues in Time of Pandemia: From Infection to Nutritional Strategies	7
Annales Nestle – Breastfeeding, Childhood Asthma, and Allergic Disease	7
Annales Nestle – Food Protein-Induced Enterocolitis Syndrome and Proctocolitis.....	7
Annales Nestle – Introduction of Complementary Foods to Infants	7
Biology of Human Milk Oligosaccharides: From Basic Science to Clinical Evidence	8
Breastfeeding & Cow Milk Protein Allergy: What You Need to Know.....	8
Evidence-based Medicine and HMOs: Where Are We Now? Where Are We Going?.....	8
Gut Microbiota and Probiotics, Prebiotics, and Synbiotics.....	8
Human Milk Oligosaccharides (HMO): Factors Affecting their Composition and Their Physiological Significance	9
Introducing Hard-to-Like Foods to Infants and Toddlers Mothers’ Perspectives and Children’s Experiences about Learning to Accept Novel Foods	9
The Latest Buzz about Heavy Metals, Infants, and Young Children	9
Mechanisms of Tolerance Induction	9
The Nest 49: Nourishing the Growth and Development of Toddlers	9
Physiological Significance of HMO: Why Are They in Mother’s Milk?	10
The Potential of HMOs in Neonatology.....	10
The Role of Microbiota on Infantile Colic.....	10
Role of Probiotics in Diarrhea	10
The 2016 Feeding Infants and Toddlers Study: Dietary Intakes and Practices of Children in the United States from Birth to 48 Months	10

NNI Infographics

Developing Toddlers First Line of Protection	11
Friends For Life: A Healthy Microbiome Builds a Strong Immune System.....	11
Gut Microbiome Shapes Health Outcomes.....	11
Gut Microbiota: No Longer the Forgotten Organ.....	11
HMOs and Gut Development: What is the Current Evidence?	11
Human Milk Oligosaccharides: Innate Defenders of Infant Gut Health and Immunity.....	11
The Transformative 10: Nourishing The Brain, Body and Behavior	11

The NNI Campus

The Allergy Academy.....	12
HMO Academy	12
The Microbiome Academy.....	12
The School Age Nutrition Academy	12
The Sustainability Portal.....	12
The Toddler Hub	12
Explore the NNI Campus.....	13

Dietary Management of EoE: More than Just Food Allergen Avoidance†

This program presented by Carina Venter, PhD, RD, begins with an overview of the prevalence and clinical presentation of eosinophilic esophagitis (EoE) in pediatric patients. Dr. Venter describes the evidence-based dietary therapy and nutrition management of EoE, which is outlined in nutrition guidelines publications. She also describes the role of elemental diets in the management of EoE, including practical guidance on how to initiate these diets and support compliance for efficacy. Finally, Dr. Venter discusses the role of the microbiome in EoE and how it correlates with disease activity.

60 minutes ©2022

Continuing Education Expires 5/31/2024

1.00 / CE for Nurses

1.00 / CPEU for Registered Dietitians/Registered Dietetic Technicians — CDR level: I

Web link: www.MyCEeducation.com

Coming summer 2022

The Journey to Food-Based Tube Feedings in Adult and Pediatric Patients†

This program reviews the recent literature pertaining to the use of commercial and homemade blenderized tube feeding and describes the key steps to successfully implement a food-based blenderized tube feeding. Learn practical tips on how to be prepared when facing COVID-19 challenges such as, shipping delays, food insecurity, or challenges with available time.

Lisa Epp, RDN, LD, CNSC

57 minutes ©2020

Continuing Education Expires 11/9/2023

1.00 / CE for Nurses

1.00 / CPEU for Registered Dietitians/Registered Dietetic Technicians — CDR level: II

Web link: www.MyCEeducation.com

Pediatric Nutrition in Practice‡

Approved for continuing education credits by the Commission of Dietetic Registration (CDR), this program aims to provide information to healthcare professionals who are looking for practical guidance on nutrition issues for infants, children and adolescents. Some of the topics covered include childhood growth and nutritional assessment, breastfeeding, complementary feeding and nutritional challenges in special conditions and diseases. Like the chapters in the book, edited by Bert Koletzko, MD and colleagues, the Program is divided into 12 learning modules, which are combining different topics in pediatric nutrition. Each module takes between 60-90 minutes to complete and contains objectives, course material, a progress check to help prepare you for the exam, a list of key words and references.

B. Koletzko, J. Bhatia, Z.A. Bhutta, M. Makrides, R. Uauy and W. Wan

12 modules 60-90 minutes each ©2020

Continuing Education Credits Expire 3/10/2023

1.00 / CPEU per Module

Web link: www.nestlenutrition-institute.org/education/e-learning/pediatric-nutrition-in-practice-landing

± Financial Support provided by Nestec SA. † Financial Support provided by Nestlé Health Science. ‡ Financial Support provided by Nestlé Infant Nutrition.

Probiotics in Pediatric Nutrition: How Should We Be Counseling Parents?

Parents of infants and young children are inundated with information and marketing claims about the benefits of various products containing prebiotics—but how do you help them separate the hype from the facts? In this educational webinar, three experts help bridge the gap between current practices in counseling parents about the optimal use of probiotics and the clinical evidence base regarding the appropriate role of probiotics in infant health and development.

**Presenters: Benjamin Gold, MD;
Jose Saavedra, MD; Michelle Pietzak, MD**

45 minutes @ 2021

Continuing Education Expires: 12/31/2022

0.75 / AMA PRA Category 1 Credit(s)™

0.75 / AMA PRA Category 1 Credit(s)™/ ABP MOC Points

0.75 / CNE Contact Hour(s)

0.75 / CPEU Credits

Web link: www.mycme.com/courses/probiotics-in-pediatric-nutrition-how-should-we-be-counseling-parents-7683

Therapeutic Diets for IBD: What is the Evidence?†

This program describes how diet plays a role in the pathogenesis of IBD. Learn the latest evidence surrounding diet and its effects on the gut microbiome and its relevance to IBD. Expand your knowledge about a recent prospective randomized controlled trial comparing a Crohn's Disease Exclusion Diet (CDED) to an Exclusive Enteral Nutrition (EEN) diet for induction of remission in mild to moderate pediatric Crohn's disease patients.

Lindsey Albenberg, DO

57 minutes ©2020

Continuing Education Expires 3/9/2023

1.50 / CE for Nurses

1.50 / CPEU for Registered Dietitians/Registered Dietetic Technicians — CDR level: II

Web link: www.MyCEeducation.com

Why Do We Need Dietary Therapy in Chron's Disease in an Era of Biologics? Part 1†

This program describes how diet plays a role in the pathogenesis of Crohn's disease. As patients and families are concerned about drug safety and show a strong interest in managing IBD with dietary strategies, learn how gut luminal content is influenced by diet and how this drives inflammation. Hear the latest evidence by lead author Dr. Levine surrounding the use of the Crohn's Disease Exclusion Diet (CDED) for induction of remission.

Lindsey Albenberg, DO and Arie Levine, MD

35 minutes ©2019

Continuing Education Expires 10/17/2022

1.00 / CE for Nurses

1.00 / CPEU for Registered Dietitians/Registered Dietetic Technicians — CDR level: II

Web link: www.MyCEeducation.com

Why Do We Need Therapeutic Diets in Chron's Disease in an Era of Biologics? Part 2†

This program focuses on the evidence supporting nutrition interventions for induction of remission in patients with Crohn's Disease. Learn the latest evidence supporting the use of the novel Crohn's Disease Exclusion Diet (CDED) for children with mild to moderate CD, as well as the body of evidence supporting exclusive enteral nutrition (EEN).

Eytan Wine, MD, PhD, FRCPC and Rotem Sigall Boneh, RD

41 minutes ©2019

Continuing Education Expires 10/17/2022

1.00 / CE for Nurses

1.00 / CPEU for Registered Dietitians/Registered Dietetic Technicians — CDR level: II

Web link: www.MyCEeducation.com

± Financial Support provided by Nestec SA. † Financial Support provided by Nestlé Health Science. ‡ Financial Support provided by Nestlé Infant Nutrition.

14th Advances in Pediatric Nutrition

The 14th Advances in Pediatric Nutrition conference was designed to share the latest scientific progress and practical approaches to contemporary issues in pediatric nutrition. This meeting reporter provides highlights of selected key presentations with the goal of disseminating unique opportunities to learn and investigate new ways of assessing and managing pediatric patients with unique nutritional needs. The educational program, a 2-day internet-based live conference, was provided by Johns Hopkins School of Medicine, Division of Pediatric Gastroenterology, Hepatology and Nutrition; the Johns Hopkins Department of Pediatrics; and the Johns Hopkins Children's Nutrition Center.

Activity Director: Ann Scheimann, MD

75 minutes @ 2021

Continuing Education Expires: March 31, 2023

1.25 / AMA PRA Category 1 Credit™

American Nurses Credentialing Center (ANCC) accepts AMA PRA Category 1 Credit™ from organizations accredited by the ACCME.

American Academy of Nurse Practitioners National Certification Program accepts AMA PRA Category 1 Credit™ from organizations accredited by the ACCME.

PAs may claim a maximum of 1.25 Category 1 credits for completing this activity. NCCPA accepts AMA PRA Category 1 Credit™ from organizations accredited by ACCME or a recognized state medical society.

The Johns Hopkins University has approved this activity for 1.25 contact hours for non-physicians.

Web link: <https://www.mycme.com/courses/14th-advances-in-pediatric-nutrition-7647>

Diagnosis and Management of Cow's Milk Protein Allergy in Infants and Children

Cow's milk protein allergy (CMPA) is one of the most common food allergies in infancy and childhood, affecting up to 2% of this age group in the USA. CMPA may manifest as immediate, IgE-mediated symptoms as well as more delayed chronic symptoms affecting gut or skin. In general, prognosis of CMPA is favorable with majority of the affected infants and children achieving tolerance to milk by school age. Diagnosis of CMPA relies on careful history, skin prick tests and serologic tests as well as elimination diets and oral food challenges. In this video Prof. Anna Nowak-Wegrzyn discusses latest dietary guidelines for management of infants with CMPA.

Anna Nowak-Wegrzyn, M.D., PhD

Web link: <https://www.nestlenutrition-institute.org/resources/videos/details/diagnosis-and-management-cows-milk-protein-allergy-infants-and-children-anna-nowak-wegrzyn-md-phd>

Early Interventions and Long Lasting Effect on Childhood Allergies: The GINI Study 20 Year Results

Allergy development is a complex process and depends on numerous factors, including postnatal influences, that guide the immune system towards allergenicity or tolerance. Breast-feeding has a proven beneficial role and some studies also support a preventative effect of partially hydrolyzed infant formula on allergy development. Professor Monika Gappa presented the 20-year follow-up data from the GINI study showing that early nutritional intervention with extensively hydrolyzed casein formula (eHF-C) or partially hydrolyzed whey formula (pHF-W) when compared to cow's milk based formula exerts a preventive effect on both eczema and allergic airway manifestation that endures until adulthood.

Prof Monika Gappa

Presented at Pediatric Allergy & Asthma Meeting (PAAM) Digital 2021

Web link: www.nestlenutrition-institute.org/resources/videos/details/early-interventions-and-long-lasting-effect-childhood-allergies-gini-study-20y-results

The GUT Microbiome and Lifestyle: Are Children at Risk?

A healthy gut microbiome must be maintained for optimal health and immunity. Modern day "harried" life, stress, inactivity, alcohol, increased intake of processed fast food disrupt and alter the gut microbiome. Today, children are at risk for developing lifestyle diseases early: obesity, diabetes, heart disease and metabolic syndrome.

Sylvia Estrada, MD

Presented at 2022 World Microbiome Day - The Microbiome and Health Risks in the Changing Times

Web link: www.nestlenutrition-institute.org/resources/videos/details/gut-microbiome-and-lifestyle-are-children-risk

The Highs and Woes of Parenting

In the fast-changing world, among multiple stressors such as finance or societal, the greatest challenge of all for parents is that of raising their children. Parenting challenges has indeed risen to a higher notch of difficulty for families. Such obstacles could influence children's cognitive and comprehensive development.

As healthcare professionals, the parenting index in combination with the help of experts across the globe, we could understand better the multiple challenges and help parents navigate through them.

Speakers: Multiple

Web link: www.nestlenutrition-institute.org/resources/videos/details/highs-and-woes-parenting

± Financial Support provided by Nestec SA. † Financial Support provided by Nestlé Health Science. ‡ Financial Support provided by Nestlé Infant Nutrition.

How Do Maternal Diet and Infant Complementary Feeding influence Food Allergy

Dr Carina Venter discussed the importance of diet diversity (including food allergen diversity) with early introduction of allergenic foods between 4 to 6 months of age as part of a complementary diet recommended by the majority of medical and scientific societies worldwide, including EAACI. She also presented the limited available data on the possible influence of maternal diet on future food allergy development.

Dr. Carina Venter

Presented at Pediatric Allergy & Asthma Meeting (PAAM) Digital 2021

Web link: www.nestlenutrition-institute.org/resources/videos/details/how-do-maternal-diet-and-infant-complementary-feeding-influence-food-allergy

How to Make Nutritious Diets More Affordable, Accessible, and Adequate

Even before COVID-19, prospects for achieving Millennium Development Goals (MDGs) for nutrition were bleak. Progress in areas such as poverty reduction and child mortality reduction has slowed, and COVID-19 has caused additional hardship. The problem is most concentrated in Africa and Southeast Asia. A shift towards greater consumption of cheap junk food is increasing problems such as obesity and non-communicable diseases like cancer and heart disease. To address the situation, both the supply and demand side of the food system need to be addressed. Productivity growth is linked to investment, including spending on infrastructure, developing financial markets, telecommunications and policies on trade dependence and protectionism. Trade dependence varies a lot around the world, with Europe importing 29% of food, the USA 10% and India just 3%. Small enterprises such as cold storage are helping to support innovation in many

places. Concentration and multinationalization, plus branding is driving a close connection between producers and consumers. Drivers towards healthy food systems are complex, and far more resources are needed to achieve the goal of making nutritious food in adequate quantities accessible to all.

Dr. Uma Lele

Presented at Nestlé Research and Development Scientific Roundtable 2021: Food Which is Good for People and the Planet

Web link: www.nestlenutrition-institute.org/resources/videos/details/how-make-nutritious-diets-more-affordable-accessible-and-adequate

Human Milk Oligosaccharides and the Preterm Infant: Clinical Relevance

Gut microbiota plays an important role in the health of infants. Breastfed term infants have a gut microbiota that is dominated by bifidobacteria, whereas formula-fed infants have a more heterogeneous composition. This prevalence of bifidobacteria has been associated with reduced infection rates and less allergy manifestation as compared with formula-fed infants. In premature infants, gut microbiota shows different patterns related with NICU practices and maturity. It is associated with the level of HMOs in breastmilk. Specific HMOs milk content may be associated with decreased NEC and LOS. HMO supplementation might reduce dysbiosis leading to more mature microbiota and better clinical outcome.

Professor Jean-Michel Hascoët

Presented at jENS 4th Congress of Joint European Neonatal Societies 2021

Web link: www.nestlenutrition-institute.org/resources/videos/details/human-milk-oligosaccharides-and-preterm-infant-clinical-relevance

± Financial Support provided by Nestec SA. † Financial Support provided by Nestlé Health Science. ‡ Financial Support provided by Nestlé Infant Nutrition.

Importance Of Transformative Years From 5 to 15 Years Old

The period between age 5 to 15 is a time of extraordinary changes in the growth and development of children. This video will define this period and why we should put more interest into. Then explain why this period is critical for long term health and how do we support nutrition for school aged children and who should be involved.

Dr. Jose Saavedra

Web link: www.nestlenutrition-institute.org/resources/videos/details/importance-transformative-years-5-15-yo

Nutritional Needs During The First 1000 Days to Support Growth During Infancy And Toddlerhood: The Influence of Maternal Health

The 1st 1000 days of life is important as it is a window of opportunity for maternal and infant nutrition to influence proper growth and development. Maternal and infant risk factors both are associated with development of obesity and adverse health outcomes in the child. High birth weight and high protein intake in the first year of has been shown to predispose to higher of obesity in childhood. After the 1st year, the feeding practices, environmental factors and the BMI of the child may further influence the development of non-communicable diseases later in life. Obesity in the child is multifactorial hence prevention through proper nutrition and maintenance of appropriate growth trajectories are crucial.

Prof. Eline M. van der Beek

9th International Conference on Nutrition and Growth 2022

Web link: www.nestlenutrition-institute.org/resources/videos/details/nutritional-needs-during-first-1000-days-support-growth-during-infancy-and-toddlerhood-influence-maternal-health

Probiotics For Functional Gastrointestinal Disorders

Functional gastrointestinal disorders (FGIDs) often lead to referral to a paediatrician during the first 6 months of life and are often responsible for hospitalization feeding changes, use of drugs, parental anxiety, and loss of parental working days with relevant social consequences. Among the many dietary interventions that have been reported to help manage symptoms of FGIDs is supplementation with the probiotic, *Lactobacillus reuteri*. This video expounds on the evidence supporting oral supplementation with *L reuteri* to address symptoms of colic, regurgitation and functional constipation.

Speakers: Professor Flavia Indrio

Web link: www.nestlenutrition-institute.org/resources/videos/details/probiotics-functional-gastrointestinal-disorders

± Financial Support provided by Nestec SA. † Financial Support provided by Nestlé Health Science. ‡ Financial Support provided by Nestlé Infant Nutrition.

Annales 79.1 — Pediatric Issues in Time of Pandemia: From Infection to Nutritional Strategies

The pandemic has made good nutrition more important, and also harder to achieve. Breastfeeding supports the infant immune system and has benefits for maternal mental health, but the pandemic has restricted support for new mothers and increased early termination of breastfeeding. Vaccination against COVID-19 has minimal impact on lactation or adverse impacts on infants, although an initial lack of clinical data has made many mothers hesitate to accept vaccination.

Editor(s): Raanan Shamir, Petach Tikva

Web link: www.nestlenutrition-institute.org/resources/publication-series/publications/article/annales-791-pediatric-issues-time-pandemia-infection-nutritional-strategies

Annales Nestle — Breastfeeding, Childhood Asthma, and Allergic Disease

Exclusive breastfeeding for the first 6 months of life, and up to 2 years or longer is encouraged as the “gold” standard for infant feeding because breastfeeding has health benefits for mother and child. Human maternal milk is uniquely suited to the human baby with nutritional composition as well as bioactive and immunological factors that promote healthy development.

Author(s): W.H. Oddy

Web link: www.nestlenutrition-institute.org/resources/publication-series/publications/article/details/annales-751-nutrition-intervention-allergy-prevention/breastfeeding-childhood-asthma-and-allergic-disease

Annales Nestle — Food Protein-Induced Enterocolitis Syndrome and Proctocolitis

The terms food protein-induced enterocolitis syndrome (FPIES) and food protein-induced allergic proctitis (FPIAP) describe a well-defined but less well-known form of cow’s milk allergy in infants and children. FPIES and FPIAP are non-IgE-mediated, cellular allergic reactions to foods that account for around 40% of the cases of cow’s milk allergy in infants and young children. In his update, Professor Dupont describes clinical presentations/features, pathophysiology, diagnosis and management of FPIES and FPIAP.

Author(s): Christophe Dupont

Web link: www.nestlenutrition-institute.org/resources/publication-series/publications/article/details/annales-763-allergic-or-pseudo-allergic-gastrointestinal-disorders/food-protein-induced-enterocolitis-syndrome-and-proctocolitis

Annales Nestle — Introduction of Complementary Foods to Infants

Worldwide, the most common food allergies in children are allergies to cow’s milk, hen’s egg, soy, peanut, tree nuts, wheat, fish, and seafood. Although a large proportion of those with milk or egg allergies will develop tolerance as they age, certain subgroups remain allergic and are at risk of developing other disorders such as respiratory allergic disease. In the past, food allergy prevention strategies focused on the avoidance of allergenic foods in infancy.

Author(s): C. West

Web link: www.nestlenutrition-institute.org/resources/publication-series/publications/article/details/annales-751-nutrition-intervention-allergy-prevention/introduction-complementary-foods-infants

± Financial Support provided by Nestec SA. † Financial Support provided by Nestlé Health Science. ‡ Financial Support provided by Nestlé Infant Nutrition.

Biology of Human Milk Oligosaccharides: From Basic Science to Clinical Evidence

Human milk oligosaccharides (HMOs) have been researched by scientists for over 100 years, driven by the substantial evidence for the nutritional and health benefits of mother's milk. Yet research has truly bloomed during the last decade, thanks to progress in biotechnology, which has allowed the production of large amounts of bona fide HMOs. The availability of HMOs has been particularly crucial for the renewed interest in HMO research because of the low abundance or even absence of HMOs in farmed animal milk. This interest is reflected in the increasing number of original research publications and reviews on HMOs. Here, we provide an overview and critical discussion on structure–function relations of HMOs that highlight why they are such interesting and important components of human milk. Clinical observations in breastfed infants backed by basic research from animal models provide guidance as to what physiological roles for HMOs are to be expected. From an evidence-based nutrition viewpoint, we discuss the current data supporting the clinical relevance of specific HMOs based on randomized placebo-controlled clinical intervention trials in formula-fed infants.

Editor(s): Norbert Sprenger, Hanne L.P Tytgat, Aristea Binia, Sean Austin and Atul Singhal

Web link: www.nestlenutrition-institute.org/resources/publication-series/publications/article/biology-human-milk-oligosaccharides-basic-science-clinical-evidence

Breastfeeding & Cow Milk Protein Allergy: What You Need to Know

Cow milk protein allergy is the most common food allergy in children. Manifestations include IgE-mediated reactions (urticaria, anaphylaxis), non-IgE reactions (delayed gastrointestinal manifestations) or mixed reactions (atopic dermatitis). Diagnosis is based on proper history-taking and laboratory tests (skin prick tests, in vitro test oral challenges). Management includes advice regarding avoidance and replacement. Breastfeeding is highly encouraged with the proper

advice for mothers to address nutritional or even quality of life concerns. It is also highly suggested to refer to an allergist for co-management.

Web link: www.nestlenutrition-institute.org/resources/publication-series/publications/article/breastfeeding-cow-milk-protein-allergy-what-you-need-know

Evidence-based Medicine and HMOs: Where Are We Now? Where Are We Going?

A number of benefits of breastfeeding, particularly protection against child infections, may be, at least partially, related to the presence of human milk oligosaccharides (HMOs). Among others, the postulated effects of HMOs include prebiotic and antiadhesive/antimicrobial effects, modulation of intestinal epithelial cells, and immune modulation.

Author(s): Hania Szajewska

Web link: www.nestlenutrition-institute.org/resources/publication-series/publications/article/details/human-milk-oligosaccharides-hmo-symposia-abstracts/evidence-based-medicine-and-hmos-where-are-we-now-where-are-we-going

Gut Microbiota and Probiotics, Prebiotics, and Synbiotics

Dysbiosis, an altered gut microbiota composition and/or activity, contribute to the development and progression of diseases, such as allergy, obesity, irritable bowel syndrome, necrotizing enterocolitis, type 1 diabetes, and autism. This article discusses the clinical effects of probiotics in children and how they should be chosen, as well as potential effects of specific prebiotics, considering that not all probiotics and/or prebiotics are equal.

Hania Szajewska

Web link: www.nestlenutrition-institute.org/resources/publication-series/publications/article/details/nest-44-pro-pre-and-synbiotics-myths-and-facts/gut-microbiota-and-probiotics-prebiotics-and-synbiotics

± Financial Support provided by Nestec SA. † Financial Support provided by Nestlé Health Science. ‡ Financial Support provided by Nestlé Infant Nutrition.

Human Milk Oligosaccharides (HMO): Factors Affecting their Composition and Their Physiological Significance

Human milk oligosaccharides (HMOs) are elongations of the milk sugar lactose by galactose, N-acetylglucosamine, fucose and sialic acid. The HMOs composition of breastmilk is strongly influenced by polymorphisms of the maternal fucosyltransferases, FUT2 and FUT3, and by stage of lactation. Clinical observational studies with breastfed infant-mother dyads associate specific HMOs with infant gut microbiota, morbidity, infectious diarrhea, and allergies.

Author(s): Norbert Sprenger

Web link: www.nestlenutrition-institute.org/resources/publication-series/publications/article/details/human-milk-oligosaccharides-hmos-abstracts-workshops-annales/human-milk-oligosaccharides-hmo-factors-affecting-their-composition-and-their-physiological-significance

Introducing Hard-to-Like Foods to Infants and Toddlers: Mothers' Perspectives and Children's Experiences about Learning to Accept Novel Foods

Children reportedly consume a variety of adequate vegetables during the introduction of complementary foods, and breastfeeding helps to facilitate child food acceptance. However, dietary intake of vegetables is reported to fall when children begin to eat foods of the family table.

Author(s): Susan L. Johnson, Kameron J. Moding

Web link: www.nestlenutrition-institute.org/nniw-95---building-future-health-and-well-being-of-thriving-toddlers-and-young-children/introducing-hard-to-like-foods-to-infants-and-toddlers-mothers-perspectives-and-children-s-experiences-about-learning-to-accept-novel-foods

The Latest Buzz about Heavy Metals, Infants, and Young Children

Over the last few years, published reports document the presence of heavy metals in certain foods. This is of particular concern when these foods are consumed by infants and young children due to

the potential effect of heavy metal exposure on neurological development even at low levels.

Editor(s): Jennifer Sample, MD

Web link: www.nestlenutrition-institute.org/resources/publication-series/publications/article/latest-buzz-about-heavy-metals-infants-and-young-children

Mechanisms of Tolerance Induction

Food allergy is defined as an immune-mediated adverse reaction to specific foods. This problem is becoming more widespread and affects up to 8% of children and 5% of adults in Western countries. Currently, there are no effective strategies to induce permanent tolerance: management of food allergies consists of recognizing the adverse reactions and treating the symptoms. Food allergy arises when oral tolerance fails to develop in early life or is breached at an older age.

Author(s): A. Nowak-Węgrzyn, P. Chatatec

Web link: www.nestlenutrition-institute.org/resources/publication-series/publications/article/details/annales-751-nutrition-intervention-allergy-prevention/mechanisms-tolerance-induction

The Nest 49: Nourishing the Growth and Development of Toddlers

The highest growth rates in weight and length occur during fetal life and in the first two years of life after birth and during adolescence. Nutrition in childhood is crucial for adequate growth and development, including adequate immune system functioning and brain development.

In the issue of The Nest, you will read articles about:
 * Understanding growth trajectories
 * Nutrition for bone growth in toddlers
 * Muscle growth in children
 * The role of Macronutrients on toddler's growth, immunity and brain development.

Editor(s): Mauro Fisberg, Marie-Noëlle Horcajada, Nicolas Bonnet, Astrid Horstman, Pascal Stuelsatz, and Vanessa Hernández Rosiles

Web link: www.nestlenutrition-institute.org/resources/publication-series/publications/article/nest-49-nourishing-growth-and-development-toddlers

± Financial Support provided by Nestec SA. † Financial Support provided by Nestlé Health Science. ‡ Financial Support provided by Nestlé Infant Nutrition.

Physiological Significance of HMO: Why Are They in Mother's Milk?

Human milk oligosaccharides (HMO) have no nutritive value, yet mothers spend significant energy for their synthesis. So what do they do? Clinical observational studies together with basic research position HMO as multifunctional innate breastmilk component. They shape the establishing gut microbiota and supposedly help the development of appropriate immune competence.

Author(s): Norbert Sprenger

Web link: www.nestlenutrition-institute.org/resources/publication-series/publications/article/details/human-milk-oligosaccharides-hmo-symposia-abstracts/physiological-significance-hmo-why-are-they-mothers-milk

The Potential of HMOs in Neonatology

Unlike the milk of many other mammals, human milk contains a high amount of diverse complex sugars called human milk oligosaccharides (HMOs). The composition varies between women and, to a certain extent, changes over the course of lactation. Current research focuses on the maternal factors that drive HMO variation and aims to understand how HMO composition impacts immediate and long-term infant health and development.

Author(s): Lars Bode

Web link: www.nestlenutrition-institute.org/early-nutrition-influence-preventive-and-therapeutic-aspects-proceedings-from-nni-kol-meeting-zone-emen-2019/the-potential-of-hmos-in-neonatology

The Role of Microbiota on Infantile Colic

The etiology of infant colic is suggested to be multifactorial and growing scientific evidence suggests a link between the alterations in gut microbiota and infant colic. The clinical management of this condition includes parental education and reassurance. The treatment with pharmacological agents is not supported by clinical evidence and specific probiotics

may be useful, with *L. reuteri* DSM17938 being the strain with the highest evidence of efficacy.

Author(s): Rodrigo Vázquez Frias

Web link: www.nestlenutrition-institute.org/the-nest-46-functional-gastrointestinal-disorders-in-infants/the-role-of-microbiota-on-infantile-colic

Role of Probiotics in Diarrhea

The use of antibiotics in early life changes the gut microbiota with possible long-term health implications. Dysbiosis in infectious diarrhea or antibiotic associated diarrhea can be prevented and treated with the use of probiotics. The strain that has the greatest efficacy in both disorders is *L. rhamnosus* GG (LGG) as confirmed by major clinical practice guidelines.

Author(s): Guillermo Álvarez Calatayud

Web link: www.nestlenutrition-institute.org/the-nest-48-the-role-of-nutrition-in-the-development-of-early-gut-microbiome-for-lifelong-health/role-of-probiotics-in-diarrhea

The 2016 Feeding Infants and Toddlers Study: Dietary Intakes and Practices of Children in the United States from Birth to 48 Months

The Feeding Infants and Toddlers Study (FITS) is a periodic national cross-sectional survey to examine the diets and feeding practices of US infants and children, with ages categorized to represent important transition times in the diet: younger infants (birth to 5.9 months), older infants (6–11.9 months), toddlers (12–23.9 months), younger preschoolers (24–36.9 months), and older preschoolers (36–47.9 months).

Author(s): Regan Bailey, Shinyoung Jun, and Alison L. Eldridge.

Web link: www.nestlenutrition-institute.org/resources/publication-series/publications/article/details/nniw91-nurturing-healthy-generation-children-research-gaps-and-opportunities/2016-feeding-infants-and-toddlers-study-dietary-intakes-and-practices-children-united-states-birth-48-months

± Financial Support provided by Nestec SA. † Financial Support provided by Nestlé Health Science. ‡ Financial Support provided by Nestlé Infant Nutrition.

Developing Toddlers First Line of Protection

Physical barriers, such as of the lungs, the gut and the skin, are an important corner stone in protecting against environmental pathogens, pollutants and antigens. Defects in these barrier functions are associated with certain health conditions including inflammatory bowel diseases, celiac disease, or atopic dermatitis.

Web link: www.nestlenutrition-institute.org/resources/infographics/details/developing-toddlers-first-line-protection

Friends For Life: A Healthy Microbiome Builds a Strong Immune System

A healthy microbiome builds a strong immune system. The microbiome acts as instructor and arbiter of host immunity, while the immune system regulates colonization with healthy microbes. This bi-directional crosstalk can be regulated through nutrition to support a healthy microbiome and long-term immunity.

Web link: www.nestlenutrition-institute.org/resources/infographics/details/friends-life-healthy-microbiome-builds-strong-immune-system

Gut Microbiome Shapes Health Outcomes

Gut microbiome has multiple important functions. Appropriate trajectory of gut microbiome is essential for many aspects life-long health.

Web link: www.nestlenutrition-institute.org/resources/infographics/details/gut-microbiome-shapes-health-outcomes

Gut Microbiota: No Longer the Forgotten Organ

Gut microbiome development in early life is linked to long-term health. Bifidobacteria make up to 90% of the microbiota of healthy breastfed infants born by vaginal delivery, but factors such

as C-section birth, formula feeding, antibiotic use, preterm birth, diet and home environment can result in a less healthy microbial profile.

Web link: www.nestlenutrition-institute.org/resources/infographics/details/gut-microbiota-no-longer-forgotten-organ

HMOs and Gut Development: What is the Current Evidence?

With the advancement of technology and research activities, the knowledge about how human milk oligosaccharides, or HMOs, will benefit the baby is constantly increasing, and more HMOs are available for infant nutrition.

Web link: www.nestlenutrition-institute.org/resources/infographics/details/hmos-and-gut-development-what-current-evidence

Human Milk Oligosaccharides: Innate Defenders of Infant Gut Health and Immunity

Human milk oligosaccharides (HMOs) are the third most abundant solid component of human milk after lactose and lipids, often exceeding the total amount of human milk proteins.

Web link: <https://www.nestlenutrition-institute.org/resources/infographics/details/human-milk-oligosaccharides-innate-defenders-infant-gut-health-and-immunity>

The Transformative 10: Nourishing The Brain, Body and Behavior

During the transformative 10 years, boys and girls experience rapid and visible changes that will affect the rest of their lives. Discover more in The Transformative 10: Nourishing the Brain, Body and Behavior infographic.

Web link: www.nestlenutrition-institute.org/resources/infographics/details/transformative-10-nourishing-brain-body-and-behavior

The Allergy Academy

Allergic disorders have become the most common chronic disorders, affecting both children and adults. Food allergy and infantile eczema are frequently the first manifestations of a life-long problems of allergies. Early diagnosis and correct management of allergic diseases are crucial for the proper growth and development of the children as well as for improvement of their quality of life and of their families as well.

Web link: <https://www.nestlenutrition-institute.org/nutrition-campus/allergy-academy>

HMO Academy

Human Milk Oligosaccharides (HMOs) are an exciting and central area of research in infant nutrition.

Scientific advances on HMOs are helping us know more about the role and importance of these essential components of Human milk.

Web link: www.nestlenutrition-institute.org/nutrition-campus/hmo-academy

The Microbiome Academy

Gut microbiome, the ecosystem of microorganisms living in gastrointestinal tracts, is increasingly recognized as a key to many aspects of human health. The Microbiome Academy is dedicated to providing scientific information and resources on gut microbiome development, how this process is shaped by nutrition, and the implications for health.

Web link: www.nestlenutrition-institute.org/nutrition-campus/microbiome-academy

The School Age Nutrition Academy

The first 1000 days are fully recognized as setting the foundations of a child's lifelong health. However, are you aware that the ultimate realization of an individual's full potential requires a successful bridging from early childhood to adulthood which lies between 5 to 15 years of age: The Transformative 10 years?

During The Transformative 10, boys and girls experience rapid and visible changes that will affect the rest of their lives. The Transformative 10 is the last major opportunity to shape growth and development, including healthy dietary habits, to maximize the chances of each child reaching their full potential.

Web link: www.nestlenutrition-institute.org/campus/school-age-nutrition-academy

The Sustainability Portal

Sustainability means "meeting the needs of the present without compromising the ability of future generations to meet their own needs". This really reflects the inextricable link between human health and planetary health. The Sustainability Portal is dedicated to provide basic concepts of different areas where support to sustainable actions can make a difference for humans and the planet.

Web link: www.nestlenutrition-institute.org/nutrition-campus/sustainability-portal

The Toddler Hub

Toddlerhood represents striking changes in children's overall development. The Toddler Hub is dedicated to provide scientific information and practical resources on toddler's nutrition, growth and development.

Web link: www.nestlenutrition-institute.org/nutrition-campus/toddler-hub



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