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Editor:
Regina Izquierdo

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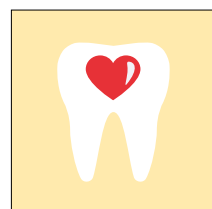
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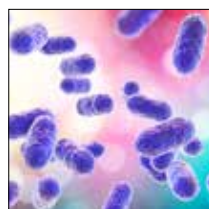
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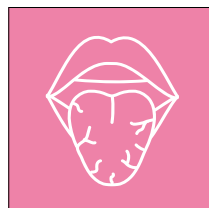
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PRESENTATION

Regina Izquierdo
Scientific editor of the magazine
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Are we what we eat?

THE BENEFITS OFFERED by good oral health are unquestionable – not only in the mouth itself but also in the whole organism. Having a healthy mouth not only helps prevent the appearance of so-called systemic diseases (such as diabetes and some heart conditions) but also helps control many of them. But, in addition, every day there is more evidence about the positive repercussion that periodontal treatment has on these systemic diseases.

As well as the pathological link between deficient gum health (which, in many cases, ends up provoking inflammatory disorders that extend beyond the mouth), there is a clear and direct association between a healthy mouth and a healthy life. It is not possible to follow a healthy lifestyle if you do not take sufficient care of your mouth, and vice versa. Hence the growing importance and interest in turning the dental clinic into a centre for promoting health... oral and general.

Because of this, our message from the dental practice on improving health must include not only specific recommendations about the appropriate routine for dental hygiene but should also create healthy habits. We should promote a healthy diet, taking care of our food as we take care of our mouths, improving even the way that we eat. But it is also important to teach how to manage stress and to encourage regular physical exercise and the giving up of toxic habits such as smoking.

In this issue, we put the spotlight on various aspects that link poor diet, obesity, inflammation, and oral problems – a vicious circle that should be broken. Information and motivation to follow healthy lifestyle habits should be part of the dental routine and should ALWAYS be present in the dental clinic, to help improve the quality of life of our patients.

Take Care of Your Gums

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Eat wisely, also think about your oral health

SECTION COORDINATED BY:

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Chronic non-communicable diseases kill 41 million people each year according to the World Health Organization (WHO), representing 71% of all deaths across the world. A common characteristic of these diseases – which include cardiovascular diseases, diabetes, metabolic syndrome, obesity, and cancer – is that they are of multifactorial origin, which is to say they result from a combination of genetic, physiological, environmental, and behavioural factors that provoke in patients a proinflammatory systemic state. Although they tend to be associated with groups of more advanced age, everyone – including children and young adults – is vulnerable to these risk factors.

To be able to prevent chronic non-communicable diseases it is important to understand and act as soon as possible on the factors that can be modified, and which depend on the patient – such as physical inactivity, smoking, alcohol abuse, and poor diet.

Most chronic non-communicable diseases arise from the combination of genetic, physiological, environmental, and behavioural factors

Periodontitis in the spotlight

Periodontitis is a multifactorial chronic disease that can also be considered as a chronic non-communicable disease. In order for it to appear, a “dysbiotic” biofilm (or organized bacterial ecosystem) needs to exist or, which is the same thing, a biofilm that is out of balance because of the increase of certain types of bacteria and the decrease of others within the overall set of bacteria in a particular medium, in this case the mouth.

This dysbiosis is an essential requirement but is not enough in itself to produce disease, as periodontitis is the result of complex interactions

A poor diet can cause, among other conditions, a considerable increase in inflammation in the organism, which is at the origin of many chronic non-communicable diseases, such as diabetes, cardiovascular diseases, and periodontitis

between bacteria and the immune and inflammatory response of each individual to them.

In patients susceptible to periodontitis, this response will be anomalous and exaggerated. As Dr Agustín Casa, master’s degree in periodontology and specialist in osteointegration from the Complutense University of Madrid (UCM), indicates, *“It could be said that it is a hyper-inflammatory response with the liberation of a multitude of proinflammatory substances that will in the end be responsible for the destruction of the periodontal tissues.”*

As with other chronic non-communicable diseases, the inflammatory response in periodontitis will be conditioned by risk factors, some of which are not modifiable (such as genetic factors) and others where it is possible to intervene, such as those related to individual habits, of which the most important are smoking, physical inactivity, and diet. →

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“A poor diet, which is a very common problem among obese people, generates significant oral and dental problems”



Dr. Francisco Tinahones

Endocrinologist and president of the Spanish Society for the Study of Obesity (SEEDO).

Refined carbohydrates and glycaemic index

To understand the influence of refined sugars on the generation of inflammation, it is important to know about the glycaemic index⁶. The glycaemic index of a food rich in carbohydrates indicates its capacity to raise glucose in the blood.

For this, the glucose itself is taken as a reference, and it is considered that it has an index of 100.

Consumption rich in sugars with a high glycaemic index (such as industrial baked goods, white bread, pasta, fruit juices, and carbonated juices) immediately provokes a rapid increase in blood glucose. This is even more intense in the case of juices which, because they lack fibre (which does not happen when we eat the whole fruit, and which results from their liquid consistency) the process of digestion and absorption is accelerated.

This spike in glucose stimulates the pancreas to rapidly release a huge amount of insulin which in turn provokes a rapid reduction of glycaemia, as a result of which the feeling of hunger quickly returns which stimulates the intake of more sugars. When these spikes are produced in a continuous manner, processes of oxidation and reduction are needed to transform so much glucose into energy, but this also means the production of a multitude of free radicals.

Furthermore, the excess of glucose in the blood triggers a series of processes that perpetuate the situation of a state of general inflammation in patients.



Periodontitis is a multifactorial chronic inflammatory disease, and is one of the most common chronic non-communicable diseases

→ Importance of diet

A poor diet is a common risk factor in chronic non-communicable diseases.

Thus, the type of diet can influence the way that the immune system will respond to various aggressions, as it is able to alter the inflammatory response both at the local level (as occurs with periodontitis) and at a general level (as in the case of cardiovascular diseases).

Every day the influence of diet on health becomes more apparent. *“Consuming essential nutrients, such as minerals and vitamins, is essential for life and their lack produces serious diseases,”* highlights Dr Cristina Serrano Sánchez-Rey, teacher of the master’s degree in periodontology at the UCM. Furthermore, she adds, *“there is more and more evidence that shows that the excessive consumption of certain substances – notably including refined carbohydrates and saturated and trans fats – will be a risk factor for the most common chronic non-communicable inflammatory diseases.”*

A diet may be inadequate for a lack of essential nutrients (for instance, in the case of scurvy it is the lack of Vitamin C), as well as for an excess of other less desirable foodstuffs, which include saturated fatty acids coming from dairy and meat products.

Influence of diet on systemic inflammation

Studies show how certain foods consumed excessively have the capacity to induce inflammation, and these are known as “proinflammatory foods”.

What links these foods and systemic inflammation² is so-called “oxidative stress”³, a situation that is produced in the organism when the delicate balance between pro-oxidant and antioxidant substances is broken.

Periodontitis results from complex interactions between bacteria and the immune and inflammatory response of the organism to them

Pro-oxidant agents are smoking, stress, radiation, and certain foodstuffs. For instance, refined carbohydrates and saturated and trans fats are pro-oxidant substances because metabolizing them requires the liberation of a multitude of free radicals.

Free radicals are atoms characterized by having a free electron on their surface which makes them tremendously reactive. They are able to attach themselves to a multitude of molecules and oxidize them rapidly.

The process produces a chain reaction, provoking damage at many levels including the DNA of the cells. In conditions of health, all metabolic processes produce free radicals, but in low amounts and in a controlled way so that the organism can neutralize them

when they have fulfilled their function, and to do this it uses antioxidant systems. There are two main groups of antioxidants, which are related to each other: the endogenous ones, which form part of our organism, and the exogenous ones, which are incorporated through diet.

Proinflammatory diet and periodontal diseases

A diet rich in refined sugars also negatively affects the oral cavity in being cariogenic. People who consume a lot of added sugar in their diet (including sugary drinks) have a greater predisposition to develop dental caries, while those that follow a diet low in carbohydrates have less risk of suffering this disease.

Given the multifactorial character of periodontal diseases, it is more complicated to discern the specific impact of diet on its appearance. A diet rich in refined sugars or saturated fats will provoke an elevation in general circulation of a large amount of inflammation products and oxygen radicals. All this combined provokes a situation of oxidative stress, impacting in a negative way the general inflammatory response, but also the local response in periodontal tissues. Some studies put at 80% the risk of periodontal destruction attributable to the inflammatory response of the organism to the dysbiotic biofilm.

Classic studies have demonstrated how the combination of poor oral hygiene and a diet rich in refined carbohydrates is associated with the →

“Having a healthy and balanced diet can become a protective factor against chronic non-communicable diseases such as periodontitis”



Dr. Agustín Casas

Master’s degree in periodontology from the Complutense University of Madrid (UCM) and member of the ETEP research group at the UCM.

Beware saturated fats!

FATS ARE ANOTHER TYPE OF NUTRIENT that is important for health, as they serve to produce energy, to absorb liposoluble vitamins (vitamins A, B, E, and K), and they are a source of essential fatty acids (linoleic and linolenic acid) necessary for brain function and the control of inflammation.

All fats present in their composition two types of fatty acid, unsaturated and saturated. A saturated fat is that which contains more saturated fatty acids, while an unsaturated fat is thus called because it has a greater part of unsaturated fatty acids. Saturated fats are characterized by remaining in a solid state at room temperature, and tend to derive from animals, while unsaturated fats are in a liquid state and tend to be found more often in vegetables. Examples of saturated fats are butter, red meat, full-fat milk, and ice cream, while unsaturated (mono- and polyunsaturated) fats are present in olive and sunflower oil and in avocados.

Another type of fat is the trans fat, produced by trans-fat acids that result from a process of hydrogenation of vegetable fats in order to preserve food. Examples of these are margarine, fried food, pies, cakes, etc.

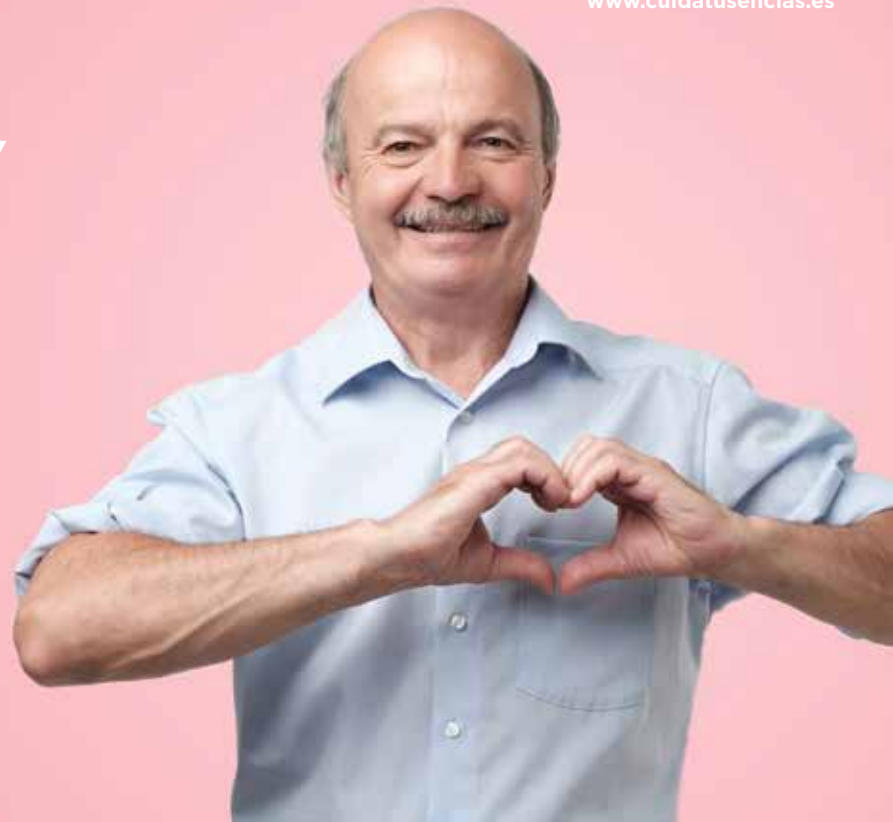
Both saturated and trans fats are proinflammatory foods. After their ingestion, they produce a very rapid increase in the blood of these saturated and trans-fat acids, they increase LDL cholesterol (which is also oxidated) and reduce HDL ("good") cholesterol. The organism responds to the increase of these lipoproteins with the release of proinflammatory cytokines and active-phase proteins, such as C-reactive protein. All this also produces a state of low-grade chronic systemic inflammation. For this reason, a diet rich in saturated and trans fats is considered to be proinflammatory, unlike a diet rich in mono- and polyunsaturated fats.

Oxidative stress, the villain of the piece

AN INFECTION, A SITUATION of acute stress, or a persistently inadequate diet can produce so great an increase in free radicals that it goes beyond the capacity of the antioxidants (endogenous and exogenous) to neutralize them. As a result, wear and tear occurs, as well as a deficit of antioxidants, and oxidative stress develops.

This provokes an activation of complex immunological pathways, with the release of inflammatory products, which will cause a low-grade systemic inflammation.

The inflammatory state induced in the patient is implicated in the appearance of the chronic non-communicable inflammatory diseases, such as periodontitis.



The excessive consumption of certain substances, such as refined carbohydrates and saturated or trans fats, is a risk factor for the most common chronic non-communicable inflammatory diseases

→ appearance of gingivitis, with a much greater inflammatory load when the consumption of carbohydrates is increased.

It has also been shown that people who stop brushing their teeth for four weeks and adopt the diet typical of primitive human beings (the so-called “paleo” diet, with no sugars or dairy products and little meat, but with a great variety of vegetables, fruit, and fibre) experience an increase in the levels of bacterial plaque but, curiously, their bleeding indexes reduce from 31% to 13%. According to Dr Casas, “this would confirm the importance of the relationship between the consumption of

carbohydrates and the inflammation of the gum.”

In the last five years, more controlled studies have been conducted which have confirmed that the consumption of refined sugars increases gingival bleeding. In this respect, as Dr Cristina Serrano warns, “*it must not be forgotten that gingivitis is the step before periodontitis, so if we want to reduce the prevalence of periodontitis it is essential to reduce gingivitis.*”

A diet rich in refined sugars also negatively influences the oral cavity as it is cariogenic

In terms of saturated or trans fats, animal studies suggest a close relationship with periodontal inflammation, and recent longitudinal studies performed in Japan relate a diet rich in saturated fats to a greater progression to suffer periodontitis in the longer term.

Healthy diet and improvement in periodontal health

If the premise that a proinflammatory diet can have a negative effect on the health of the gums is fulfilled, the contrary hypothesis can be proposed: if we improve the diet, reducing the consumption of refined carbohydrates and saturated fats, we could optimize the response of our immune system to bacterial biofilm and improve gingival health.

In recent years, numerous studies have been carried out with patients who maintain a carbohydrate-rich diet who have obesity, metabolic syndrome, and gingival inflammation.

These patients have had their diets modified, restricting the consumption of sugars and saturated fats and it has been observed that, even without changes in the patients’ toothbrushing technique (with plaque indices similar to those at the start of the study), there is a reduction in the bleeding index and in the probing depth⁴, as well as a decrease in the proinflammatory →

The glycaemic index of a foodstuff rich in carbohydrates indicates its capacity to raise blood glucose

→ cytokines of the gingival sulcus⁵. A major randomized, controlled study carried out at the University of Freiburg in Germany by Woelber et al. in 2019 selected 30 patients who had previously presented with gingivitis and a diet based mainly on carbohydrates (more than 45% of the total diet). There was no modification of the toothbrushing technique of any patient but they were asked to suspend interdental brushing (floss or interdental brushes). The patients were divided into two groups of 15: one continued with the carbohydrate-rich diet and the other group (experimental group) was given a special diet designed by the researchers. This so-called “optimized diet” consisted of the reduction of carbohydrates to less than 130 grams per day, the restriction of trans fats, and other substances were added to the daily diet: omega-3 fatty acids (oily fish), a source of vitamin C (two kiwis, an orange, a pepper, etc), a source of vitamin D (15 minutes of sun without protection, a supplement of 500 units, or 300 grams of avocado, etc), the consumption of an antioxidant (a handful of blueberries or a cup of green tea, etc), and fibre.

“The results of the study are very interesting,” says Dr Cristina Serrano. At the end of the study, all the patients had plaque indices similar to those at the start of the experiment, as all had

continued brushing in the same way as before starting the study apart from eliminating interdental brushing.

However, the group on the “optimized diet” presented a bleeding index much lower than that at the start of the study and this was differentiated from the group that had continued with the carbohydrate-rich diet, and the differences were statistically significant.

This reduction in gingival inflammation was not associated with microbiological changes (both the quantity and the quality of the bacteria were similar to the situation at the start of the study). Furthermore, people in the experimental group improved their blood levels of vitamin D and reduced their weight in a statistically significant way in relation to the control group.

If the consumption of refined sugars increases, there will be more gingival bleeding

What they have not yet been able to explain is whether these reductions in gingival inflammation result only from the reduction of proinflammatory foodstuffs in the diet (refined sugars and saturated and trans fats) or from the enrichment of the diet with anti-inflammatory food stuffs (such as those rich in oxidants and omega-3 fatty acids). Another possibility, as Dr Serrano suggests, is that “this improvement results from the sum of both attitudes – that is to say, from the reduction of proinflammatory foods and the incorporation of more foodstuffs that are considered to be anti-inflammatory.” →



Dra. Lourdes Nóvoa

Tutor of practices in periodontology at the University of Santiago de Compostela (USC).

The dangers of the Western diet

IN RECENT YEARS, the term “Western diet” has become popular, a diet characterized by the habitual and excessive consumption of red meat, processed food, saturated fats, refined sugars, and with little or very little intake of vitamins and fibre (fruit and vegetables).

This food regime has become extensive thanks to the wide availability of ultrarefined food products at low prices and with big marketing strategies behind them. It is known as “Western” because it has increased in the most developed countries, against the more natural diet of oriental countries such as China and Japan based on fruit, vegetables, and fish, although that diet too has become Westernized over the years.

It is now known that the Western diet weakens our immune system and is related not only to obesity but also to other chronic inflammatory diseases.



“The most important decision for our health – oral and general – is one we take every day when we choose what to eat”



El tipo de dieta puede influir en la manera en que el sistema inmune va a responder a las diferentes agresiones

→ Western versus Mediterranean diet

What is not in doubt is that the Western diet, based on large amounts of refined sugars and highly processed products, has a negative influence on the organism's immune response and is closely connected to the increase in chronic inflammatory diseases such as periodontitis.

On the other hand, a diet rich in high-quality proteins, with unsaturated fats, without refined sugars, and rich in antioxidants prevents obesity, diabetes, cardiovascular diseases, and surely also inflammation of the gums. A clear example of this kind of diet is the Mediterranean diet, rich in monounsaturated fatty acids (such as olive oil) and characterized by the consumption of local and in-season fruit and vegetables, oily fish, legumes, and red wine. ■

GLOSSARY

- 1. Dysbiosis:** Unbalance between the number or proportion of microorganisms that are beneficial for health on the one hand and pathogens on the other.
- 2. Systemic inflammation:** characterized by the increase in inflammatory factors in the blood which, independently of their origin, can spread to different target organs, which may cause lesions or loss of functionality in the infiltrated tissue.
- 3. Oxidative stress:** is produced by an imbalance in the balance that should exist in the organism between oxidants and antioxidants, resulting in an excess of oxygen free radicals in the human body. When the antioxidants are insufficient to counteract the free radicals and the number of the latter increases in the cell, the oxidative activity inside the cell increases, a structural and functional change is produced which accelerates its ageing and encourages apoptosis or cellular death.
- 4. Probing depth:** distance from the gingival margin to the bottom of the periodontal pocket; it is measured with a probe in millimetres at six points on each tooth.
- 5. Gingival sulcus:** virtual shallow space formed by the internal part of the marginal gum and the tooth surface (enamel or cement).
- 6. Glycaemic index:** a measurement of the speed with which a foodstuff can increase the level of sugar (glucose) in the blood.

Infectious endocarditis, an easily avoidable threat



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A CONGENITAL CARDIOPATHY is a problem in the normal anatomical structure of the heart which is present since birth. Congenital heart defects are anatomical lesions of one or more of the four cardiac chambers, of the walls which separate them, or of the valves or outlets. Minor cardiac anomalies may not require any treatment while the more severe kind may require medical or surgical treatment during the first year of life. These patients often suffer oral pathologies that require treatment in the dental clinic and they are patients at risk of contracting infectious endocarditis during dental treatment.

Infectious endocarditis represents one of the biggest risks in the management of paediatric patients with congenital cardiopathy, so its prevention is essential. Infectious endocarditis is an inflammatory disease of the endocardium secondary to infectious phenomena and is characterized by the presence of an endothelial lesion to which bacteria

can adhere after a bacteriemia and then proliferate, giving rise to the typical presentation of endocarditis.

For its part, **bacteriemia** is a phenomenon characterized by the presence of bacteria in the bloodstream as a consequence of daily activities (toothbrushing, chewing), dental or medical procedures, or the existence of infections.

Unjustified fear and serious consequences

At times, the lack of information and fear of what could happen in the →

Optimal oral care in people with congenital cardiopathies and the adoption of a series of prophylactic measures in the dental clinic can avoid the appearance of particularly serious events, such as infectious endocarditis or bacteriemia

THE
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“Fear and the lack of information on oral care and health among patients with cardiac diseases can lead to a worsening of their general health”



Dra. María Faus

Master's degree in periodontology and implants from the University of Valencia (UV).

Cardiopathies and the risk of endocarditis

1 High risk:
endovascular prosthesis, previous endocarditis, complex cyanogenic congenital cardiopathy, and systemic-pulmonary fistulas performed surgically.

2 Moderate risk:
other congenital cardiopathies, acquired valvulopathies, mitral valve prolapses with insufficiency, hypertrophic cardiomyopathy.

3 Low risk:
cinteraauricular communication (oval fossa type), intervened interauricular or intraventricular communication, previous bypass, mitral prolapse without regurgitation, pacemaker, implantable defibrillator.

→ dental surgery to these patients with congenital cardiopathies results in their not visiting dentists to receive necessary treatment. This measure is disproportionate and can be highly counterproductive. In fact, in these cases it is common that the children end up developing multiple caries and gum infections which can have negative repercussions on their general health.

But, as well as this fear or disinformation, there are other factors that allow many of these children with congenital cardiopathies to neglect their dental care, above all the fact of fundamentally putting the focus of concern on their cardiopathy, leaving their dental health in a completely secondary plane. This is because both parents and doctors are unaware of the relationship between oral health and its great impact on general health. It is important that parents are aware that the oral health of their child with congenital cardiopathy may be vital. Both paediatric dentists and cardiologists as well as parents should work together to educate these vulnerable children with congenital cardiopathies to ensure they have good oral health.

Maintaining an oral infection without treatment can cause systemic manifestations, as these infections are not limited to the oral cavity but, through the blood vessels, can reach other parts of the organism (including the heart) and worsen their health.

Healthy mouth, protected heart

To prevent infectious endocarditis within the dental practice, the taking of antibiotics before performing certain types of dental surgery that can allow the passage of bacteria into the bloodstream should be considered.

Generally, the preventive administration of antibiotics is advised in children with cyanotic congenital cardiopathies, who have previously had infectious endocarditis, or who have an artificial cardiac valve. In any case, it is the cardiologist, depending on the

cardiac pathology presented by the child, who will recommend or advise against the use of preventive antibiotics when the child is subject to a dental procedure.

But the best prevention of infectious endocarditis, even more than the administration of prophylactic antibiotics, is having good oral health, free of infections, and based on correct daily hygiene, thereby reducing the incidence of daily bacteriemia after toothbrushing. However, in patients susceptible to this type of disorder or whose health is compromised, other measures will be necessary to control these bacteria.

Special care

Dentists should motivate their patients to perform a good control of bacterial plaque, which reduces the volume of microorganisms that can enter the bloodstream during dental treatment. In addition, this professional will explain that they should not fear to visit the dentist and both the patient and their cardiologist should be informed in advance of the preventive measures to take.

People with a congenital cardiopathy tend to present oral diseases that require treatment in the dental clinic

But children with cardiac anomalies should also follow a preventive oral care programme to achieve excellent care of their mouths:

1. Adequate daily oral hygiene with brushing of gums and teeth, dental floss, twice a day
2. Every three months, a new toothbrush
3. Regular check-ups with the dentist, twice a year
4. Professional mouth cleaning, once a year or according to the dental or periodontal pathology that they present



Antibiotic prophylaxis in dentistry: why, when, with what?

The aim of antibiotic prophylaxis in dentistry is to prevent the appearance of infection in the area where treatment is performed or at the systemic level, when there is a risk of infection whether through the characteristics of the treatment carried out or the patient's state of health. Antibiotics reduce bacteriemia and impede bacterial adherence to the endocardium.

Antibiotic prophylaxis is performed in those patients who are susceptible, with predisposing cardiopathy, in whom "invasive" dental treatments are performed (such as extractions, root planing, surgery, etc...) as these can produce bleeding, bacteriemia, and have a risk of infection. Non-invasive procedures do not require preventive treatments with antibiotics.

It is usually sufficient to administer antibiotics at blood concentrations that prevent the dissemination of microorganisms (generally *Streptococcus*, *Staphylococcus* and gram-negative and anaerobic bacilli) prior to dental treatment.

Mouthwashes with chlorhexidine at 0.12% five minutes before starting the dental treatment are also recommended, to help minimize the risk of bacteriemia.



A controversy that is still alive

THE PREVENTION OF INFECTIOUS endocarditis does not defend the indiscriminate use of antibiotic prophylaxis in all dental procedures. Prophylaxis for dental procedures is advised only for patients with cardiac conditions associated with a high risk of developing infectious endocarditis and for those procedures with significant bacteriemia.

Some authors and scientific societies question the use of antibiotic prophylaxis as they do not find sufficient scientific evidence that

demonstrates that the use of antibiotic prophylaxis is effective for the prevention of infectious endocarditis and believe that only a small number of cases of infectious endocarditis could be prevented with antibiotic prophylaxis. Their use is also questioned because of the appearance of possible side-effects and of bacterial resistance.

The risk of contracting infectious endocarditis during dental treatment is greater in patients with congenital cardiopathy

In line with the cardiologist

Antibiotic prophylaxis will be essential in patients with a high risk of suffering infectious endocarditis who receive interventions in the maxillofacial area. Among these high-risk patients are those who have previously been referred for an endocarditis, who wear valvular prosthesis, who have congenital cardiopathies, those with surgical derivations, and those with acquired valvulopathies, hypertrophic cardiomyopathy, mitral valve prolapses, sustained murmurs, or Marfan syndrome. In these cases, before starting dental treatment, the dentist should consult the patient's general doctor and cardiologist.

The cardiologist should decide in which dental treatments and in

which patients antibiotic prophylaxis should be performed, always assuming the importance of having the best possible oral health before any dental procedure. The criteria of the cardiologist in deciding whether or not antibiotic prophylaxis is needed should be based on the risk-benefit relationship. The benefit is the prevention by the antibiotic of possible infectious complications after performing the treatment. The risk of antibiotic prophylaxis is focused on the possible appearance of adverse allergic reactions or the development of antibiotic resistance in the oral cavity.

The prophylaxis of infectious endocarditis related to dental treatments tends to be made with antibiotics that are effective against oral streptococci and anaerobes, such as amoxicillin (2g orally), which tends to be the antibiotic of choice, or amoxicillin with clavulanic acid (2g + 125mg); in allergic patients, the alternative is clindamycin (600mg orally) or azithromycin. The antibiotic

People with a congenital cardiopathy should not avoid the dental clinic out of fear of the possible appearance of infectious endocarditis

is given in a single dose, administered 60 minutes before the dental procedure if given orally or 30 minutes before if given intravenously.

Ultimately, the best prevention of infectious endocarditis involves having good oral health free of infections and correct daily hygiene, reducing in this way the incidence of daily bacteriemia after toothbrushing. ■

GLOSARIO

- 1. Endocardium:** membrane that locally covers the cavities of the heart. It forms the internal lining of the atria and the ventricles.
- 2. Endothelial lesion:** involvement of the endothelium, the tissue that lines all the blood vessels, including the layer of the heart called the endocardium.

"Good daily oral hygiene, regular visits to the dentist, and good communication with the cardiologist are fundamental points for preventing complications in patients with congenital cardiopathies"



Dra. Ana Castellano

Master's degree in periodontology from the University of Santiago de Compostela (USC).

Approaching the most severe cases of periodontitis:

the importance of self-evaluation and early diagnosis

Better knowledge of the prevalence of periodontitis and its evolution towards more severe forms, together with the possibility of making a self-evaluation, allows this problem to be minimized and personalized periodontal treatments to be carried out

SECTION CO-ORDINATED BY:

Desirée Abellán
Associate professor, Master's degree in periodontology, UIC Barcelona

Advanced periodontitis is a chronic inflammatory disease that affects 11% of the global population, implying a significant deterioration in the quality of life related to oral health. This severe form of periodontitis contributes to systemic inflammation and can have an impact on other chronic diseases, such as diabetes and atherosclerotic cardiovascular diseases. It thus has a clear and significant effect on general health.

Periodontitis is an infectious disease, a consequence of a bacterial attack on a susceptible subject, in whom modifiable and non-modifiable risk factors also play a role. Genetics play an important role in the appearance and development of periodontitis, and it is estimated that the genetic load can be responsible for up to 50% of susceptibility to the disease.

There are modifiable risk factors in periodontitis – such as the lack of oral hygiene, poor control of diabetes, and smoking – which can increase by up to five times the risk of suffering this disease

However, there are environmental and acquired risk factors that can be modified, such as a lack of oral hygiene, a poor control of diabetes, and smoking, which can increase by up to five times the risk of suffering periodontitis.

Periodontitis and diabetes, a dangerous alliance

The relationship between periodontitis and diabetes mellitus has been studied for years. High levels of glucose

encourage the proinflammation of the periodontal tissues, implying a greater risk of developing gingivitis and a greater severity and progression of periodontitis.

In recent years, it has been demonstrated that the relationship between diabetes and periodontitis is bidirectional: it is not only that poor control of diabetes worsens the periodontal status but also that periodontal diseases can worsen glycaemic control in people with diabetes. Furthermore, periodontal treatment in diabetic patients has shown improvements in terms of levels of glycosylated haemoglobin (HbA1c) and can reduce HbA1c levels by up to 0.4%. Other pathological interactions have been found, such as the relationship between overweight or obesity and periodontitis, as well as →

THE
OPINION
OF THE
EXPERTS

“Periodontitis is a very prevalent chronic inflammatory disease that is associated with a multitude of systemic diseases and which – especially in its more advanced stages – has repercussions on the quality of life of patients, which means that early diagnosis will be key to minimising its consequences.”



Dra. Cristina Carral

Collaborating teacher of the master's degree in periodontology at the University of Santiago de Compostela (USC).

Efficacy of self-evaluation

IN THE UNITED STATES, measures aimed at encouraging self-evaluation and self-reporting have had success in generating health data for various chronic diseases and risk factors.

Since 2006, the use of these measures has been investigated by the American Academy of Periodontology and the Centers for Disease Prevention and Control to estimate the prevalence of periodontitis, identifying eight measurements of self-reporting correlated to clinical measurements of periodontitis.

The results of these measurements have proven useful in estimating the prevalence of periodontitis and they are able to optimize the precision of partial-mouth examinations, especially in cases of advanced periodontitis.

In Spain, the use of the self-evaluation test designed by SEPA to predict periodontitis has demonstrated a sensitivity and specificity of between 60 and 80%, indicating sufficient validity for monitoring studies and providing an adequate estimate of the prevalence of periodontitis in comparison with full or partial clinical examinations. Thus, the use of these tests by primary-care doctors and in the dental clinic could be very useful in screening of patients with a high risk of advanced periodontitis.

THE OPINION OF
THE EXPERTS

“As well as causing deterioration in the mouth’s health, function, and aesthetics, periodontal diseases can promote the response at the systemic level and generate and aggravate general health problems”

“The need for early detection of periodontitis and certain systemic diseases is driving teamwork between dentists and other health professionals to minimize the impact on the health of our patients”



Dr. Paula Matesanz
Secretary of the Spanish Society of Periodontology (Sepa).

The prevalence of periodontitis increases with age, with the increase of levels of glycosylated haemoglobin, and is greater in smokers and in men

→ the link between metabolic syndrome and periodontitis.

Thus, given the relationship between periodontitis and other chronic diseases, it is necessary to strengthen preventive measures to reduce the inflammatory load associated with periodontitis. The analysis of population data allows an understanding of the determining factors and the distribution of the disease, and can be used in the development of prevention programmes.

Radiography of periodontitis

National surveys financed at federal level, such as the National Health and Nutrition Examination Survey (NHANES), have represented the only representative source of information on periodontal diseases in the United States.

The analysis of data from the National Health and Nutrition Examination Survey 2011-2012 (NHANES 2011-2012) in the United States has allowed the evaluation of the associations between cardio-metabolic risk and moderate-advanced periodontitis, charting this association in the adult population of the USA.

In addition, these results provide the basis for the use of demographic algorithms – on lifestyle, cardio-

metabolic status – that allow the detection of periodontitis in primary-care health centres.

According to these data, periodontitis presents a prevalence of about 50% – 36.06% moderate and 13.19% advanced. This prevalence increases with age (as it reflects the periodontal destruction accumulated over time), with the increase in levels of HbA1c, and is greater in smokers and in men.

Among different ethnic groups, the prevalence of periodontitis is greater in African Americans (61%) and Hispanics (57.6%), and lesser in Asian Americans (48.5%) and non-Hispanic whites (40.4%). In addition, low educational level and lower income also seem to increase the prevalence of severe-moderate cases.

The use of self-evaluation tests to predict periodontitis have demonstrated a sensibility and specificity of between 60 and 80%

Towards greater knowledge and a better approach

Among the cardio-metabolic risk factors, the consumption of tobacco closely corresponds to the more severe forms of periodontitis, and it is the strongest risk indicator, followed by HbA1c levels. Smokers present greater risk of suffering moderate-advanced periodontitis compared with non-smokers.

→



Dr. Álex Picó
Collaborating teacher of the master's degree of periodontology at the University of Santiago de Compostela (USC).

“Recognizing the differences between a healthy and a diseased gum can help prevent serious complications in our general health”

THE OPINION OF
THE EXPERTS

“Early diagnosis is a very important part of prevention, through which we achieve an early detection and a more effective treatment of periodontitis”



Dra. Blanca Ríos

Professor of advanced periodontology at the University of Seville (US).

The use of self-evaluation tests in primary care could be very useful in detecting people with a high risk of advanced periodontitis

→ People with levels of HbA1c $\geq 5.7\%$ present a greater risk of suffering moderate-advanced periodontitis than people with normal HbA1c levels. Patients aged under 50 with HbA1c levels $\geq 5.7\%$ have a very high risk of suffering moderate-advanced periodontitis, which increases in the subgroup of smokers. Furthermore, HbA1c levels $\geq 5.7\%$ seem to be the only cardio-metabolic parameter associated with clinical attachment loss $\geq 6\text{mm}$. In terms of obesity, adults under 50 seem to have more risk of presenting moderate-advanced periodontitis.

The creation of a predictive model that includes age, race, HbA1c, and smoking habit has demonstrated a 70% sensitivity and a 67.7% specificity in detecting cases of moderate-advanced periodontitis in the US adult population.

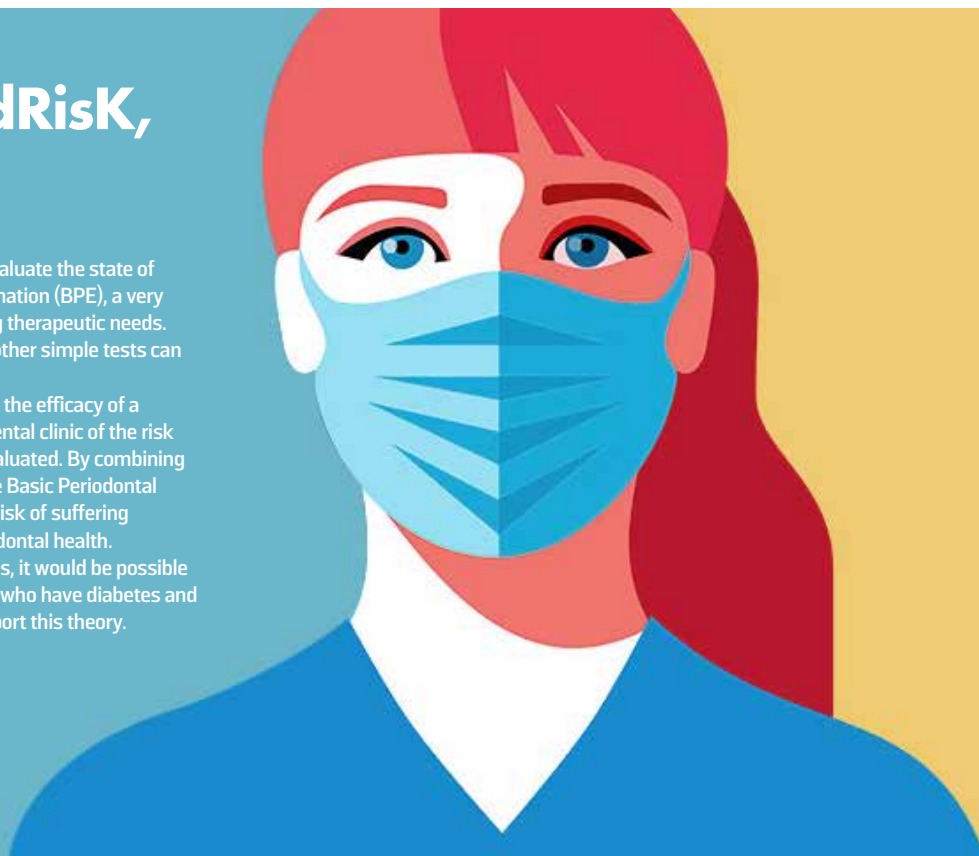
Thus, the use of this model, in combination with cardio-metabolic, demographic, and lifestyle variable, can be used by primary-care doctors to detect cases of undiagnosed or untreated moderate to severe periodontitis, thereby supporting the approach of integrated and personalized treatments by doctors and periodontists. ■

From BPE to FindRisk, unity is strength

There are now simple and practical resources to evaluate the state of gums health, such as the Basic Periodontal Examination (BPE), a very useful tool for rapid assessment and for evaluating therapeutic needs. Furthermore, the combination of these tools with other simple tests can offer information of great clinical information.

Thus, in the DiabetRisk test, promoted by SEPA, the efficacy of a protocol for facilitating the early detection in the dental clinic of the risk of suffering diabetes and prediabetes has been evaluated. By combining the FindRisk (FINnish Diabetes Risk Score) and the Basic Periodontal Examination, it has been possible to estimate the risk of suffering diabetes and perform a rapid examination of periodontal health.

The hypothesis is that, combining both resources, it would be possible to increase the capacity of risk detection of people who have diabetes and still do not know it. The first published results support this theory.



“Nutrition undoubtedly determines oral health”

FRANCISCO TINAHONES
PRESIDENT OF SEEDO
(SPANISH SOCIETY FOR
THE STUDY OF OBESITY)

SECTION CO-ORDINATED BY:

Assumpta Carrasquer
Professor of Master's
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implants. Faculty of Dentistry,
University of Valencia.

Spain is one of the European countries with the highest rates of obesity, with a growing trend in recent years. Apart from the typical clinical complications that are involved, it is now known that excessive weight also worsens the prognosis of patients with COVID-19. To combat this health problem, the alliance of adequate nutrition and good oral health is fundamental.

In this time of the coronavirus pandemic, we also find ourselves immersed in another that is less perceived, but which affects even more people and which is associated with a high mortality level, don't we?

There are today more than 650 million people with obesity in the world and deaths causally related to this are approaching three million a year.

They are figures that should concern us and keep us busy, as this pandemic is also expanding at an accelerated rate without efficient measures being taken to stop and reverse it. Obesity is associated with many comorbidities: there would hardly be type-2 diabetes if obesity did not exist, and it increases the prevalence of certain types of cancer, problems with joints, breathing, digestion, fertility and many more... including the poor prognosis for patients with COVID-19 if they are obese.

Why do you think that the economic and health impact of obesity continues to be underestimated at the social and political level?

It is undoubtedly a problem that is underestimated; unfortunately, there is little social or political awareness of the seriousness of this disease. A study carried out by SEEDO observed that 80% of obese subjects did not recognize themselves as such; and, even more worryingly, in the ALADINO Study 2019 [a study of diet, physical activity, childhood development, and obesity in Spain], only 4.8% of parents with obese children believed that the weight of their child was a problem.

If we go to social media, obesity is almost always treated without respect and as a joke, something which no one would dare do with other diseases such as cancer, for instance.

Finally, the competent authorities of almost all countries are beginning to perceive the huge health problem that is coming to them, but they are reacting late and with little energy. The problem of obesity will not be solved only with information, they need to intervene using their executive and legislative power to tackle holistically this problem which is clearly multifactorial.

Whoever views obesity as a problem of a lack of people's willpower in terms of living a healthy life – putting the

The obesity pandemic is spreading at an accelerated rate without measures being taken to stop and reverse it

blame on obese people – has a very myopic view of the problem. One should not blame the obese and, on the contrary, they should be offered solutions to combat a serious health problem.

There is no easy solution to reverse the problem of overweight and obesity, but it undoubtedly includes prevention.

What basic recommendations would you give to avoid or tackle this health problem?

The intervention needs to be multifactorial. For example, in the prevention of childhood obesity certain strategies have been successful in acting in a combined way with diet and encouraging physical activity in schools and at home. You cannot create programmes to encourage physical activity without having towns and cities that allow it. The subject of prevention is very complex. The two variables that are most associated with obesity are low economic and educational levels; this fact confirms the idea that prevention in an effective way can only be done with the direct involvement of political leaders. →



The interview in 10 phrases

"There are more than 650 million people with obesity in the world, and almost three million deaths every year associated with it"

"There would hardly be any type-2 diabetes if obesity did not exist"

"The problem of obesity will not be solved only with information; authorities should intervene using executive and legislative power"

"Blame should not be placed on obese people, who should be offered solutions to tackle a serious health problem"

"The two variables most associated with obesity are low economic and educational status"

"Only with the direct involvement of political leaders can the pandemic of obesity be prevented in an effective way"

"People who suffer obesity are more likely to develop periodontitis"

"A family may be more motivated to adopt a healthy diet to protect their teeth than because of the risk of putting on weight"

"A healthy diet helps maintain good oral health and prevents obesity"

"Periodontal health can be a factor related to cardiovascular diseases, including obesity"

Obesity and periodontal disease are two problems and areas of knowledge with significant meeting points

→ Should we not demand more health education in schools to have a society that is more aware of obesity and oral diseases?

Of course. There is a lot of work to be done. We should not forget that if 80% of obese people do not see that they have a problem, how are we going to be able to convince them to change their habits?

In 2016, the World Health Organization recommended that all countries had education in nutrition and health, including food-preparation classes. But changing the beliefs of children and adults is not achieved by just one hour-long class; there has to be a fine rain that soaks the student throughout the whole of his or her education.

Every day in our surgeries we treat malnutrition because of poor oral health.

The struggle against obesity is led by endocrinological experts like yourself, but to what point is collaboration with other health professionals essential to attaining the desired objectives?

Fortunately, in this struggle professionals from other disciplines are coming together, and both family doctors and colleagues from other specialities see every day the damage caused by this disease.

Within SEEDO, for instance, there are members related to sports medicine, psychologists, primary-care doctors, internists, nutritionists, and many other professionals with different profiles who have joined this battle.

The Spanish Society of Periodontology (SEPA) leads an Alliance for General and Periodontal Health, with the participation of dozens of scientific societies. What do you think of this type of initiative? Can we also count on SEEDO?

The only way to achieve great success is through collaboration. We would be delighted to join this initiative.

And within this collaboration, what role do dentists play? Are they also essential for resolving this problem?

Nutrition undoubtedly determines oral health. Poor diet, which is very common in obese people, generates dental and oral problems.

Furthermore, there is evidence that people who suffer obesity are more likely to develop periodontitis. So, it is clear we have many meeting points.

Do you believe, for instance, that a review of diet, as part of the regular check-ups that are made to combat diseases such as caries, should also be part of the dental practice?

We have a fierce battle to reduce the consumption of refined sugars and, in this respect, to prevent childhood obesity the WHO recommends limiting drinks sweetened with sugar.

Very often there are specific messages that achieve a change in habits: people change their habits very often for subjects that worry them, and it may be that a family is more motivated to protect their teeth through a healthy diet than through the danger of putting on more weight.

In any case, what is clear is that healthy nutrition helps maintain good oral health and also prevents obesity.

It also seems that, as well as what you eat, how you eat and the health of your mouth can be important factors in triggering or promoting weight gain, right?

Oral health is determined by an adequate nutrition.

Poor diet, which is very common in obese people, generates oral and dental problems

Every day in our surgeries we treat malnutrition through poor oral health, for instance.

In this respect, there is more and more evidence that highlights the numerous systemic effects of periodontal health, impacting on cardiovascular diseases or diabetes. In the case of obesity, can a connection of this type also be appreciated?

Yes, there is increasing scientific evidence that periodontal health can be a factor that is related to cardiovascular diseases, including obesity.

The only way to achieve significant success is through collaboration

Leaving aside the obvious differences, it seems that both obesity and periodontal disease have many similarities: they are not associated with specific symptoms, their origin is multifactorial, they are linked to almost the same risk factors as cardiovascular disease... is that right?

Indeed. This interview has served to make me aware that we have two areas of knowledge with big meeting points. I hope that this will prove to be the start of joint health-promotion strategies. ■

There's no such thing as a 'magic' toothbrush

Innovation in the design, material, and functions of toothbrushes has been extraordinary in recent years, but we should be wary of commercial messages that highlight almost 'miraculous' properties

SECTION CO-ORDINATED BY:

Mónica Muñoz
Master's degree in periodontology, Complutense University of Madrid. Certified in implantology, University of the Basque Country.

Rosa Puigmal
Master in Periodontology, University of Barcelona.

Recently an innovative 'super-effective' toothbrush has appeared in the market that provides advantages over existing systems of oral-health care. At least, that is what the company in charge of its marketing says.

In 2019, the US company Sevens launched a crowdfunding campaign to bring forward 'Chiiz', one of its most ambitious projects. A sonic toothbrush, which resembles a mouthguard that is covered with bristles and which can perform up to 25,000 movements per minute to clean the teeth in 30 seconds.

A few months later, the French company Fasteesh raised the stakes and claimed to be able to keep the mouth clean and healthy in barely ten seconds. All this thanks to the 'Y-Brush', a sonic brush that looks like the kind of mouthguard used by sportspeople.

A real revolution?

Along the same lines, there is Ultra Brush®, a project launched in Munich in September 2017 by Dr Max Spicer, a professional dentist for 21 years, and Marco Koller, a sales executive of a famous brand of cosmetics. It is a U-shaped brush with silicone bristles that covers both dental arches. It is ultrasonic and cleans all the teeth simultaneously.

According to the manufacturers, "it is fun, safe, and easy to use and

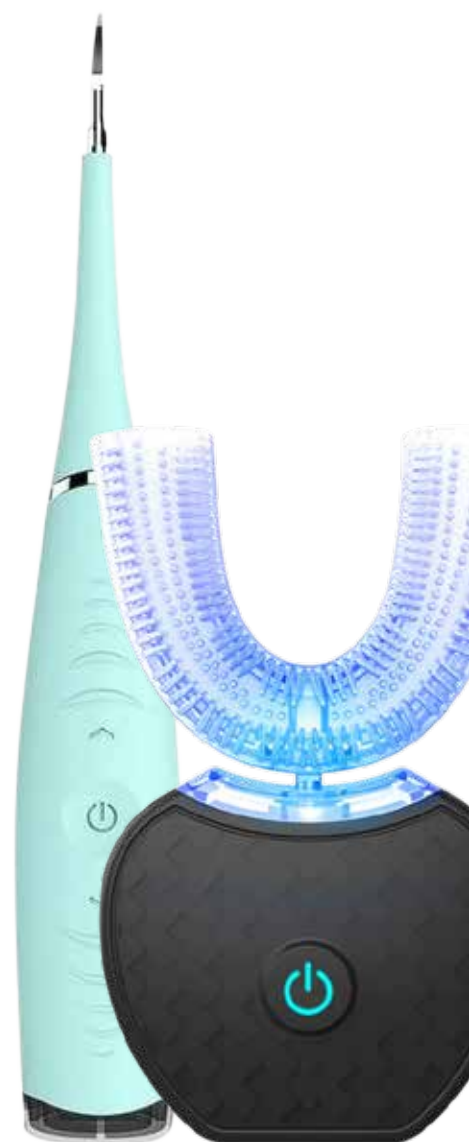
New oral cleaning devices promise an effective tooth cleaning in only 30 seconds and with an antibacterial effect

performs an efficient oral cleaning." Furthermore, it has the option of tooth whitening with cold light. It implies a saving of time, as it cleans all the teeth in only 30 seconds; and to perform a more complete cleaning of our gums, it promises to do so in about five minutes.

Alongside this, the manufacturers claim that it has an antibacterial effect, eliminating pathogens, and would thus help to achieve a healthy oral flora.

But, in fact, if we analyse things with a little rigour and care, this device does not a priori offer so many advantages over the conventional sonic and ultrasonic electric toothbrushes in the market as it might appear.

A comparative study between the different systems would have to be performed to be able to make this claim, as was carried out between manual brushes and electric ones when the latter appeared in the market. →



The Ultra Brush® does not offer a priori as many advantages as it seems compared with electric brushes

→ The manufacturers highlight that the whole mouth can be cleaned in only 30 seconds, but this does not imply a huge benefit given that standard electrical toothbrushes achieve an optimal dental cleaning in only two minutes. Really, if the recommendation to brush teeth three times a day is followed, only 4.5 minutes a day would be saved, against the risk that the oral hygiene would not be as effective as the manufacturer says, given the absence of clinical studies to corroborate it.

Limitations to consider

Another drawback of this type of device is that they are not available in different sizes, something which can cause certain problems in the long term, because the size of the mouth and the mouth opening is different in each individual.

Another inconvenience is the sensation of a full mouth as well as the gag reflex that it can cause in some patients (as when measurements are taken to make a mould of our mouths).

Tooth whitening is a technique that must be supervised by a professional

On the other hand, brushing your teeth is not a habit that necessarily has to be enjoyable, any more than washing your hands is. It is a habit of health. We find ourselves at a historic point in the care of our health and the need to acquire healthy hygiene routines has become even more important and, without a shadow of doubt, oral hygiene is fundamental. And this is because not only does it help prevent diseases such

as caries, gingivitis, or periodontitis – among others – but also because caring for our mouths means we are taking care of our general health by reducing the risk of suffering other diseases (metabolic, lung, heart...).

Whitening and antimicrobial effect?

These new automatic devices offer the option of whitening teeth as well as cleaning them. Tooth whitening is a technique that should be supervised by a professional to avoid possible complications or undesirable effects (such as dental hypersensitivity).

Another of the leading properties or characteristics of the Ultra Brush® is its antibacterial effect. However, this result is also achieved with any toothbrush, electric or not, provided that both the technique and the duration of brushing and the toothpaste used are adequate.

Comparative studies would be needed with various systems of oral cleaning

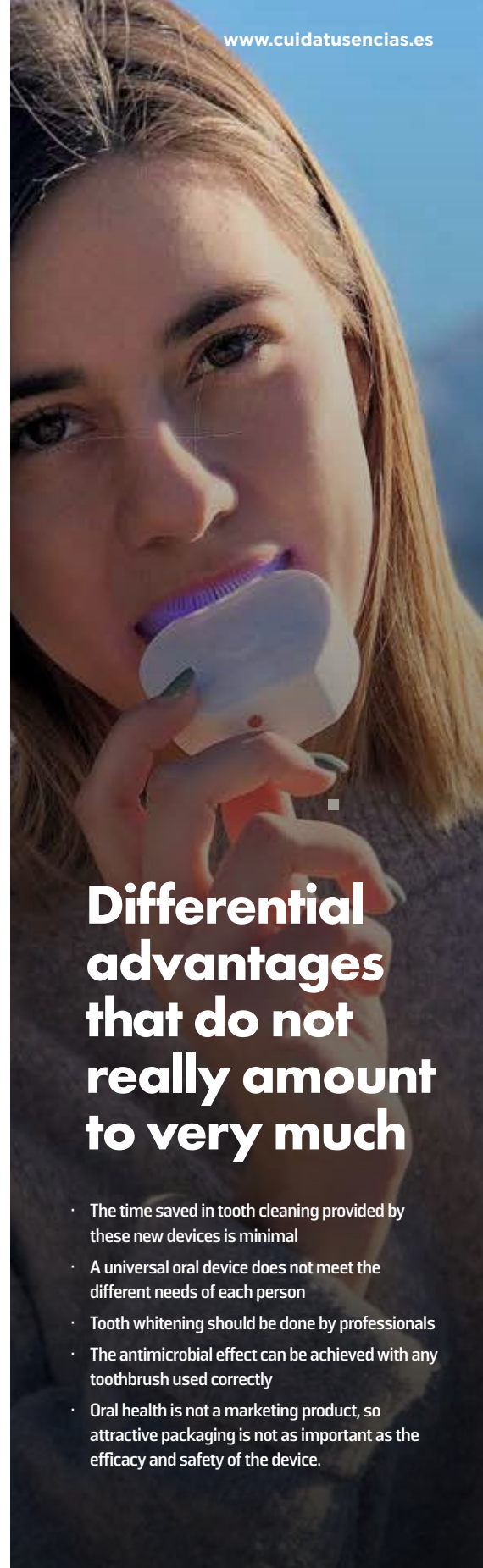
Furthermore, this ‘revolutionary’ kit for oral cleaning comes in a ‘luxurious and elegant’ case... We are talking about health here, and now more than ever it is necessary to be serious and rigorous.

Beyond the time that we can save with this system, it does not offer additional advantages over the systems of electric toothbrushing that are already in the market and there are some possible downsides.

Comparative studies of the different systems would be necessary to elucidate which offers most advantages to the user in maintaining correct hygiene and oral health. ■

Differential advantages that do not really amount to very much

- The time saved in tooth cleaning provided by these new devices is minimal
- A universal oral device does not meet the different needs of each person
- Tooth whitening should be done by professionals
- The antimicrobial effect can be achieved with any toothbrush used correctly
- Oral health is not a marketing product, so attractive packaging is not as important as the efficacy and safety of the device.



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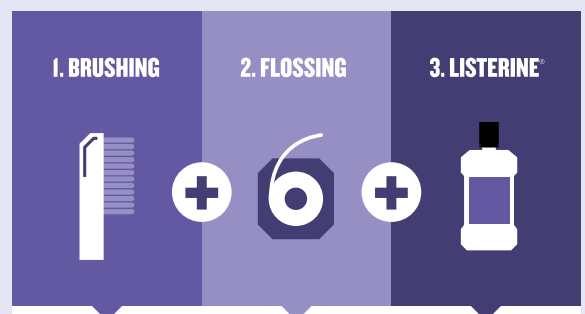
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Do you still not know the website cuidatusencias.es?

The informative website of the SEPA Foundation and the Spanish Society of Periodontology for the general population is gathering pace. After making some important changes, the website seeks to become a benchmark in the era of online and audiovisual communication

“CUIDATUSENCIAS.ES is addressing even more the growing needs and demands for information about oral health and hygiene from the population and dental professionals, with particular attention to the health of the gums, and is expanding its offering and the variety of resources and formats,” indicates Dr Antonio Bujaldón, SEPA president, who recalls that “the website is based on the same basic and indispensable values that we base our work as a scientific society: rigour, innovation, excellence, transparency, and ethics”.

The same aim, more innovative

As Dr Olalla Argibay, SEPA spokesperson, says “the mission of our website remains intact: to offer rigorous and accurate information about oral health to the general population, both national and international, for the promotion of health. Nonetheless, our aims

More information, accessibility, and interactivity – the newest features of the website

have become more ambitious, with the intention of multiplying the website’s impact and reach via the various channels of social networks.” The website has undergone an extraordinary aesthetic transformation, giving priority to the image, and adopting not only a more striking, intuitive, and visual appearance but also incorporating the latest trends in interactivity, in a clear commitment to share information about oral health.

Social networks are definitively integrated into the new design, along with audiovisual resources. The website is adapted for desktop, tablet, and mobile formats and is also prepared as a multilanguage portal.



CUIDA TUS encías

The new website cuidatusencias.es has been the fruit of exhaustive work by scientific and communications professionals, who have worked together to offer high-quality online content in the clearest and most informative way through the new website, without neglecting this magazine, which is available in digital format in the section Take Care of Your Gums Magazine in the drop-down menu.

1 In the new cuidatusencias.es, you can access up to eight different spaces that make up the website's category tree:

- **Advice:** How to avoid being misled by hoaxes and answers to questions you did not know you had
- **Gums:** All you have ever wanted to know about the health of your gums
- **Aesthetics:** A good appearance, but always with health
- **Implants:** Information and recommendations for the health of your implants
- **Expert opinion:** Those with most knowledge have something to tell you
- **Prevention:** Avoid problems with oral health before they appear
- **Oral health:** Look after your gums, but also the rest of your mouth
- **General health:** Did you know that oral health is related to up to 47 systemic diseases?

7 To keep up to date with the news on oral and general health, subscribe to our free newsletter.



2 The news that most interests our readers may also be of interest to you.

3 Keep an eye on the highlights, which are updated every week!

4 Every month we put the spotlight on a current topic that you will surely want to know about in depth.

5 "Cuida Tus Encías" live, the fortnightly streaming interview programme that will always offer you something new.

6 This new website could not lack audiovisual material. Here you will find a clearer, more enjoyable, and accessible video dissemination.

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EN DIRECTO

It is for this reason that last September www.cuidatusencias.es, the dissemination project for patients of the Spanish Society of Periodontology (SEPA), made a commitment to a modern and innovative format. In this way *Cuida tus Encías* (Take Care of Your Gums) live was born, an online television space, fortnightly and interactive, which covers the questions that society needs to understand in relation to the health of our gums.

Every two weeks, the YouTube channel of *Cuida tus Encías* hosts a television special on a specific topic, open to all audiences. Health and dental professionals are interviewed by health journalist Ángel Ramírez. Over 30 minutes they talk about the most important aspects of gum health, using clear and simple language, and patients can express their doubts, concerns, or questions directly.

Take care of your gums live, to date

So far this year, there have been five special live *Cuida tus Encías* programmes which have covered the importance of good gum health, the relationship between the health of our mouths and that of our hearts, the keys to effective oral hygiene, a special edition for Diabetes Experience Day on the importance of the dental clinic in the prevention and early diagnosis of type-2 diabetes, and the relationship between the pharmacy and the dental clinic.

The live programme *Cuida tus Encías* is a product of the deep interest in ensuring that the message reaches more and more people and that they are aware as early as possible of the importance of maintaining healthy habits related to their gums.

Upcoming live transmissions via our YouTube channel

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oral health

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Oral hygiene
inside and
outside the clinic



How the pharmacy
can help us look
after our oral health



The dental clinic,
a space for health
promotion



Towards a new way to tackle periodontitis

One of the most innovative, transformative, and positive advances in recent years in the approach to periodontitis is not a new treatment or diagnostic technique but clinical guidelines that can provide significant practical advantages

SECTION COORDINATED BY:
Nerea Sánchez
Master in Periodontology,
Complutense University Madrid.

In January 2020, new clinical guidelines for the treatment of periodontitis – the most destructive gum disease, which leads to the loss of the tooth’s bone support – were published in the *Journal of Clinical Periodontology*, one of the magazines in the dental sector with greatest impact. The guidelines were created under the auspices of the European Federation of Periodontology (EFP), and various representatives of the Spanish Society of Periodontology and Osteointegration (SEPA) have since adapted them for Spain.

Aim

The aim of this “S3-level Clinical Practice Guideline” has been to relate the new classification of periodontitis, recently described at the World Workshop in 2017, to preventative and therapeutic strategies for this disease. It thus offers dental professionals, healthcare systems, and those in charge of implementing health policies recommendations for the treatment of periodontitis based on scientific evidence.

In this way, it seeks overall to improve the quality of periodontal treatment in Europe and reduce the loss of teeth by patients with periodontitis. In addition, given the relationship that has been demonstrated between gum disease and other systemic diseases (such as cardiovascular disease and diabetes, among others), it is considered that

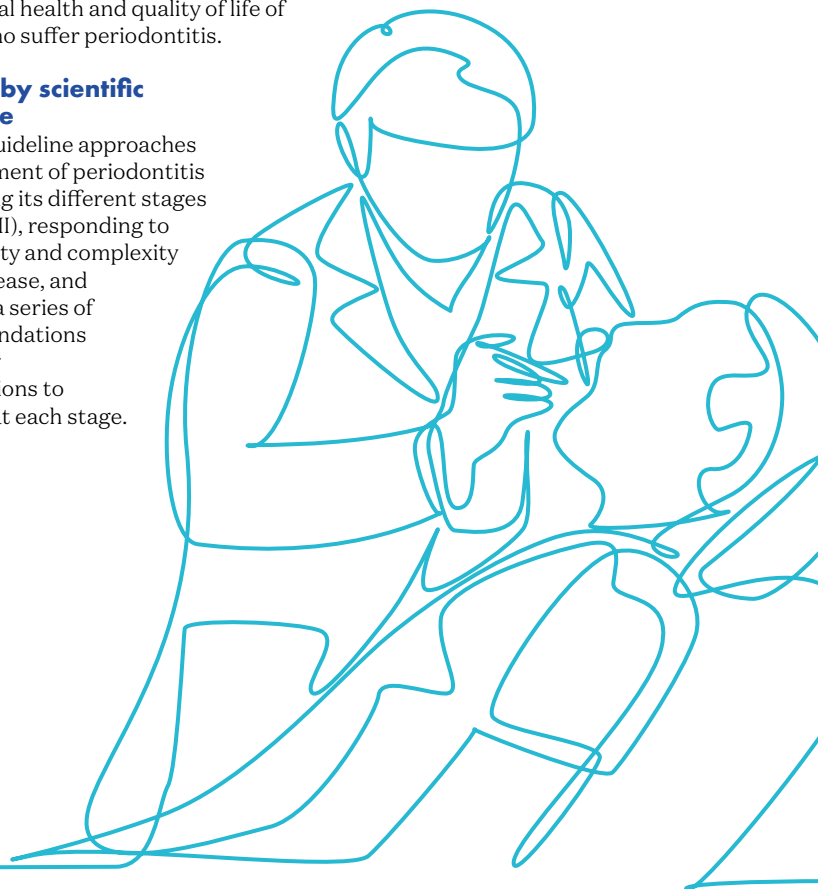
SEPA experts have adapted into Spanish the EFP S3-level Clinical Practice Guideline for the treatment of periodontitis stages I-III

these recommendations will not only improve periodontal health but also the general health and quality of life of people who suffer periodontitis.

Backed by scientific evidence

The S3 Guideline approaches the treatment of periodontitis addressing its different stages (I, II, and III), responding to the severity and complexity of the disease, and it details a series of recommendations regarding interventions to perform at each stage.

The content of this guideline is based on the results of 15 systematic reviews, a type of study of the highest scientific evidence, that analysed the various interventions for treating periodontitis. ■



Treating periodontitis stages I-III: success in four steps

Once periodontitis has been diagnosed, the person affected should be informed of the degree of their disease, the causes that have provoked it, and the specific treatment plan for it. Then treatment will be started, based on a series of interventions, carried out in a gradual way, distributed in four steps

Step 1. Behavioural change to remove bacterial plaque and other risk factors of the disease

Given that periodontitis is produced by the accumulation of bacterial plaque (through the lack of adequate oral hygiene), people who suffer from it are motivated and instructed regarding the techniques of toothbrushing and cleaning between the teeth that they should use.

As there are also other factors that can increase the risk that the illness arises or progresses, such as smoking or poorly controlled diabetes, it is essential that in this first phase patients are informed of the damaging effect of these factors and the importance of controlling them.

In this step, the dental professional can where necessary, also perform, therapies to remove bacterial plaque located above the gum, as well as ensuring the people with this disease can perform oral hygiene correctly in all areas of the mouth.

Step 2. Removal of bacterial plaque below the gum

Through “subgingival instrumentation” or “scaling and root planing”, the dentist cleans the bacterial plaque and the tartar below the gum, with the aim of controlling inflammation and reducing

the so-called “periodontal pockets”. These are lesions that occur in the gums in people with periodontitis in which, as a result of the accumulation of bacteria on the root of the tooth, produce a kind of “detachment” of the gum, forming pockets that get deeper as the disease advances, housing more and more calcified bacterial plaque. In turn, the presence of bacteria in the pocket generates an inflammatory response that leads to the loss of the bone that supports the tooth.

As well as this cleaning, the dentist can recommend, depending on the case, specific toothpastes or mouthwashes, and even antibiotics, to combat the bacteria that cause the disease.

Once the gum has healed after this deep cleaning, a meticulous review or periodontal re-evaluation is performed. If the treatment objectives have been obtained (that is to say, the periodontal tissues are no longer inflamed and there are no remaining deep pockets), we move directly to the fourth step of treatment. However, if the treatment has not been successful it is time to consider the third step of therapy.

Step 3. Treatment of the zones that have not been resolved with the second step

In certain people in whom there continue to be inflamed zones or teeth that present deep pockets, it is necessary to carry out a series of interventions with the aim of treating these unresolved areas. For this, subgingival instrumentation (cleaning below the gum) may be repeated or the dentist may proceed to more advanced procedures such as surgeries on specific zones of the mouth.

In the presence of deep pockets, once the previous steps have been carried out, it may be necessary to perform minor surgery on the gums, through

The aim of this new Guideline has been to relate the new classification of periodontitis to preventative and therapeutic strategies for the disease

which it is possible to clean the roots of the teeth more comprehensively and to reach bacterial plaque that would otherwise be difficult to eliminate.

In certain specific cases, it will be possible to regenerate the lost bone using regenerative periodontal surgery, deploying materials such as “membranes” or “enamel-matrix-derived proteins” with or without a bone graft, as well as recovering lost or insufficient gum through soft-tissue grafts.

Step 4. Periodontal maintenance therapy

Once the disease has been controlled, to avoid its recurrence it is essential to attend the dental clinic so that the dentist, periodontist, or hygienist can check our gums and perform periodontal maintenance therapy. This treatment is “tuning” our gums, where the remains of bacterial plaque above and below the gum are cleaned with the aim of avoiding the progression of the disease. Another objective is detecting zones of risk and the appearance of other oral diseases. Ultimately, it is about avoiding as far as possible or reducing the extent of tooth loss.

Questions with answers... and evidence

How should bacterial plaque be cleaned in people who are in treatment for periodontitis?

- Manual or electric toothbrush
- If we have inflamed gums, we must use devices to clean between the teeth, preferably interdental brushes
- Our dentist/hygienist should give us instructions on how to use these tools to perform hygiene correctly

What is the efficacy of risk-factor control in the treatment of periodontitis?

- **Stopping smoking:** smoking-cessation measures are recommended in people who are subject to treatment for periodontitis, as there is evidence of significant benefits. There is a very high level of evidence
- **Diabetes control:** interventions for the control of diabetes (patient education and diet assessment or referral to a specialist to control the "sugar") is recommended in people who are subject to treatment for periodontitis. There is a very high level of evidence
- **Increased physical exercise, diet assessment** (reduction of fats, sugars, and salt and increase of fruit and vegetables), **changes in lifestyle to lose weight.** The level of evidence is low; there are no conclusive results on whether these interventions improve the result of periodontitis treatment and more research is necessary in this area

What is the efficacy of cleaning bacterial plaque in the dental clinic?

The removal of bacterial plaque (also called dental biofilm) and tartar is considered to be an essential component in the prevention and treatment of periodontitis. The scientific evidence that supports this claim is very high

Is cleaning the bacterial plaque/tartar below the level of the gum beneficial?

Yes. "Subgingival instrumentation" (cleaning below the gum) is recommended for treating periodontitis and thereby reduces the inflammation of the gums and the depth of the periodontal pockets. This can be done with manual and/or mechanical instruments (sonic or ultrasonic). There is a high degree of evidence

Are there other agents/products recommended as a complement to cleaning below the gums?

- It is suggested not to use laser devices, as there is no evidence that they improve the response to treatment
- The taking of statins, probiotics, doxycycline, bisphosphonates, anti-inflammatories, or omega-3 polyunsaturated acids is not recommended, nor is the local use on the gums of bisphosphonates, doxycycline, or metformin gels
- The use, as complements to cleaning below the gum, of certain antiseptics (mouthwashes with chlorhexidine), specific local antibiotics placed between the gum and the tooth, and systemic antibiotics (only in specific cases of more advanced periodontitis) is possible





What does the S3 CPG provide?

The S3-level Clinical Practice Guide (CPG) addresses the treatment of periodontitis (stages I, II, and III), using a pre-established gradual approach to treatment that, according to the stage of the disease, should be incremental and include different interventions in each case.

Agreement has been reached on recommendations related to different interventions, aimed at: i) behavioural changes, control of supragingival biofilm, gingival inflammation, and risk factors; ii) supragingival and subgingival instrumentation, with and without adjunctive treatments; iii) different types of periodontal surgical interventions; and iv) the periodontal maintenance needed to extend the benefits over time.

This S3 Guideline informs clinicians, healthcare systems, and those in charge of formulating health policies – as well as, indirectly, the public – of the available and most effective modalities for treating periodontitis and maintaining healthy dentition throughout life, in accordance with the evidence available at the time of its publication.



6 (essential) things you should know and do

- 1** It is recommended that visits to the dentist should be programmed at intervals between three and (at most) 12 months, depending on the risk of each person treated for periodontitis and the results of disease treatment.
- 2** It is very important that all people treated for periodontitis attend all their maintenance visits.
- 3** It is essential that, in a repeated way, during these visits our dentist/hygienist checks that we are cleaning our teeth and gums adequately, with the toothbrush (electric or manual) and interdental brushes, and if we are not doing it correctly, they will show us what we need to do.
- 4** If interdental brushes do not fit into the spaces between the teeth, it will be necessary to use another device for cleaning these zones (floss or tape, specific picks for cleaning between the teeth...)
- 5** Antiseptics (containing chlorhexidine, triclosan/copolymer, or sodium hexametaphosphate with stannous fluoride) may be used as a complement to oral health, once the person is in this phase of periodontal maintenance.
- 6** It is essential that our dentist/hygienist, at each maintenance visit, removes the accumulated bacterial plaque and that they continue to control the risk factors mentioned in Step 1.

NUEVO

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¿EL SECRETO DE UNA BOCA MÁS SANA?

ENCÍAS REVITALIZADAS Y ESMALTE FUERTE



Nuestro día a día, la dieta o la salud en general son factores que, si no cuidamos, pueden **irritar las encías o debilitar el esmalte**. Dos de los factores que mayor causa de **problemas bucodentales provocan**.

Para ayudarte, Oral-B ha desarrollado el dentrífico **Encías & Esmalte Repair**. Una pasta de dientes que ha sido probada clínicamente como la mejor de Oral-B para ayudar a **revitalizar las encías y a fortalecer el esmalte en 2 semanas***.

Todo gracias a su **tecnología ActivRepair™** que actúa de forma localizada en la línea de las encías con una doble acción sobre esmalte y encías.

AYUDA A MANTENER TU BOCA Y TU CUERPO SANO



ALIMENTACIÓN: intenta evitar la ingesta de comidas o bebidas muy ácidas que pueden debilitar y decolorar el esmalte.



ESTILO DE VIDA: cepíllate los dientes al menos dos veces al día, durante 2 minutos. Y recuerda no ejercer mucha presión para no estropear el esmalte ni dañar las encías.



SALUD: recuerda que si sufres diabetes o estás embarazada tienes mayor riesgo de desarrollar problemas de encías y esmalte.

*Testado en laboratorio sobre esmalte debilitado.

Practical tips to combat the symptoms of Sjögren's syndrome

Thousands of people in Spain have Sjögren's syndrome, an autoimmune disease that reduces the number of tears in the eyes and the amount of saliva in the mouth. Following some practical recommendations, these symptoms can be resolved

SECTION COORDINATED BY:

Juan Puchades Rufino
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THE DRYNESS OF THE MOUTH that (together with ocular dryness) characterizes Sjögren's syndrome affects taste, makes it harder to chew and swallow, and increases the risk of caries, tooth loss, and mouth infections. In addition, this syndrome can cause dryness of the skin, nose, and vagina and can affect other parts of the body, including the kidneys, blood vessels, lungs, liver, pancreas, and the brain.

Sjögren's syndrome affects between one and four million people in the United States and occurs in all ethnic groups. Most of the people are over 50 years old when they are diagnosed. Women are nine times more likely to have Sjögren's syndrome than men.

Women are nine times more likely to have Sjögren's syndrome than men

What causes it?

Sjögren's syndrome is an autoimmune condition in which the immune cells attack and destroy by error the healthy cells of the glands that produce tears and saliva. Scientists think that Sjögren's syndrome is caused by a combination of genetic and environmental factors. Several genes seem to be implicated in the presentation of this condition. Some researchers think that Sjögren's syndrome may occur as a result of a previous viral or bacterial infection. →

THE
OPINION
OF THE
EXPERTS

"When the first symptoms, such as dryness in the mouth or eyes, appear it is important to visit the specialist, not only for an early diagnosis but also to avoid the appearance of other problems as a result of the disease"



Dra. Carlota Blanco

Master's degree
in periodontology
from the University
of Santiago de
Compostela (USC).



5 Tips for relieving dry eyes

1. Use eye drops that do not irritate the eyes; speak with your doctor to find the best drops for you.
2. Practice the habit of blinking; when reading or using the computer, try to remember to blink five or six times per minute.
3. Protect your eyes from air currents, breezes, and wind, which can dry the eyes.
4. Use humidifiers in the rooms where you spend most time or install a humidifier in the heating and air conditioning unit.
5. Do not smoke and avoid smoke-filled rooms.

→ How is it recognized?

The main symptoms of Sjögren's syndrome are:

- **Dry mouth:** the tongue and throat will feel dry and it can be difficult or even painful to chew and swallow.
- **Dry eyes:** the eyes can burn, sting, or can feel as if there were grit on the eye. Vision may be blurred and strong light can be uncomfortable.

Sjögren's syndrome can also affect other parts of the body and cause symptoms such as:

- Pain in the joints and the muscles.
- Dry skin.
- Rashes on the skin of the hands and feet.
- Numbness or tingling in the hands or feet.
- Vaginal dryness.
- Persistent dry cough.
- Constant fatigue.

If you have Sjögren's syndrome, it is possible that you only experience mild symptoms of dryness in the eyes and mouth or have cycles of mild symptoms followed by more serious symptoms.

In Sjögren's syndrome the immune system attacks the glands that produce tears and saliva

Diagnosis

A doctor diagnoses Sjögren's syndrome based on the patient's medical records, a physical examination, and the results of clinical or laboratory tests. During the physical examination, the doctor looks for the main physical signs of this condition (such as dry mouth) and whether there are signs of other diseases related to this syndrome (such as lupus or rheumatoid arthritis).

Depending on what is found after reviewing the patient's medical history and making the physical examination, it is possible that more tests will be done or the case may be sent to a specialist.

The dentist can also establish a presumed diagnosis when finding one of these symptoms during a routine check-up or dental treatment, which is an important part of the early diagnosis of the disease.

Treatment

There is still no definitive cure for Sjögren's syndrome and treatment may vary from person to person, according to the parts of the body that are affected.

There are saliva substitutes and medications that require a prescription that can help increase the production of saliva. However, simply drinking small sips of water regularly during the day can also help. In any case, treatment of dryness in the mouth should be led by your dentist, aware that it will not be possible to definitively solve the problem but that disorders deriving from the lack of saliva can be alleviated.

Dry mouth affects taste, makes it harder to chew and swallow, increases the risk of caries, tooth loss, and mouth infections

Therapies to replace the lost ocular moistness (such as drops and ointments) can alleviate dryness in the eyes.

In cases where there is pain in the joints, non-steroid anti-inflammatory medications can provide some relief. If the symptoms are serious, corticosteroids and immunosuppressive medications can be prescribed. ■

What to do to combat dry mouth?

SALIVA HELPS CLEAN TEETH AND REDUCE the number of bacteria in the mouth that cause dental caries and gum disease. This means that good oral hygiene is important if you have a dry mouth. Below, various things that you can do to tackle the lack of saliva are indicated:

1. Visit your dentist at least twice a year for an examination. We must maintain our teeth and gums in a correct state of health, as the absence/lack of saliva can increase the risk of having caries or periodontal diseases.

2. Keep a glass of water beside you day and night, and drink small sips regularly to keep your mouth moist.

3. Use a lip salve if your lips are dry and cracked.

4. Use a fluoride toothpaste and brush your teeth, gums, and tongue gently after each meal and, above all, before going to bed.

5. Use dental floss, interproximal brushes, or other devices for interdental cleaning regularly.

6. Avoid where possible food and drinks with sugar. If you eat or drink sugary foodstuffs, brush your teeth immediately afterwards.

7. Always choose sugar-free chewing gum, sweets, and soft drinks.

8. Ask your dentist if you need to use a specific mouthwash or a fluoride gel at night, or whether a fluoride coating needs to be applied in the dental practice to protect teeth against caries.

9. Drink water or a sugar-free drink with meals; this will make it easier to chew and swallow as well as improve the taste of food.

10. Avoid drinks with caffeine, such as coffee, tea, and colas, as caffeine can also dry the mouth.

11. You may chew sugar-free sweets to stimulate the flow of saliva. Hard sweets with a citric, cinnamon, or mint taste are good options. Some sugar-free chewing gums and hard (non-chewable) sweets contain xylitol and can help prevent caries.

12. Avoid spicy or salty foods, which can cause pain when the mouth is dry.

13. Avoid tobacco and alcohol, which dry the mouth. If you smoke, consider quitting, which will be a great help too in controlling the symptoms.

14. Use a humidifier at night.

15. Try to breathe through the nose, as breathing through the mouth will increase the sensation of dryness.



Oral health concerns and worries of people with diabetes



MORE THAN 30,000 VIEWS on YouTube, almost 20,000 people reached in Facebook, and more than 20,000 impacts on social media such as Instagram, Twitter, and Telegram. These are some of the numbers left by the first 'Diabetes Experience Day Virtual', promoted and organized by Canal Diabetes and which, on this occasion, has given protagonism to the Spanish Society of Periodontology (SEPA) and oral health in people with diabetes. The event has highlighted the important role of the dental clinic in identifying the risk of suffering diabetes, an underdiagnosed disease that is suffered by about 5.5 million people in Spain (13.8% of the adult population), with up to 2.3 million still without diagnosis.

Furthermore, within the framework of this informative day, results were presented from the DiabetRisk study, a pioneering work promoted by the SEPA Foundation, directed by the ETEP (aetiology and therapy of periodontal

The results of the DiabetRisk study were presented during these informative days

and peri-implant diseases) research group of the Complutense University of Madrid, and carried out with the support of Sunstar, the healthcare multinational. The efficacy of a protocol to evaluate from the dental clinic the risk of suffering undiagnosed diabetes (and prediabetes). It is estimated that the generalized use of this protocol in all dental clinics could contribute to identifying people at risk of suffering diabetes who have yet to be diagnosed, so that medical staff can later confirm (or not) this risk. The study has been conducted in SEPA's research network of dental clinics, with 41 centres participating (both private and university clinics).

The study included 1,143 subjects, with 97 (8.5%) identified as having

The most important annual event in Spanish that brings together people with diabetes, 'Diabetes Experience Day', paid special attention to oral health in its latest edition, supported by the collaboration of SEPA

some condition related to the metabolising of glucose, whether prediabetes (69 patients, 6.0%) or diabetes (28 patients, 2.5%). As Dr Eduardo Montero, coordinator of the study and a researcher of the ETEP group, explained, *"we have succeeded in demonstrating that a simple protocol is viable and efficient in the early identification of people at risk of suffering undiagnosed diabetes or prediabetes."* The study has also corroborated the close links established between periodontal health and diabetes, with a recognised bilateral relationship: patients with worse gum health are more likely to present prediabetes or diabetes.

An event of reference

This meeting counted on the participation of more than 70 speakers from countries including Chile, Argentina, Uruguay, Colombia, Puerto Rico, Venezuela, Mexico, the USA, and España, with the aim of demonstrating the reality of millions of people with diabetes.

One of the great innovations of this digital edition was the area for virtual meetings, which was attended over the weekend by 1,500 people, with an average stay of more than 50 minutes, where they were able to learn about projects, take part in talks, or attend virtual meetings. Within this space, participants learned about more than 20 projects of social responsibility concerning diabetes and made contact among themselves thanks to a personal avatar included in a virtual platform that allowed real-time interaction and conversation.

IV Programa Educativo CUIDATE Plus



SEPA does not miss its appointment with children's oral education

THE LEADING HEALTH-INFORMATION portal in Spain, CuidatePlus, has collaborated with the Office of Education and Youth of the Community of Madrid for the last four years in the Health Education Programme, aimed at fifth- and sixth-grade students. The aim is to improve the quality of education in prevention and self-care, as well as to identify good communication and the responsible use of technology. This year, all the digital tools were strengthened to improve distance learning, with the workshops carried out online.

This edition pays special attention to prevention measures against Covid-19. But it does not neglect information on oral health, a fixed topic within these educational programmes and which is provided in collaboration with the Spanish Society of Periodontology (SEPA). Specifically, the workshop

SEPA once again shows its faithful and determined commitment to the promotion of oral health among children, collaborating in a new edition of the CUIDATE+ educational programme

on oral health, directed by the trainer Nagore Ambrosio, traces the importance of maintaining good oral hygiene, provides evidence about how what we eat can damage the teeth, explains the effect of caries on teeth, and offers basic details about oral health in the time of Covid-19. A training video about gums and oral hygiene specifically conceived for sharing among children has been recorded.

CUIDATE Plus



Nagore Ambrosio, trainer of the Cuidate+ educational programme.

The growing impact of oral diseases on public health



SECCIÓN COORDINADA POR:

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Even though they can largely be prevented, oral diseases are very common and affect more than 3.5 billion people across the world. A series of studies published by the medical magazine *The Lancet* has analysed why oral diseases have persisted around the world over the last three decades, despite the scientific advances in this field.

Oral diseases represent a burden on global public health which has been ignored by the healthcare community, according to a special edition of this leading medical publication. Furthermore, it emphasizes that the burden of oral diseases is increasing as more people are exposed to risk factors such as sugar, smoking, and alcohol.

Basically, three aspects are highlighted that are driving the increase in oral diseases today on a global level:

- 1. The fact the dental care is not universal.**
- 2. Not adequately tackling the underlying causes of these diseases.**
- 3. The high levels of consumption of sugar in the diet.**

In this respect, Dr Gloria Calsina, periodontist and collaborator of the magazine *Take Care of Your Gums*, admits that “oral health is the great forgotten area in global healthcare, even though it affects millions of people, even though disease can be prevented, and even though it is of great importance to general health.”

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In Depth, Update

THE OPINION OF THE EXPERTS

Carlota Blanco, Cristina Carral, Agustín Casas, Ana Castellano, María Faus, Paula Matesanz, Lourdes Nóvoa, Álex Picó, Blanca Ríos y Francisco Tinahones.



PROTECT YOUR MOUTH NOW MORE THAN EVER

These days it is very important to step up hygiene measures, including oral hygiene.
Reduce the microorganisms in your mouth.

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with good **oral health.**

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Oral Health Experts

Take care of your gums

It is important to **keep your gums healthy** to be able to enjoy life to the full. To do this, **brush your teeth twice a day** and use **dental floss** and a **mouthwash**.

Two times a day



Brush your gums and teeth with toothpaste.



Use dental floss or interdental brush.



Reinforce your hygiene with mouthwash.

Every 3 months



Change your tooth brush.



Visit your trusted dentist or periodontist every six months to check your oral health.

WHAT ARE GUM DISEASES?

GINGIVITIS

Superficial inflammation of the gum. Bleeding is the main warning sign. If not treated appropriately, it can lead to periodontitis.

PERIODONTITIS

Profound infection of the gum and the other tissues that support the tooth. It can provoke the loss of teeth and has an impact on general health: it increases the risk of cardiovascular disease, diabetes, and premature birth.

WARNING SIGNS

- Bleeding or reddening of the gums
- Bad breath
- Hypersensitivity to cold
- Mobility-separation of teeth
- Longer teeth
- Loss of teeth

RISK FACTORS

- Tobacco
- Stress
- General diseases: diabetes, osteoporosis, HIV, herpes, transplants, etc....
- Hormonal changes
- Hormonal antecedents