

# MICROBES AND THE BODY'S TERRAIN

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No human is alone. We gain company by simply passing through the birth canal. Bacteria from the mother immediately take charge of the new earth citizen. These microscopic creatures invade the skin, migrate to the mouth, and settle in the intestines. Unaware of who we walk with throughout life, each of us – is a biotope – containing up to twenty times more microbes than body cells, which is about two thousand trillion foreigners.

Although humans are clueless about their company, which is equivalent to four to five pounds of their body weight, these microorganisms regulate digestion, make vitamins, and are involved in numerous bodily functions. So far laboratories can only culture about 20 percent of microbes living within the human body. That's the reason why most of these bodily citizens are unknown.

Worldwide, scientists are recognizing and exploring this previously overlooked area. During the 2007 annual meeting of the American Society of Microbiology, held in Toronto, a courageous plan to trace and research these vast microbial populations was introduced. The international Human Microbiome Project was formed. This is a major change in the traditional scientific approach. Going forward, the human body will be viewed differently. Renowned genetic researchers predict that this new undertaking will be even more promising regarding human health than genetic research. The gene pool of microorganisms is vast compared to that of human beings.

Until now, medical science only looked at 50 to 100 microbes that do not live permanently within the body, but can cause disease. However, George Weinstock, a genetic researcher of Baylor College of Medicine in Houston, Texas once said, —there are more than 2,000 microbial strains present within the human body and no one has ever had a glimpse of how many are actually living in our external environment.

Bacteria are currently used industrially to create plastic material. For

example, E-coli bacteria in steel incubators, when combined with cornstarch, are able to produce complex molecules called PDO. These molecules are able to create plastic material called Sorona, which is used for making clothing thread and plastic cups. You may be wearing socks created from this material right now.

Bacterial populations in the gut will decide which nutrients are prepared to be absorbed and assimilated. Trying to understand why a slim person remains slender, compared to an overweight person who gains weight easily, led researchers to the discovery of new facts. Jeffrey Gordon at Washington School of Medicine in St. Louis, Missouri, tested the intestinal flora of overweight people and found unusually high concentrations of the bacterial strain Firmicutes. This strain is able to digest sugar molecules, which are indigestible by normal flora. Further findings showed that by changing the terrain of the gut, a reduction of the Firmicutes strain occurred, while Bacteroides increased.

Interestingly enough, this resulted in the reduction of weight in test animals. Conversely, Gordon transplanted intestinal bacteria from adipose mice to skinny mice, which resulted in weight gain.

Researchers hope to manipulate the collective gene pool of these organisms via the terrain; intending to cause a direct effect on the host. Simply speaking, with that result achieved, these little guys would no longer have exclusive control over the host.

With the exception of Helicobacter Pylori, stomach acid has always been considered a forbidden zone for microbes. Thus far, researchers have found 128 different bacterial strains in the walls of the stomach. One in particular, Deinococcus, known as a —survivorll was until recently, isolated within the hot springs of atomic waste storage caves.

In summary, the most encouraging message from these renowned microbiologists is: We must look at infectious diseases in a new light. These diseases are not solely caused by a single pathogen; the outbreak can occur during an imbalance in the microflora of the body's terrain.

**Treating the terrain** is, and has always been, a major part of integrated medicine. Use of the bacteria *Bacillus Coagulans*, due to its right-spinning lactic acid, is a perfect example of changing the terrain (pH) in the GI tract; with the result of inhibiting pathogenic growth and restoring the balance of microflora.

God bless their hearts! It is heartwarming to see the 100 Monkey Effect gripping medical minds. Integrated medicine has referred to this new approach, using probiotics, throughout the last century. There is no place here for sarcasm because the issue is too vital. Let's hope this new research brings many beneficial discoveries forward.