



Cutaneous photoperception

Recently, one of my patients asked me: „What is the cutaneous photoperception? »

This word is a neologism, I suggested in the year 1984, after the various experiments done together with professor Roger Santini and Dr. Yves Menezzo at the INSA, Lyon.

In 1966 Paul Nogier discovered the auriculo-cardiac reflex. This reflex is the origin for the discovery of the cutaneous photoperception. As soon as pressure is effectuated on the auricle, or a light is beamed on the ear (or the skin), the radial pulse changes. Either it becomes stronger, or it gets weaker. This phenomenon was studied during numerous experiments and in order to better understand it, we imagined a series of experiments, which we carried out at the INSA in the 80th. These experiments required 3 years and were presented in international publications.

Let us take a rabbit, which is placed in a cage with a hole. The head of the rabbit looks out and therefore the rabbit cannot see what is happening inside the cage. Now we illuminate the skin (the fur coat) at the back of the rabbit with white light (something, which seems totally banal) for a period of two minutes. A result is, there is no change in the level of the catecholamines in blood (this can be measured by the help of blood samples taken from the vein on the ear). The catecholamines, these are dopamine, adrenalin and nor-adrenalin.

Now we take the same rabbit placed in the same cage and illuminate it with a discontinuous light. As the result we will see a considerable increase of the blood catecholamine level. Consequently we can say that a “blind” rabbit is able to make a difference between a continuous and discontinuous white light.

This explicitly odd phenomenon, shows us the capacity of the skin to make the difference between certain electromagnetic stimulations, what was confirmed by various other experiments carried out in Lyon and Paris. The cutaneous photoperception is a fact. The skin «can see».

As it was suspected in the year 1937 by the outstanding physiologist, Jules Tinel, the skin is not just a barrier but also a tissue, which has the capacity to capture unconscious information. Consequently, Paul Nogier discovered actually, during his exploration of the radial pulse variances, while the stimulations of the auricle, a part of a more significant phenomenon, the phenomenon of photoperception.

But why is there a phenomenon of cutaneous photoperception?

In the by Steven Spielberg created film « Jurassic Park », one of the scientists on the dinosaur isle says: « The life always finds a way». This is beautiful sentence, which is entirely true. The living beings utilise everything at their disposal in the surroundings in order to live and to develop. The bacteria, the multicellular animals, the birds, the reptiles, the mammals, utilise all in their milieu present elements in order to sustain and to develop.

What are these elements surrounding us?

- solids : animals, plants, minerals
- liquids : mainly water
- gas: azote, oxygen
- electromagnetic waves.

The mammals, only to mention them as an example, will „eat“ the world from the moment they are born. A child will hurry to the breast of its mother to get the milk. Later it will place everything it finds in its mouth. The body will build itself through the absorption of the liquids and solids by the mouth: this is called nutrition.

We are surrounded by gas, which are important for the functioning of our organism. The oxygen is a highly reactive gas, which is placed at the beginning of the long combustion chain, allowing us through the release of energy to keep the “machine” working. The mammals, will utilise this gas by inhalation through their lungs: this is called respiration.

Moreover, we are surrounded by electromagnetic waves. We find ourselves in a dense „soup“ of electromagnetic waves, only a little part of which can be perceived by our eyes. Light which we can see, represents only a tiny part of the waves surrounding us.

It seems, following the experiments we could carry out in the last years that our skin utilises certain electromagnetic waves in order “to stimulate, to regulate and to repair” the machine. This is the cutaneous photoperception. Some of the

us surrounding electromagnetic waves (not all of them) will change by the means of the skin, that is acting as a receiver or an antenna, the secretion of certain neuromediators, which on their part are fundamental elements for a correct functioning of the nervous system. Therefore a correct functioning nervous system needs a correct functioning photoperception.

To remember, we can say that the body employs everything surrounding it in order to maintain the equilibrium. So we can say:

« The body, is the world in us at a given moment »

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