

Pediatric Society of Greater Dallas



President's Message Michelle Caraballo, MD 2021 President

Friends and colleagues,

Here we are again, in the thick of it, as bad or worse than it has ever been. The difference now is that while our offices were empty during the first waves, this time around, many practices seem to be bursting at the seams, which itself has its pros and cons. Every day is its own uphill battle, and many of us are burned out. Last week I spoke at a school board meeting in our district, and during my brief 60-second allotment, I was jeered, booed, and yelled at by an overwhelming majority of anti-mask parents who had the audacity to chant, "Not our doctor!" and "She doesn't know what's best for our kids!" I cried. When I saw how they treated the physicians who spoke before me, I almost left before my name was called. But I stayed because I wanted to do the right thing, even though it's hard. That's what we all do. And we will continue to treat their children all the same. I hope this newsletter offers some light reading for a brief reprieve to get us back to what we all care about most – always expanding our knowledge and bettering ourselves to serve our patients well.

Michelle Caraballo, MD

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A Regression Discussion During the Pandemic: How to Continue Making Progress and Adapt to Change Sarah Lipinsky, BS

A few months ago, I had the privilege of co-leading a group discussion for parents of children with special needs. We discussed academic, behavioral, and social regression, as well as specific issues parents were struggling with during the pandemic.

For simplicity, I will use the term "student" going forward. While your child may be a kid/teenager/adult, I find that "student" is the simplest and most inclusive word. When I use the term student, I am including children who are not in school. Right now, we are all learning as we go, especially parents and educators. With constant or sporadic virtual learning and ongoing schedule changes, we rely on trial and error. As we try not to let students fall behind academically or behaviorally, we are also struggling with socialization opportunities and maintaining engagement.

It is important to realize that every student may be struggling in various academic, behavioral, and social areas at present; this is not an issue unique to students with special needs. As a result, it is imperative to keep the communication lines open between parent and teacher. If as a parent you are noticing any sort of regression, you should reach out to your student's teacher, let them know what you are seeing, and ask if they are noticing any changes in your student.

Together, you may need to set new goals and clearly define the responsibilities of the teacher versus the responsibilities of the parent, thus creating a partnership.

Most parents present at our discussion noticed behavioral and social regression in their students. While many factors may contribute, the one that stood out the most in our discussion is change in routine. Parent and student routines have been disrupted, which can affect student behavior. Students of any age and even some adults have a hard time with change. Change can be difficult and scary due to fear of the unknown, but it is crucial for students to learn how to cope with change and handle transitions as stress-free as possible.

Adapting to change is a life skill. The current pandemic will eventually end, but change will continue to happen throughout our lives. Major transitions can

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include moving from one grade level to the next, sitting in the driver's seat of a car for the very first time and learning to drive, and even living alone without roommates.

Routine and schedule changes can be overwhelming, and that feeling is amplified when change comes more often than expected. In our discussion, many parents expressed that they felt (or feel) extremely overwhelmed right now. These emotions, when presented openly in front of students, may lead to students perceiving and acting out those same feelings.

So, how can a parent prevent this from happening? Parents should try to hide feelings of anxiety or stress in the presence of their student and pay attention to their tone of voice and body language. If a parent models the ability to calmly handle transition when stressful changes occur, students can begin to incorporate appropriate responses in their own behavior. This is not to say that parents should not have emotions, but parents should be aware of their behavior and emotions around their student.

Transition Examples

Example 1: Imagine you just discovered a new plant that lights up as your hand closely approaches the plant. But then you hear, "Come on, let's go, it's time for dinner, let's go."

Would you want to stop what you were doing in that moment and be rushed into something else? Probably not. When talking to your student as part of a transition, take a moment to look at what they are doing; they might be in the middle of something.

Example 2: Communicate with words: "I can see you are building a very tall structure, but we are going to have dinner shortly. Can you get yourself to a stopping point in the next few minutes, and join us for dinner? You can have more time for building tomorrow after school."

Students look for solutions to the problem. In this case, the problem is that they want to continue building, and you need them for another task. By giving them the opportunity to wind down and letting them know when they will have more time for this project, you are empowering them to make decisions within the structure you provide. When students perceive they have this independence, they won't feel the need to resort to having a complete meltdown or tantrum.

Along with talking to your student and acknowledging that you can see things from their point of view, here are some additional ideas that may help with adapting to transitions and changing schedules.

1. Give the student a watch to be the timekeeper. Let the student know that when the watch beeps, they have five minutes left on the playground and can do two more slides before it is time to go home.

2. Display a family calendar. Perhaps your student loves playing on the playground after school, but you need your student to go home after school to eat lunch. A possible solution could be that on Fridays you bring lunch with you at pick up, and then you and your student can go straight to the playground after school.
3. Talk about frontloading. "We are going to the park, and you always have a great time at the park! But you have a hard time when it is time to leave. Today I am going to give a five-minute warning before it is time to leave."
4. Plan ahead. Build in extra time, especially in the morning, to alleviate the need to rush.
5. Listen and talk with your student about their feelings when change is taking place.

Planning Schedules

Creating daily schedules can be extremely helpful for students. The following are a few tips for making the schedule:

1. Make the schedule visual by writing or printing it on paper.
2. Make the schedule broad.
3. Schedule in break times.
4. Add incentives.
5. Schedule in time for yourself. Parents need time too, and it is necessary for your student to have independent play/work time, allowing parents time for themselves during the day. Additionally, independent time allows students to work on enhancing their independent skills.

We have all struggled with the disruption caused by the pandemic. Many are working from home, and seemingly endless Zoom sessions have replaced in-person opportunities for connection. Without knowing how long things will continue this way, it is easy to feel that we have very little control in our lives. We do, however, have the ability to make the situation better by using a few simple tools. We can create stronger partnerships with teachers and create new goals for our students (or modify existing ones) to help them continue to grow. We can work on improving our verbal and non-verbal communication with our students by practicing empathy and modeling positive behavior. Lastly, we can strive to be more mindful by setting aside additional time when completing tasks, allowing time for introspection without feeling rushed.

Ms. Lipinsky is a Registered Behavioral Technician, Director of Education and Special Needs Coordinator at Congregation Shearith Israel.

Caring for Clefts

Jeffrey A. Fearon, MD



Clefts of the palate arise in various locations, with management dependent upon the region impacted. These may occur either as an isolated entity or as a component of a syndrome (defined by additional manifestations occurring outside the palate). The following is a brief synopsis of the various presentations of this condition, along with a few key management strategies.

1. Clefts of the uvula.

The presence of a bifid, or grooved, uvula can be a marker for a *submucous cleft*; a cleft in the muscular layer, deep to the mucous membranes, rendering it not obviously visible. When this occurs, the circle of muscles that function to approximate the back of the palate to the posterior pharyngeal wall are instead U-shaped, impairing complete closure of the palate. Most often, submucous clefts do not produce any obvious feeding or speech issues. However, speech evaluations are recommended well into middle school years, as the adenoid pad shrinks, to monitor speech development. When function is impaired, surgically reorienting the palatal musculature with a 4-flap, or *Furlow*, palatoplasty has a high success rate.

2. Clefts of the soft palate.

Clefts isolated to the soft palate are considered a uniquely different entity from a cleft lip and palate. They are more likely to be the result of a gene mutation and carry an associated slight increased risk for congenital heart anomalies. Almost all children born with a soft palatal cleft will have some degree of Eustachian tube dysfunction, with most requiring recurrent myringotomy tube placements. However, the more immediate concern for any infant born with soft palatal cleft is feeding. Physical disruption of the palate impairs the ability to create suction, making it instead necessary to deliver the milk to the infant. This can be accomplished in one of two ways: either dispensing milk by squirting it into the mouth, or by gravity (an enlarged soft nipple permits flow when the nipple is squeezed). Centers treating clefts have feeding specialists available to help determine the best system for each child. When infants have difficulty feeding, they will tire and fall asleep before finishing their bottle, only to wake up hungry an hour or two later. So, in addition to closely monitoring weight gain, questioning mothers about how long their child will go in between feeds can provide insights into potential feeding issues. Surgeons vary on the timing for palatoplasties, but generally soft palatal cleft repairs are performed between 9 and 12 months of age.

3. Complete cleft palate.

Clefts involving the entire palate most often arise in tandem with a cleft lip. Although more than a dozen “helper” genes have been found to be associated with this presentation, only rarely are cleft lip and palate caused by a specific mutation. As with clefts of just the soft palate, the initial focus needs to be on feeding and weight gain because of the impaired ability to create suction. A higher incidence of chronic serous otitis can also be expected, which typically dictates repeat myringotomy tube placement. Although some surgeons will recommend staging the repair of the soft and hard palatal clefts, most will repair both simultaneously, sometime around a year of age.

4. Clefts of the alveolus.

Clefts limited to the alveolus typically arise in combination with a cleft lip. Because the rest of the hard and soft palate are intact, typically no issues with feeding, speech, or chronic serous otitis should be expected. However, most clefts of the alveolus will require bone grafting, typically performed around age 7 to 8 years, to permit eruption of the canine tooth. A congenital absence of one or more teeth is also usually found, with the lateral incisor being the most commonly missing tooth. Later in life, the adjacent canine tooth can be orthodontically substituted to address this loss.

Surgical treatment

Although the timing for repairs is partially influenced by phenotype, it is primarily determined by balancing two opposing factors: speech development and growth of the upper jaw. Studies suggest that earlier closure of clefts will result in better speech, whereas later repairs are associated with better growth of the maxilla (reducing the need for orthognathic surgery). Surgeons balance these competing issues in determining the ideal timing for a repair.

Long-term care

Children with clefts involving the soft palate require continued evaluations by a speech pathologist for nasal air emission, which can arise from compromised palatal closure. This *velopharyngeal incompetence* impairs the production of consonant sounds, which over time can lead to learned substitutions – or other ways of mimicking a particular sound. Most often, nasal air emission cannot be resolved with speech therapy alone, and secondary surgical procedures are typically necessary to achieve normal speech.

Pediatricians should be aware that some surgeons might elect to treat velopharyngeal incompetence with a *posterior pharyngeal flap* (or PPF). This procedure reduces nasal airflow, which pretty effectively reduces nasal air emission; however, it can also cause obstructive sleep apnea. Should parents report an increase in snoring or daytime sleepiness following such a repair, further evaluation with a sleep study should be considered. If obstructive sleep apnea is present, this procedure may need to be reversed.

In addition to nasal air emission (or *resonance* issues), speech can also be negatively impacted by *errors in articulation*. These develop with diminished growth of the upper jaw, which positions the maxillary teeth behind, instead of in front of, the mandibular teeth. This abnormal dental relationship, or *Class III malocclusion*, crowds the tongue, impairing articulation. Unless the midfacial hypoplasia is quite severe, maxillary advancements are delayed until skeletal maturity. Until that time, errors in articulation can be mitigated with speech therapy.

Dr. Fearon is a craniofacial surgeon practicing in North Dallas.

Discussing Sexual Abuse with Patients

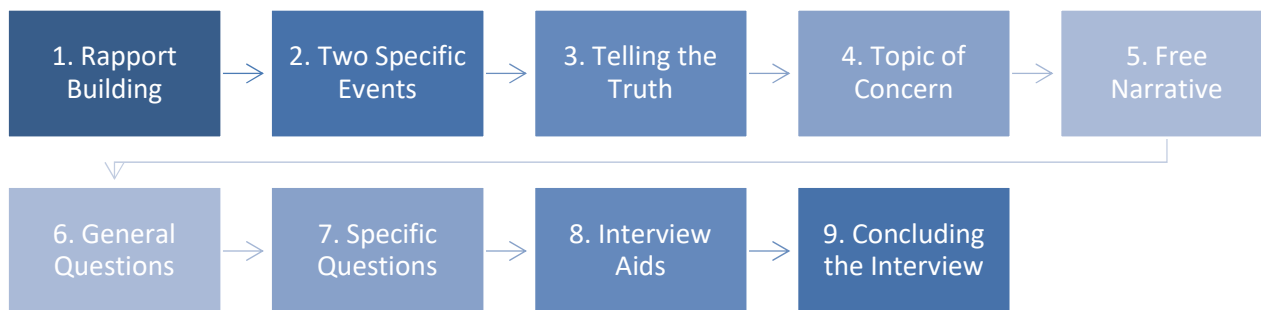
Rachel E. Zettl, MD, MEd

One of the more difficult parts of our profession is facing the darkest parts of human nature and seeing their consequences played out in our offices. Child abuse is an all-too-common experience for our patients and is difficult to comprehend for both us and them. We will review some helpful guidelines for interviewing children with history of sexual abuse.

Sexual abuse in childhood has been shown to have many adverse long-term health consequences, including an increased risk of adolescent pregnancy, unsafe sexual behaviors, psychological distress and mental health problems, higher healthcare utilization, and greater health risk behaviors. One study found the lifetime economic burden of sexual abuse in the United States to be approximately \$9.3 billion dollars. Taking into consideration that one in four girls and one in 13 boys have experienced sexual abuse at some time during childhood, the impact on our communities is staggering.

As mental health professionals, our goal is to help our patients share their stories in a healing and helpful way. By using the tips suggested by the American Academy of Child and Adolescent Psychiatry (AACAP) Practice Parameters, we can use a uniform, nonthreatening approach to engage vulnerable patients in conversation. Although these guidelines were originally created for forensic interviews, they can be adapted to be clinically useful in all psychiatric settings. In this article, we will focus on The Stepwise Interview, first described in Yuille et al. in 1993 and seen in the practice parameter outline below from the original paper on “The Forensic Evaluation of Children and Adolescents Who May Have Been Physically or Sexually Abused.” Although this technique was published 28 years ago, the wisdom shared in this approach is still relevant. Additionally, the WHO clinical guidelines for responding to children and adolescents who have been sexually abused, published in 2017, follow many of the same principles and are another great source of information. The reader is encouraged to review these guidelines as well.

The Stepwise Interview consists of nine parts, as seen in the figure below.



“Rapport Building” is the first step of any patient interaction. Without this key component, it would be difficult to help patients feel safe confiding in their provider. Our opportunity to build rapport is dependent on (a) the setting in which we see our patients and (b) the time we have with them.

A “spectrum of inquiry” is created that reflects the lengths to which we go to obtain information. On one end of the spectrum is Immediate Safety and Risk, which is the type of information elicited in an Emergency Room or consult service. In these situations, rapport is important, but will be limited due to time constraints. Thus, the focus should be on developing enough rapport to identify the level of acute risk and need for informing authorities.

On the other end of the spectrum is the Outpatient Setting, where relationships can be established and gradually deepened over time. In this setting, the provider plays the part of both therapist and educator. While immediate safety should always be screened, over time, sharing our knowledge of the effects of abuse can empower our patients to more constructively engage in their treatment and provide autonomy. In the middle of the spectrum are inpatient, day patient, and intensive outpatient programs.

During the “Two Specific Events” step, the interviewer asks the patient to discuss two unrelated and preferably pleasant events. This allows the provider to model the pattern of questioning that will occur during the discussion of abuse. Non-leading and open-ended questions should be used to construct a narrative. This step can also help with rapport building and making the patient feel more comfortable speaking with the provider.

The “Telling the Truth” step refers to the interviewer setting expectations that the information shared during the interview will be the truth and not imaginary or “pretend.” This can be done in a non-judgmental fashion by starting with general questions and moving to more specific questions. Reminding the child that they are not “in trouble” and this is not a punitive process may help with their comfort in sharing what has happened.

Introducing the “Topic of Concern” starts with general questions, such as “*Have you ever had something really scary happen to you in the past?*” or “*Has anyone ever done something to you that made you very sad or hurt?*” In settings where time is limited, once it is clearer what the event is, it is helpful to ask, “*Can that person still hurt you?*” or “*Do you still see or are you still around that person?*” This type of questioning allows children to give vital information about their acute risk without forcing them to share the time or relation of their abuser. Although it is always ideal to get as many details about the abuser as possible, many patients have very strong and mixed feelings regarding their abuse and may not give any information if too much pressure is placed on revealing the perpetrator right away.

“Topic of Concern” refers to discussing the event of abuse. Again, the setting and level of rapport built should be taken into consideration, being mindful of not reopening painful trauma without the time to help the patient process and regain composure. The interviewer must help the patient avoid delving too deeply into details without the time and space to process.

The next step, “Free Narrative,” allows the patient to tell their story. In the forensic setting, this may be the bulk of the interview. However clinically, unless doing therapy for the trauma, it is better to set some expectations for the patient. For example, “You can tell

me as much or as little as you are comfortable sharing, and don’t feel pressured to share details. We are looking for how this may be affecting you now and if you are safe now.” This differs from what you would be looking for in a forensic interview, because as the treating physician, we are not interested in proving whether abuse did or did not happen. Our primary goals in the clinic setting are: 1) an immediate safety assessment and 2) identification of ways our patient’s trauma is affecting their daily lives. By letting the patient know details are not as important as knowing if they are safe, we give them permission to avoid discussing these topics. Ideally, discussions of trauma should involve trauma-trained providers.

“General Questions” is the sixth step and refers to the provider asking more closed-ended questions following the narrative. The seventh step, “Specific Questions,” includes more detailed questions. In the clinical setting, these should follow the previous pattern of how the abuse is affecting the patient’s daily life and immediate safety. Again, there is no reason to ask for details regarding the abuse that does not pertain to these two main topics, unless information is needed for reporting to child or adult protective services.

“Interview Aids” are usually not needed in the clinical setting, with exception of therapeutic interventions. However, sometimes allowing children to draw or express themselves nonverbally is helpful, e.g., a child draws stick figures of their family or a person and points to them to identify the perpetrator of their abuse.

“Concluding the Interview” is a tool to help detect suggestibility in the patient. Using leading irrelevant questions, such as, “You came by taxi today, right?” or “It was raining when you came into the office today, wasn’t it?” can help the physician discern if their patient is susceptible to suggestive questioning. In the clinical setting this may be less helpful, however these questions can also work to the distract the patient and get them thinking about something other than their trauma.

Thanking patients for sharing this sensitive information is helpful in communicating the physician’s understanding that it is a privilege to be privy to such poignant, painful, and many times secret information. Statements like “you did a great job sharing today; talking about trauma can be very hard,” can build further rapport and help them feel empowered to share with their providers going forward.

All patients are different, and thus the techniques used should be at the discretion of the provider and attuned to the patient’s needs and sensitivities. When in doubt, the simple act of showing we care through empathy and respect can make a profound difference. ***Dr. Zettl is a fellow in Child and Adolescent Psychiatry at UT Southwestern.***

Oral Allergy Syndrome

Richard L. Wasserman, MD, PhD

Presentation

Oral allergy syndrome (OAS), also known as pollen-food allergy syndrome, occurs when individuals with allergic rhinitis develop symptoms when they eat certain raw fruits, vegetables, and occasionally nuts. Typically, patients report symptoms that are limited to the mouth, face, lips, tongue, and throat. Itching is the most common feature, but swelling and rash can also develop. Symptoms develop within a few minutes of ingestion but typically improve soon after. In general, symptoms are relatively mild, but more severe reactions are possible. Rarely, OAS can include significant swelling of the throat or more systemic reactions (anaphylaxis). For the overwhelming majority of patients, OAS is just really annoying.

When symptoms suggestive of OAS are associated with non-plant foods, they almost certainly reflect true allergy, and the patient should be evaluated for a systemic IgE-mediated food allergy. Similarly, patients with symptoms to fruits, vegetables, or nuts who do not have seasonal allergies may have classical food allergy.

Pathogenesis

Oral allergy syndrome is caused by cross-reactivity between pollen proteins and food proteins. PR-10, thought to be a steroid hormone transfer protein, lipid transfer protein (LTP), and profilin, a protein that catalyzes ADP/ATP exchange in actin, are among the plant and pollen proteins that elicit cross-reactive antibodies. Birch pollen is a major trigger for the development of these cross-reactive antibodies, but other pollens, especially ragweed, have been implicated as well.

Treatment

Patients with oral allergy syndrome should avoid the foods that cause the symptoms, particularly during peak allergy season. While symptoms may occur year-round, symptoms are often worse when the cross-reacting pollen counts are high. In North Texas, this is particularly true of OAS due to melons. While watermelon, cantaloupe, and honeydew may cause minimal to no symptoms during the summer, patients find that they can no longer tolerate those fruits in September when the ragweed pollen count is high. Often, peeled fruit (apples, peaches, and related fruits) causes fewer symptoms. Additionally, cooking, which denatures the proteins that cross-react with pollen proteins, usually eliminates the problem. Similarly, eating canned versions of the food may limit or alleviate the symptoms. Notably, heating does not typically help individuals with reactions to nuts or seeds. Roasting peanuts is actually responsible for creating the allergenic epitopes responsible for true peanut allergy.

Some patients benefit from antihistamine pre-treatment, but in my experience, antihistamines are usually of limited benefit. The only truly remission-inducing therapy is allergen immunotherapy (allergy shots), which decreases or resolves the symptoms.

Common associations between pollens and foods

There is an extensive list of possible cross-reacting pollens and foods. Below is a sampling of common associations:

1. Birch tree pollen has been associated with multiple foods, including peach, pear, apple, apricot, almond, hazelnut, kiwi, coriander, fennel, caraway, aniseed, soybean, peanut, plum, parsley, celery, cherry, and carrot. While birch tree is not a common allergen in North Central Texas, there is a significant similarity between birch pollen and other trees in our area. These trees commonly pollinate in the early spring (March-April).
2. Alder tree pollen may cross-react with celery, pears, apples, almonds, cherries, hazelnut, peaches, and parsley.
3. Several common grasses have been shown to cross-react with peaches, celery, peanut, white potato, tomatoes, various melons (watermelon, cantaloupe, and honeydew), and oranges. Grass pollen is high in North Central Texas during the late spring and early summer (April-June).
4. Ragweed may cause OAS related to banana, cucumber, melons, zucchini, and chamomile teas. Ragweed season can span from late summer and throughout the fall (late August-November).
5. Mugwort (a weed) has been associated with reactions to carrots, celery, apple, kiwi, peanut, coriander, fennel, parsley, caraway, aniseed, bell pepper, black pepper, garlic, onion, mustard, cauliflower, cabbage, broccoli, and sunflowers.

Latex-Fruit Syndrome

Special consideration should be given to individuals with reactions to bananas, avocados, kiwi, chestnut, peach, tomato, white potato, bell pepper, and papayas, as these foods have been associated with latex allergy. Because allergic symptoms associated with these foods are generally rare, allergy to any of these foods should raise a suspicion of latex allergy. Depending on the clinical history, such patients may require an evaluation for latex allergy.

Dr. Wasserman is an allergist/immunologist practicing in North Dallas.



Common Vulvovaginal Complaints in the Pediatric Patient

Jason Jarin, MD

Vulvovaginal complaints comprise up to 80% of pediatric referrals to gynecologists. As the prepubertal vulva is markedly hypoestrogenic, it is particularly vulnerable to inflammation and irritation due to urine, sweat, and mechanical abrasion. Patients most commonly present with itching, vaginal bleeding, vulvar pain or dysuria; however, given the nonspecific nature of the presenting complaints, patients are frequently misdiagnosed or overtreated. Most vulvovaginal complaints in prepubertal children have a nonspecific etiology, although they may also be the result of infection, trauma, congenital abnormalities or other dermatologic conditions. Table 1 summarizes the most commonly encountered vulvovaginal disorders in prepubertal girls. In most cases, a thorough history and physical exam is sufficient to make a diagnosis.

Diagnosis	Common Presenting Complaints
Nonspecific Vulvovaginitis	Pruritus, vulvar pain, redness and irritation, vaginal discharge, dysuria, constipation.
Labial Adhesions	Disruption of urinary stream, post-void dribbling, urinary retention.
Lichen Sclerosus	Pruritus, vulvar pain and irritation, dysuria, labial discoloration.
Vaginal Foreign Body	Foul smelling discharge, vaginal bleeding.
Urethral Prolapse	Painless vaginal bleeding, vaginal/urethral mass, dysuria/difficulty voiding, constipation.

Table 1: Summary of Common Vulvovaginal Complaints

Before the onset of puberty, the vulva is atrophic with very little subcutaneous fat underneath the mons pubis and labia majora. Furthermore, the hypoestrogenic labia minora are thin and attenuated, offering no physical barrier to the introitus and vagina against irritants and infection. This differs from the adult vulva, although maternal estrogen during the neonatal period (up to the first 6 months) may give the vulva an estrogenized appearance. Estrogen allows for the proliferation of glycogen-rich epithelium within the vagina and lowers the vaginal pH, allowing the adult vagina to be more resistant against infection. The hypoestrogenic vulva and vagina are therefore more susceptible to irritation and inflammation, especially given the close proximity of the anus to the introitus in prepubertal patients.

Internal speculum examination of prepubertal children is rarely indicated, as most pediatric vulvar pathology can be diagnosed with only a thorough external inspection. The labia majora can be separated with gentle forward and outward traction which typically allows adequate visualization of the urethra, hymen and distal vagina. The perineum can also be examined by placing the hands on the buttocks and gently providing downward and lateral traction. In the event that an internal exam is required, vaginoscopy under sedation is recommended. Pediatric patients may be examined lying supine with their legs in frog-leg position. The examination may be performed while the patient is lying supine on the mother's lap, especially in younger patients. Allowing the parent to be involved can help minimize any anxiety that the girls and their caregivers may have regarding the gynecologic exam, emphasizing that an internal exam will not be performed in the outpatient clinic setting.

Nonspecific Vulvovaginitis

Vulvovaginitis is the most common condition for which girls are referred to a pediatric gynecologist. Patients often present to their primary care providers with vaginal discharge, vulvar discomfort, or pruritus. Patients may also complain of vulvar erythema, dysuria, and burning, often leading to multiple erroneous diagnoses of urinary tract infections or *Candida* vaginitis prior to gynecologic evaluation. In addition to the anatomy of the prepubertal vulva and vagina, behavioral factors specific to this age group also increase their risk for recurrent vulvovaginitis. These factors include chronic constipation and a tendency to have poor hygiene, which is particularly evident in girls between the ages of 2 and 7 years. The provider should place emphasis on the child's hygiene habits at home, including use of any potential irritants such as bath soaps, laundry detergents, or feminine hygiene products. Previously administered home and prescribed remedies should also be determined, as these may have contributed to the underlying vulvovaginitis rather than

alleviated it. Over-the-counter vaginal relief products as well as topical antifungal medications are typically not appropriate in the treatment of vaginitis in this patient population.

On examination, nonspecific vulvovaginitis can present with a wide range of appearance depending on the severity, from simple erythema to areas of excoriation and lichenification. The presence of vaginal discharge may also aid in diagnosis. Bloody discharge in the absence of any history of trauma may indicate a foreign body. Copious and watery discharge that is yellow or green in color may indicate an infectious etiology, in which case a culture should be obtained. Vulvovaginitis is most often nonspecific and has no identifiable infectious or dermatologic etiology. The differential diagnosis is broad and varied, including dermatologic conditions such as lichen sclerosus, eczema, lichen planus and psoriasis. Less common etiologies include sexually transmitted infections (as in the setting of abuse), foreign bodies, and pinworms. It is important to note *Candida* vulvovaginitis is very rare in the pediatric patient population, as the hypoestrogenic vulva does not lend to fungal colonization as easily as adults. Antifungal treatment is usually not indicated. The most common infectious etiologies before puberty are respiratory pathogens such as *Streptococcus pyogenes*, *Staphylococcus aureus*, and *Haemophilus influenzae*. These pathogens are readily transferred to the perineum through autoinoculation, so any history of a recent upper respiratory infection should point to a likely cause.

Once all identifiable pathology is ruled out, nonspecific vulvovaginitis can be effectively managed with improved hygiene measures (Table 2). Topical emollients such as Vaseline or petroleum jelly serve to protect the skin, lessen the severity of the symptoms, and help restore the integrity of the vulvar epithelium. Parents should be counseled to avoid potentially harmful irritants such as soaps, detergents, and tight-fitting clothing. Good bathing practices also promote good vulvar hygiene, emphasizing that patients should use only warm, clear water daily without any soaps or additives. Antibiotics and antifungals should be used only in the presence of positive cultures, especially since topical and systemic medications may worsen symptoms rather than alleviate them.

Recommended Hygiene Measures for Vulvovaginitis

- Remove any identifiable irritants: soap, scented or colored detergents
- Sitz baths in warm plain water
- Use cotton underwear and loose-fitting clothing
- Avoid feminine products and lotions
- Apply emollient barriers such as Vaseline or Petroleum jelly twice daily
- Urinate with the legs spread apart and wipe from front to back

Table 2: Recommended Hygiene Measures for Vulvovaginitis

Labial Adhesions

Before puberty, the labia are markedly hypoestrogenic, making them thin and easily susceptible to denudation by environmental irritants. Adhesions may then form if re-epithelialization occurs between the two labia, causing them to become adherent in the midline. Also known as labial agglutination, labial adhesions are most common at 13-23 months of age but can occur any time before puberty. Patients are typically asymptomatic, with adhesions noted on routine pediatric visits. However, they can also present with complaints of vulvar irritation, difficulty urinating, and recurrent urinary or vaginal infections. On physical examination, thin, avascular adhesions are visualized between the labia minora to varying degrees. These adhesions may partly or completely obscure the vaginal introitus, and diagnosis can be made with visual genital examination alone.

Treatment is not necessary if the patient is asymptomatic, as the adhesions will resolve spontaneously as the child approaches puberty and endogenous estrogen production ensues. More extensive adhesions may obscure the urethral meatus, causing disruption of the normal urinary stream. This may cause vulvar irritation and recurrent urinary tract infections, which may or may not improve with improved hygiene measures and avoidance of potential vulvovaginal irritants. In patients with persistent symptoms, first-line treatment is topical estrogen applied directly onto the line of fusion. Application of conjugated estrogen cream may be performed once or twice daily for 2 to 6 weeks. Topical betamethasone may be considered second-line treatment, especially in girls with a contraindication or intolerance to topical estrogen. The majority of labial adhesions

resolve following topical estrogen therapy, but manual separation may be considered in patients with labial adhesions that are refractory to medical treatment or in those presenting with acute urinary retention or infection due to obstruction caused by the adhesions. Parents should be counseled that recurrence of labial adhesions following medical or surgical treatment may be as high as 40%. Fortunately, they rarely persist beyond the onset of puberty and are not known to be associated with any congenital anomalies.

Lichen Sclerosus

Lichen sclerosus (LS) is a chronic inflammatory disorder of the skin that can affect the vulva in prepubertal girls. Patients with LS typically present with itching, vulvar discomfort, bleeding, or discharge. The exact etiology is unclear, but it has been associated with several autoimmune conditions such as vitiligo, alopecia, and rheumatoid arthritis. LS is more frequently encountered in postmenopausal women, but about 10-15% of cases may arise prior to puberty. While the diagnosis of LS in adults typically requires biopsy, the diagnosis in pediatric patients can be successfully made by direct visual examination. LS presents as a well-demarcated hypopigmented patch of skin in a figure of 8 configuration surrounding the vulva and anus. Excoriations, erosions, and even ecchymoses may be encountered due to pruritus and irritation causing subepithelial hemorrhages underneath the thinned skin of the labia. Left undiagnosed or untreated, LS may result in fissuring, alteration of the normal vulvar architecture, fusion of the labia minora, disruption of the clitoral hood, or narrowing of the introitus.

High-potency topical steroids such as clobetasol propionate 0.05% are considered the first-line therapy for pediatric LS. Topical therapy may be taken two to three times daily for 6 to 12 weeks until clinical resolution. Clinical improvement is seen almost immediately after initiation of treatment, although prior to puberty, the symptoms of LS may remit and recur in up to 60% of patients. In most cases, recurrences become infrequent, and symptoms improve following puberty.

Vaginal Foreign Body

Vaginal foreign bodies can be seen in up to 50% of children with vaginal bleeding and foul-smelling vaginal discharge. While a relatively uncommon etiology of prepubertal vaginal bleeding, suspicion should be high in girls between the ages of 2 and 9 who present with acute or recurrent vaginal symptoms. Toilet tissue is considered to be the most commonly found foreign object, as girls start voiding independently around this age. If left untreated, foreign bodies in the vagina may cause recurrent urinary tract infection, erosion, stenosis or even perforation of the vagina, and dermatologic abnormalities.

The diagnosis of a foreign body is often delayed as most children are unable to recall insertion of a foreign object. Pelvic imaging such as sonography or plain films are usually not able to identify small objects within the vagina. However, ultrasound may be helpful in identifying conditions which would suggest uterine rather than vaginal bleeding. Initial evaluation of a patient where a foreign body is suspected first involves a visual inspection. Bedside vaginal irrigation with warmed fluid using a pediatric catheter can be used to evacuate smaller objects. If larger foreign bodies are suspected and in cases of persistent symptoms despite successful irrigation, examination under anesthesia and/or vaginoscopy may be necessary. In prepubertal patients, bedside digital exam or direct internal visualization is not recommended.

Urethral Prolapse

Urethral prolapse refers to the partial or complete protrusion of the distal urethral mucosa beyond the urethral meatus. It is most commonly encountered in girls age 5 to 8 years old. Given the hypo-estrogenic state of the submucosal and periurethral tissue in prepubertal girls, the terminal urethra can be weak and susceptible to prolapse in times of increased intra-abdominal pressure. Children can also present to the emergency department with profuse but painless vaginal bleeding. Constipation, chronic cough, or any other condition that involves repeated Valsalva increases risk of developing urethral prolapse. The diagnosis of urethral prolapse can be made by direct physical exam, which will reveal a beefy, red and donut-shaped mass obscuring the urethral meatus. The surrounding genital anatomy should appear normal.

In some cases, the child may be asymptomatic and prolapse is encountered on routine physical exam. In these cases, the prolapse can be managed with frequent sitz baths as well as active management of potential constipation that is common in this age group. In cases where prolapse presents with acute vaginal bleeding or urinary irritation, topical estrogen cream (i.e., Premarin or Estrace cream 0.01%) can be applied twice daily for 2 to 4 weeks. Symptoms may resolve within a few days of initiating therapy without full visual resolution. In cases where topical estrogen does not improve the prolapse or where the patient presents with acute urinary obstruction or necrosis of the distal urethra, surgical resection may be indicated. Regardless of treatment modality, puberty and subsequent estrogenation of the periurethral tissue typically result in complete resolution of the prolapse.

Dr. Jarin is a pediatric and adolescent gynecologist at UT Southwestern/Children's Health.



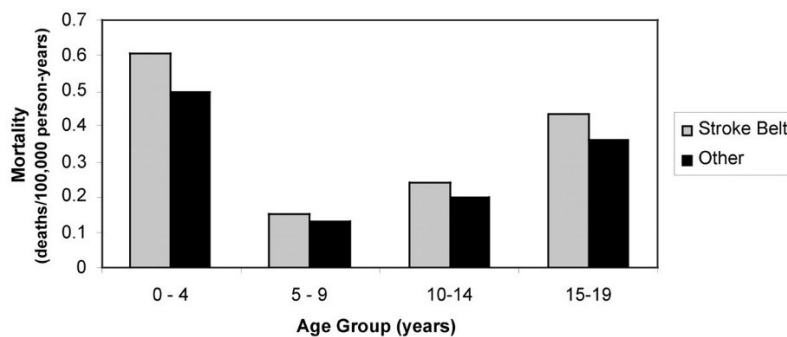
Is it a Stroke?

William Wood, MS4 and Pamela Okada, MD

A stroke occurs when there is a lack of blood flow to the brain. Strokes can be ischemic, meaning a vessel is occluded, or hemorrhagic, meaning a vessel has ruptured. Stroke occurrence in children is considered to be a rare event. The reported incidence of ischemic and hemorrhagic pediatric strokes ranges from roughly 1 to 2 cases per 100,000 per year in western developed countries. The incidence of ischemic and hemorrhagic stroke is roughly equal in children, but incidence of ischemic stroke is higher than hemorrhagic in the perinatal period. The incidence of stroke follows a bimodal distribution, with strokes being more common in the perinatal period and in older adults. The Centers for Disease Control (CDC) reports that cerebrovascular death is a top-ten cause of death in children in the United States.

Childhood stroke is more common in boys than in girls. Additionally, stroke is more common in Black children even when controlling for risk factors. Risk factors for stroke in children include a history of meningitis, encephalitis, arterial or cardiac disease, prothrombotic state, cancer, migraines, seizures, trauma, developmental delay, and previous stroke.

Of note for Texans, the consequences of living in America's "Stroke Belt" apply to children, as mortality rates from strokes are higher in the southeastern United States.



Mortality rates from stroke (ischemic and hemorrhagic) in US children in Stroke Belt states versus other states, by age group. (Fullerton, Elkins, and Johnston, 2004)

Early identification of stroke is vital to improve patient outcomes. While treatment with thrombolytics in pediatric stroke remains controversial, quick action to use anti-thrombotic therapy and neuroprotective measures are beneficial in preventing neurologic damage.

With the need for quick identification in mind, this article will review common stroke mimics in the pediatric population, when to worry about a stroke, general distinguishing factors, and information for parents and patients.

Common Mimics and When You Should Worry About a Stroke

Migraine / Complex Migraine / Hemiplegic migraine.

- What the mimic looks like: focal neurologic signs that resolve within 30 minutes and a throbbing headache.
- Worry about stroke: if there are persistent neurological symptoms or signs following headache onset.

Todd's paralysis + seizures.

- What the mimic looks like: seizures with focal motor deficits.
- Worry about stroke: if this is the first-time paralysis or neurologic symptoms persist for multiple hours, consider referral to the emergency department or imaging.

Bell's Palsy.

- What the mimic looks like: isolated upper and lower motor weakness (peripheral 7th nerve).
- Worry about stroke: if there are brainstem deficits on exam like changes in eye movements. Usually, Bell's palsy is an isolated peripheral 7th nerve palsy, so presentations involving multiple nerve deficits raises suspicion for stroke.

Tumor.

- What the mimic looks like: any neurological sign, altered consciousness, and/or signs of raised intracranial pressure.
- Worry about stroke: if the onset of neurologic symptoms is sudden. Tumor symptom onset is usually gradual.

Syncope.

- What the mimic looks like: loss of consciousness with an identifiable trigger, preceded by gradual visual change, tingling or diaphoresis.
- Worry about stroke: if there are neurologic deficits after the event or if there is a lack of a clear trigger causing the event.

Conversion disorder.

- What the mimic looks like: any neurological symptoms or signs that do not conform to neuroanatomical pathways, are inconsistent with the complaint, or vary from one examination to the next. A diagnosis of exclusion.
- Worry about the stroke: if the presentation has consistent and persistent neurological deficits.

Posterior Reversible Encephalopathy Syndrome (PRES).

- What the mimic looks like: it is nonspecific and can include headache, seizures, altered mental status, and vision loss.
- Worry about stroke: presentation is almost indistinguishable from stroke without imaging. Consider referral to the emergency room.

Acute Disseminated Encephalomyelitis (ADEM).

- What the mimic looks like: presents with fever, encephalopathy, seizure, and multifocal neurological deficits referable to more than one location within the central nervous system.
- Worry about stroke: presentation is almost indistinguishable from stroke without imaging. Consider referral to the emergency room.

General Distinguishing Factors between Strokes and their Mimics

In the context of suspecting a stroke, these signs and symptoms on presentation increase the odds of a stroke over a mimic:

1. Feeling well the week before.
2. Inability to walk.
3. Face and arm weakness.

Aspects of the history and physical exam that raise concern for stroke include an acute onset of symptoms, risk factors in history, sudden onset of weakness or speech change, lateralized extremity or facial weakness, abnormal eye movement or visual fields, visuospatial neglect, hemiparetic or ataxic gait disturbance, or sensory disturbance.

Mnemonic: Remember the three W's

Well a week ago, won't walk, and weak in the face or arm. Go online for strokes! www.stroke.org.

Anticipatory Guidance for Parents and Patients

Recurrence of stroke in children is estimated to be 10-20% within 5 years of the initial event, even when on anti-thrombotic medications. For ischemic strokes, recurrence is more common in the initial 12 weeks following the event, whereas for hemorrhagic strokes it is more common within the first 6 months. Additionally, many patients are diagnosed with risk factors of stroke before an infarct occurs. For these reasons, it is important to provide anticipatory guidance to parents of children with risk factors for stroke or a previous stroke. Below are helpful websites that include up-to-date information and useful handouts for parents and patients.

[Kid's Health Handouts](#)**[CHASA Stroke Infographics](#)****[ASA General Information on Pediatric Stroke](#)****[AHA Stroke Fact Sheet](#)****[CHOP Pediatric Stroke Information](#)****[ASA Pediatric Stroke Infographic](#)****[CNF Perinatal Stroke Information](#)**

Mr. Wood is a fourth-year medical student at UT Southwestern. Dr. Okada is a pediatric emergency physician at UT Southwestern/Children's Health.

**Pediatric Insomnia**
W. David Brown, PhD

“There was never a child so lovely but his mother was glad to get him to sleep.” — Ralph Waldo Emerson

Sleep is critically important for health and well-being for all of us. Shakespeare called sleep the “chief nourisher in life’s feast.” This is particularly true for our children. As parents, we are correct saying to grow big and strong, you need to get plenty of sleep. It is during sleep that growth hormone is released. Young children learn at a rate that will never again be achieved through the rest of their lives. Inadequate sleep causes problems with memory, attention, and concentration. Two researchers at the University of Wisconsin, Giulio Tononi and Chiara Cirelli have speculated that sleep loss during critical periods of development such as

childhood may cause a lasting change in the way the brain is wired.

The importance of sleep in children cannot be overstated. Poor sleep during childhood can lead to poor emotional control, increases in accidental injuries, and negative parent-child relations. Unfortunately, sleep problems in childhood are all too common. Most studies estimate that 20-30% of children experience bedtime resistance and nighttime awakenings. Sleep problems are even more common in specific populations such as children with psychiatric problems (25-50%), autism spectrum disorder (49-89%), and developmental disorders (34-86%).

The Behavioral Insomnias of Childhood include Limit Setting Disorder, Sleep Onset Association Disorder, and a combination of the two. Limit setting is exactly as it sounds. Many children will utilize several delaying tactics to avoid going to bed. They begin negotiating with their parent to stay up later. "Please, just one more book, I have not finished this game, I need water," etc. I am all for compromise, but these negotiations can get out of hand. It is best to provide firm expectations about bedtime and to stick to these expectations. One of the best ways to do this is with a good bedtime routine.

For children, bedtime is very much like time out. The child is losing access to their electronics, books, siblings, and parents. It can seem punitive. A good bedtime routine should be short and sweet and a clear indication that it is time for bed. The type of play should slow down as bedtime approaches. A good routine might include bath, pajamas, brush teeth, in bed, one or two books (agree before bed and stick to the agreement), a little cuddle time, then the parent gets out of the bed and says goodnight. It is important to get out of the bed to avoid the second behavioral insomnia, sleep onset association disorder. More on that later. Once the parent is out of the bed and said goodnight, ideally, they will leave the room and the child will stay in bed and fall to sleep. That does not always happen. If the parent stays in the room for a while, they must be out of the bed. This allows mobility and the parent can move about without disturbing the child. Once you have said goodnight, the parent should then become the most boring person ever. Do not engage the child, answer questions, get angry, or discuss the day. At best you may say it is bedtime.

Children, like the rest of us, learn how to fall to sleep. If a child has always slept with a parent or falls to sleep with a parent in their bed, rubbing their back, or singing a song, the child will associate these actions with falling to sleep. It is perfectly normal to wake during the night. Children will wake up at night. When they wake up and the parent is not there, they will try to get back to sleep in the manner they have learned, that

is, with the parent. The child may go seek out the parent and hope to sleep in their bed or will call a parent to come get them back to sleep. If you allow the child in your bed, you will notice that they return to sleep quickly and may not awaken again the rest of the night. The child has associated the parent's presence with falling to sleep and will try to recreate those actions to return to sleep. This is Sleep Onset Association Disorder.

You are now able to begin to remove yourself from the bedroom without the child panicking using a technique called the "Excuse Me Drill." This procedure is a form of extinction that is not as arduous as letting the child cry it out. With the Excuse Me Drill, before the child is asleep, the parent says, "Excuse me. I need to check on..." The parent will then walk towards the door but will turn back around before the child gets upset and jumps out of the bed. After a few moments, say "Excuse me, I need to check on...", and try to get out of the door but still come right back. Keep repeating this step until you can leave the room without the child getting out of the bed. You are trying to time it so that the child falls to sleep when you are not in the room. This technique teaches the child two things, patience and self-soothing. If you always come back, the child will wait. When the child naturally awakens during the night, there will be no need to seek out a parent as the child can fall to sleep independently.

Another technique is called the "Bedtime Pass." This is also a form of gradual extinction. The child makes a pass, usually made of paper with drawings or stickers. Both the parent and the child "sign" the document and this is now an official document good for one trip out of bed with no questions asked. This technique works well for the child that has multiple reasons for getting out of bed before they have fallen to sleep. With the pass, the child can get out of bed for a hug, glass of water, or a pressing question without argument or anger from the parent. However, once the request has been fulfilled, the child must surrender the pass and cannot use it again until the following night. It helps children think before they get out of bed, is this important enough to use the pass? Many children begin to hoard the pass thinking if they really need to get out of bed, they will have some way of doing it. The technique is helpful because it gives both the child a sense of control over the bedtime process, and it helps parents set limits and stick to them.

These techniques can be potentiated with a reward system. To be effective, positive reinforcement (a star, sticker, or token) needs to be done quickly, typically the morning following a successful night. The child can then trade three tokens for a prize. The nights do not have to be consecutive. However, if the child does not get any tokens, no behavior is being changed and the

task is too difficult. Make the task easier and once the child is getting rewarded, the task can then be gradually made more difficult.

Sleep loss is a preventable source of a multitude of problems in our children. Treat sleep as a vital sign. Talk about the importance of sleep early and often with children and parents. A healthy sleep lifestyle can confer a lifetime of benefits.

Dr. Brown is a pediatric sleep psychologist at Children's Health.

Evaluating Vaccine Reactions

Sheeba Cherian, MD



Allergic reactions to vaccines are rare but a common concern for patients and their parents due to the rise of false information regarding vaccine safety. Pediatricians have an important role in evaluating vaccine reactions and providing guidance regarding proper vaccine administration.

Immediate vs. Delayed Reactions

Vaccine reactions can be categorized into two broad categories: immediate reactions and delayed reactions.

Immediate reactions begin one to four hours following vaccination and suggest an IgE-mediated process. Cutaneous (hives, flushing, itching), respiratory (nasal discharge, cough, wheeze), and cardiovascular (syncope, hypotension) signs and symptoms are most common. Anaphylaxis to vaccines, while rare, tends to occur within 30 minutes of vaccine administration.

Delayed reactions occur several hours to days after vaccination. Serum sickness or serum sickness-like reactions typically occur one to two weeks after vaccination and present as rash, fever, and pain with or without swelling in multiple joints. Aluminum-containing vaccines may cause a delayed-type hypersensitivity reaction to the aluminum, presenting as a pruritic nodule at the injection site.

Evaluating Vaccine Reactions

Evaluation of vaccine reactions should start with a detailed history. Key questions to ask include:

1. What was the timing of the reaction in relation to vaccine administration?
2. What were the associated signs and symptoms?
3. Is there a history of similar reactions to the vaccine or vaccine components in the past?
4. Does the patient need additional doses of this vaccine or a different vaccine with the same vaccine components in the future?

Many conditions can mimic anaphylaxis following vaccine administration. Vasovagal reactions can exhibit hypotension, bradycardia, pallor, nausea, vomiting, and syncope. One distinguishing feature of vasovagal reactions when compared to anaphylaxis is the lack of cutaneous symptoms such as itching, hives, or swelling. While bradycardia can be seen with vasovagal reactions, reflex tachycardia is seen in anaphylaxis.

Some patients can have anxiety-induced signs or symptoms after vaccine administration, such as stridor associated with vocal cord spasm or sensation of throat closure with panic attacks. Again, cutaneous symptoms are absent.

If the history is concerning for an immediate-onset vaccine allergy, referral to an allergist for skin testing is recommended.

All serious events occurring after vaccine administration should be reported to the Vaccine Adverse Event Reporting System (VAERS).

Vaccine Components

IgE-mediated reactions to vaccines are more often caused by additives or other components in the vaccine rather than the microbial agent. Examples of these components include gelatin, egg, aluminum, yeast, latex (used in some vial stoppers and syringes), and polyethylene glycol (PEG) or polysorbate found in SARS-CoV-2 mRNA vaccines. [CDC.GOV](https://www.cdc.gov/vaccines/imz/summary/) provides a Vaccine Excipient Summary including all components found in U.S. vaccines.

Patients with an anaphylactic reaction following a vaccine should be referred to an allergist for further evaluation and possible skin testing to determine the causative component. This can help guide candidacy for further doses of important childhood vaccines and identification of alternatives when possible.

COVID-19 Vaccines

With the pediatric population now becoming eligible to receive COVID-19 vaccines, parents express concern about who is at increased risk for vaccine reactions. Pfizer has received approval for vaccine administration to those age 12 years and older, and Moderna is expected to follow suit in the near future.

The anaphylaxis rate from currently available COVID-19 vaccines is 4.5 per million doses, which is consistent with the anaphylaxis rate for other vaccines. The only contraindication for SARS-CoV-2 mRNA vaccines (i.e., Pfizer and Moderna) is known allergy to the vaccine components PEG or polysorbate.

Precaution should be taken in people who have had reactions to vaccines or injectable therapies in the past when the inciting medication contained PEG, polysorbate, or another mRNA component. Deferral of vaccination and consultation with an allergist may be helpful. These patients may be evaluated via allergy skin testing to see which vaccine they can safely

receive. If, however, the patient has subsequently received a vaccine or other product containing PEG (found in some laxatives) or polysorbate (found in some lubricating eye drops), testing for allergy to those excipients is not necessary.

People with a history of environmental, food, latex, or insect allergy can get the vaccine with a standard 15-minute observation period. Those with a history of anaphylaxis or severe allergic reactions to an injectable medication or vaccine should follow a 30-minute observation period following vaccination.

Special populations

Egg protein is found in yellow fever, MMR, and some influenza and rabies vaccines. Egg-allergic patients may receive influenza, MMR, and rabies vaccines without any additional period of observation. While a referral to an allergist is not necessary prior to administration of these vaccines, it may be helpful when there is parental hesitancy about vaccination. Only patients with anaphylactic reactions to previous doses of these vaccines require deferral of further vaccination and referral to an allergist.

Egg-allergic patients who require yellow fever vaccine should be evaluated by an allergist prior to vaccine administration, as it is not known if the amount of egg protein in the yellow fever vaccine is enough to cause reactions.

In general, immunocompromised patients should avoid live vaccines.

In conclusion, severe vaccine reactions remain rare. A detailed history can identify patients who require further testing prior to vaccine administration.

Pediatricians play a key role in patient-education and advocacy for safe vaccine administration.

Dr. Cherian is an allergist/immunologist practicing in North Dallas.



Panic Disorder in Children and Adolescents

Ritu Ghai, MD and
Baer Ackerman, MD

A tearful 15-year-old girl is brought by her mother to your office. She tells you that sometimes her “heart just starts pounding” and she feels like she “can’t breathe” or that she’s “going crazy.” She has had at least one ER visit for these symptoms, and the family was told that the patient was experiencing panic attacks. Both the teen and her mother are very distressed by her physical symptoms, as well as the impact the symptoms have had on the girl’s functioning. She has been refusing to go to school and has begun resisting going

to the neighborhood grocery store alone, a task she used to do easily. Her grades are slipping, and her mother is worried that the child is becoming depressed.

Panic disorder is classified in the DSM-V as an anxiety disorder. Anxiety can be understood in three ways: 1) as a purely neurochemical phenomenon, e.g., if we drink 10 pots of coffee, one after the other, we will feel nervous, not because there’s anything bothering us but because that’s what too much caffeine does; 2) as the private conviction that a catastrophe is imminent (by extension, depression would be the private conviction that a catastrophe has already occurred); and 3) as our inner experience of perceived danger, *real or imagined*, on the outside (in the environment) or on the inside (intrapsychic), which reminds us of the power of fantasy, conscious and unconscious.

A panic attack is not, in and of itself, considered to be a mental disorder and may occur in the context of many different psychiatric concerns. A panic attack is an abrupt, intense surge of fear or discomfort that reaches a peak within several minutes, during which time the individual may experience a variety of physical and mental symptoms. These symptoms may include palpitations, sweating, trembling, chest pain, difficulty breathing, and abdominal distress. Individuals may also complain of feeling detached from reality (derealization) or worry that they are dying.

Panic attacks may arise from a calm state or an anxious state. If they arise from an anticipated trigger, the individual may *expect* the panic attack; however, individuals may also experience *unexpected* panic attacks. The presentation of a panic attack may also vary with culture and country. In some cultures, other symptoms, like headaches and screaming episodes, may feature prominently. It’s important to keep in mind that not all individuals who experience panic attacks will go on to develop a panic disorder.

A panic disorder is a disturbance in which an individual experiences recurrent panic attacks, is persistently worried about having another attack, and has changed their behavior to avoid triggering the attack. Some, but not all individuals also present with agoraphobia, which is marked fear or anxiety triggered by the real or anticipated exposure to a variety of situations. Youths with panic disorder may refuse to go to school or avoid social activities or other situations or environments that might trigger an attack. Individuals will voice fear of being unable to escape from a certain situation in the event of a panic attack or being unable to get help in these situations. Individuals often find the bodily symptoms to be overwhelmingly distressing, embarrassing, or fear that the bodily symptoms represent a serious medical issue. When a teen starts avoiding various environments and situations, parents find themselves either staying with the teen at home or

increasingly accompanying them to events or locations as a “safety person.” Thus, as with so many psychiatric disorders in children, panic disorder affects the functioning of the entire family system.

Panic disorder generally does not begin before adolescence, but, although uncommon, it can develop in children. It occurs more often in females than males and may run in families.

Youth with panic disorder should first be evaluated by their family doctor or pediatrician to rule out any medical issue. Once it is clear that there is no underlying medical issue, Cognitive Behavioral Therapy (CBT) alone is often tried as the first line of treatment. In CBT, patients are asked to try and learn to self-observe their cognitive and behavioral processes and develop better/more adaptive cognitive and somatic coping skills as they are exposed to feared situations and stimuli. It is often helpful to have individuals think of their symptoms as a faulty alarm system. Over time, patients learn to tolerate panic symptoms and understand that the bodily symptoms will not harm them; that they are part of a “false alarm.” Individuals are also taught some techniques, like deep breathing, to help dispel some of the physical symptoms. After an initial course of CBT, individuals often return periodically for maintenance treatment.

An antidepressant is considered to be a second-line intervention. A Selective Serotonin Reuptake Inhibitor (SSRI) is often considered before other pharmacological agents, given the overall safe side-effect profile of these medications. An SSRI may help decrease the intensity of the “false alarm” and the anxiety surrounding the panic attack. When treating children with an antidepressant, risks and benefits must be carefully weighed and addressed with the family, including the potential risk of increased suicidal thoughts or behaviors.

It should also be noted that individual and family psychodynamically-oriented psychotherapies, with or without medication(s), can also be useful for certain patients in which CBT has been of limited utility. Psychodynamic psychotherapy pays attention to five calamities that may underlie panic, either in isolation or together. These five calamities are: 1) fear of loss of love from a loved person; 2) fear of losing a loved person; 3) fear of guilt or shame; 4) fear of physical harm; 5) and being overstimulated. While there may be more categories of calamities, these five serve pretty well as guides to what worries might underlie the individual’s specific panic and thus can help optimize the implementation of specific treatment modalities.

Dr. Ghai is a child and adolescent psychiatrist practicing in Dallas. Dr. Ackerman is a child and adolescent psychiatrist practicing in Plano.

Third Quarter 2021 Dinner/Meeting

Just a reminder.... The Executive Committee made the decision to postpone our September 22nd meeting. Dr. Browne’s anxiety talk will be rescheduled for a later date.

UPCOMING PEDIATRIC GRAND ROUND EVENTSWednesday, September 22nd

8:00 am – Moore Auditorium, Children's Health

Charuta Joshi, MBBS, Clinical Professor of Pediatrics, University of Colorado, Denver,
Anschutz Medical Campus, Denver

“My Career Path from the “Mundane” to the “Exciting”: A Collage”

<https://utsouthwestern-du.zoom.us/j/91628027373?pwd=RUphUFY0N0NhOXFicUJlL3Y1UVVnQT09>

Meeting ID: 974 0376 8151 Passcode: 092921

Tuesday, September 28th

7:30 am – Classrooms A&B, Medical City Children's Hospital

Timothy Crombleholme, MD

“Making a Graceful EXIT: Indications and Outcomes in Application of the Ex-utero
Intrapartum Treatment Procedure”

Wednesday, September 29th

8:00 am – Moore Auditorium, Children's Health

Matthew J. McLaughlin, MD, MSB, Associate Professor of Pediatrics, Division of Pediatric Rehabilitation
Medicine and Clinical Pharmacology, Toxicology, and Therapeutic Innovation, Children's Mercy Hospital,
Kansas City, MO

“Precision Medicine in Pediatric Rehabilitation”

<https://utsouthwestern-du.zoom.us/j/97403768151?pwd=dDESNE3ZXZxdjJubHdwaStwaFQrZz09>

Meeting ID: 974 03768151 Passcode: 092921

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President's Message

Friends and colleagues,

Here we are again, in the thick of it, as bad or worse than it has ever been. The difference now is that while our offices were empty during the first waves, this time around, many practices seem to be bursting at the seams, which itself has its pros and cons. Every day is its own uphill battle, and many of us are burned out. Last week I spoke at a school board meeting in our district, and during my brief 60-second allotment, I was jeered, booed, and yelled at by an overwhelming majority of anti-mask parents who had the audacity to chant, "Not our doctor!" and "She doesn't know what's best for our kids!" I cried. When I saw how they treated the physicians who spoke before me, I almost left before my name was called. But I stayed because I wanted to do the right thing, even though it's hard. That's what we all do. And we will continue to treat their children all the same. I hope this newsletter offers some light reading for a brief reprieve to get us back to what we all care about most – always expanding our knowledge and bettering ourselves to serve our patients well.

Michelle Caraballo, MD

A Regression Discussion During the Pandemic: How to Continue Making Progress and Adapt to Change

Sarah Lipinsky, BS

A few months ago, I had the privilege of co-leading a group discussion for parents of children with special needs. We discussed academic, behavioral, and social regression, as well as specific issues parents were struggling with during the pandemic.

For simplicity, I will use the term “student” going forward. While your child may be a kid/teenager/adult, I find that “student” is the simplest and most inclusive word. When I use the term student, I am including children who are not in school. Right now, we are all learning as we go, especially parents and educators. With constant or sporadic virtual learning and ongoing schedule changes, we rely on trial and error. As we try not to let students fall behind academically or behaviorally, we are also struggling with socialization opportunities and maintaining engagement.

It is important to realize that every student may be struggling in various academic, behavioral, and social areas at present; this is not an issue unique to students with special needs. As a result, it is imperative to keep the communication lines open between parent and teacher. If as a parent you are noticing any sort of regression, you should reach out to your student’s teacher, let them know what you are seeing, and ask if they are noticing any changes in your student. Together, you may need to set new goals and clearly define the responsibilities of the teacher versus the responsibilities of the parent, thus creating a partnership.

Most parents present at our discussion noticed behavioral and social regression in their students. While many factors may contribute, the one that stood out the most in our discussion is change in routine. Parent and student routines have been disrupted, which can affect student behavior. Students of any age and even some adults have a hard time with change. Change can be difficult and scary due to fear of the unknown, but it is crucial for students to learn how to cope with change and handle transitions as stress-free as possible.

Adapting to change is a life skill. The current pandemic will eventually end, but change will continue to happen throughout our lives. Major transitions can include moving from one grade level to the next, sitting in the driver’s seat of a car for the very first time and learning to drive, and even living alone without roommates.

Routine and schedule changes can be overwhelming, and that feeling is amplified when change comes more often than expected. In our discussion, many parents expressed that they felt (or feel) extremely overwhelmed right now. These emotions, when presented openly in front of students, may lead to students perceiving and acting out those same feelings.

So, how can a parent prevent this from happening? Parents should try to hide feelings of anxiety or stress in the presence of their student and pay attention to their tone of voice and body language. If a parent models the ability to calmly handle transition when stressful changes occur, students can begin to incorporate appropriate responses in their own behavior. This is not to say that parents should not have emotions, but parents should be aware of their behavior and emotions around their student.

Transition Examples

Example 1: Imagine you just discovered a new plant that lights up as your hand closely approaches the plant. But then you hear, “Come on, let’s go, it’s time for dinner, let’s go.”

Would you want to stop what you were doing in that moment and be rushed into something else? Probably not. When talking to your student as part of a transition, take a moment to look at what they are doing; they might be in the middle of something.

Example 2: Communicate with words: “I can see you are building a very tall structure, but we are going to have dinner shortly. Can you get yourself to a stopping point in the next few minutes, and join us for dinner? You can have more time for building tomorrow after school.”

Students look for solutions to the problem. In this case, the problem is that they want to continue building, and you need them for another task. By giving them the opportunity to wind down and letting them know when they will have more time for this project, you are empowering them to make decisions within the structure you provide. When students perceive they have this independence, they won't feel the need to resort to having a complete meltdown or tantrum.

Along with talking to your student and acknowledging that you can see things from their point of view, here are some additional ideas that may help with adapting to transitions and changing schedules.

1. Give the student a watch to be the timekeeper. Let the student know that when the watch beeps, they have five minutes left on the playground and can do two more slides before it is time to go home.
2. Display a family calendar. Perhaps your student loves playing on the playground after school, but you need your student to go home after school to eat lunch. A possible solution could be that on Fridays you bring lunch with you at pick up, and then you and your student can go straight to the playground after school.
3. Talk about frontloading. "We are going to the park, and you always have a great time at the park! But you have a hard time when it is time to leave. Today I am going to give a five-minute warning before it is time to leave."
4. Plan ahead. Build in extra time, especially in the morning, to alleviate the need to rush.
5. Listen and talk with your student about their feelings when change is taking place.

Planning Schedules

Creating daily schedules can be extremely helpful for students. The following are a few tips for making the schedule:

1. Make the schedule visual by writing or printing it on paper.
2. Make the schedule broad.
3. Schedule in break times.
4. Add incentives.
5. Schedule in time for yourself. Parents need time too, and it is necessary for your student to have independent play/work time, allowing parents time for themselves during the day. Additionally, independent time allows students to work on enhancing their independent skills.

We have all struggled with the disruption caused by the pandemic. Many are working from home, and seemingly endless Zoom sessions have replaced in-person opportunities for connection. Without knowing how long things will continue this way, it is easy to feel that we have very little control in our lives. We do, however, have the ability to make the situation better by using a few simple tools. We can create stronger partnerships with teachers and create new goals for our students (or modify existing ones) to help them continue to grow. We can work on improving our verbal and non-verbal communication with our students by practicing empathy and modeling positive behavior. Lastly, we can strive to be more mindful by setting aside additional time when completing tasks, allowing time for introspection without feeling rushed.

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Caring for Clefts

Jeffrey A. Fearon, MD

Clefts of the palate arise in various locations, with management dependent upon the region impacted. These may occur either as an isolated entity or as a component of a syndrome (defined by additional manifestations occurring outside the palate). The following is a brief synopsis of the various presentations of this condition, along with a few key management strategies.

1. Clefts of the uvula.

The presence of a bifid, or grooved, uvula can be a marker for a *submucous cleft*; a cleft in the muscular layer, deep to the mucous membranes, rendering it not obviously visible. When this occurs, the circle of muscles that function to approximate the back of the palate to the posterior pharyngeal wall are instead U-shaped, impairing complete closure of the palate. Most often, submucous clefts do not produce any obvious feeding or speech issues. However, speech evaluations are recommended well into middle school years, as the adenoid pad shrinks, to monitor speech development. When function is impaired, surgically reorienting the palatal musculature with a 4-flap, or *Furlow*, palatoplasty has a high success rate.

2. Clefts of the soft palate.

Clefts isolated to the soft palate are considered a uniquely different entity from a cleft lip and palate. They are more likely to be the result of a gene mutation and carry an associated slight increased risk for congenital heart anomalies. Almost all children born with a soft palatal cleft will have some degree of Eustachian tube dysfunction, with most requiring recurrent myringotomy tube placements. However, the more immediate concern for any infant born with soft palatal cleft is feeding. Physical disruption of the palate impairs the ability to create suction, making it instead necessary to deliver the milk to the infant. This can be accomplished in one of two ways: either dispensing milk by squirting it into the mouth, or by gravity (an enlarged soft nipple permits flow when the nipple is squeezed). Centers treating clefts have feeding specialists available to help determine the best system for each child. When infants have difficulty feeding, they will tire and fall asleep before finishing their bottle, only to wake up hungry an hour or two later. So, in addition to closely monitoring weight gain, questioning mothers about how long their child will go in between feeds can provide insights into potential feeding issues. Surgeons vary on the timing for palatoplasties, but generally soft palatal cleft repairs are performed between 9 and 12 months of age.

3. Complete cleft palate.

Clefts involving the entire palate most often arise in tandem with a cleft lip. Although more than a dozen “helper” genes have been found to be associated with this presentation, only rarely are cleft lip and palate caused by a specific mutation. As with clefts of just the soft palate, the initial focus needs to be on feeding and weight gain because of the impaired ability to create suction. A higher incidence of chronic serous otitis can also be expected, which typically dictates repeat myringotomy tube placement. Although some surgeons will recommend staging the repair of the soft and hard palatal clefts, most will repair both simultaneously, sometime around a year of age.

4. Clefts of the alveolus.

Clefts limited to the alveolus typically arise in combination with a cleft lip. Because the rest of the hard and soft palate are intact, typically no issues with feeding, speech, or chronic serous otitis should be expected. However, most clefts of the alveolus will require bone grafting, typically performed around age 7 to 8 years, to permit eruption of the canine tooth. A congenital absence of one or more teeth is also usually found, with the lateral incisor being the most commonly missing tooth. Later in life, the adjacent canine tooth can be orthodontically substituted to address this loss.

Surgical treatment

Although the timing for repairs is partially influenced by phenotype, it is primarily determined by balancing two opposing factors: speech development and growth of the upper jaw. Studies suggest that earlier closure of clefts will result in better speech, whereas later repairs are associated with better growth of the maxilla (reducing the need for orthognathic surgery). Surgeons balance these competing issues in determining the ideal timing for a repair.

Long-term care

Children with clefts involving the soft palate require continued evaluations by a speech pathologist for nasal air emission, which can arise from compromised palatal closure. This *velopharyngeal incompetence* impairs the production of consonant sounds, which over time can lead to learned substitutions – or other ways of mimicking a particular sound. Most often, nasal air emission cannot be resolved with speech therapy alone, and secondary surgical procedures are typically necessary to achieve normal speech.

Pediatricians should be aware that some surgeons might elect to treat velopharyngeal incompetence with a *posterior pharyngeal flap* (or PPF). This procedure reduces nasal airflow, which pretty effectively reduces nasal air emission; however, it can also cause obstructive sleep apnea. Should parents report an increase in snoring or daytime sleepiness following such a repair, further evaluation with a sleep study should be considered. If obstructive sleep apnea is present, this procedure may need to be reversed.

In addition to nasal air emission (or *resonance* issues), speech can also be negatively impacted by *errors in articulation*. These develop with diminished growth of the upper jaw, which positions the maxillary teeth behind, instead of in front of, the mandibular teeth. This abnormal dental relationship, or *Class III malocclusion*, crowds the tongue, impairing articulation. Unless the midfacial hypoplasia is quite severe, maxillary advancements are delayed until skeletal maturity. Until that time, errors in articulation can be mitigated with speech therapy.

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Discussing Sexual Abuse with Patients

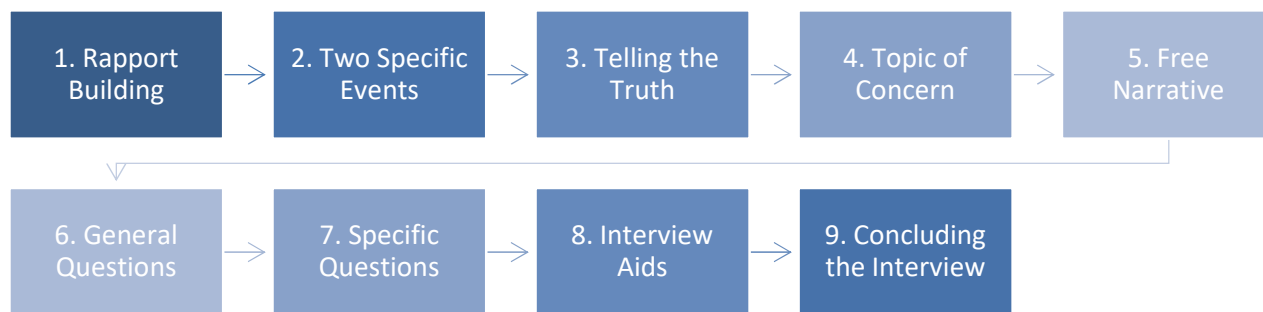
Rachel E. Zettl, MD, Med

One of the more difficult parts of our profession is facing the darkest parts of human nature and seeing their consequences played out in our offices. Child abuse is an all-too-common experience for our patients and is difficult to comprehend for both us and them. We will review some helpful guidelines for interviewing children with history of sexual abuse.

Sexual abuse in childhood has been shown to have many adverse long-term health consequences, including an increased risk of adolescent pregnancy, unsafe sexual behaviors, psychological distress and mental health problems, higher healthcare utilization, and greater health risk behaviors. One study found the lifetime economic burden of sexual abuse in the United States to be approximately \$9.3 billion dollars. Taking into consideration that one in four girls and one in 13 boys have experienced sexual abuse at some time during childhood, the impact on our communities is staggering.

As mental health professionals, our goal is to help our patients share their stories in a healing and helpful way. By using the tips suggested by the American Academy of Child and Adolescent Psychiatry (AACAP) Practice Parameters, we can use a uniform, nonthreatening approach to engage vulnerable patients in conversation. Although these guidelines were originally created for forensic interviews, they can be adapted to be clinically useful in all psychiatric settings. In this article, we will focus on The Stepwise Interview, first described in Yuille et al. in 1993 and seen in the practice parameter outline below from the original paper on “The Forensic Evaluation of Children and Adolescents Who May Have Been Physically or Sexually Abused.” Although this technique was published 28 years ago, the wisdom shared in this approach is still relevant. Additionally, the WHO clinical guidelines for responding to children and adolescents who have been sexually abused, published in 2017, follow many of the same principles and are another great source of information. The reader is encouraged to review these guidelines as well.

The Stepwise Interview consists of nine parts, as seen in the figure below.



“Rapport Building” is the first step of any patient interaction. Without this key component, it would be difficult to help patients feel safe confiding in their provider. Our opportunity to build rapport is dependent on (a) the setting in which we see our patients and (b) the time we have with them.

A “spectrum of inquiry” is created that reflects the lengths to which we go to obtain information. On one end of the spectrum is Immediate Safety and Risk, which is the type of information elicited in an Emergency Room or consult service. In these situations, rapport is important, but will be limited due to time constraints. Thus, the focus should be on developing enough rapport to identify the level of acute risk and need for informing authorities.

On the other end of the spectrum is the Outpatient Setting, where relationships can be established and gradually deepened over time. In this setting, the provider plays the part of both therapist and educator. While immediate safety should always be screened, over time, sharing our knowledge of the effects of abuse can empower our patients to more constructively engage in their treatment and provide autonomy. In the middle of the spectrum are inpatient, day patient, and intensive outpatient programs.

During the “Two Specific Events” step, the interviewer asks the patient to discuss two unrelated and preferably pleasant events. This allows the provider to model the pattern of questioning that will occur during the discussion of abuse. Non-leading and open-ended questions should be used to construct a narrative. This step can also help with rapport building and making the patient feel more comfortable speaking with the provider.

The “Telling the Truth” step refers to the interviewer setting expectations that the information shared during the interview will be the truth and not imaginary or “pretend.” This can be done in a non-judgmental fashion by starting with general questions and moving to more specific questions. Reminding the child that they are not “in trouble” and this is not a punitive process may help with their comfort in sharing what has happened.

Introducing the “Topic of Concern” starts with general questions, such as “*Have you ever had something really scary happen to you in the past?*” or “*Has anyone ever done something to you that made you very sad or hurt?*” In settings where time is limited, once it is clearer what the event is, it is helpful to ask, “*Can that person still hurt you?*” or “*Do you still see or are you still around that person?*” This type of questioning allows children to give vital information about their acute risk without forcing them to share the time or relation of their abuser. Although it is always ideal to get as many details about the abuser as possible, many patients have very strong and mixed feelings regarding their abuse and may not give any information if too much pressure is placed on revealing the perpetrator right away.

“Topic of Concern” refers to discussing the event of abuse. Again, the setting and level of rapport built should be taken into consideration, being mindful of not reopening painful trauma without the time to help the patient process and regain composure. The interviewer must help the patient avoid delving too deeply into details without the time and space to process.

The next step, “Free Narrative,” allows the patient to tell their story. In the forensic setting, this may be the bulk of the interview. However clinically, unless doing therapy for the trauma, it is better to set some expectations for the patient. For example, “You can tell me as much or as little as you are comfortable sharing, and don’t feel pressured to share details. We are looking for how this may be affecting you now and if you are safe now.” This differs from what you would be looking for in a forensic interview, because as the treating physician, we are not interested in proving whether abuse did or did not happen. Our primary goals in the clinic setting are: 1) an immediate safety assessment and 2) identification of ways our patient’s trauma is affecting their daily lives. By letting the patient know details are not as important as knowing if they are safe, we give them permission to avoid discussing these topics. Ideally, discussions of trauma should involve trauma-trained providers.

“General Questions” is the sixth step and refers to the provider asking more closed-ended questions following the narrative. The seventh step, “Specific Questions,” includes more detailed questions. In the clinical setting, these should follow the previous pattern of how the abuse is affecting the patient’s daily life and immediate safety. Again, there is no reason to ask for details regarding the abuse that does not pertain to these two main topics, unless information is needed for reporting to child or adult protective services.

“Interview Aids” are usually not needed in the clinical setting, with exception of therapeutic interventions. However, sometimes allowing children to draw or express themselves nonverbally is helpful, e.g., a child draws stick figures of their family or a person and points to them to identify the perpetrator of their abuse.

“Concluding the Interview” is a tool to help detect suggestibility in the patient. Using leading irrelevant questions, such as, “You came by taxi today, right?” or “It was raining when you came into the office today, wasn’t it?” can help the physician discern if their patient is susceptible to suggestive questioning. In the clinical setting this may be less helpful, however these questions can also work to the distract the patient and get them thinking about something other than their trauma.

Thanking patients for sharing this sensitive information is helpful in communicating the physician’s understanding that it is a privilege to be privy to such poignant, painful, and many times secret information. Statements like “you did a great job sharing today; talking about trauma can be very hard,” can build further rapport and help them feel empowered to share with their providers going forward.

All patients are different, and thus the techniques used should be at the discretion of the provider and attuned to the patient's needs and sensitivities. When in doubt, the simple act of showing we care through empathy and respect can make a profound difference.

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Oral Allergy Syndrome

Richard L. Wasserman, MD, PhD

Presentation

Oral allergy syndrome (OAS), also known as pollen-food allergy syndrome, occurs when individuals with allergic rhinitis develop symptoms when they eat certain raw fruits, vegetables, and occasionally nuts. Typically, patients report symptoms that are limited to the mouth, face, lips, tongue, and throat. Itching is the most common feature, but swelling and rash can also develop. Symptoms develop within a few minutes of ingestion but typically improve soon after. In general, symptoms are relatively mild, but more severe reactions are possible. Rarely, OAS can include significant swelling of the throat or more systemic reactions (anaphylaxis). For the overwhelming majority of patients, OAS is just really annoying.

When symptoms suggestive of OAS are associated with non-plant foods, they almost certainly reflect true allergy, and the patient should be evaluated for a systemic IgE-mediated food allergy. Similarly, patients with symptoms to fruits, vegetables, or nuts who do not have seasonal allergies may have classical food allergy.

Pathogenesis

Oral allergy syndrome is caused by cross-reactivity between pollen proteins and food proteins. PR-10, thought to be a steroid hormone transfer protein, lipid transfer protein (LTP), and profilin, a protein that catalyzes ADP/ATP exchange in actin, are among the plant and pollen proteins that elicit cross-reactive antibodies. Birch pollen is a major trigger for the development of these cross-reactive antibodies, but other pollens, especially ragweed, have been implicated as well.

Treatment

Patients with oral allergy syndrome should avoid the foods that cause the symptoms, particularly during peak allergy season. While symptoms may occur year-round, symptoms are often worse when the cross-reacting pollen counts are high. In North Texas, this is particularly true of OAS due to melons. While watermelon, cantaloupe, and honeydew may cause minimal to no symptoms during the summer, patients find that they can no longer tolerate those fruits in September when the ragweed pollen count is high. Often, peeled fruit (apples, peaches, and related fruits) causes fewer symptoms. Additionally, cooking, which denatures the proteins that cross-react with pollen proteins, usually eliminates the problem. Similarly, eating canned versions of the food may limit or alleviate the symptoms. Notably, heating does not typically help individuals with reactions to nuts or seeds. Roasting peanuts is actually responsible for creating the allergenic epitopes responsible for true peanut allergy. Some patients benefit from antihistamine pre-treatment, but in my experience, antihistamines are usually of limited benefit. The only truly remission-inducing therapy is allergen immunotherapy (allergy shots), which decreases or resolves the symptoms.

Common associations between pollens and foods

There is an extensive list of possible cross-reacting pollens and foods. Below is a sampling of common associations:

1. Birch tree pollen has been associated with multiple foods, including peach, pear, apple, apricot, almond, hazelnut, kiwi, coriander, fennel, caraway, aniseed, soybean, peanut, plum, parsley, celery, cherry, and carrot. While birch tree is not a common allergen in North Central Texas, there is a significant similarity between birch pollen and other trees in our area. These trees commonly pollinate in the early spring (March-April).
2. Alder tree pollen may cross-react with celery, pears, apples, almonds, cherries, hazelnut, peaches, and parsley.
3. Several common grasses have been shown to cross-react with peaches, celery, peanut, white potato, tomatoes, various melons (watermelon, cantaloupe, and honeydew), and oranges. Grass pollen is high in North Central Texas during the late spring and early summer (April-June).
4. Ragweed may cause OAS related to banana, cucumber, melons, zucchini, and chamomile teas. Ragweed season can span from late summer and throughout the fall (late August-November).

5. Mugwort (a weed) has been associated with reactions to carrots, celery, apple, kiwi, peanut, coriander, fennel, parsley, caraway, aniseed, bell pepper, black pepper, garlic, onion, mustard, cauliflower, cabbage, broccoli, and sunflowers.

Latex-Fruit Syndrome

Special consideration should be given to individuals with reactions to bananas, avocados, kiwi, chestnut, peach, tomato, white potato, bell pepper, and papayas, as these foods have been associated with latex allergy. Because allergic symptoms associated with these foods are generally rare, allergy to any of these foods should raise a suspicion of latex allergy. Depending on the clinical history, such patients may require an evaluation for latex allergy.

Dr. Wasserman is an allergist/immunologist practicing in North Dallas.

Common Vulvovaginal Complaints in the Pediatric Patient

Jason Jarin, MD

Vulvovaginal complaints comprise up to 80% of pediatric referrals to gynecologists. As the prepubertal vulva is markedly hypoestrogenic, it is particularly vulnerable to inflammation and irritation due to urine, sweat, and mechanical abrasion. Patients most commonly present with itching, vaginal bleeding, vulvar pain or dysuria; however, given the nonspecific nature of the presenting complaints, patients are frequently misdiagnosed or overtreated. Most vulvovaginal complaints in prepubertal children have a nonspecific etiology, although they may also be the result of infection, trauma, congenital abnormalities or other dermatologic conditions. Table 1 summarizes the most commonly encountered vulvovaginal disorders in prepubertal girls. In most cases, a thorough history and physical exam is sufficient to make a diagnosis.

Diagnosis	Common Presenting Complaints
Nonspecific Vulvovaginitis	Pruritus, vulvar pain, redness and irritation, vaginal discharge, dysuria, constipation.
Labial Adhesions	Disruption of urinary stream, post-void dribbling, urinary retention.
Lichen Sclerosus	Pruritus, vulvar pain and irritation, dysuria, labial discoloration.
Vaginal Foreign Body	Foul smelling discharge, vaginal bleeding.
Urethral Prolapse	Painless vaginal bleeding, vaginal/urethral mass, dysuria/difficulty voiding, constipation.

Table 1: Summary of Common Vulvovaginal Complaints

Before the onset of puberty, the vulva is atrophic with very little subcutaneous fat underneath the mons pubis and labia majora. Furthermore, the hypoestrogenic labia minora are thin and attenuated, offering no physical barrier to the introitus and vagina against irritants and infection. This differs from the adult vulva, although maternal estrogen during the neonatal period (up to the first 6 months) may give the vulva an estrogenized appearance. Estrogen allows for the proliferation of glycogen-rich epithelium within the vagina and lowers the vaginal pH, allowing the adult vagina to be more resistant against infection. The hypoestrogenic vulva and vagina are therefore more susceptible to irritation and inflammation, especially given the close proximity of the anus to the introitus in prepubertal patients.

Internal speculum examination of prepubertal children is rarely indicated, as most pediatric vulvar pathology can be diagnosed with only a thorough external inspection. The labia majora can be separated with gentle forward and outward traction which typically allows adequate visualization of the urethra, hymen and distal vagina. The perineum can also be examined by placing the hands on the buttocks and gently providing downward and lateral traction. In the event that an internal exam is required, vaginoscopy under sedation is recommended. Pediatric patients may be examined lying supine with their legs in frog-leg position. The examination may be performed while the patient is lying supine on the mother's lap, especially in younger patients. Allowing the parent to be involved can help minimize any anxiety that the girls and their caregivers may have regarding the gynecologic exam, emphasizing that an internal exam will not be performed in the outpatient clinic setting.

Nonspecific Vulvovaginitis

Vulvovaginitis is the most common condition for which girls are referred to a pediatric gynecologist. Patients often present to their primary care providers with vaginal discharge, vulvar discomfort, or pruritus. Patients may also complain of vulvar erythema, dysuria, and burning, often leading to multiple erroneous diagnoses of urinary tract infections or *Candida* vaginitis prior to gynecologic evaluation. In addition to the anatomy of the prepubertal vulva and vagina, behavioral factors specific to this age group also increase their risk for recurrent vulvovaginitis. These factors include chronic constipation and a tendency to have poor hygiene, which is particularly evident in girls between the ages of 2 and 7 years. The provider should place emphasis on the child's hygiene habits at home, including use of any potential irritants such as bath soaps, laundry detergents, or feminine hygiene products. Previously administered home and prescribed remedies should also be determined, as these may have contributed to the underlying vulvovaginitis rather than alleviated it. Over-the-counter vaginal relief products as well as topical antifungal medications are typically not appropriate in the treatment of vaginitis in this patient population.

On examination, nonspecific vulvovaginitis can present with a wide range of appearance depending on the severity, from simple erythema to areas of excoriation and lichenification. The presence of vaginal discharge may also aid in diagnosis. Bloody discharge in the absence of any history of trauma may indicate a foreign body. Copious and watery discharge that is yellow or green in color may indicate an infectious etiology, in which case a culture should be obtained. Vulvovaginitis is most often nonspecific and has no identifiable infectious or dermatologic etiology. The differential diagnosis is broad and varied, including dermatologic conditions such as lichen sclerosus, eczema, lichen planus and psoriasis. Less common etiologies include sexually transmitted infections (as in the setting of abuse), foreign bodies, and pinworms. It is important to note *Candida* vulvovaginitis is very rare in the pediatric patient population, as the hypoestrogenic vulva does not lend to fungal colonization as easily as adults. Antifungal treatment is usually not indicated. The most common infectious etiologies before puberty are respiratory pathogens such as *Streptococcus pyogenes*, *Staphylococcus aureus*, and *Haemophilus influenza*. These pathogens are readily transferred to the perineum through autoinoculation, so any history of a recent upper respiratory infection should point to a likely cause.

Once all identifiable pathology is ruled out, nonspecific vulvovaginitis can be effectively managed with improved hygiene measures (Table 2). Topical emollients such as Vaseline or petroleum jelly serve to protect the skin, lessen the severity of the symptoms, and help restore the integrity of the vulvar epithelium. Parents should be counseled to avoid potentially harmful irritants such as soaps, detergents, and tight-fitting clothing. Good bathing practices also promote good vulvar hygiene, emphasizing that patients should use only warm, clear water daily without any soaps or additives. Antibiotics and antifungals should be used only in the presence of positive cultures, especially since topical and systemic medications may worsen symptoms rather than alleviate them.

Recommended Hygiene Measures for Vulvovaginitis
<ul style="list-style-type: none"> ○ Remove any identifiable irritants: soap, scented or colored detergents <ul style="list-style-type: none"> ○ Sitz baths in warm plain water ○ Use cotton underwear and loose-fitting clothing <ul style="list-style-type: none"> ○ Avoid feminine products and lotions ○ Apply emollient barriers such as Vaseline or Petroleum jelly twice daily ○ Urinate with the legs spread apart and wipe from front to back

Table 2: Recommended Hygiene Measures for Vulvovaginitis

Labial Adhesions

Before puberty, the labia are markedly hypoestrogenic, making them thin and easily susceptible to denudation by environmental irritants. Adhesions may then form if re-epithelialization occurs between the two labia, causing them to become adherent in the midline. Also known as labial agglutination, labial adhesions are most common at 13-23 months of age but can occur any time before puberty. Patients are typically asymptomatic, with adhesions noted on routine pediatric visits. However, they can also present with complaints of vulvar irritation, difficulty urinating, and recurrent urinary or vaginal infections. On physical examination, thin, avascular adhesions are visualized between the labia minora to varying degrees. These adhesions may partly or completely obscure the vaginal introitus, and diagnosis can be made with visual genital examination alone.

Treatment is not necessary if the patient is asymptomatic, as the adhesions will resolve spontaneously as the child approaches puberty and endogenous estrogen production ensues. More extensive adhesions may obscure the urethral meatus, causing disruption of the normal urinary stream. This may cause vulvar irritation and recurrent urinary tract infections, which may or may not improve with improved hygiene measures and avoidance of potential vulvovaginal irritants. In patients with persistent symptoms, first-line treatment is topical estrogen applied directly onto the line of fusion. Application of conjugated estrogen cream may be performed once or twice daily for 2 to 6 weeks. Topical betamethasone may be considered second-line treatment, especially in girls with a contraindication

or intolerance to topical estrogen. The majority of labial adhesions resolve following topical estrogen therapy, but manual separation may be considered in patients with labial adhesions that are refractory to medical treatment or in those presenting with acute urinary retention or infection due to obstruction caused by the adhesions. Parents should be counseled that recurrence of labial adhesions following medical or surgical treatment may be as high as 40%. Fortunately, they rarely persist beyond the onset of puberty and are not known to be associated with any congenital anomalies.

Lichen Sclerosus

Lichen sclerosus (LS) is a chronic inflammatory disorder of the skin that can affect the vulva in prepubertal girls. Patients with LS typically present with itching, vulvar discomfort, bleeding, or discharge. The exact etiology is unclear, but it has been associated with several autoimmune conditions such as vitiligo, alopecia, and rheumatoid arthritis. LS is more frequently encountered in postmenopausal women, but about 10-15% of cases may arise prior to puberty. While the diagnosis of LS in adults typically requires biopsy, the diagnosis in pediatric patients can be successfully made by direct visual examination. LS presents as a well-demarcated hypopigmented patch of skin in a figure of 8 configuration surrounding the vulva and anus. Excoriations, erosions, and even ecchymoses may be encountered due to pruritus and irritation causing subepithelial hemorrhages underneath the thinned skin of the labia. Left undiagnosed or untreated, LS may result in fissuring, alteration of the normal vulvar architecture, fusion of the labia minora, disruption of the clitoral hood, or narrowing of the introitus.

High-potency topical steroids such as clobetasol propionate 0.05% are considered the first-line therapy for pediatric LS. Topical therapy may be taken two to three times daily for 6 to 12 weeks until clinical resolution. Clinical improvement is seen almost immediately after initiation of treatment, although prior to puberty, the symptoms of LS may remit and recur in up to 60% of patients. In most cases, recurrences become infrequent, and symptoms improve following puberty.

Vaginal Foreign Body

Vaginal foreign bodies can be seen in up to 50% of children with vaginal bleeding and foul-smelling vaginal discharge. While a relatively uncommon etiology of prepubertal vaginal bleeding, suspicion should be high in girls between the ages of 2 and 9 who present with acute or recurrent vaginal symptoms. Toilet tissue is considered to be the most commonly found foreign object, as girls start voiding independently around this age. If left untreated, foreign bodies in the vagina may cause recurrent urinary tract infection, erosion, stenosis or even perforation of the vagina, and dermatologic abnormalities.

The diagnosis of a foreign body is often delayed as most children are unable to recall insertion of a foreign object. Pelvic imaging such as sonography or plain films are usually not able to identify small objects within the vagina. However, ultrasound may be helpful in identifying conditions which would suggest uterine rather than vaginal bleeding. Initial evaluation of a patient where a foreign body is suspected first involves a visual inspection. Bedside vaginal irrigation with warmed fluid using a pediatric catheter can be used to evacuate smaller objects. If larger foreign bodies are suspected and in cases of persistent symptoms despite successful irrigation, examination under anesthesia and/or vaginoscopy may be necessary. In prepubertal patients, bedside digital exam or direct internal visualization is not recommended.

Urethral Prolapse

Urethral prolapse refers to the partial or complete protrusion of the distal urethral mucosa beyond the urethral meatus. It is most commonly encountered in girls age 5 to 8 years old. Given the hypo-estrogenic state of the submucosal and periurethral tissue in prepubertal girls, the terminal urethra can be weak and susceptible to prolapse in times of increased intra-abdominal pressure. Children can also present to the emergency department with profuse but painless vaginal bleeding. Constipation, chronic cough, or any other condition that involves repeated Valsalva increases risk of developing urethral prolapse. The diagnosis of urethral prolapse can be made by direct physical exam, which will reveal a beefy, red and donut-shaped mass obscuring the urethral meatus. The surrounding genital anatomy should appear normal.

In some cases, the child may be asymptomatic and prolapse is encountered on routine physical exam. In these cases, the prolapse can be managed with frequent sitz baths as well as active management of potential constipation that is common in this age group. In cases where prolapse presents with acute vaginal bleeding or urinary irritation, topical estrogen cream (i.e., Premarin or Estrace cream 0.01%) can be applied twice daily for 2 to 4 weeks. Symptoms may resolve within a few days of initiating therapy without full visual resolution. In cases where topical estrogen does not improve the prolapse or where the patient presents with acute urinary obstruction or necrosis of the distal urethra, surgical resection may be indicated. Regardless of treatment modality, puberty and subsequent estrogenation of the periurethral tissue typically result in complete resolution of the prolapse.

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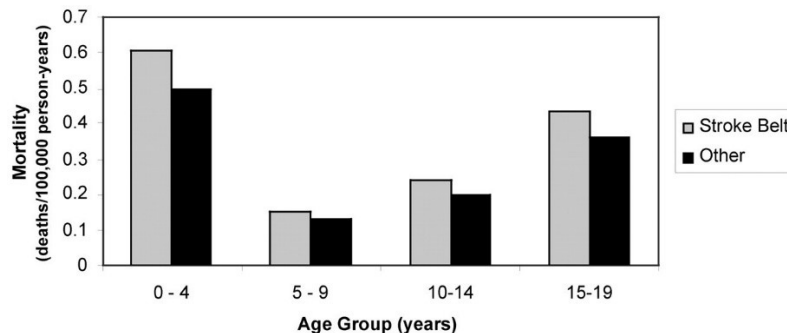
Is it a Stroke?

William Wood, MS4 and Pamela Okada, MD

A stroke occurs when there is a lack of blood flow to the brain. Strokes can be ischemic, meaning a vessel is occluded, or hemorrhagic, meaning a vessel has ruptured. Stroke occurrence in children is considered to be a rare event. The reported incidence of ischemic and hemorrhagic pediatric strokes ranges from roughly 1 to 2 cases per 100,000 per year in western developed countries. The incidence of ischemic and hemorrhagic stroke is roughly equal in children, but incidence of ischemic stroke is higher than hemorrhagic in the perinatal period. The incidence of stroke follows a bimodal distribution, with strokes being more common in the perinatal period and in older adults. The Centers for Disease Control (CDC) reports that cerebrovascular death is a top-ten cause of death in children in the United States.

Childhood stroke is more common in boys than in girls. Additionally, stroke is more common in Black children even when controlling for risk factors. Risk factors for stroke in children include a history of meningitis, encephalitis, arterial or cardiac disease, prothrombotic state, cancer, migraines, seizures, trauma, developmental delay, and previous stroke.

Of note for Texans, the consequences of living in America's "Stroke Belt" apply to children, as mortality rates from strokes are higher in the southeastern United States.



Mortality rates from stroke (ischemic and hemorrhagic) in US children in Stroke Belt states versus other states, by age group. (Fullerton, Elkins, and Johnston, 2004)

Early identification of stroke is vital to improve patient outcomes. While treatment with thrombolytics in pediatric stroke remains controversial, quick action to use anti-thrombotic therapy and neuroprotective measures are beneficial in preventing neurologic damage.

With the need for quick identification in mind, this article will review common stroke mimics in the pediatric population, when to worry about a stroke, general distinguishing factors, and information for parents and patients.

Common Mimics and When You Should Worry About a Stroke

Migraine / Complex Migraine / Hemiplegic migraine.

- What the mimic looks like: focal neurologic signs that resolve within 30 minutes and a throbbing headache.
- Worry about stroke: if there are persistent neurological symptoms or signs following headache onset.

Todd's paralysis + seizures.

- What the mimic looks like: seizures with focal motor deficits.
- Worry about stroke: if this is the first-time paralysis or neurologic symptoms persist for multiple hours, consider referral to the emergency department or imaging.

Bell's Palsy.

- What the mimic looks like: isolated upper and lower motor weakness (peripheral 7th nerve).
- Worry about stroke: if there are brainstem deficits on exam like changes in eye movements. Usually, Bell's palsy is an isolated peripheral 7th nerve palsy, so presentations involving multiple nerve deficits raises suspicion for stroke.

Tumor.

- What the mimic looks like: any neurological sign, altered consciousness, and/or signs of raised intracranial pressure.
- Worry about stroke: if the onset of neurologic symptoms is sudden. Tumor symptom onset is usually gradual.

Syncope.

- What the mimic looks like: loss of consciousness with an identifiable trigger, preceded by gradual visual change, tingling or diaphoresis.
- Worry about stroke: if there are neurologic deficits after the event or if there is a lack of a clear trigger causing the event.

Conversion disorder.

- What the mimic looks like: any neurological symptoms or signs that do not conform to neuroanatomical pathways, are inconsistent with the complaint, or vary from one examination to the next. A diagnosis of exclusion.
- Worry about the stroke: if the presentation has consistent and persistent neurological deficits.

Posterior Reversible Encephalopathy Syndrome (PRES).

- What the mimic looks like: it is nonspecific and can include headache, seizures, altered mental status, and vision loss.
- Worry about stroke: presentation is almost indistinguishable from stroke without imaging. Consider referral to the emergency room.

Acute Disseminated Encephalomyelitis (ADEM).

- What the mimic looks like: presents with fever, encephalopathy, seizure, and multifocal neurological deficits referable to more than one location within the central nervous system.
- Worry about stroke: presentation is almost indistinguishable from stroke without imaging. Consider referral to the emergency room.

General Distinguishing Factors between Strokes and their Mimics

In the context of suspecting a stroke, these signs and symptoms on presentation increase the odds of a stroke over a mimic:

1. Feeling well the week before.
2. Inability to walk.
3. Face and arm weakness.

Aspects of the history and physical exam that raise concern for stroke include an acute onset of symptoms, risk factors in history, sudden onset of weakness or speech change, lateralized extremity or facial weakness, abnormal eye movement or visual fields, visuospatial neglect, hemiparetic or ataxic gait disturbance, or sensory disturbance.

Mnemonic: Remember the three W's

Well a week ago, won't walk, and weak in the face or arm. Go online for strokes! www.stroke.org.

Anticipatory Guidance for Parents and Patients

Recurrence of stroke in children is estimated to be 10-20% within 5 years of the initial event, even when on anti-thrombotic medications. For ischemic strokes, recurrence is more common in the initial 12 weeks following the event, whereas for hemorrhagic strokes it is more common within the first 6 months. Additionally, many patients are diagnosed with risk factors of stroke before an infarct occurs. For these reasons, it is important to provide anticipatory guidance to parents of children with risk factors for stroke or a previous stroke. Below are helpful websites that include up-to-date information and useful handouts for parents and patients.

[Kid's Health Handouts](#)
[CHASA Stroke Infographics](#)
[ASA General Information on Pediatric Stroke](#)
[AHA Stroke Fact Sheet](#)
[CHOP Pediatric Stroke Information](#)
[ASA Pediatric Stroke Infographic](#)
[CNF Perinatal Stroke Information](#)

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Pediatric Insomnia

W. David Brown, PhD

“There was never a child so lovely but his mother was glad to get him to sleep.” — Ralph Waldo Emerson

Sleep is critically important for health and well-being for all of us. Shakespeare called sleep the “chief nourisher in life’s feast.” This is particularly true for our children. As parents, we are correct saying to grow big and strong, you need to get plenty of sleep. It is during sleep that growth hormone is released. Young children learn at a rate that will never again be achieved through the rest of their lives. Inadequate sleep causes problems with memory, attention, and concentration. Two researchers at the University of Wisconsin, Giulio Tononi and Chiara Cirelli have speculated that sleep loss during critical periods of development such as childhood may cause a lasting change in the way the brain is wired.

The importance of sleep in children cannot be overstated. Poor sleep during childhood can lead to poor emotional control, increases in accidental injuries, and negative parent-child relations. Unfortunately, sleep problems in childhood are all too common. Most studies estimate that 20-30% of children experience bedtime resistance and nighttime awakenings. Sleep problems are even more common in specific populations such as children with psychiatric problems (25-50%), autism spectrum disorder (49-89%), and developmental disorders (34-86%).

The Behavioral Insomnias of Childhood include Limit Setting Disorder, Sleep Onset Association Disorder, and a combination of the two. Limit setting is exactly as it sounds. Many children will utilize several delaying tactics to avoid going to bed. They begin negotiating with their parent to stay up later. “Please, just one more book, I have not finished this game, I need water,” etc. I am all for compromise, but these negotiations can get out of hand. It is best to provide firm expectations about bedtime and to stick to these expectations. One of the best ways to do this is with a good bedtime routine.

For children, bedtime is very much like time out. The child is losing access to their electronics, books, siblings, and parents. It can seem punitive. A good bedtime routine should be short and sweet and a clear indication that it is time for bed. The type of play should slow down as bedtime approaches. A good routine might include bath, pajamas, brush teeth, in bed, one or two books (agree before bed and stick to the agreement), a little cuddle time, then the parent gets out of the bed and says goodnight. It is important to get out of the bed to avoid the second behavioral insomnia, sleep onset association disorder. More on that later. Once the parent is out of the bed and said goodnight, ideally, they will leave the room and the child will stay in bed and fall to sleep. That does not always happen. If the parent stays in the room for a while, they must be out of the bed. This allows mobility and the parent can move about without disturbing the child. Once you have said goodnight, the parent should then become the most boring person ever. Do not engage the child, answer questions, get angry, or discuss the day. At best you may say it is bedtime.

Children, like the rest of us, learn how to fall to sleep. If a child has always slept with a parent or falls to sleep with a parent in their bed, rubbing their back, or singing a song, the child will associate these actions with falling to sleep. It is perfectly normal to wake during the night. Children will wake up at night. When they wake up and the parent is not there, they will try to get back to sleep in the manner they have learned, that is, with the parent. The child may go seek out the parent and hope to sleep in their bed or will call a parent to come get them back to sleep. If you allow the child in your bed, you will notice that they return to sleep quickly and may not awaken again the rest of the night. The child has associated the parent’s presence with falling to sleep and will try to recreate those actions to return to sleep. This is Sleep Onset Association Disorder.

You are now able to begin to remove yourself from the bedroom without the child panicking using a technique called the “Excuse Me Drill.” This procedure is a form of extinction that is not as arduous as letting the child cry it out. With the Excuse Me Drill, before the child is asleep, the parent says, “Excuse me. I need to check on...” The parent will then walk towards the door but will turn back around before the child gets upset and jumps out of the bed. After a few moments, say “Excuse me, I need to check on...”, and try to get out of the door but still come right back. Keep repeating this step until you can leave the room without the child getting out of the bed. You are trying to time it so that the child falls to sleep when you are not in the room. This technique teaches the child two things, patience and self-soothing. If you always come back, the child will wait. When the child naturally awakens during the night, there will be no need to seek out a parent as the child can fall to sleep independently.

Another technique is called the “Bedtime Pass.” This is also a form of gradual extinction. The child makes a pass, usually made of paper with drawings or stickers. Both the parent and the child “sign” the document and this is now an official document good for one trip out of bed with no questions asked. This technique works well for the child that has multiple reasons for getting out of bed before they have fallen to sleep. With the pass, the child can get out of bed for a hug, glass of water, or a pressing question without argument or anger from the parent. However, once the request has been fulfilled, the child must surrender the pass and cannot use it again until the following night. It helps children think before they get out of bed, is this important enough to use the pass? Many children begin to hoard the pass thinking if they really need to get out of bed, they will have some way of doing it. The technique is helpful because it gives both the child a sense of control over the bedtime process, and it helps parents set limits and stick to them.

These techniques can be potentiated with a reward system. To be effective, positive reinforcement (a star, sticker, or token) needs to be done quickly, typically the morning following a successful night. The child can then trade three tokens for a prize. The nights do not have to be consecutive. However, if the child does not get any tokens, no behavior is being changed and the task is too difficult. Make the task easier and once the child is getting rewarded, the task can then be gradually made more difficult.

Sleep loss is a preventable source of a multitude of problems in our children. Treat sleep as a vital sign. Talk about the importance of sleep early and often with children and parents. A healthy sleep lifestyle can confer a lifetime of benefits.

Dr. Brown is a pediatric sleep psychologist at Children’s Health.

Evaluating Vaccine Reactions

Sheeba Cherian, MD

Allergic reactions to vaccines are rare but a common concern for patients and their parents due to the rise of false information regarding vaccine safety. Pediatricians have an important role in evaluating vaccine reactions and providing guidance regarding proper vaccine administration.

Immediate vs. Delayed Reactions

Vaccine reactions can be categorized into two broad categories: immediate reactions and delayed reactions. Immediate reactions begin one to four hours following vaccination and suggest an IgE-mediated process. Cutaneous (hives, flushing, itching), respiratory (nasal discharge, cough, wheeze), and cardiovascular (syncope, hypotension) signs and symptoms are most common. Anaphylaxis to vaccines, while rare, tends to occur within 30 minutes of vaccine administration.

Delayed reactions occur several hours to days after vaccination. Serum sickness or serum sickness-like reactions typically occur one to two weeks after vaccination and present as rash, fever, and pain with or without swelling in multiple joints. Aluminum-containing vaccines may cause a delayed-type hypersensitivity reaction to the aluminum, presenting as a pruritic nodule at the injection site.

Evaluating Vaccine Reactions

Evaluation of vaccine reactions should start with a detailed history. Key questions to ask include:

1. What was the timing of the reaction in relation to vaccine administration?
2. What were the associated signs and symptoms?
3. Is there a history of similar reactions to the vaccine or vaccine components in the past?
4. Does the patient need additional doses of this vaccine or a different vaccine with the same vaccine components in the future?

Many conditions can mimic anaphylaxis following vaccine administration. Vasovagal reactions can exhibit hypotension, bradycardia, pallor, nausea, vomiting, and syncope. One distinguishing feature of vasovagal reactions when compared to anaphylaxis is the lack of cutaneous symptoms such as itching, hives, or swelling. While bradycardia can be seen with vasovagal reactions, reflex tachycardia is seen in anaphylaxis.

Some patients can have anxiety-induced signs or symptoms after vaccine administration, such as stridor associated with vocal cord spasm or sensation of throat closure with panic attacks. Again, cutaneous symptoms are absent.

If the history is concerning for an immediate-onset vaccine allergy, referral to an allergist for skin testing is recommended.

All serious events occurring after vaccine administration should be reported to the Vaccine Adverse Event Reporting System (VAERS).

Vaccine Components

IgE-mediated reactions to vaccines are more often caused by additives or other components in the vaccine rather than the microbial agent. Examples of these components include gelatin, egg, aluminum, yeast, latex (used in some vial stoppers and syringes), and polyethylene glycol (PEG) or polysorbate found in SARS-CoV-2 mRNA vaccines. [CDC.GOV](https://www.cdc.gov/vaccines/imz/downloads/p/2019/s11-1219-1220-1221-1222-1223-1224-1225-1226-1227-1228-1229-1230-1231-1232-1233-1234-1235-1236-1237-1238-1239-1240-1241-1242-1243-1244-1245-1246-1247-1248-1249-1250-1251-1252-1253-1254-1255-1256-1257-1258-1259-1260-1261-1262-1263-1264-1265-1266-1267-1268-1269-1270-1271-1272-1273-1274-1275-1276-1277-1278-1279-1280-1281-1282-1283-1284-1285-1286-1287-1288-1289-1290-1291-1292-1293-1294-1295-1296-1297-1298-1299-1300-1301-1302-1303-1304-1305-1306-1307-1308-1309-1310-1311-1312-1313-1314-1315-1316-1317-1318-1319-1320-1321-1322-1323-1324-1325-1326-1327-1328-1329-1330-1331-1332-1333-1334-1335-1336-1337-1338-1339-1340-1341-1342-1343-1344-1345-1346-1347-1348-1349-1350-1351-1352-1353-1354-1355-1356-1357-1358-1359-1360-1361-1362-1363-1364-1365-1366-1367-1368-1369-1370-1371-1372-1373-1374-1375-1376-1377-1378-1379-1380-1381-1382-1383-1384-1385-1386-1387-1388-1389-1390-1391-1392-1393-1394-1395-1396-1397-1398-1399-1400-1401-1402-1403-1404-1405-1406-1407-1408-1409-1410-1411-1412-1413-1414-1415-1416-1417-1418-1419-1420-1421-1422-1423-1424-1425-1426-1427-1428-1429-1430-1431-1432-1433-1434-1435-1436-1437-1438-1439-1440-1441-1442-1443-1444-1445-1446-1447-1448-1449-1450-1451-1452-1453-1454-1455-1456-1457-1458-1459-1460-1461-1462-1463-1464-1465-1466-1467-1468-1469-1470-1471-1472-1473-1474-1475-1476-1477-1478-1479-1480-1481-1482-1483-1484-1485-1486-1487-1488-1489-1490-1491-1492-1493-1494-1495-1496-1497-1498-1499-1500-1501-1502-1503-1504-1505-1506-1507-1508-1509-1510-1511-1512-1513-1514-1515-1516-1517-1518-1519-1520-1521-1522-1523-1524-1525-1526-1527-1528-1529-1530-1531-1532-1533-1534-1535-1536-1537-1538-1539-1540-1541-1542-1543-1544-1545-1546-1547-1548-1549-1550-1551-1552-1553-1554-1555-1556-1557-1558-1559-1560-1561-1562-1563-1564-1565-1566-1567-1568-1569-1570-1571-1572-1573-1574-1575-1576-1577-1578-1579-1580-1581-1582-1583-1584-1585-1586-1587-1588-1589-1590-1591-1592-1593-1594-1595-1596-1597-1598-1599-1600-1601-1602-1603-1604-1605-1606-1607-1608-1609-1610-1611-1612-1613-1614-1615-1616-1617-1618-1619-1620-1621-1622-1623-1624-1625-1626-1627-1628-1629-1630-1631-1632-1633-1634-1635-1636-1637-1638-1639-1640-1641-1642-1643-1644-1645-1646-1647-1648-1649-1650-1651-1652-1653-1654-1655-1656-1657-1658-1659-1660-1661-1662-1663-1664-1665-1666-1667-1668-1669-1670-1671-1672-1673-1674-1675-1676-1677-1678-1679-1680-1681-1682-1683-1684-1685-1686-1687-1688-1689-1690-1691-1692-1693-1694-1695-1696-1697-1698-1699-1700-1701-1702-1703-1704-1705-1706-1707-1708-1709-1710-1711-1712-1713-1714-1715-1716-1717-1718-1719-1720-1721-1722-1723-1724-1725-1726-1727-1728-1729-1730-1731-1732-1733-1734-1735-1736-1737-1738-1739-1740-1741-1742-1743-1744-1745-1746-1747-1748-1749-1750-1751-1752-1753-1754-1755-1756-1757-1758-1759-1760-1761-1762-1763-1764-1765-1766-1767-1768-1769-1770-1771-1772-1773-1774-1775-1776-1777-1778-1779-1780-1781-1782-1783-1784-1785-1786-1787-1788-1789-1790-1791-1792-1793-1794-1795-1796-1797-1798-1799-1800-1801-1802-1803-1804-1805-1806-1807-1808-1809-1810-1811-1812-1813-1814-1815-1816-1817-1818-1819-1820-1821-1822-1823-1824-1825-1826-1827-1828-1829-1830-1831-1832-1833-1834-1835-1836-1837-1838-1839-1840-1841-1842-1843-1844-1845-1846-1847-1848-1849-1850-1851-1852-1853-1854-1855-1856-1857-1858-1859-1860-1861-1862-1863-1864-1865-1866-1867-1868-1869-1870-1871-1872-1873-1874-1875-1876-1877-1878-1879-1880-1881-1882-1883-1884-1885-1886-1887-1888-1889-1890-1891-1892-1893-1894-1895-1896-1897-1898-1899-1900-1901-1902-1903-1904-1905-1906-1907-1908-1909-1910-1911-1912-1913-1914-1915-1916-1917-1918-1919-1920-1921-1922-1923-1924-1925-1926-1927-1928-1929-1930-1931-1932-1933-1934-1935-1936-1937-1938-1939-1940-1941-1942-1943-1944-1945-1946-1947-1948-1949-1950-1951-1952-1953-1954-1955-1956-1957-1958-1959-1960-1961-1962-1963-1964-1965-1966-1967-1968-1969-1970-1971-1972-1973-1974-1975-1976-1977-1978-1979-1980-1981-1982-1983-1984-1985-1986-1987-1988-1989-1990-1991-1992-1993-1994-1995-1996-1997-1998-1999-2000) provides a Vaccine Excipient Summary including all components found in U.S. vaccines.

Patients with an anaphylactic reaction following a vaccine should be referred to an allergist for further evaluation and possible skin testing to determine the causative component. This can help guide candidacy for further doses of important childhood vaccines and identification of alternatives when possible.

COVID-19 Vaccines

With the pediatric population now becoming eligible to receive COVID-19 vaccines, parents express concern about who is at increased risk for vaccine reactions. Pfizer has received approval for vaccine administration to those age 12 years and older, and Moderna is expected to follow suit in the near future.

The anaphylaxis rate from currently available COVID-19 vaccines is 4.5 per million doses, which is consistent with the anaphylaxis rate for other vaccines. The only contraindication for SARS-CoV-2 mRNA vaccines (i.e., Pfizer and Moderna) is known allergy to the vaccine components PEG or polysorbate.

Precaution should be taken in people who have had reactions to vaccines or injectable therapies in the past when the inciting medication contained PEG, polysorbate, or another mRNA component. Deferral of vaccination and consultation with an allergist may be helpful. These patients may be evaluated via allergy skin testing to see which vaccine they can safely receive. If, however, the patient has subsequently received a vaccine or other product containing PEG (found in some laxatives) or polysorbate (found in some lubricating eye drops), testing for allergy to those excipients is not necessary.

People with a history of environmental, food, latex, or insect allergy can get the vaccine with a standard 15-minute observation period. Those with a history of anaphylaxis or severe allergic reactions to an injectable medication or vaccine should follow a 30-minute observation period following vaccination.

Special populations

Egg protein is found in yellow fever, MMR, and some influenza and rabies vaccines. Egg-allergic patients may receive influenza, MMR, and rabies vaccines without any additional period of observation. While a referral to an allergist is not necessary prior to administration of these vaccines, it may be helpful when there is parental hesitancy about vaccination. Only patients with anaphylactic reactions to previous doses of these vaccines require deferral of further vaccination and referral to an allergist.

Egg-allergic patients who require yellow fever vaccine should be evaluated by an allergist prior to vaccine administration, as it is not known if the amount of egg protein in the yellow fever vaccine is enough to cause reactions.

In general, immunocompromised patients should avoid live vaccines.

In conclusion, severe vaccine reactions remain rare. A detailed history can identify patients who require further testing prior to vaccine administration. Pediatricians play a key role in patient-education and advocacy for safe vaccine administration.

Dr. Cherian is an allergist/immunologist practicing in North Dallas.

Panic Disorder in Children and Adolescents

Ritu Ghai, MD and Baer Ackerman, MD

A tearful 15-year-old girl is brought by her mother to your office. She tells you that sometimes her “heart just starts pounding” and she feels like she “can’t breathe” or that she’s “going crazy.” She has had at least one ER visit for these symptoms, and the family was told that the patient was experiencing panic attacks. Both the teen and her mother are very distressed by her physical symptoms, as well as the impact the symptoms have had on the girl’s functioning. She has been refusing to go to school and has begun resisting going to the neighborhood grocery store alone, a task she used to do easily. Her grades are slipping, and her mother is worried that the child is becoming depressed.

Panic disorder is classified in the DSM-V as an anxiety disorder. Anxiety can be understood in three ways: 1) as a purely neurochemical phenomenon, e.g., if we drink 10 pots of coffee, one after the other, we will feel nervous, not because there’s anything bothering us but because that’s what too much caffeine does; 2) as the private conviction that a catastrophe is imminent (by extension, depression would be the private conviction that a catastrophe has already occurred); and 3) as our inner experience of perceived danger, *real or imagined*, on the outside (in the environment) or on the inside (intrapsychic), which reminds us of the power of fantasy, conscious and unconscious.

A panic attack is not, in and of itself, considered to be a mental disorder and may occur in the context of many different psychiatric concerns. A panic attack is an abrupt, intense surge of fear or discomfort that reaches a peak within several minutes, during which time the individual may experience a variety of physical and mental symptoms. These symptoms may include palpitations, sweating, trembling, chest pain, difficulty breathing, and abdominal distress. Individuals may also complain of feeling detached from reality (derealization) or worry that they are dying.

Panic attacks may arise from a calm state or an anxious state. If they arise from an anticipated trigger, the individual may *expect* the panic attack; however, individuals may also experience *unexpected* panic attacks. The presentation of a panic attack may also vary with culture and country. In some cultures, other symptoms, like headaches and screaming episodes, may feature prominently. It’s important to keep in mind that not all individuals who experience panic attacks will go on to develop a panic disorder.

A panic disorder is a disturbance in which an individual experiences recurrent panic attacks, is persistently worried about having another attack, and has changed their behavior to avoid triggering the attack. Some, but not all individuals also present with agoraphobia, which is marked fear or anxiety triggered by the real or anticipated exposure to a variety of situations. Youths with panic disorder may refuse to go to school or avoid social activities or other situations or environments that might trigger an attack. Individuals will voice fear of being unable to escape from a certain situation in the event of a panic attack or being unable to get help in these situations. Individuals often find the bodily symptoms to be overwhelmingly distressing, embarrassing, or fear that the bodily symptoms represent a serious medical issue. When a teen starts avoiding various environments and situations, parents find themselves either staying with the teen at home or increasingly accompanying them to events or locations as a “safety person.” Thus, as with so many psychiatric disorders in children, panic disorder affects the functioning of the entire family system.

Panic disorder generally does not begin before adolescence, but, although uncommon, it can develop in children. It occurs more often in females than males and may run in families.

Youth with panic disorder should first be evaluated by their family doctor or pediatrician to rule out any medical issue. Once it is clear that there is no underlying medical issue, Cognitive Behavioral Therapy (CBT) alone is often tried as the first line of treatment. In CBT, patients are asked to try and learn to self-observe their cognitive and behavioral processes and develop better/more adaptive cognitive and somatic coping skills as they are exposed to feared situations and stimuli. It is often helpful to have individuals think of their symptoms as a faulty alarm system. Over time, patients learn to tolerate panic symptoms and understand that the bodily symptoms will not harm them; that they are part of a “false alarm.” Individuals are also taught some techniques, like deep breathing, to help dispel some of the physical symptoms. After an initial course of CBT, individuals often return periodically for maintenance treatment.

An antidepressant is considered to be a second-line intervention. A Selective Serotonin Reuptake Inhibitor (SSRI) is often considered before other pharmacological agents, given the overall safe side-effect profile of these medications. An SSRI may help decrease the intensity of the “false alarm” and the anxiety surrounding the panic attack. When treating children with an antidepressant, risks and benefits must be carefully weighed and addressed with the family, including the potential risk of increased suicidal thoughts or behaviors.

It should also be noted that individual and family psychodynamically-oriented psychotherapies, with or without medication(s), can also be useful for certain patients in which CBT has been of limited utility. Psychodynamic psychotherapy pays attention to five calamities that may underlie panic, either in isolation or together. These five calamities are: 1) fear of loss of love from a loved person; 2) fear of losing a loved person; 3) fear of guilt or shame; 4) fear of physical harm; 5) and being overstimulated. While there may be more categories of calamities, these five serve pretty well as guides to what worries might underlie the individual’s specific panic and thus can help optimize the implementation of specific treatment modalities.

Dr. Ghai is a child and adolescent psychiatrist practicing in Dallas. Dr. Ackerman is a child and adolescent psychiatrist practicing in Plano.

Third Quarter 2021 Dinner/Meeting

Just a reminder.... The Executive Committee made the decision to postpone our September 22nd meeting. Dr. Browne's anxiety talk will be rescheduled for a later date.

Upcoming Pediatric Grand Rounds

Wednesday, September 22nd

8:00 am – Moore Auditorium, Children's Health

Charuta Joshi, MBBS, Clinical Professor of Pediatrics, University of Colorado, Denver, Anschutz Medical Campus, Denver

"My Career Path from the "Mundane" to the "Exciting": A Collage"

<https://utsouthwestern-du.zoom.us/j/91628027373?pwd=RUpUUFY0N0NhOXFicUJjL3Y1UVVnQT09>

Meeting ID: 974 0376 8151 Passcode: 092921

Tuesday, September 28th

7:30 am – Classrooms A&B, Medical City Children's Hospital

Timothy Crombleholme, MD

"Making a Graceful EXIT: Indications and Outcomes in Application of the Ex-utero Intrapartum Treatment Procedure"

Wednesday, September 29th

8:00 am – Moore Auditorium, Children's Health

Matthew J. McLaughlin, MD, MSB, Associate Professor of Pediatrics, Division of Pediatric Rehabilitation Medicine and Clinical Pharmacology, Toxicology, and Therapeutic Innovation, Children's Mercy Hospital, Kansas City, MO

"Precision Medicine in Pediatric Rehabilitation"

<https://utsouthwestern-du.zoom.us/j/97403768151?pwd=dDE5NEN3ZXZxdjJubHdwaStwaFQrZz09>

Meeting ID: 974 03768151 Passcode: 092921

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