Immune Disease and the Microbiome: PPPM Healthcare in response to New Knowledge

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Source: www.NAU.edu
"Man is a Superorganism"
25,000 Human Genes
>1 million microbial genes

Babies are born dirty, with a gutful of bacteria

IT HAS long been assumed that the fetus lives in a sterile world, protected from the countless bacteria that fill its mother's gut and cover the surface of her body. A baby's first gut flora was thought to be collected at birth - either from the mother's vagina or from the environment it is born into. But it's time for a drastic rethink: it appears that we are in fact born dirty - bacteria colonize our guts in the womb, where they begin to shape our immune systems and influence our risk of disease. What's more, this collection of bacteria, or microbiome, could eventually be manipulated to ensure a baby is given the healthiest start in life.

Some of the first evidence that mammals might begin to develop a microbiome before birth came from studies in mice published four years ago.

Esther Jimenez and her colleagues at the Complutense University of Madrid, Spain, labelled bacteria with a genetic marker and fed milk containing them to...
Microbiota at Birth


Unweighted UniFrac-based principal coordinate analysis (PCoA) of LBW infant-associated bacterial communities

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Human Breast Milk Microbiome

Hypervariable regions V1 and V2 of the 16S RNA gene of bacteria in human breast milk.

Our Microbiome grows from our Environment

From our pets, family and friends

From Travel, Food, and Medicines

Types of Organisms in Air Samples:

San Diego Indoor Hospital
Bacteria 86%
Fungi 4%
Insects <1%
Other Animals <1%
Plants 1%
Rodents <1%

San Diego Indoor House
Bacteria 89%
Fungi 2%
Insects <1%
Other Animals <1%
Plants 1%
Rodents <1%

SOURCE: J. CRAIG VENTER INSTITUTE 2012

VDR / Innate host defenses are key

In order to survive inside human phagocytic cells, microbes have had to evolve to knock out the VDR -- so that they don't have to deal with the cell’s innate defenses

In Homo sapiens, and only in Homo sapiens, one Nuclear Receptor, the VDR, expresses genes for TLR2, as well as the Cathelicidin and beta-Defensin anti-microbial peptides, all of which are essential to intra-cellular innate immune defenses.
Persistent EBV down-regulates VDR more than 10 fold.

Note that the most pronounced effect is in the immature lymphoblastoid cell lines (LCL) after 1.5 years of exposure.

**Species Known to act on VDR:**
- *Mycobacterium tuberculosis*
- *Aspergillus fumigatus*
- *Borrelia burgdorferi*
- *Chlamydia trachomatis*

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**Immunostimulation, not Immunosuppression**

Inflammation is a body’s healing-response. It is not, of itself, something inherently bad which needs to be suppressed at all cost.
Olmesartan re-activates VDR, and Innate Immunity

Olmesartan Activates VDR

Activated VDR Translates genes Reactivates Innate Immunity

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Clinical Observation of Immunostimulation In Chronic Nervous and Immune Disorders

Retargeted Olmesartan Medoxomil in 62 Patients

Author: Hell, T., J. R.
Autoimmunity Research Foundation, California, U.S.A.

Comorbidity Wheel


**Science often gives answers you did not want**

Diabetes Research Group, Dept of Surgery, Hospital for Sick Children, Toronto, 1982

Still using Insulin to control BG
Insulins still basically the same
Still rely on biomarker HbA1c
Patients still guess dosage
New Knowledge about Diabetes

The BRAIN controls Blood Glucose levels without changing Insulin

Prof F Rubino MD,
Bariatric Surgery, King’s College London
Lancet 2015; 386: 964

Hormonal Signaling in the Gut, Côté et al,
J Biol Chem. 2014 Apr 25; 289(17)
(Tony Lam’s group at University of Toronto)

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Effects of Cell Phone Radiofrequency Signal Exposure on Brain Glucose Metabolism

Nora D. Volkow, MD, Dardo Tomasi, PhD, Gene-Jack Wang, MD, Paul Vasaka, PhD, Joanna S. Fowler, PhD; Frank Telang, MD; Dave Aleskoff, BSE; Jean Logan, PhD; Christopher Wong, MS

Author Affiliations: National Institute on Drug Abuse, Bethesda, Maryland (Dr Volkow); National Institute on Alcohol Abuse and Alcoholism, Bethesda (Drs Volkow, Tomasi, and Telang and Mr Wong); and Medical Department, Brookhaven National Laboratory, Upton, New York (Drs Wang, Vasaka, Fowler, and Logan and Mr Aleskoff).

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Electrosmog and autoimmune disease

Trevor G. Marshall, Trudy J. Ruman Heil

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Microwave Electrosmog (TV, WiFi, CellPhones)

2016 Electrosmog levels 50,000 times greater

It may not be possible for true PPPM breakthroughs without fundamental changes to existing models for Healthcare, Medicine and Science