Rodney Dietert, PhD

The Gut Biome

What is his background?

- He is a professor emeritus at Cornell who works on the protection of the developing immune system, both in utero development and infancy.
- He has worked on the microbiome for the last decade.
- 60-70% of our immune cells are in our gut.

What is the importance of the microbiome and how does it relate to pregnancy?

- Microbiome refers to the genes and the microorganisms.
- Over 99% of our genes are from microbes, and not from chromosomes.
- Those genes make proteins, enzymes, and signal molecules.

How is microbiome important when it comes to gut health and how is that related to pregnancy?

- Microbiome is the gatekeeper of our body.
- Microbiome is the filter as well.
- Microbiome is the collection of all microbes (bacteria, fungi, viruses, and their genes) that naturally live on our bodies and inside us.
- Microbes are controlling what our bodies see.
- If our microbes are 99% of our genes, they are valuable.
- Microbes help digest our food, fight off bad bacteria, help with water balance and regulate our immune system properly.
- Different microbes have different functions in the gut.
- The microbiome is the starting point of the protection against diseases.
- The changes you make in your pregnancy can affect the entire life course.

What are some of the factors why a healthy microbiome is important for infants?

- The babies come out of a protective environment with a skewed immune system.
- A healthy microbiome helps adjust the baby to the outer world.
- You need to nurture the infancy as best as you can to develop the child's immune system.

How does the infant's microbiome begin and evolve?

- Mothers make a huge genetic contribution which occurs during the vaginal delivery.
- Breast milk is nature's marvel.
- Breast milk provides immune components.
- HMOs (human milk oligosaccharides) are in breast milk, and they are there for our microbes.
- Chronic diseases exist because of the lack of control of the immune system's inflammation
- He points out the B. Infantis (Bifidobacterium Infantis).
- B. Infantis helps reduce intestinal inflammation in infants.
- Breast milk changes its profile every week during the infant's development.

What does affect an infant's microbiome and what problems occur because of that?

- They are the host of issues and opportunities.
- Physicians should not wait for the baby; they should help the mum have better health and a more robust microbiome.
- Chronic health diseases mothers may have, such as asthma, could be because of the bad microbiome.
- The infant gets a big part of the microbiome from his mother so if the mother has a healthy microbiome, the baby will have it as well.

What are the key causes of a poor microbiome?

- Eating poor, low-fiber food and antibiotics are one of the causes.
- If you do not feed your microbes, they will not live.
- What you feed your microbes with determines the garden they will grow in.
- It is a personalized decision because you need to find the sources of fiber that work well for you.
- You can take supplements.
- Processed foods are devastating for the microbiome.
- Emulsifiers, which help get food smooth, are bad for the microbiome.
- He points out people should focus on organic food and regenerative agriculture.

- Air pollution also affects it.
- People should get more vitamin D and go to an animal farm that does not use pesticides to embrace their own microbial nature.

What are his thoughts on prebiotics and probiotics?

- He thinks they can be beneficial.
- Sometimes, people spend a lot of money and see no benefits.
- Probiotics help you install a set of genes associated with bacteria into your gut and have them live in your gut long term or pass through while they produce useful metabolites.
- Prebiotic's role is to stimulate the growth of healthy bacteria in the gut.
- You need to adjust your diet, so it supports the same thing.

What are some of the more exploratory approaches?

- Some people use vaginal swabs from moms who need a C-section. Those bacteria can be manually given to the newborn shortly after birth.
- Some people are banking that ahead of time, so they are not waiting.

Should women who gave C-section births give the probiotic to the infant?

- Yes, that should at least be an option for them.
- He points out that each round of antibiotics increases the risk of illnesses in the infant.
- Antibiotics are antimicrobials and that is how they damage the microbiome.
- A significant percentage of existing drugs damage the microbiome.

What chronic diseases can a healthy microbiome can help with?

- A healthy microbiome can help with many diseases like inflammatory bowel disease, Celiac disease, asthma, behavioral disorders, overweight risks, etc.
- You need to recognize which symptoms lead to other conditions.

What are his closing comments?

- Diet is an easy way to maintain a good microbiome and to encourage a more robust microbiome.