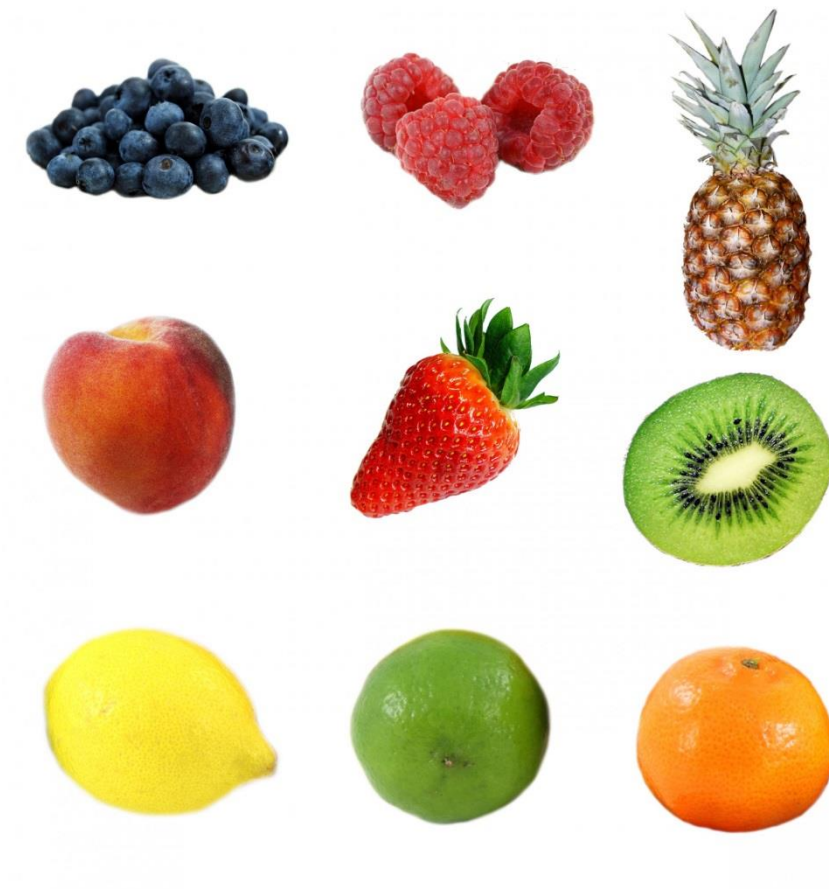


Paediatric Nutrition

Current Awareness Newsletter



June 2016

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Tables of Contents from Nutrition journals

The links below will take you to the full Tables of Contents.

If you require full articles please email: library@uhbristol.nhs.uk

American Journal of Clinical Nutrition

June 2016, Volume 103, Issue 6

Journal of Human Nutrition & Dietetics

June 2016, Volume 29, Issue 3

Journal of American Dietetics Association

June 2016, Volume 116, Issue 6

Gut

July 2016, Volume 65, Issue 7

Other Journals

British Medical Journal

The Lancet

Latest relevant Systematic Reviews from the Cochrane Library

Fasting for haemostasis in children with gastrointestinal bleeding

Multi-nutrient fortification of human milk for preterm infants

NHS Behind the Headlines

[Report attacks official guidance on low-fat diets](#)

Monday May 23 2016

"Low-fat diet bad for your health and cutting back on meat, dairy and eggs a disastrous mistake," the Daily Mirror reports. That is the main message of a controversial report attacking official UK guidelines on diet and weight loss...

[Diluted apple juice 'as good as' rehydration drinks for children](#)

Wednesday May 4 2016

"Scientists have revealed which fruit can stop toddlers crying due to stomach pains," says the Daily Mirror, missing the point of the study it reports on. The study looked at the use of diluted apple juice to prevent dehydration...

New activity in Uptodate

Diluted apple juice for hydration in young children with mild gastroenteritis (May 2016)

Commercial oral rehydration solutions (ORS) are recommended for rehydration of children with gastroenteritis. More readily available household beverages, such as fruit juice, tea, sports drinks, and soft drinks, have not been recommended due to concerns that their lower sodium concentration and higher osmolarity ([table 1](#)) could induce osmotic diarrhea, leading to hyponatremia. However, a randomized trial in children 6 to 60 months of age with mild gastroenteritis and no clinical signs of dehydration demonstrated that hydration with half-strength apple juice resulted in fewer episodes of treatment failure than ORS (17 versus 25 percent) [1]. Treatment failure was defined as any of the

following events occurring within seven days of enrollment: intravenous rehydration, hospitalization, subsequent unscheduled physician encounter, protracted symptoms, crossover to the other fluid, ≥ 3 percent weight loss, or signs of significant dehydration on a follow-up visit. Based on these findings, diluted apple juice followed by a permissive approach to fluid consumption is a reasonable alternative to ORS for hydration in young children with mild gastroenteritis and no clinical signs of dehydration. (See "[Oral rehydration therapy](#)", section on '[Common household beverages and fluids](#)'.)

Quick Exercise

Relative Risk

The relative risk is the ratio of probability of an event (a specified outcome) occurring in one group (i.e. those exposed to a particular intervention) compared to those in another group (i.e. those not exposed – a control group).

The relative risk can be interpreted using the following chart. First, you must determine whether the event (the outcome measure) is adverse or beneficial.

Relative Risk	Adverse outcome (e.g. death)	Beneficial outcome (e.g. recovery of limb function)
<1	Intervention better than control	Intervention worse than control
1	Intervention no better or worse than control	Intervention no better or worse than control
>1	Intervention worse than control	Intervention better than control

Have a go at interpreting the relative risks for these three studies using the chart above. Is the intervention better or worse than the control?

	Intervention	Population	Outcome measure (think: adverse or beneficial?)	Relative Risk
Study 1	Drug X	Adults at risk of a heart attack	Heart attack	1.2
Study 2	Therapy programme Y	Smokers	Smoking cessation	0.8
Study 3	Probiotic Z	Children on antibiotics	Diarrhoea	0.3

*Find out more about relative risk in one of our **Basic Statistics** training sessions. For more details, email library@uhbristol.nhs.uk.*

Current Awareness database articles

If you require full articles please email: library@uhbristol.nhs.uk

Title: Exercise intervention and cardiovascular risk factors in obese children. Comparison between obese youngsters taking part in a physical activity school-based programme with and without individualised diet counselling: the ACORDA project.

Citation: Annals of human biology, May 2016, vol. 43, no. 3, p. 183-190, 1464-5033 (May 2016)

Author(s): Aires, Luísa, Silva, Gustavo, Martins, Clarice, Marques, Elisa, Lagoa, Maria João, Ribeiro, José Carlos, Rêgo, Carla, Nascimento, Henrique, Pereira, Petronila Rocha, Santos-Silva, Alice, Belo, Luís, Mota, Jorge

Abstract: To determine the effects of a school-based exercise intervention programme on cardiovascular risk factors, including body fat (BF), metabolic profile and physical activity (PA) in children with and without individualised dietary counselling approach (IDC and WIDC). Forty-six overweight children from 6-16 years old (25 girls, 54.3%; age = 10.3 ± 2.8) of six schools took part in an 8-month interdisciplinary, school-based intervention programme. All children were engaged in PA classes, but only one group was exposed to individualised counselling. Blood pressure (BP), lipids and lipoproteins, accelerometer-based PA, percentage of body fat (%BF) and trunk fat (%TF) measures were taken before and after intervention. General Linear Model (Repeated Measures ANOVA) adjusted for age, maturation and height change was used to analyse the longitudinal effect of individualised counselling between two evaluations in each group. Favourable changes were observed for %BF, %TF, systolic BP and total cholesterol in the IDC group. Subjects WIDC only increased light and moderate-vigorous PA. In IDC, significant effects for time * group interactions were found for systolic BP, total cholesterol and LDL-cholesterol, indicating that counselling might add favourable changes in these markers, beyond those explained by PA and growth. School-based interventions can contribute to counteracting obesity in youth, particularly when individualised dietary counselling is provided. Therefore, the link between schools and professional counselling should be strengthened to ensure consolidated changes towards healthy behaviours.

Title: Picky eating in preschool children: Associations with dietary fibre intakes and stool hardness.

Citation: Appetite, May 2016, vol. 100, p. 263-271, 1095-8304 (May 1, 2016)

Author(s): Taylor, Caroline M, Northstone, Kate, Wernimont, Susan M, Emmett, Pauline M

Abstract: It has been suggested that constipation may be associated with picky eating. Constipation is a common condition in childhood and a low intake of dietary fibre may be a risk factor. Differences in fibre intake between picky and non-picky children and its relation to stool consistency is currently not well-understood. Children enrolled in the Avon Longitudinal Study of Parents and Children identified as picky eaters (PE) were compared with non-picky eaters (NPE): (1) to determine dietary fibre intake at 38 months; (2) to investigate whether any difference in dietary fibre intake was predictive of usual stool hardness at 42 months. PE was identified from questionnaires at 24 and 38 months. Usual stool hardness was identified from a questionnaire at 42 months. Dietary intake was assessed at 38 months with a food frequency questionnaire. Dietary fibre intake was lower in PE than NPE (mean difference -1.4 (95% CI -1.6, -1.2) g/day, p < 0.001). PE was strongly associated with

dietary fibre intake (adjusted regression model; unstandardised B -1.44 (95% CI -1.62, -1.24) g/day, $p < 0.001$). PE had a lower percentage of fibre from vegetables compared with NPE (8.9% vs 15.7%, respectively, $p < 0.001$). There was an association between PE and usually having hard stools (adjusted multinomial model; OR 1.31, 95% CI 1.07, 1.61; $p = 0.010$). This was attenuated when dietary fibre was included in the model, suggesting that fibre intake mediated the association (OR 1.16, 95% CI 0.94, 1.43, $p = 0.180$). Picky eating in 3-year-old children was associated with an increased prevalence of usually having hard stools. This association was mediated by low dietary fibre intake, particularly from vegetables, in PE. For children with PE, dietary advice aimed at increasing fibre intake may help avoid hard stools. Copyright © 2016 The Authors. Published by Elsevier Ltd.. All rights reserved.

Title: Nutrition, gut microbiota and child health outcomes.

Citation: Current opinion in clinical nutrition and metabolic care, May 2016, vol. 19, no. 3, p. 208-213, 1473-6519 (May 2016)

Author(s): Videhult, Frida Karlsson, West, Christina E

Abstract: Diet is one of the main drivers of the composition and function of the gut microbiota. The scope of this review is to summarize recent studies assessing the role of gut microbiota in clinical pediatric conditions and to review studies using nutritional approaches to favorably modify the gut microbiota to improve health outcomes in children. New studies underscore that breastfeeding and infant diet impact the gut microbiome and metagenome. A comprehensive study using metagenomic shotgun sequencing, suggests that the cessation of breastfeeding rather than the introduction of solid foods, drives the functional maturation of the infant gut microbiome toward an adult-like state. There is further support for the view that a disturbed early gut microbiota is implicated in allergic and autoimmune diseases. New studies using prebiotics, probiotics, and synbiotics in various pediatric disorders have yielded promising results, yet the evidence for specific guidelines on their use is still low. Intestinal dysbiosis is associated with several pediatric disorders but a cause-effect relationship remains to be clearly demonstrated in most conditions. Future studies using new systems biology approaches are anticipated to provide further insight into the functional capacities of the gut microbiome and its establishment in childhood. This may then lay the ground for improved treatment and prevention strategies targeting the gut microbiota.

Title: Nutritional support and the role of the stress response in critically ill children.

Citation: Current opinion in clinical nutrition and metabolic care, May 2016, vol. 19, no. 3, p. 226-233, 1473-6519 (May 2016)

Author(s): Joosten, Koen F M, Kerklaan, Dorian, Verbruggen, Sascha C A T

Abstract: Nutrition impacts outcome in critically ill children. Based on evolving neuro-endocrine, immunologic and metabolic alterations, three different phases can be proposed during the course of illness. The different phases each demand for tailored macronutrient intakes in critically ill children. Early enteral nutrition is associated with decreased morbidity and mortality, but several misconceptions concerning the provision of enteral nutrition prevent adequate intake. Parenteral nutrition in critically ill children is associated with potential disadvantages, as nosocomial infections, but evidence on the effect on clinical outcome is lacking. Nutrient restriction early during critical illness might be beneficial for short and long-term outcomes by decreasing the incidence of side-

effects and possibly by amplifying the acute catabolic stress response and stimulating autophagy and muscle integrity. Higher caloric and protein intake via the enteral route are associated with higher 60-day survival, asking for a more aggressive feeding approach in subsequent phases. Understanding the stress response to critical illness and its phases is essential for nutritional recommendations in critically ill children. Although parenteral nutrient restriction during the acute phase might be beneficial, inclining requirements ask for a more aggressive approach during the stable and recovery phase to enable recovery, growth and catch-up growth.

Title: Fluid intake and hydration status in obese vs normal weight children.

Citation: European journal of clinical nutrition, May 2016, vol. 70, no. 5, p. 560-565, 1476-5640 (May 2016)

Author(s): Maffei, C, Tommasi, M, Tomasselli, F, Spinelli, J, Fornari, E, Scattolo, N, Marigliano, M, Morandi, A

Abstract: Little is known on the relationship between obesity and hydration levels in children. This study assessed whether and by which mechanisms hydration status differs between obese and non-obese children. Hydration levels of 86 obese and 89 normal weight children (age: 7-11 years) were compared. Hydration was measured as the average free water reserve (FWR=urine output/24 h minus the obligatory urine output [total 24 h excreted solutes/97th percentile of urine osmolality of children with adequate water intake, that is, 830 mOsm/kg]) over 2 days. Three days of weighed dietary and fluid intakes were recorded. Non-parametric tests were used to compare variables that were skewed and to assess which variables correlated with hydration. Variables mediating the different hydration levels of obese and normal weight children were assessed by co-variance analysis. Obese children were less hydrated than normal weight peers [FWR=median (IQR): 0.80 (-0.80-2.80) hg/day vs 2.10 (0.10-4.45) hg/day, $P<0.02$; 32% of obese children vs 20% of non-obese peers had negative FWR, $P<0.001$]. Body mass index (BMI) z-score (z-BMI) and water intake from fluids correlated with FWR ($\rho=-0.18$ and 0.45 , respectively, both $P<0.05$). Water intake from fluids completely explained the different hydration between obese and normal weight children [FWR adjusted for water from fluids and z-BMI=2.44 (0.44) hg vs 2.10 (0.50) hg, $P=NS$; B coefficient of co-variation between FWR (hg/day) and water intake from fluids (hg/day)=0.47, $P<0.001$]. Obese children were less hydrated than normal weight ones because, taking into account their z-BMI, they drank less. Future prospective studies are needed to explore possible causal relationships between hydration and obesity.

Title: Association between nutritional status and outcomes in critically-ill pediatric patients - a systematic review.

Citation: Jornal de pediatria, May 2016, vol. 92, no. 3, p. 223-229, 1678-4782 (2016 May-Jun)

Author(s): Costa, Caroline A D, Tonial, Cristian T, Garcia, Pedro Celiny R

Abstract: To systematically review the evidence about the impact of nutritional status in critically-ill pediatric patients on the following outcomes during hospitalization in pediatric intensive care units: length of hospital stay, need for mechanical ventilation, and mortality. The search was carried out in the following databases: Lilacs (Latin American and Caribbean Health Sciences), MEDLINE (National Library of Medicine United States) and Embase (Elsevier Database). No filters were selected. A total of seven relevant articles about the subject were included. The publication period was between

1982 and 2012. All articles assessed the nutritional status of patients on admission at pediatric intensive care units and correlated it to at least one assessed outcome. A methodological quality questionnaire created by the authors was applied, which was based on some references and the researchers' experience. All included studies met the quality criteria, but only four met all the items. The studies included in this review suggest that nutritional depletion is associated with worse outcomes in pediatric intensive care units. However, studies are scarce and those existing show no methodological homogeneity, especially regarding nutritional status assessment and classification methods. Contemporary and well-designed studies are needed in order to properly assess the association between children's nutritional status and its impact on outcomes of these patients. Copyright © 2016 Sociedade Brasileira de Pediatria. Published by Elsevier Editora Ltda. All rights reserved.

Title: Infant feeding: beyond the nutritional aspects.

Citation: Jornal de pediatria, May 2016, vol. 92, no. 3 Suppl 1, p. S2., 1678-4782 (2016 May-Jun)

Author(s): Silva, Giselia A P, Costa, Karla A O, Giugliani, Elsa R J

Abstract: To draw attention to the importance of interaction between caregiver and child during feeding and the influence of parenting style on dietary habit formation. A search was performed in the PubMed and Scopus databases for articles addressing responsive feeding; the articles considered most relevant by the authors were selected. The way children are fed is decisive for the formation of their eating habits, especially the strategies that parents/caregivers use to stimulate feeding. In this context, responsive feeding has been emphasized, with the key principles: feed the infant directly and assist older children when they already eat on their own; feed them slowly and patiently, and encourage children to eat but do not force them; if the child refuses many types of foods, experiment with different food combinations, tastes, textures, and methods of encouragement; minimize distractions during meals; and make the meals an opportunity for learning and love, talking to the child during feeding and maintaining eye contact. It is the caregiver's responsibility to be sensitive to the child's signs and alleviate tensions during feeding, and make feeding time pleasurable; whereas it is the child's role to clearly express signs of hunger and satiety and be receptive to the caregiver. Responsive feeding is very important in dietary habit formation and should be encouraged by health professionals in their advice to families. Copyright © 2016. Published by Elsevier Editora Ltda.

Title: Fruit and Vegetable Intakes of Preschool Children Are Associated With Feeding Practices Facilitating Internalization of Extrinsic Motivation.

Citation: Journal of nutrition education and behavior, May 2016, vol. 48, no. 5, p. 311, 1878-2620 (May 2016)

Author(s): Shim, Jae Eun, Kim, Juhee, Lee, Yoonna, STRONG Kids Team

Abstract: To examine the association between feeding practices and both fruit and vegetable intakes of preschoolers. Cross-sectional; data collected from 2009 to 2010. Child care centers enrolled in the cohort of the Synergistic Theory and Research on Obesity and Nutrition Group Kids program. Three hundred and sixteen mother-child dyads were recruited in the baseline survey as primary caregivers of children aged 2-5 years. Ten aspects of maternal feeding practices were measured using a Comprehensive Feeding Practices Questionnaire. The frequency of children's fruit and vegetable

consumption was estimated by mothers. Spearman's rank order correlation and linear regression analysis between parental feeding practices and both fruit and vegetable consumption were adjusted for potential confounders. Pearson's correlation coefficients among 10 parental feeding practices were calculated. Children in the study consumed fruit 1.7 ± 0.9 times per day and vegetables 1.4 ± 0.8 times per day. Feeding practices of building a healthy home food environment and involvement were positively related and those of restriction for health were negatively related to children's vegetable consumption ($P < .001$); moreover, encouraging balance and variety and monitoring were positively related to children's fruit consumption ($P < .001$). The results of this study suggest that both fruit and vegetable intakes of preschool children are more likely to increase if parents employ feeding practices that encourage child autonomy, competence, and relatedness. Copyright © 2016 Society for Nutrition Education and Behavior. Published by Elsevier Inc. All rights reserved.

Title: Validation of a Nutritional Screening Tool for Ambulatory Use in Pediatrics.

Citation: Journal of pediatric gastroenterology and nutrition, May 2016, vol. 62, no. 5, p. 771-775, 1536-4801 (May 2016)

Author(s): Rub, Gal, Marderfeld, Luba, Poraz, Irit, Hartman, Corina, Amsel, Shlomo, Rosenbaum, Israel, Pergamentzev-Karpol, Shiri, Monsonego-Ornan, Efrat, Shamir, Raanan

Abstract: To evaluate the use of Screening Tool for the Assessment of Malnutrition in Pediatrics (STAMP) in a primary health care clinic in the community and to assess the impact of its use on medical staff's awareness of nutritional status. STAMP scoring system was tested as is and with modifications in the ambulatory setting. Nutritional risk according to STAMP was compared with a detailed nutritional assessment performed by a registered dietitian. Recording of nutrition-related data and anthropometric measurements in medical files were compared prior and post implementation. Sixty children were included (31 girls, 52%), ages between 1 and 6 years, mean age 2.8 ± 1.5 (mean \pm SD). STAMP scores yielded a fair agreement between STAMP and the dietitian's nutritional assessment: $\kappa = 0.47$ (95% confidence interval [CI] 0.24-0.7), sensitivity of 47.62% (95% CI 28.34-67.63). Modified STAMP yielded more substantial agreement: $\kappa = 0.57$ (95% CI 0.35-0.79), sensitivity of 76.19% (95% CI 54.91-89.37), specificity of 82.05% (95% CI 67.33-91.02). The use of STAMP resulted in an increase in recording of appetite, dietary intake, and anthropometric measurements. Modification of the STAMP improved nutritional risk evaluation in community setting. The use of STAMP in a primary health care clinic raised clinician's awareness to nutritional status. Further work will identify whether this could be translated into lower malnutrition rates and better child care.

Title: ESPGHAN Committee on Nutrition Position Paper. Intravenous Lipid Emulsions and Risk of Hepatotoxicity in Infants and Children: a Systematic Review and Meta-analysis.

Citation: Journal of pediatric gastroenterology and nutrition, May 2016, vol. 62, no. 5, p. 776-792, 1536-4801 (May 2016)

Author(s): Hojsak, Iva, Colomb, Virginie, Braegger, Christian, Bronsky, Jiri, Campoy, Cristina, Domellöf, Magnus, Embleton, Nicholas, Fidler Mis, Nataša, Hulst, Jessie M, Indrio, Flavia, Lapillonne, Alexandre, Mihatsch, Walter, Molgaard, Christian, van Goudoever, Johannes, Fewtrell, Mary, ESPGHAN Committee on Nutrition

Abstract: The aim of the present article was to perform a systematic review with meta-analysis of available scientific evidence regarding the role of different intravenous lipid emulsions (ILE) in the pathogenesis of cholestasis and parenteral nutrition-associated liver disease. A systematic review of the literature (up to March 2015) identified 23 randomized controlled trials (RCTs). Of these, 17 were performed in preterm infants or critically ill neonates with a short duration of intervention, 2 in older children with short-term use (following surgery or bone marrow transplantation), 1 in neonates with long-term use, and 3 in infants and children receiving long-term parenteral nutrition (PN). Meta-analysis showed no differences in the rate of cholestasis or bilirubin levels associated with short-term use of different ILEs. Because of high heterogeneity of the long-term studies no meta-analysis could be performed. Available studies found that the use of multicomponent fish oil (FO)-containing ILE compared with pure soya bean oil (SO), ILE-reduced liver enzymes, and bilirubin levels in noncholestatic children on long-term PN and one other RCT found that FO-based ILE-reversed cholestasis in a proportion of patients. The ESPGHAN Committee on Nutrition concludes that there is no evidence of a difference in rates of cholestasis or bilirubin levels between different ILE for short-term use in neonates. The use of multicomponent FO-containing ILE may contribute to a decrease in total bilirubin levels in children with IF on prolonged PN. Well-designed RCTs are, however, lacking and long-term effects have not been determined.

Title: Implementation of Nutrition Support Guidelines May Affect Energy and Protein Intake in the Pediatric Intensive Care Unit.

Citation: Journal of the Academy of Nutrition and Dietetics, May 2016, vol. 116, no. 5, p. 844, 2212-2672 (May 2016)

Author(s): Kyle, Ursula G, Lucas, Laura A, Mackey, Guisela, Silva, Jaime C, Lusk, Jennifer, Orellana, Renan, Shekerdemian, Lara S, Coss-Bu, Jorge A

Abstract: Critically ill children are at risk of developing malnutrition, and undernutrition is a risk factor for morbidity and mortality. The study evaluated changes in the energy and protein intake before and after implementation of nutrition support (NS) guidelines for a pediatric critical care unit (PICU). This retrospective study documented energy and protein intake for the first 8 days of PICU stay. Basal metabolic rate and protein needs were estimated by Schofield and American Society for Parenteral and Enteral Nutrition Guidelines, respectively. Three hundred thirty-five children from August to December 2012 (pre-implementation) and 185 from October to December 2013 (post-implementation). Implementation of NS Guidelines. Changes in actual energy and protein intake in the post- compared with the pre-implementation period. Unpaired t tests, Pearson's χ^2 (unadjusted analysis) were used. Logistic regressions were used to estimate odds ratios and 95% confidence intervals for protein and energy intake, adjusted for age, sex, and Pediatric Risk of Mortality score. After the implementation of guidelines, significant improvements were seen during days 5 through 8 in energy intake among children 2 years of age and older, and in protein intake in both age groups ($P < 0.05$). For the 8-day period, statistically or clinically significant improvements occurred in the cumulative protein deficit/kg/day, as follows: younger than 2-year-olds, -1.5 ± 0.7 g/kg/day vs -1.3 ± 0.8 g/kg/day, $P = 0.02$; 2-year-olds or older, -1.0 ± 0.6 g/kg/day vs -0.7 ± 0.8 g/kg/day, $P = 0.01$; and for the energy deficit/kg/d in 2-year-olds and older, -17.2 ± 13.6 kcal/kg/day vs -13.3 ± 18.1 kcal/kg/day, unpaired t test, $P = 0.07$, in the pre- vs post-implementation period, respectively. The implementation of NS guidelines was associated with improvements in total energy in 2-year-olds and older and protein in younger than 2 and 2 years and older children by days 5 through 8, and protein deficits were significantly lower in the post- vs the pre-implementation period. The implementation of NS guidelines may have had a positive effect on improving NS in critically ill children.

Title: Single-center assessment of nutritional counseling in preventing excessive weight gain in pediatric renal transplants recipients.

Citation: Pediatric transplantation, May 2016, vol. 20, no. 3, p. 388-394, 1399-3046 (May 2016)

Author(s): Cameron, Camilla, Krmar, Rafael T

Abstract: Post-transplantation obesity is a common complication that is associated with a higher risk for decreased allograft function and hypertension. However, the role of diet intervention on reducing post-transplantation obesity is relatively unknown. We investigated the clinical relevance of dietary counseling on the prevalence of overweight/obesity during the first two yr following renal transplantation. The computerized patient records of 42 recipients (31 males) aged 6.3 ± 4.8 yr at transplantation were reviewed. All patients systematically underwent yearly dietary assessment/counseling (motivational interviewing technique) and measurement of renal function and ABPM. At transplantation, 14.2% of patients were overweight/obese, which increased to 42.8% by two yr post-transplantation ($p = 0.004$). The majority of patients experienced a significant increase in BMI SDS during the first six months post-transplantation that remained sustained throughout the duration of the follow-up period ($p = 0.001$). By two yr post-transplantation, there were no observable differences between patients classified as having normal BMI or being overweight/obese with regard to renal function and controlled hypertension. The application of yearly tailored dietary assessment/counseling had a poor effect on preventing post-transplantation weight gain, suggesting the need for more comprehensive interventions to reduce post-transplant obesity. © 2016 John Wiley & Sons A/S. Published by John Wiley & Sons Ltd.

Title: Revised WIC Food Package and Children's Diet Quality.

Citation: Pediatrics, May 2016, vol. 137, no. 5, 1098-4275 (May 2016)

Author(s): Tester, June M, Leung, Cindy W, Crawford, Patricia B

Abstract: In October 2009, the Special Supplemental Nutrition Program for Women, Infant, and Children (WIC) food package was revised to include more fruits, vegetables, whole grains, and lower-fat milk. We examined the impact of the WIC food package revisions on the diet quality of children in households using WIC. A total of 1197 children aged 2 to 4 years from low-income households were studied from before and after the policy implementation (using the 2003-2008 and 2011-2012 National Health and Nutrition Examination Survey). The Healthy Eating Index-2010 (HEI-2010) was calculated using two 24-hour diet recalls. Linear regression was used to examine the difference in HEI-2010 score attributable to the food package change, adjusting for baseline and secular trends among WIC participants and nonparticipants, as well as child and household characteristics. Component scores of the HEI-2010 index were analyzed with generalized linear models. Average HEI-2010 scores for participants and nonparticipants were 52.4 and 50.0 at baseline, and 58.3 and 52.4 after the policy change, respectively. The WIC food package revisions were associated with an adjusted average of 3.7 additional HEI-2010 points (95% confidence interval, 0.6-6.9) for WIC participants compared with nonparticipants. In particular, the revisions were associated with a 3.4-fold relative increase (95% confidence interval, 1.3-9.4) in the Greens and Beans component score for WIC participants compared with nonparticipants. Results from this national sample indicate that the WIC food package revisions were associated with higher diet quality for children participating in WIC. Copyright © 2016 by the American Academy of Pediatrics.

Full Text:

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Title: The effects of ketogenic diet on the Th17/Treg cells imbalance in patients with intractable childhood epilepsy.

Citation: Seizure, May 2016, vol. 38, p. 17-22, 1532-2688 (May 2016)

Author(s): Ni, Fen-Fen, Li, Cheng-Rong, Liao, Jian-Xiang, Wang, Guo-Bing, Lin, Su-Fang, Xia, Yu, Wen, Jia-Lun

Abstract: The ketogenic diet (KD) is an effective treatment for intractable epilepsy (IE), however the therapeutic mechanism is still unclear. This study was designed to investigate T helper type 17/regulatory T cell (Th17/Treg) levels in children with IE and age-matched healthy controls following KD. Circulating levels of Th17/Treg cells were analyzed by flow cytometry. Plasma concentration of interleukin (IL)-17 was measured by cytometric bead array assay. Real-time PCR was performed to measure mRNA levels of mTOR, HIF1 α and Th17/Treg associated factors in purified CD4(+)CD25(+) T and CD4(+)CD25(-) T cells. By one-way ANOVA, the proportion of circulating Th17 cells and expression of IL-17A and ROR γ t were significantly higher ($P < .05$), while the proportion of circulating Tregs and expression of Foxp3, GITR, CTLA-4 were significantly lower ($P < .05$) in IE patients than healthy subjects. However, these alternations were reversed following KD ($P < .05$). In CD4(+)CD25(+) T and CD4(+)CD25(-) T cells mTOR and HIF1 α expression were significantly higher in IE patients ($P < .05$), however KD reduced mTOR and HIF1 α expression ($P < .05$). The plasma IL-17A concentrations were higher in IE patients than controls ($P < .05$). KD partially reduced IL-17A levels ($P < .05$). Our results suggest that Th17/Treg imbalance is characteristic of childhood IE, and may contribute to IE pathogenesis. KD treatment is able to correct this imbalance, probably via inhabiting the mTOR/HIF-1 α signaling pathway.

Title: Energy and nutrient intakes of young children in the UK: findings from the Gemini twin cohort.

Citation: The British journal of nutrition, May 2016, vol. 115, no. 10, p. 1843-1850, 1475-2662 (May 2016)

Author(s): Syrad, H, Llewellyn, C H, van Jaarsveld, C H M, Johnson, L, Jebb, S A, Wardle, J

Abstract: Data on the diets of young children in the UK are limited, despite growing evidence of the importance of early diet for long-term health. We used the largest contemporary dietary data set to describe the intake of 21-month-old children in the UK. Parents of 2336 children aged 21 months from the UK Gemini twin cohort completed 3-d diet diaries in 2008/2009. Family background information was obtained from questionnaires completed 8 months after birth. Mean total daily intakes of energy, macronutrients (g and %E) and micronutrients from food and beverages, including and excluding supplements, were derived. Comparisons with UK dietary reference values (DRV) were made using t tests and general linear regression models, respectively. Daily energy intake (kJ), protein (g) and most micronutrients exceeded DRV, except for vitamin D and Fe, where 96 or 84 % and 70 or 6 % of children did not achieve the reference nutrient intake or lower reference nutrient intake (LRNI), respectively, even with supplementation. These findings reflect similar observations in the smaller sample of children aged 18-36 months in the National Diet and Nutrition Survey. At a

population level, young children in the UK are exceeding recommended daily intakes of energy and protein, potentially increasing their risk of obesity. The majority of children are not meeting the LRNI for vitamin D, largely reflecting inadequate use of the supplements recommended at this age. Parents may need more guidance on how to achieve healthy energy and nutrient intakes for young children.

Title: Update on Early Nutrition and Food Allergy in Children.

Citation: Yonsei medical journal, May 2016, vol. 57, no. 3, p. 542-548, 1976-2437 (May 2016)

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Abstract: With growing evidence of an increase in the prevalence, food allergy has been emerged as a new public health problem. As treatment and management of food allergy remain challenging, more attention has been paid to the importance of prevention of food allergy. Although the exact mechanism of recent epidemic is not fully understood, it is suggested that nutritional exposure in early life may play an important role in food allergy development. The underlying hypothesis is that nutritional status or food exposure in the critical period of fetal development can affect the programming of immune system and modify the risk of immunologic reactions to foods in postnatal life. We review accumulating epidemiological studies to examine an association between nutritional exposure during pregnancy or early infancy and food allergy development in children. We also discuss recent advances in the studies of the genetic and epigenetic regulation of food allergy and evaluate the role of early nutrition in food allergy development to provide a new perspective on the prevention of food allergy.

Full Text:

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