

ALLERGY

# BELIEVE ME, IT 'S NOT HYGIENE

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I have written earlier about the hygiene hypothesis and my doubts that more or less “hygiene” influences the development of allergy ([blog](#) | [paper](#)). As we are further swamped with regular statements like

[2006](#)

the so-called hygiene hypothesis has ever since undergone numerous more or less subtle modifications by various researchers in the fields of epidemiology, clinical science, and immunology ... To date, a truly unifying concept has not yet emerged, but various pieces of a complex interplay between immune responses of the host, characteristics of the invading microorganism, the level and variety of the environmental exposure, and the interactions between a genetic background and a range of exposures becomes apparent ... Even if today practical implications cannot directly be deduced from these findings, there is great potential for the development of novel preventive and therapeutic strategies in the future.

[2007](#)

... So far a truly unifying concept is still lacking, but various pieces of a complex interplay between a host's immune response, characteristics of the invading microorganism, the level and variety of the environmental exposure, and the interactions between a genetic background and a range of exposures become apparent. All these pieces eventually assemble to the clinical presentation of a complex syndrome namely of asthma and allergic illnesses ...

I could even write now the 2008 update but think it will be better to point you to the original conception of the hygiene sect (Hygieia was the Greek goddess of health, cleanliness and sanitation). This paper is now online [thanks to the efforts of the BMJ](#) and just a click

away. Please prove my observation that also YOUNGER siblings have a significant protective effect on allergy of earlier born children. As allergy frequently starts in the first year of life this event CAN NOT be modified by siblings born AT A LATER TIME – I have support from formal logics. Unfortunately, the hygiene hypothesis is not so much used as a logic construct that is operationalized and tested in a scientific study; it is more used as a trivial & common sense notion like “the weather will change”. Nevertheless there are a couple of points that could have been tested during the past 18 years, see [Wikipedia](#). As far as I am aware, however, this has been never done.

Personal hygiene: washing of the body and hair frequently, frequent washing of hands and/or face, oral hygiene – brushing and flossing teeth, cleaning of the clothes, general avoidance of bodily fluids such as feces, urine, not touching animals before eating, holding a tissue over the mouth when coughing, suppression of habits such as nose-picking, touching the face, washing hands after using toilet, ...

Food safety: maintaining good food and cooking hygiene to prevent food poisoning, cleaning of food preparation areas and equipment, thorough cooking of meats, dish sanitizing by washing with soap and clean water, washing of hands after touching uncooked food when preparing meals, different utensils to prepare different foods, not licking fingers or hands while or after eating, proper storage of food so as to prevent contamination by vermin, refrigeration of foods, disposal of uneaten food, ...

Medicine & personal services: Bandaging and dressing of injuries, protective clothing such as masks, gowns, caps, eyewear and gloves, sterilization of instruments used in surgical procedures, safe disposal of medical waste, ...

Back to the sib pair effect – the largest study so far, published only 2 months ago in [Chest](#) also disagrees with the hygiene hypothesis

The medical records of 531,116 Israeli military conscripts were reviewed ... Asthma was diagnosed in 26,833 male subjects (8.6%) and 15,079 female subjects (6.9%). Asthma prevalence was inversely related to the number of children in the family ( $p < 0.001$ ) ... Asthma prevalence was similar for all birth orders ... The similar asthma prevalence for all birth orders challenges the hygiene hypothesis as the mechanism for the decreased asthma prevalence in large families.

We can safely conclude that “unhygienic contact with older siblings” is a myth that could never been proven. Has everybody followed up the antibiotics studies? They are NOT relat-

ed to the hygiene hypothesis but to the [iatrogenic hypothesis](#). The journal [Chest](#) has some interesting conclusions.

Using the health-care and prescription databases of Manitoba, Canada, this longitudinal study assessed the association between antibiotic prescription use during the first year of life and asthma at age 7 years in a 1995 birth cohort of 13,116 children ... Independent of well-known asthma risk factors, asthma was significantly more likely to develop in children who had received antibiotics in the first year of life at age 7 years.

Yea, yea.

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