



Praesidium™

The EMF Protector



The invention of Praesidium

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Introducing Dr Ruggiero

Let me introduce myself and let me describe my research experience on the biological effects of electromagnetic fields. I was born in Firenze, Florence, Italy in 1956 and in this city I graduated in 1980 from the School of Medicine.

Later, I obtained a PhD in Molecular Biology and a specialization in Diagnostic Radiology. This is a medical school where particular emphasis is placed in the area of protection against electromagnetic fields ranging from X-rays to radiofrequencies and magnetic fields used in Magnetic Resonance Imaging.

I served in the Army as Lieutenant Medical Officer; in the Army, I received expert training in nuclear, biological and chemical warfare where emphasis was placed in protection against all types of electromagnetic fields. As a Medical Officer, I lectured Military radar operators on protection against those electromagnetic fields that are used for radars.

In 1984-1986 I worked at the Laboratory of Cellular and Molecular Biology of Burroughs Wellcome in North Carolina, where, among other papers, I published an article in the Proceedings of the National Academy of Sciences of the US; this article was sponsored by Nobel Laureate Sir John Vane. I then worked at the Laboratory of Cellular and Molecular Biology of the National Cancer Institute in Bethesda, Maryland, where I performed research on the genes of cancer, the so-called oncogenes. I returned to Italy as Professor of Molecular Biology at the University of Florence where I performed research until my retirement in 2014.

My first peer-reviewed article was published in 1980 and in 41 years of scientific career I published more than 200 peer-reviewed articles and I was invited to speak at hundreds of congresses and conferences. According to a major scientific database, I have more publications than 99% of all Authors of that database; I am in the top 1%.



Currently, my main research interests are in the fields of oncology, neurosciences and immunotherapy. As far as my work on electromagnetic fields is concerned, my first peer-reviewed article on their effects on the human bone marrow was published in the prestigious scientific journal "Blood" in 1989 and this article was so appreciated that it was selected for the "Mosby Year Book of Hematology".

As of today, I have published 25 peer-reviewed articles on the biological effects of electromagnetic fields. I had the honor of being invited to publish an essay on electromagnetic fields and cancer in the prestigious Encyclopedia of Cancer, the most comprehensive reference in Oncology, that is published by Springer Nature in Switzerland and is edited in Heidelberg, Germany.

In my 41 years of research, I published articles co-authored, among others, by famous researchers such as Eduardo Lapetina, Stuart Aaronson, Jacalyn Pierce, Peter Duesberg, Henry Bauer, Jeff Bradstreet, Dietrich Klinghardt.



The invention of Praesidium

It is based on these premises that I invented and developed an innovative supplement based on microbiome science designed to support the body against the harmful effects of electromagnetic fields. This supplement is Praesidium.

There are no other products like Praesidium; it is unique among the scores of other products I have developed and, as far as I can tell, it is unique in the world. Its formula is unique and unique and proprietary is the procedure for its manufacture; unique are its indications. Because of uniqueness and originality, it is the object of a Patent Application in the US. Praesidium represents the synthesis of 32 years of research on the biological effects of electromagnetic fields.

As a radiologist, my imperative was to protect myself and others against the harmful effects of electromagnetic fields, more precisely, X rays that are ionizing radiations. With X or gamma rays, protection is relatively simple and, for example, the lead shields used in conventional radiology are enough as they act as physical shields or barriers interposed between the human body and the radiations.

However, in the modern world we are surrounded by a number of different types of electromagnetic fields and it is impossible to place shields between them and our bodies. In addition, as I wrote in the essay in the Encyclopedia of Cancer, electromagnetic fields do not affect only the human cells of our body, but also, and maybe more importantly, the cells of our microbiome.

The microbial cells of the microbiome in our body are ten times more numerous than the human cells of ours, and the microbial genes hundreds times more numerous than the 22,000 genes in our human DNA. The microbiome is involved in the development and function of all human organs and systems, from the

immune system to the brain. Therefore, any damage to the microbiome potentially leads to altered function of our organs and systems.

Based on these premises, I developed a product that is based on microbial cells that are extremely resistant to the harmful effects of electromagnetic fields, and I devised a strategy to prime these cells and help them transfer their beneficial properties to the cells of our microbiome and, ultimately, to our human cells.

Praesidium is designed to help prevent and support repair to the damage exerted by electromagnetic fields on the microbiome's cells and, therefore, prevent and support the repair to damage that derives from an imbalanced microbiome. In general terms, we may say that Praesidium helps to support the healthy microbiome that, in turn, supports the health of practically all our organs and systems.

The components of Praesidium have well-documented support for normal inflammation; they show antioxidant and immune-support features

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and may play a role in cancer prevention. There are studies demonstrating that a specific component of Praesidium helps to mitigate the effects of chronic arsenic poisoning.

You may wonder; what has arsenic in common with electromagnetic fields? Interestingly, the damages

induced by arsenic are very similar if not identical to those induced by electromagnetic fields because arsenic mediates its toxicity by generating oxidative stress, causing immune dysfunction, inducing DNA damage, preventing DNA repair, and disrupting signal transduction and all these are practically the same damages inflicted by electromagnetic fields.

In addition, Praesidium contains the extract of a perennial plant rich in antioxidants that supports normal inflammation and healthy blood vessel, brain and heart function. The antioxidant properties of this extract that counteract the oxidative stress caused by electromagnetic fields, synergize with those of the microbes mentioned before and with phages of the probiotic blend resulting in inhibition of excessive reactive oxygen species formation, that is, reducing oxidative stress.

In addition, the high content of silica that is arranged in surface fractals in the plant whose extract part of Praesidium, favors horizontal gene transfer. A number of studies have demonstrated that adsorption to minerals such as silica and silicates increases DNA longevity and stability, an important factor in protection against electromagnetic fields.

Praesidium helps prevent the damage exerted by EMF on the microbiome's cells. This supports the healthy microbiome that, in turn, supports the health of practically all our organs and systems.





How Praesidium works

Now, let me describe how Praesidium works. Praesidium contains special microbes that are extremely resistant to the harmful effects of electromagnetic fields. These incredible microbes survive exposure to gamma-rays up to 6,400 Grays (Grays are units of measure for radiations); for reference, the median human lethal radiation dose calculated from data obtained in Nagasaki, is around 3 Gy. In other words, these microbes are about 2,000 times more resistant than humans; in theory, they could survive the radiations from a nuclear blast 2,000 times more potent than that of Nagasaki.

Not surprisingly, these microbes have been used in the nutrition of astronauts who are exposed to harmful radiations because they are not protected by the atmosphere. Their resistance to radiations is due to a number of factors that include the presence of a high level of antioxidants and, more importantly, stimulation of genes supporting DNA repair.

In Praesidium, these microbes are cultured together with probiotics that help reconstitute the healthy human microbiome. The goal of culturing together

these two types of microbes in a highly specific medium is to transfer the information from the radiation-resistant microbes to the probiotics whose viability is enhanced by the characteristics of the medium. The culture medium also contains silica from vegetal origin introduced to enhance horizontal gene transfer, that is transfer of genetic information.

Finally, the transfer of resistance to human cells is achieved through a phage-encoded protein that is the evolutionary precursor of human proteins involved in DNA repair and cancer protection.

Resistance to the harmful effects of electromagnetic fields is achieved through a variety of molecular mechanisms that involve neutralizing reactive oxygen species through powerful natural antioxidants, supporting normal inflammation and increasing the ability to support DNA repair. Microbial cells in Praesidium are primed in the highly specific medium of the formula to enhance these mechanisms and transfer them through biological quantum entanglement. Also plasmids, that are mobile DNA elements, and phages that are viruses of the microbes, contribute to the transfer of information.





Biological Quantum Entanglement

In addition to all this, there is another mechanism at work in Praesidium: biological quantum entanglement. Entanglement is a form of very deep connection that defies logic up to the point that Albert Einstein famously dismissed it as “spooky action at a distance” in a letter to Max Born in 1947. In quantum physics, entangled particles remain connected so that actions performed on one particle immediately affect the other, even when the particles are separated by great distances.

For some years, it was believed that quantum entanglement only occurred between subatomic particles and was of no interest for biologists or medical doctors. However, there is now demonstration that quantum effects are at work in biological processes such as human consciousness, photosynthesis, and avian navigation, processes that are based on the connection and exchange of information between molecules. Not surprisingly, quantum entanglement between the electron clouds of nucleic acids in DNA underlies the ability of DNA to retain, process, and transmit information; in other words, quantum processes are at the basis of life.

Originally, quantum entanglement was described for particles with no mass like photons, but now we know that this phenomenon of connection and transfer of information is at work in living beings

ranging from microbes to fish and possibly humans. For example, authors from the United Kingdom and Singapore recently demonstrated the quantum entanglement between bacteria and fields of light, that are electromagnetic fields.

Even more interesting in the context of Praesidium are the experimental results demonstrating how biological quantum entanglement confers protection against radiations and, more in general, against diseases. Researchers from Canada described results related to radiation protection that can be explained only by taking into consideration quantum biological processes at the level of complex organisms such as the rainbow trout or the zebra fish.

This article prompts the question as to whether biological quantum entanglement occurs only within the same species or may also occur among different living beings as it may seem more logical. Should this be the case, we could then imagine that all living beings are somehow entangled as we all derive from the primitive ancestor whose appearance on Earth dates back to some 3.8 billion years ago.

This concept is consistent with the idea of the rhizome as originally proposed by the French philosophers Deleuze and Guattari and how it relates to the microbiome and immortality, an interesting topic I have recently described in a scientific article. I realize that all this is difficult to digest; however, please consider that Einstein himself had difficulties accepting the oddities of quantum entanglement.





Health impacts from EMF

Now let me talk about a very hot topic: the biological and health effects of electromagnetic fields. Electromagnetic fields are characterized by frequency and wavelength; some of them, such as ionizing radiations (X- and gamma rays) are extremely dangerous for all living beings as they cause damage to DNA, RNA, proteins and essentially all macromolecules. Also non-ionizing radiations such as Ultra Violet radiations are dangerous as they cause mutations and are known to increase the probability of skin cancer.

More complex is the topic of those electromagnetic fields that can be described as radiowaves or radiofrequencies and are used for wireless and mobile telecommunication. Based on a review of studies published up until 2011, the International Agency for Research on Cancer has classified radiowave radiation as “possibly carcinogenic to humans,” based on evidence of a possible increase in risk for brain tumors among cell phone users, and other evidence for other types of cancer.

In studies published in 2018 by the US National Toxicology Program and by the Ramazzini Institute in Italy, the researchers exposed groups of lab rats (as well as mice, in the case of the American study) to radiowaves over their entire bodies for many hours a day, starting before birth and continuing for most or all of their natural lives. Both studies found an increased risk of uncommon heart tumors and the American study reported increased risks of certain types of tumors in the brain and in the adrenal glands. Several other studies have looked at possible links between cell phone use and tumors in humans.

Most of these studies have focused on brain tumors. Many of these have been studies in which patients with brain tumors were compared to people who didn't have brain tumors, in terms of their past cell phone use.

The 13-country INTERPHONE study, the largest case-control study done to date, looked at cell phone use among more than 5,000 people who developed brain tumors (gliomas or meningiomas) and a similar group of people without tumors. In the group of

people who used their cell phones the most, the risk of glioma and meningioma was increased.

A large prospective (forward-looking) study of nearly 800,000 women in the UK examined the risk of developing brain tumors over a 7-year period in relation to cell phone use. This study found a link between long-term cell phone use and acoustic neuromas.

The International Agency for Research on Cancer has classified radiowave radiation as “possibly carcinogenic to humans.”

Another study, in this case a comprehensive meta-analysis published in 2020 found evidence that linked cellular phone use to increased tumor risk.

It should be noticed, however, that all these studies have limitations and, as of today, the best approach should be the same that is used for exposure to all types of radiations, the principle defined ALARA, As Low As Reasonably Achievable. Consistent with this approach, the American Cancer Society provides suggestions for people who are concerned about radiowaves and describes what they can do to limit their exposure.

However, cancer is not the only risk possibly associated with exposure to electromagnetic fields. There is increasing evidence the exposures could result in neurobehavioral deficits and that some individuals develop a syndrome of “electro-hypersensitivity” or “microwave illness”.



Biological effects of 5G

In these days there is a new technology that is at the center of interest for a variety of reasons, the fifth generation technology for cellular networks or 5G. The 5G networks will use several different radiowave frequencies of which the lower frequencies are being proposed for the first phase of 5G rollout.

Several of these frequencies (principally below 1 GHz also known as Ultra-high frequencies) have actually been, or are presently used, for earlier mobile communication generations. Much higher radio frequencies are planned to be used at later stages of technology evolutions. The new bands are well above the Ultra-high frequency ranges, having wavelengths in the centimeter or the millimeter ranges. These latter bands have traditionally been used for radars and microwave links.

A study published by Swedish scientists in 2019, analyzed 94 relevant publications performing in vivo or in vitro investigations. Eighty percent of the in vivo studies showed biological effects due to exposure, while 58% of the in vitro studies demonstrated significant biological effects.

A study published in May 2020 by Authors from several international research institutions including the Albert Einstein College of Medicine in the US, presents evidence that the nascent 5G mobile networking technology will affect not only the skin and the eyes, as commonly believed, but will have adverse systemic effects as well.



As far as the biological effects of 5G are concerned, it is worth noticing the committee of experts of the Institute of Electrical and Electronics Engineers, the world's largest technical professional organization, in 2020 wrote a document recognizing that the scientific literature on the biological effects of 5G is limited, in other words, we have not enough information. They also wrote that research on 5G is of mixed quality, not always good.

Eighty percent of the in vivo studies showed biological effects due to exposure, while 58% of the in vitro studies demonstrated significant biological effects.

Because of all this, several cities and major countries have established their own "precautionary" limits based on the principle of minimizing exposure in order to avoid as-yet unknown hazards, the ALARA principle. For example, exposure limits in Switzerland and Italy are 100 times lower than the limits proposed by the International Commission on Non-Ionizing Radiation Protection, while in India they are 10 times lower; it seems that not all Governments agree on the complete absence of risks. The problem is that there are no studies on adverse health effects of 5G under real-life conditions.

Many experiments do not include the real-life pulsing and modulation of the carrier signal, and the vast majority of experiments do not account for synergistic adverse effects of other toxic stimuli such as, for example, the concomitant presence of other forms of environmental pollution. When real-life



considerations are added, the adverse effects of 5G increase substantially.

Addition of 5G radiation to an already imbedded toxic wireless radiation environment, and to an already chemically polluted environment will increase the adverse health effects known to exist. According to researchers from the School of Public Policy of the Georgia Institute of Technology, the McGill University of Canada, the Albert Einstein College of Medicine,

We have no reason to believe 5G is safe, the technology is coming, but contrary to what some people say, there could be health risks.

the University of Crete in Greece, and the Sechenov University of Moscow, far more research and testing of potential 5G health effects under real-life conditions is required before further rollout can be justified.

According to researchers from the European Cancer Environment Research Institute of Brussels, the Paris University Hospital, the Department of Oncology of the Orebro University in Sweden, the Department of Radiobiology of the Slovak Academy of Science, the Laboratory of Radiobiology of the Russian Academy of Science, the Istituto Scientifico Biomedico Euro Mediterraneo of Italy, the Institute for Health and the Environment of Albany, and the University of Queensland, exposure to electromagnetic fields such

as those of 5G poses a significant health hazard that has not been adequately addressed by national and international organizations such as the World Health Organization.

According to these Authors, unfortunately standards set by most national and international bodies are not protective of human health. This is a particular concern in children, given the rapid expansion of the use of wireless technologies, the greater susceptibility of the developing nervous system, the hyperconductivity of their brain tissue, the greater penetration of radiofrequency radiation relative to head size and their potential for a longer lifetime exposure.

An article published in Scientific American in 2019, a scientific journal with such a high reputation that even Albert Einstein published his articles in this journal, is entitled "We Have No Reason to Believe 5G Is Safe, The technology is coming, but contrary to what some people say, there could be health risks".

Praesidium supports health & sleep quality

Going back to Praesidium, if we consider electromagnetic fields as environmental pollutants, then it is presumable that all those who are exposed may benefit from a supplement such as Praesidium that is designed specifically for this purpose. In today's world we are constantly exposed to chemical toxicants of all types and to electromagnetic fields.

In addition to potential damage to our human cells, both chemical toxicants and electromagnetic fields may cause damage to our microbiome. The definition of electromagnetic fields as environmental pollutants comes from the European Environment Agency; this agency compared the risks of radiowaves used for mobile telecommunication to other environmental hazards such as asbestos, benzene, and tobacco.

The Agency urgently recommended to implement a precautionary approach regarding electromagnetic fields. This is all the more significant if we consider that certain subjects are more at risk.



For example, at a meeting in Norway in 2009, a scientific panel recognized the existing evidence for potential global health risks from exposure to electromagnetic fields. The panel recommended exposure limits for electromagnetic fields and radio-frequency radiation.

However, even the existing limits may not be enough for certain subjects and the panel wrote: "Numeric limits recommended here do not yet take into account sensitive populations, that are, for example, subjects with electromagnetic hypersensitivity, immune-compromised subjects, the fetus, developing children, the elderly, people on medications, and so on."

In addition, it is worth noticing that electromagnetic fields may alter the quality of sleep. A study published in 2019 demonstrated that one or more cordless phone calls per week was significantly associated with decreased sleep quality. Higher tablet use was associated with decreased sleep efficiency.

Praesidium, by counteracting the effects of electromagnetic fields, might help people sleep better. An article published in 2019 demonstrated that probiotic administration improves sleep quality and a number of other psychological conditions.

Some of those probiotics were similar to those used in Praesidium and these findings corroborate the hypothesis that Praesidium may improve psychological well-being by improving mood and sleep quality. Today there are several affordable devices that monitor sleep; it will not be difficult for individuals to assess for themselves the efficacy of Praesidium on sleep.

These findings corroborate the hypothesis that Praesidium may improve psychological well-being by improving mood and sleep quality.





Hypersensitivity to EMF

There is also the issue of sensitivity or hypersensitivity to electromagnetic fields. This has been observed for quite some time. In 1970, a report from the Soviet Union described a “microwave syndrome” among military personnel working with radio and radar equipment. These subjects showed symptoms that included fatigue, dizziness, headaches, problems with concentration and memory, and sleep disturbances.

Similar symptoms were found in the Eighties in Sweden in people working in front of the cathode monitors of those days. They had symptoms such as flushing, burning, and tingling of the skin, especially on the face, but also headaches, dizziness, tiredness, and photosensitivity.

The same symptoms were reported in Finland; in this case electromagnetic hypersensitivity was attributed to exposure to radiowaves. Of special concern is involuntary exposure to electromagnetic fields from different sources. Most people are unaware of this type of exposure, which has no smell, color, or visibility. For example, there is an increasing concern



that wireless use of laptops and iPads in Swedish schools, where some schools have even abandoned paper textbooks, will worsen the exposure to electromagnetic fields.

Electromagnetic hypersensitivity is a clinical syndrome characterized by the presence of a wide spectrum of symptoms affecting several organs, including the central nervous system. These symptoms occur following the patient’s acute or chronic exposure to electromagnetic fields in the environment or in occupational settings as it was the case for the Soviet soldiers.

In order to study electromagnetic hypersensitivity, researchers from Sweden have surveyed the literature and they have found that the prevalence of electromagnetic hypersensitivity ranged from 1.5% in Sweden to 13.3% in Taiwan. Upon exposure to electromagnetic fields, the researchers observed changes in reactions of the pupil, changes in heart rhythm, damage to red blood cells, and disturbed glucose metabolism in the brain.

Praesidium was developed taking into account these data with the objective of supporting detoxification, a process that may be impaired in subjects with electromagnetic hypersensitivity



As far as I know, Austria is the only country with written guidelines for the diagnosis and treatment of health problems associated with exposure to electromagnetic fields. Apart from this, electromagnetic hypersensitivity is not recognized as a specific disease in the rest of the world, and no established treatment exists. Therefore, it seems necessary to give an International Classification of Diseases to electromagnetic hypersensitivity to get it accepted as a health problem associated with environmental pollution. According to published research, the increasing exposure to electromagnetic fields in schools is of great concern and needs better attention because health effects in the long term are unknown.

The causes of electromagnetic hypersensitivity are not yet well understood, but it seems that many hypersensitive patients have impaired detoxification systems that become overloaded by excessive oxidative stress. As a matter of fact, many subjects who show hypersensitivity to electromagnetic fields, also show multiple chemical sensitivity, thus lending credit to the hypothesis that impaired detoxification

and excessive oxidative stress may be responsible for both syndromes.

If electromagnetic hypersensitivity is due to inefficient detoxification systems that become overloaded by excessive oxidative stress, then Praesidium could definitely help. We have evidence demonstrating that the microbes of Praesidium are very efficient in detoxification, enhancing the capacity of the body to remove metal and non-metal toxicants, including glyphosate, decreasing nagalase and supporting the immune system.

Praesidium was developed taking into account these data with the objective of supporting detoxification, a process that may be impaired in subjects with electromagnetic hypersensitivity. Praesidium was designed to reduce oxidative stress and support the body to repair the damage inflicted by the reactive oxygen species formed as a consequence of interaction between electromagnetic fields and human cells.



The advances in the fields of microbiome medicine and quantum biology made Praesidium possible since it exploits the most advanced research in these fields.



Praesidium; your inner shield

In this context, Praesidium works as an inner shield. The noun Praesidium in Latin means guard, help, protection and the name reflects its indications. When I first started working on this project many years ago, I was thinking of ways to shield our body from the harmful effects of all types of radiations, just as we do in radiology when we hide behind shields made of lead.

However, I soon realized that in today's world this is impossible unless we want to have Faraday cages always around us. Electromagnetic fields are everywhere and it is impossible to avoid them. I live in Arizona, a sparsely populated State with not too many industries; nevertheless, even when I go to remote, absolutely wonderful, places such as the Petrified Forest or the White Mountains, there is signal for my cell phone; electromagnetic fields and electromagnetic pollution are part of our lives and we cannot escape them.

Therefore, I shifted the focus of my research toward designing an inner shield that could protect us from the inside. I reasoned that if microbes can survive doses of radiations 2,000 times greater than those that kill humans, we could learn something from

those microbes and we could put their experience at work for us.

The advances in the fields of microbiome medicine and quantum biology made Praesidium possible since it exploits the most advanced research in these fields. You can think of Praesidium as a guard, help, protection as its Latin name indicates, that works from within.

In addition, since Praesidium is all natural, it is not a drug, and the potential for adverse effects is limited to specific allergies or intolerances toward one or more components of Praesidium. As with any other supplement, caution must be exercised in conditions such as pregnancy, lactation or diseases where the advice of a Medical Doctor is always recommended.

Also, it is important not to exceed the recommended daily dose. All the ingredients of Praesidium come from certified, reliable sources and there are no genetically modified organisms. Praesidium is manufactured in Switzerland under the most rigorous and certified conditions and it is compatible with vegetarian and vegan lifestyles.

I thank you so much for your attention and I hope that I have been able to give you some information about this innovative product of mine. Thanks so much.

