

# Hygienic dogma: How we killed our child's immunity - Retrospective Review Study

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## ABSTRACT

**Introduction:** Evidence is growing that our indoor-based, ultra-clean lifestyles square measure dangerous for our health and will be fuelling issues such as childhood diabetes, asthma, depression, and poor concentration, and of times falling sick. In an exceedingly verge to stay our self-clean we have a tendency to distract our self from the friendly organisms that might facilitate us in many ways. Without exposure to dirt and germs early in life, the system does not find out how to regulate its reaction to everyday invaders such as dirt and spore. This could result in it this - firing later in life resulting in numerous sicknesses. Apart from this, the mode of delivery conjointly determines the immunity as of this study duct delivery has been drastically reduced putt the kids below nature for immunity. This retrospective study invades into this core space and finds out the prevailing hygienic dogmas that have result in the poor immunity level of this age generation kids. Moreover, conjointly this study tries to seek out the right methodology of maintaining hygiene while not dislodging the helpful organisms. **Methods:** A detailed electronic search was made with the key terms and the studies were limited to no more than 10 years, the results were synthesized and the conclusion drawn. **Results and Conclusions:** The results showed that there square measure ton of hygienic dogmas within the name of hygienic hypothesis and heaps of awareness has to be enforced to forestall the first onset of medical specialty immunity issues.

**KEY WORDS:** Gut flora, Hygienic hypothesis, Immunity, Microbiota and asthma, Too clean

## INTRODUCTION

Hygiene may be a set of practices performed to preserve health. Consistent with the World Health Organization (WHO), "Hygiene refers to conditions and practices that facilitate to take care of health and stop the unfold of diseases. Personal hygiene is that the acts of taking care of our health and well-being by keeping ourselves clean. Youngsters get in grips with tons of dirt, dust, and microorganism once they leave. Whether or not they head to the college, park or the other place, they bit thing that has microorganism, which gets transferred to their hands. Once the microorganisms realize their method into a child's body, he is at risk of diseases and diseases. On the opposite hand, there is increasing proof that gut microorganism and skin flora has an impression on health. A parturition followed by skin to skin contact

and breastfeeding your baby helps to colonize your baby with best friendly gut and skin microorganism or flora. Evidence counsel that gut microorganism and skin flora has an impression on health. A parturition (or a duct swab following a C-section) followed by skin to skin contact along with your baby helps to colonize your baby with best friendly gut and skin microorganism or flora.<sup>[1]</sup>

One of the most ways in which your child's immunity develops is being challenged by a spread of traditional microbes and germs within the atmosphere. Our system has evolved over uncountable years to shield the body from microorganism, viruses, and different parasites.<sup>[2]</sup>

In recent decades, we have overused antibacterial merchandise in our surroundings, killing several of the friendly microbes in our homes and even have an obligatory ton of healthful dogmas on our kids creating them a lot of viable for infection. Getting outside tons, even before babies will walk is nice for

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them. Once they will move around, many outside exercises square measure smart too. Recent air and exercise facilitate babies sleep higher, eat better, keeps them match and thus stronger to repel varied sorts of infections and additionally daylight stimulates the assembly of calciferol that may be a very important vitamin for immune systems. Deficiencies in microbic exposure may well be key to rises in each allergy and chronic inflammatory diseases. The elaborated review of proof, accumulated over 20 years of analysis since the “Hygiene refers to conditions and practices that facilitate to take care of health and stop the unfold of diseases.”<sup>[3]</sup>

There is microorganism that causes unpleasant may be deadly diseases; however, countless them are very helpful and useful to our health.<sup>[4]</sup> They create vitamins in our gut, coat our skin to shield us from harmful microbes, and facilitate us digest food exposure to infections throughout childhood would offer an honest defense against allergies in later life. A hypersensitivity reaction is, in fact, our system going haywire, by perceiving a harmless substance as a significant attack. Our bodies might respond to useful microbes, as a result of our immune systems has forgotten a way to bear them. For this reason, we tend to teach to perceive, however, microbiota - the microorganisms living on and in our body - will facilitate us.

It is essential to expire the maternal microbiota-dependent harmless organisms within the gut, skin. The system makes certain that our bodies have the microbes that square measure necessary for our development, physiology, metabolism, and even brain functions, whereas at an equivalent time doing many weeding, obtaining eliminate the microbes that contain pathogens and then lack of diversity in our microbiota is related to a large variety of diseases.<sup>[5,6]</sup> The microbiome has been joined to immunity, autism, allergy, pathology, mood, and therefore the development of our central system and nerves system. In operation, our system in an atmosphere of sterility is sort of sensory deprivation for the brain. Eventually, it goes insane, so the multiplied quantity to hypersensitivity reaction and pathology related to persons the WHO attempt to arduous to avoid all exposure to something in their atmosphere, the atmosphere seems to play a job, and if you have got too clean of an atmosphere the child’s system is not attending to be stirred.<sup>[7]</sup>

The system features a central role within the axis connecting the gut microbiota to tissue injury set distant from the gut. Too clean although causative issues solely that ought to not be everlasting for the prevalence of conditions, as a result of there are often a ton of the many underlying reasons the most

hygiene concepts are to retain the useful organisms deceit weeding the harmful organisms. Children ought to perceive the worth of these microbes and may be inspired to try and do and participate in varied activities instead of sitting smitten with gadgets and resulting in several diseases due to poor immunity.

## MATERIALS AND METHODS

### Search Methods for Identification of Studies

This study is a nonexperimental retrospective review study. The present study conducted a review of literature published in English in electronic searches in the following databases: Cochrane Central Register of Controlled Trials (CENTRAL) in the Cochrane Library, Database of Abstracts of Reviews of Effects in the Cochrane Library, Health Technology Assessments in the Cochrane Library, MEDLINE (OVID), EMBASE (OVID), CINAHL (EBSCO), PsycINFO (OVID), LILACS, Pedro, and Web of Science.

### Procedure

In this retrospective study, the Medical Subject Headings terms and keywords were used to identify the studies; the words used were too clean, hygienic hypothesis, microbiota and asthma, gut flora, and immunity.

After the search, the study was thoroughly analyzed for the relative evidence and was included in this study and the rest of the studies were excluded. After carefully scrutinizing, the search extended to the following registers and databases to identify unpublished research as well as research in progress.

Open gray (system for information on gray literature in Europe), dissertation abstracts (ProQuest), national research register archive, health services research projects in progress, current controlled trials register (incorporating the meta-register of controlled trials, and the international standard randomized controlled trial number); clinical trials Government, International Clinical Trials Registry Platform, and Pan African Clinical Trials Registry. After thorough search and analysis results were drawn descriptively and conclusion framed.

## DISCUSSION

The results obtained in the present study support the prevalence of hygienic dogmas that exist among the people and it interferes with the immunity building and disease resistance factors and makes the pediatric population more vulnerable to diseases.<sup>[8]</sup>

A recent study mentioned correlations between disturbed gut microbiota (dysbiosis) and chronic pathologies (non-communicable diseases) as well as

allergies, duct disorders, obesity, polygenic disorder, and different metabolic and vas disorders, cancer, and central systema nervosum dysfunctions such as learning and memory impairment, anxiety, stress, depression, and syndrome.<sup>[9,10]</sup>

A link with the microbiota has, additionally, been prompt for neurodegenerative disorders like Alzheimer. Overall, those microorganism products activate interconnected immune, endocrine and central system and nerves system pathways that counteract non-communicable diseases.<sup>[11,12]</sup> Keeping a healthy immune, metabolic and system profile could also be necessary for preventing cancer. Indeed, its powerfully prompt that interactions between system perform, hormones, and psychoneurotic factors may verify whether or not pre-neoplastic lesions progress towards cancer.<sup>[13,14]</sup>

Ensuring long-run contributions of the varied microbiota (gut, skin, mouth, vaginal, and metabolic process tract) to physiological condition might need quite transient enrichment with specific microbes, metabolites, or elements. The physiological condition might need continuous cross-talk between the host and also the microbiota during a dependent relationship.<sup>[15, 16-18]</sup>

The bulk of analysis information already counsels that a microbiota with a high level of diverseness is usually coupled with a physiological condition, particularly for preventing non-communicable diseases.<sup>[19]</sup>

Studies in many countries show an oversized distinction in gut microbiota composition between individuals living in urban and in rural areas. Retrospective medical specialty studies in humans indicate that the microbiota in inheritable throughout the perinatal amount and early infancy has necessary effects on the developing system and its general role in health or sickness later in life.<sup>[20]</sup> The early airway microbiota might prime the developing pneumonic system, and dysbiosis in its development might set the stage for ulterior respiratory organ diseases. The development of the baby bowel is, additionally, addicted to microorganism organization that contributes greatly to its future traditional perform.<sup>[21]</sup> Diseases of the central system and nerves system like Alzheimer's can be coupled with a lack of training of the system by disconnection from the natural atmosphere, as well as its microbes. Our microbiome, that some authors think about as our "second" or "third genome" 100 times a lot of genes than our primary genome, plays key roles within the biological process part of eukaryotes and probably therein of their issue. The microbiota is at the interface between the atmosphere and our internal world, will adapt itself and its hosts to completely different and ever-changing environments, and should contribute toward

a decent Eco Health relationship between our body and also the external atmosphere.

There is a dominant of analysis that states that we have become over attentive to hygiene which has ton of our troubles of nowadays atmosphere and also the children area unit affected during this mechanical phenomenon wherever we have a tendency to provide a lot of sanitary restrictions within the name of care.<sup>[22]</sup>

We should trust our own body and also the friendly organism we have that facility in a ton of activities from birth to death. The most of dogmas shall be removed, therefore, promoting youngsters to play, explore and have a future healthy mode.

## RESULT AND CONCLUSION

The results showed that there are a ton of hygienic dogmas within the name of hygienic hypothesis and loads of awareness must be enforced to stop the first onset of medicine immunity issues. Keeping clean may be necessary hygiene, however, being too clean is that the downside as per the conclusions derived from the retrospective study. Further experimental analysis is required to ascertain an accurate balance between being clean and too clean.

## REFERENCES

1. Villeneuve C, Kou HH, Eckermann H, Palkar A, Anderson LG, McKenney EA, *et al.* Evolution of the hygiene hypothesis into biota alteration theory: What are the paradigms and where are the clinical applications? *Microbes Infect* 2018;20:147-55.
2. Flandroy L, Poutahidis T, Berg G, Clarke G, Dao MC, Decaestecker E, *et al.* The impact of human activities and lifestyles on the interlinked microbiota and health of humans and of ecosystems. *Sci Total Environ* 2018;627:1018-38.
3. van Tilburg Bernardes E, Arrieta MC. Hygiene hypothesis in asthma development: Is hygiene to blame? *Arch Med Res* 2017;48:717-26.
4. Campbell B, Raherison C, Lodge CJ, Lowe AJ, Gislason T, Heinrich J, *et al.* The effects of growing up on a farm on adult lung function and allergic phenotypes: An international population-based study. *Thorax* 2017;72:236-44.
5. Bloomfield SF, Rook GA, Scott EA, Shanahan F, Stanwell-Smith R, Turner P, *et al.* Time to abandon the hygiene hypothesis: New perspectives on allergic disease, the human microbiome, infectious disease prevention and the role of targeted hygiene. *Perspect Public Health* 2016;136:213-24.
6. Keune H, Flandroy L, Thys S, De Regge N, Mori M, Antoine-Moussiaux N, *et al.* The need for european oneHealth/EcoHealth networks. *Arch Public Health* 2017;75:64.
7. Kelly JR, Clarke G, Cryan JF, Dinan TG. Brain-gut-microbiota axis: Challenges for translation in psychiatry. *Ann Epidemiol* 2016;26:366-72.
8. Foster JA, Lyte M, Meyer E, Cryan JF. Gut microbiota and brain function: An evolving field in neuroscience. *Int J Neuropsychopharmacol* 2016;19:114.
9. Burcelin R. Gut microbiota and immune crosstalk in metabolic disease. *Biol Aujourdhui* 2017;211:1-8.
10. Hullar MA, Burnett-Hartman AN, Lampe JW. Gut microbes, diet, and cancer. *Cancer Treat Res* 2014;159:377-99.
11. Erdman SE, Poutahidis T. Microbes and oxytocin: Benefits for host physiology and behavior. *Int Rev Neurobiol* 2016; 131:91-126.

12. Marsland BJ. Regulating inflammation with microbial metabolites. *Nat Med* 2016;22:581-3.
13. Price JL, Ali GA, Huttenhower C. The healthy human microbiome. *Gen Med* 2016;8:51.
14. Gensollen T, Iyer SS, Kasper DL, Blumberg RS. How colonization by microbiota in early life shapes the immune system. *Science* 2016;352:539-44.
15. Lal CV, Travers C, Aghai ZH, Eipers P, Jilling T, Halloran B, *et al.* The airway microbiome at birth. *Sci Rep* 2016;6:31023.
16. Miller WB Jr. The eukaryotic microbiome: Origins and implications for fetal and neonatal life. *Front Pediatr* 2016;4:96.
17. Fujimura KE, Lynch SV. Microbiota in allergy and asthma and the emerging relationship with the gut microbiome. *Cell Host Microbe* 2015;17:592-602.
18. Nguyen TL, Vieira-Silva S, Liston A, Raes J. How informative is the mouse for human gut microbiota research? *Dis Model Mech* 2015;8:1-6.
19. Carabotti M, Scirocco A, Maselli MA, Severi C. The gut-brain axis: Interactions between enteric microbiota, central and enteric nervous systems. *Ann Gastroenterol* 2015;28:203-9.
20. Schuijs MJ, Willart MA, Vergote K, Gras D, Deswarte K, Ege MJ, *et al.* Farm dust and endotoxin protect against allergy through A20 induction in lung epithelial cells. *Science* 2015;349:1106-10.
21. Wood R. Division of allergy and immunology, Johns Hopkins children's center; Todd Mahr, M.D., allergist-immunologist, La Crosse, Wis., and chair. *Am Acad Pediatr Section Allergy Immunol* 2014;9:73-86.
22. Fox M, Knapp LA, Andrews PW, Fincher CL. Hygiene and the world distribution of Alzheimer's disease: Epidemiological evidence for a relationship between microbial environment and age-adjusted disease burden. *Evol Med Public Health* 2013;2013:173-86.

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