



WHOLISTIC
KIDS & FAMILIES

Cold and Flu 2019-2020 Update

Dear Families,

I hope you are all well and thriving. I hope your summer was restful and joy-filled. Somehow another year has come and gone, and winter is once again upon us.

As I am sure you have heard, there has already been one reported pediatric death related to the flu. Based on the flu season in the Southern hemisphere, some physicians are concerned for a severe flu season this year. I wish I could definitively tell you what will happen. Only time will tell.

For those of you who are interested, we do carry the flu vaccine. Please feel free to call the office to coordinate a flu shot for your family. We also have the homeopathic flu nosode or “vaccine” if any of you wish to use it.

With a little preventative effort, hopefully we can avoid any exciting illness. Last year’s handout was long and detailed. For the sake of clarity, I have chosen to divide this year’s handout into two parts. The first is a one page “quick and dirty” overview of high-priority prevention and treatment items to consider. Following this, you will see a much more detailed discussion of health-promoting action items similar to the year prior.

I wish for us all a beautiful winter with lots of laughter, celebration and abundant health.

Warmest regards,

Dr. Katiraei and the Wholistic Kids Family

QUICK AND DIRTY

Inflammation = BAD!

Gut imbalance and poor digestion = BAD!

This combo = poor immunity with prolonged cough and congestion after an illness

Lots of antioxidants and detoxing veggies = GOOD!

Happy adrenals and thyroid = GREAT!

The Bad Guys

During the winter time, try to keep inflammation down. Winter physiology is COMPLETELY different than summer, and foods that were not causing a problem over the summer may become problematic in the winter. To keep inflammation down, we must start with sugar, including those delicious simple carbs [aka crackers, toast, croissant (GF or not)]. Now, I am not saying for you to put your family in a bubble, or to push them into a paleo diet and to strip all joy out of their life. Nope! Eliminate sugar as much as possible. Keep simple carbs balanced with fats, protein and fiber.

Now comes the dynamic duo - gluten and dairy. Of all the foods we eat, gluten and particularly cow's dairy are the most inflammatory. Unless you are one of our lucky families for whom gluten or dairy cause zero problems, I suggest you consider dialing back gluten and dairy so it is no more than 10-20% of your family's diet. Sheep and goat cheese and yogurt are often better tolerated than regular, pasteurized cow's dairy.

The Good Guys

After reducing the bad guys, the best way to improve digestion is to make sure there is abundant vegetable fiber in your child's diet. This fiber will do a better job balancing out the bacteria than any probiotic. You will also see a "detox" diet handout. The center column lists the vegetables (brassica, leafy greens, thiols..) that are most helpful for detoxification. These vegetables will help increase glutathione within the body, which in turn increases the body's resiliency to inflammation. Berries are also helpful (even if frozen) because of the antioxidants they contain. Make sure antioxidant spices, like turmeric, sumac, rosemary are present. Fermented foods and the probiotics they contain can also be helpful.

Please see page 6 for ways to keep your adrenal and thyroid glands in good working order. Both of these organs are quite important for allowing a robust immune response in face of illness. Sage as a spice or tea is one of the few plants which can support both the adrenal and thyroid glands. Use it liberally in your diet.

Fighting Back

Be prepared for when you do get sick. The most important time to act is within the first 24 hours of illness. Once congestion has set in (3+ days into illness), it is FAR harder to clear it out of the system. For young children <2 years, the homeopathics and gemmotherapies, especially Briar Rose are most helpful. In this last year, we have created a new blend called "Tiny Congestion" mix which contains Briar Rose amongst other gemmotherapies. Of all the available tools, I believe essential oils are the best line of defense. Use these oils liberally at the first sign of illness. The most effective way to use oils is to directly inhale them. Not all oils are safe/meant to be inhaled, so please double check before using. Our Cough and Congestion blend was specifically designed to be inhaled, even by young children. A simple trick is to put 2-5 drops of the oil in the palm of your hands, rub together, put your hands together to make a mask and then inhale for 1-2 minutes. Repeat every 2-4 hours.

COLD AND FLU PREVENTION

DIETARY HACKS TO REDUCE INFLAMMATION

As a pizza lover it breaks my heart to say this, but if you or your family had a rough winter last year, *please* consider eliminating the majority of gluten and dairy from your diet. These two foods, along with excess simple carbs/sugars, make up the bulk of the pro-inflammatory foods we ingest. I can't even count how many children I have seen "suddenly" develop a robust immune system once these foods were eliminated. I know for some families, this will be easier than others. So do what you can! Please consider implementing the following changes:

- **Organic:** Use the resources from the Environmental Working Group to prioritize which foods you buy organic. Pesticides, especially the glyphosates, can compromise gut integrity and general metabolic functioning, and thus potentially lower immunity.
 - o https://www.ewg.org/foodnews/dirty_dozen_list.php#.WcVw5K2ZNE4
- **Sugar:** Sugar spikes insulin, which then triggers a rather impressive inflammatory response. Unfortunately, even those delicious croissants are almost immediately metabolized to sugar! While children need a lot of carbs for appropriate growth, balancing the carbs with fats and proteins is ideal! The lower we can keep our blood sugar, the lower our inflammatory response! This video is one of many available to dives into this topic.
 - o <https://www.youtube.com/watch?v=2hR9sD9eX-A>
- **Gluten:** Do what you can to reduce gluten! I find for most individuals that even 50-60% reduction in gluten is sufficient for an improved immune response. Perhaps you are only able to reduce gluten by 10%, but that is still better than nothing.
 - o Consider organic, quinoa/lentil/bean pastas when you can.
 - o Brown rice and sweet potatoes are other great options.
 - o *Exceptions:* In some farmer's markets, you can find really high quality, organic wheat pasta from Italy (or other parts of Europe). These pastas (and breads) should be fine if consumed in moderation. Some bakers will also have great local options.
 - o Some tasty gluten-free bakeries:
 - <https://karmabaker.com/>
 - <http://mulberrybakery.com/backtobasicsclass/>
 - o Consider healthy, nutrient dense breads such as the Ezekiel breads, if the gluten-free options don't resonate.
- **Dairy:** As many of you already know, our dairy is not what it used to be. Today's US dairy tends to create significant congestion and inflammation. This is likely due to the poor, corn-based diets the US cows are fed along with decades of breeding practices to create cows with higher milk yields. In the midst of all of this, we have basically changed the composition of the milk/dairy we ingest (<http://www.chelseagreen.com/devil-in-the-milk>). With all of this said, I still believe that dairy is a healthy and good source of fat, protein and calcium for most children. Here are some basic things to do to minimize the negative consequences of dairy.
 - o During an illness, please consider eliminating dairy for just a few days to reduce congestion. (Not for infants under 1 year of age)
 - o Consider sheep's or goat's cheese and yogurt when possible. If you or your child like the taste of goat's milk – fantastic! Raw, aged cheeses are another option. In general, hard cheeses that are aged more than 60 days tend to be easier on the digestive tract.

- For those of you who are comfortable with the idea, raw cow's (or goat's) milk also tends to be easier to digest, and less inflammatory than regular organic milk.
- The Amish have "old world" cows that produce a different type of milk (A2 casein milk). This A2 milk is what milk use to be 50 or 100 years ago. Please contact me if you are interested in getting this milk. For others, there is a company that sells "A2" Milk. While this milk is technically not organic, it does tend to be much easier to digest. Unfortunately, few stores seem to carry this milk, so you may have to ask them to order for you.
- **Soy:** It seems to be just as problematic as conventional dairy. Please limit soy products as much as is reasonable. Organic, non-GMO, ideally fermented soy (tempeh) should be okay in moderation.
- **Eggs:** Unfortunately for some, eggs (especially egg whites) can cause inflammatory reactions that are just as bad as gluten. We are not sure if this reactivity is due to how most chickens are raised and fed. Let's support happy chickens. When possible, try to purchase pasture-raised/fed chickens that are allowed to graze and are fed a semi-natural diet. If you have any doubts, consider feeding your child just egg yolks, as they are generally much less problematic and have the cholesterol and choline that are truly wonderful for little people!

Anti-inflammatory foods: Now with all this negative talk about avoidance, we can also focus on many great things to give the puny stomachs super powers!

- **Turmeric:** In addition to being a powerful antifungal, antibacterial and anti-oxidant, this magical powder actually turns on genes that help our bodies produce natural anti-oxidants. Curcumin has also been found to turn on genes for BDNF (brain-derived neurotropic factor), which is critical for healthy brain functioning.
- **Garlic and Onion:** Garlic happens to be one of the best prebiotics on the market. Eat a little garlic or onion every day for happy gut bacteria. These foods also contain oils with POWERFUL anti-bacterial and anti-viral properties. While onions can be cooked without the oils being damaged, garlic's oils are far more sensitive. Chop or crush garlic and allow it to sit for 15 minutes before cooking to allow the oils to undergo a conversion that makes them far more resistant to heat. Garlic and onion are also rich in sulfur which is very important for glutathione production and detoxification.
- **Vegetables:** Load your bodies with vegetables and fibers. We focus so much on probiotics as way to prevent colds and flu, but did you know that without the prebiotics found in fibrous foods, probiotics do NOT adhere to your intestinal tract to do the good work? Some foods rich in prebiotics are listed here. <https://www.healthline.com/nutrition/19-best-prebiotic-foods#section19> It is also very important to focus on eating "detox" vegetables, including the Brassica family. These sulfur-rich veggies help naturally boost glutathione levels, which then allows us to control inflammation. Let us not forget our dark green leafy friends. These vegetables, along with beets, asparagus and artichokes all play a part in optimizing antioxidants and supporting detoxification.
- **Fermented foods:** The bacteria in our intestines can help optimize our digestion and body's inflammatory response, thus improving our ability to handle colds and flu. Kefir, kombucha, kimchi, sauerkraut, pickles, miso, tempeh, yogurt, etc. are AMAZING as probiotics to help improve intestinal functioning. The variety and number of strains in these fermented foods are far larger than even the best probiotics out there. Make these a part of your diet today!

- **Adrenal support:** I have shared with you a lot of information on how to minimize prolonged or excessive inflammation, which can cause endless congestion and general poor immunity. The flip side of this coin is to have a robust immune system that can quickly kick into action to kill of viruses as soon as they attack. To achieve a strong immune response, we must have healthy adrenal function to produce a strong cortisol response during an illness. A surge in cortisol is what wakes us up in the mornings, and guess what? Cortisol also happens to be a key chemical to wake up our white blood cells and help mobilize them to confront the invading viruses and bacteria. Happy adrenals = happy immunity! Individuals who have lack luster adrenal glands are those who struggle to get out of bed in the mornings, and a crash 2-4PM and often get a second wind later in the evenings. If this is you or your child, then it is time for you to consider some good adrenal support.
 - Rosemary is an amazing spice to help optimize pancreatic and acts as great anti-inflammatory within the intestinal tract. What many don't know is that Rosemary also helps support the adrenal glands. Add a pinch of this spice to everything you can!
 - Ginger is considered a "heating" plant, which clears "dampness" from within the body. It turns out that ginger boosts cortisol production which is necessary to mobilize white blood cells in the face of an infection. Children over one year of age and adults can consume ginger in the form of tea and food. In older children and adults, you can also enjoy ginger juice in moderation (to avoid GI upset). You should not take ginger during pregnancy, but it is safe otherwise for breastfeeding, etc.
 - Briar rose is perhaps the best tasting adrenal support and decongestant for children (and adults) of any age. It is safe to use in any child over six months of age. It is thought to provide some immune support. You can purchase this from us or online. <https://www.pureformulas.com/rosa-canina-125ml-by-seroyal.html>
 - Dosing:

• 6-12 months: 10 drops once a day	12-24 months: 10-20 drops once a day
• 2-4 years: 20-30 drops once a day	4-10 years: 30-50 drops once a day
• 10+ years: 60 drops once a day	
 - Siberian ginseng (*Eleutherococcus*) is a magical plant for ADULTS to support the adrenals and immune system. This is an outstanding (and inexpensive) plant to support your body during times of high stress, including extensive traveling or lack of sleep. This plant is safe for breastfeeding in the short term (avoiding using longer than 2 weeks per month while breastfeeding). You should not take this if you have high blood pressure.
 - Wise Women Herbals Immune Tea is a combination of several different plants that have immune and adrenal boosting properties. I would advise against drinking this while breastfeeding, pregnant or if you have high blood pressure. This tea can be found online.
- **Thyroid Support:** Healthy thyroid functioning is often ignored in discussions about healthy immunity. It has always fascinated me to talk to parents whose children have overactive thyroids, and one thing they always say is that he or she "never gets sick." These individuals usually tend to run warm all the time, have high metabolic rates and sometimes spike higher fevers (104-105) in the face of a regular infection. Why do these people never get sick? Simply put, the thyroid hormones have SIGNIFICANT influence over the immune system and in an overly simplified way act as the accelerator for the immune system. A beautiful (and very scientific) discussion of these connections can be found here: (<http://www.jimmunol.org/content/jimmunol/164/12/6158.full.pdf>). How do you know if you or your child has poor thyroid functioning? Here are a few clues: low core body temperature, chronically fatigued, chronic poor immunity and prolonged tantrums or OCD behaviors occurring for no reason (and yes toddlers actually go through periods of thyroid calibration).
 - The great news is that there is a lot that can be done to easily optimize thyroid functioning:

- Sage not only does a wonderful job supporting adrenal gland functioning, but also helps boost thyroid functioning. Use sage liberally as a spice or tea. Mountain rose herbs (and many other stores) sell sage in bulk.
- Oat tea is perhaps one of the best thyroid supporters around. Make a tea of oat and drink regularly to enjoy healthy thyroid functioning. Again, Mountain rose herbs is a reputable place to purchase this plant.
- Iodine deficiency is more common than we realize. Without iodine, thyroid function grinds to a stop. Regular sea salts often lack iodine. Even Himalayan sea salts only have very small amounts of iodine. Fortunately, seaweed is very rich in iodine. A few seaweed snacks a week is all the iodine you will need!

The Power of Tea: As mentioned above, both Sage and Oat can be used in tea form. Other teas to consider are:

- Agrimony: Quite possibly my FAVORITE plant. Agrimony has potent anti-histamine properties. It reduces congestion and inflammation throughout the body.
- Licorice: This is fantastic for “decongesting” the liver. The liver is quite important in managing immunity. Furthermore, it has some mild anti-infectious properties and helps clear mucous from the ear-nose-throat area and lungs.
- Eleutherococcus: As noted above, Eleutherococcus has great immune-boosting and adrenal-supporting properties. When used in moderation, as a tea, this plant can safely be consumed by children and adults alike.

Many local markets will sell these herbs. They can all be purchased through Mountain Rose herbs: <https://www.mountainroseherbs.com/catalog/herbs-spices/bulk>. These herbs can be combined in equal parts as you wish. Please steep 2-3 teaspoons in a pot of hot water for 10-15 minutes. Let cool, flavor with honey as needed, enjoy!

How much? Drink 1-2 times a day:

- | | |
|--------------------------|-----------------------|
| ▪ 12-24 months: 1 ounce | 2-5 years: 2-4 ounces |
| ▪ 5-12 years: 4-8 ounces | 12+ years: 8+ ounces |

COLD AND FLU TREATMENTS FOR ONCE YOU ARE SICK

Please DO NOT WAIT until you or your child is sick to find remedies or treatments for an illness. Please start preparing your home "pharmacy" now for the time in which you or your children become sick.

HERBAL TREATMENTS

The key to effectively fighting a viral infection is to aggressive treatment the first moment you see any sign of a viral illness. This can include the first temperature, swollen lymph node(s), body aches, or even a mild sore throat. By the time a full cough or sinus congestion has started, the virus has already taken hold and is replicating like crazy, making treatments far less effective.

- **Rest:** Our American culture encourages us to run as fast as we can for as long as we can. Often we ignore the signs of an illness until we are hit hard and forced to rest because we can no longer function. It is amazing what one day of rest at the onset of a viral infection can do!
- **Old-school cold treatment (2+ years):** This remedy is a simple way to knock out a cough and cold. It can be especially helpful at first sign of a cold if you do not have any of the herbal or other products at home.
 - o Juice of 1 fresh lemon
 - o Mix in pinch of powdered ginger and dash of cayenne pepper
 - o Add 1/2-1 ounce of hot water and then mix in one tablespoon honey
 - o Allow to cool to room temperature and drink. Repeat every 4-6 hours as needed.
- **Individual Essential Oils** – Essential oils are the **MOST EFFECTIVE TOOL** in combating viral infections. Please consider having a few essential oils on hand in case of an illness. The most useful oils are:
 - o Onions – as mentioned above, onions happen to have some of the most powerful anti-viral oils available! While inhaling these oils may not be so much fun, at the onset of a cold a simple and inexpensive way to fight viruses is by allowing these oils to absorb through the skin. At the onset of a cold, slice an onion and place the slices directly on the skin to allow the oils to be absorbed. The feet are perhaps the kindest place (for your nose) to put onion slices, covered by socks for 15 minutes. Avoid this practice in any child younger than one year of age, as their skin can be sensitive and have a reaction to the onion oil.
 - o Eucalyptus breaks up mucous, opens the airways, and fights viral and bacterial infections. If you are planning to inhale this oil, please make sure to purchase the radiata subtype, as the globulus can be rather irritating to the airways.
 - o Cypress stimulates the immune system and prevents viruses from entering cells in our airways. It also breaks up mucous and opens the airways.
 - o Lavender reduces airway spasm and breaks up mucous. It also has anti-inflammatory and anti-bacterial properties.
 - o Ravensara is perhaps once of the most powerful anti-viral and anti-bacterial essential oils around. It also helps reduce congestion and mucous.
 - o These oils can be combined as you see fit.

- **Combined Essential Oils** – If you do not want to worry about how to combine the oils or would like a multi-purpose combination, please consider the below options.
 - Wholistic Kids Cough and Congestion essential oil mix. We needed a medical-grade essential oil blend that we could nebulize for our sickest patients with severe colds. So we created one! This oil is a blend of Cypress, Eucalyptus radiata, Fir, Lavender, Peppermint, Ravensara and Thyme borneal. Few essential oil blends can be inhaled directly AND provide anti-viral/bacterial properties. These oils can also help open up the airways and make it easier to breath. This blend can be applied topically, ingested and inhaled based on appropriate age. This product is also available on Amazon and through our online store – <https://store.wholistickids.com>
 - doTERRA's on Guard and Breath are great essential oils can help with colds. One study found that on Guard may actually reduce flu viral replication and prevent colds. This oil blend can be purchased online. Please use as instructed. On Guard may not be suitable for inhalation.
 - Young Living Thieves oil is a nice blend of oils that also help fight colds. Many have found this oil blend to be helpful. This oil blend can be purchased online. Please use as instructed. This oil may not be suitable for inhalation.

Essential oil caution: You should be cautious in the initial use of essential oils as they can be very potent. These oils may cause airway reactivity and breathing problems in small infants, children under two, and those with asthma.

Methods of administration:

- Indirect application into the air. This is the safest, **yet least effective way** of administering essential oils. While some of the oil will be inhaled, the concentrations will be far less than direct application as below.
 - Humidifier (can be continuous) – keep humidifier away from your child.
 - 6-12 months: 8 drops per gallon of water
 - 12-24 months: 12 drops per gallon of water
 - 24+ months: 16-32 drops per gallon of water
 - Diffuser (can be continuous) – keep the diffuser at least 3 feet away from your child.
 - 6-12 months: 1 drop, 12-24 months: 2 drops, 24+ months: 3 drops
- Direct application – by directly applying the oils onto the skin or into the airway, you will have a higher degree of oil absorption and effectiveness.
 - **Massage:** Mix the essential oils with 1-2 teaspoons of your oil of choice (olive, almond, jojoba, etc.) and massage into the chest area every 6-8 hours. Do not apply directly to the face.
 - 2-6 years: 3-5 drops, 6-12 years: 5-7 drops, 12+ years: 8-10 drops
 - **1-2 years – you must be careful to not have the little ones inhale the oil. As such, you put 2 drops in 1 teaspoon of carrier oil and *ONLY apply it to the child's back and base of feet to avoid inhalation.*
 - **Inhalation:** Inhalation of suitable/safe essential oils (**not all oils can be inhaled**) is perhaps the **MOST EFFECTIVE** way to administer essential oils. Inhalation of the oils delivers them directly into the sinuses and areas where the viruses are actively replicating and causing infection. Inhalation of the oils at the onset of illness should be your first line treatment against viral infections.
 - Hand mask method (2+ years) – put the drops of essential oil in the palm of your hand, rub your hands together quickly, put your hands together to make a cup/mask and bring that mask to your face or that of your child and take deep breaths ideally alternating between mouth and nose. For younger children (2-3 years), also do a trial run with 2 drops of oil to make sure they tolerate the oils well.
 - 2-4 years: 2-3 drops 4-8 years: 3-4 drops 8+ years: 4-6 drops

- Cloth method (2-6 years) – put 1-3 drops onto a cloth/towel moistened by warm water and allow child to inhale oils while keeping cloth about 3-4 inches away from their mouth for 1-2 minutes at a time. Repeat every 4-6 hours as needed.
- Nebulizer (6+ years) – put 2-5 drops of the essential oil into nebulizer chamber with a vial of saline or albuterol and allow child to inhale nebulized mixture. Repeat every 4-6 hours as needed.
- Steam inhalation (6+ years) - put 2-6 drops of the essential oils in a bowl of hot/steaming water and drape a towel over the head. Directly inhale the steam/oil mixture for 2-5 minutes based on tolerance. Leave at least 12” between your face and the water to prevent any irritation. Watch for any irritation of the eyes.

OTHER HERBAL COLD PRODUCTS

- **Kan Jang Plus** by Swedish Herbal Institute – is a combination of two adrenal boosting plants (*Adrographis* and *Eleutherococcus* or Siberian ginseng) and sambucus that has been shown in at least one study to work even better than the anti-viral medicine amantadine to reduce flu severity and duration. Like all the other products, it should be started at the first sign of the flu. This product can be purchased online. Dosing is per product listing. *Kan Jang is not recommended for breastfeeding. Kan Jang Junior is not recommended.*
- **Wholistic Kids Cough and Cold Mix** – This mixture contains Cypress, Thyme and Ravensara along with Briar rose, Plantain and various other plants that can help reduce congestion and fight viral infections. Some of our families have found this mixture to be very helpful for relieving congestion and cough, and possibly even shortening the duration of a viral infection. Please start this at the immediate onset of an illness. Due to the strong taste, we recommend it for children over 3-4 years, but it is safe to give 2 years and older.
- **Wholistic Kids Congestion Mix** – Since many children cannot tolerate our cold mixture, we have created the congestion mix which is a better tasting blend of Briar rose, Juniper, Plantain and Licorice. It can help reduce congestion and the associated cough.
 - 6-9 months: 4-5 drops twice a day 9-12 months: 5-8 drops twice a day
 - 1-3 years: 8-15 drops twice a day 3-6 years: 15-30 drops twice a day
 - 6-9 years: 30-60 drops twice a day 9+ years: 60-90 drops twice a day

HOMEOPATHICS - For children under 2 years, homeopathics are the safest modality we have to treat an illness. The most important thing to keep in mind is that homeopathics have a “stronger” dose the more OFTEN they are given. How much you give makes far less difference. Please dissolve 3-5 pellets (or tablets) of a given remedy in water and then give doses of that water to your child every 20-30 minutes, and after 5-6 doses you should start seeing change. Afterwards, you can give a dose every 1-2 hours as needed.

- Infants (2-24 months), consider dissolving them in 1 ounce of water and give 1-2ml every.
- For older children, you can dissolve the pellets in a cup of water and have them sip that water as frequently as is reasonable.
- **Individual homeopathics** – all of these remedies are ideal in the 6, 9 or 15c concentrations
 - Fevers below 102°, inflammation and pain – Belladonna
 - Many have been told that homeopathic belladonna is “toxic.” The Hyland’s teething tabs contained actual belladonna and therefore were not true homeopathic dilutions. The Boiron blue tubes are so diluted that they contain NO actual belladonna and cannot cause toxicity as a result.

- Congestion – Pulsatilla
 - Clear runny nose – Allium Cepa
 - Yellow/green runny nose – Kali Bichromium
 - Wet cough and fevers above 102° – Bryonia
 - Stomach upset and vomiting – Nux Vomica
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- **Combined homeopathics** – Boiron’s Cold Calm (can be given after 1 year despite label of 3+) and Hyland’s Tiny Cold Tablets (for 6+ months) combine numerous remedies to save you the trouble when treating a cold. These remedies can be given directly by mouth as instructed on the box or dissolved in water as above.

 - **Oscillocochinum** – Studies have found this homeopathic flu remedy to help decrease the duration and severity of the flu. This medicine works best if used in the first 6-8 hours of the flu (it does not do much for regular colds). It can also be purchased at most health food stores or at our office. The manufacturer’s recommended dosing is 1 vial under the tongue. In our opinion 1/3 a vial is more than enough for each dose (1 vial = full treatment). For young children, you can dissolve the pellets in ½ ounce of water and have them slowly sip on this mixture.

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