Biological Dentistry

By Dr. Carla Schweer, France

Biological dentistry is a more bio-compatible approach to oral health and offers alternative therapy to the conventional dental practice. It regards the patient as a whole and does not treat the mouth in isolation. What happens to the teeth and gingiva has an impact on the rest of the body and, conversely, a systemic condition can affect oral health. Teeth are often the first sign of a general state of health. It involves a more organic approach to care, with less invasive protocols and materials. Biological dentists always seek the safest, least toxic way to accomplish the mission of therapy and all the goals of modern dentistry. Biological dentistry describes a philosophy that canapply to all facets of dental practice and healthcare in general.

Oral ecology

The human mouth contains around 500–1,000 different types of bacteria with various functions as part of the human flora and oral microbiology. Individuals who practice oral hygiene have 1,000 to 10,000 bacteria living on each tooth surface, while less clean mouths can have between 100 million and one billion bacteria on each tooth. Some of the bacteria in our mouths are harmful and can cause serious illness, while others are beneficial and prevent disease. Periodontal treatment is an essential component of biological dentistry to prevent diseases such as diabetes, cardiovascular disease, rheumatoid arthritis, Crohn’s disease and Alzheimer’s disease.

Immune system

The biological dentist will give the patient nutritional advice and prescribe vitamins and food supplements to enhance the immune system for a better outcome of therapy. For example, in biological dentistry, it is commonly known that a high vitamin D level and low LH, cholesterol are key factors for a better outcome for bone surgery and implant osseointegration.

Dental mercury

An amalgam restoration is of great concern in biological dentistry. However, amalgam contamination is because 90% of it consists of mercury, which is one of the most toxic non-radioactive elements on the planet. Therefore, biological dentistry has established beyond doubt that amalgam continuously releases mercury in small amounts and creates for bone surgery and implant osseointegration.

Endodontic treatment

Endodontically treated teeth are dead tissue left in the body. This type of procedure is not found in any other medical discipline. Inflammation is common at the root apex, as it is almost impossible to clean thoroughly in this area. Even the best endodontic specialist can never achieve complete cleaning of bacteria Accessory lateral channels and the endodontic-periapical connection via the root canal system are always sealed. Thus, bacteria harbored in root canal areas such as infratinnas, dentinal tubules and ramifications may evade disinfection. These pathogenic bacteria produce toxic and potentially carcinogenic hydrogen sulphide compounds (thioether and mercaptans) from the amino acids cysteine and methionine as by-products of anaerobic metabolism. Studies have reported several different strains of bacteria found in endodontically treated teeth with periapical periodontitis. Enterococcus facialis and yeast, mainly Candida albicans, are very resistant and have been repeatedly identified as the species most commonly recovered from root canal contents after retreatment, in cases of failed endodontic therapy and with persistent infections. The predominance of Gram-negative bacteria associated with endodontic infections and evidence of cytokine production in inflamed pulp and periapical granulomatous tissue has shown an elevation of systemic levels of inflammatory mediators in endodontic patients which could have an impact on distant organs.

Metals and oral gaiavirans

Biological dentists believe that placing metal and other foreign materials in the teeth and gingiva may have un-foreseen consequences. That is why biological dentists only offer metal-free alternatives such as ceramics or composites. Composites are also chosen with care, as they should be mercury-free and non-allergenic. Consequently, they are free of HEMA, bis-GMA and TEGDMA.

A bridge framework and titanium implants are replaced by a zirconia alternative. Zirconia is one of the strongest, stiffest and most heat-resistant materials known. These implants contain zirconia, a biocompatible ceramic material free of metal. These types of implants promote complete assimilation into the jawbone and the surrounding gingiva.

A side from their ability to provoke immune reactivity, metals are electrically active. Oral galvansism has been discussed for well over 100 years, but dentists have tended to ignore it at their peril. Biological dentists follow scientific evidence that amalgam continuously releases mercury in small amounts and creates in vivo due to wear (Fig. 3). The corrosion control and potential migration in vivo is currently limited to care-free coatings and possibly material selection and surface modification. The effectiveness of coatings may be limited in vivo due to wear (Fig. 5).

Cavitation or osteonecrosis

Cavitation or ischaemic osteonecrosis (NICO) is a hole in the jawbone, occurring mainly after a tooth extraction that has not healed correctly. Dr Greene Vardiman Black, one of the found-ers of modern dentistry, described this process as early as 1915. Patho-gens, a bedlin of form bacteria, are also present in this dead tissue and release highly toxic waste products that can pass into the bloodstream and have detrimental effects on the heart, kidney and joints, as well as the nervous, endocrine and dental systems.

Recent work in the field of facial pain syndromes and NICO has led to the realisation that the jawbone is a frequent site of ischaemic osteonecrosis. This can be called aeothetic necrosis and is often located near the root of the head. As a result, many extraction sites that appear to have healed have actually not healed completely. It may trigger pain in other parts of the face and head, and in distant parts of the body. Even though most of these sites present with no symptoms at all, pathological examination reveals a combination of dead bone and slow-growing anabolic pathogens in a mixture of highly toxic waste products where there otherwise appears to be proper healing.

Biological Dentistry today

Dentistry is a rapidly evolving field. Especially, biological dentistry is always seeking the latest research for a better and safer approach. In the past, it was revolutionary to be able to restore a tooth instead of just pulling it out; amalgam, gold and den-ture teeth were, at the time, innova-tive materials and a better option than extraction. But today, we can do better dentistry in a less toxic, more individualised, more integrated and more environmentally friendly way than ever. Biological dentistry is a mandate more than a specialty: It could also be called advisory dentistry or common sense dentistry. When dentists choose to put biocompatibil-ity first, they can look forward to practising effective dentistry while knowing that patients are provided with the safest experience for their overall health.

References


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