Ear infections can make children feel miserable and parents feel helpless — but it's important to know that not all ear infections respond to the most common treatment, antibiotics. According to Dr. Owen Hendley, professor of pediatrics at the University of Virginia Health System, antibiotics only help one in eight children who are diagnosed with ear infections.

More than five million ear infections are diagnosed each year in the United States. "Antibiotic overuse has been a much discussed problem over the last decade. Research shows that it has led to a growing number of antibiotic-resistant bacteria," said Hendley. He advises physicians to wait two to three days to see if the ear infection clears up on its own, something that happened within one week for 81 percent of children who received a placebo. Hendley showed this after reviewing over one hundred placebo-controlled clinical trials.

"The pain and irritability that accompany ear infections can be treated with children's acetaminophen or ibuprofen. A less common type of ear infection, bacterial otitis media or 'pus drum' should be treated with amoxicillin," he said.

Now, if you notice that ear infections seem to creep up around the same time that a child catches a cold, you're not imagining things. A March 2008 study found that there is indeed a link between the common cold and ear infections. The researchers also discovered that three viruses — adenovirus, respiratory syncytial virus and coronavirus — are the culprits behind most ear infections.

So how do parents help children avoid colds? Experts suggest placing children in smaller-sized daycares to reduce their chances for germ exposure, getting children their flu shots and reminding children to wash their hands regularly. Parents should also advise their children to avoid rubbing their eyes and using their hands to wipe their noses. This is how individuals infect themselves with the cold virus. Exposure to cigarette smoke also contributes to the development of ear infections, another reason to avoid smoking near children.

If ear infections occur more than three times in six months, a long-term surgical method may be needed. Tymanostomy tubes inserted in the ear drum to drain fluid and ventilate the middle ear may help children who have persistent ear infections. This common pediatric surgery was made easier thanks to a novel device co-developed by UVA Health System physician Dr. Bradley Kesser and his collaborator Dr. Shayn Peirce-Cottler in the UVA Biomedical Engineering Department. The new device allows physicians to insert the tube in one motion, requiring less time and less chance of damaging nearby structures.

Along with this new technology, tried and true remedies are still reliable. Antibiotic restraint, flu shots, hand washing and avoidance of cigarette smoke are still some of the best ways to keep little ears happy.

Abena is a medical writer at the University of Virginia Health System. Please consult your physician with questions about your child. Visit www.uvahealth.com to learn more about specific health topics and to subscribe to the free online Parenting newsletter.