Pretty earrings- but what you see in the back will surprise you

We see this a couple times a year… an earring which looks fine when viewed from the front…

…is actually embedded when viewed from the back. When you flip up this child’s ear lobe, you will notice how the skin has nearly completely engulfed the earring back. Young children

heal well and the skin in the back of an ear can grow over the back of an earring fairly easily. So, change earrings often and “watch their backs.” It’s not enough just to spin the earrings around from the front.

Naline Lai, MD and Julie Kardos, MD

Mom “nose” best: Happy Mother’s Day 2016

This Mother’s Day, we honor Dr. Kardos’s mom, who passed earlier this year.

Dr. Kardos and I had been planning a post on nasal congestion in kids, but because we couldn’t have said it any better, we share a poem that Dr. Kardos’s mom wrote on this topic.

—Drs. Lai and Kardos

Runny Noses

My grandsons seem always to have runny noses;

They drip from their noses and land on their toeses;

One kid especially, his name is Aaron,

Will hug you so tight that what’s runnin’ you’re sharin’.

Alex will wipe with the back of his hand;

His runs in the house, on the beach, on the sand.

Jacob is older and he’ll use a tissue,

So his runny nose is not much of an issue.

In case they have colds, I hand each one a sweater,

But wearing a sweater does not make things better.

Allergic to dust? That’s the answer I’m seeking;

But while I keep dusting, their noses keep leaking.

They eat well and sleep well and play hard all day

In spite of their dripping that won’t go away.

So I’ve come to conclude, and I’m happy to say

That the noses of kids prob’ly just come that way.

by Felice Kardos (1943-2016)

The best sunscreen: questions answered

An inadvertent sunburn tattoo

I was greatly relieved recently when my teen arrived back from a music department trip to Disney without a sunburn. I had pictured a bright red cherry tomato coming off the plane. For those of us stuck in the middle of an East Coast perpetual rain cloud, it's hard to believe that anyone outside of the South needs to worry about sunscreen. But soon enough, you will be scratching your head in a pharmacy aisle asking yourselves these questions:

What is SPF?

- SPF stands for Sun Protection Factor. SPF gives you an idea of how long it may take you to burn. SPF of 15 means you will take 15 times longer to burn without sunscreen. If you would burn after one minute in the sun, that's only 15 minutes of protection!
- The American Academy of Pediatrics recommends applying a minimum of SPF 15 to children, while the American Academy of Dermatology recommends a minimum of SPF 30. We both apply sunscreen with SPF 30 to our own kids (mom hint: the high SPF sunscreens tend to be watery).
- Apply all sunscreen liberally and often– at least every two hours. More important than the SPF is how often you reapply the sunscreen. All sunscreen will slide off of a sweaty, wet kid. Even if the label says "waterproof," reapply after swimming.
- Watch out for sunlight reflecting off water as well as sunburning on cool days. One pediatrician mom I know was aghast at seeing signs posted at her kid's school reminding parents to apply sun screen "because it will be in the 80's." Kids burn on 60 degree days too. Lower temperatures do not necessarily mean less UV light.

Why does the bottle of sunscreen say to "ask the doctor" about applying sunscreen to babies under 6 months of age?

- Sunscreens were not safety-tested in babies younger than 6 months of age, so the old advice was not to use sunscreen under this age. The latest American Academy of Pediatrics recommendation is that it is more prudent to avoid sunburn in this young age group than to worry about possible problems from sunscreen. While shade and clothing are the best defenses against sun damage, you can also use sunscreen on exposed body areas.
- Clothing helps to block out sunlight. In general, tighter weaves protect better than loose weaves. Expensive "sun-protective clothing" is not always

better– a study from 2014 suggests regular clothing may be as protective.
- Hats help prevent burns as well.
- Remember that babies burn more easily than older kids.

Which brand of sunscreen is best for babies and kids?

- Although clothing and shade block harmful rays the best, no one brand of sunscreen is better for children than another. We both tell our patients to apply a "test patch" the size of a quarter to an arm or leg of your baby and wait a few hours. If no rash appears, then use the sunscreen on whatever body parts you can't keep covered by clothing. Look for UVA and UVB protection. More expensive does not always mean "better" and SPF above 50, according to the American Academy of Dermatology, has not been proven to be more effective than 50.

What do we know about the ingredients in sunscreen such as oxybenzone? In the United States sunscreen ingredients are considered medications and are regulated by the FDA. Oxybenzone is one of the oldest broad-spectrum (UVA and UVB) sunscreens, and was approved by the FDA in 1978. Oxybenzone's main side effect is that it can cause allergic reactions of the skin. Recently, some people question whether oxybenzone can be a hormone disrupter and have questioned the use of oxybenzone. At this point, no hormonal disturbances have been clearly found in humans and the American Academy of Dermatology continues to support the use of oxybenzone.

Sunscreens made with zinc oxide and titanium dioxide (the white stuff on a lifeguard's nose) have not garnered any questions nor sparked any debate about safety. Interestingly, zinc oxide is not only an effective sunscreen but also you will recognize it as the main ingredient in many newborn diaper rash creams.

Any info about the popular sprays? For spray formulations of

any type of sunscreen, many doctors are concerned that any aerosolized oily substance will irritate the lungs and are looking into long term effects now. Avoid spraying sun screen near a child's head to avoid inhalation. Also with the spray, some dermatologists worry that people might not be as thorough when they apply a spray as when they apply a cream.

Can I use last year's sunscreen? Most sunscreens have expiration dates, as long as your bottle hasn't expired, then it should be effective. In general, sunscreens are designed to last about three years before they expire.

Remember when we used to call sunscreen lotion "suntan lotion," and when tolerating red, blistering shoulders was considered a small price to pay for a tan? Live and learn.

Naline Lai, MD and Julie Kardos

The best antihistamine for your kid



Lately, whenever I take my dog for her walk, she sneezes as soon as we get outside. I find it interesting that my vet says I can give her Claritin—the same dose that I take for my own seasonal allergies. Must be time to repost our allergy medicine post featuring Dr. Lai's poem.

—Drs. Kardos and Lai

The Quest for the Best (antihistamine)

Junior's nose is starting to twitch
His nose and his eyes are starting to itch.
As those boogies flow, you ask oh why, oh why can't he learn to blow?

It’s nice to finally see the sun
But the influx of pollen is no fun.
Up at night, he’s had no rest,
But which antihistamine is the best?

It’s a riddle with a straight forward answer. The best antihistamine, or “allergy medicine” is the one which works best for your child with the fewest side effects. Overall, I don’t find much of a difference between how well one antihistamine works versus another for my patients. However, I do find a big difference in side effects.

Oral antihistamines differ mostly by how long they last, how well they help the 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. Most of what you see over-the-counter was by prescription only just a few years ago. And unlike some medications, the recommended dosage over-the-counter is the same as what we used to give when we wrote prescriptions for them.

The oldest category, the 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. Diphendydramine (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. Another first generation antihistamine is Clemastine (eg.brand name Tavist).

The newer second generation antihistamines cause less sedation and are conveniently dosed only once a day. Loratadine (eg. brand name Alavert, Claritin) is biochemically more removed

from diphenhydramine than Cetirizine (eg. brand Zyrtec) and runs a slightly less risk of sleepiness. However, Cetirizine tends to be a better at stopping itchiness.
Now over-the-counter, fexofenadine (eg brand name Allegra) is a third generation antihistamine. Theoretically, because a third generation antihistamine is chemically the farthest removed from a first generation antihistamine, it causes the least amount of sedation. The jury is still out.

If you find your child's allergies are breaking through oral antihistamines, discuss adding a different category of oral allergy medication, eye drops or nasal sprays with your pediatrician.
Because of decongestant side effects in children, avoid using an antihistamine and decongestant mix (often, first generation antihistamines such as brompheniramine are combined in this fashion).

Back to our antihistamine poem:

Too many choices, some make kids tired,
Paradoxically, some make them wired.
Maybe while watering flowers with a hose,
I'll just turn the nozzle and wash his nose.

Naline Lai, MD with Julie Kardos, MD

Updated from the original post April 10, 2011

Update on Lyme disease: Is it

bug-check season in your area of the United States?

The classic bullseye rash of Lyme

Our infectious disease colleagues warn us that this year, winter in the Northeast United States was not cold enough for long enough to kill off as many ticks as usual. Thus, we folks in Pennsylvania are in for a more burdensome Lyme disease season. We've already had children come to our office this spring with concerns of tick bites, so here's an update on Lyme disease:

Lyme disease is spread to people by blacklegged ticks. Take heart- even in areas where a high percentage of blacklegged

ticks carry the bacteria that causes Lyme disease, the risk of getting Lyme from any one infected tick is low. Niney-nine percent of the little critters DON'T carry Lyme disease… but there are an awful lot of ticks out there. Blacklegged ticks are tiny and easy to miss on ourselves and our kids. In the spring, the ticks are in a baby stage (nymph) and can be as small as a poppy seed or sesame seed. In order to spread disease, the tick has to be attached and feeding on human blood for more than 36 hours, and engorged.

In areas in the United States where Lyme disease is prevalent (New England and Mid-Atlantic states, upper Midwest states such as Minnesota and Wisconsin, and California), parents should be vigilant about searching their children's bodies daily for ticks and for the rash of early Lyme disease. Tick bites, and therefore the rash as well, especially like to show up on the head, in belt lines, groins, and armpits, but can occur anywhere. When my kids were young, I showered them daily in summer time not just to wash off pool water, sunscreen, and dirt, but also for the opportunity to check them for ticks and rashes. Now that they are older I call through the bathroom door periodically when they shower: "Remember to check for ticks!" Read our post on how to remove ticks from your kids.

"I thought that Lyme is spread by deer ticks and deer are all over my yard." Nope, it's not just Bambi that the ticks love. Actually, there are two main types of blacklegged ticks, *Ioxdes Scapularis* and *Ioxdes Pacificus*, which both carry Lyme and feed not only on deer, but on small animals such as mice. (Fun fact: *Ioxdes Scapularis* is known as a deer tick or a bear tick.)

Most kids get the classic rash of Lyme disease at the site of a tick bite. The rash most commonly occurs by 1-2 weeks after the tick bite and is round, flat, and red or pink. It can have some central clearing. The rash typically does not itch or hurt. **The key is that the rash expands to more than 5 cm**, and can become quite large as seen in the above photo. This

finding is helpful because if you think you are seeing a rash of Lyme disease on your child, you can safely wait a few days before bringing your child to the pediatrician because the rash will continue to grow. The Lyme disease rash does not come and then fade in the same day, and the small (a few millimeters) red bump that forms at the tick site within a day of removing a tick is not the Lyme disease rash. Knowing that a rash has been enlarging over a few days helps us diagnose the disease. Some kids have fever, headache, or muscle aches at the same time that the rash appears.

If your child has primary Lyme disease (enlarging red round rash), the diagnosis is made by a doctor examining your child. Your child does not need blood work because it takes several weeks for a person's body to make antibodies to the disease, and blood work tests for antibodies against Lyme disease, not actual disease germs. In other words, the test can be negative (normal) when a child does in fact have early Lyme disease.

The second phase of Lyme disease occurs if it is not treated in the primary phase. It occurs about one month from the time of tick bite. Children develop a rash that looks like the primary rash but appears in multiple body sites all at once, not just at the site of the tick bite. Each circular lesion of rash looks like the primary rash but typically is smaller. Additional symptoms include fever, body aches, headaches, and fatigue without other viral symptoms such as sore throat, runny nose, and cough. Some kids get the fever but no rash. Some kids get one-sided facial weakness. This stage is called Early Disseminated disease and is treated similarly to the way that Early Lyme disease is treated- with a few weeks of antibiotics.

The treatment of early Lyme disease is straightforward. The child takes 2-3 weeks of an antibiotic that is known to treat Lyme disease effectively such as amoxicillin or doxycycline. Your pediatrician needs to see the rash to make the diagnosis. This treatment prevents later complications of the disease.

While the disease can progress if no treatment is undertaken, fortunately children do not get “chronic Lyme disease.” Once treatment is started, the rash fades over several days. Sometimes at the beginning of treatment the child experiences chills, aches, or fever for a day or two. This reaction is normal but you should contact your child’s doctor if it persists for longer.

Later stages of Lyme disease may be treated with the same oral antibiotic as for early Lyme but for 3-4 weeks instead of 2-3 weeks. The most common symptom of late stage Lyme disease is arthritis (red, swollen, mildly painful joint) of a large joint such as a knee, hip, or shoulder. Some kids just develop joint swelling without pain and the arthritis can come and go.

For some manifestations, IV antibiotics are used. The longest course of treatment is 4 weeks for any stage. Children do not develop “chronic Lyme” disease. If symptoms persist despite adequate treatment, sometimes one more course of antibiotics is prescribed, but if symptoms continue, the diagnosis should be questioned. No advantage is shown by longer treatments. Some adults have lingering symptoms of fatigue and aches years after treatment for Lyme disease. While the cause of the symptoms is not understood, we do know that prolonged courses of antibiotics do not affect symptoms.

For kids eight years old or older, if a blacklegged tick has been attached for well over 36 hours and is clearly engorged, and if you live in an area of high rates of Lyme disease-carrying ticks, your pediatrician may in some instances choose to prescribe a one time dose of the antibiotic doxycycline to prevent Lyme disease. The study that this strategy was based on and a few other criteria that are considered in this situation are described here.* Your pediatrician can discuss the pros and cons of this treatment.

Bug checks and insect repellent. Protect kids with DEET containing insect repellents. The Centers for Disease Control

recommends 10 to 30 percent DEET- higher percent stays on longer. Spray on clothing and exposed areas and do not apply to babies under two months of age. Grab your kids and preform daily bug checks- in particular look in crevices where ticks like to hide such as the groin, armpits, between the toes and check the hair. Be suspicious of random scabs. Dr. Lai once had a elementary school patient who had a blacklegged tick in the middle of his forehead. The mother noticed it at breakfast, tried to brush it off, thought it was a scab and sent the boy to school. Later that day the teacher called saying, “I think your son has a bug on his face.”

Misinformation about this disease abounds, and self proclaimed “Lyme disease experts” play into people’s fears. While pediatricians who practice in Lyme disease endemic areas are usually well versed in Lyme disease, if you feel that you need another opinion about your child’s Lyme disease, the “expert” that you could consult would be a pediatric infectious disease specialist.

For a more detailed discussion of Lyme disease, look to the Center for Disease Control website: www.cdc.gov.

Julie Kardos, MD and Naline Lai, MD

*link corrected 4/18/2016

Rolling along: Teach your child to ride a bike

Helmets on, ready to roll
photo credit: Sylvia Aptacy pixabay

About 95 percent of all Americans know how to ride a bike and who taught them? Probably their parents. Joining us today is frequent guest blogger Dr. Deb Stack with pointers on teaching your kid how to ride. – Drs. Lai and Kardos

I live in beautiful Bucks County, PA, an area known for its rolling hills, bike paths and covered bridges. With spring here, it's a great time to head out for a family ride.

Yet with less outdoor playtime, more and more children are struggling with learning to ride. A child's readiness is very individual. My own children ranged in age from 6-11 years old when they learned. Interestingly, my oldest learned by hopping

on a friend’s bike and being pushed down a gentle, grassy hill by the neighborhood children while I huddled out of sight around the corner. It turns out, their technique was right.

Riding a bike is an interplay of several components:

1. INTEREST – if the child is not interested, it is not time to try.
2. ABILITY to maintain PEDALing at a walking speed at least, even with distraction.
3. ABILITY to BALANCE when sitting.
4. STEERING
5. STARTING and STOPPING

After making sure your child is interested, check the bike:

The seat should be low enough that the rider can place both feet flat on the ground at the same time.

If there are hand brakes, the brake to the front wheel should be disconnected. This will prevent the rider from accidently squeezing only the front brake and being sent over the handlebars.

Remove the pedals or practice balancing on a Skuut bike, or balance bike, (two-wheeler without pedals). These are readily available and not too costly, but tend to be needed for only a short time.

Mountain bikes or BMX style bikes are not recommended for learning. Look for a bike where the pedals are nearly directly under the seat and the child does not have to raise the knees too high at the top of the pedal cycle.

Wear a helmet and make sure it is securely fastened under the chin.

Location: Look for a gently sloping grass hill (the kids were right!) or a large, fairly level, empty parking lot

What to do:

1. Practice pedaling separately if possible. Try a trike or stationary bike and practice pedaling at a steady rate and even singing or carrying on a conversation without stopping before heading out to try a two-wheeler.
2. Practice balancing: Use both feet to push off the ground and glide forward as far as the rider is able. Have the rider place feet down if he feels uncomfortable and then push again. Practice for about 15-20’. Keep practicing, trying to decrease the number of pushes per overall distance. Make sure the rider is looking ahead. Everyone, but most especially children, relies heavily on vision to balance.
3. Practice balancing and using hand brakes (if equipped). Work on glide-squeeze-feet down. This will allow the rider to slow down using the brakes and then place the feet down to stop or remain upright once stopped. It also allows the child to be in control of the speed.
4. Add the pedals back to the bike. Practice gliding. This time trying to place feet on the pedals for the glide. At this point, it can be helpful for the rider to start by being pushed by a spotter. Getting started and getting feet on the pedals is the most difficult part of riding and should be the last step taught.
5. Teach the rider how to start. Either pushing two to three times with both feet and placing on pedals, or with one foot while keeping the other on the pedal both work. Children will quickly let you know their preference.
6. Keep practicing in a large, open space and go in large circles before trying to make sharper turns. Make sure to practice going in circles both to the

left AND the right to practice both types of turns. Once the child has good control, you can transition to wide bike paths.

Some helpful reminders:

To keep a bike upright, the rider must lean into the turn, or in other words, turn handles into a fall rather than away.

Training wheels often teach the children to lean the wrong way and often slow learning. Better not to start them!

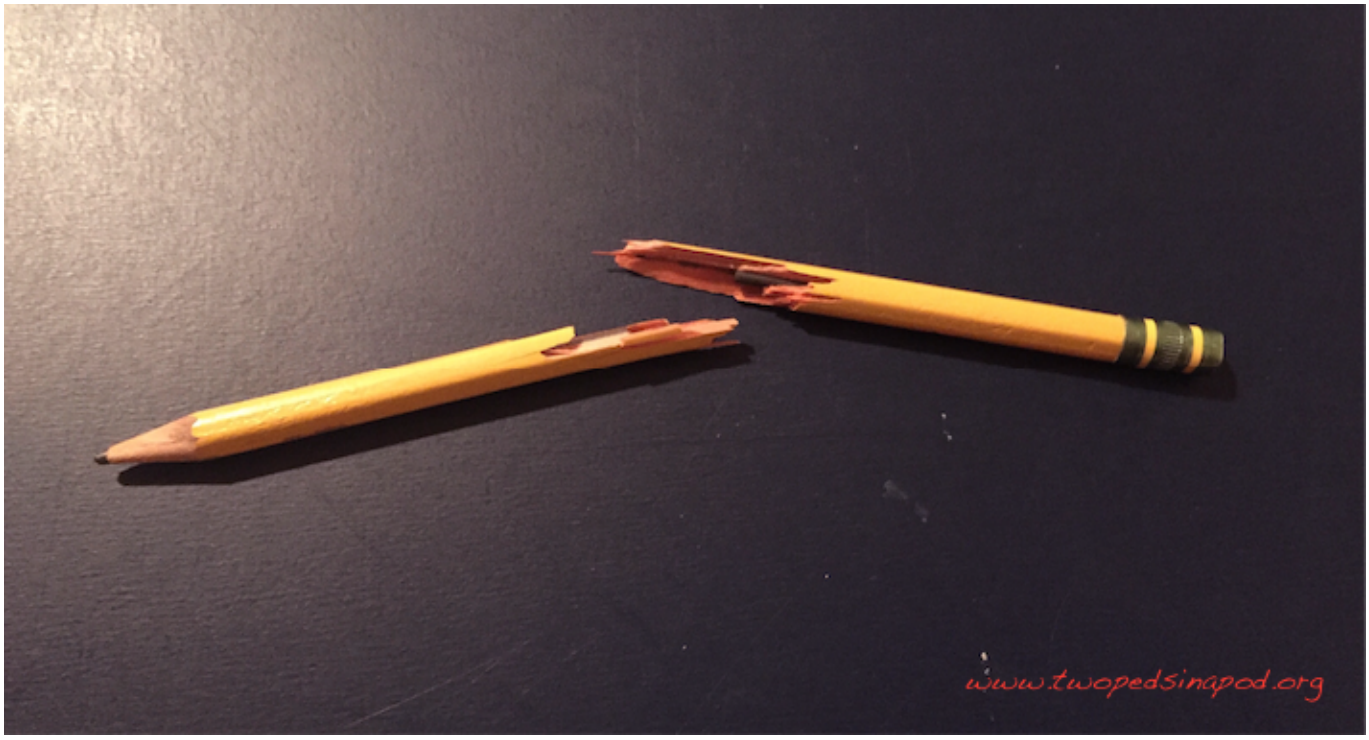
If you want to use a handle to attach to the back of the bike, make sure it is the type that clamps onto the seat post or frame. Your hand should hover over the top of the handle and just tap it gently to help a child rebalance; don't hold on. You can use an open hand on the end of the handle to push the child to start.

If your child is not quite ready, you can still enjoy a family ride; tag-along bikes foster good bike habits and let you bring along a child who is not quite ready to go solo. Don't miss the beautiful spring. Head out and ride!

Deborah Stack, PhD

With over 20 years of experience as a physical therapist, Dr. Stack heads The Pediatric Therapy Center of Bucks County in Pennsylvania. She holds both masters and doctoral degrees in physical therapy from Thomas Jefferson University.

Test anxiety: taking out the stress



Spelling test on Friday? Algebra unit test next week? SATs looming? Our guest blogger, child psychologist Dr. Jessica Collins, gives tips for calming test anxiety.

Test anxiety is a common source of stress for both students and parents. Despite your best efforts to help your child study more effectively, instructing your child how and what to study may actually increase their anxiety as your suggestions are likely to be based on your own study style preferences. Instead of offering your advice or opinion, we suggest you try some of the following:

Breathe. Help your child relax by practicing diaphragmatic breathing. Diaphragmatic breathing increases oxygen in the bloodstream. It is a way to interrupt the body's response to stress and promote a relaxation response instead. This strategy can be used before, after and *DURING* test taking!

Relax. When you are feeling anxious or stressed, one of the ways your body responds is with muscle tension. Progressive Muscle Relaxation (PMR) is a strategy that helps relieve that tension by completing a series of exercises in which you tense your muscles as you breathe in and relax them as you breathe out. PMR can also be used, anytime and anywhere!*

Promote Organization. Before your child begins to study, ensure that he/she has all of the necessary materials (i.e., pens, highlighters, note cards, books). Help your child group his/her study information into categories or test subjects. Organizing information before your child begins to study will allow him/her to spend more time with his/her nose in the books and less time searching for missing papers.

Break It Down. Work backward and help your child identify smaller content areas, within a test subject that he/she can focus on, one at a time. This will help your child feel less overwhelmed and make studying more manageable.

Encourage Time Management. Once your child has organized and identified the test content areas, help your child create a study schedule. Make sure to start studying early. Information is more easily remembered when it is studied for shorter periods of time over a longer time period rather than spending hours cramming for 1 or 2 days. Also, make sure to schedule in study breaks.

State-Dependent Learning. As much as possible, the environment in which your child studies should mimic the test environment. Help your child find a quiet place to study in your home or at the library. Have him/her sit at a desk or table instead of lying on his/her bed. Limit distractions including background noise or music. Use a timer and offer periodic breaks if your child's testing environment will be doing the same.

Remember the Bigger Picture. Children who experience test anxiety may easily forget how much the test grade counts

towards a final grade. Help your child put the test into perspective by highlighting their successes in other areas and how those achievements are linked to future goals. For tests which are used to help determine a child's future academic placement (e.g., SATs, ACTs, AP exams, etc.), make a list of ALL the other criteria (i.e., letters of recommendation, grades, extracurricular activities) that are also incorporated into applications. The longer the list, the easier it will be for your child to see his/her test score as one factor, out of many, that are used in this decision making process.

It is very common for students to become nervous or anxious when they must take quizzes and tests. By developing effective study skills and engaging in routine practice of relaxation exercises, many child are able conquer test-anxiety.

Jessica Collins, Psy. D.

Dr. Jessica Collins is a licensed PA psychologist. She earned her degree from La Salle University. She completed both her internship and fellowship at the Kennedy Krieger Institute and Johns Hopkins School of Medicine in Baltimore, MD, where she specialized in Pediatric Psychology.

- NOTE: original link to a script to Progressive Muscle Relaxation script is broken, here is one your Two Peds found.

Digging out splinters

It’s a sure sign of spring. Recently a mom showed me a splinter in her child’s finger (pictured above) from running about outside and falling on wood chips.

If a splinter is very tiny (too small to grab with tweezers,) seems near the skin surface, and does not cause much discomfort, simply soak the splinter in warm soapy water several times a day for a few days. Fifteen minutes, twice a day for four days, works for most splinters. Our bodies in general dislike foreign invaders and try to evict them. Water will help draw out splinters by loosening up the skin holding

the splinter. This method works well particularly for multiple hair-like splinters such as the ones obtained from sliding down an obstacle course rope. Oil-based salves such as butter will not help pull out splinters. However, an over-the-counter hydrocortisone cream will help calm irritation and a benzocaine-based cream (for kids over 2 years of age) will help with pain relief.

If the splinter is “grab-able”, gently wash the area with soap and water and pat dry. Don’t soak an area with a “grab-able” wooden splinter for too long because the wood will soften and break apart. Next, wash your own hands and clean a pair of tweezers with rubbing alcohol. Then, grab hold of the splinter and with the tweezers pull smoothly. Take care to avoid breaking the splinter before it comes out.

If the splinter breaks or if you cannot easily grab the end because it does not protrude from the skin, you can sterilize a sewing needle by first boiling it for one minute and then cleaning with rubbing alcohol. With the needle, pick away at the skin area directly above the splinter. Use a magnifying glass if you have to, make sure you have good lighting, and for those middle-age parents like us, grab those reading glasses. Be careful not to go too deep, you will cause bleeding which makes visualization impossible. Continue to separate the skin until you can gently nudge the splinter out with the needle or grab it with your tweezers.

Since any break in the skin is a potential source of infection, after you remove the splinter, wash the wound well with soap and water. Flush the area with running water to remove any dirt that remains in the wound. See our post on wound care for further details on how to prevent infection. If the splinter is particularly dirty or deep, make sure your child’s tetanus shot is up to date. Also, watch for signs of infection over the next few days: redness, pain at the site, or thick discharge from the wound are all reasons to take your child to his doctor for evaluation.

Some splinters are just too difficult for parents to remove. If you are not comfortable removing it yourself of if your child can’t stay still for the extraction procedure, head over to your child’s doctor for removal.

Now you can add “surgeon” to your growing list of parental hats.

Julie Kardos, MD with Naline Lai, MD

Before the Zika virus: A look back at Rubella and microcephaly

photo credit: Laikipia Pixabay.com

The Zika virus in the news these days reminds us of another microcephaly-causing virus which scourged our world in the not-so-distant past. In the years right before the Two Peds doctors were born (late 1960s), the virus Rubella routinely swept through the United States and the rest of the world. The airborne germ Rubella, just like the mosquito-spread Zika virus, caused most people just a mild illness that they usually never even knew that they had. After they were sick, they became immune to the virus. But when pregnant women contracted Rubella early in pregnancy, their unborn children sometimes ended up with microcephaly.

Microcephaly is a condition where a small, underdeveloped, or abnormal brain leads to a small head at birth. Many children with microcephaly have significant mental disabilities.

So what happened to Rubella? It's the R in the MMR vaccine. We give this vaccine to all children, first at 12-15 months, and again at 4-6 years of age. We vaccinate girls to protect their unborn fetuses when they are pregnant, and we also vaccinate boys. Although boys will not become pregnant, they can contract the disease and spread it to others who are pregnant. It is standard practice for obstetricians to test all of their pregnant patients for immunity to Rubella. If a woman is not immune, she is given the MMR vaccine after delivery to prevent coming down with Rubella during future pregnancies.

Because of the success of this safe vaccine, it is extremely rare to have child born with Congenital Rubella Syndrome and its accompanying problems. The syndrome not only included the mental impairments associated with microcephaly but also was associated with blood disorders, heart defects, deafness, visual impairment, developmental delay, and seizures. In the United States where the vaccine rates are high enough, no cases have been reported since 2004. In the rest of the world, cases still occur in countries with limited access to vaccines against Rubella. Approximately 100,000 cases of Rubella worldwide per year still occur according to the Centers for Disease Control.

Scientists are working on a vaccine against the Zika virus because, as is often the case, preventing a disease is often easier, less costly, and more successful than attempting to cure it. For a basic explanation of how vaccines work, please see our prior post on this topic. Trials for a vaccine for Zika may begin as early as summer 2017.

But if we look at history, Rubella was once a dreaded virus too. Now, with the widespread use of a vaccine, although still dreaded, the rates of Rubella have dropped dramatically. Zika

hopefully will not be far behind.

Naline Lai, MD and Julie Kardos, MD

Telling your children about a miscarriage or still birth

Grief counselor Amy Keiper-Shaw joins us today to help families during the difficult time after a miscarriage or still birth occurs. – Drs. Lai and Kardos

If you are reading this, you or someone you love may have had a miscarriage. It is a tragic, often unexpected, experience that many families will encounter.

Bereaved parents may feel great sadness, regret, shock, confusion, some or all of these emotions. There may be anger directed toward the doctor, a spouse, or other women who have been able to conceive easily and carry their pregnancies to full term. Some women feel guilt, as if there were something that they could have been done to prevent this loss.

What should you tell your children?

When adults experience a traumatic event like a miscarriage, they often are so consumed by their own grief that they fail to see that their children may be struggling with the same emotions. They may wonder what they should tell their children, if anything. Some parents may feel that the children are too young to be told about the miscarriage or believe they would not understand and instead wait until the children is older to explain it to them.

If the surviving children were not aware of the pregnancy, parents may wonder about the need for them to know about the loss. Even though you may not have told them about the pregnancy or the loss, they will likely know something is wrong and may act out. You might have been tearful, in pain, or angry, or you might have been in a hospital and away from home. The children's routine might have changed, people could be speaking in hushed tones, and other family members may be visiting or bringing meals. It is difficult to hide changes such as these from children. Often a child feels or sees this change and worries about the parents' sadness and grief yet he may not have the skills to talk about it. If children are not told what has occurred, they often develop their own ideas of what has happened, such as mom is sick and dying or they must have done something to make everyone act differently.

It is usually best to be honest, to use simple language and to give clear explanations. Avoid euphemisms. If you say "lost" to young children, they may worry that they will get "lost" as well. If you say the baby has fallen asleep, they may become

frightened of falling asleep or have nightmares.

You may also need to reassure them that the miscarriage was not anyone's fault. Children might believe that they are somehow to blame, especially if they weren't happy about the idea of a new sibling. One of the children who came to my bereavement camp carried the guilt of his baby sister's death for nearly five years. He believed that because he asked God for a baby brother and not a sister, he had somehow caused her death. It was only by talking about it and processing those feelings in a supportive, safe environment that he came to understand that he had done nothing wrong.

If your children were aware of the pregnancy, they would probably need to be told about the miscarriage promptly. If they are small children, a later time might be more appropriate when they are more able to comprehend what has occurred.

Very young children are likely to pick up on the feelings of the adults around them, but will not fully understand the finality of the loss. Children under five will have some awareness of death. They may ask questions to try to make sense of what has happened, such as "Where has the baby gone? When will the baby come back?"

By the age of eight or nine, most children will understand that the baby is gone and not returning. As one parent illustrates, "We explained to her that sometimes, for no reason and through nobody's fault, babies can die."

Teenagers will think about death like an adult. At any stage, there will most likely be questions about the baby that died as the loss is processed.

Children as well as adults react in their own way to a miscarriage. You may see your children being more "clingy", acting out at home or school, or having tantrums. They may have disturbed sleep, appetite or concentration. They may have

a lot of questions and need to share them with you or someone else they trust. They may also withdraw.

When parents can share their grief with their children openly and honestly, it implies to the child that it is understandable to be sad. This is a family loss that they will get though together. Some suggestions to help acknowledge the death are:

- Read books together
- Plant a tree or bush in memory of the baby
- Make a memory book of special things from the pregnancy
- Write a note to the baby on a string attached to a balloon and release it
- Participate in art/creative activities: painting, music, poetry, writing
- Visit the grave together

If you would like more information on helping children cope with a loss, please view the website for Hands Holding Hearts, a nonprofit organization in Bucks County, Pennsylvania that supports grieving children and their families.

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