

ASTHMA & ALLERGY

BULLETIN

ASTHMA AND ALLERGY FOUNDATION OF AMERICA • NEW ENGLAND CHAPTER

RESEARCH UPDATE

Farm Living: How does it prevent asthma?

By Frank J. Twarog, MD, PhD

How does exposure to various microbes early in life affect whether or not a person develops allergies or asthma? This is the question researchers have tried to answer as they probe the complexity of the “hygiene hypothesis” – the theory that various populations have a greater tendency towards becoming “allergic” as a result of modern lifestyles that don’t challenge our immune systems at an early age.

Previous studies have suggested that exposure to a farming environment may reduce the frequency of asthma

and allergic disease, due to exposure to barnyard micro-organisms. A new study has gone considerably farther in trying to understand how this works by studying children of Amish farmers from Indiana and Hutterite farmers in South Dakota.



Both groups are descendents of Germanic ancestors who relocated to farming communities in the United States in the 1700s and 1800s. They share a similar genetic background and by shunning intermarriage have remained reproductively isolated.

Both had high rates of childhood vaccination, diets rich in fat, salt, and raw milk, and a low incidence of childhood obesity. They practice prolonged breastfeeding, minimal exposure to tobacco smoke and air pollution, and taboos against having indoor pets.

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Eating “On-the-go” with Food Allergies!

By Tara McCarthy, RD

When my youngest was 4 years old, she proudly told me, “Mom! You and I are in the car the *most!*” In that moment it hit me just how right she was. We were (and still



are!) always driving to a game or practice or appointments. She was little enough that she was still my traveling sidekick while we shuttled her brother and sister all over creation. I think anyone with a child or children can relate because there is *a lot* of running around involved in our daily lives.

So, if we are in the car a lot, moving from field to gym to office to school, we are probably eating on-the-go as well. This can be tricky for any parent, but it’s a

whole different ballgame when your children have food allergies.

Nowadays it seems like there is food available everywhere we go, but for families who have allergies to contend with, you can’t necessarily just stop and grab something.

My three children do not have food allergies, but they do have a dietitian as a mother! We work around self-imposed restrictions because there are very few places where I will stop and pick up something for my kids to eat. So I know first hand how hard it can be to eat on-the-go, and I know it’s *even harder* when you have to add avoiding allergens to the equation.

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Farm living: How does it prevent asthma?

There was a striking difference in the prevalence of asthma, however, between the two groups. Children from the Amish community had only a 5.2% prevalence of asthma, while for the Hutterites it was 21.3%. Allergic sensitization similarly was different, with a 7.2% vs. 33.3% incidence.

A difference in the farming style, however, was obvious. The Amish continue living in a small, family-style farm environment with animals close by their homes, whereas the



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Hutterites live on large, highly industrialized communal farms.

The difference between the households in which the children live was evidenced by dust samples taken from the homes of Amish families, which contained much higher levels of specific microbes than that of the Hutterites.

Blood samples from the participating children, aged 8-14 years of age, were also evaluated, and included looking for what is called “innate” or inborn immunity. There were significant differences in the



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proportion of innate immune cells between the two groups.

The blood samples from Amish children, who were exposed to an environment with heavy microbial concentrations and showed low rates of asthma, contained factors that have a protective effect against airway inflammation. Children from the Hutterite group, although living in a farming community, had less exposure to farm animals and related microbes. Their blood test findings did not exhibit this ability to suppress inflammation.

This extensive study not only documented the clinical status of these populations, but also set up experiments to evaluate the effect of dust collected from these homes in inducing asthma and allergic sensitization in mice. The mice that had been treated with dust from Hutterite homes had an increase in eosinophils (specialized cells associated with inflammation) in their lungs compared to those that had been treated with Amish dust extracts. They also found that the lungs in mice treated with Hutterite dust were irritable, consistent with asthma.

This fascinating study has provided further insight into factors that result in protective effects of bacterial exposure, not only directly but also perhaps long-term by affecting genetic changes. An editorial in the medical journal in which this study was published commented, however, that it was unclear whether this



Photo: © Filedimage | Dreamstime.com

would extend beyond the immediate generation of children or even within the population if this microbial exposure were not continued.

Certainly, our modern lifestyles more closely reflect the Hutterite children’s limited microbial allergen exposure, in contrast to that of the Amish. This perhaps is at least one additional reason for an increase in the frequency of asthma in contemporary society.

References:

- Stein M et al. Innate immunity and asthma risk in Amish and Hutterite farm children. *New England Journal of Medicine*, 375:411-421, Aug. 4, 2016.
- Chatila TA. Innate immunity and asthma (Editorial). *New England Journal of Medicine*, 375:477-479, Aug. 4, 2016.

Thumb sucking and pacifier cleaning: other pieces of the “hygiene hypothesis” puzzle?

If you don’t live on a small farm you can take some comfort from the results of other recent studies into behaviors related to the “hygiene hypothesis” and how babies may be exposed to diverse microbes. Children who suck their thumbs are more protected from allergic disease, as are those whose parents put a dropped pacifier into their own mouths to “clean it off.”

References:

- Lynch S. et al. Thumb-Sucking, Nail-Biting, and Atopic Sensitization, Asthma, and Hay Fever. *Pediatrics*, 2016 Aug;138(2). pii: e20160443. doi: 10.1542/peds.2016-0443.
- Hesselmar, B. et al. Pacifier Cleaning Practices and Risk of Allergy Development, *Pediatrics*, 2013 DOI: 10.1542/peds.2012-3345

SBS

Epinephrine for Allergy Emergencies: Injector Updates

Several companies are in various stages of developing new devices to inject a single dose of epinephrine in case of a severe allergic reaction. Innovations will ideally include more convenient size and shape, longer shelf life, and increased temperature stability.

Pending FDA approval, one or more of these may be marketed sometime in 2017, so in the future be sure to ask your allergist about new options.

Generic epinephrine injectors

A generic medication contains the same active ingredient as a brand name product but is generally sold at a much lower price. In the wake of this past summer's controversy over the cost of EpiPens®, manufacturer Mylan announced it will soon be



releasing a generic version of its familiar brand name auto-injector device. It will be essentially identical to the EpiPen®, but will be sold for \$300, which is approximately one-half the list price of the branded version.

[Note: Mylan also increased its \$0 co-pay offer up to \$300 for each Epi-Pen 2-Pak® and extended the Dec. 31 deadline into 2017. This offer should be applied automatically

by your pharmacy, whether or not you have previously used a \$0 Co-pay card. Please let us know if you run into problems so we can effectively represent your interests and concerns.]

Another generic single-dose epinephrine device is currently on the market. It is based on a branded product named Adrenaclick®, which you are not likely to find on pharmacy shelves.



Its generic version is simply called “epinephrine injection USP auto-injector,” and it is available in the same two dosage strengths as Mylan’s EpiPen®. Since this is a lower-cost alternative some insurance plans may be adding this to their formulary or list of pre-approved medications.

If you receive one of the generic epinephrine injectors from your pharmacy be sure to learn how to use it and teach others. It looks and feels different than Epi-Pen® and is used somewhat differently. A trainer device for practice is not included in the packaging. Contact us or your physician if you’d like one, so you are not faced with using an unfamiliar device in an emergency situation.

Teva Pharmaceutical Industries is another company that is hoping

to win FDA approval of a generic epinephrine device, perhaps sometime in 2017.

Auvi-Q® will return to the market

This small rectangular epinephrine injector device



with audio instructions on how to use it was gaining in acceptance and popularity when it was pulled off the

market in 2015 by multi-national pharmaceutical company Sanofi, due to a possible manufacturing problem.

The rights to the product were returned to Kaléo, a company run by the twin brothers who actually invented Auvi-Q®, motivated by their personal experience growing up with severe allergies. Kaléo has announced that it will be reintroducing Auvi-Q® to the U.S. market in the first half of 2017. It issued a statement assuring consumers that it has “invested in new technology and quality systems to ensure accurate, reliable and consistent delivery from the product.”

The bottom line: make sure you have enough epinephrine devices to cover your family’s needs in various locations and situations, that they are always close at hand with the person who may need one quickly, and that they and others know how to use them.

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What I don't want to see happen is that we limit our children's activities because of the difficulties associated with feeding children with food allergies.

Here are some suggestions to help families rise to the challenge of eating safely “on-the-go.”

Of course, each individual has to avoid different allergens, so think of these ideas as a place to start and *always double check product labels for your allergens*. Let's look at this in three different ways:

1. Survival

Foods: Things that live in your car/purse/backpack that won't go bad and can be eaten when you find yourself in a situation that wasn't planned for.



Photo: © Warrengoldswain | Dreamstime.com

Many people find it most convenient to turn to the companies that offer packaged snacks manufactured to avoid all or most of the “top 8” allergens. These can be expensive, so think about buying in bulk or preparing your own versions in advance, when possible, to have a supply readily at hand. Here are a few of my favorites:

- Roasted chick peas are flavorful, crunchy, and nutritious. (Biena and The Good Bean™ are two packaged brands, or roast your own starting with canned garbanzos. Just drain and toss with a little oil and your own choice of herbs and spices.)

- Quinoa is a high protein grain that is becoming much more popular. A quick on-line search for “quinoa snack recipes” will yield many ideas. (IHeartKeenWah® is one brand of

packaged snack products based on quinoa, some of which contain milk or nuts.)

- Protein, energy, or granola bars: many companies make packaged bars that may or may not include things you need to avoid so read labels carefully. (Some favorites: Made Good™, 88 Acres, Don't GoNuts™.)

- Pretzels, chips, and trail mix are the common snack foods that kids are familiar with. (Plentils® and Not Nuts!™ Seed and Fruit Mix made by Enjoy Life Foods®, which also makes bars, and Snyder's® Gluten Free pretzels are among my favorites. It's easy enough to put together packets of your own customized version of trail mix with a focus on nutrition as well as calories.)

2. Quick grab-and-go

snacks/meals: These are things that we can pull together in just fifteen minutes using items from

our pantry. It helps to have a supply of small plastic leak-proof containers, plastic utensils and zip-close bags on hand so individual portions of these kinds of foods can be packed up and eaten on-the-go.

- Baked potatoes (microwave for 6-8 minutes) with toppings such as broccoli, beans, deli turkey, salsa.

- Pasta with sauce and carrots or mixed vegetables (can be fresh or frozen) that you throw in with the pasta the last 4 minutes of cook-time

- Smoothie (made with one of the many “alternative” milks such as pea protein, oat, hemp or others depending on your allergy) with frozen berries, banana and/or sunflower seed butter

- Oatmeal with seeds and dried fruit



Photo: © Cromary | Dreamstime.com

- Mediterranean wrap filled with hummus, cucumbers, shredded carrots and olives or any safe foods your kids like: turkey, lettuce, tomato, or maybe some leftovers from your fridge. You can use lettuce or a rice wrap (Food for Life® is one brand) if you need to avoid wheat.

3. Make-ahead and planned

meals: Think about foods that will last in a cooler because of the long day at the hockey rink or the weekend soccer tournament or the whole day of Irish step dancing. Pick your activity! Everyone still needs to eat, even when making a fresh meal is not an option.

Think in food groups (fruit/vegetables, starches, proteins) and be flexible. Some foods that you generally think about eating hot, such as corn on the cob, can also be enjoyed cold or at “room temperature,” so plan to cook extras or take along leftovers.

- Fruits & Veggies: fill the cooler with their favorites, already washed, cut up, and portioned in snack-bags or small reusable containers

- Dips: seed butters, safe dressings, hummus, salsa

- Proteins: cut up chicken breast, chick peas, hummus, seeds

- Thermos of hearty homemade soup (chicken, rice and vegetable or minestrone with noodles, vegetables and beans)

- Homemade safe muffins and/or safe bars

- Fixings for a sandwich or salad to be put together on the side lines.

(continued on next page)

Do you really understand your child's asthma medications?

Around half of parents may not understand their children's controller medications.* That was the unfortunate conclusion of a recent study led by Dr. Ann Wu, MD MPH, an asthma researcher at Harvard Medical School and Harvard Pilgrim Health Care Institute, a pediatrician at Boston Children's Hospital, and mom to a pre-teen with asthma.

Wu wanted to find out why so many children with persistent asthma don't take daily controller medicines as recommended by national guidelines. She asked similar questions to parents and their healthcare providers and linked the survey responses of parents and providers.

She found that many physicians do not recommend that inhaled steroids be

* Controller medications include inhaled corticosteroids, leukotriene antagonists, or combination inhaled corticosteroids/long acting beta agonists.

used according to national guidelines, and that frequently parents' reports of their child's asthma controller medicine use were mismatched with their provider's recommendations. Many did not understand the role of inhaled corticosteroids or that their child was supposed to use the medication every day.

Here are a few suggestions from Dr. Wu about what you can do to prevent this mismatch and keep your child's asthma under good control:

- Be more proactive about asking for explanations about which medications you or your child should be taking.
- Let your health care providers know which medications you have stopped using, the reasons why, and any other concerns. For example, some parents stop giving controller medications

if they feel the medicine is not helping or if they believe the child doesn't need as much as prescribed.

- Ask for a written Asthma Action Plan that lists which medications should be taken when well, sick, or very sick.



"I believe that if both patients and providers take more active approaches, communication will improve, and hopefully an improvement in asthma symptoms will follow," said Dr. Wu. Find her blog at: <http://asthma.org>.

Eating "on-the-go" with Food Allergies (continued from page 4)

Now, let's talk about those times when you really *do* have to stop for food, or you just really want to eat out. How can you find a quick resource to help?

"Allergy Eats" is a website and an app that provides you with information from people and families who are living with food allergies and are sharing their good and not-so-good experiences. It's a helpful place to start that offers guidance from a

community of people who want to help you. Remember, though, that these recommendations are based on the opinions of other diners and are not vetted by food allergy experts. Think of this as if a friend-of-a-friend mentions that a restaurant is safe. It is still important to do your due diligence at the restaurant when making choices.*

Eating on-the-go is not ideal. We all know there are important benefits that come from slowing down and

sitting together as a family. However, the realities of our kids' schedules are such that we simply cannot make the family meal happen as often as we might like. So, instead of added stress, we rely on planning ahead as well as having some back-up options for when our very carefully detailed plan... doesn't exactly go as planned!

I hope these general guidelines can help give you ideas, even though you'll still have to do some research and strategizing based on the specific allergies in your family and everyone's food preferences. If you are struggling, it can be really helpful to consult a dietitian who specializes in food allergies.

**Editor's note:* See "Eating Out with Food Allergies" on the AAFA New England website (www.asthmaandallergies.org) or call us and we'll mail you a free copy.



Tara McCarthy is the Chief Dietitian at Kindrdfood.com, which provides personalized food and nutrition consultation sessions by telephone or live video. She also works part time at Boston Children's Hospital where she is part of the EGID (Eosinophilic Gastrointestinal Disease) Program and celiac clinic. Tara has been a Registered Dietitian since 1999 and has worked with the pediatric population for over 15 years.

FROM THE BOOKSHELF: Going to College with Food Allergies

**Food Allergies and College:
Your Complete Planning Guide**
Information, Recommendations,
and Insights

by Jan Hanson, M.A.

Available online or at your favorite
bookseller

As a food allergy educator for the past fifteen years Jan Hanson has helped scores of families and school personnel manage food allergy effectively. Her previous book, *Food Allergies: A Recipe for Success at School*, published in 2012, remains the most complete compendium of information about how to keep children both safe and included.

Hanson's new book is an equally thorough and comprehensive look at all aspects of attending college for someone with food allergies. It draws on her background as a college residence life administrator, and the experience of shepherding two sons with food allergies through college.

Hanson outlines the college "process" in four stages, with specific recommendations for what to do at each phase, from visiting and applying to what to do after being accepted and making the transition. The section on actually living at college does not shy away from tricky topics like alcohol, parties and dating.

Hanson outlines the roles and responsibilities of four key administrative departments with which students with food allergies

and their families must become familiar, and explains how to interact with them at each stage of applying for and attending college. It is clearly important to work closely with the Housing/Residence Life office and understand the capacity and procedures of the Health Services and Dining Services offices.

One key issue Hanson addresses well is the importance of registering with the college's Office of Disability Services, or similar administrative

department. This is a simple process which generally requires providing medical documentation of the student's allergies (and asthma, if relevant). Teens may be resistant to the idea, fearing being labeled or stigmatized in their new college environment. They (and their parents) need to understand that food allergy

is recognized as a legitimate "hidden disability," and this is a confidential but necessary step so that the other departments will be obliged to accommodate their needs in every aspect of campus life – housing, dining, athletics, other extra-curricular activities, and more.

Hanson warns that schools may differ widely, which she illustrates with examples of dining hall policies she found on several college websites. These range from no mention of food allergy at all to a school that states that it develops an individual plan to meet the needs of each student with a

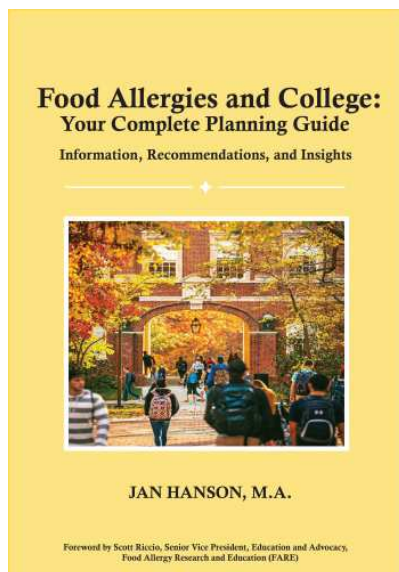
food allergy. But Hanson emphasizes that it's not just the dining halls that should be the focus of students as they explore potential college choices.

In addition to Hanson's own detailed explanations of what to do and why, each chapter includes contributions by other authors which expand on or illustrate important points. These sections, identified in the pages as "Insights," add a very human touch as well as important perspectives from college students, administrators, housing and dining staff, physicians and lawyers, and others. There are chapters summarizing key background information, relevant laws, other useful resources, and helpful checklists to make it easier to be sure you are "covering the bases."

Reading Hanson's well-organized book is a great way for students and parents to get "on the same page" as they approach the emotionally fraught processes of visiting, applying, choosing and heading off to college. Students will appreciate being "in the know" and parents will appreciate being able to refer to the authoritative information provided by Hanson and other experts rather than debating or arguing with their teens about how to go about things.

Investigating colleges and universities to figure out which will meet an individual's needs, interests, desires and budget is truly daunting for everyone. When food allergies are in the picture the stakes feel particularly high. This enormously helpful book will relieve some of that burden by helping you know what to expect and giving you the confidence to ask the right questions and put good plans in place at every step of the way.

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Around AAFA New England



Nursing students from Middlesex Community College used educational materials donated by AAFA New England to teach people how to manage their asthma at a health fair in Lowell, MA.

Let us help educate people in your community

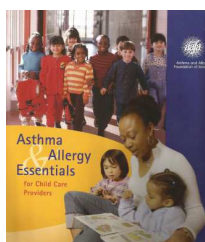
We are happy to provide free handouts for local healthcare providers, school nurses, and others. Let us know if you are planning a community health fair or have opportunities to share our asthma and food allergy educational materials.

SAVE THE DATE: Mark your calendar for AAFA New England's annual "Breath of Spring" gala fundraiser: May 5, 2017.

Please call if you can spare some time to help get auction items or assist with other volunteer tasks!

"Asthma and Allergy Essentials for Child Care Providers"

Grants from several sources are helping us teach child care providers how to keep children safe and healthy when they are cared for outside their homes. Thanks to Gratis Foundation, Nashoba Valley Community Health Care Fund, North Shore Community Health Network, and Community Health Network 17.



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Do you understand your child's asthma medicines?



Kyle Dine *entertained, educated and inspired children and their parents at a joyous autumn AAFA New England*

Family Concert & Food Allergy EXPO

This lucky family got to take home one of the door prizes – a huge gift basket from Sunbutter Sunflower Spread, one of the 20 wonderful concert sponsors. Visit our website for links to all the sponsoring companies and services.



Allergist John Lee and psychologist Jennifer LeBovidge talked with parents at the information table sponsored by the Boston Children's Hospital Food Allergy Center



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