

Pinnacle Pediatrics

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“It was 20 years ago today.” – Sgt. Pepper’s Lonely Hearts Club Band, The Beatles.

“Twenty years now. Where’d they go? Twenty years. I don’t know.” – Like a Rock, Bob Seger.

Yes, it has been 20 years since I converted my “regular” pediatric practice to a “concierge” practice (and yes, I am a fan of classic rock 😊). I was the first pediatrician in the country to establish this type of practice (the adult docs initiated this 10 years prior). My goal was to create the highest quality, most convenient pediatric practice available anywhere. I do believe, by measurable criteria, and by the success and retention rate of the practice, that we have achieved this goal.

This is my annual “What to do when your child is sick” Newsletter. This will cover the topics of Fever, Common Cold, Flu, Covid, Sore Throat, Pink Eye, and Gastroenteritis (stomach bug). If your child goes the entire year without succumbing to one of these maladies, you are entitled to start your own “How to keep your kids healthy” blog. (I will actually be discussing Mommy blogs in a future Newsletter, stay tuned). Overall, these topics constitute a large percentage of the queries I receive concerning your children. Hence, I do encourage you to read this Newsletter fully, and to file it where you can easily access it. In addition, this will be posted on my website, pinnaclepediatrics.com, just click on Newsletters. Although I am accessible 24/7 for your questions and concerns, referring to this Newsletter will provide you with instantaneous access to my complete recommendations on these subjects. Sometimes, if I am occupied with other patients or otherwise involved, I may not be able to respond to your concerns as promptly as I would like. These guidelines should answer most of the questions you have. And sometimes, like between 10:30 PM and 5:30 AM, I am, ummm, asleep. Through the years, my patients’ parents have been very respectful and only contact me in the middle of the night for issues that they do consider to be urgent. To be honest, lately I have received an increased number of calls/texts after I have gone to bed for clearly non-urgent issues, such as scheduling, a spot on the skin, a

problem that has been there for a month, etc. I do ask that you contact me concerning non-urgent issues during regular daylight hours. This not only enables me to function at my clear-headed best the following day, it lessens the chance that I will mumble “Espresso” as a therapeutic option for your child’s symptoms in my sleep-fog state.

In addition to my recommendations regarding the Common Cold delineated in this Newsletter, I do wish to discuss the effect kids’ colds have on parents. Everyone knows that all children get colds, although most parents do not realize how frequently these occur, which is 6 - 12 times per year. We all also feel badly for our children, especially the very young ones, and are desperate to make them feel better, to Do Something. Hence, most parents do overreact when their child gets a cold. Example: When a parent is describing their child’s cold symptoms to me, all symptoms have an adjective in front of them. No child just has a sore throat, runny nose, congestion or cough. It is always a “severe” sore throat, “massive” runny nose, “terrible” congestion or “horrible” cough.

Their heightened level of concern also results in the parents wanting to give their child Something to ease their symptoms. Recommended therapeutic options are as listed in this Newsletter. That is often not sufficient for many parents. So, they turn to Dr. Google, or some other surrogate advice-giver, such as a talk-show host or celebrity endorser, and try their recommended product (and enlarge their bank account). Often parents will try products based on the advertising phrase “Secrets your doctor does not want you to know”. 😂 Why wouldn’t I want you to know? If I make a recommendation that brings relief to your child, I am a hero!. I do not make any money from any product I recommend, so I certainly do not lose money from products I do not recommend. If a product is safe and effective, I will scream it from the rooftops. Many of these “alternative” products have been clearly shown to be of no value. It is almost universal that every time one of these supposed miracle cures undergoes peer-reviewed scientific testing, they are shown to be of no benefit. Many others simply have not been subjected to rigorous trials to prove their efficacy and safety. Why not? Well, that is expensive. But if someone discovers a product that really works for the common cold, they will have more money than Elon Musk and the makers of Ozempic combined. But again, in parents’ blind desire to do Something for their child, they are easy prey for charlatans and hucksters. This is why the

cold and cough medicine industry is a multi-billion dollar industry, selling products that just don't work, and are sometimes harmful.

Often, parents want a child with a cold to be seen by a physician. Realistically, there is not usually a medical reason to see these children. The diagnosis of a cold, or a sinus infection, is based on the symptoms, not the physical exam. If a physician is suspicious of a complication of a cold, particularly if the child is demonstrating signs of respiratory distress, then the child may need to be seen. But simply laying on the hands of the Pediatrician is, unfortunately, no more effective at relieving the child's symptoms than ginkgo biloba (or the many other disproven recommended therapies). Furthermore, almost never is an x ray or lab study indicated with cold symptoms.

The final step of the overanxious parent of the child with a cold is a trip to the ER or Urgicare. Here, they will often find satisfaction. Their child gets a physical exam (and in the case of the infant, frequently a diagnosis of an ear infection, by a health care provider who likely has no clue how to make that diagnosis), often a chest x-ray, sometimes a breathing treatment, and is discharged with some combination of an antibiotic, a steroid and an inhaled medication. (Side note – almost ALL adults who go to an Urgicare with cold symptoms are discharged with all 3 of these medicines. Then they come home and immediately call their Pediatrician, stating that their child has the same symptoms as they do, so they want all 3 of those medicines for the child. Then the Pediatrician spends 30 minutes explaining why neither the parent nor the child needs these meds, often resulting in an angry or disappointed parent). Urgicares, and ERs treating non-emergency patients, and, sadly, often even Pediatricians' offices, function as retail outlets, not as medical caregivers. They serve to please the customer (patient or patient's parent). We all know how to do this – give them what they want. DO SOMETHING. So this encounter results in a happy parent, but an unhappy Pediatrician. From a medical perspective, this is entirely inappropriate. First, the child was unnecessarily taken to a facility with lots of other sick individuals, thus possibly resulting in exposure to an even more serious illness. The chest x-ray exposed the child to unnecessary radiation. The breathing treatment may result in untoward side-effects. The antibiotic, steroid and inhaler will not make the child's cold better in any way, and will again expose the child to numerous possible side-effects.

Yes, every good parent wants to do what is best for their child. They want to do Something. But in their overzealousness to accomplish this, they in fact often cause more harm than benefit. This is true in many situations in medicine. The most appropriate mantra in medicine is often, "Don't just do something, sit there!"

After that long preamble, get a little exercise, have a cup of coffee, and please come back to read my advice on these common maladies that all of your children are likely to encounter. This is based on my training, my experience and my reading of the scientific literature, not on what is trending on TikTok or Twitter (X) (Coffee enemas? Placenta pills?). This is the (valid) information your doctor Does want you to know. After invoking The Beatles, Bob Seger and Sabrina Carpenter in my prologue, feel free to play a little Crosby, Stills, Nash and Young in the background, maybe "Teach Your Children".

Fever

Almost all of you have heard me preach that fever is not dangerous, it is simply a sign of infection. My concern is not the fever, but what is causing the fever - what is the infection and, even more important, how serious does it appear to be. Any time a child has a fever, or any symptom of illness, the most important questions to ask are..."How is the child acting?" and "How is the child drinking?" If these two items seem to be okay, then it is very unlikely that there is a serious problem. Conversely, if the child is extremely irritable or lethargic, or refusing to drink for an extended period, then we need to be concerned.

Any time a child has a fever or is ill, she is entitled to act "sick", just not "real sick". She may be fussy, sleepy, not eat well. But, she needs to drink, she needs to be arousable, consolable, and interactive to reassure us that there is nothing serious going on, that she is not "toxic".

Once it has been established that the child is not toxic, then look for other "clues" as to the source of the fever, i.e. cold symptoms (runny nose, cough, congestion, sneezing), gastrointestinal symptoms (abdominal pain, vomiting, diarrhea), sore throat, earache, etc. Often in children, there are no symptoms other than fever. Most of the time, these kids have a viral illness, which may simply run its course (usually 3-5 days) without any other symptoms.

Fever itself is not dangerous unless it reaches 107°F or higher, which is rarely seen except in severe heat stroke -- almost never with an infection. It is true that about 10% of children under 7 years of age will have a seizure with fever. But this is related to the rate of rise of the fever not how high it is. Most of the time the parent doesn't even know their child has a fever before the seizure. Fortunately, although febrile seizures are frightening to the parent, they are rarely serious. It has never been demonstrated that we can prevent febrile seizures by aggressively treating the fever.

The key is not to focus on the fever. It is worthwhile to measure the temperature one time to document that there is a true fever. (Often kids feel warm to a parent's touch, but the temperature is normal. This is not a concern. There is no disease state associated with this). After that, put the thermometer away - it is not important whether the temp. is 101 or 104. The degree of the fever correlates poorly with the severity of the infection. If the child is uncomfortable with the fever (usually the case), feel free to treat the child with an antipyretic (fever reducer). Reducing the fever will not "mask" a serious illness, and if the fever is reduced, the child will likely drink better and act better, thus reassuring us that he is not "toxic". Do not be concerned, however, if the medicine does not decrease the fever - it has been clearly shown that the response to antipyretics is not indicative of the severity of the illness. Once a fever has been established, it is reasonable to measure the temperature once per day, to ascertain whether a fever is still present.

If the child is not uncomfortable due to the fever, do not give an antipyretic. Fever is one of the ways our bodies fight infection. Suppressing the fever may increase the duration of the illness. "Treat the child, not the fever".

Acetaminophen (Tylenol) or Ibuprofen (Motrin, Advil) are both effective at the proper dose (15mg./kg. every four hours for Acetaminophen, 10mg./kg. every six hours for Ibuprofen). Head-to-head, Ibuprofen appears to be slightly more effective than Acetaminophen. Although you will hear medical personnel recommending alternating the two medicines, I do not believe that this is a good idea. It is hard to coordinate an every four hour and an every six hour dosing, and many mistakes, leading to overdoses, have been made in this manner. Stick with one antipyretic and use it appropriately. Besides, the main point here is that Fever is Not the Enemy. We treat it to make the child comfortable, but the real concerns are as we discussed above. (Note -- Many cold medicines contain Acetaminophen, so combining Acetaminophen with a cold product can lead to an overdose of Acetaminophen. Always read labels

to avoid this serious complication). (Also note -- Acetaminophen is the most common accidental medication poisoning in the U.S. This can lead to serious, even fatal, liver injury. Keep Acetaminophen, like all medicines, safely away from small children).

This discussion does not apply to the infant under three months of age. Although fever is not dangerous for this child either, a child under three months of age with a true fever (temp. greater than 100.5°F.) has a 20% chance of having a serious infection, and thus necessitates a call to the Pediatrician. Likewise, if a child greater than three months of age appears to be toxic, or the fever lasts more than 3-5 days, the Pediatrician should be called.

Colds

Colds are ubiquitous - everybody gets them. Because there are numerous viruses that cause colds, a child can get many colds in the same season. The usual symptoms are low-grade fever (99°-102°F.) for the first few days, sore throat, runny nose, sneezing, congestion, and cough. The runny nose usually starts out clear, then turns cloudy around day 4, then turns clear again around day 7. A cold may make a child slightly uncomfortable, slightly lethargic and cause a decrease in appetite. But, most kids will still be fairly active and still drink well. On average children get 6-12 colds per year. Parents often become concerned that their child is getting too many colds, and question if they have a problem with their immune system. Children who have true immune deficiencies are prone to recurrent serious infections, not colds.

Cold prevention is problematic, if not impossible. Avoiding other individuals with colds is effective, albeit rarely feasible. Frequent handwashing, keeping hands away from faces, and not sharing utensils or drinkware are all beneficial.

Cough is one of the most common reasons for a call to the Pediatrician. It makes the child uncomfortable, which makes the parents uncomfortable. Parents often focus on the nature of the cough (dry, wet, harsh, phlegmy, etc.), but this is usually insignificant in determining the severity of the child's illness. The only accompanying symptom that should cause concern is difficulty breathing, particularly when the child is not in the middle of a coughing spell. If the child is breathing fast or hard for a prolonged period, the Pediatrician should be notified.

Cough often persists for 4-8 weeks, which drives parents crazy. This is due to inflammation of the airway, not the infection that initiated it, so these children are not contagious. As I have discussed in prior newsletters, cold and cough medicines are largely ineffective. Due to possible side-effects, they are no longer recommended in children under 6 years of age. Therapies that may make your child a little more comfortable include moisture in the air (vaporizer/humidifier, bathroom steam) and sipping beverages/sucking on lozenges (bathing the cough receptors in the back of the throat helps to decrease cough). Honey (for the child over 1 year of age) has also been shown to be mildly beneficial for cough. Salt-water (saline) nose drops with suction can help to ease congestion in the infant. You can make saline nose drops by mixing ¼ teaspoon of salt in 4 ounces of water. Heat it so it goes into solution, then let it cool -- Voila, saline nose drops. Vicks under the nose may offer relief from congestion, though it has no apparent benefit when rubbed on the chest.

In the child above 6 years of age, cough/cold medicines are still of questionable benefit, but have decreased risk. Pseudoephedrine is the most effective oral decongestant, but is now stored only behind the pharmacist's counter because of its role as an ingredient in the production of crystal meth, so you need to ask for it. Potential adverse effects include insomnia, headache, excitability, nervousness, decreased appetite, increased heart rate and blood pressure, arrhythmias, nausea and vomiting. Phenylephrine has replaced Pseudoephedrine in most OTC cold medicines. Numerous studies show it to be no more effective than placebo (The Medical Letter, Dec. 2015). (Those of you who have been reading these Newsletters know that I have been advising against use of this product for years. Finally, in September 2023, the FDA issued the same advisory). Afrin nasal spray is effective in relieving congestion, but even when limited to 2-3 days, usage may still result in a "rebound" of nasal congestion when the Afrin is discontinued. Dextromethorphan is the most common OTC cough suppressant, but it is not very effective. Delsym is a long acting form of Dextromethorphan that may be useful for night time cough. Previously, we would prescribe Codeine for the older child with a severe cough, but this is no longer recommended due to numerous reports of respiratory depression and death secondary to this therapy. Antibiotics have no role in treating the common cold, which is due to a virus, as they only treat bacterial infections. Echinacea, Vitamin C and Zinc have all been purported to help alleviate cold symptoms, but there is no good scientific evidence that this is true in children. Grandma's chicken soup (and

actually, just Grandma) may provide the most comfort. "A cold will last seven days if you treat, one week if you don't." A good review of cold remedies can be found in the January, 2018 edition of Consumer Reports.

Frequently, a parent becomes concerned that their child's upper respiratory infection is a bacterial infection. This is usually due to a change to cloudy nasal discharge (though, as discussed, this is the norm around day 4) or the length of the symptoms. Most colds do last 7-10 days, and 2 weeks is not unusual. Cough may last 4-8 weeks, which is a frequent cause of concern. The typical bacterial upper respiratory infection (sinus infection) usually presents at the tail end of a cold. Symptoms include high fever, marked congestion, a large amount of thick yellow or green nasal discharge, and a significant worsening of the child's activity level and appetite. These symptoms should prompt a call to the Pediatrician, as sinus infections are amenable to antibiotic therapy.

FLU

Influenza, or the Flu, usually presents with the rapid onset of high fever, chills, and body aches. Other symptoms include sore throat, cough and vomiting. The symptoms of the Flu usually last for 7 days. The Flu almost always presents in epidemic fashion in the winter, not episodically throughout the year.

Diagnosis of Influenza is primarily based on clinical symptoms. Although rapid-testing is available, it is not very accurate, with a false-negative rate of 30%. Children consistently have the highest attack rates of Influenza. Kids younger than age 5, especially those under age 2, and kids with underlying medical conditions (most commonly asthma, neurologic disorder, and obesity) are at increased risk of hospitalization and complications from the Flu. Approximately 50% of children hospitalized for Influenza do not have an underlying condition.

Anti-Influenza medications, primarily Tamiflu, are available. Unfortunately, they are not very effective. Studies show that if Tamiflu is started within 48 hours of symptom onset, it can shorten the duration of the illness by 1 day (7 days to 6 days). Common side-effects of Tamiflu include nausea, vomiting, and headache. Tamiflu has also been associated with neuropsychiatric symptoms, including self-injury and delusion. Currently, Tamiflu is only recommended for high-risk individuals, including children under 5 years of

age, and those with chronic conditions or obesity. It should be started within 48 hours of symptom onset. Tamiflu is recommended for prophylaxis for high-risk individuals who have been exposed to Flu who have not received Flu immunization.

Xofluza is another anti-Flu product that is approved for children age 5 and over. Its advantage is it only requires one dose, and it appears to have fewer side-effects than Tamiflu. Unfortunately, it is no more effective than Tamiflu, and also needs to be taken less than 48 hours after initiation of symptoms. Tamiflu is considered the preferred product in children. For otherwise healthy children, or any child with symptoms longer than 48 hours, symptomatic treatment is all that is appropriate (anti-pyretics, fluids).

Influenza vaccine is recommended for everyone age 6 months and older. Although it is our least effective vaccine, with average efficacy of 60%, it has been very safe, and 60% is better than 0% (for you math majors ☺). More importantly, similar to Covid vaccines, the efficacy rate for preventing hospitalization and death due to Influenza is significantly higher.

A quick note on Bird Flu. This strain of Influenza virus, H5N1, was discovered in Hong Kong in 1997, in chickens. It killed 7 people in Southeast Asia. It was not seen again until 2003, spreading from chickens to other birds, then to mammals. By April, 2005, it had sickened 97 people, and 53 died.

In the ensuing 20 years, this virus has spread to 23 countries, infecting about 50 people per year. In the Spring of 2024, it was detected in cows in the U.S. Since then, several human cases have been reported, primarily in poultry and dairy workers. There is now 1 confirmed death as a result.

The good news is that, barring a significant mutation, Bird Flu is very unlikely to cause a human pandemic. Without getting too technical, this is due to the fact that this is an H5 virus. This type of Influenza does not transmit easily among humans. H5 viruses have been detected for decades, but have never caused a human pandemic. All human pandemics have been due to H1, H2, and H3 viruses. The reason for this has to do with the location of the receptor cells — take my word for it (more specifically, take Dr. Paul Offit's word for it, from whom I receive this information).

So, although workers in certain professions are at risk for this virus, most of us have a very low risk. There is a recently approved vaccine for this, which is being administered to high-risk groups in Europe, but not in the U.S. so far.

As for you and your children? Avoiding close contact with live birds and cows, and not drinking unpasteurized milk, is prudent for now.

COVID

SARS-CoV-2, the virus that causes Covid-19, is still very much with us. This virus has killed over 1,600 children in this country since it first arrived in 2020, and has caused serious illness in thousands of others. Fortunately, during its evolution through multiple mutations, and thanks to the fact that almost every child now has some degree of immunity due to infection and immunization, it is not as virulent as it once was. However, in 2023 it was the leading cause of death due to infectious disease in children in the U.S., and the 8th leading cause of death in children overall. Other than the elderly, children under 4 years of age were the 2nd most common group in this country to be admitted to the hospital due to Covid.

So how should we respond to Covid in the pediatric population in 2025? Should children be immunized? A resounding Yes! Immunization has been proven to be both effective (drastically decreasing the number of serious Covid infections, and mildly decreasing the number of overall infections) and safe (with hundreds of millions of doses given, the only significant side-effect that has been clearly documented is a slight increased risk of myocarditis in adolescent males, which is lower than the risk of myocarditis from the disease itself, and less severe). How many doses is enough? The evidence points to 3 as the appropriate number. That is counting disease as a dose. So, any combination of vaccines and disease totalling 3 or more is sufficient. Will a booster be necessary next Fall? To be determined .. stay tuned.

Should children be tested for Covid when they are ill? In my opinion, only in certain circumstances. We have no outpatient treatment for Covid in children at this time. So making the diagnosis will not change our management as long as the child is not so ill that hospital admission is required. What about quarantine? In my opinion (though admittedly contrary to current CDC guidelines), I do believe that the current level of virulence of this disease does not warrant quarantine of infected individuals. However, children with Covid should avoid the elderly. Hence, if exposure to the elderly is anticipated, then

it is reasonable to test for Covid, and if positive, avoiding the elderly is prudent.

Outpatient treatment for Covid is the same as for all other respiratory diseases. See the section on Colds for this advice. Should your child wear a mask? It is certainly fine if you desire added protection, but not necessary in my opinion. Vaccination is more effective, and less intrusive, than masking.

Covid appears to be here to stay for a while, maybe a long while. But at this point I do believe it is reasonable to regard this disease similarly to how we respond to Influenza. Immunize to increase the child's chances of avoiding serious disease, avoid the elderly and immune-suppressed when ill, but otherwise no significant alterations to normal daily activity are warranted. We have not conquered Covid, but we have learned to live with it (sort of like Stink Bugs, or your mother-in-law, – except they do not cause any disease).

SORE THROAT

In general, a sore throat (pharyngitis/tonsillitis) is due to either a virus or a bacteria. The usual bacteria that causes a sore throat is Streptococcus, or "strep". Viruses are responsible for 90% of sore throats, although in "strep season", March and April, strep may cause 50% of sore throats.

Often, a cold may start out as just a sore throat, and then on day 2 or 3 the child will develop a full-blown cold. Strep throat usually presents with a high fever, severe sore throat, bright red tonsils (often with pus) and large, swollen lymph nodes in the neck. It is often associated with a headache, abdominal pain and vomiting. Occasionally, strep throat will also be accompanied by a fine, pimply, "sandpaper-like" rash - this is called "Scarlet Fever". Although many years ago this was a more serious form of strep, today it does not represent a more severe illness. Strep throat primarily occurs in children age 5 – 15 years. It is rarely seen in children under 3 years of age.

Studies done over 40 years ago demonstrated that it was difficult to distinguish between viral pharyngitis and strep throat. Consequently, physicians have relied on throat cultures and rapid strep tests to make the correct diagnosis. However, these tests are very uncomfortable for most children, and their consequent lack of cooperation often results in an unsatisfactory throat swab, yielding an invalid test. In addition, 5% of the population will have a positive strep test, despite not having an active

infection. I am now convinced with 40+ years of clinical experience, that basing treatment on my clinical judgement may be a better option than doing a throat swab. Although I will continue to do rapid strep tests under certain circumstances, I will be doing fewer of them going forward and basing treatment decisions on clinical criteria. (I hear the cheers from the extreme gaggers).

So, if your child has the symptoms of strep that I described, I will likely treat with antibiotics. However, if he/she has only had a sore throat for 1-2 days (which is commonly the prelude to a cold), or if your child has other viral symptoms (runny nose, congestion, sneezing, cough), this is likely a viral pharyngitis, and does not require antibiotic treatment.

There is no rush to treat a child with strep throat. Antibiotics initiated within 18 days of the onset of infection will prevent Rheumatic Fever, our chief concern with strep (although only 0.1% of cases of Strep throat result in Rheumatic Fever).

There is no treatment for a viral pharyngitis, just supportive measures such as pain relievers, Chloraseptic spray/lozenges (this contains Benzocaine, a local numbing agent – o.k. for kids over 6 years old) and fluids. Most viral sore throats last 3-5 days, though some, particularly those caused by Coxsackie virus (Hand-Foot-Mouth disease) last for 7 days.

PINK EYE

Pink eye, or conjunctivitis, is an infection of the conjunctival lining of the eye. This can be due to a virus or a bacteria. The primary way to assess the etiology (without doing a culture) is based on the amount of discharge from the eye. A viral conjunctivitis causes erythema (redness) of the inner lower eyelid and the sclera (the white part of the eyeball), but only causes minimal discharge (greater on awaking, then 3-4 times during the day). A bacterial conjunctivitis also causes erythema, but produces a large amount of discharge that accumulates constantly throughout the day.

The treatment for a viral conjunctivitis is simply warm compresses. The duration of symptoms is usually 7 days. Warm compresses are also beneficial for a bacterial conjunctivitis, especially first thing in the morning when the child's eyes are glued shut (which can be very frightening to a young child). Just let the warm washcloth soak on the eyelids for 5 minutes and the eyes

will gradually open. In addition, we treat bacterial conjunctivitis with topical antibiotic drops, which will hasten the resolution of the infection (assuming you have six burly Bouncers to hold the child down while you administer the drops).

Pink eye is very contagious, which is why schools and day-cares often exclude children with pink eye. However, it is not serious or dangerous, and only mildly uncomfortable. Often, a facility will advise a parent that their child cannot come back until they are being treated, not realizing that there is no treatment for most of these kids. Many times I have argued with school nurses and administrators concerning this issue, usually successfully. I do not believe children should be excluded due to a "cold in the eye", any more than they should be excluded due to a cold. This is also the official position of the American Academy of Pediatrics. The key to preventing transmission, as with so many illnesses, is washing the hands, either with soap and water or hand sanitizers, and avoiding touching other children's eyes.

GASTROENTERITIS

This is the final common illness that I will discuss. Typically, this starts with vomiting, which, fortunately, usually lasts less than 24 hours. The advice is to wait 2 hours from the last time the child vomited, and then begin sips of clear liquids (Pedialyte in the infant, any clear liquid in the older child) every 15 minutes. This is very labor intensive, as we wish to get a lot of fluid into the child, but only a little at a time. If the child vomits again, wait another 2 hours, and then start over. Gradually increase the volume as tolerated. If the child has a fever, feel free to treat this to make him/her comfortable.

Many children will also get diarrhea, usually on day 2 of the illness (some may only get diarrhea). The fluid treatment for this is the opposite of vomiting - large amounts infrequently. With diarrhea, every time the gut is challenged with something to digest, large or small, a bowel movement results. So, we try to rest the gut for hours at a time, but then challenge it with a large volume of fluid. No medications are recommended for acute diarrhea, as slowing down the intestinal motility may actually make the child sicker. We do use anti-motility agents in chronic diarrhea, but that is a different entity. Probiotics may also be useful for prolonged diarrhea, but have not proven effective for acute diarrhea.

The chief goal with gastroenteritis is to prevent dehydration. The signs of dehydration are: dry lips/mucous membranes, lack of production of tears with crying, lack of urination for an extended period of time, and extreme lethargy. The risk of dehydration depends on the age of the child and the severity of the vomiting and/or diarrhea, with younger children being more susceptible. This is particularly true if the child is refusing to drink. Obviously, if the child appears to be dehydrated, the Pediatrician should be notified. If the child has persistent vomiting or appears to be getting significantly dehydrated, he/she may require intravenous fluids. A recent change in the treatment of these children is administration of a potent anti-emetic (anti-vomiting) medication, Ondansetron (Zofran). This has prevented many children from requiring intravenous fluids.

Like most illnesses in children, gastroenteritis is usually viral, so antibiotics are not indicated. In fact, treating a viral gastroenteritis with an antibiotic can result in a very serious illness known as Hemolytic-Uremic Syndrome. If the diarrhea is bloody, this can indicate a bacterial etiology, and a stool culture should be considered.

Before the introduction of a vaccine in 2006, Rotavirus was the leading cause of gastroenteritis in children in the U.S. Almost 80% of children contracted rotavirus by age 5, resulting in more than 200,000 Emergency Dept. visits and 55,000 hospitalizations annually. These numbers have decreased dramatically since then as the vaccine has proven to be 94% effective at preventing severe disease. Now Norovirus is the leading cause of gastroenteritis in the U.S. There are currently clinical trials ongoing evaluating vaccines against this pathogen.

This is my science-based, experience-backed advice on these common childhood maladies. Hopefully this provides you with the knowledge-base to confidently care for your ill children. Obviously, if you have additional questions or concerns, I am always available to provide additional support. As parents, we all feel badly when our children feel badly. I encourage you to resist the temptation to try whatever the latest internet fad may be and stick with evidence-based Science for treatment strategies. A parent's comforting touch, along with a Taylor Swift video or an episode of Paw Patrol is often all that is really necessary.

As always, this advice will be posted under Newsletters on my website, pinnaclepediatrics.com. By the way, my site has been updated and refreshed by one of my daughters, so check it out! (Yup, the college tuition checks are starting to pay off 😊)

Best regards,

Scott R. Serbin M.D.

This issue's Back Page features some wordplay that will hopefully bring a smile to your faces, even while you are chasing your children around the house trying to wipe their noses. Enjoy!

1. Cashtration (n.): The act of buying a house, which renders the subject financially impotent for an indefinite period of time.
2. Ignoramus: A person who is both stupid and an asshole.
3. Intoxication: Euphoria at getting a tax refund, which lasts until you realize it was your money to start with.
4. Reintarnation: Coming back to life as a hillbilly.
5. Bozone (n.): The substance surrounding stupid people that stops bright ideas from penetrating the bozone layer, unfortunately, shows little sign of breaking down in the near future
6. Giraffiti: Vandalism spray-painted very, very high.
7. Sarchasm: The gulf between the author of sarcasm wit and the person who does not get it.
8. Inoculatte: To take coffee intravenously when you are running late.
9. Osteopornosis: A degenerative disease. (This one got extra credit.)
10. Karmageddon: It is like, when everybody is sending off all these bad vibes, right? And then, like, the Earth explodes, and it is like a serious bummer.
11. Decafalon (n.): The gruelling event of getting through the day consuming only things that are good for you.
12. Glibido: All talk and no action.
13. Dopeler Effect: The tendency of stupid ideas to seem smarter when they come at you rapidly.
14. Arachnoleptic Fit (n.): The frantic dance performed just after you have accidentally walked through a spider web.
15. Beelzebug (n.): Satan in the form of a mosquito, that gets into your bedroom at three in the morning and cannot be cast out.
16. Caterpallor (n.): The color you turn after finding half a worm in the fruit you are eating.