

Q&A On The Science Behind Microbirth:  
Answers From Rodney Dietert,  
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- Could the newly seeded microbiomes wash off in a water birth?

*Don't know. Not much if anything has been published on this specific factor. Just on vaginal (and what that includes) vs. Caesarean delivery.*

- And, if a baby is born with the white waxy vernix, will the microbiomes be washed off or come off when the baby is cleaned, as they usually are right away if they are in a hospital setting?

*(same answer as above)*

- How fully seeded can a child get after a C-section?

*As a group, C-section delivered babies have a lower diversity of microbes and lower numbers of some useful bacteria types comprising the microbiome than do vaginal-delivered babies. So they are not as fully complete and also their seeded microbiome is less derived from their mother compared with vaginally delivered babies. Treatments such as the use of vaginal swabs at birth for C-section babies may be helpful for self completion.*

- And what or whose microbiomes is a C-section child getting?

*The exact range of sources of the C-section baby's microbiome remains somewhat uncertain. But it is clear that much less of it is from the mother (particularly for gut microbes) than in vaginally-delivered babies. So for C-section babies, much of their seeding is coming from the surroundings (e.g., the hospital environment, hospital personnel, and patients).*

- Are most of the auto-immune diseases coming from C-section born children?

*As a group, C-section delivered babies have a higher prevalence of auto-immune and allergic conditions than do vaginally delivered babies. However, birth delivery mode is not the only factor in risk of immune disorders. Exposure of the parents (particularly the pregnant mom) and the baby or infant to toxic chemicals (e.g., heavy metal, plasticizers, pesticides, air pollutants) and drugs and/or to adverse environmental conditions (low vitamin D, stress/abuse) can also produce immune dysfunction and elevated risk of auto-immune and allergic diseases.*

- Or are there children with these listed diseases that were born vaginally?

*Vaginally-delivered children can and do get auto-immune and allergic diseases. Their families may have genetic predispositions for these diseases and/or they may have exposed either in utero or early childhood to harmful chemicals or drugs that promote these diseases. For example, a mother with extensive heavy metal exposure or who had multiple rounds of antibiotics and delivered vaginally could have a severely depleted microbiome for seeding her baby. However, as a group, vaginally-delivered children have a lower prevalence for these immune disorders than occurs with C-section delivered babies.*

- If so, where do their diseases originate?

*Immune and inflammatory disorders such auto-immune and allergic diseases are thought to originate via a combination of family genetics, prior family-related exposures (epigenetics) and current early life environment. The developing immune system is programmed for dysfunction and as the child matures, improper immune-related responses to environmental challenges (e.g., childhood infections) show up as auto-immune, allergic or inflammatory conditions. Because the microbiome helps to train the immune system as to what is friend or foe, a complete and useful microbiome helps to reduce the risk of these diseases.*

- Has there been a study done regarding this?

*Yes. Many studies have examined the causes and triggers of immune disorders such as childhood asthma, type 1 diabetes and celiac disease as well as the role of the microbiome in controlling immune maturation and affecting the risk of these diseases.*

- Is the young child still getting “microbiomes” if they continue nursing past babyhood?

*The young child would still have some exposure to the mother’s microbes that may help to fill in any remaining blanks. However, it is the breast milk that nurtures the gut microbes and helps the baby’s microbiome to mature that is probably the more important factor. Exposure to the microbes early is important because that is when the immune system needs to see the microbes the most for effective immune maturation.*

- If a mother stops nursing after a few weeks, has the baby not been fully seeded? When does seeding stop?

*Most seeding occurs during the first year with the majority of that probably occurring during the first few months. However, if the infant has received antibiotic treatments, the microbiome may need to be re-seeded at least in part.*

- What about recent research indicating the baby's microbiome may be seeded before birth?

*The film Microbirth does not say that the only exposure to microbes is at birth. In fact, the film points out prenatal exposure to bacteria and/or bacterial products is likely to occur. But it makes the point that birth and the period surrounding it appears to be the single most important seeding event that: 1) determines whether self completion of the infant fully occurs (complete seeding of the microbiome) and 2) promotes necessary postnatal immune maturation. If prenatal exposure were adequate for self completion, then C-section-delivered babies would not (as a group) have restricted microbiomes and elevated risk of later-life non-communicable diseases (when compared to the group of vaginally-delivered babies).*

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