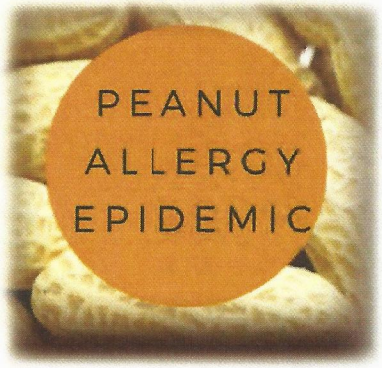

Where did it come from?

By Kristi Wees

Did you go to school in the 1980's or 1990's and have a peanut free table in your cafeteria or a peanut-free school? Neither did I. Which makes me wonder: what has changed in the last 30+ years that we now have an epidemic of childhood allergies, including anaphylactic allergies to peanuts?

According to a FARE funded study (foodallergy.org), "the number of children in the U.S. with peanut allergy more than tripled between 1997 and 2008." As a curious chemist, I couldn't help but wonder where this increase has come from and more importantly what can be done to reverse it and protect the safety of those children with life threatening allergies. Off I went to research...

Let's start with some definitions. What is anaphylaxis? If you didn't grow up with allergies, you may not have become familiar with the term anaphylaxis until you had children. I recently read the book "*The Peanut Allergy Epidemic* " by writer, historian and mom to peanut allergic kids, Heather Fraser. I was fascinated to learn in this book, about the historical reference to immunologist Charles Richet when he coined the term, anaphylaxis, in 1901.

Richet was working on creating a vaccine for poison from the sea creature, Portugese Man of War. His experiments included injecting dogs with the poison. Those that survived the initial dose were re-injected with a much smaller dose. He hypothesized that the first injection would protect the dog by building immunity, but what he found was just the opposite. The dogs had become hypersensitive, making the very small second dose deadly, resembling what they called in those days: "serum sickness".

Richet used two Greek words: ana (against) and phylaxis (protection) to describe what he witnessed with the dogs. He went on to win the Nobel Prize in Medicine in 1913 for his work. In his view, from this research, there were three outcomes of vaccination - unchanged sensitivity, diminished sensitivity and heightened sensitivity (resulting in anaphylaxis with subsequent injections).

Richet went on to prove a mechanism for food anaphylaxis. For these experiments, he fed dogs raw and cooked meat and measured their blood. He then injected the same dogs with the raw meat that he had fed them and provoked anaphylaxis. These same dogs ate the raw meat before the injection with no anaphylaxis, but after injection the anaphylaxis was present. Richet had discovered a new mechanism for this type of allergy.

So that is all fascinating, but what do dogs and raw meat have to do with peanuts and Epi-pens®?

Fast forward to the late 1980's and early 1990's, when emergency room and hospital records for food anaphylaxis discharges began to show the onset of today's epidemic. In a report from the National Center for Health Statistics from the CDC, titled: "*Food Allergy Among US Children: Trends in Prevalence and Hospitalizations*", the numbers of food allergy discharges, steadily increased from 2,615 discharges in 1998-2000 to 9,527 for the 2004-2006 time period, more than tripling in less than ten years.

What was going on?

So, if one of the few mechanisms found near the turn of the century for inducing food anaphylaxis involved injecting food (protein) into the blood stream of animals (Richet's Nobel Prize winning work); was this same thing happening in children? Author, Heather Fraser points out in her book that indeed this was exactly what was happening and she chronicles both the political changes (the 1986 National Childhood Vaccine Injury Act was passed, giving vaccine manufacturers liability protection over harm caused by vaccines) and the resulting medical and economic changes (the childhood vaccine schedule was greatly increased between 1985 and 1995, and government subsidized funding for vaccines increased).

Due to the fact that peanut oil (as well as cross reactive, soybean oil) has been used in the manufacturing of vaccines and injectable pharmaceutical products for years (dating back to penicillin shots in the 1940's, the Romansky formula), and due to the fact that these ingredients are not required by law in the US to be labeled in the use of injectables due to their GRAS (Generally Regarded As Safe status), it is difficult to pinpoint which childhood "injections" might be the culprit.

My interest was piqued, who was

researching this today? I looked in PubMed (a database of medical literature) and found a few articles studying peanut allergy in mice and guinea pigs. I was a bit disturbed to find that the articles began by describing how the researchers MADE a "peanut anaphylactic mouse/guinea pig" in the lab. Most of those experimental protocols included injecting the animal with peanut protein or oil plus a toxic pathogen: measles, mycobacteria (Freund's adjuvant)) and sometimes adding an aluminum adjuvant, to illicit anaphylaxis. (PMID: 5032489, 22194949, 18268389, 9032902, 12626588)

Was history repeating itself in children?

Some of the most recent research I was able to find, points to bacteria in the stomach (clostridia) as a clue to solving the peanut epidemic. (PMID: 25157157) Since it is estimated that a large portion of the immune system is in the gastrointestinal tract, this is not surprising. But what disrupted these gut bacteria in the first place?

So what is a parent to do? My advice for all parents is to do your own research (a few medical sources to get you started are presented in this article), have a candid discussion with your doctor and

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as always, trust your instincts – you know your child and your family's health history better than any professional. Allow your instincts and research to guide the medical decisions you make for your child. When in doubt ask for confirmatory testing that your child's immune system is working properly prior to subjecting it to any additional immune stimulation, no matter what the source of that stimulation may be. ■

Kristi Wees is the mom of two children from Gibsonia.

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big difference," Keller says. Try to pick up at the same every day, if possible.

School success rx

Read, read, read to your child. "Being read to is the single most consistent and reliable predictor of academic success later in life," says Kurumada Chuang. She recommends reading to your preschooler for 20 minutes every night at bedtime While you're at it, stop every so often and ask your child a question about the story before turning the page, such as: "Gosh, why do you think she was sad?" or "What do you think it going to happen next?" Making reading more interactive makes it more fun and helps build your child's comprehension skills.

Help your child learn to follow directions. To help your preschooler get the hang of following directions, practice at home by giving simple commands, such as "Please help me pick up your toys and put them in the toy box." Then, encourage your child to follow through by offering an incentive to do whatever it is you're asking. Tell your child that he can play outside once he's finished putting his toys away. An incentive helps him understand that following directions makes other fun activities possible. If he doesn't follow your directions and, for example, put his toys away, calmly explain that he won't be able to play with those toys for the rest of the day or go to the park. Keep it positive by focusing on how clean the playroom will look when you're done. Then praise him when he's successful. "You followed my directions so well. Thank you for helping me put your toys in the toy box like I asked you to! That was so helpful."

Help your child master sharing and turn taking. From age three to five, children tend to hoard coveted toys and objects. They're not really ready to grasp the concept of sharing yet. But you can help your youngster practice by having him "take turns" with toys and catching him when he shares on his own. To help him develop the empathy that true sharing requires, state what he did and how it makes others feel, such as: "Thank you for sharing. It makes your sister feel good when you share the ball." Your child should be able to "own" special or new toys, though, so keep them out of sight on play dates or in his room away from siblings.

By kindergarten, children are capable of sharing well and taking turns. If your child isn't there yet, help him get the hang of it by inviting a friend over for a cooperative task such as baking cookies. If things aren't going well, calmly ask him to sit out. Pretty soon, he'll get the idea and want to join in on the fun again. You can also read your child books about sharing and discuss them. In the classic tale, *Stone Soup*, retold by Heather Forest, for example, two hungry travelers make soup from ingredients that everyone in the town contributes. What makes it extra delicious is the sharing it took to make it.

Help your child make friends

If you get the sense your toddler or preschooler needs a little help in the social department, try hosting play dates with others your child likes or with whom she has common interests. Play dates offer an opportunity to break away from the group and foster individual friendships. You might begin by asking your preschooler, for example: "How about a play date with Grace? I notice that she likes to draw, too." If you're not sure who to invite over first, ask your child's preschool teacher if there's anyone in the classroom who might be a good match for your child.

To help your child play hostess, let her pick the snack and ask her beforehand what games and activities she and her friend might like to do. On the play date, feel free to play along and stay close by to make sure everyone stays safe. But give your child and her friend the chance to play on their own, too. To help things go smoothly, keep play dates to two hours; children start to get tired after that. And keep it simple by inviting just one child over at a time.

Practice sharing

From age three to five, kids aren't yet capable of grasping the concept of sharing, but you can help your preschooler get the hang of it by having her "take turns" with toys and catching her when she shares on her own. "Stating what she did and how it makes others feel, such as: 'Thank you for sharing. It makes your sister feel good when you share your toast,' helps her develop the empathy that true sharing requires," says Marcy Guddemi, Ph.D., executive director of the Gesell Institute of Human Development. You can also read your child books about sharing and discuss them.

Hone your child's listening skills

At the dinner table and during car rides, help your preschooler hone her listening skills by asking her to wait to speak until her brother has finished his sentence. When it's her turn, remind her, "Now it's your turn to talk. Thank you for being patient and for being such a good listener while your brother was talking." Explain that being a good listener shows respect for the speaker, whether it's her brother or her teacher and the other students at school who are trying to hear what the teacher has to say. Mention that it's a two-way street: When she's a good listener, she's showing the same kind of respect that she gets when others listen to her. If she continues to interrupt, keep reminding her that she'll get the chance to talk. Becoming a good listener, like many things, can take lots of practice.

Be there at pick-up

Focus on your child. When it's time to collect your child, be really glad to see her. Make sure you're not on your cellphone or otherwise distracted. "Pick-up should be all about your child," Keller says. "Your child wants to know you're super glad to see her and that you've been looking forward to it all day." ■

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Is it Time... *continued from page 37*

emotional coaching for students who feel anxious, defeated or discouraged. The right tutor will be able to advocate for your child, equip them to perform to their full potential on exams and help them cope with worry. ■

Michele Ranard has a husband, two children, and a master's in counseling. She is happy to report her son made great progress and has learned invaluable life lessons as a result of his academic struggles.

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your son to start his homework by not letting him do anything else before his homework is completed. ■

Parents should send questions to Dear Teacher, in care of Pittsburgh Parent, PO Box 395, Carmel, IN 46082-0395