

Hygienic Dogma: How We Killed Our Child's Immunity

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ABSTRACT

Evidence is growing that our indoor-based, ultra-clean lifestyles are bad for our health and could be fuelling problems like childhood diabetes, Asthma, Depression, and Poor Concentration, Frequently falling sick. In a verge to keep our self clean we distract our self from the friendly organisms that could help us in many ways. Without exposure to dirt and germs early in life, the immune system doesn't learn how to control its reaction to everyday invaders such as dust and pollen. This can lead to it mis-firing later in life leading to various illnesses. Apart from this the mode of delivery also determines the immunity as of the current study vaginal delivery has been drastically reduced putting the children under nature for immunity. This retrospective study invades into this core area and finds out the prevailing Hygienic dogmas that have lead to the poor immunity level of the current age generation children. And also this study tries to find out the proper method of maintaining hygiene without dislodging the beneficial organisms. The results showed that there are lot of hygienic dogmas in the name of hygienic hypothesis and a lot of awareness needs to be implemented to prevent the early onset of paediatric immunity problems.

KEY WORDS: *Hygienic dogmas, hygienic hypothesis and paediatric immunity*

1. INTRODUCTION

Hygiene is a set of practices performed to preserve health. According to the World Health Organization (WHO), "Hygiene refers to conditions and practices that help to maintain health and prevent the spread of diseases. Personal hygiene is the act of taking care of our health and well-being by keeping ourselves clean[1,2]. Children get in touch with a lot of dirt, dust, and bacteria when they go out. Whether they go to the school, park or any other place, they touch things that have bacteria, which get transferred to their hands. When the bacteria find their way into a child's body, he is prone to diseases and illnesses. On the other hand there is increasing evidence that gut bacteria and skin flora has an impact on health. A vaginal birth followed by skin to skin contact and breastfeeding your baby helps to colonise your baby with optimal friendly gut and skin bacteria or flora. Evidence suggest that gut bacteria and skin flora has an impact on health[3]. A vaginal birth (or a vaginal swab following a C-section) followed by skin to skin contact with your baby helps to colonise your baby with optimal friendly gut and skin bacteria or flora. One of the main ways that your child's immunity develops is being challenged by a range of normal microbes and germs in the environment. Our immune system has evolved over millions of years to protect the body from bacteria, viruses and other parasites.

In recent decades, we have overused anti-bacterial products in our environment, killing many of the friendly microbes in our houses and also have imposed lot of hygienic dogmas on our children making them more viable for infection. Getting outside a lot, even before babies can walk is great for them. Once they can move around, plenty of outside exercises are good too.

Fresh air and exercise help babies sleep better, eat better, keeps them fit and therefore stronger to fight off various types of infections and also Sunlight stimulates the production of Vitamin D which is a vital vitamin for immune systems. Deficiencies in microbial exposure could be key to rises in both allergies and chronic inflammatory diseases. The detailed review of evidence, accumulated over more than 20 years of research since the 'hygiene hypothesis' was first proposed, now confirms that the original idea that microbial exposure is crucial to regulating the immune system is right. There are bacteria that cause unpleasant or even deadly diseases, but lots of them are extremely useful and beneficial to our health. They make vitamins in our gut, coat our skin to protect us from harmful microbes, and help us digest food. Exposure to infections during childhood would provide a good defence against allergies in later life. An allergy is, in fact, our immune system going haywire, by perceiving a harmless substance as a major attack. Our bodies may overreact to beneficial microbes, because our immune systems have forgotten how to live with them. For this reason, we may have to understand how microbiota – the microorganisms living on and in our body – can help us. It is essential to pass on the maternal microbiota – symbiotic harmless organisms in the gut, skin and elsewhere – and we need contact with the microbial biodiversity from the environment. The immune system makes sure that our bodies have the microbes that are important for our development, physiology, metabolism, even brain functions, while at the same time doing plenty of weeding, getting rid of the microbes that contain pathogens and so lack of diversity in our microbiota is associated with a huge range of illnesses. The microbiome has been linked to immunity, autism, allergy, autoimmunity, mood, and the development of our central nervous system. Operating our immune system in an environment of sterility is like a sensory deprivation for the brain. Eventually, it goes insane, thus the increased amount of allergy and autoimmunity associated with persons who try too hard to avoid all exposure to anything in their environment, the environment appears to play a role, and if you have to clean of an environment the child's immune system is not going to be stimulated. The immune system has a central role in the axis connecting the gut microbiota to tissue damage located distant from the gut[4]. So the importances of this microbiota have to analyse with a keen knowledge and has to approach in a very sophisticated manner. Too clean though a precipitating factor only that should not be blamed for the prevalence of conditions because there can be lot of many underlying reasons the main hygiene ideas is to retain the beneficial organisms while weeding the harmful organisms. Children should understand the value of these microbes and should be encouraged to do and participate in various activities rather than sitting struck with gadgets and leading to many diseases because of poor immunity[5].

2. METHODOLOGY

STUDY DESIGN: Non experimental retrospective review study

SEARCH METHODS FOR IDENTIFICATION OF STUDIES

ELECTRONIC SEARCHES

For this study relevant studies were identified by electronically searching 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) ,PsyncINFO (OVID) , LILACS
PEDro, Web of Science

In this retrospective study the MeSH (Medical Subject Headings) terms and key words were used to identify the studies, the words used was 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 into this study and the rest of the studies were excluded. After careful scrutinizing the search extended to the following registers and databases to identify unpublished research as well as research in progress: OpenGrey (System for Information on Grey Literature in Europe), Dissertation Abstracts (ProQuest), National Research Register Archive,Health Services Research Projects in Progress,Current Controlled Trials Register (incorporating the metaregister of controlled trialsand the International Standard Randomised Controlled Trial Number);ClinicalTrials.gov, International Clinical Trials Registry PlatformPan African Clinical Trials Registry.After through search and analysis results was drawn descriptively and conclusion framed.

3. RESULT AND DISCUSSION

A recent workshop (Workshop Session, 2016b) discussed correlations between disturbed gut microbiota (dysbiosis) and chronic pathologies (non-communicable diseases) including allergies[6,7] autoimmunity), gastrointestinal disorders obesity, diabetes[8] and other metabolic and cardiovascular disorders (Tang and Hazen, 2014), cancer and central nervous system dysfunctions such as learning and memory impairment, anxiety, stress, depression and autism [9] A link with the microbiota has also been suggested for neurodegenerative disorders like Alzheimer's disease[10] Overall, those microbial products activate interrelated immune, endocrine and central nervous system pathways that counteract NCDs[11]

Keeping a healthy immune, metabolic and neuroendocrine profile may be important for preventing cancer. Indeed, it is strongly suggested that interactions between immune system function, hormones, and psychosomatic factors could determine whether pre-neoplastic lesions progress towards cancer [12]. Living bacteria or bacterial components that we breathe in the environment/green spaces and inhale into our upper respiratory tract have been shown to have anti-inflammatory effects similar to those of living beneficial gut microbes Ensuring long term contributions of the various microbiota (gut, skin, mouth, vaginal, respiratory tract) to good health may require more than transient enrichment with specific microbes, metabolites or components. Good health may require continuous cross-talk between the host and the microbiota in a symbiotic relationship The bulk of research data already suggest that a microbiota with a high level of biodiversity is generally linked to good health, especially for preventing NCDs Studies in several countries show a large difference in gut microbiota composition between people living in urban and in rural areas Retrospective epidemiological studies in humans indicate that the microbiota acquired during the peri natal period and early infancy has important effects on the developing immune system and on its systemic role in health or disease later in life [15] The early airway microbiota may prime the developing

pulmonary immune system, and dysbiosis in its development may set the stage for subsequent lung diseases. The development of the infant small intestine is also dependent on bacterial colonization that contributes greatly to its future normal function. Diseases of the central nervous system like Alzheimer's might be linked to a "lack of training" of the immune system by disconnection from the natural environment, including its microbes [13]. Our microbiome, that some authors consider as our "second" or "third genome" (~100 times more genes than our primary genome), plays key roles in the developmental phase of eukaryotes and potentially in that of their progeny [14]. The microbiota is at the interface between the environment and our internal world, can adapt itself and its hosts to different and changing environments, and may contribute towards a good OneHealth/EcoHealth relationship between our body and the external environment. There is a paramount of research that states that we have become over conscious of hygiene and that has led to a lot of our troubles of today's environment and the children are more affected in this trajectory where we give them a lot of hygienic restrictions in the name of care. We should trust our own body and the friendly organism we have that help in a lot of activities from birth to death. The main dogma shall be removed thus promoting children to play, explore and have a future healthy lifestyle.

4. CONCLUSION

The results showed that there is a lot of hygienic dogmas in the name of hygienic hypothesis and a lot of awareness needs to be implemented to prevent the early onset of paediatric immunity problems. Keeping clean is a mandatory hygiene but being too clean is the problem as per the conclusions derived from the retrospective study. Further experimental research is needed to establish a correct balance between being clean and too clean.

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