

Bracing and exercise-based treatment for idiopathic scoliosis.

Kalichman L, Kendelker L, Bezalel T.

J Bodyw Mov Ther. 2016 Jan;20(1):56-64. doi: 10.1016/j.jbmt.2015.04.007. Epub 2015 Apr 23.

ABSTRACT

BACKGROUND: Various conservative therapies are available for treating adolescent idiopathic scoliosis (AIS), however, the disparities between them and the evidence of their efficacy and effectiveness is still unclear. **OBJECTIVES:** To evaluate the effectiveness of different conservative treatments on AIS. **METHODS:** A literature-based narrative review of the English language medical literature. **RESULTS AND CONCLUSIONS:** The most appropriate treatment for each patient should be chosen individually and based on various parameters. Bracing has been found to be a most effective conservative treatment for AIS. There is limited evidence that specific physical exercises also an effective intervention for AIS. Exercise-based physical therapy, if correctly administered, can prevent a worsening of the curve and may decrease need for bracing. In addition, physical exercises were found to be the only treatment improving respiratory function. Combining bracing with exercise increases treatment efficacy compared with a single treatment. Additional, well-designed and good quality studies are required to assess the effectiveness of different conservative methods in treating AIS.

KEYWORDS: Adolescent idiopathic scoliosis; Bracing; Conservative treatment; Exercises; Review

Current management of pregnancy-related low back pain: a national cross-sectional survey of U.K. physiotherapists.

Bishop A, Holden MA, Ogollah RO, Foster NE; EASE Back Study Team.

Physiotherapy. 2016 Mar;102(1):78-85. doi: 10.1016/j.physio.2015.02.003. Epub 2015 Apr 19.

ABSTRACT

BACKGROUND: Pregnancy-related low back pain (LBP) is very common. Evidence from a systematic review supports the use of exercise and acupuncture, although little is known about the care received by women with pregnancy-related back pain in the U.K. **OBJECTIVE:** To describe current acupuncture and standard care management of pregnancy-related LBP by U.K. physiotherapists. **DESIGN:** Cross-sectional survey of physiotherapists with experience of treating women with pregnancy-related LBP from three professional networks of the Chartered Society of Physiotherapy. **METHODS:** In total, 1093 physiotherapists were mailed a questionnaire. The questionnaire captured respondents' demographic and practice setting information, and experience of managing women with pregnancy-related back pain, and investigated the reported management of pregnancy-related LBP using a patient case vignette of a specific, 'typical' case. **RESULTS:** The overall response rate was 58% (629/1093). Four hundred and ninety-nine physiotherapists had experience of treating women with pregnancy-related LBP and were included in the analysis. Most respondents worked wholly or partly in the U.K. National Health Service (78%). Most respondents reported that they treat patients with pregnancy-related LBP in three to four one-to-one treatment sessions over 3 to 6 weeks. The results show that a range of management strategies are employed for pregnancy-related LBP, and multimodal management is common. The most common reported treatment was home exercises (94%), and 24% of physiotherapists reported that they would use acupuncture with the patient described in the vignette. **CONCLUSIONS:** This study provides the first robust data on the management of pregnancy-related LBP by U.K. physiotherapists. Multimodal management is common, although exercise is the most frequently used treatment for pregnancy-related

KEYWORDS: Acupuncture; Low back pain; Physiotherapy; Pregnancy; Survey

Sick leave and healthcare utilization in women reporting pregnancy related low back pain and/or pelvic girdle pain at 14 months postpartum.

Bergström C, Persson M, Mogren I.

Chiropr Man Therap. 2016 Feb 15;24:7. doi: 10.1186/s12998-016-0088-9. eCollection 2016.

ABSTRACT

BACKGROUND: Pregnancy related low back pain (PLBP) and pelvic girdle pain (PGP) are considered common complications of pregnancy. The long-term consequences for women with persistent PLBP/PGP postpartum are under-investigated. The main objective was to investigate the prevalence, pattern and degree of sick leave as well as healthcare utilization and its perceived effect in women with persistent PLBP/PGP at 12 months postpartum. **METHOD:** This is a follow-up study of a cohort involving of a sample of women, who delivered from January 1(st) 2002 to April 30(th) in 2002 at Umeå University Hospital and Sunderby Hospital, and who reported PLBP/PGP during pregnancy. A total of 639 women were followed-up by a second questionnaire (Q2) at approximately 6 months postpartum. Women with persistent PLBP/PGP at the second questionnaire (N=200) were sent a third questionnaire (Q3) at approximately 12 months postpartum. **RESULTS:** The final study sample consisted of 176 women reporting PLBP/PGP postpartum where N = 34 (19.3 %) reported 'no' pain, N = 115 (65.3 %) 'recurrent' pain, and N = 27 (15.3 %) 'continuous' pain. The vast majority (92.4 %) of women reported that they had neither been on sick leave nor sought any healthcare services (64.1 %) during the past 6 months at Q3. Women with 'continuous' pain at Q3 reported a higher extent of sick leave and healthcare seeking behaviour compared to women with 'recurrent' pain at Q3. Most women with persistent PLBP/PGP had been on sick leave on a full-time basis. The most commonly sought healthcare was physiotherapy, followed by consultation with a medical doctor, acupuncture and chiropractic. **CONCLUSION:** Most women did not report any sick leave or sought any healthcare due to PLBP/PGP the past 6 months at Q3. However, women with 'continuous' PLBP/PGP 14 months postpartum did report a higher prevalence and degree of sick leave and sought healthcare to a higher extent compared to women with 'recurrent' PLBP/PGP at Q3. Women with more pronounced symptoms might constitute a specific subgroup of patients with a less favourable long-term outcome, thus PLBP/PGP needs to be addressed early in pregnancy to reduce both individual suffering and the risk of transition into chronicity.

KEYWORDS: Cohort studies; Female; Healthcare utilization; Pelvic girdle pain; Postpartum period; Pregnancy; Pregnancy complications; Pregnancy related low back pain; Sick leave

Intakes of fish and polyunsaturated fatty acids and mild-to-severe cognitive impairment risks: a dose-response meta-analysis of 21 cohort studies.

Zhang Y, Chen J, Qiu J, Li Y, Wang J, Jiao J.

Am J Clin Nutr. 2016 Feb;103(2):330-40. doi: 10.3945/ajcn.115.124081. Epub 2015 Dec 30.

ABSTRACT

BACKGROUND: The intake of fish and polyunsaturated fatty acids (PUFAs) may benefit cognitive function. However, optimal intake recommendations for protection are unknown. **OBJECTIVE:** We systematically investigated associations between fish and PUFA intake and mild-to-severe cognitive impairment risk. **DESIGN:** Studies that reported risk estimates for mild cognitive impairment (MCI), cognitive decline, dementia, Alzheimer disease (AD), or Parkinson disease (PD) from fish, total PUFAs, total n-3 (ω -3) PUFAs, or at least one n-3 PUFA were included. Study characteristics and outcomes were extracted. The pooled RR was estimated with the use of a random-effects model meta-analysis. A dose-response analysis

was conducted with the use of the 2-stage generalized least-squares trend program. **RESULTS:** We included 21 studies (181,580 participants) with 4438 cases identified during follow-up periods (2.1-21 y). A 1-serving/wk increment of dietary fish was associated with lower risks of dementia (RR: 0.95; 95% CI: 0.90, 0.99; P = 0.042, I(2) = 63.4%) and AD (RR: 0.93; 95% CI: 0.90, 0.95; P = 0.003, I(2) = 74.8%). Pooled RRs of MCI and PD were 0.71 (95% CI: 0.59, 0.82; P = 0.733, I(2) = 0%) and 0.90 (95% CI: 0.80, 0.99; P = 0.221, I(2) = 33.7%), respectively, for an 8-g/d increment of PUFA intake. As an important source of marine n-3 PUFAs, a 0.1-g/d increment of dietary docosahexaenoic acid (DHA) intake was associated with lower risks of dementia (RR: 0.86; 95% CI: 0.76, 0.96; P < 0.001, I(2) = 92.7%) and AD (RR: 0.63; 95% CI: 0.51, 0.76; P < 0.001, I(2) = 94.5%). Significant curvilinear relations between fish consumption and risk of AD and between total PUFAs and risk of MCI (both P-nonlinearity < 0.001) were observed. **CONCLUSIONS:** Fishery products are recommended as dietary sources and are associated with lower risk of cognitive impairment. Marine-derived DHA was associated with lower risk of dementia and AD but without a linear dose-response relation.

KEYWORDS: Alzheimer disease; cognitive impairment; dementia; fish; polyunsaturated fatty acids

What Is Evidence-Based About Myofascial Chains: A Systematic Review.

Wilke J, Krause F, Vogt L, Banzer W.

Arch Phys Med Rehabil. 2016 Mar;97(3):454-61. doi: 10.1016/j.apmr.2015.07.023. Epub 2015 Aug 14.

ABSTRACT

OBJECTIVE: To provide evidence for the existence of 6 myofascial meridians proposed by Myers based on anatomic dissection studies. **DATA SOURCES:** Relevant articles published between 1900 and December 2014 were searched in MEDLINE (PubMed), ScienceDirect, and Google Scholar. **STUDY SELECTION:** Peer-reviewed human anatomic dissection studies reporting morphologic continuity between the muscular constituents of the examined meridians were included. If no study demonstrating a structural connection between 2 muscles was found, articles on general anatomy of the corresponding body region were targeted. **DATA EXTRACTION:** Continuity between 2 muscles was documented if 2 independent investigators agreed that it was reported clearly. Also, 2 independent investigators rated methodologic quality of included studies by means of a validated assessment tool (Quality Appraisal for Cadaveric Studies). **DATA SYNTHESIS:** The literature search identified 6589 articles. Of these, 62 article met the inclusion criteria. The studies reviewed suggest strong evidence for the existence of 3 myofascial meridians: the superficial back line (all 3 transitions verified, based on 14 studies), the back functional line (all 3 transitions verified, based on 8 studies) and the front functional line (both transitions verified, based on 6 studies). Moderate-to-strong evidence is available for parts of the spiral line (5 of 9 verified transitions, based on 21 studies) and the lateral line (2 of 5 verified transitions, based on 10 studies). No evidence exists for the superficial front line (no verified transition, based on 7 studies). **CONCLUSIONS:** The present systematic review suggests that most skeletal muscles of the human body are directly linked by connective tissue. Examining the functional relevance of these myofascial chains is the most urgent task of future research. Strain transmission along meridians would both open a new frontier for the understanding of referred pain and provide a rationale for the development of more holistic treatment approaches.

KEYWORDS: Connective tissue; Fascia; Meridians; Myofascial pain syndromes; Rehabilitation

Cannabis and tobacco exposure in relation to brain morphology: a prospective neuroimaging study in young children.

El Marroun H, Tiemeier H, Franken IHA, et al.

Prenatal Biol Psychiatry. Published online June 16, 2016.

<http://www.biologicalpsychiatryjournal.com/article/S0006-3223%2815%2900692-7/abstract> . Accessed June 23, 2016.

ABSTRACT

Background: Cannabis use during pregnancy has been associated with negative behavioral outcomes and psychopathology in offspring. However, there has been little research evaluating alterations in brain structure as a result of maternal cannabis use. In this prospective study, we investigated the association between prenatal cannabis exposure and brain morphology in young children. **Methods:** We matched 96 children prenatally exposed to tobacco only (without cannabis) with 113 unexposed control subjects on the basis of age and gender and subsequently selected 54 children exposed to prenatal cannabis (mostly combined with tobacco exposure). These children (aged 6 to 8 years) were part of a population-based study in the Netherlands, the Generation R Study, and were followed from pregnancy onward. We assessed brain volumetric measures and cortical thickness in magnetic resonance imaging scans using FreeSurfer. We performed vertexwise analyses in FreeSurfer and linear regression analyses adjusting for relevant covariates using Statistical Package for the Social Sciences. **Results:** Prenatal cannabis exposure was not associated with global brain volumes, such as total brain volume, gray matter volume, or white matter volume. However, prenatal cannabis exposure was associated with differences in cortical thickness: compared with nonexposed control subjects, cannabis-exposed children had thicker frontal cortices. Prenatal tobacco exposure compared with nonexposed control subjects was associated with cortical thinning, primarily in the superior frontal and superior parietal cortices. **Conclusions:** Our findings suggest an association between prenatal cannabis exposure and cortical thickness in children. Further research is needed to explore the causal nature of this association.

Keywords: Brain morphology, Neuroimaging, Pediatric brain development, Population-based study, Prenatal cannabis exposure, Prenatal tobacco exposure

Maternal Exposure to Childhood Trauma Is Associated During Pregnancy With Placental-Fetal Stress Physiology.

Moog NK, Buss C, Entringer S, Shahbaba B, Gillen DL, Hobel CJ, Wadhwa PD.

Biological Psychiatry. May 15, 2016; 79(10):831-839. DOI: <http://dx.doi.org/10.1016/j.biopsych.2015.08.032>

ABSTRACT

Background: The effects of exposure to childhood trauma (CT) may be transmitted across generations; however, the time period(s) and mechanism(s) have yet to be clarified. We address the hypothesis that intergenerational transmission may begin during intrauterine life via the effect of maternal CT exposure on placental-fetal stress physiology, specifically placental corticotropin-releasing hormone (pCRH). **Methods:** The study was conducted in a sociodemographically diverse cohort of 295 pregnant women. CT exposure was assessed using the Childhood Trauma Questionnaire. Placental CRH concentrations were quantified in maternal blood collected serially over the course of gestation. Linear mixed effects and Bayesian piece-wise linear models were employed to test hypothesized relationships. **Results:** Maternal CT exposure (CT+) was significantly associated with pCRH production. Compared with nonexposed women, CT+ was associated with an almost 25% increase in pCRH toward the end of gestation, and the pCRH trajectory of CT+ women exhibited an approximately twofold steeper increase after the pCRH inflection point at 19 weeks gestation. **Conclusions:** To the best of

our knowledge, this finding represents the first report linking maternal CT exposure with placental-fetal stress physiology, thus identifying a potential novel biological pathway of intergenerational transmission that may operate as early as during intrauterine life.

Keywords: Childhood trauma, Developmental programming, Intergenerational transmission, Placental CRH, reconceptual stress, Pregnancy

Effect of childhood maltreatment and brain-derived neurotrophic factor on brain morphology.

van Velzen LS. Schmaal L. Jansen R. Milaneschi Y. Opmeer EM. Elzinga BM. van der Wee NJA. Veltman DJ. Penninx BWJH.

Soc Cogn Affect Neurosci (2016) doi: 10.1093/scan/nsw086 First published online: July 12, 2016.

ABSTRACT

ABSTRACT: Childhood maltreatment (CM) has been associated with altered brain morphology, which may partly be due to a direct impact on neural growth, e.g. through the brain-derived neurotrophic factor (BDNF) pathway. Findings on CM, BDNF and brain volume are inconsistent and have never accounted for the entire BDNF pathway. We examined the effects of CM, BDNF (genotype, gene expression and protein level) and their interactions on hippocampus, amygdala and anterior cingulate cortex (ACC) morphology. Data were collected from patients with depression and/or an anxiety disorder and healthy subjects within the Netherlands Study of Depression and Anxiety (NESDA) (N = 289). CM was assessed using the Childhood Trauma Interview. BDNF Val66Met genotype, gene expression and serum protein levels were determined in blood and T1 MRI scans were acquired at 3T. Regional brain morphology was assessed using FreeSurfer. Covariate-adjusted linear regression analyses were performed. Amygdala volume was lower in maltreated individuals. This was more pronounced in maltreated met-allele carriers. The expected positive relationship between BDNF gene expression and volume of the amygdala is attenuated in maltreated subjects. Finally, decreased cortical thickness of the ACC was identified in maltreated subjects with the val/val genotype. CM was associated with altered brain morphology, partly in interaction with multiple levels of the BDNF pathway. Our results suggest that CM has different effects on brain morphology in met-carriers and val-homozygotes and that CM may disrupt the neuroprotective effect of BDNF.

Keywords: childhood maltreatment, brain-derived neurotrophic factor, BDNF, gene expression, brain structure

Early life stress dampens stress responsiveness in adolescence: Evaluation of neuroendocrine reactivity and coping behavior.

Hsiao YM. Tsai TC. Lin YT. Chen CC. Huang CC. Hsu KS.

Psychoneuroendocrinology. Volume 67 , 86 - 99

DOI: <http://dx.doi.org/10.1016/j.psyneuen.2016.02.004>

ABSTRACT

ABSTRACT: Stressful experiences during early life (ELS) can affect brain development, thereby exerting a profound and long-lasting influence on mental development and psychological health. The stress inoculation hypothesis presupposes that individuals who have early experienced an attenuated form of stressors may gain immunity to its more virulent forms later in life. Increasing evidence demonstrates that ELS may promote the development of subsequent stress resistance, but the mechanisms underlying such adaptive changes are not fully understood. The present study evaluated the impact of fragmented dam-pup interactions by limiting the bedding and nesting material in the cage during postnatal days 2–9, a naturalistic animal model of chronic ELS, on the physiological and behavioral responses to different stressors in adolescent mice and characterized the possible underlying mechanisms. We found that ELS mice showed less social interaction deficits after chronic social defeat stress and acute restraint-tailshock stress-induced impaired long-term potentiation (LTP) and enhanced long-term depression (LTD) in hippocampal CA1 region compared with control mice. The effects of ELS on LTP and LTD were rescued by adrenalectomy. While ELS did not cause alterations in basal emotional behaviors, it significantly enhanced stress coping behaviors in both the tail suspension and the forced swimming tests. ELS mice exhibited a significant decrease in corticosterone response and trafficking of glucocorticoid receptors to the nucleus in response to acute restraint stress. Altogether, our data support the hypothesis that stress inoculation training, via early exposure to manageable stress, may enhance resistance to other unrelated extreme stressors in adolescence.

Keywords: Early life stress, HPA-axis, Stress reactivity, Glucocorticoid receptor, Hippocampus, Mouse

Childhood adversity and psychiatric disorder in young adulthood: An analysis of 107,704 Swedes.

Björkenstam E. Burström B. Vinnerljung B. Kosidou K.

Journal of Psychiatric Research, Volume 77, 67 - 75

DOI: <http://dx.doi.org/10.1016/j.jpsychires.2016.02.018>

ABSTRACT

ABSTRACT: Childhood adversity (CA) is associated with increased risks of psychiatric disorder in young adulthood, but details in this association are less known. We aimed to explore the association of a range of CA indicators with psychiatric disorder in young adulthood, and the impact of age at exposure, disorder type and accumulation of indicators. We capitalized on Sweden's extensive and high-quality registers and analyzed a cohort of all Swedes (N = 107,704) born in Stockholm County 1987–1991. Adversities included familial death, parental substance misuse and psychiatric disorder, parental criminality, parental separation, public assistance reciprocity and residential instability. Age at exposure was categorized as: 0–6.9 years (infancy and early childhood), 7–11.9 years (middle childhood), and 12–14 years (early adolescence). Psychiatric disorders after age 15 were defined from ICD codes through registers. Risks were calculated as Hazard Ratios (HR) with 95% confidence intervals (CI). Results showed that exposure to at least one CA was associated with an increased risk of psychiatric disorder (HR 1.4, 95% CI: 1.3–1.4). Risks were increased for mood, anxiety, and psychotic disorders

and ADHD but not for eating disorders. The risk varied with type of disorder but was similar for all exposure periods. Individuals with multiple (3+) CAs had a two-fold risk of psychiatric disorder (HR 2.0, 95% CI: 1.9—2.1). In conclusion, our findings support the long-term negative impact of CA on mental health, regardless of developmental period of exposure. Given that experience of CA is common, efforts should be put to alleviate the burden of childhood adversities for children, particularly among the most disadvantaged.

Keywords: Childhood adversity, Sensitive period, School performance, Epidemiology, Socioeconomic, Young adulthood

Childhood Trauma and Illicit Drug Use in Adolescence: A Population-Based National Comorbidity Survey Replication—Adolescent Supplement Study.

Carliner H. Keyes KM. McLaughlin KA. Meyers JL. Dunn EC. Martins SS.

Journal of the American Academy of Child and Adolescent Psychiatry. August 2016 Volume 55, Issue 8, Pages 701—708, DOI: <http://dx.doi.org/10.1016/j.jaac.2016.05.010>

ABSTRACT

Objective: Although potentially traumatic events (PTEs) are established risk factors for substance use disorders among adults, little is known about associations with drug use during adolescence, an important developmental stage for drug use prevention. We examined whether childhood PTEs were associated with illicit drug use among a representative sample of US adolescents. **Method:** Data were drawn from the National Comorbidity Survey Replication—Adolescent Supplement (NCS-A), which included adolescents aged 13 to 18 years (N = 9,956). Weighted logistic regression models estimated risk ratios for lifetime use of marijuana, cocaine, nonmedical prescription drugs, other drugs, and multiple drugs. **Results:** Exposure to any PTE before age 11 years was reported by 36% of the sample and was associated with higher risk for use of marijuana (risk ratio [RR] = 1.50), cocaine (RR = 2.78), prescription drugs (RR = 1.80), other drugs (RR = 1.90), and multiple drugs (RR = 1.74). A positive monotonic relationship was observed between number of PTEs and marijuana, other drug, and multiple drug use. Interpersonal violence was associated with all drug use outcomes. Accidents and unspecified events were associated with higher risk for marijuana, cocaine, and prescription drug use. **Conclusion:** Potentially traumatic events in childhood are associated with risk for illicit drug use among US adolescents. These findings add to the literature by illustrating a potentially modifiable health behavior that may be a target for intervention. The results also highlight that adolescents with a trauma history are a high-risk group for illicit drug use and may benefit from trauma-focused prevention efforts that specifically address traumatic memories and coping strategies for dealing with stressful life events.

Keywords: substance use, illicit drugs, adolescents, childhood trauma, maltreatment

The effects of maternal alcohol use disorders on childhood relationships and mental health.

Wolfe, J.D.

Soc Psychiatry Epidemiol (2016):1-10.
doi:10.1007/s00127-016-1264-x

ABSTRACT

Purpose: Despite millions of children living in the turmoil of their parents' active alcoholism or the aftermath of past abuse, research to date has not (1) provided a comprehensive examination of the effects of maternal alcohol use disorders (AUDs) on children's social ties outside of their relationships with parents, or (2) considered whether the number and quality of childhood social ties alter the effects of maternal AUDs on children's mental health. **Method:** Using data from the National Longitudinal Surveys of Youth 1979 Children and Young Adults, analysis examined the influence of maternal AUDs on the number and quality of children's ties with siblings, extended family and family friends, peers, and neighborhood members. The analysis also considered how children's social ties influenced the association between maternal AUDs and children's internalizing and externalizing problems. **Results:** Children of alcoholic mothers had similarly sized networks but more distant relationships with siblings and friends, negative interactions with classmates, and isolating neighborhoods. Controlling for these aspects of children's social ties substantially reduced mental health disparities between children of alcoholic mothers and other children. **Conclusions:** Findings support the view that maternal alcohol use disorders have the potential to damage children's mental health while also setting into motion long-term relationship problems. Future research should examine the networks of children who experience parental AUDs to further clarify the social processes that link parental AUDs to children's mental health.

Keywords: Alcohol use disorder, alcoholism, social ties, childhood, early adolescence, mental health, emotional and behavioral problems, childhood adversity

Commentary

Randomized Trial of Introduction of Allergenic Food in Breast-Fed Infants

Perkin MR, Logan K, Tseng A, et al; EAT Study Team
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Cite this article: Introducing Allergenic Foods in Breastfed Infants: Does Timing Matter? *Medscape.* May 02, 2016.

STUDY SUMMARY

This randomized trial, which took place from 2009 to 2012 at a single site in the United Kingdom, evaluated early introduction of multiple potentially allergenic foods in infancy. Exclusively breastfed infants were recruited at age 3 months from a general population (not necessarily at higher risk for allergy). The standard-introduction group was exclusively breast-fed until age 6 months, after which the parents could introduce all foods, including potential allergens.

In the early-introduction group, parents introduced six allergenic foods at age 3 months—beginning with cow's milk, then followed by five other allergenic foods (peanut, egg, sesame, whitefish, and eventually wheat). If the child passed an initial oral challenge without a reaction, the parents were instructed to continue giving the child at least 2 g of each allergenic food twice weekly. If a child reacted to the oral challenge, the parents were instructed to avoid that specific food but continue introduction of the other foods to which the child did not react.

To assess exposure to allergenic foods, the parents completed monthly food diaries for the first 12 months, then quarterly

food diaries until the children were 3 years old. The main outcome of interest was whether the children developed an allergy to one of the six allergenic foods at any time between age 12 and 36 months, as evidenced by a positive response to an oral food challenge.

In general, the trial failed to show a protective effect of early introduction of allergenic foods. For the primary outcome of challenge-proven allergy, 5.6% of the early-introduction group had a food allergy at 36 months, compared with 7.1% of the standard-introduction group (relative risk, 0.80; 95% confidence interval, 0.51-1.25)—a nonsignificant difference.

With respect to specific foods, peanut allergy was documented in 1.2% of children in the early-introduction group vs 2.5% of children in the standard-introduction group—again failing to reach statistical significance. Egg allergy occurred in 3.7% of the early-introduction group compared with 5.4% of the standard-introduction group, also not significantly different. The frequency of allergies to the other foods were all less than 1% and did not differ between the two groups.

The investigators also conducted per-protocol analyses on only the infants who adhered to their group assignment for at least 5 months. Across multiple outcomes, the per-protocol analysis suggested that early introduction of allergenic foods was protective, and these differences did reach statistical significance. Additional analyses looking at the amount of foods consumed generally demonstrated that increasing consumption of allergenic foods correlated with lower risk of developing food allergy at either 12 or 36 months.

The investigators concluded that early introduction of multiple allergenic foods did not protect against development of food allergies in the intention-to-treat analyses, but there appeared to be an inverse dose-response in the secondary analyses.

Viewpoint

Although the results of this trial are negative, as pointed out in an accompanying editorial,¹ several findings are worth noting and suggest that further research should be done.

First, even though the differences in the primary outcome and secondary outcomes in the intention-to-treat analyses were not statistically significant, the allergy frequencies were consistently lower among the early intervention group, regardless of food or outcome evaluated (oral challenge results or immunoglobulin E levels, for example).

Second, this trial was conducted in a general population, whereas the LEAP trial (which had such promising results with early introduction of peanut) enrolled children from high-risk families. It's possible that the hint of protective effect shown in this study might be magnified in a population at greater risk.

Third, the duration of feeding of the allergenic foods was relatively short—from age 6 months to 1 year. The LEAP study suggests that longer administration of allergens may be more likely to lead to favorable outcomes.

Finally, the demonstration of an inverse relationship between the amount of allergen consumed and risk of developing an allergy later on is compelling and suggests that adherence to protocol might have produced better effects.

In summary, although this was a well-designed trial that had negative results, I'm not sure that it yet closes the door on similar investigation in either larger or higher-risk populations.

References

1. Wong GW. Preventing food allergy in infancy—early consumption or avoidance? *N Engl J Med*. 2016 Mar 4. [Epub ahead of print] Medscape Pediatrics © 2016 WebMD, LLC

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