

## Implants and Oral Galvanisms

**Zoran Milankov\* and Dusan Maric**

<sup>1</sup>Founder of Regenerative orthopaedics Society ORTO CELL and associate co worker of katedra for Regenerative medicine, Medical Faculty Novi Sad", Serbia

<sup>2</sup>Head of katedra for regenerative medicine, Head of Subject regenerative orthopaedics at PhD studies katedra of Surgery Medical Faculty Novi Sad, Serbia

**\*Corresponding Author:** Zoran Milankov, Founder of Regenerative orthopaedics Society ORTO CELL and associate co Head of katedra for regenerative medicine, Medical Faculty Novi Sad", Serbia.

**Received:** September 16, 2015; **Published:** November 05, 2015

**DOI:** 10.31080/ecde.2015.02.000067

### Abstract

Oral galvanism is a cause of many tissue metaplastic manifestation on the mucuose and all the others soft tissues in stomatology. It is evident in cases where between the metal oral prosthetic and osteosyntetic surgical reconstructions, a measurement is showing a high electric voltage and current. Measurement rates in dental implant pleasment failure have to find diagnostic and preventional place. Trough a 250 patient measurements between of a different metals in the mouth (amalgam, gold, palador, steel..), and the implants, in cases where are a current is evidently higher of 5 micro ampers, and the voltage is higher than 100 mV, peri implantitis and implant failure is evident in the rate of 90%. Removing of all the other metals from the mouth is an imperative in the therapy of implantation. The reason is covered in the galvanic currents whose are a disturbing factors in to the regenerative an the augmentative processes in the osseal tissues. It is also visible in to the persistence of fibrouse and granulation tissues in the peri implant area. Using of non-metal implants is one of the options of the prevention of current-possible osseal regenerative destimulation. Intraoperative checking of current and voltage trough a process of the implantation, is a valuable guide to prevent a implant failure, and it should be taken like a new method in implant operation protocols.

**Keywords:** Oral Galvanisam; Current and voltage measurements; Regenerative process; Implant failure cause; Peri implantitis; Galvanic tissue metaplasion; Method of prevention; Regenerative dissimulation

### What are the galvanic currents?

Two contemporaries

1. Luigi Aloisio Galvani (1737 1798)
2. Alessandro Volta Giuseppe (1745 1827)

They ran endless debates, which usually ended in squabbles at personal theory representations of "animal electricity" and on whether the reflex writhing frog legs, in the stimulation of n. Ischiadicus occurs due to the influence metal or animal electricity. Like any other debate, they have not contributed to the development of scientific thought, mostly due to lack of technology and knowledge. All their decade long debate was reduced to 5 words: Galvanic current round action potential.

Galvanic currents in the mouth as well as anywhere in the bodies of living things are consequence of existence. Metals and potential derived from the voltage of the string. Current values (current, voltage and resistance are correlated and are defined by Ohm law) the natural action of membrane potential are the order of nA (Nano amperes) are the result of the metabolism of living structures.

The values galvanic currents are of the order of microamps (nano x 1000 = micro) and the consequence of the action of a series of metal stress in electrolytic environment. The molecular composition of the electrolyte middle has resulted in resistance to the environment, and so has resulted in the existence of the corresponding voltage, SRO all in the route and leads to a dissociation, ie. Decomposition of the molecule at the cations and anions. The voltage generated in the electrolytic middle of the living cell as a result of galvanic currents and ion dissociative resistance between dissimilar Metals, on the order of (theoretically) to 1200 mV. Just to here "Accentuating" maximum voltage between two metal that I have so far able to measure a 468 mV.

### Slika

The nature of these currents and voltage is a consequence of the number and position of the electronic orbitals and free electrons in orbitals, on the one hand and molecular catalytic potential, on the other hand. The measured values between dissimilar metals grow exactly in proportion between the metals which are located diametrically in the periodic table of elements, so that the electronic voltage current engagement between the metal leads to the movement of electrons and thereby dissociation within the intracellular electrolyte.

### What are electrolytes of the body made of?

The electrolytes of the body comprise a maximum of 0.9% solution of NaCl in terms of the physiological corporal solutions, but also include all the bodily fluids in them, and all biochemical molecules that are administered polarisati. And these are all molecular biological organic structures. The average man of 80 Kg of body weight contains 75 wt% aqueous solutions of such electrolytes and thus man as entity becomes a big electrolytic capacitor. Unpleasant discharge previously filled by galvanic own capacitors, we can sometimes feel in contact with other metals out of the body, such as door handles, Body, metal chairs, fences and soon.

**Activity series:** Presents a series of metal in order of increasing value potential It Pauling scale. The use of metal in your mouth is as old as itself 'protostomatology '. Today we have cases of that in the XXI century are used simultaneously and amalgams of XIX century and titanium alloys of this century, resulting often (over 70% of cases of measured on a sample of 250 patients) has the appearance of a high the current values of more than 5 microampere and voltage of about 200 mV. You should note that these values are the thousands and tens of thousands of times exceed the value of the action potential. which results in:

1. Blocking nerve biofeedback regulatory mechanisms
2. The retention of nuclear receptors in an activated state
3. The retention of cell receptor in an inactive state
4. Blocking homeostasis K, Na, Ca, Mg, Al, Zn, Cr, Fe, Cd, Co, Ni, Sn, Pb, H, Cu, Hg, Ag, Pd, Pt, Au

Since the formation of the zygote, during embryogenesis, the cells are precisely differentiating tissue differentiation and cell receptor. We must note that the differentiation of cells electrochemically determined strictly by establishment of nuclear receptors, which share so basic tissues in three groups: egzoderm, endoderm and mesoderm. Cells with receptors broke more "do not know" as differentiated and what to do.

The works date from the beginning of 2015, published in the prestigious journal "Science" prove that cellular receptors determine the three levels. In addition, if at any level "closed" cell receptor determines mao example. egzoderm, then the cell cannot be differentiating in any other direction. For the other two levels of cells remains "inhibited". If you activate the receptor at the level of mesoderm cells activated by heart and soul continues to be mesodermal and does not return to her home lineage cells, although DNA is determined by the cell remains identical, ie. Unchanged. It has long been a secret mechanism by which the cells are differentiating, or so that their DNA remains identical. The difference lies in the receptors, which are differentiating and wherein the biofeedback mechanism from locking and the DNA itself, so that synthesis of the protein from the DNA is precisely guided by differentiating cells in morphogenesis. That marked and differentiated cells can be reset and dedifferentiated, but only by deleting the active state of the receptor to which it was differentiation, because the receptor command of what the DNA and which part of the DNA to be active and which is passive. This is not the only mechanism, there are more, but this mechanism is sufficient for further explanation of the influence of galvanic current.

What is the influence of galvanic current? All the above, is of great importance, because galvanic current of voltage can cause distractions and to reset the cell receptors, in greater or lesser extent. Thus, cells can lose determined differentiated tissue position. Stresses galvanic currents disturb the natural charms that determine the cell via receptor activation. Thus, the cell begins to inappropriate and inhomogeneous, ie. "Wild" proliferate. It is one of the mechanisms of what we call cancer: a completely incoherent tissue. It would be logical to conclude that it is possible coherencies of cell structures and tissues frequent stimuli, reset receptors, so that wild division stop. Proof of this theory lies in the (more or less) successful treatment of "cancer" using coherent radiation. This is an area that a lot of investigating nowadays.

To us at augmentation procedures at implantation (or with any form of treatment) is not intended to de-differentiate cells, on the contrary, we must turn our attention to the power status of the implants and other metals in the oral cavity and its surrounding tissues. If the voltage and current values significantly greater than natural, it will surely come to dedifferentiate and failure in implant techniques. Today we know that the power of regenerative capacity of tissues derived from the activation of the receptor and the level of electromagnetic pulses, besides the activity of neurotransmitters that. Active amine, such works that encourage and School of Medicine, Department of Regenerative Medicine at the University of Novi Sad.

**Osteoclastsosteoblasts:** Osteoclasts are derived cells that belong to the white line, differentiating the monocytes and macrophages of the. Hence their power of phagocytosis, where at remodelling the bones breaks down and engulf the osteocytes. On the other hand, osteoclasts originate from stem cells from bone marrow.

### **Why does bone resorption and peri implantitis?**

Because changes polarity natural biological tissues under the influence of galvanic streamed to happen two galvanically induced disadvantages to the success of implantation.

The stimulation of osteoclasts. Osteoclasts arise from monocytes, belonging to the white line, differentiating the first in preosteoklaste, and only then in osteoclasts, which independently and in cooperation with other macrophages perform its function of natural bone remodelling. If the osteoclasts are unable to register the proper biological activity of osteocytes, they are fagocitovani tissue compatibility by phagocytes, which by their nature osteoclasts and fall, are destroyed and fagocitovane.

**Suppression osteoblasts:** Osteoblasts arise from stem cells, first differentiating in preosteoblastea, and only then in osteoblasts. Later it forms a layer of young osteocytes, and old osteocytes, the loss of biological activities that are immunologically indistinguishable, and, as I described earlier, destroyed by osteoklasta. Ukoliko there galvanic currents that interfere with differentiation into osteocytes, they may stay and osteoblasts fagocitovani because by the immune mechanism not recognize.

**The question is:** what happens to stem cells which were only partially differentiated, and circulatory find themselves in a place where they can actively and uncontrollably proliferate, and the immune system tolerates them? If we implant products in conjunction with other metal/metal galvanic current voltage above the value of the natural action potential of 100 mV and currents greater than 1020 nA, the more there will be described the effect of the failure to implantologic procedure.

Therefore, I suggest that the practice of introducing regular measuring galvanic currents and carefully so chooses and follows one of the metal must be removed from the mouth in the first place, but also from the body and from the body in general. Danas there are plenty of implants without production of galvanic current, such as implants of zirconium. I think in practice unfairly ignored. I would suggest then create a buffer around the thread of zirconium metal implants, because it seemed like a dielectric, and would significantly reduce or galvanic current or be completely lacking. This is very different from the abandoned the practice of asking ceramic layer over the metal implants. Zirconium is mechanically far more favourable.

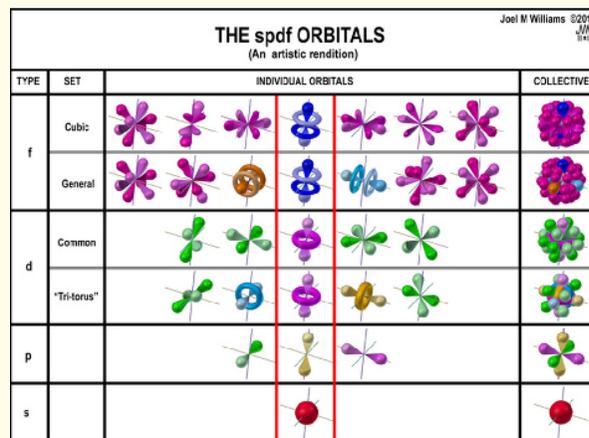
My study shows the serious results, and should be the practice, or to confirm or refute, or measurement of galvanic currents certainly deserves its place in implantology and status and diagnostic and preventive methods. Why comes to the failure of the augmentation of the bone, bone augmentation primarily involves preserved and good proliferative power of the existing cells.

Without proper blood circulation and innervation later, ie. augmentational set of operational conditions in the tissue, as a condition of differentiation of stem and later blast cells that are caught in surgery. Good set process of the operation is the beginning of regeneration.

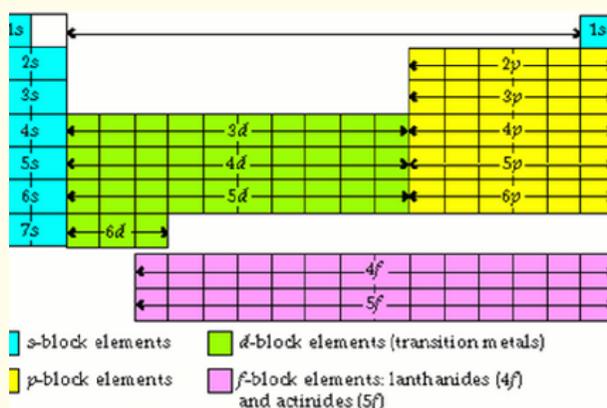
**Conclusion**

In the XXI century we have to act accordingly: What search amalgam dating from 1886 with an implant from 2015? Disruption of the natural mechanisms of augmentation and thus osteosynthesis and osseointegration of implants is happening at interfering galvanic currents, galvanism. Red size of the action potential is about 100 mV (30 + 70 mV), and so is the maximum level of tolerance of tissue to galvanic current. Therefore, all values of stress on the implant, which we find to be greater than these values, almost inevitably say that it will be a loss of osseointegration and unsuccessful implantacje. It is necessary to measure the value of these stresses already during the implantation, and consequently possibly change the place of implantation, or wait a while to create a clot, because I fibrin acts as a kind of insulator.

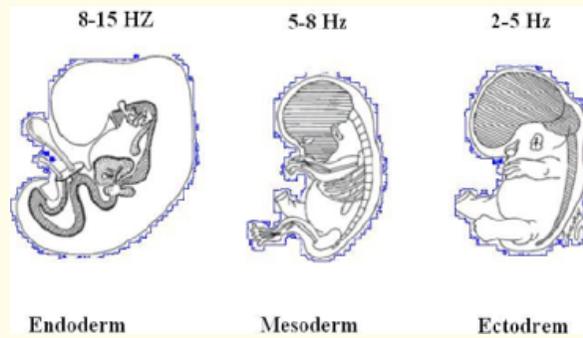
This is a topic that everyone should explore and I hope that this article will be an incentive to the kind of research goes seriously because it is a job for a lot of teams and independent.



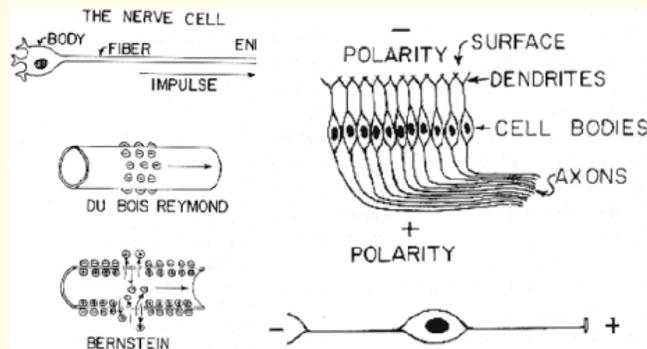
**Figure 1:** The nature of the current and voltage is a result of the number and position of the electronic orbitals and free electrons in orbitals, on the one hand and molecular catalytic potential, on the other hand.



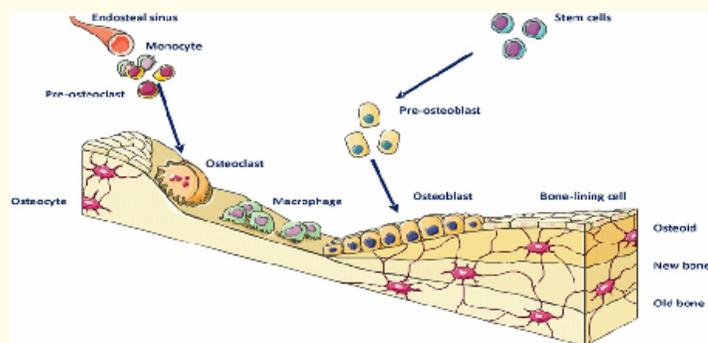
**Figure 2:** The measured values between dissimilar metals grow just proportion between the metals which are located diametrically in the periodic table of elements, so that the electronic voltage-current engagement between metal leads to movement.



**Polsrnost ostaje u celijama**



**Why does bone resorption and peri implantitis?**



Kako se meri?



### Bibliography

1. Milankov dr Zoran "Efekat Aure" ISBN 978-86-84863-29-6
2. [http://www.art-aglow-new-mexico.com/a\\_chart\\_of\\_the\\_spdf\\_electron\\_orbitals.htm](http://www.art-aglow-new-mexico.com/a_chart_of_the_spdf_electron_orbitals.htm)
3. <http://www.intechopen.com/books/coronary-angiography-advances-in-noninvasive-imaging-approach-for-evaluation-of-coronary-artery-disease/acceleration-of-new-biomarkers-development-and-discovery-in-synergistic-diagnostics-of-coronary-arte>
4. <http://zerial.mpi-cbg.de/page/project-endocytosis>
5. <http://www.milldental.com/our-services/metal-free-dental-implants/>
6. <http://www.dr-jacques-imbeau.com/metalfreeimplantology.html>
7. <https://drvee.wordpress.com/2015/04/02/is-there-a-battery-in-your-mouth-guest-post/>
8. (<http://toothbody.com/>)
9. <http://www.dentalwatch.org/reg/amalgameter.html>

Volume 2 Issue 6 November 2015

© All rights are reserved by Zoran Milankov and Dusan Maric.