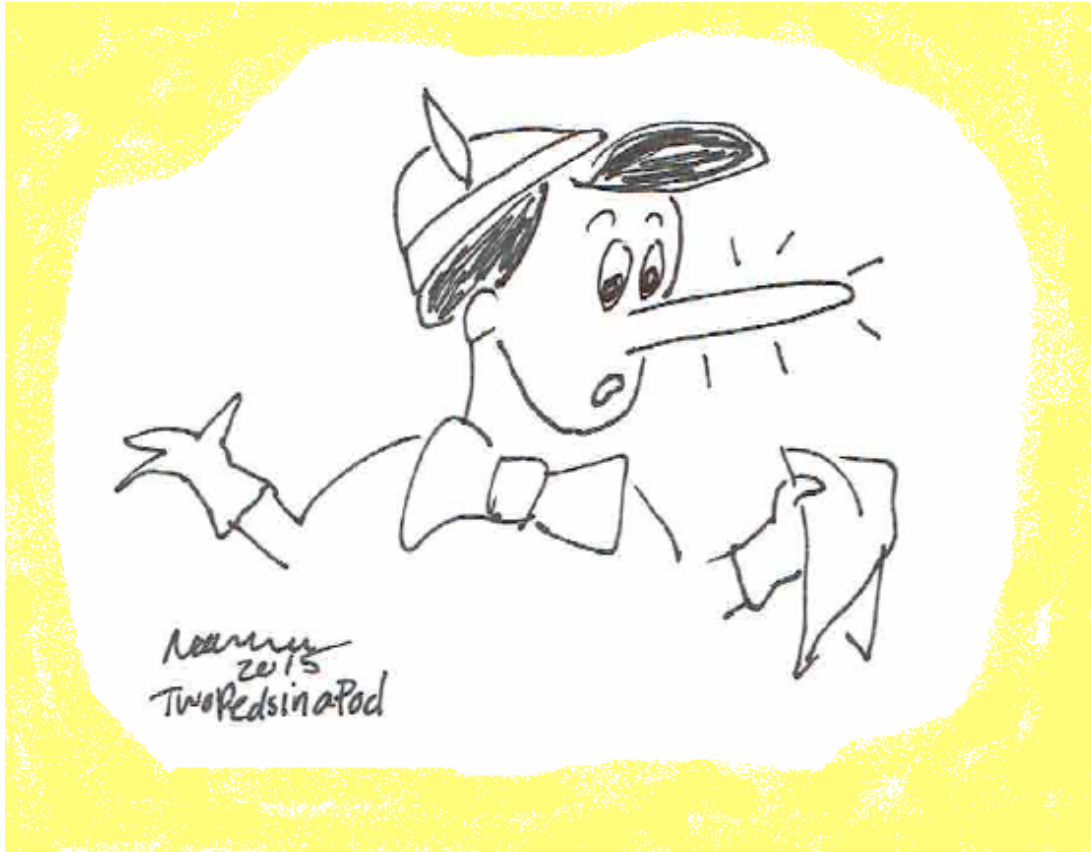


How to treat your kid's allergies: sorting out over the counter medications



Gepetto always said his son had allergies, but the villagers knew better

It's not your imagination. This is a particularly bad spring allergy season. We didn't need media outlets to tell us that there are more itchy, sneezy, swollen eyed kids out there this year.

It is worth treating your child's allergy symptoms- less itching leads to improved sleep, better ability to pay attention in school, improved overall mood, and can prevent asthma symptoms in kids who have asthma in addition to their nose and eye allergies.

Luckily, nearly every allergy medication that we wrote prescriptions for a decade ago is now available over-the-counter. As you and your child peer around the pharmacy through itchy blurry eyes, the displays for allergy medications for kids can be overwhelming. Should you choose the medication whose ads feature a bubbly seven-year-old girl kicking a soccer ball in a field of grass, or the medication whose ads feature a bubbly ten-year-old boy roller blading? Is it better to buy a “fast” acting medication or medication that promises your child “relief?”

Here is a guide to sorting out your medication choices:

Oral antihistamines: Oral antihistamines differ mostly by how long they last, how well they help itchiness, and their side effect profile. During an allergic reaction, antihistamines block one of the agents responsible for producing swelling and secretions in your child’s body, called histamine. Prescription antihistamines are not necessarily “stronger.” In fact, at this point there are very few prescription antihistamines. The “best” choice is the one that alleviates your child’s symptoms the best. As a good first choice, if another family member has had success with one antihistamine, then genetics suggest that your child may respond as well to the same medicine. Be sure to check the label for age range and proper dosing.

First generation antihistamines work well at drying up nasal secretions and stopping itchiness but don’t tend to last as long and often make kids very sleepy. **Diphenhydramine (brand name Benadryl)** is the best known medicine in this category. It lasts only about six hours and can make people so tired that it is the main ingredient for many over-the-counter adult sleep aids. Occasionally, kids become “hyper” and are unable to sleep after taking this medicine. Opinion from Dr. Lai: dye-free formulations of diphenhydramine are poor tasting. Other first generation antihistamines include **Brompheniramine (eg. brand names Bromfed and Dimetapp)** and **Clemastine (eg.**

brand name Tavist).

Second and third generation antihistamines cause less sedation and are conveniently dosed only once a day. Cetirizine (eg. brand Zyrtec) causes less sleepiness and it helps itching fairly well. Give the dose to your child at bedtime to further decrease the chance of sleepiness during the day. **Loratadine (brand name Alavert, Claritin)** causes less sleepiness than cetirizine. **Fexofenadine (brand name Allegra)** causes the least amount of sedation. The liquid formulations in this category tend to be rather sticky, the chewables and dissolvables are favorites among kids. For older children, the pills are a reasonable size for easy swallowing.

Allergy eye drops: Your choices for over-the-counter antihistamine drops include **ketotifen fumarate (eg. Zatidor and Alaway)**. For eyes, drops tend to work better than oral medication. Avoid products that contain vasoconstrictors (look on the label or ask the pharmacist) because these can cause rebound redness after 2-3 days and do not treat the actual cause of the allergy symptoms. Contact lenses can be worn with some allergy eye drops- check the package insert, and avoid wearing contacts when the eyes look red. Artificial tears can help soothe dry itchy eyes as well.

Allergy nose sprays: Simple nasal saline helps flush out allergens and relieves nasal congestion from allergies. **Flonase**, which used to be available by prescription only, is a steroid allergy nose spray that is quite effective at eliminating symptoms. It takes about a week until your child will notice the benefits of this medicine. Even though this medicine is over-the-counter, check with your child's pediatrician if you find that your child needs to continue with this spray for more than one allergy season of the year. Day in and day out use can lead to thinning of the nasal septum. Avoid the use of nasal decongestants (e.g., Afrin, Neo-Synephrine) for more than 2-3 days because a rebound runny nose called rhinitis medicamentosa may occur.

Oral Decongestants such as phenylephrine or pseudoephedrine can help decrease nasal stuffiness. This is the “D” in “Claritin D” or “Allegra D.” However, their use is not recommended in children under age 6 years because of potential side effects such as rapid heart rate, increased blood pressure, and sleep disturbances.

Some of the above mentioned medicines can be taken together and some cannot. Read labels carefully for the active ingredient. Do not give more than one oral antihistamine at a time. In contrast, most antihistamine eye drops and nose sprays can be given together along with an oral antihistamine.

If you are still lost, call your child’s pediatrician to tailor an allergy plan specific to her needs.

The best medication for kids? Get the irritating pollen off your child. Have your allergic child wash her hands and face as soon as she comes in from playing outside so she does not rub pollen into her eyes and nose. know that spring and summer allergens/pollen counts are highest in the evening, vs fall allergies where counts are highest in the mornings. Rinse outdoor particles off your child’s body with nightly showers. Filter the air when driving in the car and at home: run the air conditioner and close the windows to prevent the “great” outdoors from entering your child’s nose. If you are wondering about current pollen counts in your area, scroll down to the bottom of many of the weather apps to find pollen counts or log into the American Academy of Allergy Asthma and Immunology’s website.

Naline Lai MD and Julie Kardos, MD

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Contribute to our Two Peds Mother's Day post!



Dr. Kardos, on a visit home from medical school, with her mom and grandmothers, 1991.

A flash of surprise spread across her face. "You mean my mother was right? I can't believe it!" the mom in our office exclaimed.

Many times as we dispense pediatric advice, the parent in our office realizes that their own mother had already offered the same suggestions.

This Mother's Day, we're asking readers for anecdotes about times where maybe, just maybe, your mom or your grandmother was right after all. If you have a photo available of your mom or grandmother with your child that you don't mind sharing as well, we would love to post them along with your anecdotes this Mother's Day.

Please send them along to us at twopedsinapod@gmail.com before Mother's Day weekend.

Naline Lai, MD and Julie Kardos, MD

Worry wart: how to treat a wart



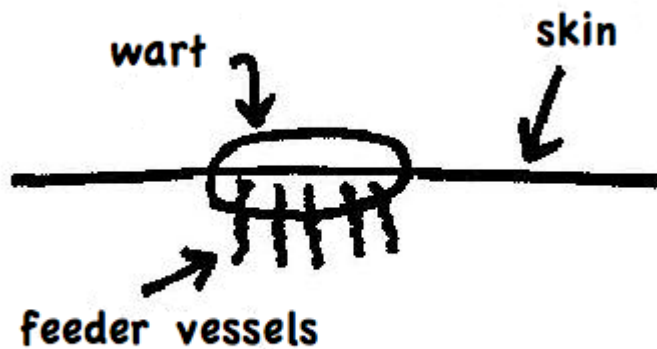
Nope, warthogs don't actually have warts. But kids often do!

Emma's dad and I both peered at the filamentous growth dangling from his nine year old's right nostril. "Yes," I said, "it's definitely a wart."

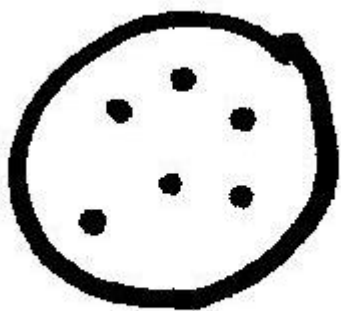
Emma's dad offered, "When I was a kid, I heard the way to get rid of a wart was to cut a potato in half, rub it on the wart, and bury the potato in the backyard. Legend had it, by the time the potato disintegrates, the wart will be gone."

"I wish it were so easy," I replied.

Warts are caused by skin-dwelling viruses. On the feet, warts can sometimes be mistaken for calluses. One distinguishing feature is that warts sit in the skin like this:



Fine "feeder" blood vessels extend from the wart into the skin. Therefore, if you scrape off the top layer of a wart, a dotted pattern usually appears from above. The dots will not appear in a callus. View from above:



There are simply no glamorous ways to get rid of warts. Most treatment modalities destroy warts by pulverizing the home they live in, a.k.a. your skin. Your doctor may be armed with various agents such as liquid nitrogen or dimethyl ether propane, which produces a chemical "freeze" and dries up the wart. Another agent called cantharidin (otherwise known as

“beetle juice”) is a caustic liquid derived from the blister beetle. Application of beetle juice causes the warts to blister.

Some doctors will even manually take a scalpel and cut out the warts.

Like I said, there are no glamorous treatments. However, more gentle creams which stimulate the immune system, such as Imiquimod (Aldara) show some promise in children. Other compounds such as 5-fluorouracil can be topically applied or injected and treatments such as pulsed dye laser therapy have mixed reviews.

Over-the-counter remedies exist in a milder form. Commonly used wart removers such as Compound W, Dr Scholl's Clear Away Wart, and Duofilm all contain salicylic acid. The acid slowly dries up the warts. When applying salicylic acid, after a few applications make sure you peel the dead crusty top layer off the wart. Without peeling, future medicine will not reach the wart. These methods can take weeks to months to work, but they do work.

And don't forget the duct tape. Duct tape, the great all-purpose household item, has also been shown to speed up the resolution of warts. Scientists hypothesize the constant presence of the adhesive somehow stimulates a natural immune response. If you try duct tape, have your child wear the duct tape over the wart for several days in a row and then give a day off. If the wart is on a hand or foot, the tape tends to fall off during the day: just re-apply some tape at bedtime. Effects should be seen within a couple of months if not sooner. Now, the original study that showed duct tape was helpful, was followed by a study which showed duct tape was not helpful. Some hypothesize that the results differ because silver sticky duct tape was used in the initial study, while the later study used less sticky duct tape. So be sure to use the old-fashioned silver duct tape.

The prevention of warts is tricky. Some people just seem genetically predisposed. However, your best bet for keeping warts away is to keep your child's skin as healthy as possible. Warts tend to gravitate towards areas of skin broken down by friction such as feet or fingers. Liberally apply moisturizing creams daily to prone areas. After a summer of wearing flip-flops and walking on the rough cement by the side of a swimming pool in bare feet, many children end up with warts on the bottom of their feet. I know a teen whose warts on the tips of her fingers stemmed from months of guitar strumming.

Turns out that even without treatment, 60% percent or more of all warts will disappear spontaneously within two years.

Coincidentally, I think that's also the time it takes for a potato half to disintegrate.

Naline Lai , MD and Julie Kardos, MD

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When a pet dies



Photo by Lexi Logan

We welcome Bereavement Counselor Amy Keiper-Shaw who shares with us how to discuss the death of a pet with your child.

—Drs. Lai and Kardos

When I first graduated from college I worked as a nanny. One day the mom shared with me that their family goldfish recently died. As this was her daughter's first experience with death, we schemed for nearly 20 minutes to find the best way to talk to her child. The mom and I thought it could be an excellent teaching moment.

We pulled the girl away from her playing to explain that the fish had died. We told the girl we'd help her have a funeral if she wanted, and we would find a box (casket) to bury the fish so she could say her goodbyes. We explained what a casket

was and what a funeral was in minute detail. After our monologue we stopped, we asked if she had any questions.

After a slight pause she asked, "Can't we just flush it?"

The lesson I learned from that experience, and still use to this day, is to keep things simple, and know my audience. Sometimes as parents we overcompensate for our own fears and make situations more challenging than they need to be.

Here are some tips on how to talk to your children about pet loss:

Tell your child about the death, and then pause. Ask her what she thinks death means before moving on with further explanations. This will help you know if she has questions or if she has enough information for the moment. Children often need a small amount of information initially and will later come back to you several times later to ask more questions after they process the information.

Remember to express your own grief, and reassure your child that many different feelings are ok. Be sure to allow children to express their feelings. If your child is too young to express herself verbally, give her crayons and paper or modeling clay too help express grief.

Avoid using clichés such as: Fluffy "went to sleep." Children may develop fears of going to bed and waking up. The phrase "God has taken" the pet could create conflicts in a child and she may become angry at a higher power for making the pet sick, die, or for "taking" the pet from them.

Be honest. Hiding a death from a child can cause increased anxiety. Children are intuitive and can sense is something is wrong. When the death isn't explained they make up their own explanation of the truth, and this is often much worse than the reality of what occurred.

Children are capable of understanding that life must end for

all living things. Support their grief by acknowledging their pain. The death of a pet can be an opportunity for a child to learn that adult caretakers can be relied upon to extend comfort and reassurance through honest communication.

Developmental Understanding of Death

Two and three-year-olds

Often consider death as sleeping, therefore tell them the pet has **died** and will not return.

Reassure children that the pet's failure to return is unrelated to anything the child may have said or done (magical thinking).

A child at this age will readily accept another pet in the place of a loved one that died.

Four, five, and six-year-olds

These children have some understanding of death but also a hope for continued living (a pet may continue to eat, play & breathe although deceased).

They can feel that any anger that they had towards the pet may make them responsible for the pet's death ("I hated feeding him everyday").

Some children may fear that death is contagious and could begin to fear their own death or worry about the safety of their parents.

Parents may see temporary changes in their child's bladder/bowels, eating, and sleeping.

Several brief discussions about the death are more productive than one or two prolonged discussions.

Seven, eight, and nine-year-olds

These children have an understanding that death is real and irreversible.

Although, to a lesser degree than a four, five, or six-year-old, these children may still possibly fear their own death or the death of their parents.

May ask about death and its implications (Will we be able to get another pet?).

Expressions of grief may include: somatic concerns, learning challenges, aggression, and antisocial behavior. Expression may take place weeks or months after the loss.

Adolescents

Reactions are similar to an adult's reaction.

May experience denial which can take the form of lack of emotional display so they could be experiencing the grief without outwards manifestations.

Resources:

Petloss.com— a gentle and compassionate website for pet lovers who are grieving the death or an illness of a pet- they have a Pet Loss Candle Ceremony every week

Your local veterinarian- often your veterinarian has or knows of a local pet loss group

Handsholdinghearts.org— our group of counselors offer grief support to children, teens, and their families centered in Bucks County Pennsylvania.

Books on pet loss for children:

Badger's Parting Gifts (children) by Susan Varley

Lifetimes by Brian Mellonie & Robert Ingpen

The Tenth Good Thing About Barney (children) by Judith Viorst

Amy Keiper-Shaw, LCSW, QCSW, GC-C

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Amy Keiper-Shaw is a licensed grief counselor who holds a Masters Degree in clinical social work from the University of

Pennsylvania. For over a decade she has served as a bereavement counselor to a hospice program and facilitates a bereavement camp for children. She directs Handsholdinghearts, a resource for children who have experienced a significant death in their lives.

Home remedies for dry, chapped hands



Raw hands- recognize your kid?

Even when it isn't flu season, we pediatricians wash our hands about sixty times a day, maybe more. This frequent washing, in combination with cold winter air, leads to dry, chapped hands. Here are the hands of a patient. Do your children's hands look like these?

To prevent dry, chapped hands:

- **Don't stop washing your hands**, but do use a moisturizer afterwards. Also use warm but not hot water. Hot water removes protective oils from skin.
- According to the American Academy of Dermatology, **hand sanitizer can prevent the drying** that accompanies frequent hand washing. However, we can tell you from experience that once your hands are already chapped and cracked, the alcohol content in the sanitizers stings sensitive skin. So if your child's hands are already chapped, stick with water and soap.
- **Wear gloves or mittens** as much as possible outside even if the temperature is above freezing. Remember chemistry class—cold air holds less moisture than warm air and therefore is unkind to skin. Gloves will prevent some moisture loss. Having difficulty convincing your child to wear gloves? Point out that refrigerators are kept around 40 degrees Fahrenheit or below. Tell your kids that if they wouldn't sit inside a refrigerator without layers, then it would be wise to wear gloves.
- Before exposure to any possible irritants such as the chlorine in a swimming pool, **protect the hands by layering heavy lotion (e.g. Eucerin cream) or petroleum based product (e.g. Vaseline or Aquaphor) over the skin.**

To rescue dry, chapped hands:

- Prior to bedtime, smother hands in **1% hydrocortisone ointment**. Avoid the cream formulation. Creams tend to sting if there are any open cracks. Take old socks, cut out thumb holes and have your child sleep at night with the sock on his hands. Repeat nightly for up to a week. Alternatively, for mildly chapped hands, use a **petroleum oil based product such as Vaseline or Aquaphor** in place of the hydrocortisone.
- If your child has underlying eczema, **prevent your child from scratching his hands**. An antihistamine taken orally such as diphenhydramine (Benadryl) or cetirizine (Zyrtec) will take the edge off the itch. Keep his nails trimmed to avoid further damage from scratching.

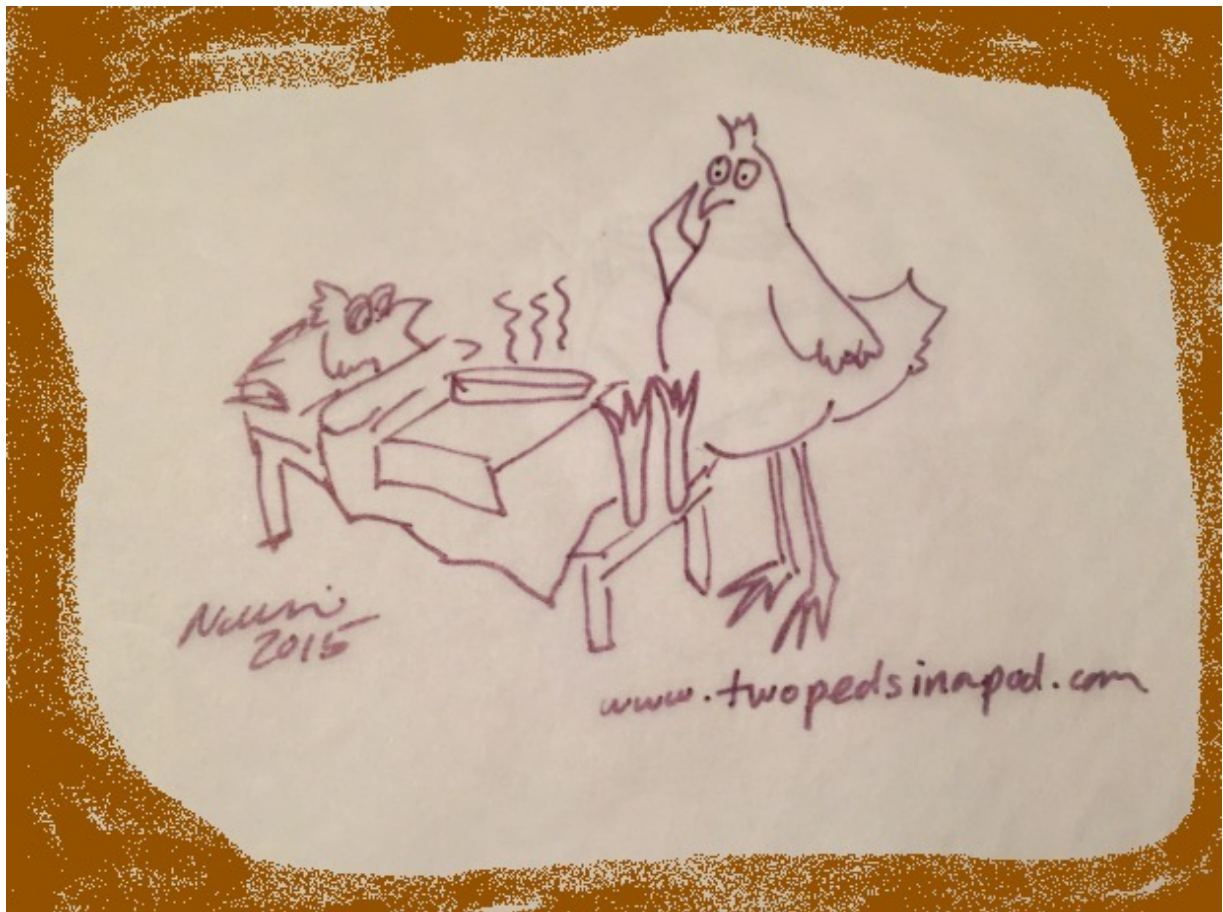
- **For extremely raw hands**, your child's doctor may prescribe a stronger cream and if there are signs of a bacterial skin infection, your child's doctor may prescribe an antibiotic.

Happy moisturizing. Remember smearing glue on your hands and then peeling off the dried glue? It's not so fun when your skin really is peeling.

Naline Lai, MD and Julie Kardos, MD

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Does my child have a cold or the flu?



“Now what kind of soup did the doctor recommend? Was that tomato soup? Mushroom Barley?”

Headlines remind us daily that the US is officially in the midst of flu season. We are also in the midst of a really yucky cold season. We have seen numerous kids in our offices with bad colds and others with flu.

Parents ask us every day how they can tell if their child has a cold or the flu. While no method is fool proof, here are some typical differences:

The flu, caused by influenza virus, comes on suddenly and makes you feel as if you've been hit by a truck.

Flu almost always causes fever of 101°F or higher and some respiratory symptoms such as runny nose, cough, or sore throat (many times, all three). Children, more often than adults, sometimes will vomit and have diarrhea along with their respiratory symptoms, but contrary to popular belief, there is no such thing as “stomach flu.” In addition to the usual respiratory symptoms, the flu causes body aches, headaches, and often the sensation of your eyes burning. The fever usually lasts 5-7 days. All symptoms come on at once; there is nothing gradual about coming down with the flu.

Colds, even really yucky ones, start out gradually.

Think back to your last cold: first your throat felt scratchy or sore, then the next day your nose got stuffy or then started running profusely, then you developed a cough. **Sometimes during a cold you get a fever for a few days.** Sometimes you get hoarse and lose your voice. The same gradual progression of symptoms occurs in kids. In addition, kids

often feel tired because of interrupted sleep from cough or nasal congestion. This tiredness leads to extra crankiness.

Usually kids still feel well enough to play and attend school with colds.

The average length of a cold is 7-10 days although sometimes it takes two weeks or more for all coughing and nasal congestion to resolve.

Important news flash about mucus:

The mucus from a cold can be thick, thin, clear, yellow, green, or white, and can change from one to the other, all in the same cold. The color of mucus does NOT tell you if your child needs an antibiotic and will not help you differentiate between a cold and the flu. Here's a post on sinus infections vs. a cold.

Remember: colds = gradual and annoying. Flu = sudden and miserable.

If your child has a runny nose and cough, but is drinking well, playing well, sleeping well and does not have a fever and the symptoms have been around for a few days, the illness is unlikely to "turn into the flu."

Fortunately, a vaccine against the flu is available for all kids over 6 months old

This flu vaccine can prevent the misery of the flu. In addition, vaccines against influenza save lives by preventing flu-related complications such as pneumonia, encephalitis (brain infection), and severe dehydration. Even though we are starting to see a lot of flu, it is not too late to get the flu vaccine for your child. Please schedule a flu vaccine ASAP if your child has not yet received one for this season. Parents and caregivers should also immunize themselves. We all know how well a household functions when Mom or Dad have the

flu... not very well! Sadly there have been 20 children so far this flu season who died from the flu. In past years many flu deaths were in kids who did not receive the flu vaccine, so please vaccinate your children against the flu if you have not already. Unfortunately, the vaccine isn't effective in babies younger than 6 months, so it is important to vaccinate everyone who lives or cares for a baby this young.

Be sure to read our article on ways to prevent colds and flu. As pediatricians, we remind you to WASH HANDS, make sure your child eats healthy, gets enough sleep, and avoid crowds, when possible. As moms, we add that you might want to cook up a pot of good old-fashioned chicken soup to have on hand in case illness strikes your family.

Julie Kardos, MD and Naline Lai, MD

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Update on teen meningococcal (meningitis) vaccines



Olga Pasick, mom of a teen who died of meningococcal disease, shares her personal experience and information about the updated guidelines.

I wish I had known the importance of vaccination for meningococcal disease before it was too late for my son. Back in September of 2004, David was a happy, healthy 13 year old, who came down with flu-like symptoms one evening. He first felt cold, then spiked a high fever, and vomited throughout the night. In the morning we called the pediatrician to have him seen. Everything ached, and he needed help getting dressed. That's when I noticed purplish spots on his chest and arms. I didn't know how serious that symptom was.

As soon as the doctors saw him, they knew he had meningococcal disease. He was rushed to the ER for a spinal tap and treatment. Unfortunately, the disease spread quickly and his organs failed. David died within 24 hours of first developing those flu-like symptoms from a potentially vaccine-preventable disease. Unbelievable... and heartbreaking.

Meningococcal disease is spread through respiratory droplets, such as coughing or sneezing, or through direct contact with an infected person, such as kissing. About 1 in 10 people are carriers, and don't even know it. It doesn't affect everyone. It is difficult to diagnose because symptoms are similar to

the flu, and include high fever, headache, stiff neck, nausea, vomiting, exhaustion, and a blotchy rash. The disease spreads quickly and within hours can cause organ failure, brain damage, amputations of limbs, and death.

The Centers for Disease Control and Prevention and the American Academy of Pediatrics recommend meningococcal vaccination for all 11-18 year olds. The newest recommendation is for permissive use (recommended on a case by case basis) of a type of meningococcal vaccine called meningococcal serotype B. The serotype B vaccine is for ages 16-23, with a preferred age of 16-18. This recommendation joins the long-standing recommendation that all adolescents get meningococcal A, C, W and Y vaccine (this one vaccine protects against these four serotypes) at age 11-12 with a booster dose at 16. The newer serotype B vaccine is particularly important for older adolescents and young adults because it is the most common cause of meningococcal disease in this age group. No vaccine is 100% effective, but it is the best preventative measure we can take.

Because of my experience, I became a member of the National Meningitis Association's (NMA) Moms on Meningitis (M.O.M.s) program. We are a coalition of more than 50 mothers from across the country whose children's lives were drastically affected by this disease, and are dedicated to supporting meningococcal prevention.

Visit the NMA website for more information and to view powerful personal stories of those affected. Talk to your doctor about vaccination. It could save a life. How I wish those recommendations were in place years ago.

Olga Pasick
Wall, New Jersey

Note: In the United States, you may know the meningococcal A, C, W and Y vaccine as either Menactra® or Menveo®. The

serogroup B meningococcal vaccine you may recognize as either Bexsero® or Trumenba®.

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Flu vaccine myth busters



Ben's runny nose, as depicted by Ben

The good news is that there was only a smattering of influenza (flu) cases across the United States over the summer. The great news is that according to the Centers for Disease Control, most of the detected strains are covered in this year's vaccine.

If you're still hesitant to vaccinate your family, let's talk frankly about some myths we sometimes hear about flu vaccines:

If my friend's child has flu symptoms, I'll just avoid their house to avoid catching the flu

False. According to the CDC , you are infectious the day before symptoms show up. So it is TOO LATE to avoid only those already sick.

My family never gets the flu so it's not necessary to get the vaccine.

False and dangerous. Saying "My child and I have never had the flu so we don't need the flu vaccine" is like saying, "I've never a car accident so I won't wear my seat belt."

I got the flu shot last year and then I got sick. So the flu shot must have made me sick.

Our condolences. True, you were sick. **But this statement is False**, because the illness was not caused by the flu vaccine. Vaccines are not real germs, so you can't "get" a disease from the vaccine. But to your body, vaccine proteins appear very similar to real germs and your immune system will respond by making protection against the fake vaccine germ. When the real germ comes along, pow, your body already has the protection to fend off the real disease.

It is important to realize that the vaccine takes about 2 weeks to take effect in your body. So, if you were unlucky enough to be exposed to someone with the flu and then got the vaccine the next day, you still have a good chance of coming down with the flu. Unfortunately, the vaccine will not have had a chance to work yet.

Please know, however, there is a chance that for a couple days after a vaccine, you will ache and have a mild fever. The reason? Your immune system is simply revving up. But no, the flu vaccine does not give you the flu.

No one dies from the flu anymore, do they? Flu is just not that dangerous, so my child does not need a flu shot. I will just take my chances with flu.

False! A total of 107 influenza-associated pediatric deaths

were reported for the 2016-2017 season. In past seasons up to 90% of children who died from flu did not receive a flu vaccine. So please, vaccinate yourself and your children.

The vaccine coverage is awful.

Not the case this year. On the other hand, even if coverage was spotty, look at it this way– if half of the flu out there was covered, that's a lot fewer people that won't give your kid the flu.

Naline Lai, MD and Julie Kardos, MD

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rev Oct. 10, 2017 see comments

Pediatric tidbits-probiotics, sport burnout and more



In front of “The Bean” in Chicago

We’re back from the American Academy of Pediatrics National Conference and Exhibition in Chicago—sharing with you some tidbits from the forefront of pediatrics:

New high blood pressure guidelines are here. Starting at age 3 years, children should have their blood pressure checked annually, more often if they have certain medical conditions such as diabetes or kidney disease. The cutoff for “high blood pressure” has been lowered so more and more, you may notice your pediatrician scrutinizing your child’s blood pressure.

We’ve noticed many more over-use injuries from kids who play the same sport year round. We were reminded that most professional athletes played multiple sports in high school and some even up through college. Specialization in a particular sport leads to more injuries, burnout, depression, and anxiety. If you feel that sports rule your child’s life,

remember this good rule of thumb: for high school kids, keep training under 16 hours a week. For the younger kids, keep the total number of hours per week playing organized sports under an hour per week for each year of age. For example, an 8 year old should spend no more than 8 hours per week playing organized sports.

Probiotics are ubiquitous these days, but are they helpful? In viral diarrhea, probiotics can be mildly helpful, and may shorten the duration of diarrhea by about a day. Probiotic therapy is showing promise for treating colic, but not for treating eczema. For more information see the International Scientific Association of Probiotics and Prebiotics.

If your child scalds himself, put the burn under COLD running tap water for *20 minutes* to stop further injury. This treatment is effective for up to 3 hours after a burn.

A cautionary word about herbs: Know that herbs are not regulated by the FDA (Food and Drug Administration). Companies that supply herbs are under no obligation to show that the product works. Additionally, the company that sells the herb does not have to show that the herb is safe or effective, and cannot claim that the product can cure or prevent anything. Additionally there are no manufacturing standards to adhere to, which means you do not know how much herb or for that matter, any other contaminants, are in the herbs that you buy.

Julie Kardos, MD and Naline Lai, MD

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Cell phones, routers and electromagnetic radiation



At college drop off last week, my husband noticed an object that looked suspiciously like a router in our kid's dorm room. Vaguely aware that routers emit some sort of radiation, I turned to environmental medicine expert Dr. Alan Woolf for information, here is what he shared:

Q: My daughter has a wireless router within 2 feet of where she sleeps. Is this a problem?

A: The answer to the question is unfortunately not a straightforward 'no problem'. Routers are one of a number of devices, including tablets, cell phones, and cell towers, that give off electromagnetic radiation (EMR) or radiofrequency radiation (RFR). In 2013 more than 6.8 billion mobile phones were registered.

Animal studies of EMR/RFR shows some biological effects, but it is uncertain whether these are applicable to humans. Human studies (and there have been many) have been either inconclusive or negative and are frequently confounded by problems with their design. However one well-controlled, blinded 2015 study of 31 adult females (average age: 26 years) holding 3G mobile phones near their heads for 15 minutes showed evidence of changes in their brain waves on EEG. Whether these changes were long-lasting or of any health import are unanswered questions. The International Agency for Research on Cancer (IARC), part of the United Nations' World Health Organization, said in June 2011 that a family of frequencies that includes mobile-phone emissions is "possibly carcinogenic to humans."

Federal agencies, such as the NIOSH, FCC and FDA, have set safety standards for mobile phones, routers, cell towers, etc. that are inclusive of safety factors for EMR/RFR emissions for humans; no commercial devices can be sold in the U.S. that do not comply with such standards. RFR energy levels from Wi-Fi equipment in all areas accessible to the general public, including school settings, are required to meet Federal exposure guidelines. The limits specified in the guidelines are based on an ongoing review of thousands of published scientific studies on the health impacts of RFR energy. Levels of RFR energy emitted from Wi-Fi equipment are typically well below these exposure limits. As long as exposure is below these established limits, there is no convincing scientific evidence that emissions from this equipment are dangerous to schoolchildren or to adults. There is no scientific evidence

of long-term or cumulative health effects of RFR in children.

Wireless routers in commercial use are very low energy devices and are not a safety concern. Still, It seems prudent to keep some distance away from EMR/RFR emitters when chronic exposure is likely. The strength (and therefore dose) of EMR/RFR is exponentially inversely proportional to distance from the emission. Apple Inc. itself recommends, for example, that mobile phones be held at least 5/8 inch away from the body, or that Bluetooth-type headphone devices be used to keep the head away from the phone emitter.

In reality, EMR/RFR waves are all around us (just see what happens when your cell phone is 'searching' for a signal—sometimes it finds half a dozen or more in your vicinity). Unfortunately the medical safety science has not kept up with advances in the technology and so there continue to be uncertainty and unanswered health questions concerning their safety.

Alan Woolf, MD, MPH

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We thank Dr. Woolf for his insight, and Dr. Lai is happy to report that her daughter gets great wi-fi reception. Alan Woolf, MD, MPH is Professor of Pediatrics, Harvard Medical School (HMS), attending physician at Boston Children's Hospital (BCH) and has authored over 250 original reports, scientific reviews, chapters, and other publications, many of them on topics concerning children's poisoning and toxic environmental exposures. Among other accolades he is a past-president of the American Association of Poison Control Centers (AAPCC), and immediate past-president of the American Academy of Clinical Toxicology (AACT). Dr. Woolf has also served as external consultant to the World Health Organization's International Program in Chemical Safety and as a member of the National Advisory Committee for Acute Exposure

Guideline Levels for Hazardous Substances, EPA. He was recently chosen as a member of the General Hospital & Personal Use Device Panel of the Food & Drug Administration (FDA) and also serves as a consultant to the Medical Devices Advisory Committee of the Center for Devices and Radiological Health of the FDA.