January 2016

CALL FOR AE-C RESEARCH PROPOSALS

The NAECB Research Committee has an exciting and novel opportunity for all AE-Cs. As a part of our charge, we have designed and funded a research grant opportunity for 2016 which proposes to validate the role of certified asthma educators (AE-Cs). We recognize that quality research is the cornerstone of evidence-based medicine and that evidence-based asthma education optimizes patient outcomes. The mission of the NAECB is to promote optimal asthma management and quality of life among individuals with asthma by advancing excellence in asthma education through the certified asthma educator (AE-C) process. There exists a great need for validating the beneficial role of AE-Cs within asthma education programs through the research process and this grant opportunity focuses on that validation role.

We invite you to apply for the **2016 AE-C Research Grant Award** (please apply online at www.naecb.org). The grant recipient(s) will be awarded up to $10,000 in order to conduct their research project. The grant application is due by **11:59 p.m. on Friday, April 1, 2016.** The Research Committee will then review applications and grant recipient(s) will be notified no later than Friday, July 1, 2016.

We welcome your questions and appreciate your partnership in advancing our collective goals.

ANNOUNCING:
New Grace Period for Recertifying as an AE-C© by Continuing Education Units (CEUs)

A significant change in the recertification process was recently approved by NAECB Board members:

- **If your certification is about to expire**, you can recertify by continuing education units (CEUs), as an alternative to taking the examination, if you meet the recertification by CEU requirements.
- **If your certification has already expired**, you can still recertify by continuing education units (CEU) through a **newly initiated grace period** by meeting the recertification by CEU requirements and paying a late fee!
- If your credential is **2 or more years past its expiration date**, you will be eligible to recertify by examination ONLY.

In order to recertify by CEUs, please note the following:

- **A certificant must submit all required forms, including documentation of 35 continuing education units pertaining to asthma in order to be considered for recertification by continuing education units.**
- The Board has determined that 35 continuing education units in asthma-related content (earned within **5 years** of the date of application) will constitute recertification for the AE-C® credential.

- The Board has formed an expert panel of certified asthma educators who will evaluate the continuing education courses for validity to ensure that they are pertinent to the Detailed Content Outline (DCO), which can be downloaded from our website, www.NAECB.org. The DCO serves as the matrix for the NAECB examination.

Please note that there will be a late fee assessed for any certificant applying for recertification by CEUs past the expiration date of his/her credential. The recertification fee structure is as follows:

- $245 - Recertification by CEUs up to and including date of expiration
- $345 - Recertification by CEUs past date of expiration

We hope that you will take advantage of this opportunity to recertify or retain your AE-C® credential and we wish you success with the recertification process!

Asthma in the News

Inhaled corticosteroids safe, effective, but systemic complication concerns remain

Researchers recommended greater vigilance in testing adrenal function, monitoring bone mineral density and checking linear growth in high risk patients than current standard practice, especially in patients with diabetes mellitus (types 1 and 2).
http://bit.ly/23cfKR0

E-cigarettes, as used, aren't helping smokers quit, study shows

Electronic cigarettes are widely promoted and used to help smokers quit traditional cigarettes, but a new analysis found that adult smokers who use e-cigarettes are actually 28 percent less likely to stop smoking cigarettes.http://bit.ly/1QiAzVP

Rhinovirus-positive bronchiolitis increases use of asthma medication in kids, study shows

The authors believe the study may help predict which children are more likely to develop asthma. Based on the results, it appears that syncytial virus is less likely to provoke asthma than rhinovirus, with other types of viruses falling somewhere in between.
http://bit.ly/1ZOFQu5

Researchers link FDA actions to decrease in LABA use in asthma treatment

The study noted a statistically significant decrease in the use of LABA-containing products after the FDA issued alerts and required new warnings to be included in the products' labels.
http://bit.ly/1TSrYbt

Azithromycin shortens symptom duration for pediatric patients with asthma-like symptoms

Azithromycin was effective in reducing the symptoms of asthma exacerbations in pediatric patients, according to a recent double blind, randomized study published in The Lancet.
http://bit.ly/1Zq7zBm

Genetic screening of children with asthma could mean an end to 'trial and error' treatments

By
Kirsteen Patterson
1/12/2016

GENETIC screening could bypass the "trial and error" approach to treating childhood asthma, according to new research.

An estimated 72,000 youngsters in Scotland have the condition, which affects the airways carrying oxygen to and from the lungs, causing breathing problems.

Currently incurable, asthma claims three lives in the UK every day and treatment of young patients commonly involves a steroid inhaler.

However, ten per cent of youngsters with the condition continue to experience symptoms like chest tightness, wheezing, or coughing despite the treatment and doctors then use trial and error to ascertain which of the three alternative measures could help.

Now a major study by Aberdeen University has found screening for a specific gene change could avoid the use of ineffective medicines.

Research on 4,000 children with asthma found those with the genetic alteration were 50 per cent

more likely to suffer an attack than those without it when treated with a steroid inhaler and a long-acting beta agonist (LABA), a medication which causes the muscles lining the breathing tubes to relax and widen the airway.

According to scientists, around 60 per cent of people have the gene change which makes the LABA less effective.
Children found to have this alteration did not experience increased asthma attacks when treated with other asthma medicines.

The team, led by Dr Steve Turner, pooled results from five studies in Scotland, England the Netherlands and the USA and now aims to run a full clinical trial.

The results are published in The Journal of Allergy and Clinical Immunology.

Dr Turner said: "The question is, 'how do we match the right children to the right treatment?' Our study shows that those with the gene change are more likely to suffer an attack because they are being treated with LABA, which is ineffective for them.

"So the implication of this finding is that routine testing for this very common gene may let physicians know which asthma treatment works best in children with asthma and spare them an unsuccessful 'trial by treatment'.

"These findings now need to be properly tested in a clinical trial."

http://www.thenational.scot/news/genetic-screening-of-children-with-asthma-could-mean-an-end-to-trial-and-error-treatments.12210

From the community: Childhood asthma rates declining, but not for all

By Amanda Greep
1/11/2016

Today, nearly 6.8 million children in America live with asthma. Asthma is responsible for more than 10.5 million missed days of school and costs the United States $27 billion each year. Childhood asthma rates rose steadily in the 1980's, but a new study suggests asthma rates may be improving.

According to the study, asthma rates plateaued in 2008 before starting a significant decline in 2013. The study used data from more than 150,000 children in the National Health Interview Survey.

"The growing prevalence of childhood asthma has been a challenge for physicians and families, so this is potentially very good news," says Dr. Krishna Sunkara, pulmonologist on staff at Advocate South Suburban Hospital in Hazel Crest, Ill. "Asthma is a complicated and somewhat mysterious condition, so prevention can be difficult. It will be interesting to see how the rates change in coming years, and whether we can determine which of our efforts are responsible for the improvements."

Although there was an overall decline in asthma rates in 2013, the trends vary when broken down by race, age and location. While children in the Northeast and West saw no change in prevalence,

asthma rates grew for poor children and those living in the South.

Rates also increased for older children 10 to 17 years old, but plateaued for those 5 to 9 years old. Similarly, white and Puerto Rican children saw no change, while growing asthma rates for black children plateaued in 2013.

"Historically, black children have been twice as likely to be diagnosed with asthma as white children despite prevention efforts," says Dr. Sunkara. "While any decline is good news, it is vital that we continue to work toward closing this gap."

There is no cure for asthma, so people with asthma have to manage their disease and try to avoid known triggers. According to the American Academy of Allergy, Asthma and Immunology, nearly 60 percent of children have an asthma attack in any given year.

"Preventing the disease is ideal, but it's not always possible to avoid," says Dr. Sunkara. "Once diagnosed, families should work very closely with their children's doctor and school to ensure their child's asthma is under control."

http://www.chicagotribune.com/suburbs/daily-southtown/community/chi-ugc-article-childhood-asthma-rates-declining-but-not-for-2016-01-11-story.html

Age at asthma onset and asthma self-management education among adults in the United States. (Journal of Asthma)

Mirabelli, M. C., Beavers, S. F., Shepler, S. H., & Chatterjee, A. B.

Objective:
Asthma self-management education improves asthma-related outcomes. We conducted this analysis to evaluate variation in the percentages of adults with active asthma reporting components of asthma self-management education by age at asthma onset.

Methods:
Data from 2011 to 2012 Asthma Call-back Surveys were used to estimate percentages of adults with active asthma reporting six components of asthma self-management education. Components of asthma self-management education include having been taught to what to do during an asthma attack and receiving an asthma action plan. Differences in the percentages of adults reporting each component and the average number of components reported across categories of age at asthma onset were estimated using linear regression, adjusted for age, education, race/ethnicity, sex, smoking status, and years since asthma onset.

Results:
Overall, an estimated 76.4% of adults with active asthma were taught what to do during an asthma attack and 28.7% reported receiving an asthma action plan. Percentages reporting each asthma self-management education component declined with increasing age at asthma onset. Compared with the referent group of adults whose asthma onset occurred at 5-14 years of age, the percentage of adults reporting being taught what to do during an asthma attack was 10% lower among those whose asthma onset occurred at 65-93 years of age (95% CI:

-18.0, -2.5) and the average number of components reported decreased monotonically across categories of age at asthma onset of 35 years and older.

Conclusions:
Among adults with active asthma, reports of asthma self-management education decline with increasing age at asthma onset.

http://www.ncbi.nlm.nih.gov/pubmed/26291134

Maternal intimate partner violence exposure, child cortisol reactivity and child asthma. (Child Abuse and Neglect)

Bair-Merritt, M. H., Voegtline, K., Ghazarian, S. R., Granger, D. A., Blair, C., Johnson, S. B., Willoughby, M.

Psychosocial stressors like intimate partner violence (IPV) exposure are associated with increased risk of childhood asthma. Longitudinal studies have not investigated the role of hypothalamic-pituitary-adrenal (HPA) axis reactivity (and associated alterations in cortisol release) in the child IPV exposure-asthma association. We sought to investigate this association, and to assess whether this relationship differs by child HPA reactivity. This secondary analysis used longitudinal cohort data from the Family Life Project.

Participants included 1,292 low-income children and mothers; maternal interview and child biomarker data, including maternal report of IPV and child asthma, and child salivary

cortisol obtained with validated stress reactivity paradigms, were collected when the child was 7, 15, 24, 35, and 48 months. Using structural equation modeling, maternal IPV when the child was 7 months of age predicted subsequent reports of childhood asthma (B =0.18, p = .002). This association differed according to the child's HPA reactivity status, with IPV exposed children who were HPA reactors at 7 and 15 months of age - defined as a ≥10% increase in cortisol level twenty minutes post peak arousal during the challenge tasks and a raw increase of at least 02. µg/dl - being significantly at risk for asthma (7 months: B =0.17, p = .02; 15 months: B =0.17, p = .02).

Our findings provide support that children who are physiologically reactive are the most vulnerable to adverse health outcomes when faced with environmental stressors.

http://www.pubfacts.com/detail/25435104/Maternal-intimate-partner-violence-exposure-child-cortisol-reactivity-and-child-asthma

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Evaluating the Impact of Information Technology Tools to Support the Asthma Medical Home.
(Clinical Pediatrics)

Matiz LA, Robbins-Milne L, Krause MC, Peretz PJ, Rausch JC.

This study aimed to evaluate the impact of information technology tools on the outcomes of children with asthma in the medical home. A registry was established for children aged 4 to 18 years with an ICD-9 code for asthma. Changes to the electronic health record included

modifications to notes, care plans, and orders.

A retrospective analysis of emergency department and in-patient utilization for a cohort of patients was conducted from July 2009 through June 2013. Of the study population (n = 1217), 65% had a classification of asthma severity and 63% were risk-stratified. Seventy percent had a control assessment at least once. Care plan use increased from 5% to 22% and enrollment in care coordination increased from 0.1% to 4%. After 3 years, there was a reduction of emergency department and inpatient admissions for asthma (P < .05 andP < .005, respectively).

The implementation of information technology tools was associated with improved asthma outcomes.

http://cpj.sagepub.com/content/55/2/165

Associations between parental health literacy, use of asthma management plans and child's asthma control. (Clinical Pediatrics)

Brigham EL, Goldenberg L, Stolfi A, Mueller GA, Forbis SG.

Background:
There are some studies demonstrating the effectiveness of the provision of written asthma action plans in improving asthma outcomes. There exist little data on the ability of parents to use these plans to make asthma care decisions.

Objective:
To assess the associations between parental health literacy (HL), parental ability to use a written asthma management plan (WAMP), and child's asthma control.

Methods:
Parents completed a survey with questions related to WAMPs and child's asthma, a HL screening tool, and 5 asthma vignettes. For vignettes, parents identified asthma control zone and then made decisions about asthma management. WAMP scores were totaled (0-32) and converted to a percent correct score. Associations between parental HL, WAMP scores, child's asthma control, and demographics were determined with independent t tests or 1-way analysis of variance, and chi-square tests. Variables significantly associated with WAMP scores or asthma control were included in multiple logistic regression or multiple linear regression analyses.

Results:
A total of 176 surveys were included; the mean ± SD WAMP score was 58.9% ± 22.2%, and 25% of respondents had limited HL. Of respondents' children, 38% had not well/poorly controlled asthma. In multiple regression analysis controlling for education level, limited HL was significantly associated with WAMP score (b = 11.3, standard error 3.8, P = .004). WAMP score was not associated with asthma control. Limited HL was associated with poor asthma control in univariate analysis, but not in a logistic regression model controlling for other significant variables. Only unmarried marital status (adjusted odds ratio 4.4, 95% CI 1.8-10.8, P = .001) was associated with asthma control.

Conclusion:
HL is associated with parental ability to use WAMPs to respond to asthma scenarios. Parental HL may play a role in parents' ability to appropriately use WAMPs.

http://www.ncbi.nlm.nih.gov/pubmed/25994320

The impact of food allergens on airway responsiveness in schoolchildren with asthma: A DBPCFC study

Krogulska, A., Dynowski, J., Jedrzejczyk, M., Sardecka, I., Małachowska, B., & Wasowska-Królikowska, K.
January 2016

Background and Objective: Despite the growing evidence of a possible link between asthma and food allergy (FA), so far, the involvement of food in inducing respiratory symptoms has not been fully evaluated. The objective of this study was to evaluate the impact of food allergens on respiratory symptoms and bronchial reactivity (BHR) in schoolchildren with asthma.

Methods: The initial study group consisted of 362 children with asthma. In the end, 22 children with concomitant FA, and 18 without FA, were selected to participate in the study. Spirometry and Methacholine Inhalation Challenge (MIC) were conducted prior to and after the completion of a double blind placebo control food challenge (DBPCFC).

Results: The food-induced asthmatic reactions were observed in nine (2.5%) out of all 362 children with asthma. Mean FEV1 prior to and after allergen or placebo challenge did not differ between the groups studied. Increase of BHR after DBPCFC was seen in 17 (4.7%) children with asthma. The mean PC20 value in children with FA was 1.41±1.12mg/ml prior to the allergen

challenge and 0.86±0.71mg/ml (P=0.002) after the test, whereas these values were 1.93±1.68mg/ml and 2.02±1.75mg/ml, respectively, in children without FA (P>0.05). Significant differences were noted after the allergen provocation in children with FA as compared to children without FA (P=0.007).

Conclusions: Although food allergens are a rare trigger of food-induced asthmatic reactions in schoolchildren with asthma, they could enhance BHR, despite a lack of evident clinical respiratory signs and decreased in FEV1 values after food challenge.

http://www.ncbi.nlm.nih.gov/pubmed/26731485

Mouse sensitivity is an independent risk factor for rhinitis in children with asthma

Sedaghat, A. R., Matsui, E. C., Baxi, S. N., Bollinger, M. E., Miller, R., Perzanowski, M., & Phipatanakul, W.
January-February 2016

Background: Although mouse and cockroach allergy is known to be important in urban children with asthma, the independent association of mouse and cockroach sensitization with rhinitis in these children is unknown.

Objective: To determine the association of mouse and cockroach sensitization with rhinitis in urban children with asthma. Methods: As part of the Mouse Allergen and Asthma Intervention Trial, 499 urban children (5-17 years) with persistent asthma underwent spirometry, skin prick testing to 14 common environmental allergens, and serology for mouse-specific IgE. In 269

subjects, cockroach-specific IgE serology was also obtained. Patient/parent-reported rhinitis in the last 2 weeks and the last 1 year was the primary outcome measure. Mouse/cockroach exposure was measured by reported frequency of sightings. Mouse allergen-settled bedroom dust samples were also measured in mouse-sensitized children.

Results: Rhinitis was reported in 49.9% and 70.2% of the participants within the last 2 weeks and the last 1 year, respectively. Serum mouse IgE level of 0.35 IU/mL or more was associated with rhinitis in the past 2 weeks (adjusted odds ratio, 2.15; 95% CI, 1.02-4.54; P =04) and the past 1 year (adjusted odds ratio, 2.40; 95% CI, 1.12-5.1; P =02) after controlling for age, race, sex, the presence of any smokers at home, primary caregiver education level, number of allergen sensitivities, cockroach IgE level of 0.35 IU/mL or more, and study site (Boston or Baltimore). Measures of home mouse exposure were not associated with rhinitis, regardless of mouse sensitivity. Cockroach sensitivity was not associated with rhinitis regardless of sensitization to other allergens.

Conclusions: In urban children with asthma, increased mouse IgE, but not cockroach IgE, in the sera (mouse IgE ≥ 0.35 IU/mL) may be associated independently with rhinitis.

http://www.jaci-inpractice.org/article/S2213-2198(15)00516-4/abstract

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Reducing exacerbations in the inner city: Lessons from the inner-city asthma consortium (ICAC)

Gergen, P. J., Teach, S. J., Togias, A., & Busse, W. W.
January-February 2016

Asthma exacerbations are important components of asthma morbidity. The Inner-City Asthma Consortium was established in the early 1990s to identify risk factors for and to evaluate treatments to reduce asthma symptoms and exacerbations. Early studies identified atopy and inadequate treatment as important drivers of asthma morbidity. Later studies demonstrated that good adherence to guidelines-based asthma care could virtually eliminate symptoms and reduce but not eliminate exacerbations. Looking at exacerbations by season, risk factors were found to vary across the different seasons.

Of the 7 factors identified, allergic status and pulmonary functions were found to be important for exacerbations in all seasons, but allergy had its strongest effect in the fall season. Therefore, additional therapy directed at reducing the role of allergy was evaluated and found to significantly reduce exacerbations even in participants with good symptom control when receiving guidelines-based therapy. Despite this year around aggressive therapy, exacerbations remain albeit at a lower level and with less seasonal variation. Another strategy, the short term use of therapy aimed at reducing the role of allergy begun before the fall season and focused on individuals at high risk for exacerbations, was found to be an effective approach to minimize exacerbations and to limit the amount of therapy necessary.

http://www.jaci-inpractice.org/article/S2213-2198(15)00439-0/abstract

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Influenza vaccination among US children with asthma, 2005-2013

Simon, A. E., Ahrens, K. A., & Akinbami, L. J.
January-February 2016

Children with asthma face higher risk of complications from influenza. Trends in influenza vaccination among children with asthma are unknown.

Methods

We used 2005-2013 National Health Interview Survey data for children 2 to 17 years of age. We assessed, separately for children with and without asthma, any vaccination (received August through May) during each of the 2005-2006 through 2012-2013 influenza seasons and, for the 2010-2011 through 2012-2013 seasons only, early vaccination (received August through October). We used April-July interviews each year (n = 31,668) to assess vaccination during the previous influenza season. Predictive margins from logistic regression with time as the independent and vaccination status as the dependent variable were used to assess time trends. We also estimated the association between several sociodemographic variables and the likelihood of influenza vaccination.

Results

From 2005 to 2013, among children with asthma, influenza vaccination receipt increased about 3 percentage points per year (P <.001), reaching 55% in 2012-2013. The percentage of all children with asthma vaccinated by October (early vaccination) was slightly above 30% in 2012-2013. In 2010-2013, adolescents, the uninsured, children of parents with some college education, and those living in the Midwest, South, and West were less likely to be vaccinated.

Conclusions

The percentage of children 2 to 17 years of age with asthma receiving influenza vaccination has increased since 2004-2005, reaching approximately 55% in 2012-2013.

http://www.academicpedsjnl.net/article/S1876-2859(15)00335-6/abstract

Hypertension and asthma: A comorbid relationship

Christiansen, S. C., Schatz, M., Yang, S. -., Ngor, E., Chen, W., & Zuraw, B. L.
January-February 2016

An increased prevalence of hypertension has been described in adult asthmatic patients. However, there is no information regarding the interaction of hypertension as a comorbidity with asthma severity.

Objective: The objective of this study was to investigate whether a concomitant diagnosis of hypertension had any impact on markers of asthma severity in adult asthmatic patients.

Methods: A total of 117,922 asthmatic subjects 18 years or older were identified in the Kaiser Permanente database. Case-control studies were conducted with cases defined by short-acting β-agonist canister dispensing greater than 6 (SABA > 6), history of emergency department visits or hospitalizations (EDHO), and corticosteroid dispensings (CCS), respectively. Controls were matched by age and sex. Univariate and multivariate conditional logistic regression was applied to estimate the odds ratios (OR) and 95% confidence intervals (CI) for SABA > 6, EDHO, and CCS associated with the diagnosis of hypertension.

Results: Hypertension was associated with an increased odds of SABA > 6 (OR 1.19, CI 1.13-1.26, n = 15,855 cases and 76,060 controls), EDHO (OR 1.11, CI 1.03-1.19, n = 9,307 cases and 46,535 controls), and CCS (OR 1.15, CI 1.10-1.19, n = 53,690 cases and 53,690 controls) after adjusting for potential confounders.

Conclusions: Asthmatic subjects with comorbid hypertension display evidence of enhanced of asthma morbidity.

http://www.ncbi.nlm.nih.gov/pubmed/26342745

Severe asthma in children: Lessons learned and future directions

Fitzpatrick, A. M.
January-February 2016

Severe asthma in children is a complicated and heterogeneous disorder that is extremely challenging to treat. Although most children with asthma derive clinical benefit from daily administration of low-to-medium-dose inhaled corticosteroid (ICS) therapy, a small subset of children with "severe" or "refractory" asthma require high doses of ICS and even systemic corticosteroids to maintain symptom control. These children with severe asthma are at increased risk for adverse outcomes including medication-related side effects and recurrent and life-threatening exacerbations that significantly impair quality of life.
This review highlights findings on severe asthma in school-age children (age 6-17 years) from the National Heart, Lung and Blood Institute's Severe Asthma Research Program (SARP) over a 10-year period, between 2001 and 2011. Although SARP has advanced knowledge of the unique clinical, biological, and molecular attributes of severe asthma in children, considerable gaps remain for which additional studies are needed.

http://www.jaci-inpractice.org/article/S2213-2198(15)00572-3/abstract

Behavioral interventions to improve asthma outcomes for adolescents: A systematic review

Mosnaim, G. S., Pappalardo, A. A., Resnick, S. E., Codispoti, C. D., Bandi, S., Nackers, L., . . . Powell, L. H.
January-February 2016

Factors at multiple ecological levels, including the child, family, home, medical care, and community, impact adolescent asthma outcomes.

Objective: This systematic review characterizes behavioral interventions at the child, family, home, medical system, and community level to improve asthma management among adolescents.

Methods: A systematic search of PubMed, SCOPUS, OVID, PsycINFO, CINAHL, and reference review databases was conducted from January 1, 2000, through August 10, 2014. Articles were included if the title or abstract included asthma AND intervention AND (education OR self-management OR behavioral OR technology OR trigger reduction), and the mean and/or median age of participants was between 11 and 16 years. We compared populations, intervention characteristics, study designs, outcomes, settings, and intervention levels across studies to evaluate behavioral interventions to improve asthma management for adolescents.

Results: Of 1230 articles identified and reviewed, 24 articles (21 unique studies) met inclusion criteria. Promising approaches to improving adherence to daily controller medications include objective monitoring of inhaled corticosteroid adherence with allergist and/or immunologist

feedback on medication-taking behavior and school nurse directly observed therapy. Efficacy at increasing asthma self-management skills was demonstrated using group interactive learning in the school setting. This systematic review is not a meta-analysis, thus limiting its quantitative assessment of studies. Publication bias may also limit our findings.

Conclusions: Novel strategies to objectively increase controller medication adherence for adolescents include allergist and/or immunologist feedback and school nurse directly observed therapy. Schools, the most common setting across studies in this review, provide the opportunity for group interactive learning to improve asthma knowledge and self-management skills.

http://www.ncbi.nlm.nih.gov/pubmed/26563672

Food consumption and risk of childhood asthma

Lumia, M., Takkinen, H. -., Luukkainen, P., Kaila, M., Lehtinen-Jacks, S., Nwaru, B. I., . . . Virtanen, S. M.
December 2015

The consumption of foods rich in n-3 polyunsaturated fatty acids has been proposed to protect against childhood asthma. This study explores the association of food consumption (including cow's milk (CM)-free diet) in early life and the risk of atopic and non-atopic asthma.

Methods: Food intake of 182 children with asthma and 728 matched controls was measured using 3-day food records, within the Finnish Type 1 Diabetes Prediction and Prevention (DIPP) Nutrition

Study cohort. The diagnoses of food allergies came both from the written questionnaire and from the registers of the Social Insurance Institution. Conditional logistic regression with generalized estimating equations framework was used in the analyses.

Results: The diagnosis of cow's milk allergy (CMA) led to multiple dietary restrictions still evident at 4 yr of age. Even after adjusting for CMA, higher consumption of CM products was inversely associated with the risk of atopic asthma and higher consumption of breast milk and oats inversely with the risk of non-atopic asthma. Early consumption of fish was associated with a decreased risk of all asthma.

Conclusions: Dietary intake in early life combined with atopy history has a clear impact on the risk of developing asthma. Our results indicate that CM restriction due to CMA significantly increases and mediates the association between food consumption and childhood asthma risk.

http://onlinelibrary.wiley.com/doi/10.1111/pai.12352/abstract

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Decline in admissions for childhood asthma, a 26-year period population-based study

Mikalsen, I. B., Skeiseid, L., Tveit, L. M., Engelsvold, D. H., & Øymar, K.
December 2015

Pediatric Allergy and Immunology, 26(8), 750-755. doi:10.1111/pai.12372
The prevalence of childhood asthma has increased, although the rate of hospitalization for asthma seems to decrease. In Norway, the rate of hospital admission for childhood asthma from 1984 to 2000 increased. The aim of this study was to assess further trends in hospital admissions for

childhood asthma up to 2010.

Methods: A population-based study including children 1-13 yrs of age hospitalized for asthma during six periods from 1984/1985 to 2009/2010 in Rogaland, Norway, was performed. Medical records from 1536 admissions (1050 children) were studied; and gender, age, number of admissions, length of hospital stay, medications and symptoms were recorded.

Results: For all age groups, the rate of admissions per 10.000 increased from 20.1 in 1984/85 to 33.7 in 1989/90, but declined to 14.4 in 2009/2010. Rates were highest in boys (OR 1.87; 95% CI: 1.69, 2.09), younger age groups (OR 2.51; 2.38, 2.64) and decreased from 1984 to 2010 (OR 0.92; 0.88, 0.94). The rates of readmissions were higher than for primary admissions (OR 1.33; 1.19, 1.47). From 1984 to 2010, there was an increased use of inhaled corticosteroids prior to admission (6 to 51%) and started at discharge (7 to 37%), and systemic steroids given during admission (19 to 83%).

Conclusion: There has been a substantial decline in the rate of hospital admissions for childhood asthma after 1989/1990, with major differences between age groups and genders. The decline could be due to improved care of children with asthma or a real reduction in asthma exacerbations.

http://www.ncbi.nlm.nih.gov/pubmed/25787851

High levels of physical activity are associated with poorer asthma control in young females but not in males

Lövström, L., Emtner, M., Alving, K., Nordvall, L., Borres, M. P., Janson, C., & Malinovschi, A.
January 2016

Earlier studies on the levels of physical activity in asthma patients compared with controls have yielded varying results. We have previously reported that high versus moderate levels of physical activity were associated with higher prevalence of wheezing, especially in females. Here we studied the levels of physical activity in young patients with asthma and healthy subjects and their effect on asthma control.

Methods
Four hundred eight physician-diagnosed patients with asthma and 118 controls (10-34 years) answered questions concerning frequency and/or duration of physical activity and undertook the Asthma Control Test (ACT), spirometry, methacholine challenges and exhaled nitric oxide measurements.

Results
Asthma patients were more frequently physically active ($P = 0.01$) and for longer durations ($P = 0.002$) than controls. Highly versus moderately physically active patients with asthma had a higher prevalence of not well-controlled asthma (ACT < 20) when physical activity was assessed by frequency (40.6% vs 24.1%, $P = 0.001$) or duration (39.0% vs 21.7%, $P < 0.001$). This was only seen in females who had reduced ACT items ($P < 0.05$). Frequently versus moderately active females had an odds ratio of 4.81 (2.43, 9.51) to have ACT < 20, while no such effect was found in males (OR 1.18 (0.61, 2.30)) and this interaction was statistically significantly associated with gender ($P = 0.003$). No differences in fraction of exhaled nitric oxide or methacholine reactivity were found between moderately and highly physically active females with asthma.

Conclusion
Young asthma patients were more active than controls. High levels of physical activity were associated with poor asthma control as judged by the ACT in females, but not in males, and this appears unrelated to airway inflammation or responsiveness. Young patients with asthma reported to be more physically active than controls. High versus moderate physical activity levels were associated with poorer asthma control in females, but not in males. This has to be further studied when physical activity is objectively measured and type and intensity of exercise are characterized.

http://www.ncbi.nlm.nih.gov/pubmed/26581686

Keeping kids who have asthma healthy

By Jill U. Adams
January 18, 2015

There are so many tricky things about keeping kids with asthma healthy that it's hard to know where to start.

At their worst, asthma attacks can mean a sudden trip to the emergency room. These can be scary episodes in their own right, but they also disrupt everyday life, interfering with sleep, school or work schedules. Preventing such attacks is a major goal of treatment.

Asthma - which affects more than 6 million American children, according to the Centers for Disease Control and Prevention - is a chronic inflammatory disorder of the airways. When airways

are provoked - by allergens, infection or exercise, for instance - they narrow, which reduces airflow. Typical asthma symptoms are shortness of breath, coughing and wheezing, and a tightness in the chest.

Frequency and intensity of symptoms can vary widely, says Katherine Rivera-Spoljaric, a Washington University pediatrician at St. Louis Children's Hospital. "Symptoms can be intermittent to persistent - that's one continuum," she says. "With intermittent symptoms - a few times a year, say - we look for triggers." Are attacks related to allergies, perhaps, or stress? "We try to reduce those triggers and treat their symptoms."

The severity of symptoms is another continuum, says Rivera-Spoljaric.

To manage the sometimes fickle condition, doctors recommend two strategies: to prevent serious attacks from occurring and to be prepared to nip an approaching attack in the bud.

"It's a very complex illness, even though it's really common," says Kristin Riekert, a Johns Hopkins Medicine researcher who studies doctor-patient communication and medication adherence. With multiple possible triggers, a wide range of things can prompt an attack "even if you're doing everything perfectly," Riekert says. "People feel fine until they don't."

Ideally, people with asthma know what their triggers are and avoid them. This might work for a child who is allergic to dogs, but it is harder with dust-mite allergies. One of the most common triggers for asthma in children is the common cold. Another is cold air. Try avoiding cold air and cold viruses all winter long.

In reality, it can take time to identify triggers. And triggers can change as kids grow older, Riekert

says.

There are medicines that dampen overreactive tissue in the airways and help prevent asthma attacks. Two common control agents are corticosteroid inhalers (such as Alvesco, Pulmicort and Flovent) and leukotriene inhibitors such as montelukast (Singulair), a once-a-day chewable medication.

Other medicines can thwart an asthma attack as it begins. The most common are inhaled bronchodilators such as albuterol (brand names include Proventil, Ventolin and ProAir). Properly used, the drug gets deep in the airways and blunts the overreactive inflammatory process.

In other words, a person might need one inhaler for prevention, a different one for rescue. Some patients get the two confused. Many don't like to use them at all.

"There's nothing appealing about respiratory medicine," Riekert says. There's a bothersome taste; there's poor technique. And because of the capricious nature of asthma, she says, people can forget to use their control inhaler and still feel fine, thereby "reinforcing non-adherence."

Managing asthma, Riekert says, "requires structures and routines in a spontaneous world."

For severe allergic asthma, a newer and expensive treatment, an antibody treatment called omalizumab (Xolair), is approved for people age 12 and older. "It's been helpful in some patients with severe asthma," Durrani says.

Education is a mainstay of asthma management for anyone, says Sandy Durrani, an allergist at the University of Cincinnati, but perhaps especially when kids are the patients. He says health-

care providers need to spend time with their patients and their parents to explain both the illness and its management.

"At first we see patients pretty frequently - maybe weekly," Durrani says. In addition to taking a detailed history to identify possible triggers and to understand the frequency and severity of attacks, he says, "this time is used to prevent the patient and the parent from getting overwhelmed. It's an iterative process."

Giving patients and parents some say can lead to better asthma management, says Rivera-Spoljaric. "I tell the parent: Your child meets the criteria for daily medication." Then she'll explain the medications and write down the options, starting with Number 1: Do nothing. "It's a choice," she says.

Other options might be taking medications intermittently, using a daily steroid inhaler or taking a once-a-day pill. The pill may not provide the best protection, but it helps most patients and might fit hectic lifestyles better, she says. "I talk about lifestyle - work and day-care schedules, who's in charge of the kid's therapy."

Kids might resist using an inhaler, saying they don't want to be different from their friends. Riekert will reframe that concern: "Your friends don't see you take your meds, but they do see you limiting your activity at school."

Even with education and practice and frequent visits, sticking to an asthma management plan can be undermined by the temperamental nature of the illness. "The fact is, you can't always anticipate when there is going to be a problem," Riekert says. "Asthma's unpredictable nature makes it really tough."

https://www.washingtonpost.com/national/health-science/keeping-kids-who-have-asthma-healthy/2016/01/15/1a025232-b8a1-11e5-99f3-184bc379b12d_story.html

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Girl who had asthma attack reportedly faces punishment for borrowing inhaler

January 15, 2016

A Texas student is facing alternative school after she had an asthma attack and used a classmate's inhaler.

Fox4 reported that Indiyah Rush offered 13-year-old Alexis Kyle her inhaler in gym class after she saw her struggling to breathe.

Because Alexis accepted the inhaler, she and Rush are facing 30 days in alternative school.

"I'm getting in trouble, but the thing is, she's getting in trouble too," Alexis said. "She tried to help me."

The school district said the 30-day punishment is the initial automatic punishment for sharing a controlled substance until the students and their parents speak with the principal.

"The little girl saved her life," Michael Green, Alexis' stepfather, said. "And the reason we say that (is) because we have been to situations where she has been to (the intensive care unit) so we know how bad her asthma is."

A district representative said the parents and their daughters will have to appeal to get their punishment reduced. The 7th graders could get 0 to 30 days at the alternative school.

Alexis, her mother and stepfather appealed to school administrators Thursday.

http://www.ajc.com/news/news/national/girl-who-had-asthma-attack-reportedly-faces-punish/np56Z/

School asthma program update

By Monica Garcia
January 21, 2016

TUCSON- Tucson kids are breathing easier thanks to a study through the University of Arizona and the American Lung Association.

They've partnered up with the Tucson Unified School District to implement a school-based asthma program in 20 selected elementary schools.

The program called Supervised Asthma Medicine in School, or SAMS for short, launched 2 years ago.

Today, researchers say the program is helping improve the lives of students like 12-year-old Guillermo Vindiola and 8-year-old Angel Perez. The boys have been receiving free asthma

medication thanks to the program.

According to Vindiola, his asthma symptoms are a far cry from where they use to be.

"Panic, you can't breathe, you're going to suffocate, you're under water and you can't swim back up to the surface."

Researchers hope to have a full understanding of the program's effectiveness by this summer.

Asthma attacks lead to 3,000 hospitalizations each year in Arizona.

For more information about the SAMS program click here.

http://www.kvoa.com/story/31022489/school-asthma-program-update

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