

# THE HUMAN MICROBIOME & THE EVOLUTION OF YOU

## Your Life

### Fertilized Egg

Over 23,000 genes inherited from both your mother and father

### Baby

You are born sterile and your first acquisition of microbiota is inherited from the birth canal. If you were breastfed, you received over 700 species of bacteria.

### Child

It takes 1-2 years to develop adult microbiota. As you develop, your diet and environment impacts the proportion and presence of the microbiome.

### Adult

As you age, the activity of the microbiome changes. An adult harbors more than 100 trillion bacteria.

## A Bug's Life

### The Beginning of an Ecosystem

The Human Microbiome defines a collection of microorganisms within your own body. Trillions of microbes (bacteria, viruses, fungi and protozoa) reside on the surface and in deep layers of the skin, especially in the nose, mouth, gut and genitals.

### Your Environment

The microbiome has an intimate connection to the environment in which you are raised.

### The Microbial "Organ"

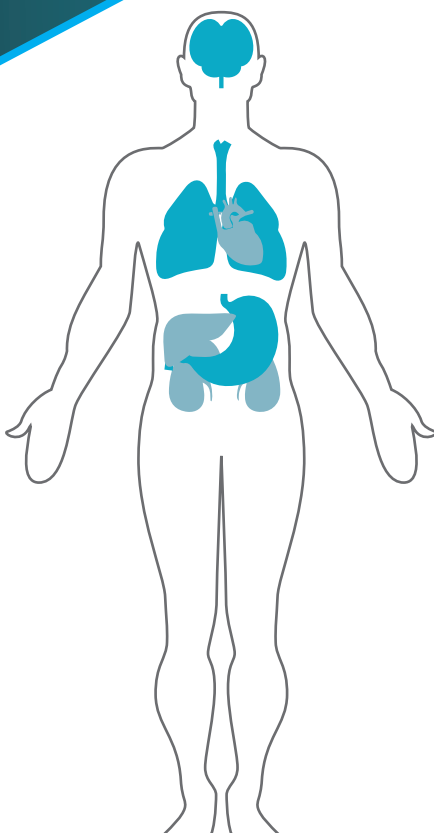
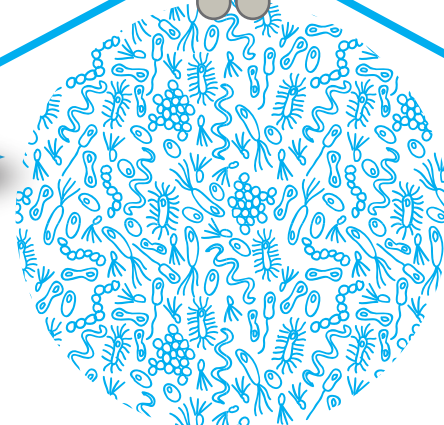
Microbial cells are one-tenth to one-hundredth the size of a human cell and may account for up to five pounds of body weight in a healthy adult. The microbiome is an organized system of cells with as much impact on the body as the heart, liver or immune system.

### 99% of Microbes are Beneficial

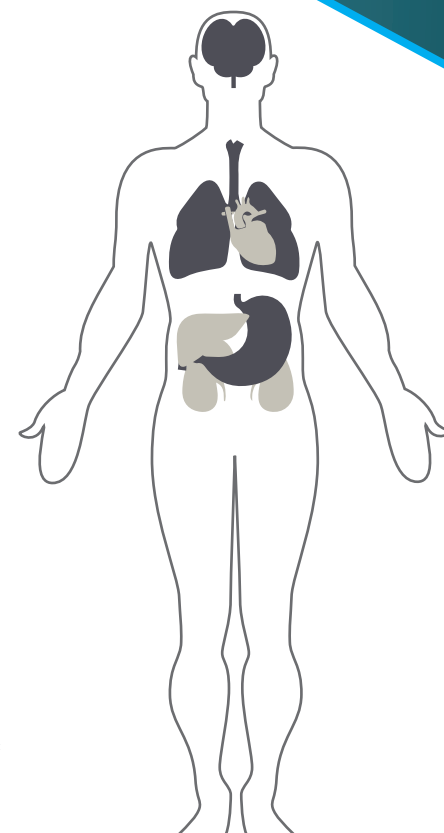
Microbes assist with digestive activity, vitamin synthesis, immune system function and protection from pathogens.

**GOOD TIMES**  
You scratch my back and I'll scratch yours. In exchange for raw materials and shelter, we'll keep the peace.

**BAD TIMES**  
Common interests break down. Illness results when the microbiome is out of balance.



- The human microbiome is medically accessible and manipulable in ways the human genome is not.
- Microbes have a significant impact on digestion, metabolism, neurology and immunology.
- Microbiome ecology assists with down regulation, reducing inflammation, and colonization resistance against pathogens (CRAP).
- Immune cells live in the gut wall and distinguish friendly from unfriendly bacteria.
- Parasites can help with the maintenance of healthy tissue.



- A disturbance in the immune system opens the way for a normally benign microbiome to become a disease-bearing organism.
- The overuse of antibiotics are increasing antibiotic resistance among microbes.
- The average child in the developed world receives 10-20 courses of antibiotics before they turn 18, creating a fertile environment for opportunistic pathogens.
- Many diseases have been correlated with a microbiome imbalance, such as IBD, Crohn's Disease, obesity, autism, pediatric allergy and autoimmunity.

Stay Healthy

Tend Your Microbial Garden

Get Healthy

Contact Energetix to learn more about Medical Ecology and gut health.

Take Prebiotics and Probiotics

Stress Less

Breathe Fresh Air

Limit Antibiotic Use

Nurture the invisible ecosystem of your body

Add Plant-Based Enzymes to Your Diet

Eat Healthier

