

# **Pinnacle Pediatrics**

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### **Pinnacle Pediatrics Newsletter** **Vol. XVII, #1**

Happy New Year! No, really, HAPPY NEW YEAR! I'm going to go out on a limb here and say that 2020 will not go down as one of the greatest years in American history. There are multiple reasons for this, but since this is a medical newsletter, we will stick with the medical catastrophe that is COVID. The loss of life, fear, economic hardship and diminution of enjoyable pursuits that this disease wrought is mind-boggling. But, with the recent introduction of effective vaccines, there is good reason to be optimistic that 2021 will end on a much better note.

Meantime, as horrific as this has been, there actually have been some positives that have emanated from the abyss. For one, we saw far fewer of the "usual" infections that we typically see, thanks to the mitigation efforts (masks, social distancing, increased hygiene) we utilized to decrease the spread of COVID. A study from Harvard (Pediatrics, Oct., 2020) demonstrated a dramatic decrease in incidence of 10 common infectious diseases in children, including ear infections, the common cold, bronchiolitis, croup, gastroenteritis, Influenza, pharyngitis, pneumonia, and sinusitis, once these mitigation efforts were put in place. This also demonstrates that, as horrific as the number of COVID cases and deaths are, they would have been far worse if not for the public health measures put in place.

The decrease in industry and travel resulted in far less air and water pollution. Far-flung families and friends reconnected via Zoom. The simple joys of family board games, word games and card games were reignited. Family hikes and bike rides, as well as just playing in the yard, were re-emphasized. Siblings discovered that, when deprived of ready access to non-familial friends, they actually could get along for extended periods and enjoy each other's friendship (with occasional planned, and unplanned, breaks, of course).

The importance of good hygiene, particularly cleaning hands, as a deterrent to the spread of infectious disease, is one positive outcome that will hopefully outlast the current pandemic. (One quick note on hand sanitizers. Although they are very effective at killing most germs, remember that as they are greater than 60% alcohol, they are flammable. Make certain your child avoids open flames until their hands are completely dry.) (I realize if I am advising avoiding open flames, I should also advise avoiding tornadoes and sharks, but you get the idea).

One final positive offshoot of this tragedy is the general acknowledgement of the importance of Science, and scientists. This has been one of the main themes of these Newsletters for many years, and the pandemic has brought this into sharp focus. As Fabiola Gianotti, a prominent scientist, wrote in Time (11/2/20), "...science is both universal and unifying. ...the laws of nature are the same everywhere on Earth. Science has neither passport nor gender, ethnicity nor political affiliation, and has long been recognized as a facilitator of cross-border alliances."

Every January I revise and send out my "What to do when your child is sick" Newsletter. This year COVID has a substantial impact on this treatise. Literally every one of the usual topics CAN be a symptom of COVID (fever, pink eye, sore throat, gastroenteritis) or resemble this illness (Common Cold, Influenza). Although there are multiple revisions in this Newsletter, as there are every year (Science makes us continuously smarter, that's a good thing), I will not dwell on how COVID relates to each topic. I believe my prior updates on COVID symptoms will suffice to inform you as to the relation of COVID to these subjects. However, I will make some brief comments where appropriate.

## **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.

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.

**COVID addendum:** Fever is one of the primary manifestations of COVID. It is certainly reasonable to have your child tested for COVID in the event of a fever. Since there is currently no outpatient treatment, there is no urgency for testing. It is appropriate for quarantine and contact-notification purposes.

## 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). 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. 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 4-6 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.

**COVID Addendum:** COVID can present with the same symptoms as a cold or the Flu (see below). It is reasonable to test any child with these symptoms for COVID. As discussed, this is for contact consideration, not for treatment. If we had easy at-home testing capabilities, this would be the gold standard. However, if your child presents with what appears to be "usual" cold symptoms, the decision to test needs to be weighed against the risk, inconvenience and cost of going to a testing facility.

## 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 last year, 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).

So far, this has been a very mild Flu season, likely secondary to the public-health mitigation efforts for COVID. Last year there were 182 deaths due to Influenza in the U.S. in children. Of these 74% were unvaccinated. If your child has not yet received Flu vaccine, it is not too late -- contact me asap.

## 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, "sand-paper-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 30+ 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.

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, Ondansetron (Zofran). This has prevented many children from requiring intravenous fluids, but is used only in severe cases, due to potential side-effects.

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.

COVID obviously has presented a significant challenge this year, and will continue for the foreseeable future. But there IS light at the end of the tunnel, thanks to vaccines. Keep enjoying your children, and providing them with opportunities for fun and exercise. I promise we will soon return to the halcyon days of complaining about the weather and potholes.

I hope this discussion proves to be useful to you (actually, I hope it doesn't, meaning your children don't get sick this year - it does happen). It is only appropriate that I add one last item on COVID. The American Academy of Pediatrics now recommends that any child who is diagnosed with the SARS-CoV-2 virus refrain from any significant exercise or sports activity for 10 days, with a gradual return to activity over the following 7 days. This applies even if the child is asymptomatic. This is due to the fact that this virus does cause inflammation of the heart muscle (myocarditis) which can cause severe repercussions if the heart is stressed by vigorous activity. Any child with a positive SARS-CoV-2 test who displays shortness-of-breath, extreme fatigue, chest pain, fainting or an irregular heartbeat should be seen by a physician. Remember, there are links to some excellent medical websites on my website, [pinnaclepediatrics.com](http://pinnaclepediatrics.com), as well. If all else fails, don't forget the chicken soup...

Wishing you all a happy, healthy year.

Best Regards,

*Scott Serbin, M.D.*

P.S. -- Laughter IS the best medicine. This issue's Back Page pokes fun at physicians – we CAN all laugh at ourselves. Enjoy!!



Here are funny lines that came straight from real doctors' notes:

- "The patient refused an autopsy."
- "The lab test indicated abnormal lover function."
- "Occasional, constant, infrequent headaches."
- "Patient was alert and unresponsive."
- Rectal exam revealed a normal size thyroid."
- "The patient has no past history of suicides."
- "Patient has two teenage children, but no other abnormalities."