

Evidence review does not support antibiotics for pediatric respiratory complications

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Antibiotics are often prescribed for young children who have upper respiratory tract infections (URIs) in order to prevent complications, such as ear infections and pneumonia, however, a new evidence review in The Cochrane Library found no evidence to support this practice.

Lead author Márcia G. Alves Galvão, Ph.D., of the Municipal Secretariat of Health in Rio de Janeiro, Brazil, and her team explained that [children](#)'s immature immune systems leave them vulnerable to many infections. URIs, which are mostly caused by viruses and typically run their course in 2-14 days, usually manifest themselves as coughs, but may also be accompanied by infections of the ears, sinuses or lungs, especially in low-income countries.

URIs are the most common reason that parents take [young children](#) to the doctor and lead to massive direct costs, high indirect costs including work absenteeism among parents, and even mortality, especially in disadvantaged groups, say the authors.

In high-income countries, the authors noted, these pediatric illnesses "are responsible for 75 percent of the total amount of prescribed [antibiotics](#)." Physicians prescribe antibiotics in hopes of preventing bacterial [complications](#) despite growing concerns about the drugs' misuse and mounting problems with resistance.

The authors reviewed four studies involving 1,314 children up to five years of age. The studies addressed the use of antibiotics to prevent two types of bacterial complications of URIs, [ear infections](#) (3 studies) and pneumonia (1 study). Although serious bacterial complications of URIs are rare, they are sometimes dangerous or fatal, and again such complications are more common in [low income countries](#), the authors noted.

"This study shows that the evidence just isn't there to support using antibiotics in children with these infections to prevent complications," said Christian Coles, Ph.D., assistant professor in the department of international health at the Johns Hopkins Bloomberg School of Public Health. "Inappropriate use of antibiotics increases the risk of microbial resistance and wastes money," he said.

Coles sympathized with parents who care for crying, uncomfortable children and who often miss work to do so. Generally, he said, parents pressure physicians to prescribe antibiotics for children with URIs, not to prevent complications but hoping to shorten the illness. And while the authors indicated that most URIs are viral, and thus not amenable to treatment with antibiotics, a minority of the illnesses actually are bacterial and might respond to the drugs, he said. When physicians

prescribe antibiotics for these URIs, though, they seldom know the cause of the [infection](#). "Many viruses and bacteria cause the same symptoms. It's very tricky to figure out [the root causes]," said Coles.

"Both parents and clinicians have to be trained to avoid overuse and inappropriate use [of antibiotics]," Coles said. This will help ensure that the medications will continue to work when they are really needed.

More information: Alves Galvão MG, Rocha Crispino Santos MA, Alves da Cunha AJL. "Antibiotics for preventing suppurative complications from undifferentiated acute respiratory infections in children under five years of age." *Cochrane Database of Systematic Reviews* 2014, Issue 2. Art. No.: CD007880. [DOI: 10.1002/14651858.CD007880.pub2](#).

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