CHILDREN'S MEDICAL OFFICE
of North Andover, P.C.

ACUTE ILLNESS GUIDE:

www.chmed.com 978-975-3355

ACUTE ILLNESS GUIDE

POISONING

Every day in this country over a thousand children swallow poisonous material and, of these, at least one dies. Most of these accidents involve children less than 5 years old, and occur in their own homes. This is a tragedy because most of these events could be prevented:

- Insist on child proof caps for all your prescription drugs and USE THEM.
- Keep all medicines, household cleaners, paints and other chemicals well secured - this means out of both reach and sight at least, and preferably under lock & key.
- Be particularly vigilant when using or working with such materials. We always hear "I just left it there for a minute!"
- Never refer to medication as "juice" or "candy".
- Do NOT rely on cabinet latches that bill themselves as "child proof" – they are not.

TREATMENT - If your child has swallowed a poison:

1. If your child is unconscious, disoriented, lethargic, OR is having any difficulty breathing, IMMEDIATELY call 9-1-1 for an ambulance. After stabilization at a local hospital, you should insist that your child be transferred to Boston Children's Hospital or MGHfc where we can become involved.
2. Quickly determine as best possible WHAT you think was taken, approximately WHEN this occurred, and HOW MUCH
3. If the child is awake, alert, and breathing normally, IMMEDIATELY call the **Poison Control Hotline, 1-800-222-1222** (you should do this before contacting one of us).
4. DO NOT try to induce vomiting by any means. Syrup of Ipecac for this purpose is no longer recommended. If you have this at home you should dispose of it.
5. If told by Poison Control to seek medical attention, *but your child does not meet the above criteria for calling an ambulance*, call our office. If it is after hours, page the provider on call. DO NOT go to a local ER.

HEAD TRAUMA

Kids fall and bump their heads commonly, and luckily the vast majority of these injuries are minor. A child's skull is more flexible than an adult, and can therefore tolerate more of a bump without developing a fracture. All head injuries are potentially serious however, due to the possibility of internal bleeding in the brain. Sometimes this may not start until many hours after the event, so a child who looks fine even to a medical provider may suddenly deteriorate later. Because of this children deserve careful watching by their parents after a bump on the head of any sort - the longer they remain well the less likely anything bad will occur. Generally head injuries which are sustained while moving on/in a vehicle (auto, bicycle, sled, skis, skateboard, skates) or in a fall from some height (window, stairs, porch) are far more likely to be significant than those that occur while running or just "horsing around". A child will surely need to be examined if there is any immediate loss of consciousness, seizure (convulsion).

A child who has difficulty with memory for the event or the period just before or after, a severe headache, repeated episodes of vomiting, change in behavior, any weakness or numbness should also be evaluated. Otherwise it is safe for a parent to keep the child quiet and observe for the following:

- **repeated vomiting**
- **lethargy, disorientation**
- **visual disturbance, unequal pupils**
- **profuse watery nasal drainage (not present before)**
- **bleeding from ears**
- **stiffness or convulsions**
- **dizziness or clumsiness**
- **weakness or numbness**
- **stiff neck**

Should any of the above occur you should call us immediately. While it is OK to let a child go to sleep (a child who is sleepy and oriented is probably OK), you should wake them every 2-3 hours and check for these things.
Finally, it is normal for a large bump to appear on the head quite rapidly after a fall. This will be tender to touch and appear bruised. It should feel hard initially. This should not concern you too much. If the bump or bruise feels soft or has 'give' to it, or if there appears to be more of a "dent" than a bump, you should call. Bumps on the forehead will often lead to a black eye and swelling around the eye several days later. If the black eye appears on the first day however you should call our office.

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Can't find it here?
Check our website (chmed.com) for additional topics!

INTRODUCTION

Few things are more worrisome to parents than a child who falls ill. Children get sick *more frequently* but *less severely* than adults. They are not yet immune to the many germs waiting for them in our environment, but their young bodies are in many ways stronger and more resilient than an adult's. The average child will have from 5 to 8 acute illnesses per year. Fortunately most of these are harmless, mild, and will resolve by themselves without any need for specific medical treatment. The purpose of this pamphlet is to offer some strategies for dealing with symptoms at their onset, and some guidelines for deciding when to seek medical help.

In general there are certain signs you should watch for during ANY illness as indicators that it is mild or benign and does not need medical attention. These include **alertness and orientation** (the child is aware of what's going on around him); **good fluid intake** (although appetite for solids may be poor); **no difficulty breathing** (despite any possible cough - see below); **absence of localized pain** (e.g. earache, sore throat, tender abdomen, stiff neck, other persistent pain in a particular area); **responsiveness to fever reduction** (not so much that the fever comes down, but that your child is feeling and acting better when it does - see below); and **prompt resolution** (symptoms start to improve within 3-4 days and are gone within 6-7 days). Usually a child who meets all these criteria has a virus. Viruses are the most common type of germ. They infect you, but in contrast to other kinds of infection (bacterial, fungal, parasitic) they generally are not dangerous, do not respond to antibiotics, and require no specific therapy to get better.

Remember that during any illness, mild or severe, the body's own immune system is doing much of the work towards recovery. Its role is ALWAYS more important than any medicine we might give. Therefore, you should help it by making sure your sick child is getting more rest than usual, plenty of fluids, a good diet, and is protected from anxiety or other emotional stress. These measures will ensure a return to normal as soon as possible.

MINOR INJURIES

SCRAPES & ABRASIONS - Wash thoroughly with soap & water. Leave open to the air as much as possible so it will dry and a scab (nature's bandage) will form. Generally the only reason to cover such a wound is to keep it clean while a child is outside playing. Acetaminophen or Ibuprofen (see medication dosage section) may be given for pain. A topical antibiotic ointment can be applied as the wound is healing. Call for increasing swelling or redness from the scab or for draining pus.

LACERATIONS (CUTS) - Immediate, direct pressure should be applied for 10 minutes to stop bleeding. If a cut is deep or gaping it may need stitches. If it is shallow or the edges lay side-by-side spontaneously, it may not. Cuts entirely inside the mouth are almost never stitched. If you think a cut may need stitches, call to find out what to do. Do not go to an ER unless you are instructed to do so or there is very vigorous bleeding that will not stop with pressure. Cuts should be dressed with a bandage and some antibiotic ointment such as Neosporin or Bacitracin for several days - thereafter they should be left open to the air and kept dry. If your child is up to date on routine vaccinations a tetanus shot is not necessary.

BURNS - Flush the area profusely with cold water for 5-10 minutes. NEVER apply any kind of grease or medication. Any burn on the palm or face, or which crosses a joint, or is larger than the size of the child's palm should be checked by us. Any burn in which tissues have turned white, gray, black or have extensive blistering should be seen as well. Otherwise, after 8-12 hours the covering can be removed and Acetaminophen or Ibuprofen given for pain.

BRUISES & SPRAINS - Ice & elevation will retard swelling, but may not be worthwhile for the younger child who becomes too upset by these measures. Direct and continuous pressure, such as may be applied by an ace bandage and some padding, also retards swelling. Fractures (broken bones) are usually marked by some combination of exquisite tenderness, bruising, loss of motion, and deformity. *If you suspect a fracture call our office.*

NURSEMAID'S ELBOW - This is a very common injury in children age 6m to 4y usually caused by pulling the hand or forearm, although it can happen in a fall or even a minor bump as well. The child will suddenly stop moving that arm and cry only if you try to move or go near it. There will be no swelling, redness, or other outward signs of trauma. A bone has been dislocated (popped out of its socket) in the elbow and will need to be reduced (popped back in) by a provider. While not serious or an emergency, it is best taken care of within 6-8 hours.

disease. The interpretation of the blood test is used in conjunction with symptoms and is an unreliable test in patients without symptoms.

Prevention of Lyme disease: The best way to prevent Lyme disease is to prevent tick bites, and to remove ticks as quickly as possible once one is on you or your child. (Ticks on for less than 24 hours have a very low risk of transmitting Lyme) You can do this by avoiding wooded areas, particularly in the late spring and early summer. If you do go in the woods, stick to the center of trails and avoid brush. Wear long pants and sleeves, and tuck pant legs into socks to provide a barrier. Insect repellants with DEET (at least 20%) should be applied to exposed skin and clothing after getting dressed. Remember to bathe children each day when using DEET and not to reapply (as you might with sunscreen). Any ticks that you find on clothing should be removed immediately, and skin should be thoroughly checked for ticks every day when spending time in the outdoors. For more information, please see http://www.cdc.gov/ncidod/dvbid/lyme/prevention/ld_prevention_avoid.htm.

AVOIDING TICK, MOSQUITO, & OTHER INSECT BITES

Until recently, DEET (n,n-diethyl-m-toluamide) was the only proven-effective insect repellent available in the U.S. It still remains the active ingredient in most such products and is considered the most effective repellent. While DEET works, it has also been associated with some risks. In high concentrations (>50%), it can be absorbed through the skin and cause harmful effects on the nervous system (such as seizures). Lower concentrations of DEET have not been shown to cause harmful effects, however, and are probably safe, at least for children over age 2y. Generally a product with 20% DEET is safe and effective when used properly. A general rule is to spray clothing and shoes and apply sparingly to exposed skin while avoiding the face and hands (to prevent ingesting). Do not reapply repellent as you might with sunscreen, and do not use combination sunscreen and insect repellants. It's best to wash skin at the end of the day.

Two newer insect repellents - **Picaridin** and **Permethrin** - have been approved by the EPA, CDC, and FDA for use in this country. Picaridin works on skin but Permethrin is de-activated by contact with skin, it works when applied to clothing. All three are available in commercially sold insect repellents and it is important to check the proper use instructions. There are many things that you can do to prevent insect bites that are both safe and easy! Choose clothes in neutral colors (bright colors and flowered prints attract stinging insects and dark colors attract biting insects).Wear a long sleeve shirt, long pants, and tuck pant legs into socks. Don't use scented soaps, shampoo or hair sprays. Use a combination of Picaridin or DEET on skin and Permethrin on clothing to keep bugs away.

One final note: certain skin products not specifically intended as insect repellents claim to possess insect-repelling properties by some of their users (but not by the manufacturer). There is NO scientific evidence to support or refute such claims. Based on the ingredients one would expect them to be harmless but ineffective.

PHILOSOPHY

Children are not merely small adults. There are many important medical and psychological differences between children and adults which impact on the fundamentals of care. Pediatricians, pediatric nurse practitioners, and pediatric subspecialists have devoted their careers exclusively to the care of children. They have extensive training in childhood disease and are *uniquely* qualified to deliver medical care to this age group. No other kind of physician can match this quality of care. Therefore, while you should be able to manage most illnesses at home without a doctor's help - when you do seek medical attention be sure the physician you see has proper pediatric credentials. Community hospital emergency rooms and walk-in clinics are generally NOT staffed by such doctors (even when a relationship exists between that hospital and a teaching hospital to staff clinics, wards, or nurseries with pediatric specialists). They should be used only in *extreme* emergencies. If for some reason you cannot see your regular pediatrician, seek out the ER or walk-in clinic of a pediatric institution such as **Boston Children's Hospital** or **Mass General Hospital for Children**.

A pediatric provider from our practice is "on-call" 24 hours per day, every day of the year. We ask that you try your best to call during office hours for any questions or problems which are not urgent in nature. During office hours, it is our policy to offer a same-day appointment to all sick children. When you call after hours, the doctor or nurse practitioner will be paged and should call you back within an hour (usually within 30 minutes) -- you will be asked questions designed to assess how urgent the problem is. You may then be given advice on how to handle the situation, and asked to bring your child in on our next business day. In certain instances you may also be given a time to meet the provider at our office after hours; or be referred to the ER at Children's Hospital or MGH. On weekends and holidays, please try to call early to guarantee your child will be seen. This practice is only affiliated with Children's Hospital in Boston and Mass General Hospital for Children - our patients should always go there if unable to reach us (which shouldn't ever happen but, due to the imperfections of things like beepers, phones, etc. sometimes does). This ensures specialized pediatric care, guarantees that we will get contacted, that the illness will be managed by our team in a way consistent with our medical approach and philosophies, and that we will become involved as soon as possible.

FEVER

FEVER PHOBIA: Parents tend to worry much too much about fever. The truth is, ***fever is your friend!*** It alerts you that something may be wrong so that you can be more observant and better care for your child. It is also one of the most important ways in which the body mobilizes its own defenses to fight off disease. Fever accompanies almost any type of illness, and usually helps you get better. Neither its presence nor its height indicates how serious the illness causing it may be or what course of action should be taken. To determine these things, one must *focus instead upon the other symptoms*. Fever itself *does not hurt you* directly in any way. Indeed, controversy exists within the scientific/medical community over whether routine treatment to bring down a fever is even appropriate at all.

Fever is uncomfortable. A child with a high fever will often seem irritable, lethargic, glassy eyed, listless, and otherwise 'not himself'. The *reason to treat fever is to relieve this distress*. Usually, once the fever comes down the child will seem happier, more alert, and more active. This *may be used as a "test"*: the child whose lethargy or irritability does not improve with a reduction of his temperature is likely to have a more serious underlying illness causing his fever and perhaps should be seen. On the other hand, there may be no reason to treat even a high fever if your child seems happy, active, and alert. Again, ***do not let fever be the overriding factor in you deciding how sick your child is.***

The exception to the above is the infant less than 2 months old. A newborn's physiologic response to illness is immature, and unfortunately they do not always show the symptoms they are 'supposed to' for a particular illness (i.e. they could have a pneumonia with no cough, meningitis with no stiff neck, etc.). Thus, fever in this age group (rectal temperature above 100.4°F) may be the *only* sign of a serious illness. For that reason, ALL infants less than 2 months with a fever should be examined right away.

A **small** percentage of children may be prone to convulsions with fever, or what is known as 'simple febrile seizures'. This tendency runs in families, although a family history is not necessary for it to occur. The convulsions are related more to how quickly the temperature rises than to how high it actually is. They tend to occur between the ages of 6m and 6y - eventually being outgrown. They last less than 5 minutes, (usually less than 1 minute) and are characterized by loss of consciousness, stiffness, eye rolling, grunting noises, and shaking. They are followed by a 15-60 minute period of drowsiness. ***Simple febrile seizures are self limited and harmless -*** although they are one of the most frightening events a parent can

LYME DISEASE

USE OF PREVENTATIVE (PROPHYLACTIC) ANTIBIOTICS:

We have updated our policy regarding Lyme disease. Parents who have previously brought their children in for evaluation or concern regarding this illness might recognize this policy as a change from what they experienced before. Our providers formulated a new policy based on reliable, current scientific evidence. After a careful review of all the available information, we are no longer offering prescriptions for patients on the basis of tick bites alone. Our reason for this is straightforward – there is simply no good evidence that preventative antibiotics for Lyme disease make any difference. No studies have made a convincing case that giving antibiotics lowers the risk of actually developing the disease. Given the risk of side effects and the growing problem of antibiotic resistance, it doesn't make sense to prescribe these medications when we have no confidence that we're actually preventing anything. What we will continue to do, of course, is treat patients who come in with symptoms suspicious for Lyme. Another big reason for this change is that Lyme disease is highly curable. After appropriate treatment, the overwhelming majority of patients have no further problems. We will not hesitate to prescribe the right medication if there is evidence to support its use.

Symptoms of Lyme disease: Most commonly this presents as a **spreading red rash**, often in a pattern that resembles **a target or concentric rings**. This usually develops where the tick bite was, but any suspicious rash should be checked, even if you don't remember seeing a tick there. Other symptoms include, **fever, joint pain, joint swelling, headache, fatigue and sometimes vomiting. Bell's Palsy** (a temporary paralysis of one of the nerves of the face causing drooping of one side of the face, asymmetric smile, inability to close one eye) is another symptom that could be consistent with Lyme disease.

Debunking the myth. You may find information on the internet that causes concern about so-called "chronic Lyme disease." This term is sometimes used as a diagnosis to explain vague, long-term complaints. There is no evidence to support the existence of chronic Lyme disease, and no reputable scientific body has found this diagnosis to be valid. While some providers have created a lucrative practice of "treating" this disease, there is no evidence that they are actually helping people, and some treatments may even be harmful. We do not treat people for this diagnosis, nor do we refer to other providers who do. More information is available at http://www.idsociety.org/lymediseasefacts.htm or http://content.nejm.org/cgi/content/full/357/14/1422.

Additionally there is no 'screening test' for Lyme disease. Lyme disease has a distinct group of symptoms associated with it. There may be times that your provider might order a blood test for Lyme disease (if we have a high suspicion of Lyme disease but the symptoms are not clear). We do not order these tests for patients who have no symptoms or because a family member may have Lyme

INSECT BITES & STINGS

INSECT BITES herald the arrival of summer. Most insect bites are painful but harmless, and should be treated with ice, soap, and water. If there is a lot of itching, Benadryl can be given by mouth (see Medication Dosing Chart section on page 7), or application of Calamine, Afterbite, Aveeno Anti-itch or Caladryl (do not use together with oral Benadryl) can be helpful. The main risk of an insect bite is infection, but it is normal for certain types of bites (spider, black fly) to be very red and swollen for as much as a week. Many individuals have hypersensitive reaction to insect bites and develop redness, swelling and warmth within the first 24 hours after being bitten. Ice and use of Benadryl for the first 24 hours after a bite can minimize these reactions. You should call us if:

- **The bite is getting progressively more red & swollen after the first 24 hours,**
- **The redness is spreading progressively further from the bite**
- **There seems to be a rash moving out in a circle away from the bite, or appearing on parts of the body far away from the bite**
- **The child has severe headache, high fever, or vomiting.**
- **There is a breakdown of the skin with oozing, crusting, or pus draining at the site of the bite.**

MOSQUITOS: There is much concern about mosquitoes in the U.S. transmitting Eastern Equine Encephalitis (EEE, a potentially deadly viral infection of the brain) and West Nile Virus (WNV, which is similar to EEE but milder). Luckily, cases of both EEE and WNV remain quite rare in humans**. Signs of these illnesses to watch out for include severe headache, vomiting, stiff neck, aversion to bright light, confusion or other mental status changes**. Unfortunately, there is no specific treatment for EEE or WNV, and no way to prevent either of them from developing once someone has been bitten. Malaria from mosquito bites is another very big concern, but only if you are traveling to tropical areas (especially sub-Saharan Africa), NOT if you remain in the United States. You should contact our office for anti-malarial medications to take if you are going to be traveling to a malaria endemic area. Otherwise the only things to do about mosquitoes are:

- **Support mosquito-spraying programs in your community.**
- **Eliminate mosquito breeding grounds (standing stagnant water) from around your home.**
- **Use an insect repellent (see info on page 30).**

BEE STINGS often cause lots of swelling - for instance a whole hand or foot. This is nothing to worry about, and it doesn't matter whether the stinger is left in the skin. If a sac is left on the stinger, however, *don't squeeze it* trying to remove the stinger. Beestings allergies can be dangerous. **Call us or 911 immediately if a rash starts developing in an area far away from the sting, or if the child starts to cough, wheeze, drool, have difficulty swallowing, confusion, disorientation, abnormal lethargy/sleepiness, or facial swelling.**

witness. If this happens to you try to stay calm - make sure the child is breathing, loosen the clothing, and protect him from harm such as falls or bumps. This is not an emergency unless it fails to stop or breathing is impaired. Patients having febrile seizures for the first time will need to be seen to be sure that in fact that is what it was. Children experiencing repeat febrile seizures are seen only as their other symptoms may indicate. Fever control measures may be somewhat more important in children with a family history or known tendency towards this phenomenon.

FEVER CONTROL: Various steps may reduce a fever and make your child more comfortable, and there are also some things to be avoided:

1. Offer cool liquids to drink frequently - this will not only directly cool the body by placing something cool in the stomach but will also prevent dehydration which itself can exacerbate a fever.

2. Keep the child lightly dressed - don't wrap him up. Keep the environment comfortable - neither too hot nor cold. Limit activity and encourage rest.

3. Give either Acetaminophen every 4 hours (Tylenol, Feverall, Pediacare, others) or Ibuprofen every 6 hours (Motrin, Advil, others). Ibuprofen costs more, the liquid tastes better, and it even works a bit faster/better, BUT it may also have more side effects (mostly in the category of stomach upset) than Acetaminophen.

4. NEVER use cold-water bathing, tub or sponge, as a means to bring down a fever. Doing this short-circuits the natural means of radiating heat from the body and can actually lead to a rapid RISE in temperature at the body core, which could set off a febrile seizure.

5. NEVER use aspirin. This drug has been associated with increased side effects and with possible precipitation of Reye's syndrome, a very serious disorder.

SEE NEXT PAGE FOR DOSES OF FEVER CONTROL MEDICATIONS

MEDICATION DOSING GUIDE:

Acetaminophen: may be used in children and infants over 2 months of age

Concentrations of Acetaminophen vary depending on the brand. It is **ESSENTIAL** that you check the concentration (e.g. the mg, or milligrams, in each ml, teaspoon, suppository, or tablet) listed on the medication label.

Forms & Strengths of ACETAMINOPHEN available are:

Infant drops:	80mg per dropper (0.8mL)
Infants and Children's elixir:	160mg per teaspoonful (5mL)
Chewable tablets:	80mg & 160mg sizes
Tablets/Capsules/Caplets:	325mg & 500mg sizes
Suppositories	60mg, 80mg, 120mg, & 325mg sizes

Acetaminophen dosage is calculated as follows
(or see chart on next page):
6 x (child's weight in lbs) mg every 4 hours OR
15 x (child's weight in kg) mg every 4 hours
Maximum daily dose 1000mg

There is a considerable margin of safety in this medication's dose - you may therefore round up or down to the nearest convenient amount (e.g. if you calculate 140mg give 160, if you calculate 90 give 80, etc.) The suppositories are particularly useful if a child is vomiting or refuses to take medications. HOWEVER: these doses are for ACUTE, short term fever or pain management only.

Ibuprofen: may be used in children and infants over 6 months of age.

Forms & Strengths of IBUPROFEN available are:

Infant's liquid	50mg per 1.25 mL
Children's liquid	100mg per teaspoonful
Chewable Tablets	100mg each
Tablets	200mg each

Ibuprofen dosage is calculated as follows
(or see chart on next page):
4 X (child's weight in lbs) mg every 6hours, or
10 x (child's weight in kg) mg every 6 hours
Maximum daily dose 600mg

Acetaminophen and Ibuprofen work by different mechanisms and so may be given simultaneously to achieve even greater fever control efficacy!

Oatmeal (Aveeno & others) baths or soaks. These are soothing to the irritated skin and also help with itch control.

Myths vs. Facts:

Eating poison ivy will protect you. This is *false*, and dangerous!

Scratching will spread the blisters-This is *only true* if the Urushiol remains unwashed. If the child scratches before washing and then touches another person or area of their body, the oil can be spread. Once washed by soap and water, Urushiol binds to whatever it is on (skin or clothing) and can no longer be spread. It would be nice if this happened within minutes of exposure, but that's nearly impossible. Most times parents are unaware of the exposure until the child's body starts to produce a local reaction.

You must have contact with the plant itself. Actually, the oil can stay active for up to 5 years on any surface including rocks, dirt, toys, dead ivy plants, and the fur of animals (including pets). It can also be spread through smoke in the air when burned. This is why we can, and do, see severe cases of poison ivy at all times of the year.

Some individuals are "immune" to poison ivy. *True*! This is most common in very young children, who have not been exposed to the urushiol oil in the past, but a lucky 10-15% of older individuals have immune systems that are unable to recognize or react to the oil even after multiple exposures.

Steroids are necessary, or are the treatment of choice. *False*! While steroids (e.g. Prednisone) are prescribed routinely by many doctors for Poison Ivy, there is actually no scientific proof they work. Steroids are powerful anti-inflammatory drugs more commonly used for serious illnesses like asthma, kidney disease, and lupus. While they *probably* do help, they also carry with them very significant risks and side effects. Steroids are "big guns" which are over-prescribed for this problem. They really should be reserved for only the most severe cases.

Prevention is best. The only way to prevent Rhus Dermatitis is to prevent children from coming into contact with the oil, which is found on the leaves. Parents & children should both learn to recognize these plants and stay away from them. Parents burning leaves in the fall should avoid inadvertently burning Poison Ivy as well. Children should not be allowed to play in areas where poison ivy is known to exist.

POISON IVY

Perhaps the least welcome sign of spring in New England is the re-appearance of Poison Ivy, Sumac, & Oak. Be aware that it is possible to be exposed to the oil of these plants during all seasons, including the winter, albeit rare. All three are present throughout most of the country and work exactly the same way: a very sticky but unseen oil from the plant ("Urushiol") gets onto the skin, triggering a severe allergic reaction known by doctors as "Rhus Dermatitis".

Symptoms:

Within 12-24 hours in sensitive people, longer in less sensitive people, the body produces a local (only where the oil has touched the skin) reaction including intense itching, redness and blistering. This can appear at different times on different parts of the body. The rash does not 'spread' but often evolves over several days as the areas of skin initially exposed may react at different times. Often there is a continued exposure to the oils that have soiled clothing, hats, jackets, shoes or bedding. Poison ivy usually can be treated at home, and does not need be seen in the office. However, if your child has fever, severe pain, or severe swelling, especially of the eyes, face, feet, or genetalia, please call the office for a same day appointment.

Treatments:

Unfortunately there is no "cure" for Poison Ivy. It will run it's course and go away by itself, but that can take anywhere from a few days to several weeks. Meanwhile, here are some ways to treat the symptoms we find most helpful:

Zanfel. We find this product to be the best treatment, by far, although it is rather expensive. Zanfel is available without a prescription. Some pharmacies keep it behind the counter, however, so you may have to ask for it if you don't see it on the shelf. Zanfel is a lotion / wash, which when applied directly to the red and blistering areas, controls the itching very well and very quickly. This product should not stay on the skin like a lotion; it must be rinsed off after application. It also serves to wash away the oil from the plant which can be difficult to remove effectively from the skin.

Benadryl (Diphenhydramine) - this is given by mouth and comes in capsules or liquid form. It does nothing for the rash but it reduces itching. It can also cause sleepiness as a side effect, which could be good or bad. (Please see dosing guidelines under 'Medication Dosing Chart' on page 7).

Caladryl or Calamine lotions. Both are designed to cover the rash and reduce both the redness and the itching. Caladryl is simply Calamine with Benadryl mixed in. Do not use oral Benadryl and Caladryl together, as this could lead to an overdose as Diphenhydramine can be absorbed into the bloodstream through the skin.

FEVER CONTROL DOSING CHART

Weight (kg)	Acetaminophen Dose	Ibuprofen Dose	Weight (lbs)
2.0 - 4.0	40 mg	Do not use	4½- 8½
4.1- 6.7	80 mg	Do not use	9 - 14½
6.6 - 9.3	120 mg	75 mg	15 - 20½
9.4 - 12.0	160 mg	100 mg	21- 26
12.1- 14.7	200 mg	125 mg	27 - 32
14.8 - 17.3	240 mg	150 mg	32 - 38
17.4 - 20.0	280 mg	175 mg	38 - 44
20.1- 22.7	320 mg	200 mg	44 - 50
22.8 - 25.3	360 mg	225 mg	50 - 56
25.4 - 29.3	400 mg	250 mg	56 - 65
29.4 - 34.7	480 mg	300 mg	65 - 76
34.8 - 40.3	560 mg	350 mg	76 - 89
40.4 - 55.0	650 mg	400 mg	89 - 120
55.1 - and up	1000 mg	600 mg	121- and up

DIMETAPP Dosing Chart:

(Give every 4-6 hours – see page 11 for information about the common cold)

Age	Dimetapp Cold & Allergy (Elixir & Chewable tabs)
< 1 y	Don't Give
1-2 y	1/2 tsp (2.5cc) or 1/2 tab (on medical advice only)
2-4 y	1 tsp (5cc) or 1 tab
5-6 y	1½ t sp (7.5cc) or 1½ tabs
7-8 y	2 tsp (10cc) or 2 tabs
9-12 y	3 tsp (15cc) or 3 tabs
13+ y	4 tsp (20cc) or 4 tabs

BENADRYL DOSING CHART:

Forms & Strengths of Benadryl (Diphenhydramine) are:	
Children's syrup	12.5 mg per 5ml (5ml=1 teaspoon)
Children's liquid	25 mg per 5ml
Children's chewable tablets	12.5 mg per tablet
Tablets/Caplets	25 mg or 50mg each
Dosage of Diphenhydramine is calculated as follows:	
0.5 X (child's weight in lbs)= mg every 6hours or	
1 X (child's weight in kg)= mg every 6hours	
Maximum dose = 50mg/dose, do not exceed 4 doses per day	

INFECTIONS, GERMS, ANTIBIOTICS, & CONTAGION

(or, "It's only a virus." "But is it catchy, doc?")

Infections are common in childhood. An infection is when a germ decides to live on or in a person's body, ***and*** causes problems as a result. Many germs colonize our bodies normally, without causing problems. That is not an infection. Some germs are *never* harmful and considered normal colonization. Other germs *always* cause illness, and so finding them on a person invariably means infection. Still other germs can either colonize or infect, depending on the time, place, and situation. These can sometimes be the hardest ones to figure out.

A germ is a small living thing, too small to see without a microscope. There are many different kinds of germs divided into several broad "families": viruses, bacteria, fungi, and protozoa. While members of each family have general characteristics in common, they do differ in the specific kinds of infections they cause. Families, however, differ from each other much more *drastically*. Bacteria are as different from fungi as animals are from plants. A virus is as different from a bacterium as an insect is from a mammal (or, perhaps more accurately, as plankton is from a whale).

Antibiotics are drugs which kill (or at least halt the growth of) germs. Antibiotic science is by far the most advanced in the realm of anti-bacterial medications. Most antibiotics we have today work against bacteria, and most known bacteria are susceptible to at least some of our antibiotics. Fungi and protozoa can be harder to treat. While we do have drugs which work against them, they tend to be more resistant to the action of these drugs. Anti-viral science is still in its infancy. We only have a few anti-viral medications, and they work against only a very few specific viruses. Most viruses are impervious to all drugs known to man.

Luckily, most viral infections are also pretty benign. Of course there are infamous exceptions (such as HIV), but when your doctor or nurse practitioner says, "It's only a virus," what we mean is that it requires no treatment because it will run it's course and go away by itself, without damage or complications. In contrast, it's a good thing we have anti-bacterial antibiotics, and we usually will use them if we suspect such an infection, because bacterial infections (while less common than viruses) tend to be more dangerous and less apt to spontaneously resolve.

No drug is perfect, and this is certainly true of antibiotics. Not only do they have risks and side effects, but they also don't always work. When we choose which antibiotic to prescribe, we base that judgment on the likelihood of an illness being caused by a particular germ, and the odds of that germ being sensitive to the antibiotic. Most clinical illnesses can be caused more

DIAPER RASH

Diaper rash is best prevented by prompt changing of soiled diapers and any of the commonly sold ointments (Vaseline, Desitin, A&D, Balmex, etc.). Powders are much less effective. Even the best cared for babies get diaper rashes. Diaper rashes are never dangerous or emergencies, even when they get severe enough to bleed. If what you see matches one of the following common patterns, you may be able to manage things yourself. Unfortunately, often a rash "doesn't fit" perfectly into one of these molds and will need to be seen.

YEAST: This is a common germ which actually lives on all of us all the time without causing much trouble. However, under the "right" conditions of moisture, warmth, acidity, and other factors it can overgrow and start to cause inflammation. When this happens in the diaper area you will see bright red areas which start and are worst in the folds or creases of skin, and which spread outward by way of little red pimple-like bumps at the edges. The best medicines for this are Lotrimin or Monistat cream - both of which are available without a prescription. Buy a new tube and use it exclusively for the baby's diaper rash. Check inside the baby's mouth for thrush – white patches inside the cheeks or on the gums which won't scrape off easily. This is the same yeast overgrown in the mouth and will need a prescription medicine to treat in that location.

IRRITANT DERMATITIS: This is essentially a chemical burn from contact with urine or feces. It can be triggered by diarrhea, a change in urine acidity (often related to diet), or by simply being left unchanged too long. Some children are much more prone to this than others. In contrast to yeast, the folds and creases are LEAST involved here and the most exposed summits of the buttocks, labia, or scrotum tend to be worst. There do not tend to be little bumps. The edges of this rash are indistinct - it fades gradually into normal skin. The best treatment is to allow the baby to go naked and "air out". Of course this can get messy. When this is not practical, use large amounts of a diaper cream that contains zinc oxide (this is the ingredient that makes the cream appear opaque white). Desitin, Balmex, Creamy A&D and Butt Balm are some examples. Change your infant's diapers very frequently. Avoid using commercial baby wipes (these can cause pain to open wounds). Instead use a face cloth with warm water. Be gentle and allow the diaper cream to remain on the skin between diaper changes if it is difficult to remove. Applying corn starch on the raw areas followed by the diaper cream can also be helpful.

IMPETIGO: This is a bacterial infection of the skin. It is characterized by large Blisters or pustules which ultimately pop leaving bright red sores with distinct sharp circular borders. Often an oozing yellow fluid is present and this can dry into a crust. The lesions can be single but are often multiple and there is normal skin between. This very same condition can happen outside the diaper area and in older children – although in those situations the blister phase is often skipped and an oozing or crusted ulcer is what is first seen. This needs a prescription antibiotic to get better and will need to be seen by a medical provider.

CHICKEN POX

Chicken Pox was once a nearly universal experience of childhood. Due to vaccination, however, your child's chances of ever contracting Chicken Pox are shrinking rapidly. This is true whether or not they actually get the Chicken Pox vaccine, since the presence of so many vaccinated children in the community means it's harder for the Varicella virus to spread.

In most cases, Chicken Pox is a harmless ailment for children up until puberty. Generally, the older a person is when they get this illness the more severe it is, so it is best to get it over with early. Teenagers and adults with Chicken Pox can be really miserable, and are at higher risk for complications. Most people are fully immune after one episode of this disease, but second and even third episodes (milder than the first) do rarely occur. We are also now seeing a "mini" form of Chicken Pox caused by the vaccine itself. This happens because the vaccine is a live but attenuated (weakened) virus, which causes some symptoms in 20% of recipients, and also can spread to non-immune close contacts of the recipient for up to 2 weeks.

The classic Chicken pox lesion starts as a small ($^1/_8$ - $^1/_4$ inch) red bump, slowly develops a central "bubble" filled with clear or white fluid, then bursts leaving an oozing sore which dries up and scabs over before finally healing. These lesions break out in successive "crops" over several days, so that while the initial ones are drying up new ones are just beginning. Sometimes lesions may appear in the mouth, eyes, or on the vaginal mucous membranes - in these sites they are quite uncomfortable but are not dangerous. Most often the first "crops" appear on the head, neck, or shoulders and subsequent ones progress "down" the body - although exceptions to this are common. Indeed, particularly in infants it is common not to have the full-blown syndrome - a few red spots that never bubble or ooze may actually be a mild case. This is why so many people think they have never had

The most troublesome symptoms with Chicken Pox are the intense itching and fever. Refer to page 7 for Benadryl dosing, which may be given every 6 hours, and fever control measures as previously described should be taken. It is particularly important to avoid aspirin with Chicken Pox, as this may precipitate serious complications. Calamine lotion may help, but DO NOT USE Caladryl or other lotions containing Benadryl as overdoses can result from the simultaneous use of Benadryl by mouth and on the skin. The oral route works better. Aveeno or baking soda baths will also relieve the itching somewhat.

Chicken pox is very contagious 2-3 days prior to the first lesion appearing until the last lesions have fully dried and scabbed over. People for whom Varicella represents a serious danger, and exposure therefore needs to be avoided, are newborns (less than a few weeks old), pregnant women who are not immune, and people with compromised immune systems (AIDS, kidney failure, cancer patients on chemotherapy, etc.). Complications requiring special treatment and/or hospitalization are quite rare but do occur. **Call our office if you note - redness spreading progressively outward (beyond $^1/_2$ inch from the center of a lesion), repeated vomiting, confusion or lethargy, or a very bad cough.**

than one germ (for instance, there are at least 6 separate bacteria that sometimes cause ear infections). It's usually impossible to pick one antibiotic that kills all the germs that could possibly be causing a particular illness. If we manage to "cover" 80-90% of the possibilities, we're doing pretty well.

"Is it contagious?" Is one of the most frequent questions a pediatrician hears. *Most infections are contagious!* Some spread more easily than others, and by differing routes, but that's not really what matters. Focusing on person-to-person spread misses the point. Germs move through entire populations. Contagion is a community-based phenomenon. The human race is to a germ as the ocean is to algae, or as the forests are to gypsy moths. There are two major PATTERNS by which germs spread: endemic and epidemic. Endemic is the *less* common. An endemic illness exists at a certain low, possibly somewhat fluctuating but basically steady rate in a community. Cases occur sporadically and semi-randomly. Person-to-person spread is important in endemic illness, as quarantine of a case might actually lower the odds of other cases occurring nearby. Examples of endemic illnesses include Chicken Pox and Strep. *Most* common childhood infections spread by the epidemic route, however. An epidemic is like a wave moving through a community or region. It touches everybody in its path, and knocks over all who aren't strong enough to stand up to it. When a germ is epidemic, it literally blankets the area. It's everywhere, on every doorknob, in every store, at every school. You can't avoid being exposed to it. In this situation, thinking that keeping one child away from another will affect anybody's odds of coming down with the illness is *simply naïve*. Epidemic illnesses include influenza, the common cold, most types of diarrhea & vomiting, and most non-Strep sore throats.

So everything is contagious, but that doesn't mean isolating a child with an infection is a useful thing to do. What else can be done? *HANDWASHING*. Hands are the dirtiest part of the human body, and germs travel on them more often than by any other route. It has been shown time and time again that of all the "infection control" measures practiced in hospital settings, handwashing has by far the biggest impact on infection rates. It's better than masks, gowns, and isolation rooms put together. Use soap & warm water, and wash frequently. Wash before and after contact with someone who's sick. Have the ill child wash before going out, eating, playing with siblings, watching the TV, and after going to the bathroom. Wash on return home from anywhere. The more frequently, the better. The more you wash the less chance you give germs to spread.

It is also important to remember it's the germ, not the disease, which is contagious. Often the same germ can cause several diseases, and the same disease can be caused by different germs. The germ that is causing pneumonia

in one person might only cause an ear infection in the next. This is a matter of where in the body the germ "settles", and that's a matter of luck, not contagion.

We *don't actually know* how long most things are contagious for, even when treated with antibiotics! The truth is that scientific studies to address this question are rarely done. Physician's over the years have developed "traditional", somewhat common-sense answers such as, *"until you've been on the medicine 24 hours"*, or, *"until the fever's gone"*, or, *"until you're feeling better"*. None of these have been proven for most infections. We do know in a few isolated situations... we know for Chicken Pox, for instance, that it's until all the lesions dry up. We know that for "Fifth Disease", by the time the rash comes, the contagious phase is over. These tidbits of certainty are the exception, not the rule, unfortunately.

While it's important to treat with antibiotics when they're needed, it is also very important NOT to use them unnecessarily. *This is because germs learn!* Ever since mankind discovered and started using the first antibiotics, we have literally been in a race with the germs to see if we could invent new ones faster than they could figure out how to resist them. For example, 20 years ago 100% of Pneumococci (the most common bacterial cause of pneumonia, ear infections, sinusitis, and meningitis) were sensitive to Penicillin. Today, more than half are resistant to that antibiotic, along with most others. These resistant Pneumococci are difficult to treat, and very dangerous as a result. Similar things have happened with other germs and antibiotics. It's been inevitable that this would happen since the day we started using Penicillin, BUT, the more Penicillin we use, the sooner and quicker the germs learn how to circumvent it – and the same goes for every other antibiotic as well. This plays out on a global, evolutionary scale - not at an individual level, however. Germs will not suddenly become resistant inside your child's body while we are treating with a particular drug. Still, we will all be safer in the long run if we resist the temptation to over-use antibiotics (e.g. for viral infections). Because of this, it is our policy *never to prescribe antibiotics over the phone*. We need to do a physical exam first - we will only prescribe when we have made a specific diagnosis we know requires antibiotic treatment, or when the likelihood of such a diagnosis is high enough to make the risks of not treating higher than the risks of doing so.

Another reason we do not prescribe antibiotics without examining you first is that it can be dangerous. If your child had a more serious illness that really required IV antibiotic treatment in the hospital, and we were to start oral ones over the phone, we could "mask" the symptoms, and cloud or delay the correct diagnosis. This could cause significant harm.

RASHES

Skin rashes may be an acute (sudden, short lived) problem or they may be a chronic (persistent) symptom. A rash should be considered chronic when it is present for more than 1-2 weeks. In that case it should always be seen by the physician, although this is not urgent.

Acute rashes are a common feature of many viral illnesses and are often preceded or accompanied by other symptoms such as fever, runny nose, cough, vomiting, or diarrhea. They can take many different appearances, but are almost always harmless and need no treatment. Often they itch - this is best treated with an antihistamine such as Benadryl (which is sold without prescription as a cough medicine but which is actually a much better itch medicine - see section on Chicken Pox for dose). If runny nose is also present any decongestant/antihistamine combination will kill both birds with one stone.

Rashes more rarely may signal serious disease. Signs that a rash may be a more urgent problem requiring prompt medical attention include:

- **bruising or "black & blue" marks (without known trauma)**
- **bright red spots (like tiny "blood blisters" under the skin)**
- **inflamed eyes and/or oral mucous membranes**
- **swollen hands, feet, or glands in the groin & underarm**
- **extensive blistering or breaks in the skin surface**

You should call right away if you observe any of the above, or if a child's other symptoms with the rash (difficulty breathing, signs of dehydration, pain, etc.) warrant in their own right.

BENADRYL DOSING CHART:

* Consult with a medical provider for children under 1 year

Forms & Strengths of Benadryl (Diphenhydramine) are:	
Children's syrup	12.5 mg per 5 ml (5ml=1 teaspoon)
Children's liquid	25 mg per 5 ml
Children's chewable tablets	12.5 mg per tablet
Tablets/Caplets	25 mg or 50 mg each
Dosage of Diphenhydramine is calculated as follows:	
0.5 X (child's weight in lbs)= mg every 6h or	
1 X (child's weight in kg)= mg every 6h	
Maximum dose = 50mg/dose, do not exceed 4 doses per day	

1. In an infant (less than 1y) try light Karo syrup 1 tablespoon mixed in 4 oz. formula or breast milk once or twice daily. If the baby has been started on pureed or solid foods, cut down on cereals and increase fruits – particularly peaches, prunes and pears. Cut back on cheese, yogurt and simple carbohydrates such as breads, crackers and pasta.

2. For older children, try *Mineral Oil orally twice a day* in a dose of:
   1 teaspoon for ages 1-2
   2 teaspoons for ages 2-4
   1 tablespoon for ages 4-8
   2 tablespoons for ages 8 and over
   While Mineral Oil is tasteless, it does feel slimy so children are reluctant to take it. This can be minimized by keeping it cold in the refrigerator and having food or drink handy to wash it down. It can also be disguised by mixing with a semi-solid food such as yogurt, ice cream, oatmeal, jelly or a small amount of cocoa powder.

3. Prevention is best achieved by increasing dietary fiber. It is the rare child who can do this by eating green vegetables, however. Buy high fiber cereals and breads, encourage prunes and raisins as snack food, and try to have your children develop a taste for Bran muffins. A very useful product in this regard is "Unprocessed Bran", available in the grocery store. This can be added to many recipes - ranging from any kind of baked goods to hamburgers, meatloaf, and casseroles – without changing the taste.

If you have given the above measures a fair trial (at least several days) and have not met with success, please call. More aggressive treatments are available but really require close medical supervision.

Finally, some children are prone to repeated or chronic constipation. This tendency often runs in families. It is also sometimes the first sign of an underlying serious disease - especially if the tendency first shows up during early infancy. Children with chronic constipation deserve a thorough medical evaluation and an individualized long term treatment plan. If your child falls into this category, please schedule them for an extended consultation.

THE COMMON COLD

A "cold" is an infection in which the main symptom is a runny nose. This is the least serious and most common respiratory illness, and is usually viral. Ordinarily the nasal discharge starts clear and watery, gradually thickens, becomes yellow or green for a few days, then dries up. Often this is accompanied by fever, discomfort, sneezing, and a mild cough. Some children are prone to nosebleeds with a cold - these should be treated with direct pressure (squeeze the nose firmly where the bone ends for 10 minutes). Many of the viruses which cause a cold may also lead to loose bowel movements and a faint red rash. Although there is no medicine to kill or halt a viral infection, the following can help alleviate the discomfort:

1. Use a cool mist vaporizer (well cleaned regularly with bleach) to help soothe irritated nasal passages and keep secretions loose. Elevating the head of the bed may help some children sleep better as well.
2. For infants less than one year who have difficulty breathing through the nose and for whom a cold may therefore interfere with feeding, use a bulb syringe to suction the nose clear. This may be done as often as necessary, but is particularly helpful just before feeding. Instilling some saline nose drops (Ocean, Ayr, NaSal, many other brands) prior to suctioning may make this job easier. A good seal between the syringe and the nostril is necessary for suctioning to be effective. Avoid aggressive deep suctioning. This may cause swelling from irritating the inside of the nose and worsen congestion.
3. As a general rule, we do not recommend over the counter decongestant/anti-histamine 'cold' preparations in children under 2 years. In older children, the benefit should be weighed against potential side effects such as drowsiness or irritability,
4. DO NOT use over-the-counter decongestant nasal sprays unless specifically instructed by a medical provider. Saline nasal sprays are fine to use. Rub on preparations such as Vicks have no scientifically proven efficacy, but are harmless and fine to use.
5. Consider seeking medical attention if the runny nose continues for more than two weeks or if your child is becoming more ill with new symptoms such as cough, or fever.

EARACHE

Middle ear infections are the most common bacterial illness in childhood. Babies often pull and poke at their ears for a variety of reasons, so this is not a very good indicator of possible infection. Middle ear infection is usually a *complication* of a cold or an allergy. Thus, failure *of a runny nose to resolve in the expected time frame* is a better clue for infants. In older children an earache may also represent an external ear infection, which is an irritation of the skin in the ear canal and is treated with drops rather than oral antibiotics.

Some children are prone to repeated ear troubles. Sometimes these are *recurrent* (they get better in between episodes), and sometimes they are *chronic* (their middle ears rarely if ever return to normal). The approaches to recurrent vs. chronic middle ear dysfunction are different. If your child develops either of these problems, please ask for our more detailed information handout, **THE PROBLEM OF "PROBLEM" EARS**.

Although examination will be required before specific treatment can be begun, ***AN EARACHE IS NOT AN EMERGENCY*** and does not need to be seen right away. Earaches are worst soon after they first begin, and by 12-18 hours the pain begins to subside *regardless of whether therapy has begun or not.* Indeed, whatever antibiotic or eardrop the doctor prescribes takes 2-3 days to even begin to work! The pain eases not because of the medicine, but because of the body's own compensatory mechanisms. Unfortunately, there is nothing we can do beyond what you can do yourself to speed up that process. A prescription may be necessary, but whether it is begun now or tomorrow is of no consequence.

A number of measures can help with the acute pain of an earache:

1. Acetaminophen or Ibuprofen, in the same dose listed above for fever control, is the single most important thing. Even if there is no fever, these medicines are effective pain relievers.
2. Decongestant/antihistamine preparations may reduce the increased fluid in the middle ear, which leads to the pain and pressure,
3. *Call during office hours* to arrange for your child to be seen.

CONSTIPATION

Constipation means hard bowel movements which are difficult and at times painful to pass. It does NOT mean infrequent bowel movements. There is a great deal of normal individual variation in how often we move our bowels, and as long as the stool remains reasonable soft and easy to pass the length of time between movements should not cause concern. On the other hand, even regular daily bowel movements which are too hard may represent a problem. In young children the discomfort associated with this can lead to a justified fear of moving the bowels, causing them to try to hold it in rather than push it out when they feel the urge to go. This in turn results in even harder stools the next time, and thus a vicious cycle is set up. The child withholds more and more stool inside, the intestine dilates and begins to function less efficiently, and the eventual endpoint can be uncontrolled soiling (encopresis), urinary accidents or frequency, abdominal pain and can even lead to nausea and symptoms of acid-reflux. Maintenance of normal stool consistency is important, especially in the early years of childhood.

Almost everyone experiences occasional self limited bouts of constipation. These can be the result of a dietary disruption, emotional stress, or acute illness. Don't worry, no one has ever "burst" from constipation. While uncomfortable, it is not an emergency. It is best to avoid both stimulant laxatives and "rectal assaults" in young children. Both can be dangerous and do more harm than good. In particular, "rectal assaults" such as enemas, suppositories, and manual disimpaction are quite frightening and impossible to adequately explain to a young child. They may be very emotionally damaging. Stimulants can induce dependence. What CAN be done? Try the plan on the following page, but remember none of them can be expected to work immediately - some patience will be necessary.

Gastroenteritis "Rescue" Plan:

Age	Hourly ORS Need (Pedialyte or equiv. until clearly improved)	First 3-4h (until no longer vomiting)	Next 8-10h (ok now to also give small bites of solid food but still ORS only)	Next 12 hours (if doing well fluid no longer has to be ORS)	2nd Day (start to resume normal diet, fluid quota is reduced)
3 - 6 mo	1½ - 2 oz / hr	10 cc (2 tsp) every 10 - 15 min	1½ - 2 oz every hour	3 - 4 oz every 2 hours	4 - 5 oz every 3 - 4 hours
6 mo - 2 yrs	2 - 3 oz / hr	½ oz (1tbsp) every 15min	2 - 3 oz every hour	4 - 6 oz every 2 hours	5 - 6 oz every 3 - 4 hours
3 - 5 yrs	3 - 4 oz / hr	1 oz (2tbsp) every 15-20min	3 - 4 oz every hour	6 - 8 oz every 2 hours	8 oz every 4 hours
6 - 9 yrs	4 - 5 oz / hr	1½ oz (3tbsp) every 20min	4 - 5 oz every hour	8 - 10 oz every 2 hours	10 oz every 4 hours
9 - 12 yrs	5 - 6 oz / hr	1½ oz (3tbsp) every 15min	5 - 6 oz every hour	10 - 12 oz every 2 hours	12 oz every 4 hours
13+ years	6 - 8 oz / hr	2 oz (4tbsp) every 15-20min	6 - 8 oz every hour	12 - 16 oz every 2 hours	16 oz every 4 hours

CAUTION: if you try this plan at home, and by the fourth hour **EITHER** the vomiting is still frequent OR you are unable to get your child to take the specified amount, you should **SEEK MEDICAL ATTENTION** (call our office or go the Children's Hospital ER) - in this case your child probably needs fluid through an IV and may need to be hospitalized. Also, any child who is not clearly getting better by the second day should be brought in for a visit at our office.

SORE THROAT

Strep is a type of bacteria that causes about 20% of sore throats in children. MOST sore throats are not Strep, but rather viruses that will resolve without treatment. Despite the fact that it's bacterial, Strep will get better by itself without antibiotic treatment! Antibiotics if started early make it go away a little bit faster, perhaps in 4 days instead of 5. The real reason we treat Strep is not to make it go away, but to prevent later complications such as Rheumatic Fever. Antibiotics prevent this as long as they are started within 2 weeks of the onset of symptoms (and even if the child feels better before they are started).

Parents often think their child has Strep because of white patches on the tonsils. Unfortunately, tonsil appearance (size, white patches, swollen glands) are not perfect predictors of Strep infection. ***STREP THROAT IS NOT AN EMERGENCY***. As long as examination, testing, and treatment are started within 2 weeks, your child will get better. If a provider determines that it is necessary to test for Strep based on exam or history, we will do a 'rapid Strep test'. If the rapid test is positive, we will treat immediately. If it is negative, we will send a throat culture to the lab. Rapid tests miss about 5% of cases, the confirmatory culture is 100% and results are back in 48-72hours. There is no need to take antibiotics if the tests are negative. We call to confirm positive tests but will not call with negative results.

Sore throats should be cared for with Acetaminophen or Ibuprofen, a bland diet, and plenty of liquids (milk, soup, or ice cream may be better than juice or soda). For the older child salt-water gargles, and anesthetic sprays, or lozenges (Chloraseptic, Sucrets, and many other brands) may help. Danger signs (rare) include **marked difficulty swallowing** *(with drooling and inability to take even liquid in - not just pain with solid food)*, **loss of voice, trouble breathing,** and **substantial asymmetry** *(difference in size between the two sides)*. Call immediately should any of these occur, or if symptoms persist longer than a week (unusual), with or without treatment.

COUGH

Cough is another one of a child's most fundamental defense mechanisms. It is what keeps things in the upper respiratory tract from moving down into the lungs, and it is what rids the lungs of an illness already there. This function is vitally important, as the lungs bring life-sustaining oxygen into the bloodstream.

Most cough medicines sold over-the-counter are cough suppressants. These interfere with the body's ability to cough and clear mucous and chest congestion. Therefore, cough medicines are rarely recommended by a medical provider. If you want to help reduce mucous production, an antihistamine (like Dimetapp or Benadryl) can be used, and may be helpful in reducing cough.

As with fever, you should view your child's cough as a *warning,* and be on the lookout for signs of serious illness or clues as to what exactly may be wrong. The main thing to watch for is true difficulty breathing or ***SHORTNESS OF BREATH.*** A child may have both a bad cough and very noisy breathing and still not be *short of breath.* Signs of true difficulty breathing should prompt you to call immediately regardless of what other symptoms may be present. They include:

- **blueness around the lips or fingernails**
- **increased breathing rate**
- **(>80x/minute in infants, >40 in older children)**
- **caving or pulling in of the chest wall while inhaling or "retracting" of skin between the ribs**
- **chest pain**
- **difficulty talking without taking multiple short breaths**
- **in an infant, inability to breastfeed or take liquid from the bottle**

Cough accompanies a wide variety of short-lived, self resolving illnesses. Within the above guidelines it can be therefore safely "tolerated". A cough can also occasionally be the sign of a chronic problem. Please call about any cough which is persisting for more than 2 weeks.

VOMITING & DIARRHEA continued (feed your child!)

When diarrhea is the main problem, and there is little or no vomiting, you should CONTINUE TO FEED YOUR CHILD food. Despite the GE, he/she still needs and is able to absorb the calories. Diarrhea actually gets better faster if there is solid matter in the intestine with which to form normal stools. Foods to avoid because they could make matters worse include milk, cheese, and most other dairy products; fast food, fried foods, oily dressings and other greasy things; chocolate and foods that are particularly spicy. Foods that are often quite good for a child with GE include:

cereals	**pasta**
toast & jam	**potatoes**
fresh fruit	**rice**
yogurt	**lean meats**
crackers	(broiled, roasted, or boiled, NOT fried)

Diarrhea medicines, over-the-counter or by prescription, are rarely indicated. Some of them are actually dangerous. In particular, children should NEVER be given medicines such as Lomotil and Immodium often used for adults in this situation. Kaopectate, Pepto-Bismol, & other similar products are safer, but they are not very effective and probably not worth buying. Again, the key to managing your child with vomiting and diarrhea is FLUID, not medicine.

HOW MUCH FLUID DOES IT TAKE???

To correct dehydration (or keep pace with severe ongoing losses), a child needs **A LOT** more fluid than usual. However, if a child's stomach is upset, he or she is more apt to vomit after drinking a large quantity of fluid than a smaller quantity. Therefore, until the vomiting subsides the only way to get **A LOT** of fluid in is through drinking smaller amounts much more frequently.

Refer to the table on page 20 for an effective "rescue plan" based on these principles for children with severe gastroenteritis (*vomiting and/or diarrhea happening every 2h or more*) or who are already showing signs of dehydration. *This plan is not appropriate for newborns, nor does it need to be used for children who have less frequent vomiting/diarrhea and are not yet dehydrated.* Implemented properly, however, it can prevent hospitalization in 75% of children who would otherwise need IV fluid. The second column indicates the hourly fluid requirement of the child while sick, while columns 3, 4, and 5 indicate HOW that amount of fluid should be delivered over 24 hours.

1. ORS turns on microscopic pumps in the stomach, so it gets absorbed into the bloodstream more quickly than any other fluid - literally within minutes. It can therefore prevent or improve dehydration even if vomiting continues, because some of it always gets absorbed before the next episode.
2. ORS replaces not just the water, but also the salt lost by vomiting and diarrhea. This makes it much safer than other fluids in this situation, which, when given in large volumes, can lead to a condition of too-little salt in the body ("water poisoning") and cause dangerous convulsions.
3. ORS actually calms the stomach and usually stops the vomiting after several hours.

Examples of ORS include Pedialyte, Rehydralyte, Enfalyte, LiquiLyte, Naturalyte, CeraLyte, ReVital, as well as generic "store brands" - these are available at most pharmacies and supermarkets without a prescription. Parents find many children are reluctant to drink ORS due to its poor taste. An infant can be forced to take ORS using a dropper, and usually will start taking it willingly after that has been done a few times. A toddler or older child can be more stubborn, but in recent years a number of new improved ORS flavors have come out, and if a child is truly in the early stages of dehydration they will usually be thirsty enough to drink it, perhaps with some coaxing, despite its taste. Also, ORS can be frozen into a "Pedialyte Popsicle" and this may encourage some children to take it *(caution: each popsicle typically contains only 1 oz. Of ORS - and the child needs to take many ounces/many popsicles to stay hydrated)*.

ORS is really the only safe, effective choice for a child with severe vomiting & diarrhea (episodes occurring every 2-3h or more) or who is already showing signs of dehydration (see above). For the child with milder symptoms, ORS is still the best option, but other clear liquids such as juice (any kind except apple), flat soda, or sports drinks may suffice to prevent dehydration. The advantage is these may be easier to get your child to take. The disadvantages compared to ORS are that they may actually perpetuate the diarrhea (by virtue of their high sugar content) and they won't have the stomach-calming effect that ORS does. Some "half way" (not as good as ORS but better than juice or soda pop) alternatives:

- **Chicken Soup alternating with other (non-ORS) clears.**
- **Mixture of 2 parts ORS + 1 part Gatorade**
- **Mixture of 1 part ORS + 1 part breast milk or infant formula**
- **Jell-O water (mix according to directions, then add 2 extra cups water)**

CROUP

Croup is another viral illness that causes cough. A croup cough has a barking sound - like a dog or a seal. It indicates a narrowing in the windpipe below the vocal cords but not down in the lungs. It is typically caused by a viral infection. This cough is usually quite painful. It can also be frightening as the child with croup often awakens suddenly from a quiet sleep having an "attack" in which they can appear to be in a great deal of distress - both from the pain and from the difficulty breathing. The best way to handle these episodes is to talk quietly, try to reassure and calm the child while providing humidity either by taking a walk outside (better, if the temperature is above freezing), or by turning a shower on and sitting in the steamy bathroom. This should break the attack within 20 minutes - if it doesn't, please call.

Another sound the child with croup may make is *stridor*. This is a hoarse raspy noise heard when the child *INHALES.* You will surely hear this during an "attack", but it should disappear when the coughing subsides and the child calms down. Rarely, the narrowing of the airway can get so severe as to be dangerous and require hospitalization. An early sign that this may be this case is *CONTINUOUS STRIDOR* which fails to go away between coughing spells. A child who has continuous stridor lasting more than 30-60 minutes after a croup attack needs to be seen right away. Likewise, stridor seen with no associated croup cough should also be promptly evaluated, especially if accompanied by drooling, fever, and shortness of breath.

Short of hospitalization for the severe case, the main treatment for croup is humidity; a cool mist vaporizer is best. These should be cleaned on regularly using bleach or as directed by the manufacturer. A decongestant may be of some benefit, especially if the croup is accompanying a cold. Tylenol or Ibuprofen will help the pain, and should be given even in the absence of fever. Occasionally we may prescribe steroids for croup. Steroids help in severe croup, but not in mild cases. This treatment is usually reserved for the hospitalized patient, but sometimes it can be used for a borderline case to avoid hospitalization.

WHEEZING

A wheeze is not the sound of a cough, but rather a sound you should watch for often associated with a cough. It consists of a high pitched whistle or a squeak usually heard best when you breathe out or *EXHALE*. It is not the sounds that you hear from while your child has nose congestion. Sometimes this is very soft, and you will need to rest your ear against the child's chest to hear it. Other times it may be loud enough to hear down the hallway. Wheezing is a sign of narrowing in the small airways deep in the lungs. While it can happen to anyone as an isolated event, when a person is predisposed to repeated wheezing episodes it is called asthma. In the past, physicians tended to avoid making this diagnosis unless it got severe - instead they used euphemisms such as "bronchitis" and "chest cold". In the past few decades mounting evidence that asthma is a progressive disease whose advance can be arrested by early and aggressive management has pushed us to change. Modern pediatricians diagnose as asthma anything, no matter how mild, which shares the wheezing physiology. Defined broadly, about one in every six children (15%) has asthma! For most, however, it is a mild and very easily controllable disease. Still, wheezing is not something that should be tolerated. If you think you hear this for the first time, call immediately. If your child has done this before and you have medications for it, try them. If what you have is not successful at stopping the wheezing or your child has any difficulty breathing, call our office. *(See section on COUGH for specific signs to look for).*

"PRODUCTIVE" COUGH

Some coughs sound wet or "juicy". This usually means that the child is bringing phlegm or sputum up with the cough. Unlike adults who tend to spit this material out, children usually swallow it. This is fine; it does no harm in the stomach. Indeed, some cough medicines claim to have an "expectorant" to encourage this process. Unlike "suppressants", if it worked this wouldn't be such a bad idea. Once again, however, the claims tend not to be borne out in reality, and thus these things tend to be a waste of money.

A wet cough by itself should not be too concerning. It may represent post nasal drip or it may be a harmless, self-limited viral pneumonia. However, a wet cough not going away in 4-5 days or in combination with high fever (>102°F), shortness of breath, and/or chest pain may mean a bacterial pneumonia which will need antibiotics. Therefore, a child with several of these signs in combination should be seen.

VOMITING & DIARRHEA

Vomiting and diarrhea usually result from gastroenteritis (GE), an intestinal infection. They can also arise from acute food poisoning (which acts and is treated just like GE), food allergies, or surgical problems such as appendicitis. The best way to be sure it is not the latter is to look for pain and tenderness. All GE may be accompanied by a vague, crampy pain especially right before an episode of vomiting or diarrhea. Surgical problems virtually always have a more constant, sharp, and localized pain - severe enough to make the child visibly tense up when you try to touch his or her belly. You should call immediately if your child has this kind of pain. Only a tiny percentage of GE cases require any medication at all to get better, regardless of whether they are viral or bacterial. Those few who may need an antibiotic will be distinguished by high fever (>104°), bloody stools, or persisting and very crampy diarrhea for more than 3 days. We will want to culture the stool of a child with this pattern, but stool tests are NOT routinely necessary in most children with diarrhea.

The ***MAIN DANGER OF GE IS DEHYDRATION*** – not enough fluid in the body. As long as you can keep up with replacing the fluid being lost, however, the child will be fine. This is easier to do with diarrhea than it is with vomiting, but luckily in most cases the vomiting is worst right at the outset then subsides. Signs of dehydration include:

- **decreased frequency/amount of urination**
- **dark/strong smelling urine**
- **sunken eyes and/or "soft spot" in an infant**
- **extreme drowsiness or fussiness**
- **crying without tears**
- **dry or "sticky" mouth**

If you feel your child is becoming dehydrated despite your best efforts (see below), you should not hesitate to call. Some IV fluid for a few hours, or a short stay in the hospital, may be necessary.

Dehydration is best prevented (& treated) by giving small amounts of liquids very frequently (see chart at end of this section). The best liquid to give by far is an ***oral electrolyte*** *or* ***rehydration solution (ORS)***. ORS is not just a "drink" - it's a medicine that does 3 important things no drink can do...