

Oral Currents

All of us have learnt in chemistry at school:

«Two different kinds of metal, connected with an electrical conductor, will result in a galvanic element. »

This paper aims at answering and explaining most of your questions, ambiguities and uncertainties as to the issue of «galvanism (oral currents) ».

Dentistry is the only medical discipline which inserts materials into the human body, of which the performance and interaction in the oral environment have frequently not been pre-tested.

For patients without any dental materials, the situation is quite simple. Prior to any initial application, the dental material will be tested for acceptance.

These days, a wide range of well-tolerated dental materials that may be defined as being free from metals is available. Devices made from well—tolerated gold alloys usually cause no problems.

Compatibility tests can be carried out by applying EAV (electro acupuncture according to Dr. Voll), kinesiology, bio-resonance, LTT (lymphocyte transformation test), or other methods.

The second patient group comprises persons who already have dental restorations. Frequently, the dental materials used are based on metals. In such cases, even experts are often unable to find suitable materials without removing existing applications.

Which materials are of high risk?

Most dental inlays applied today still consist of amalgam. Amalgam is an alloy, a combination of various metals together with mercury. Several kinds of amalgam are available. In former times, amalgam fillings used to consist of silver, tin, and zinc. Most recent amalgamations additionally contain copper. Both types feature a mercury percentage of approx. 50 %. In this type of dental fillings, both, holistic dentistry and medicine do not only face the presence of a potentially problematical galvanic element. They also regard amalgam fillings as a source of heavy metal poisonings.

Gold-based elements form the second group of dental restorations. Most frequently among these are gold fillings, gold crowns, gold bridges, and gold prostheses. These can be made as white and yellow gold alloys. There are many gold alloys composition available, however they are rarely ever checked for compatibility with other dental materials used in the same oral cavity. Already the combination of white and yellow gold alloys in one and the same patient will create a galvanic potential.

These alloys are also frequently combined with other heavy metals such as palladium, indium etc. and thus creating a heavy metal problem for the specific patient.

Frequently, patients have gold restorations and amalgam fillings at the same time. In such cases, the interference will result in a so-called «battery effect».

Titanium-based elements are a special type of dental structure. They may take the form of dental posts, titanium-made partial dentures (both of which consist of titanium alloys) as well as titanium implants (which are frequently made from pure titanium). Such metal structures being deployed in one oral cavity along with amalgam fillings and gold alloys create a galvanic potential.

Rarely, nevertheless seen in patients of an older age, we still find prosthetic works made of nickel, brass or silver alloys. These must be regarded as irritations in form of a so-called dental material mix and should therefore be removed immediately.

In case of root-treated teeth, particularly the dental posts, which are fixed by the root canal fillings, are made of metal. Such root canal fillings need to have a specific radio-opacity and therefore contain metals. Another problem occurs with orthodontic plates (braces) or fixed orthodontic structures (arches, brackets, ligatures, and retainers), which are usually made from stainless steel alloys. Even though such devices will remain inside the oral cavity only temporarily, in sensitive persons, they may still cause potential problems.

Measurement of Oral Currents

Galvanic oral currents generally form when different kinds of metals or metal alloys are used in one and the same oral cavity. Measuring the oral currents allows defining the currents' intensity. This measurement will be performed directly within the oral cavity. It is carried out on oral metal parts or in between metal parts and the oral cavity's mucous membrane. Oral currents are measured and defined, respectively, in microampere. Measured values translate as follows:

- Values ranging between 0 and 2 microampere are deemed abnormal, but not yet disturbing.
- Values ranging between 2 and 5 microampere are considered to potentially constitute interfering fields.
- Values ranging between 5 and 8 microampere must be considered irritating.

Such cases are referred to as actively interfering fields. Eventually, any values exceeding 8 microampere must be considered actively interfering fields which affect remote bodily organs.

What is the impact of metalliferous dental materials on oral cavity and body?

The presence of two or more different metals in an oral cavity - which always contains saliva (electric conductor) - will result in the presence of a galvanic potential.

Within the oral cavity, the intra-oral environment seems to be the decisive factor. The saliva's over-acidification causes the pH-value to decrease and thus initiates corrosive destruction. Acidic saliva not only corrodes dental substances such as enamel and dentine. Most of all, it will generate the release of metal ions from metalliferous dental materials. Amalgam is the material which is most affected by this process. In consequence, mercury vapors will be released and ion migrations can be observed. This is mostly the case with patients who have received both, amalgam and gold fillings. In the respective process, the gold alloy will be contaminated by mercury which will result in the formation of gold amalgam. Areas where amalgam fillings and gold works contact each other will show the respective black-colored spots of corrosion.

Acidic saliva and the release of metal ions lead to the formation of further conditions. Patients will suffer from enduring mucosal irritations and alterations such as stomatitis, gingivitis, or even periodontitis which is frequently observed. They often mention suffering from xerostomia (dry mouth) with simultaneous presence of a

metallic taste. Additionally, difficulties in swallowing as well as chronic infections of throat and tonsils may occur. Black-colored metal deposits can be found on the mucous membranes.

«Galvanic oral currents must also be regarded as a stress factor affecting the entire organism! »

All forms of mercury are carried or breathed into the digestive tract.

Organically bound mercury (methyl and ethyl mercury) shows the highest levels of toxicity. It is followed by mercury vapors.

As a result, mercury deposits in inner organs such as the kidney, liver, and the central nervous system can be observed and must be interpreted as heavy metal poisonings.

Constant currents within the oral cavity will irritate the autonomic nervous system and cause neuralgia of all forms. Respective patients suffer from a lack of concentration, fatigue, sleep disturbances, cold and hot flushes. Cases present with chronic diseases such as ulcerative colitis, rheumatism and migraines. For MS-sufferers, galvanic oral currents can cause relapses. Physicians frequently cannot successfully treat patients without resolving the oral cavity's exposition to multiple metals.

Which measures can be taken to diminish negative electric impact?

As a first step, improved nourishment and better oral hygiene may be mentioned. The consumption of acidic beverages or citrus fruits can temporarily decrease the pH-value to 1-2. To reduce the corrosive effects of such liquids, large amounts of water containing low mineral levels should be consumed afterwards. The pH-value will immediately increase. Our saliva (i.e. its increased production in the event of over-acidification) provides the body with an excellent means for self-regulation. However, this is unfortunately not enough. As a second measure, teeth should be cleaned with tooth paste approximately 20 minutes after consuming acidic foods and beverages. Patients showing galvanic problems are recommended to search for additional nutrition advice.

Medical treatment is based upon the administration of positively charged minerals. Patients will receive magnesium, calcium, selenium, and zinc.

Since the objective is to change the saliva's pH-value as to being alkaline, Alkala N Powder or preparations providing for similar effects should be prescribed.

To conclude, from a holistic point of view, we recommend dental restoration along with remedying the galvanic factors of interference discussed above.

Dear Readers

Thank you very much for your interest.

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