JOURNAL ABSTRACTS

Association between maternal intake of n-6 to n-3 fatty acid ratio during pregnancy and infant neurodevelopment at 6 months of age: results of the MOCEH cohort study.

Kim H[1], Kim H[1], Lee E[2], Kim Y[3], Ha EH[4], Chang N[5].

ABSTRACT

BACKGROUND & AIMS: Long-chain polyunsaturated fatty acids (LC-PUFAs) are essential for infant neurodevelopment. The nutritional adequacy of dietary LC-PUFAs depends not only on the LC-PUFAs intake but also on the n-6 to n-3 fatty acid ratio (n-6/n-3 PUFAs). This study aimed to identify the association between the maternal dietary n-6/n-3 PUFAs and motor and cognitive development of infants at 6 months of age. **METHODS:** We used data from 960 participants in the Mothers and Children's Environmental Health (MOCEH) study, which is a multi-center prospective cohort study. Dietary intake of pregnant women was assessed by a one-day 24-h recall method. Food consumption of infants was estimated based on the volume of breast milk and weaning foods. The duration of each feed was used to estimate the likely volume of milk consumed. Dietary intake of infants at 6 months was also assessed by a 24-h recall method. Cognitive and motor development of infants at 6 months of age was assessed by the Korean Bayley scales of infant development edition II (BSID-II) including the mental developmental index (MDI) and the psychomotor developmental index (PDI). **RESULTS:** Maternal intakes of n-6/n-3 PUFAs and linoleic acid (LA)-to-α-linolenic acid (ALA) ratio (LA/ALA) were 9.7±6.3 and 11.12±6.9, respectively. Multiple regression analysis, after adjusting for covariates, showed that n-6/n-3 PUFAs was negatively associated with both the MDI (ß= -0.1674, P = 0.0291) and PDI (ß= -0.1947, P = 0.0380) at 6 months of age. These inverse associations were also observed between LA/ALA and both the MDI and PDI (MDI; ß = -0.1567; P = 0.0310, PDI; ß = -0.1855; P = 0.0367). Multiple logistic regression analysis, with the covariates, showed that infants whose mother's LA/ALA were ranked in the 2nd, 3rd, and 4th quartile were at approximately twice the risk with more than twice the risk of delayed performance on the PDI compared to the lowest quartile (1st vs. 2nd; OR = 2.965; 95% CI = 1.376 - 6.390, 1st vs. 3rd; OR = 3.047; 95% CI = 1.374 - 6.756 and 1st vs. 4th; OR = 2.551; 95% CI = 1.160 - 5.607). **CONCLUSIONS:** Both the maternal dietary n-6/n-3 PUFAs and LA/ALA intake were significantly associated with the mental and psychomotor development of infants at 6 months of age. Thus, maintaining low n-6/n-3 PUFAs and LA/ALA is encouraged for women during pregnancy.

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https://nutritionj.biomedcentral.com/track/pdf/10.1186/s12937-017-0242-9?site=nutritionj.biomedcentral.com

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Spinal Manipulative Therapy for Adolescent Idiopathic Scoliosis: A Systematic Review.

Théroux J, Stomski N, Losco CD, Khadra C, Labelle H, Le May S.

ABSTRACT

OBJECTIVE: The purpose of this study was to perform a systematic review of clinical trials of spinal manipulative therapy for adolescent idiopathic scoliosis. **METHODS:** Search strategies were developed for PubMed, CINHAL, and CENTRAL databases. Studies were included through June 2016 if they were prospective trials that evaluated spinal manipulative therapy (eg, chiropractic, osteopathic, physical therapy) for adolescent idiopathic scoliosis. Data were extracted and assessed by 2 independent reviewers. Cochrane risk of bias tools were used to assess the quality of the included studies. Data were reported qualitatively because heterogeneity prevented statistical pooling. **RESULTS:** Four studies satisfied the inclusion criteria and were critically appraised. The findings of the included studies indicated that spinal manipulative therapy might be effective for preventing curve progression or reducing Cobb angle. However, the lack of controls and small sample sizes precluded robust estimation of the interventions' effect sizes. **CONCLUSION:** There is currently insufficient evidence to establish whether spinal manipulative therapy may be beneficial for adolescent idiopathic scoliosis. The results of the included studies suggest that spinal manipulative therapy may be a promising treatment, but these studies were all at substantial risk of bias. Further high-quality studies are warranted to conclusively determine if spinal manipulative therapy may be effective in the management of adolescent idiopathic scoliosis.

Breastfeeding in Infancy is Associated with Body Mass Index in Adolescence: A Retrospective Cohort Study Comparing American Indians/Alaska Natives and Non-Hispanic Whites.

Zamora-Kapoor A, Omidpanah A, Nelson LA, Kuo AA, Harris R, Buchwald DS.

ABSTRACT

BACKGROUND: American Indians and Alaska Natives have the highest obesity prevalence in the United States, but the influence of early childhood variables on body mass index (BMI; calculated as kg/m2) is not well understood. Previous studies have investigated the association between breastfeeding in infancy and offspring BMI, but rarely included American Indians and Alaska Natives. **OBJECTIVE:** This study investigated the association between breastfeeding in infancy and BMI in American Indians and Alaska Native and non-Hispanic white adolescents and young adults. **DESIGN:** Longitudinal analysis based on data from the National Longitudinal Study of Adolescent to Adult Health (1994 to 2008). **PARTICIPANTS:** Adolescent respondents who self-identified as American Indians and Alaska Native or non-Hispanic white, and whose parents completed the parental questionnaire, reported their height and weight. The final sample included 655 American Indians and Alaska Native and 10,305 non-Hispanic white respondents. **STATISTICAL ANALYSES PERFORMED:** Generalized estimating equations were used to measure the mean differences, 95% CIs, and P values of the association between breastfeeding in infancy and offspring BMI in adolescence, stratifying by race, and adjusting for demographic and socioeconomic variables. **RESULTS:** The length of breastfeeding was inversely associated with BMI in both populations. American Indians and Alaska Natives that were breastfed for 6 to 12 months or for more than 12 months had a mean BMI of 2.69 (95% CI -3.46 to -1.92; P<0.01) and 1.54 (95% CI -2.75 to -0.33; P<0.05) units lower than those that were never breastfed. Non-Hispanic whites that were breastfed for 3 to 6 months, 6 to 12 months, or more than 12 months had a mean BMI of 0.71 (95% CI -0.93 to -0.50; P<0.01), 0.68 (95% CI -0.87 to -0.50; P<0.01), and 0.85 (95% CI -1.09 to -0.62; P<0.01) units lower than those that were never breastfed. The association between the length of breastfeeding and offspring BMI varied by race (P<0.01). **CONCLUSIONS:** Breastfeeding in infancy is associated with lower mean BMI. Future research should investigate causal pathways and whether interventions promoting breastfeeding in American Indians and Alaska Natives can prevent increasing BMI.

Back Pain Prevalence is Associated with Curve-type and Severity in Adolescents with Idiopathic Scoliosis: A Cross-sectional Study.

Théroux J, Le May S, Hebert JJ, Labelle H.

ABSTRACT

STUDY DESIGN: A cross-sectional study. **OBJECTIVES:** he aim of this study was to investigate spinal pain prevalence in adolescents with idiopathic scoliosis (AIS) and to explore associations between pain intensity and pain-related disability with scoliosis site, severity, and spinal bracing. **SUMMARY OF BACKGROUND DATA:** The causal link between spinal pain and AIS remains unclear. Spinal asymmetry has been recognized as a back pain risk factor, which is a known cause of care-seeking in adolescents. **METHODS:** Participants were recruited from an outpatient tertiary-care scoliosis clinic. Pain intensity and pain-related disability were measured by the Brief Pain Inventory questionnaire and the Roland-Morris Disability Questionnaire. Scoliosis severity estimation was performed using Cobb angles. Associations were explored using multiple linear regressions and reported with unstandardized beta coefficients (ß) adjusted for age and sex. **RESULTS:** We recruited 500 patients (85% female) with mean (SD) age of 14.2 (1.8) years. Means (SD) of thoracic and lumbar Cobb angle were 24.54(9.77) and 24.13 (12.40), respectively. Spinal pain prevalence was 68% [95% confidence interval (95% CI): 64.5-72.4] with a mean intensity of 1.63 (SD, 1.89). Spinal pain intensity was positively associated with scoliosis severity in the main thoracic (P=0.003) and lumbar (P=0.001) regions. The mean (SD) disability score was 1.73 (2.98). Disability was positively associated with scoliosis severity in the proximal thoracic (P=0.035), main thoracic (P=0.000), and lumbar (P=0.000) regions.Spinal bracing was associated with lower spinal pain intensity in the thoracic (P=0.000) and lumbar regions (P=0.009). Bracing was also related with lower disability for all spinal areas (P<0.045). **CONCLUSION:** Spinal pain is common among patients with AIS, and greater spinal deformity was associated with higher pain intensity. These findings should inform clinical decision-making when caring for patients with AIS. **LEVEL OF EVIDENCE:** 3.

Infant feeding and growth trajectory patterns in childhood and body composition in young adulthood.

Rzehak P, Oddy WH, Mearin ML, Grote V, Mori TA, Szajewska H, Shamir R, Koletzko S, Weber M, Beilin LJ, Huang RC Koletzko B; WP working group of the Early Nutrition Project.

ABSTRACT

Background: Growth patterns of breastfed and formula-fed infants may differ, with formula-fed infants growing more rapidly than breastfed infants into childhood and adulthood. **Objective:** Our objectives were to identify growth patterns and investigate early nutritional programming potential on growth patterns at 6 y and on body composition at 20 y. **Design:** The West Australian Pregnancy Cohort (Raine) Study and 3 European cohort studies (European Childhood Obesity Trial, Norwegian Human Milk Study, and Prevention of Coeliac Disease) that collaborate in the European Union-funded Early Nutrition project combined, harmonized, and pooled data on full breastfeeding, anthropometry, and body composition. Latent growth mixture modeling was applied to identify growth patterns among the 6708 individual growth trajectories. The association of full breastfeeding for <3 mo compared with ≥3 mo with the identified trajectory classes was assessed by logistic regression. Differences in body composition at 20 y among the identified trajectory classes were tested by analysis of variance. **Results:** Three body mass index (BMI; in kg/m2) trajectory patterns were identified and labeled as follows- class 1: persistent, accelerating, rapid growth (5%); class 2: early, nonpersistent, rapid growth (40%); and class 3: normative growth (55%). A shorter duration of full breastfeeding for <3 mo was associated with being in rapid-growth class 1 (OR: 2.66; 95% CI: 1.48, 4.79) and class 2 (OR: 1.96; 95% CI: 1.51, 2.55) rather than the normative-growth class 3 after adjustment for covariates. Both rapid-growth classes showed significant associations with body composition at 20 y (P < 0.0001).Conclusions: Full breastfeeding for <3 mo compared with ≥3 mo may be associated with rapid growth in early childhood and body composition in young adulthood. Rapid-growth patterns in early childhood could be a mediating link between infant feeding and long-term obesity risk.

Elbow Injuries in Pediatric Overhead Athletes.

Wong TT, Lin DJ, Ayyala RS, Kazam JK.

ABSTRACT

OBJECTIVE: The purpose of this article is to discuss common elbow injuries found in pediatric athletes who participate in sports that entail overhead movements with focus on mechanism, clinical features, imaging appearance, and treatment options. **CONCLUSION:** Elbow injuries are commonly seen in pediatric overhead athletes and have been on the rise owing to the increased participation in and demand of youth sports. Imaging plays a critical role in identifying the type and severity of injury, which helps to determine appropriate treatment options.

Beverage Consumption Patterns at Age 13 to 17 Years Are Associated with Weight, Height, and Body Mass Index at Age 17 Years.

Marshall TA, Van Buren JM, Warren JJ, Cavanaugh JE, Levy SM.

ABSTRACT

BACKGROUND: Sugar-sweetened beverages (SSBs) have been associated with obesity in children and adults; however, associations between beverage patterns and obesity are not understood. **OBJECTIVE:** Our aim was to describe beverage patterns during adolescence and associations between adolescent beverage patterns and anthropometric measures at age 17 years. **DESIGN:** We conducted a cross-sectional analyses of longitudinally collected data. **PARTICIPANTS/SETTING:** Data from participants in the longitudinal Iowa Fluoride Study having at least one beverage questionnaire completed between ages 13.0 and 14.0 years, having a second questionnaire completed between 16.0 and 17.0 years, and attending clinic examination for weight and height measurements at age 17 years (n=369) were included. **EXPOSURE:** Beverages were collapsed into four categories (ie, 100% juice, milk, water and other sugar-free beverages, and SSBs) for the purpose of clustering. Five beverage clusters were identified from standardized age 13 to 17 years mean daily beverage intakes and named by the authors for the dominant beverage: juice, milk, water/sugar-free beverages, neutral, and SSB. **OUTCOMES:** Weight, height, and body mass index (BMI; calculated as kg/m2) at age 17 years were analyzed. **STATISTICAL ANALYSES:** We used Ward's method for clustering of beverage variables, one-way analysis of variance and x2 tests for bivariable associations, and y-regression for associations of weight or BMI (outcomes) with beverage clusters and demographic variables. Linear regression was used for associations of height (outcome) with beverage clusters and demographic variables. **RESULTS:** Participants with family incomes <$60,000 trended shorter (1.5±0.8 cm; P=0.070) and were heavier (2.0±0.7 BMI units; P=0.002) than participants with family incomes ≥$60,000/year. Adjusted mean weight, height, and BMI estimates differed by beverage cluster membership. For example, on average, male and female members of the neutral cluster were 4.5 cm (P=0.010) and 4.2 cm (P=0.034) shorter, respectively, than members of the milk cluster. For members of the juice cluster, mean BMI was lower than for members of the milk cluster (by 2.4 units), water/sugar-free beverage cluster (3.5 units), neutral cluster (2.2 units), and SSB cluster (3.2 units) (all P<0.05). **CONCLUSIONS:** Beverage patterns at ages 13 to 17 years were associated with anthropometric measures and BMI at age 17 years in this sample. Beverage patterns might be characteristic of overall food choices and dietary behaviors that influence growth.

The risk associated with spinal manipulation: an overview of reviews.

Nielsen SM, Tarp S, Christensen R, Bliddal H, Klokker L, Henriksen M.

ABSTRACT

BACKGROUND: Spinal manipulative therapy (SMT) is a widely used manual treatment, but many reviews exist with conflicting conclusions about the safety of SMT. We performed an overview of reviews to elucidate and quantify the risk of serious adverse events (SAEs) associated with SMT. **METHODS:** We searched five electronic databases from inception to December 8, 2015. We included reviews on any type of studies, patients, and SMT technique. Our primary outcome was SAEs. Quality of the included reviews was assessed using a measurement tool to assess systematic reviews (AMSTAR). Since there were insufficient data for calculating incidence rates of SAEs, we used an alternative approach; the conclusions regarding safety of SMT were extracted for each review, and the communicated opinion were judged by two reviewers independently as safe, harmful, or neutral/unclear. Risk ratios (RRs) of a review communicating that SMT is safe and meeting the requirements for each AMSTAR item, were calculated. **RESULTS:** We identified 283 eligible reviews, but only 118 provided data for synthesis. The most frequently described adverse events (AEs) were stroke, headache, and vertebral artery dissection. Fifty-four reviews (46%) expressed that SMT is safe, 15 (13%) expressed that SMT is harmful, and 49 reviews (42%) were neutral or unclear. Thirteen reviews reported incidence estimates for SAEs, roughly ranging from 1 in 20,000 to 1 in 250,000,000 manipulations. Low methodological quality was present, with a median of 4 of 11 AMSTAR items met (interquartile range, 3 to 6). Reviews meeting the requirements for each of the AMSTAR items (i.e. good internal validity) had a higher chance of expressing that SMT is safe. **CONCLUSIONS:** It is currently not possible to provide an overall conclusion about the safety of SMT; however, the types of SAEs reported can indeed be significant, sustaining that some risk is present. High quality research and consistent reporting of AEs and SAEs are needed.

Full text accessed at: https://systematicreviewsjournal.biomedcentral.com/articles/10.1186/s13643-017-0458-y