

Pinnacle Pediatrics

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Hooray for the Groundhog! Spring is here! I apologize to the cold and snow enthusiasts, but give me sunshine and warmth (I know, what am I doing living in Pittsburgh? Hey, there's more to life than good weather).

This is my "What to do when your child is sick" Newsletter. Even for those of you who have read this before, I encourage you to read it now. There are changes every year, and it is worthwhile as a refresher (even for me). Honestly, I do believe its greatest utility is as a reference. It will be posted on my website, pinnaclepediatrics.com, under Newsletters, so that you can easily refer to it when your children get sick (sorry, they will). I do hope you take advantage of this as, even though I am extremely accessible and usually prompt with my responses to your queries, utilizing this Newsletter will give you instantaneous access to my complete recommendations if your child has a Fever, Common Cold, Flu, Covid, Sore Throat, Pink Eye or Gastroenteritis (stomach bug).

How do you know that the information that I provide to you is reliable? Ultimately, it comes down to Trust. I can tell you that I am very well trained, that I voraciously read the pediatric literature, that I have tons of experience (i.e., I am old). All of that is true. But, particularly in today's environment, when experts in every field, including medicine, are routinely mistrusted, and even pilloried, it is increasingly difficult to discern truth. There has always been, and should be, healthy skepticism of medical advice-givers. However, there are Facts, there is good Science and there is Truth. The difficulty is in knowing where to look for these. Unfortunately, more so now than any time in the decades that I have been practicing medicine, politics have clouded the perception of medical reality. I assure you that the medical information that I provide is based on my training, my reading of the medical literature and my experience, not on any political ideology.

Where else can you turn for reliable medical information? There are certainly multiple sources, but let me suggest a few. The most reputable medical journal in the world is the New England Journal of Medicine. I am not suggesting that you need to obtain a subscription to this. But if you hear of

information published in this journal, you do know that the study was peer-reviewed and should be considered reliable. In the pediatric world, other reliable, peer-reviewed journals include Pediatrics, The Medical Letter and The Journal of Pediatrics. The Journal of Irreproducible Results, along with many others, are better used to line your bird cage.

Some other excellent resources: Dr. Paul Offit, the Chair of Infectious Disease at Children's Hospital of Philadelphia, puts out a weekly missive called "Beyond the Noise" which provides outstanding, and humorous, pediatric medical insight (pauloffit@substack.com). Just the Facts: Correcting this week's misinformation, is an eye-opening and informative repudiation of misleading internet posts (kernst@voicesforvaccines.org). Emily Oster is a data scientist whose Newsletter I have previously recommended as an excellent source of data-driven medical information. Scicheck.org focuses on "false and misleading scientific claims". The Vaccine Safety Datalink provides information on the study of possible reactions to vaccines (as opposed to the oft-cited VAERS, which is simply a reporting system whereby anyone can report a possible reaction, which is then studied by the VSD).

One final note on veracity of medical information. As in probably every other field of study, if 97% of physicians believe in something, and 3% disagree, it is Highly Likely that the 97% are correct. Just because a rogue physician with a contrary opinion can be located, this should not decrease the level of confidence in the opinion of the 97%.

So, please read my recommendations below on what to do when your child exhibits any of the maladies listed. I hope it makes you feel confident that you will be as well-armed as possible with this science-backed, experience-based information to help your children feel better.

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 $\frac{1}{4}$ 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.

A new anti-viral medication was approved 2 years ago, Xofluza. It is approved for patients 12 years and older. 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. For otherwise healthy children age 5 and over, 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.

COVID

SARS-CoV-2, the virus that causes Covid-19, is still very much with us. This virus has killed over 1,200 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 2024? 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 – 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.

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 (“eye of a newt works like magic!”) 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 😊)

This issue’s Back Page features quotes from two of the greatest scholars in history. They are related concepts, and are two of the most salient axioms I try to convey to my patients — focus on preventing illness, rather than responding to it, and avoid useless therapeutics when your child does become ill. They just say it better than I do

Best regards,

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“The greatest medicine of all is teaching people how not to need it”

~Hippocrates

“He’s the best physician that knows the worthlessness of the most medicines”

~Benjamin Franklin