

EAR INFECTIONS – MURPHY

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viewed was 182% with a range between 107%-285%.

8. For each additional course of antibiotics in the first year of life, the risk of developing asthma increased 16% with a range between 5%-28%.
9. "The use of antibacterials in the first year of life is associated with subsequent development of asthma."
10. "Exposure to at least one course of antibiotics in the first year of life appears to be a risk factor for the development of childhood asthma."

Over the past decade numerous other studies support the conclusions published in this issue of *Chest*. One such review article was published January 2001 in the journal *Allergy*, and titled:

The causes of the increasing prevalence of allergy: Is atopy a microbial deprivation disorder?³

Key points from this article include:

1. "The atopic diseases, i.e., primarily, bronchial asthma, atopic dermatitis, and allergic rhinoconjunctivitis, were rare a few decades ago, but constitute today an increasingly severe public health problem."

2. "The increase in the prevalence of the allergic diseases, especially in those born after 1960, is almost explosive, and there are now epidemics of allergic diseases in many countries."
3. "The prevalence of asthma in children and young adults has tripled and quadrupled in many industrialized countries during the last two decades."
4. "If the assumption that early viral or bacterial infections protect against the development of allergic diseases is correct, vaccination should lead to an increase of allergic disorders." [WOW!]
5. Antibiotics act nonspecifically and have the ability to kill not only pathogenic but also commensal bacteria.
6. Studies show a significant relationship between treatment with antibiotics during the first 2 years of life and later development of allergy.
7. "Multiple courses of antibiotic treatment are associated with higher allergy prevalence, and treatment with broad-spectrum antibiotics appears to be more likely associated with allergy development than is ordinary penicillin."
8. "Microbial agents do indeed play a protective role in the development of allergic disease," and "it is tempt-

ing to assume that the protective effect may be primarily evoked by bacterial infections."

9. Atopic sensitization begins in utero, and the first few months of life are also crucial.
10. Once atopic sensitization occurs, it tends to be persistent.
11. "A change in the 'microbial load' seems to be the most probable cause of the increase in the allergic diseases."

12. "It thus seems likely that atopy is a 'microbial deprivation disorder'."

Importantly, this article notes that atopic sensitization begins in utero. In 2002, the *American Journal Of Respiratory and Critical Care Medicine* published a cohort study titled:

The Importance of Prenatal Exposures on the Development of Allergic Disease⁴

Using a birth cohort of 24,690 children, the authors investigated a number of perinatal exposures on the incidence of asthma, eczema, and hay fever. Their findings show that exposure to antibiotics *in utero* is associated with an increased risk of asthma in a dose-related manner. Other key points from this article include:

1. "The prevalence of allergic disease has increased dramatically in the developed world during the second half of the 20th century, and it has been suggested that this increase is in part due to reductions in early microbial exposure."
2. Approximately one third of mothers are prescribed antibiotics during pregnancy, and this exposure is associated with an increased incidence of allergic diseases, especially asthma.
3. "Our results suggest that exposure to antibiotics *in utero* is associated with a dose-related increase in the child's risk of allergic disease."
4. Exposure to antibiotics *in utero* is associated with an increased risk of asthma, eczema and hay fever, in a dose-related manner.
5. The prevalence of allergic disease has increased dramatically in the developed world during the last 50 years, paralleling antibiotic use and reductions in early life microbial exposure.
6. Because the immune system develops *in utero*, factors that modify microbial exposure at this time may have a long-term impact on the risk of developing allergic disease. One such factor is *in utero* exposure to antibiotics.

Sadly, a study published earlier this year⁵ indicates that globally, "with each decade, the prevalence of asthma increases 50 percent," with more than 300 million people suffering with asthma. "The World Health Organization said 255,000 people died from asthma in 2005, and that deaths are projected to rise by almost 20 percent in the next 10 years."

These studies support a prospective that would encourage the banning of antibiotics, except for life-threatening bacterial infections.

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