

# E.M.F ? A naturopathic concern !



## Electromagnetic waves.... Proven biological effects

### And their correction with Compensating Magnetic Oscillation (A CMO technology by COMOSYSTEMS)

The first symptoms related to sensitization of the body (E.H.S) to the exposure to artificial electromagnetic waves are generally the following:

- Pain and / or sensation of heat in the ear.
- Sensitivity (tingling, tingling or even burning) in the face, scalp, arm and / or forearm, or hand holding the mobile phone or computer mouse.
- Headaches, typically associated with stiffness and neck pain.
- Sleep disorders, insomnia, chronic fatigue.
- Behavioral disorders such as irritability and verbal abuse.
- Tinnitus, transient or permanent if there is continued exposure.
- Hyperacusis, (intolerance to noise, in particular to background noise).
- Visual disturbances associated with convergence abnormalities (blurred vision), tingling associated with corneal micro-lesions and, more rarely, flashes of light. (Prof. Miyata)
- Anomalies of proprioceptive sensibility, manifested by the appearance of dizzy sensations, which are sometimes accompanied by disturbances of equilibrium during walking.

And above all, very early on, and in a quasi-constant way, cognitive disorders.

The accumulation and importance of these symptoms will increase if the protection solution is not applied.

#### An urge to do something about it !

These disorders, if not recognized or neglected, can progress to a permanent state of electromagnetic hypersensitivity (EHS).

Three phases of this electro-hypersensitivity syndrome are to be distinguished:

#### 1. The induction phase:

It is the entrance into affection; The symptoms of electro-sensitivity are reversible.

#### 2. The state phase:

The many symptoms of intolerance are becoming more and more severe and frequent, caused by increasingly weak electromagnetic field strengths and an increasingly broad spectrum of frequencies.

During this phase, biological and medical imaging tests may be disrupted, but biologically "naked" forms (with no detectable biological abnormalities) are observed in a large majority of cases, what could cause to doubt about real affections.

A cross-potentialisation with certain chemicals is found in a large majority of cases.

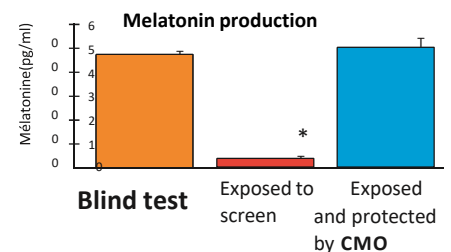
The symptoms remain reversible but the risk of persistent electro-sensitivity is obvious.

#### 3. Remote evolution:

This phase is irreversible to date.

It is necessary to act from phase 1, or even upstream preventively if we want to give ourselves every chance to avoid entry into electro-hypersensitivity.

(Ehs-mcs.org of ARTAC, Association for Anticancerous Therapeutic Research, chaired by Professor Belpomme)



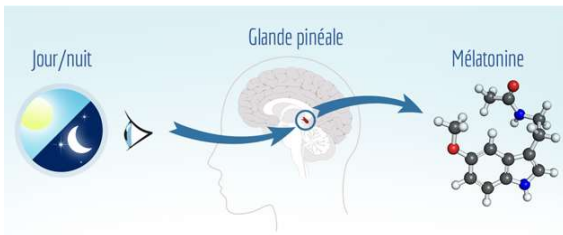
- $p < 0,05$  vs Blind test or Exposed-Protected

Pr Bastide et BJ. Youbicier-Simo 1997 et 2001, Université de Montpellier-1.

#### Decrease in melatonin production:

An 80% decrease in melatonin has been demonstrated in animals exposed to electromagnetic waves (1). Melatonin has sleep-inducing properties but also anti-radical, anti-tumor, and anti-epileptic properties at high doses. The decrease in melatonin could lead to sleep disorders and fatigability that can lead to depression.

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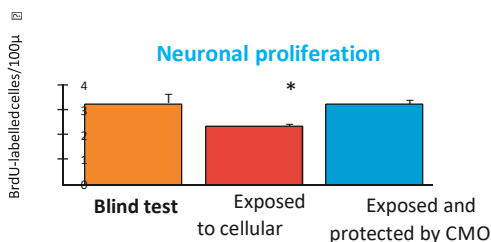


A study (2) carried out in Sao Paulo on 32 people with chronic migraines revealed that melatonin intake, in 80% of them, considerably improved their headaches or even stopped them. If we compare these data, we see the importance of bringing the level of melatonin to normal by turning the EMF to which we are exposed biocompatible.

Neurology. 2004 Aug 24; 63 (4): 757. Melatonin, 3 mg, is effective for migraine prevention. Peres MF et al. Hospital Israelita Albert Einstein, São Paulo, Brazil

## Impact on cognitive processes

EMF exposure from a cellular caused the reduction of neurogenesis (-25%), as a study reported on the regeneration of the neurons of the hippocampus. The hippocampus is the cerebral center involved in the management of memory, concentration and in learning abilities. This decrease could cause disturbances in these functions. On the other hand, the reduction in the size of the hippocampus, aggravated by the decrease in neurogenesis is recognized as one of the markers of Alzheimer's disease. It has been known for a few years that there is indeed a "reserve" of stem cells in the sub-ventricular zone of the brain. The study we carried out on the regeneration of the neurons of the hippocampus, on exposure to a mobile phone, shows that there is a decrease in neurogenesis reaching 25%



\*  $p < 0,01$  vs Blind test or Exposed-Protected Mice – exposed to cellular GSM / 11 weeks Youbicier-Simo B-J - TecnoLab

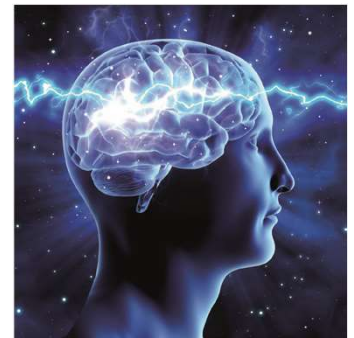
This means two things  
- the cells of the hippocampus are not replaced  
That intracerebral stem cells are not capable of performing their tasks and not only in the hippocampus but throughout the brain.

This may be an explanation for the long-term learning and memory impairment experienced by many children and adolescents receiving education using digital media. The most recent hypotheses, particularly those proposed by the Chronimed group (led by Professor Montagnier) to explain the explosion of emerging pathologies, are concerned with the problems of hyperpermeability of the intestinal and blood-brain barriers. An abnormal porosity of these barriers would allow the passage of cellular toxins, bacteria (intestinal or other), opioid-function peptides, heavy metals. This results in inflammation and oxidative stress. In children and even adolescents, these barriers, which are under development, are particularly sensitive. According to the AFFSET, for neurodevelopmental disorders, the suspected environmental agents are polychlorinated biphenyls (PCBs), lead and methylmercury, known and frequently found neurotoxic in the environment (3).

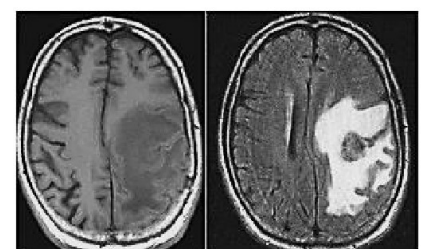
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[http://www.afsset.fr/upload/bibliothèque/688458975861202394220243892050/12\\_troubles\\_neurologiques.pdf](http://www.afsset.fr/upload/bibliothèque/688458975861202394220243892050/12_troubles_neurologiques.pdf)

## Opening of the blood-brain barrier, the door for toxics

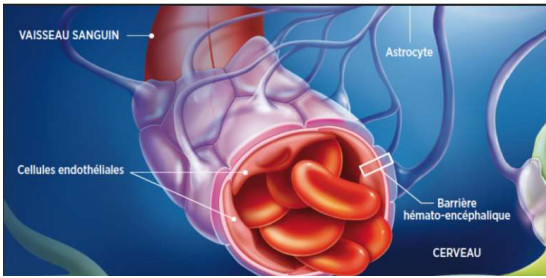
The BBB, a "blood / brain" barrier, normally protects the brain from harmful substances borne by peripheral blood. However, the child's brain is particularly sensitive and vulnerable to penetration



of toxic substances. If the passage of toxic substances such as lead and methylmercury were facilitated, neurological development disorders may be expected. The speech of Professor Pierre Aubineau is less nuanced. Director of research at CNRS-University of Bordeaux 2, he demonstrated the permeabilization of the blood-brain barrier in the rat by microwaves of mobile phones. "It's clearly a pathological effect," he warns. This phenomenon leads to the formation of micro-edema in the brain tissue and an inflammatory reaction of the meninges. Cerebral tissues are not able to defend themselves against such intrusion. Migraine is a short-term, reversible consequence. But we can not exclude, in the long term, the occurrence of indirect pathologies. "(December 2002 - SCIENCE AND FUTUREP. 29 Annie Lobé)



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## The possible impact of electromagnetic fields on intestinal permeability

Most people keep their mobile phone in their pocket, close to the intestines. However, the telephone, even if not used, continuously communicates and searches for the closest antenna relays. This makes it possible to be located in case of a call. These pulsed electromagnetic emissions from microwaves and low frequencies thus irradiate quasi permanently the intestines. This repeated exposure over several weeks, months and years is not without consequence.

The intestinal system (colon and small intestine) can be schematically defined as composed of several interrelated elements: the intestinal flora, the intestinal mucosa and an interface between the flora and the mucosa: the mucus. These three elements act as a physical, chemical and immune barrier to the various nutrients in the diet and exogenous microorganisms. Indeed 80% of the immune cells are in the intestinal mucosa.

It has been shown that the exposure of living organisms to the electromagnetic fields from mobile phones increases the production of HSP (Heat Shock Protein) or stress proteins. These "repair proteins" are the witnesses of an aggression to the organism and in particular of an inflammation at the cellular level that the integrated systems of homeostatic regulation tries to compensate by the overproduction of these HSP (1) (2).

This cellular aggression induced by the electromagnetic fields at the level of the intestinal mucosa (composed of a single-celled layer of 45 microns) will reach in particular the tight junctions that unite the intestinal cells. It has been shown that these tight junctions, ubiquitous in all barriers of the body, can be damaged by exposure to the microwave (3). The movements of calcium and its distribution in the tight junctions were also found altered by exposure to microwaves (4)..

I have proposed, during the Toulouse Biosciences 2014 Days.., the hypothesis of an alteration of the mucus protecting the different mucous membranes (Respiratory, vaginal and intestinal) by the phenomena of flocculation due to microwaves



*Dr Marco Paya, (New York Academy of Sciences)*

These four conjugated phenomena: inflammation of the mucosa, decreased occlusion of tight junctions, alteration of protective mucins and changes in the distribution of calcium in intestinal cells could participate, in synergy with other aggressions (heavy metals, toxic Environmental factors, endocrine disruptors, phytosanitary products such as glyphosate ...) to the process of induction and perpetuation of the intestinal hyperpermeability syndrome.

Thus, the mucosa and its fragile junctions are in a position to be attacked also by the food bolus and the microbiota and become even more permeable.

To express this in a simple way, the intestine loses its role as a selective filter and becomes a strain allowing a passage of unwanted molecules larger or smaller.

(depending on the size of the lesions) but also bacteria. Very recently, studies have also shown that microwaves disrupt the functioning of vitamin D receptors (VDR) (5), whose dysregulation leads to the appearance of dysbiosis, which opens the door to chronic inflammatory diseases And autoimmune disorders, as well as metabolic disorders related to microbiome dysfunction (6) (7). We thus enter here in a cascade of vicious circles, because a perturbed intestinal flora is itself a factor of triggering and dysfunction of the intestinal permeability.

Vitamin D is recognized as having nearly 200 functions and many authors consider it a hormone. The question to ask is:

"If the receivers are inactive, is it permissible to supplement before having protection in place?"

This brings us to Prof. Bruce Ames's "Theory of Triage", practically demonstrated.

What does this theory say?

That the body in case of stress, deviates its resources to survive in the short term, to the detriment of long-term protection.

Therefore, in the face of permanent electromagnetic stress, it is permissible to assume that any complementation will be diverted to survival and not, as would be expected, for which it is prescribed.

It will be as effective as it is if the protective measures against electromagnetic stress are effective.

Certain consequences of a porous intestine (leaky gut) are the various intolerances (gluten, milk proteins ...), poisoning (heavy metals, pesticides ...), fatigue, hepatic overload, neuropsychiatric disorders (autism, schizophrenia ... ) (8), autoimmune diseases ...



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This list is unfortunately not exhaustive. The pioneer in this field was Dr. Jean Seignalet (9), a friend with whom I collaborated for many years. I note that 20 years after its innovative work, many schools have resumed and developed enterorhumatology, enteropathy. This was the theme of the last World Congress of Biological Psychiatry and the November-December 2016 issue of "The Psychiatrist's Letter" (10). The first protection is not to expose yourself unnecessarily: turn off your laptop when you do not phone, and do not keep it close to sensitive areas of the human body (brain, intestines, heart, genitals ...).

To restore good intestinal function, it is essential to treat the flora and the wall before re-establishing a functional interface between the flora and the wall, protecting the mucus from degradation and avoiding a selection of aggressive germs.

*J Cell Biochem.* 2003 May 1;89(1):48-55. **Effects of mobile phone radiation on reproduction and development in *Drosophila melanogaster*.** Weisbrot D1, Lin H, Ye L, Blank M, Goodman R.

<https://www.ncbi.nlm.nih.gov/pubmed/12682907>

*World J Biol Chem.* 2012 Feb 26;3(2):34-40. doi: 10.4331/wjbc.v3.i2.34. **Modulation of heat shock protein response in SH-SY5Y by mobile phone microwaves.** Calabrò E1, Condello S, Currò M, Ferlazzo N, Caccamo D, Magazù S, Ientile R. <https://www.ncbi.nlm.nih.gov/pubmed/22371824>

(3) *Zhonghua Nan Ke Xue.* 2010 Jan;16(1):10-3. **[Microwave radiation decreases the expressions of occludin and JAM-1 in rats].** Gao XF1, Wang SM, Peng RY, Zuo HY, Wang LF, Gao YB, Dong J, Su ZT.

<https://www.ncbi.nlm.nih.gov/pubmed/20180397>

(4) *Scanning Microsc.* 1993 Dec;7(4):1255-61. **Effects of modulated and continuous microwave irradiation on pyroantimonate precipitable calcium content in junctional complex of mouse small intestine.**

Somaszy Z1, Thuróczy G, Kovács J.

<https://www.ncbi.nlm.nih.gov/pubmed/8023092> (5) *Immunol Res.* 2016 Jul 13. [Epub ahead of print]

**Electrosmog and autoimmune disease.**

Marshall TG1, Heil TJ2.

<https://www.ncbi.nlm.nih.gov/pubmed/27412293>

(6) *Clin Ther.* 2015 May 1;37(5):996-1009. e7. doi: 10.1016/j.clinthera.2015.04.004.

**Lack of Vitamin D Receptor Causes Dysbiosis and Changes the Functions of the Murine Intestinal Microbiome.** Jin D1, Wu S1, Zhang YG1, Lu R1, Xia Y2, Dong H3, Sun J4.

**Inflammatory Disease and the Human Microbiome** DISCOVERY MEDICINE Published on

May 22, 2014 Author: Amy D Proal

Institution: Autoimmunity Research Foundation

Address: 3423 Hill Canyon Ave., Thousand Oaks, California, 91360, United States

*Nutr Neurosci.* 2000;3(1):57-72. doi:

10.1080/1028415X.2000.11747303.

**Autism and Schizophrenia: Intestinal Disorders.** Cade R1,

Privette M1, Fregly M1, Rowland N1, Sun Z1, Zele V1,

Wagemaker H1, Edelstein C1.

« L'alimentation, la 3<sup>e</sup> Médecine » 6<sup>e</sup> Edition(10)

<http://www.edimark.fr/lettre-psychiatre/microbiote-ecosysteme-fertile-psychiatrie> .

## "Protection" standards worth revising



The standards governing the health effects of electromagnetic fields are based on the modeling of a warming of biological tissues, via a parameter called S.A.R. Simply, the Specific Absorption Rate (SAR) will measure the increase in the temperature of a physiological saline contained in a mannequin in the shape of a human head, exposed for 6 minutes to the EMF from the mobile phone to be tested.

**The SAR has no biological significance, it simply gives an indication of the amount of energy deposited in the tissues.**

It does not take into account the non-thermal effects of electromagnetic waves.

These standards are based on this SAR parameter: they are based on theoretical calculations and not on biological experiments.

The calculation assumptions are mainly as follows:

The modeling is based on the assumption of a homogeneous and isotropic conductivity of the body:

Which amounts to agreeing to "model the brain with salt water".

Medium- or long-term effects are not taken into consideration, nor the athermic effects. Only the immediate effects on health (shocks, burns, temperature rise of the tissues) are retained.

This theoretical model is not reliable, given the complexity of what exists in a skull.

We described this at the "Workshop Electro Compatibility" held at the Maison du Cheminot in Paris, before an audience of engineers who had no idea what could happen in a skull.

There are various structures between the bones of the skull and the nervous tissue: three meninges, with a very different density, structure and vascularization.

Cerebrospinal fluid between these meninges, and between the meninges and the brain.

There are many absorptions and reflections within these systems, which have not been studied.

With these hypotheses, the conclusions of these theoretical calculations should be discussed: in order to define a health (and therefore biological) risk, studies should be carried out on models that are biological, since even at low intensity electromagnetic waves can cause long-term biological disorders.

## Decreasing the DAS: a question of just disconnecting the alarms?

There are systems allowing to artificially decrease the DAS: it is sufficient to hinder the good emission of the high frequencies of the mobile phone (to make it simple, only the frequencies in the range of the microwaves cause thermal effects, not the low frequencies). The DAS decreases, but you hinder the proper functioning of your mobile phone.

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The phone with poor reception will increase its transmission to its maximum in order to be able to pick up the nearest antenna relay. And in areas where you do not get much, you may not be able to catch anything at all, while having a phone looking to increase its emission level.

These Schumann waves are however 10 times more intense than what the human brain emits, and in the same spectrum of frequencies.

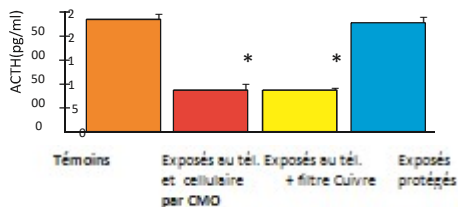
These ions, out of their inner chemical function

show oscillatory movements.

The average resonance frequencies are :

- 30 Hz for the Sodium ion
- 35 Hz for the Calcium ion,
- 50 Hz for the Potassium ion
- 41, 55 Hz for the Magnesium ion
- 217 Hz for the ion Fer. Some frequencies generated by the internal electronics of mobile phones are between 30 and 40 Hz; And the modulation of the carrier is done at 217 Hz.

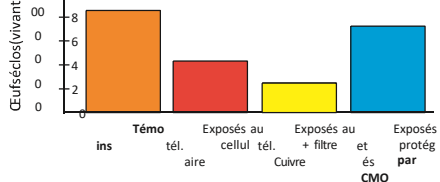
**Production of ACTH**



Souris 2001,

\* p <0,01 vs Témoins

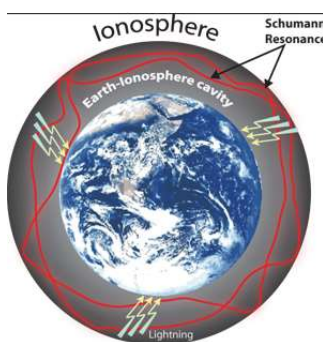
**Protection against embryo mortality**



## To go further, understand the notion of "electromagnetic signature"

The Earth naturally generates electromagnetic waves of very low intensity: these are the Schumann waves. They were measured around 1960 at a frequency (for the first harmonic) of 7.8 Hz, that is to say 7.8 beats per second. The intensity of these Schumann natural waves is close to 1 pT (pico Tesla, 1E-12 Tesla), that is one million times lower than the intensity emitted by a mobile phone. It is for this reason that these Schumann waves are very often neglected by many scientists.

Schumann's waves would act as an "orchestra leader" of the planet. This field is a pulsation, a "heartbeat" of the Earth that could regulate life on Earth.

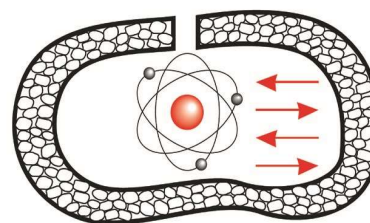


Mobile phones, Wi-Fi, relay antennas and other electromagnetic waves will then superimpose to this natural field, other (artificial) electromagnetic fields, being "coherents" because, on a similar frequency spectra.

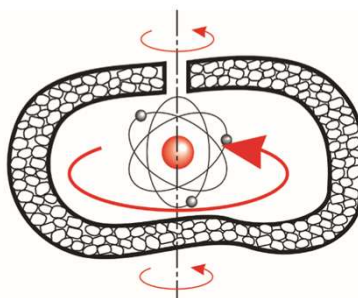
The second movement described corresponds to a pulsation of the protein (analogous to the displacement movements of an octopus). The average resonant frequencies are between 1 and 2 GHz for the calcium and magnesium ions; And these are also frequencies generated by the carrier of mobile phones.

This amounts to setting up an orchestra with several leaders in the same pit, or adding another orchestra in the next room: dyssharmonies may then occur.

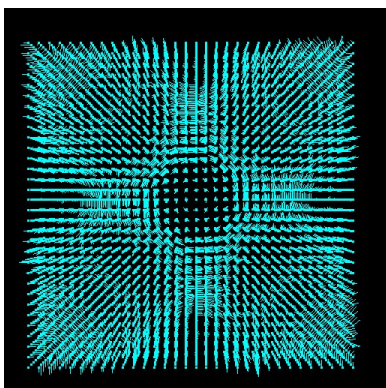
## Impact of EMF on the organism: the ion-protein binding link is disturbed.



So the cellphone will excite these different and alterate calcium, magnesium, potassium, sodium ions, etc. directly on their natural frequencies; with the consequent risk of breaking the functions linking the ion and its protein. It is this rupture that can lead to the various "biological disorders" discussed in this article. This can also lead to changes in the intra- and extracellular concentration of these ions (especially calcium),



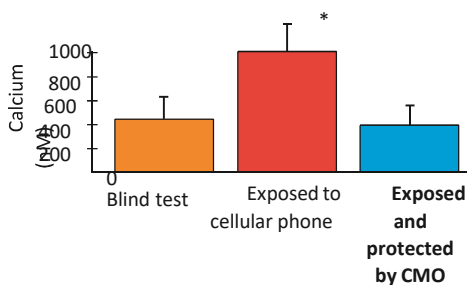
At the cellular level, the proteins of the organism determine by their winding (tertiary structure) cavities in which different ions (Calcium, Magnesium, Potassium, Sodium, etc.) are positioned to maintain the spatial structure.



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Modifications that can generate a whole physiological cascade of reactions resulting into biological perturbations. For the record, calcium ion is involved in most biochemical reactions of the cell; Its perturbation may therefore affect many systems, for example the nervous and / or muscular system.

## Concentration of intracellular calcium in cells of the pituitary gland



\* p <0,001 vs Blind test or Exposed- Protected

## What Is really C.M.O ?

The active function of the CMOs is based on an oscillating saline solution, structured by electromagnetic fields in such a way that it then becomes capable of restoring certain specific frequencies: **it is the compensation signal.**

CMO stands for "Magnetic Compensation Oscillator".

These frequencies are designed to maintain functional binding between ions and their protein by resonating with biological receptors.

This is what allows the cells of the body to communicate in a natural and normal way, despite the presence of disturbing artificial electromagnetic radiation, as the studies cited above have shown.

The objective is to be able to benefit from the advantages of electromagnetic waves (and they are numerous), but without their biological disadvantages.

It is not a question of blocking the waves as we have seen, but of generating neutralizing frequencies that are hyperflexible, which will make it possible to compensate for the biological effects of electromagnetic waves.

Biological validations have been mentioned above on parameters such as melatonin production, ACTH, production of neurons in the hippocampus, to name just a few.

The principle of design and operation of this compensation system is quite simple:

In the first place, it is necessary to identify which electromagnetic frequencies must be neutralized. Indeed, if certain frequencies are felt to be favorable (eg Schumann's frequency and other frequencies do not have a significant biological impact, certain frequencies are clearly perceived as unfavorable.

The effects of these unfavorable frequencies must be corrected.

Neutralizing frequencies will be determined as a function of these unfavorable frequencies.

The compensation frequencies are thus directly correlated to the disturbing frequencies; Is that that makes the specificity of the CMO and their effectiveness.

It is these compensating frequencies that will be used to structure a support (a liquid microcrystalline saline solution, which is the active solution of the CMO).

Once structured, a post-treatment of this active solution allows sustainability of the electromagnetic structuring, over the years.

This active solution is then capable of restoring a hyper-weak signal, by resonating effect with the external electromagnetic waves:

This is the "compensation signal."

**COMOSYSTEMS is active in most events concerning naturopathy and osteopathy and will have a stand at ICNM LONDON 2017 (UK)**

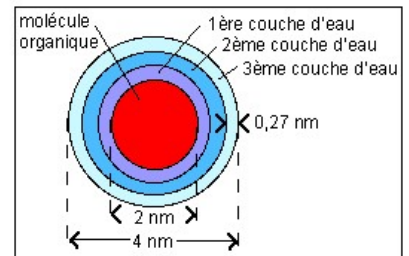
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These results could be compared to the works of Dr. Benveniste on the memory of water, works resumed by Prof Luc Montagnier and Marc Henry in the video "We have found the memory of water", available on YouTube for example. While the active CMO solution is not just water, the structuring principles are similar.



**DNA, a very « hydrated molecule » !**

## A reliable solution:

- 10 years of step back
- 10 years of biological experiments

The CMOs are designed and adapted continuously according to the electromagnetic frequencies to be corrected: for this reason, the CMOs have specific applications, the frequencies generated by a computer being different from those of a telephone.

And when these frequencies evolve, the CMO also evolve to remain always perfectly adapted and in correlation to the frequencies to be corrected.

The evolutions are represented by the arrival of "new generations of CMO" and express the upgrade of the technological evolutions of the communication devices but also the optimization of our "charging processes" .

**Article written by Dr. Marco Paya**, Scientific Director of **COMOSYSTEMS**, a graduate in Natural Medicine, member of the New York Academy of Sciences\*

\*Partial publication in the "Cahiers de la Bio-énergie & Laboratoires COPMED"

