



Phi'on products are designed to address the fundamental link between healthy soils, plants, water, animals and humans.



Microbial balancing: the fundamental path to good health

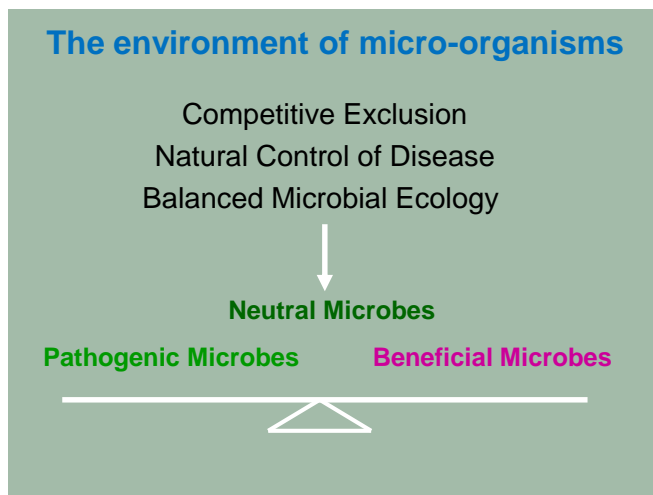
Introduction

In every ecosystem on the earth, the elements necessary for life (eg. minerals) are successively integrated into living compounds of biology, plants, animals, etc. for enrichment as organic compounds (eg. enzymes, amino acids, etc.) and then released as waste or decayed material. This turnover of elements is a process of **renewal** or **recycling**. This cyclical transformation of elements is indispensable to the maintenance of life as is the harnessing of solar energy by plants in the process of photosynthesis. A critical function in the process of renewal is **microbial balancing** that can be either a natural process in nature (recycling) or a deliberate action by humans to restore the integrity of soil, plant, water, air and the human and animal gut through the addition of microbes and nutrients/minerals, ie. applied as a **probiotic**.

Microbial balancing is a radically different approach to restoring the wellbeing of the planet to a natural balance of biological activity. The innovative technologies that have emerged since about 1990 to support microbial balancing are now commonly called Microbial Balancing Technologies (MBT)

MBT involves the addition of beneficial microbes to an environment that is out of balance or where the pathogenic microbes are in the ascendancy. That is, there is an insufficient diversity and abundance of beneficial microbes to sustain life or bodily functions. Life on Earth is increasingly and continuously subjected to factors that change the microbial balance. This includes air pollution, improper waste disposal and management that degrades soil and water systems; there is also increasing food contamination and poor diets that promotes pathogenic microbes. It is the pathogenic microbes (commonly called germs) that function to decay and facilitate disease.

To a large extent, MBT runs counter to the concept of germ elimination that is the hallmark of healthcare, agricultural and the pharmaceutical industries. MBT is grounded in balancing microbial species as collaborative communities in the same manner that they work together in a natural, unpolluted ecosystem of balanced microbial ecology, natural control of disease and competitive exclusion to ensure the pathogenic microbes do not dominate beneficial microbes.



That is, in nature all surfaces from the air, ground and underground are populated with 3 types of microbes:

1. Beneficial: These microbes (mainly bacteria) help balance the intestinal flora, boost the immune system and fight disease.
2. Pathogenic: These microbes are involved in decay, are involved in the propagation of disease, can produce harmful substances, irritate the lining of the intestines and create serious effects.
3. Neutrals (microbes that collaborate with both beneficial and pathogenic microbes and on their own have a positive or negative effect on wellbeing and decay).

These three types of microbes are essentially competing with each other for space and nutrients (eg. nutrient use and cycling) and in a healthy intestinal tract a balance is achieved where the pathogenic bacteria are held in check and therefore are enough beneficial bacteria present to perform digestive and regenerative functions. A healthy balance of intestinal flora would include 80% or more good and neutral bacteria and 20% or less pathogenic bacteria. Serious health or wellbeing issues can be created when factors like antibiotics, poor or low nutrient diet, stress and a wide range of environmental issues (eg. air pollution) cause this balance to be disrupted.

Within the concept of microbial balancing there is a critical relationship between **coherence** and energy transfer. For example, there must be coherence (ie. balance or health) in the function of a soil for optimal photosynthesis in plants. Coherence in a plant affects the probability of energy or nutrient transport and does change the chemical dynamics as these quantum (physics) effects are clearly present in the light-harvesting (photon) antenna proteins of plant cells. This coherence is one of life's fundamental conditions and this knowledge has expanded the understanding of the photosynthesis process. **Coherence** in the soil is an indicator of soil health and this coherence is significantly enhanced with microbial balancing through the inoculation or application of photosynthetic bacteria that fix atmospheric carbon dioxide in a manner similar to that of green plants. Coherence is also fundamental to human and animal health (ie. balance in gut biology)

Antibiotic resistance is a natural phenomenon that predates modern clinical antibiotic use. There is now very clear scientific evidence that antibiotic resistance was built into microbes from the beginning. That is, microbes carry an antibiotic gene and therefore microbes already have a capacity for resistance between species and this process maintains the competitive exclusion and balancing process of beneficial and pathogenic microbes in nature. The use of pesticides, insecticides and

antibiotics by humans upsets this balance and leads to exploitation of weeds, insects and many forms of disease, including poor soil and gut health. **Disease** is just another term for unbalanced. That is why all herbicides, insecticides and antibiotics will only have a short effective life, as these chemicals will be outsmarted by the microbes, and hence we have a treadmill of new chemicals that try to keep ahead of resistance and disease. This medical and chemical strategy will continue to fail if it is not replaced by MBT.

MBT is based on the idea that the war on microbes (through constant use of antibiotics and other antimicrobial action products) **has to stop and people need to learn how to live in balance with the trillion of microbes within their body and in the environment.** Animal and human bodies are filled with microbes at all times. In fact, we have about 10 times more microbe DNA than human DNA and that makes people 10% human. The systems of the human body (eg. nervous, circulatory, endocrine systems, etc.) would not function without microbes.

For example, the cells of the human body are critical agents to eliminate waste and heavy metals and can only operate effectively in a body that is microbially balanced. The same criteria apply to all other body systems or functions of humans and animals and therefore wellbeing is grounded in a balanced microbial body. People have to understand and work with the microbes instead of against them. When the intestinal tract (gut) is brought into balance and maintained in balance, the whole body comes into balance and optimal health can be restored.

Recent research has thrown new light on the proof of microbial balancing and microbial misbalancing processes in the gut. A Melbourne University team found that people on diets had a biologically altered state from the pre-diet state whereby the gastric hormones that promote a hunger feeling actually increased and the hormones that suppressed hunger actually decreased. This would explain why many people who diet will quickly return to pre-diet weight due to the increased imbalance in microbial activity. The only way that this situation can be altered is for people on dieting programs to take a probiotics with beneficial microbes to prevent the increased imbalance that returns them to overweight. Therefore, dieting without a probiotics or microbial balancing program is a waste of time.

Many of the products within the **Phi'on** range are designed to restore microbial balancing in a:

- **gut or intestinal tract** of animals and humans
- **soil** (the greatest diversity and abundance of microbes on the Earth reside in the soil)
- **plant** (the plants have microbes on their surface and rely on the diversity and abundance of microbes in the soil for nutrient cycling)
- **domestic and industrial space** that domesticated animals and humans live (eg. air, work surfaces, housing, etc).

It is this area of microbial balancing technology (MBT) and wellbeing management that science, industry and communities will firmly grasp in the decade 2011-2020.

Microbes out of balance

The period from 1950 to the present has on one hand been a major period of technological advance in health-science and on the other hand a disaster for disease growth, including obesity, cancer, heart disease, diabetes, allergies and many intestinal diseases. There is little doubt that the pollution of the environment with chemicals is at the heart of this health and wellbeing crisis for the animals and humans on the planet. The pollution of food during farming and food processing,

dietary changes including the loss of nutrients in food are major factors in the growth of disease. At the heart of the issue is the loss of microbially balanced soils. The use of chemical in the environment and with food, and the wide use of anti-biotics (anti-life) are largely responsible for creating the imbalance in microbes.

Also, the onset of aging, lifestyle and environmental factors can greatly reduce the diversity, abundance and proportion of beneficial microbes in the gut allowing pathogenic bacteria to take hold and cause health issues. Beneficial and pathogenic bacteria are affected by changes in the intestinal environment. The onset of infections can be linked to many factors in the environment including stress, antibiotic treatment, drug use, poor diet, and a number of other factors can disturb the delicate microbe balance, decreasing the number of beneficial microbes while allowing an overgrowth in pathogenic bacteria. An overgrowth of bad bacteria such as E.coli, Salmonella, Giardia, Shigella or Staphylococcus can create symptoms including flatulence, constipation and/or diarrhea. If the imbalance and symptoms are allowed to continue they can lead to chronic gastrointestinal inflammation and serious intestinal tract problems like irritable bowel syndrome (IBS), ulcerative colitis and even colon cancer. Infections caused by pathogenic microbes also pave the way for the release of toxins into the bloodstream contributing to eczema, nervous system disorders, arthritis and a variety of immune system disorders.

The onset of super bugs in hospitals (as opposed to the kitchen or bathroom) is an outcome of poor microbial balancing in hospitals. There is a propensity in hospitals to sterilise and eliminate the microbial balance on all surfaces. Many microbial species have a life cycle of between 20-60 minutes and regularly exchange DNA, depending on the substrate (eg. gut, soil, etc.) and this gives rise to super-bugs that can readily readapt and perpetuate in an environment where the beneficial microbes are diminished in diversity and abundance, and unable to competitively exclude the pathogenic microbes. Hospitals are increasingly becoming a major source of infection and a dangerous place to receive health treatment.

A mothers gut biology influences a babies health destiny

Until recently, medical science assumed that a baby collected its gut biology at birth from the vaginal channel or its environment (eg. mother's nipple). It was assumed that the foetus grew in a sterile environment.

Recent research in microbiology (see New Scientist, 14 April 2012) provides the evidence that the foetus collects its early gut biology through the placenta and umbilical cord. Biology and nutrients move through this pathway to the foetus. This information will be a shock to some doctors.

The maternal gut biology eventually determines the health destiny of the baby, along with its propensity or risk of disease (ie. immune response capacity), its personality (behaviour) and its capacity to learn.

Therefore, mother's have a responsibility to give their babies the best possible chance of a healthy start to life with their gut biology and nutrient dense food for the placenta. The mother's overall health, behaviour, attitude and environment (eg. exposure to chemicals) also influence the baby's health outcomes.

The health status of the mother's gut biology may also influence:

- Fertilisation (reproduction organ issues) or infertility
- Pre-birth bonding between mother and baby
- Miscarriage
- Birth weight
- Birth defects
- Mother's post- birth depression
- Baby's early health issues (eg. allergies, colic, irritability, etc.)

Using microbes to stay in balance

Since probiotics were first discovered in the mid 19th century and greatly accelerated understanding during the 1990's, a great deal of research and numerous clinical trials have been undertaken since the 1950's to better understand probiotics and how they function. Recently, thanks to remarkable advances in microbiology and intestinal bacteriology, it is understood that certain bacterial strains, especially the Lactobacillus and Bifid bacterium genus have a high mucus membrane chemical affinity and play important roles in human health. Probiotic supplements for microbial balancing with humans, animals, soil and plants and numerous surfaces (including air conditioning, water, workbenches, etc.) have now been widely embraced and accepted. In respect of humans and animals there are significant health benefit including:

- Enhancement of the human and animal immune system
- Microbial balancing effects that are inhibiting the growth of intestinal and food poisoning pathogens
- Improvement in gut function by normalizing the microbial balance, reducing constipation and improving intestinal mobility
- Treatment of diarrhoea and many intestinal ailments
- Contributing to the management of diabetes and prevention of osteoporosis
- Improved nutrition through the enhanced availability of vitamins, minerals and amino acids and their absorption through the intestinal walls
- Cleansing of the bloodstream through toxin elimination
- Prevention of infection by pathogenic microbes.

It is the essential nature of beneficial microbes and the tendency to lose the diversity and abundance of these microbes with aging, combined with the increasing propensity for drug treatment for illness that leaves people open to infection and disease.

Clearly, the war on microbes as germs needs to end and people need to embrace a health and wellbeing strategy of microbial balancing. Many situations of environmental degradation and poor health can be reversed in a short period of time with microbial balancing technologies (MBT). The **Phi'on** range of conditioners for soil, plants, water and air, along with the probiotic products for animals and humans, and the surface conditioner products (eg. deodorise) are a major step in this direction.