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# Ear Infections 101

Understand what is happening & learn to manage this irritating illness

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The ear tugs. The sleepless nights. The whining. The pain. Ear infections and the havoc they wreak is an experience that is all-too-common, leaving children suffering and parents feeling utterly helpless. By age one, almost 50% of children have experienced an ear infection at least once. This climbs to 66% by age three.<sup>1</sup> The incidence of ear infections peaks in the first two years of life, with most initial infections beginning between six and twelve months of age.<sup>1</sup> It is one of the most common reasons that children see the doctor and is the most common childhood infection for which antibiotics are prescribed.<sup>2,3</sup> Ear infections are unpleasant for children and the treatment, dependent on many factors, ranges from supportive care to antibiotics. Here are some strategies to help you feel more confident managing ear infections in your little ones.

## Anatomy of the ear

There are three main compartments of the ear: the outer, middle and inner ear. The outer canal is separated from the middle ear by the tympanic membrane (otherwise known as the eardrum).<sup>4</sup> The outer ear, the part that we see, carries sound vibrations to the eardrum. The middle ear contains three small bones, which send those vibrations to the inner ear where the nerve endings responsible for hearing are found.

A child can have infections in each of these compartments of the ear. Most commonly, your child will be affected by an infection of the middle ear called *Acute Otitis Media (AOM)*.

## Acute Otitis Media: the facts

AOM is inflammation and fluid accumulation in the middle ear and is caused by bacteria or viruses. This type of ear infection is associated with signs and symptoms of acute infection such as:

- » Ear pain – pulling, rubbing or hitting their ears
- » Feeling of fullness or pressure in the affected ear
- » Excessive crying
- » Irritability
- » Fluid draining from the ears
- » Sleep disturbances
- » Fever
- » Headache
- » Problems with hearing <sup>2,3,4</sup>

AOM often accompanies infections of the upper respiratory system.<sup>3</sup> The middle ear is connected to the nose and throat via the eustachian tube.<sup>4</sup> This tube is responsible for balancing pressure in the ear, and draining secretions away from the middle ear. However, it also allows organisms to climb up to the middle ear from the nose when a child has a cold. In infancy, this tube is more horizontally oriented, which makes it more difficult for fluid to drain away from the ear, and one reason why infants are more susceptible to ear

infections. As the child grows, this tube becomes more vertically oriented and conducive to drainage.<sup>4</sup>

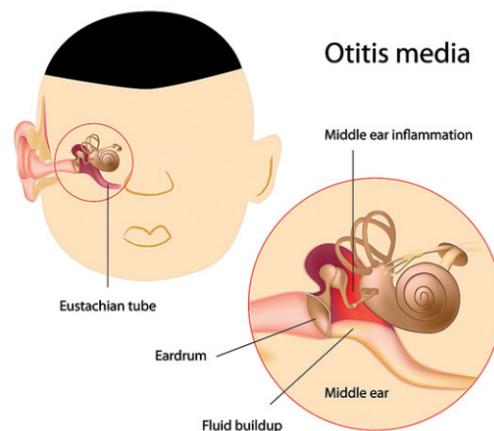


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## When to seek medical care

In most cases, a child's immune system can resolve an AOM infection with supportive care, or watchful waiting, within a few days.<sup>6</sup> AOM is most often caused by a virus for which antibiotics are not an effective treatment, and in fact, may cause more harm than good. Unnecessary antibiotics (i.e. for viral infections) contribute to antibiotic resistance. All antibiotic use disrupts the gut microbiome, which can lead to diarrhea, and potentially even allergies; a risk which is outweighed by the benefit in bacterial otitis media, but not in the case of a viral infection. The decision to use antibiotics, therefore, depends on the severity and duration of symptoms, and the age of the child.<sup>6</sup> Severe symptoms and prolonged duration suggest that the infection may be caused by bacteria, for which antibiotics could be helpful.<sup>6</sup> If your child appears to have an ear infection, seek medical attention to have them assessed and inquire if antibiotics are necessary. Your child's eardrum must be inspected for a definitive diagnosis.

## Treatment options

Watchful waiting is not synonymous with "doing nothing". In fact, there are many things you can do to make your child more comfortable and support their immune system to resolve the infection. If your child's discomfort does not seem to be improving within a day or two, follow up with your healthcare provider.

| TREATMENT                                  | REASONS FOR USE   | HOW TO USE   |
|--|---|--|
| <b>Onion Ear Muffs or Heat Application</b> | The warm vapours from the onion are soothing and help break up congestion.<br><br>Heat (from an onion or compress) promotes circulation, provides pain relief and comfort to the distressed child. Keep your child in an upright position to reduce pressure (and subsequent pain) in the ears. | Bake a medium sized onion cut in half for 15 minutes at 300°F or blanch in boiling water for one minute. Wrap in gauze, place over the affected ear and secure with a tensor bandage.<br><br>If you don't have an onion, apply a hot water bottle, warm compress or heating pad to the affected ear. In either case, make sure the application is not too hot! Apply for 10-20 minutes, several times a day. |
| <b>Castor Oil Massage</b>                  | Castor oil has anti-inflammatory properties, can help promote circulation and reduce congestion.<br><br>Massaging around the ear and down the neck will help to drain the local lymph nodes and facilitate resolution of the infection.   | Gently massage a small amount of castor oil in front of and behind the ear then down the neck following the muscle that attaches to the collarbone. Place a towel or old sheet under the head, as castor oil can stain.  |
| <b>Ear Oil</b>                             | Garlic and olive oil both possess antimicrobial properties to fight the infection and the oil will soothe the outer ear canal. Only apply ear oil if a doctor has confirmed that the eardrum is intact!   | Crush one large clove of garlic and place in 2 Tbsp of olive oil. Leave to infuse overnight and strain out garlic in the morning. Place up to 5 drops in the affected ear canal up to three times a day. Keep in a cool dark place.<br><br><i>Editor's Note: For an immediate-to-use recipe, see the alternative preparation in our Mucous Monster article!</i>  |
| <b>Rest &amp; TLC</b>                      | As with any infection, rest is important to promote optimal healing. Our support and love can help distract from the aches and pains.   | Lots of cuddles, storytime, therapeutic touch.   |
| <b>Nutrition</b>                           | A healthy diet with immune boosting foods is essential to fight off infection and prevent recurrence.   | Foods to support a healthy immune system: fruits and vegetables, protein, garlic, ginger.<br><br>Keep them hydrated with age appropriate fluids: breastmilk, water, herbal teas, soups, broths or smoothies.   |
| <b>Magic Socks</b>                         | Helps promote circulation, supports the immune system, relieves congestion in the head and provides comfort.  | Place a pair of cold wet socks on your child's feet. Cover with a dry pair of thick wool socks and send them to bed. The socks will be dry and warm by morning. Magic!   |
| <b>Herbal Tea</b>                          | Choose herbal teas with the following actions:<br><b>Calming:</b> Chamomile, Catnip & Lavender<br><b>Manage fevers:</b> Peppermint, Yarrow & Ginger<br><b>Support the immune system:</b> Elderflower, Echinacea<br><br>Combine herbs from each category for the best results.                   | Bring 1 L of water to a boil and add to 3 heaping Tbsp of dried herb. Steep until cool enough to drink. Infants can drink from a dropper and children from a cup (1-2 eye droppers every few hours for children under 1, and ¼-1 cup every few hours for older children).  |

Ref: <sup>24</sup>