TAKE CARE OF YOUR
gums 18

Outreach magazine of the **SEPA** Foundation for Periodontology and Dental Implants

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Editor:
Regina Izquierdo

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Take Care of your Gums

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UNDER THE CORONAVIRUS PANDEMIC, prophylactic measures applied to the oral cavity take on even more importance and scope, with the crisis forcing changes in the already high-level biosecurity protocols current in Spanish dental surgeries. And following basic oral hygiene recommendations can help to avoid coronavirus contagion.

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PRESENTATION

Regina Izquierdo
Scientific editor of the magazine
Take Care of Your Gums

United by health

AT THIS DECISIVE MOMENT, when so much has been said and written on this COVID-19 pandemic, it becomes even more difficult to face writing the editorial of the magazine TAKE CARE of YOUR GUMS, on the promotion of oral and general health. We have lived through this situation with pain and sadness, especially those who have lost a relative or friend, those people directly or indirectly affected by the illness, and the entirety of the population in lockdown.

So many things have changed, and uncertainty over the immediate future has reached the point at which it is easy to become dispirited; because this overarchingly health-related crisis has managed to affect all aspects of our lives too. Yet despite this, we repeatedly hear the message that we must make the effort to try to find the way to experience this change with the most positive attitude possible. This is certainly a challenge.

In the word "crisis" itself, which comes etymologically from Greek, we find exactly the same root with the meaning of choice, discernment, decision, judgement, resolution... The crisis is the moment in which routine has stopped serving us as a guide, a time when we must opt for one route, giving up on the other.

It is this moment when we make important decisions, without fear but sensibly, going forward, getting our confidence back.

We have learned that we are more vulnerable than we thought, and also which things are really important in life. It is now, during these hard times, when we must most work to take care of our health and that of those around us.

This means protecting ourselves, others, and, above all, making ourselves aware of the importance of prevention, in the way we humbly attempt to get across in this magazine TAKE CARE of YOUR GUMS. Now, more than ever, we must be united by health, in the spirit of the SEPA catchphrase: "Oral and general health for all".

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Oral health advice in times of coronavirus

Oral health care acquires particular transcendence in this current coronavirus pandemic framework. The Spanish Society of Periodontology recommends that these oral health care habits are maintained and, in some cases, strengthened, along with safety measures in dental surgeries

SECTION COORDINATED BY:
Paco Romero
Writer Take Care of Your Gums

THERE IS NOW DAILY exponential growth in information on the origin, causes, risk factors, transmission, symptoms, manifestations and, above all, the consequences of the SARS-CoV-2 infection that caused the COVID-19 illness.

All this allows for thoughts of a coming breakthrough in treatments and approval for a vaccine. So far, however, it is prevention that is our best existing way to elude this contagious and deadly virus.

Keeping up excellent personal hygiene has never been so important, especially regular washing of our hands with soap and water for at least 40 seconds or, when this is not possible, cleaning with disinfectant gel for the hands. Similarly, keeping a safe distance from others (over two metres) proves critical, as well as the use of approved face masks when close personal contact must take place.

But at the level of the oral cavity, it is important that one's hygiene routine helps avoid a high viral load in the mouth and on oral hygiene utensils. Following these tips and further extending normal hygiene measures not only protects you, but also those around you.

What is now known?

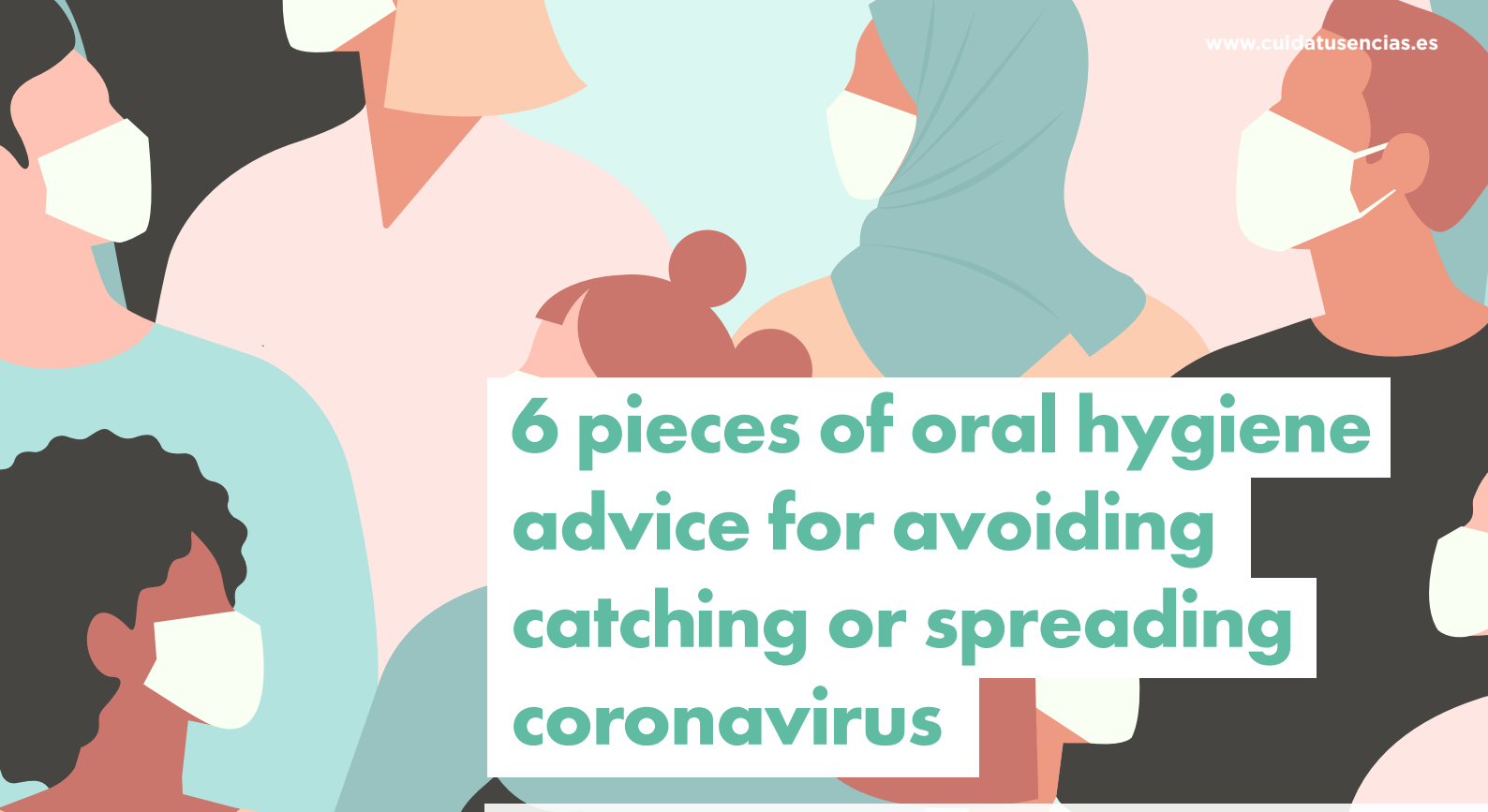
The SARS-CoV-2 infection that causes COVID-19 has been classed by the World Health Organisation as a global pandemic. Since its first appearance, it has been a threat to world health through its symptomatology, its rapid spread and contagion, and in the respiratory complications it produces in patients with other underlying chronic diseases[1].

The first pneumonia outbreak through this type of virus originated in the Chinese city of Wuhan at the end of December, 2019. Since then, the infection has spread quickly to the rest of China, and to practically all of the world's countries, infecting millions of people and causing hundreds of thousands of deaths.

Its origin is still under debate, but the most plausible opinion so far is that it is of animal origin, related to a Chinese bat, and with the pangolin as a possible transmitter. Transmission is person-to-person, and also via contact with fomites (the surface of any inanimate object that, if contaminated by a viable pathogen, can transfer said pathogen from one individual to another); this notwithstanding, transmission occurs mainly through the aspiration of respiratory droplets (Flügge's droplets) exhaled mostly on speaking, coughing, or sneezing, and through direct contact with secretions from infected persons[2].

Citizens who test positive for coronavirus, or those who remain in isolation awaiting confirmation, must step up their oral cleaning regime and deep-clean their toothbrushes

The incubation period is estimated to be on average 5-6 days, although evidence exists of periods close to 14 days[3]. During the first days of infection by SARS-CoV-2, this virus concentrates particularly in the nose, mouth, throat, and larynx, thus explaining its high contagion capacity. →



6 pieces of oral hygiene advice for avoiding catching or spreading coronavirus

Following a series of basic oral hygiene recommendations can help you avoid contagion by coronavirus. We offer you some basic steps:[7]

1. NEVER SHARE A TOOTHBRUSH. This is a frequent form of transmission of the virus. For the same reason, toothbrush heads must be kept apart from one another.

2. CLOSE THE TOILET LID BEFORE FLUSHING. If toothbrushes are kept anywhere near the toilet, each time the chain is pulled, airborne particles are thrown clear of the toilet bowl and can fall on the toothbrush. Several studies suggest that the virus can be propagated via faecal matter. It is therefore crucial to check that toothbrushes are at a safe distance from the toilet bowl, and to close the toilet lid before flushing.

3. CHANGE YOUR TOOTHBRUSH REGULARLY, at least every three months, and even before the bristles are worn out. This helps guarantee that your teeth are being brushed in an effective manner. A worn-out brush cannot do its job. Furthermore, changing the brush regularly also helps avoid the spread of microbes. And if you have had coronavirus (or if the suspicion is that you might have had it) the toothbrush should be replaced by a new one.

4. ORAL CLEANSING (TOOTHPASTES AND MOUTHWASHES). You should brush your teeth daily with a toothpaste that contains fluor: last thing at night and a minimum of once during the day. Interdental cleaning should be carried out every day (with specific interdental brushes or dental floss), and a mouthwash should be used. Only use mouthwashes containing: povidone-iodine 0.2-1%, Cetylpyridinium chloride 0.05-0.1, hydrogen peroxide 1%, and/or those containing essential oils and alcohol. Mouthwashes should be used neat, undiluted.

5. VISITING THE DENTIST. MKeeping up regular visits to your dentist will always be important, although during this period of uncertainty it is best to keep visits only to emergencies.

6. CLEAN YOUR BATHROOM REGULARLY, because this is where toothbrushes are generally kept, and where oral hygiene has its base. It is important, therefore, that bathroom surfaces are cleaned regularly with a bleach-based cleaning product.

→ Dental surgeries: opportunities, risks, and precautions

Dental professionals play a key role in prevention and in the chain of transmission of the infection that causes COVID-19, above all because of the required physical proximity to patients in order to carry out their work[4].

In this sense, as a recent Spanish Society of Oral Surgery (SECIB) document made clear, "*it is of the utmost importance that measures be taken to control infections during dental practice to block person-to-person transmission, and a fundamental role is played in this by airborne particles*"[5].

Despite the risk of using devices that produce airborne aerosols, the dental surgery is a safe environment, one in which the strictest sterilisation and cross infection prevention protocols have been practised for many years. With the integration and adaptation of new measures recommended by health bodies, (FFP2 and FFP3 face masks, gloves, glasses, and gowns), dental clinics are ready to safeguard patients with all guarantees.

The Spanish Society of Periodontology reminds readers that dental clinics are health centres that have wide, corroborated, and rigorous experience in risk control, and they are ready and trained to keep up strict controls to avoid infections.

Greater precautions

Current practice for treating patients in a dental surgery must adhere to international epidemiological and clinical criteria for SARS-CoV-2.

Under these clinical criteria, the strictest precautions are advised in the case of any person showing clinical symptoms compatible with acute respiratory infection—of any degree—that presents with fever (temperature, taken underarm, above 37.5o) and any of the following symptoms: breathing difficulties (shortness of breath or fatigue on breathing), cough, or general malaise.

In the case of any patient presenting an epidemiological criterion, alongside at least one clinical criterion, the dental treatment should be delayed (excepting emergencies) until the case has cleared, sending the patient to his or her GP with the corresponding report of suspected illness. In these cases, the recommendation is that such patients should wear a face mask before being referred elsewhere.

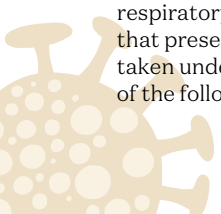
Everyone's oral hygiene routine helps lower the viral load in the mouth and on oral hygiene utensils

A necessary change

As in practically all our daily activities, the current pandemic brings necessary changes to dental treatment.

New work systems will be developed in dental surgeries, as well as special and more powerful aspiration systems that will minimise the creation of aerosols and prevent the creation of droplets in the surrounding space. This will be achieved through the use of screens or work with isolation chambers around the patient's mouth. In fact, as the SECIB states, "*the marketplace already offers some of these pieces of equipment, and they will undoubtedly be used more in clinics, while their design and features will also be improved*"[5].

The dental clinic, which already boasts biosecurity protocols at a very high level, must unfailingly fulfil these and adapt them to the new situation[6]. ■



And if you have tested positive, step up your oral hygiene even more

IF YOU HAVE TESTED POSITIVE for coronavirus, you should also carry out a preliminary mouthwash to reduce the viral load, finishing with a cleanse of your toothbrush or the brush head, soaking it in a hydrogen peroxide solution for 30 minutes; once this time has elapsed, rinse the brush head with water and allow to dry3. For the ideal concentration, mix one part of 3% hydrogen peroxide (normal pharmacy strength) with three parts of water, thus obtaining a final concentration of 1%.

To prepare a 1:100 bleach solution, follow these four steps:

1. **Take 10ml of household bleach.**
2. **Pour this into a 1 litre bottle.**
3. **Fill the bottle with tepid or cold tap water to the top (never use hot water because it will create toxic gases).**
4. **Secure the bottle top and shake the bottle several times to mix the contents. The mix should be prepared on the day of use.**

Keeping your toothbrush free of bacteria and viruses helps to lessen the contagion from brushes for persons close by3. Do not forget that you must change the toothbrush once you are over the contagious period, for your own health and that of others.

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What can I do to protect myself against the new coronavirus and other respiratory viruses?

On coughing or sneezing, cover your mouth and nose with your elbow bent

Use disposable tissues

Avoid touching the eyes, nose, and mouth, because the hands mediate the transmission

Wash your hands frequently

If you present with symptoms, avoid close contact with other people

How to wash your hands:

1. Wet the hands with water
2. Take an abundance of soap
3. Rub the hands together with the soap
4. Interlace the hands to clean well between fingers
5. Rub the back of the hand against the palm of the other, interlacing the fingers
6. Close the hand rub the back of the fingers with the palm of the other hand
7. Rub the thumbs using a circular motion with the palm of the other hand
8. Rub the fingers and nails with the palm of the other hand
9. Rub the wrists
10. Rinse well with water and dry the hands using a single-use paper towel

How to get that all-important shopping

1. People with no symptoms (cough, fever, sensation of lacking aire) are allowed to go shopping. Whenever possible, the most vulnerable should stay home, and only one person should go out
2. Keep a minimum distance of 1-2 metres and avoid crowds
3. Ask in your neighbourhood if anyone needs products. You can leave them at their door, keeping a distance of 1 to 2 metres
4. Do not touch your face, and wash your hands on your return home
5. Always behave with empathy and respect for others

Good periodontal health: a protective factor against cancer?

SECTION CO-ORDINATED BY:
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THE MOUTH IS NOT ISOLATED in the body. It is intimately linked to the rest of the organism, so the infections that arise and develop in the oral cavity can be related to different systemic diseases[1].

Periodontitis is the outcome of an imbalance in oral bacteria, one which affects the local and systemic immune response. It is a chronic inflammatory illness of bacterial origin that causes an imbalance in the immuno-inflammatory system, destroying the host's supporting tissues and causing tooth loss. But the inflammation involved is not confined to the tissue around the gums; it goes further.

There is current evidence that inflammation is produced with systemic consequences because of the entrance of periodontitis-causing bacteria into the bloodstream, spreading to the rest of the body (so-called bacteremia).

In recent years, multiple studies have been carried out on the potential

Infections that arise and develop in the oral cavity can be related to systemic diseases

associations between periodontal illness and some chronic systemic diseases that have a big impact on public health. These studies have produced evidence that suggests a relationship might exist between periodontitis and cardiovascular diseases, respiratory and renal conditions, as well as premature births, diabetes, rheumatoid arthritis, metabolic syndrome, cognitive deterioration, and cancer. This link, in general, is put down to the fact that risk factors are shared and, above all, it underlines the importance of good oral hygiene and oral health in the prevention of the systemic consequences of periodontitis.

Cancer has become one of the main causes of death in Spain and around the world. There are many risk factors involved in the dozens of oncological conditions that exist; among them, periodontitis has recently been pointed out as a possible predisposing factor

Periodontitis and cancer

The human microbiome[2] plays a key role in carcinogenesis[3]. Oral bacteria can enter the systemic circulation through a periodontium weakened by tooth brushing, for example, and settle throughout the body in sites far from the mouth. Furthermore, aspiration and ingestion of these bacteria can set off an infection in the lungs and gastrointestinal tract, as well as promote carcinogenesis on initiating the cascade of immune cells that activate the inflammatory system.

The relation between periodontitis and certain malignant tumours in the body has awoken much interest in the scientific community.

Numerous studies recently begun are attempting to discover the possible pathogenic relationships between these two pathologies. If the relationship is confirmed (although many questions must still be answered), periondontitis could come to be considered as a new risk factor for cancer, favouring a certain susceptibility to suffer from this disease, and its prevention and treatment would therefore become crucial in order to tackle oncological conditions.

Confirming the hypothesis

Some studies have already shown the association between periodontitis and a greater risk of head and neck, pancreatic, and lung cancer.

The biological hypothesis behind this association is based on the existence of greater inflammation and the presence of periodontal pathogens in areas of the human body from whence carcinogenic factors emerge.

For the moment, an association has been established between: infection by Porphyromonas gingivalis (one of the key oral bacteria in the development of periodontitis) and the progression of squamos cell oesophageal carcinoma; between entre Actinobacillus actinomycetemcomitans, P. gingivalis →

How can we prevent cancer?

SOME OF THE RISK FACTORS for cancer are known today: alcohol, smoking, genetic susceptibility, radiation...and other factors that can protect against cancer appearing are also known, such as how to adopt healthy lifestyle habits (a good diet, daily physical exercise,...). To prevent cancer, one must combat the risk factors and boost protective factors.

But, given the possible association between periodontitis and cancer, keeping the mouth and gums healthy and making regular visits to the dentist could be of great importance in preventing the appearance of particular types of cancer.

From the public health angle, periodontal disease is preventable and curable. In addition to improving patients' quality of life, implementing preventive measures and treating periodontal disease can reduce inflammation and its harmful effect on other organs. Therefore, a multidisciplinary team of health professionals is essential, one comprising both doctors and dentists, one that will educate the patient on the importance of good brushing, stopping the smoking habit, and excessive alcohol consumption, as well as the transcendence of the fact of visiting the dentist as early as possible if dental or periodontal treatment is required.

Maintaining good dental and oral health can be considered an additional measure for boosting overall health and for preventing the development of illnesses such as cancer.

The association between peridontitis and the risk of developing cancer in different organs could be because of immuno-inflammatory mechanisms common to both conditions

→ and pancreatic cancer; and also between *Fusobacterium nucleatum* and colorectal cancer. Similarly, close association has been shown to exist between Socransky red complex bacteria and A. *actinomycetemcomitans*, and the risk of precancerous gastric lesions. The association found between *Helicobacter pylori* (which can be present in the oral microbiome) and gastric and pancreatic cancers can also be highlighted in this context. This evidence suggests, for example, that strict control or the elimination of these oral bacteria could reduce the risk of the appearance of some of these tumours.

Corroborated evidence

A study published in 2019, carried out on a sample of 5,199 patients in the University of Ankara (Turkey), and with an average follow-up of 7.2 years, found that patients diagnosed with periodontal disease have a significantly higher risk of having cancer; in women the appearance of breast, and head and neck cancers is substantially higher, while in men a higher risk was noted for prostate, head and neck, and haematological cancers.

The strongest evidence of the link between periodontitis and cancer has been found in five major types of tumour:

Oral-digestive cancer.
Periodontal disease is associated with an increase of head and neck cancer, probably because of the changes in the microbiome and chronic inflammation that occur in these illnesses.

In the USA (2012), the National Health and Nutrition Examination Survey showed the mortality from oral-digestive tumours in patients with moderate and advanced periodontitis doubled in comparison with those without periodontitis. It was concluded that mortality due to this cancer is related to periodontitis and with the presence of Porphyromonas gingivalis, making this a biomarker for risk of death associated with oral-digestive cancer.

Lung cancer.
In a 2014 study carried out in postmenopausal women it was shown that periodontal disease is associated with risk of lung cancer in women smokers, but not in those who do not smoke.

Periodontal disease is not independently associated with lung cancer if the women were not smokers; but if smoking plus periodontal disease was combined, the risk of lung cancer increased.

A large study from 2016 (Zeng et al), with follow up of over five years, did also suggest that patients with periodontitis present greater risk of lung cancer, these registering an average increased risk of →

"The evidence for the relation between periodontitis and cancer is not conclusive, but it would be logical in certain types of tumours, fundamentally the gastrointestinal kind"

Dr. Miguel Carasol
Doctor of Dentistry, Complutense University of Madrid.

WORDS OF THE EXPERTS

"Periodontal disease could be a synergistic oncological risk factor or a potentiator of other better known and also preventable cancers"

Dr. Javier Román
Head of the Oncology Department of Ruber Hospitals, Madrid.

Inflammation with systemic consequences is produced because of the entrance of periodontitis-causing bacteria into the bloodstream

→ 1.24 times the chances of developing this type of tumour. It was shown that people with periodontal disease are more susceptible to respiratory conditions and, specifically, have a greater risk of lung cancer. It is thought that smoking and periodontal disease might act together to increase the risk of lung cancer.

Colorectal cancer.
In 2018 (*Michaud et al*) a large study was carried out with a 15-year follow-up of 7466 subjects, on whom dental examinations and assessment of the periodontal/cancer risk situation were made. An increase in overall cancer risk of between 14-20% was observed in patients who had severe periodontitis against those with mild or no periodontitis. A greater risk of lung and colorectal cancer was found in persons with severe periodontal disease (even in non-smokers), but no association was found with breast, prostate, hemapoietic or lymphatic cancers.

Pancreatic cancer.
Cancer of the pancreas is a difficult-to-diagnose tumour, and one with a high mortality rate. In 2018, a large study (*Heikkilä et al*) was carried out on 68273 patients, with a 10-year follow up, discovering that the presence of periodontitis is associated with greater mortality in pancreatic cancer cases.

Breast cancer.
In more developed countries, breast cancer is the most frequent kind in women. A joint analysis of 11 studies, carried out in China in 2018, suggested that periodontal disease might be a potential risk factor for breast cancer development in women; the study authors even consider that correct periodontal treatment in those with periodontitis could be a valuable preventive measure against breast cancer. Other studies, however, have not been able to find this significant link between periodontitis and breast cancer.
It is the case that there are studies among medical and ontological literature that have found no relevant link between periodontitis and cancer, and for this reason new trials are needed to settle these doubts. So, for example, a 2018 systematic review (*Corbella et al*) of different studies concluded that there are insufficient studies with standardised and comparable methods to allow for speculation on the relation between periodontitis and cancer. ■

Some systemic diseases present oral manifestations that increase the risk of pathologies of the mouth

Keeping the mouth and gums healthy, and making regular visits to the dentist, could be of great importance in preventing the appearance of certain kinds of cancer

GLOSSARY

1. **Systemic diseases:** those affecting the whole body, and not just a part of the body or a single organ.
2. **Oral microbiome:** the collected bacteria present in the mouth.
3. **Periodontium:** the tissues surrounding and supporting the teeth.
4. **Carcinogenesis:** the totality of phenomena that determine the appearance and development of a cancer.
5. **Dysbiosis:** the microbial imbalance of the normal microbiota (the combined bacteria living in the gut) because of quantitative or qualitative changes in their composition, changes in their functioning or metabolic activities, or changes in their distribution.

5 messages to remember

1 THE DATA from the studies currently available to us—although not conclusive—suggest that chronic inflammatory periodontal disease is not a health problem local to the mouth but one that can have the potential to increase the risk of of cancer at both local level and in organs distant from the mouth, owing to the action of microbiological and immunological mechanisms.

2 THE POSSIBLE link between periodontal disease and cancer is questionable and controversial, and the biological mechanisms for this association are not fully established. The methods used to diagnose periodontal disease and its degree of seriousness in epidemiological studies are heterogenous and sometimes use self-reported data instead of periodontal examinations carried out by a periodontist. The studies are heterogenous and limited, and although they suggest evidence relating periodontal disease and cancer, they cannot at this time be considered conclusive.

3 IMPROVING oral health (healthy teeth and gums), and lessening the virulent bacterial load, can have a positive effect on general health, and might even prevent the possibility of the association between periodontitis and cancer. The periodontist, therefore, takes on a relevant role in the prevention of cancer, and also in the early diagnosis of mouth cancer.

4 IT IS ESSENTIAL to create among the general public (and, above all, the young) the need to carry out good dental hygiene and regular dental prophylaxis to achieve a healthy lifelong periodontal microbiome.

5 CANCER IS a very common pathology, so the dentist must be prepared to treat patients with cancer and must understand the possible relationship between periodontitis and cancer, acting accordingly.

4 indispensable habits for a healthy mouth and life

SECTION COORDINATED BY:
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THERE IS INCREASING SCIENTIFIC proof about the effects of gum health on our general health. Similarly, the close relationship between adopting a healthy lifestyle and the benefits this means for the body overall, and particularly for oral health, has also been widely shown.

Despite genetic make-up predisposing for the appearance of gum diseases, studies are increasingly showing that lifestyle and, above all, the foods we eat can have a major influence on the risk of suffering from these diseases. Certain resources have been identified that allow for simultaneous and consistent improvement in both oral and general health.

1. Eat fruit and vegetables

Recent clinical studies have shown that little physical activity combined with a poor diet are associated with an increase in periodontal disease, while higher intake of fruit and vegetables is related to lower frequency of periodontitis.

A healthy diet, stopping smoking, the right dental hygiene (together with regular dental check-ups), and regular physical exercise are all things that bring multiple benefits for oral health, but also positively influence general and systemic wellbeing

Consuming fruit and vegetables is considered a protective factor for improving prevention, progression, and the outcomes of periodontal diseases, thus reducing tooth loss and improving quality of life.

An inverse relationship exists, therefore, between the consumption of certain foods and the prevalence of periodontitis: fibre, antioxidants, vitamins C, D, E, and Omega 3 unsaturated fatty acids.

There are multiple foodstuffs that prove particularly beneficial.

WORDS OF THE EXPERTS

"Periodontists and their surgical teams in the dental surgery play a fundamental role in the motivation for healthy lifestyle habits that help to maintain correct oral and dental health. It is our duty to inform our patients about the control of risk factors and how correct prevention measures can positively impact the mouth and, therefore, improve general health"

Dra. Patricia Solano
Master in Periodontology and implants at UCM.
Academic collaborator on the Oral Surgery Master course at UIC.

The incorporation of citric foods and berry fruits in diets (such as kiwi, rich in vitamin C), as well as the use of nutrition education activities to boost the need for their consumption, can lead to an improvement in patients' oral wellbeing and, as a consequence, a better gum state and more optimum control of the progression of periodontal disease.

These fruits and vegetables are a source of nutrients, vitamins, phytochemicals, and cellular immunity stimulants. Without doubt, they prevent the progression of periodontal diseases, and the loss of teeth. For this reason, even though more studies are needed to confirm these findings, dietary care of the periodontal patient should form part of a dental treatment programme. Nevertheless, in patients who have lost teeth due to periodontitis, and who have a resulting mastication alteration, the consumption of fruit and fresh raw vegetables can present difficulties. For these people, freeze-dried fruit and vegetables can be an interesting alternative, while the use of phytonutrient supplements as safe complements within non-surgical therapy applied to these patients.

A healthy lifestyle: diet, exercise, stopping smoking... and taking care of oral health, all keys to living longer and better

2. Indispensable: stop smoking

The habit of smoking has a huge impact on the oral cavity and is considered a risk factor for the appearance of oral cancer, lesions in the mucous membranes, periodontal and peri-implant diseases, as well as producing many potentially damaging effects for the health of organs around the body. →

Fruit and vegetable consumption is a factor that can prevent the progression of periodontal diseases

→ In Spain, smoking has a prevalence of 28%. It is one of the principal public health problems and the main cause of preventable illness and death. Smoking is a risk factor for having periodontitis, contributing to the development of the most severe cases of gum disease. Frequent smoking raises the risk of loss of gum or bone between 2.5 and five times. It can also cause grave consequences in the treatment of dental implants, worsen scarring, and limit the effectiveness of periodontal treatment, being yet another factor to take into account in preventive therapy and control of periodontal and peri-implant diseases.

3. Correct oral and dental hygiene

It is essential to carry out correct brushing daily, with the right technique, frequency, and tools (without ever forgetting cleaning between the teeth), and this should be counselled individually by your dentist, and adapted to the needs and characteristics of each person.

But, in addition, to guarantee long-term oral health, regular periodontal check-up and maintenance visits are required with the aim of detecting compromised areas, incipient lesions, or small relapses, thus avoiding the need for more complex future treatments. It is your dentist who can, in line with your habits and risk factors, best advise you in this respect.

4. Being active is health

Sport and exercise forms part of what we call healthy lifestyle. The relation between physical exercise, periodontal disease, and metabolic syndrome (which along with obesity is a risk factor for suffering from periodontitis) has been assessed.

The role of physical exercise on metabolic syndrome can also have a protective and preventive effect on periodontal risk, with physically active persons and those with correct body mass index being able to reduce the risk of suffering from periodontitis.

For this reason, physical exercise should be recommended not only to boost a healthy lifestyle, but also as a strategy for preventing periodontal diseases. In addition, it is known that periodontitis can affect sports performance.

It has been shown that maintaining healthy gums can improve sports performance, because periodontal disease is related to a reduction in muscular strength in arm and abdominal presses, and running, with a reduction in cardiorespiratory capacity (in more advanced periodontitis cases).

Studies carried out on the oral health of elite sportspersons have shown that 15% of sportsmen and women present periodontitis, and 76% gingivitis.

Furthermore, 8% affirm that oral problems affect their training, while 5% recognise that this impacts on their sporting performance. A poor state of gum health has been related to an increase in injuries to ligaments, tendons, and bones in sportspersons.

The processes relating incorrect oral health with sports performance are based on the systemic inflammation and pain generated by these pathologies. ■

In patients with tooth loss, freeze-dried fruits and vegetables, or dietary supplements, can provide an alternative

WORDS OF THE EXPERTS

"The introduction of sport as one more habit in a person's life helps to control systemic illnesses such as obesity and diabetes, which are related to gum health"

Dr. Fernando Noguerol
Master in Periodontology, Complutense University, Madrid.

If you stop smoking, you gain health

THE HEALTH BENEFITS of stopping smoking are clear and numerous, both at systemic level and for the oral cavity. Among other things, it:

- Lessens risk of a heart attack
- Improves blood pressure and cholesterol levels
- Improves lung function
- Lessens coughs and respiratory infections
- Improves the look of your skin
- Reduces the risk of oral, lung, laryngeal, bladder, stomach, eosophageal, and kidney cancer, among others
- Reduces bad mouth odour or halitosis
- Improves the response of periodontal treatment
- Lessens the risk of implant failure and the appearance of peri-implantitis

Stress, a bad companion for oral health

Stress is one of the most common disorders in society today. Everyone feels stressed now and then, though in some people it can become a chronic problem. The relation between stress and oral health is close and reciprocal, but it can be effectively fought

SECTION CO-ORDINATED BY:

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ACCORDING TO THE DICTIONARY of the Spanish Royal Academy (RAE), "stress is a state of mental tiredness provoked by the demand of a higher-than-normal performance".

It is a natural and necessary response to survival, one that does not produce disorders if it does not go beyond the adaptation limits of the individual.

Faced by any threat, the body activates its defence mechanisms; if this response is excessive, if it is kept going for too long, or if it becomes chronic, an overload of tension is produced that can bring about the onset of illnesses.

Stress, a health problem

When stress turns chronic, the same bodily responses that serve to save life can depress not only the immune system, but also digestive, sleep, and reproductive systems, making them work poorly.

This is how chronic stress can lead to the generation or worsening of serious health problems, such as cardiovascular diseases, high blood pressure, diabetes, depression, or anxiety; furthermore, in situations of stress, the ability of tissues to properly heal and scar is also affected.

The lack of adaptation to this stress phenomenon can impact the progression of many chronic illnesses, including periodontitis. And some studies suggest, for example, that this plays a role in the activation of infection by the herpes virus. The oral and dental health problems that may be related to this state of severe stress are:

Periodontal disease

Solid evidence exists of the association between stress and the onset of ulceronecrotic gingivitis (NUG), an especially painful and irritating form of gingivitis. These patients present with bad breath (halitosis) because necrosis (gangrene or disintegration) is produced in the papillae, which appear punched out and white. Other risk factors for its appearance are smoking, drug consumption, bad oral hygiene, and malnutrition.

Chronic stress can contribute to the generation of serious health problems

In a recent systematic review of studies carried out by Peruzzo et al, a relation is clearly established between stress and periodontal disease. Patients with stress are habitually less diligent in maintaining optimum oral hygiene, and they generally have a greater number of missing teeth. Other studies reveal significant links between stress, depression, and the **cortisol**[1] in saliva with the degree of severity of periodontitis and tooth loss.

Furthermore, individuals with periodontitis present higher levels of inflammatory markers (**C-reactive protein**[2], **IL-6**[3], **IL-1**[3], **and Tumour Necrosis Factor alpha**[4]), indicating that each relation is mediated →

WORDS OF THE EXPERTS

"Stress, in addition to undermining the immune response, can be associated with a less healthy lifestyle, inadequate oral hygiene, and heavier smoking. All of these can increase the risk of suffering from gingivitis and periodontitis"

Dra. Lucia Barallat
Associate professor, Department of Periodontology at the International University of Catalonia.

For stress, 4 simple recommendations to follow

1. We cannot ignore it, nor simply put up with it, letting it become part of our daily life. Stressful situations are not going to disappear, so one must learn to identify these situations and combat them or reduce them to more tolerable levels

2. To deal with situations of acute or chronic stress, many easy-to-access programmes exist for managing this problem, and they often include meditation exercises, yoga, Tai Chi, and other gentle activities

3. Set regular times for gratifying, healthy, and relaxing activities

4. Make a visit to your trusted dentist before stress climbs and/or when you notice symptoms of bruxism

WORDS OF THE EXPERTS

"Stress in our patients is a common finding. It is important to get across in surgery the relation that stress has with periodontal disease and bruxism, as well as encourage patients to follow healthy advice in order to combat it"

Dr. Javier Vilarrasa
Assistant lecturer, Department of Periodontology, International University of Catalonia.

→ by changes in behaviour and the neuroimmune system.

It is thought, therefore, that stress can modify host immune response, allowing the progression of periodontitis in susceptible patients, on establishing a bi-directional mechanism between stress and inflammation, and through this, a worse response to treatment.

Bruxism

One of the oral disorders that shows a stronger and more direct link with stress is so-called bruxism, which is characterised by the grinding and/or gnashing of the teeth owing to the flexing of the muscles involved in chewing.

It is a non-functional, rhythmic, spasmodic, and involuntary habit. Among other consequences, bruxism produces dental wear, fissures, fractures, muscular pain and/or changes in the temporomandibular joint.

Bruxism can be eccentric (grinding) and/or centric (clenching), and the two can occur simultaneously. The first damages the neck of the tooth, generally causing wear, the premolars suffering most damage because of their position in the jaw; in addition, they are usually joined by tension headaches. Centric bruxism damages the incisal and occlusal edges of teeth (mostly affecting the incisors), leading to attrition or different degrees of wear.

These excessive jaw movements follow a well-defined pattern that clearly relates to wear on teeth (the wear coincides with the moment of grinding the teeth).

Bruxism can be diurnal (usually grinding) or nocturnal, producing unconscious movements without any functional purpose.

Most people are unaware that they suffer from this condition, and many years often go by before the first signs are visible. It is calculated that between eight percent and 13% of the overall population presents bruxism; nocturnal bruxism in children is especially frequent (14-18% of children).

Bruxism is one of the dental and oral disorders that shows a more direct and stronger link with stress

The main factors behind the development of bruxism remain unknown, but it is known that the phenomenon is complex and multifactorial. This notwithstanding, four risk factors that can contribute to its appearance have been identified:

- **External factors: smoking, high alcohol intake, caffeine, medication, and drugs.**
- **Psychosocial factors.**
- **Sleep disorders.**
- **Sleep apnea and gastroesophageal reflux (GERD).** →

Dr. Juan Flores
Doctor in Dental Sciences at the Complutense University, Madrid.

"Constant stress is a dangerous enemy of overall health, with important implications for oral and dental health"

Bruxism: how to recognise and treat it

THE MOST OBVIOUS sign of bruxism is tooth wear, although it does not really indicate whether it is currently present or if this is a sign of earlier lesions. Factors such as age, occlusion, enamel hardness, type of diet, ingestion of high-acid pH drinks, saliva flow, and the presence of certain digestive disorders (such as gastroespohageal reflux[7]) have an important influence on dental wear variability.

THE MOST FREQUENT symptom is pain in the head and the temporomandibular joint (located close to the temple). Other factors that can have an influence are dental fractures or broken fillings, cervical pains, enlarged masseter muscles (located on the jaw angle), sensitivity to temperature changes, sleep disorders, and loss of periodontal support. In some cases, bruxism patients do not present symptoms or signs, in other words a state of adaptation is reached by which this disorder is assumed to be "normal".

In its initial and milder state, this condition does not require treatment, but if bruxism continues over time, it will end up damaging the dental support structures, the cervicocranial muscles, and the temporomandibular joint.

Bruxism can be easily treated and with a high success rate.

Tools exist for protecting the teeth from the damage caused by grinding or clenching; these are called bite plates or discharge splints. But it is also important to implement relaxation and hygiene measures for sleep, such as avoiding caffeine before sleeping, not using the mobile phone immediately before going to bed or in the bed, and ventilating the room properly.

→ To foster the origin of a case, it is generally necessary for some of these risk factors to coincide with a factor of psychic overload, emotional tension and/or anxiety, associated with some kind of occlusal interference[5], and which the physiological adaptation capacity of the individual is unable to cope with.

There is currently no scientific evidence relating to the role that occlusion can have as a cause of bruxism.

During sleep, some eight to 15 episodes of increased cardiac rhythm and muscular tone occur per hour, lasting between three and ten seconds. It has even been postulated that nocturnal bruxism could have a protective effect on the maintenance of the air passages and the increase of saliva flow to lubricate the oropharynx. Bruxism can be diagnosed by clinical history, oral examination, electromyography, and polysomnography, depending on the case.

Many symptoms related to TMD are caused by physical and emotional stress effects

Temporomandibular joint disorders (TMD) are a subgroup of facial pain problems. Many symptoms related to TMD are caused by physical and emotional stress effects on the structures around the joint. These structures include the jaw, face, and neck muscles, the teeth, the cartilaginous disc in the joint and the ligaments, and adjacent blood vessels and nerves. ■

GLOSSARY

1. **Cortisol:** a hormone of the corticoid class released by the adrenal glands. It is released as a response to stress and on low levels of glucocorticoids in the blood.
2. **C-reactive protein:** a protein that increases in response to inflammation, and produced by the liver.
3. **Interleukins (IL-1, IL-6, ...):** proteins synthesised by leukocytes. They are mediators of inflammation and regulate immune system functions.
4. **Tumour Necrosis Factor alpha:** a cytokine produced by cells in the immune system. They have a role in inflammation.
5. **Occlusal interferences:** occlusion is defined as each static contact between one or more lower teeth with one or more upper teeth. An "occlusal interference" is any undesired dental contact that prevents other surfaces, occlusal or masticatory, from achieving stable and harmonious contact.
6. **Sleep apnea:** pauses in breathing during sleep, of variable length. They have greater medical importance when they last more than 10 seconds, sometimes reaching 60 or 120 seconds. It is a feature of apnea for these pauses to occur during snoring.
7. **Gastroesophageal reflux (GERD):** la disorder that occurs when a muscle at the end of the esophagus does not close properly, allowing the stomach content to return, or to reflux towards the esophagus, irritating it.
8. **Electromyography:** a test that verifies the health of muscles, and the nerves that control the muscles.
9. **Polysomnography (PSG):** a test carried out while the patient sleeps, with the aim of analysing the cycles and phases of sleep, in order to establish a precise diagnosis in relation to different sleep disorders. It is performed when a patient presents a series of symptoms that allow for suspicion of the existence of a sleep disorder.

NUEVO

Oral-B

Cepíllate como un dentista

¿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 dentrífrico **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: cepillate 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.

"We want a well-informed patient, and for that we must provide knowledge"

OLALLA ARGIBAY
SEPA GOVERNING BOARD SPOKESPERSON

SECTION COORDINATED BY:
Assumpta Carrasquer
Professor of Master in Periodontology and Implants, Faculty of Dentistry of Valencia.

The SEPA Foundation is leading, nationally and internationally, a global strategy to offer dentistry professionals and the general population up-to-date, accurate, and rigorous information on gum health, and on its important influence on general health.

Why is it important for a scientific society—in this case SEPA—to have a space aimed at tackling aspects of awareness creation for citizens and outreach?
Oral and general health promotion has always been one of the objectives of this scientific society, and we would like to get this message home to patients, professionals, and institutions.

We knew that having healthy gums had functional as well as aesthetic consequence, but now it has also been demonstrated that taking care of your gums means you are looking after the rest of the body.

For this reason, it is important to get word to the rest of society, and to the entire health community: health involves the whole body.

It has been proven that taking care of your gums means looking after the rest of the body

In the specific realm of oral and dental health, what diagnosis would shape information from quantity and quality in order to reach the population on this subject?
Today, new technology has meant a huge advance in all spheres, and especially when it comes to making information accessible to all.

The problem is that there is no filter for the information going around social networks and that, in many cases, can lead to "fake news" or "false myths". Without doubt, knowledge should be within reach of everyone, but it must be accurate and based on scientific evidence. We believe that health information should come from reliable sources, such as that emerging from scientific societies such as SEPA, through its magazine *Take Care of Your Gums*, and *The Journal of Clinical Periodontology*.

So, what could be done to vastly improve this information and, in general, awareness of the problems that lead to bad oral cavity health?
We must keep on working in this same line to explain to society the importance of the association between gum conditions and general diseases, as well as repeating the message about the importance of prevention, early diagnosis, and

We want to increase social awareness and the knowledge out there among the population on the perio-systemic connection

treatment. We want a well-informed patient, and for that we must provide them with knowledge. This is how the magazine Take Care of Your Gums came into being, something that helps us in this outreach task but without losing scientific rigour.

We want the entire health community to be aware of this message and that we need to underline preventive strategies, hence the growing partnerships between SEPA and different medical societies.

In the specific case of periodontal diseases, do you believe the right knowledge is out there about what they are and what they mean?
Recent years have seen changes, and social concern about oral and dental health has increased.

There is still a long way to go, but we are heading in the right direction in terms of getting across information on periodontal diseases, their consequences, and what we can do to prevent them.

Bit by bit, it is being understood that bleeding gums is not →

There is no filter for this information on social networks and which, in many cases can lead to "fake news" or "false myths"

→ something normal, and that early diagnosis means simpler, more effective, and less expensive treatments.

What about peri-implant diseases?
The same is happening in the case of peri-implantitis, which is the same infectious pathology but one that affects the gum and/or the supporting tissues around dental implants.

It is a problem that affects more patients than we would like, and, as in the case of periodontal diseases, the essential thing is to understand this type of disease and educate on all levels to avoid it developing, or in able to catch it early.

And do you think that we have good knowledge on the direct and indirect repercussions of conditions such as periodontitis on general health?
It is still underestimated, although there are increasingly more people achieving healthy gums as part of their healthy lifestyles.

But we must keep on working to raise the profile of this relation between periodontitis and other systemic pathologies, and co-operation with other medical societies is fundamental in this.

Work is currently being done with the Spanish Cardiology Society, the Spanish Diabetes Society, the Spanish Gynaecology Society, the Spanish Society of General Practitioners...and soon we will be working with more new partners.

Why is it so important for the public to be well informed on the health of their mouths? Has any change in tendency been noticed in this area in recent years (more interest among people and/or health authorities, more resources,...)?
Because the main efforts and advances in the realm of periodontal disease must be oriented towards prevention and early diagnosis, and rigorous information is fundamental for that.

It is important to prevent the onset of a disease in the mouth, which has repercussions locally and all over the body.

It is true that public concern about oral and general health has increased in recent years, but not enough. We must get this to grow, and for this it is crucial to make the public, professionals, and institutions aware of the importance involved.

Health information should come from reliable sources, such as that currently offered by scientific societies

All the resources devoted to prevention always seem too little, but it is true that institutions are progressively increasing allocations for this area, and only through data and insistence will we get these resources to climb.

And what role do dental surgeries play, and specifically the dental team, in promoting health and in prevention of oral conditions and other illnesses such as diabetes, obesity, smoking,...?
Besides the highly important functions already assigned to the dental clinic and team as promoters of oral and general health, new important roles have currently been added, such as systemic assessment of patients, specifically of cardiovascular risk and detection of pre-diabetes and undiagnosed diabetes.

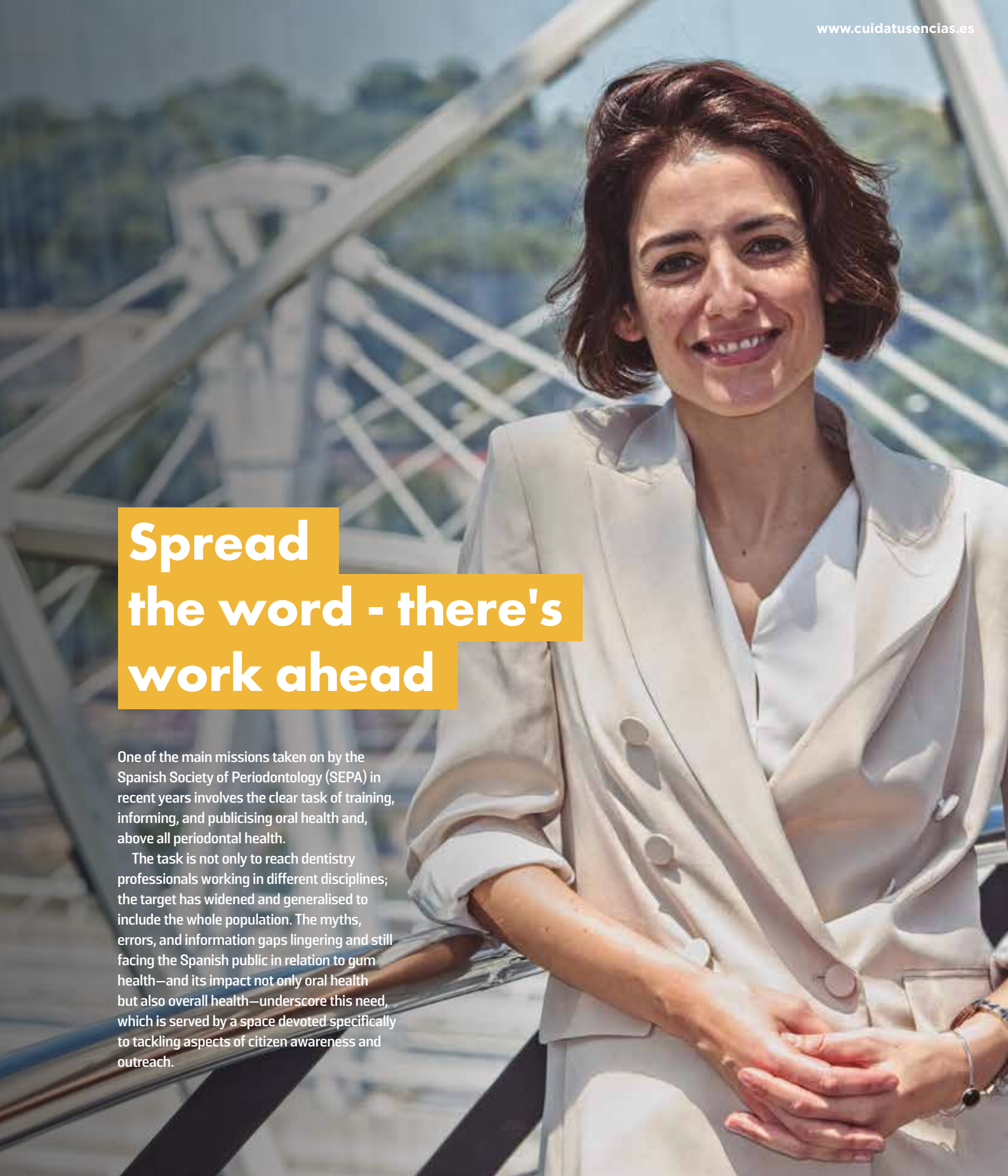
Social concern about oral health has increased, but there is a long way to go

This means trying to introduce simple protocols that can help the patient in the prevention of chronic illnesses that, over time, worsen or lead to acute complications.

A population group of special focus must be the very young...?
Definitely. We understand that the dental clinic is a crucial place for educating about health, creating healthy lifestyle habits, and oral hygiene. And the dental team is the ideal vehicle for getting this across, and age doesn't come into it. All in all, we see it as a necessary measure to inculcate this idea in education centres, because the sooner we begin to create these healthy habits, the more probabilities open on keeping them going over time so that these help in preventing oral and general diseases.

In relation to the Take Care of Your Gums website, which has just gone through an update and redesign, what would you highlight? What can this bring in the current context in which citizens increasingly do their own searching on health questions, but in which so much health disinformation accumulates?
The project is much more than a simple update: we are trying to update to new times and we know that the future is in social networking. We want to take advantage of the outreach possibilities this medium offers for creating a global community under the "Periodontology for All" brand.

At **www. cuidatusencias.es** patients and professionals will find a source for learning, updating, and debate, a forum by and for everyone, but all without overlooking the scientific rigour that characterises SEPA. ■



Spread the word - there's work ahead

One of the main missions taken on by the Spanish Society of Periodontology (SEPA) in recent years involves the clear task of training, informing, and publicising oral health and, above all periodontal health.

The task is not only to reach dentistry professionals working in different disciplines; the target has widened and generalised to include the whole population. The myths, errors, and information gaps lingering and still facing the Spanish public in relation to gum health—and its impact not only oral health but also overall health—underscore this need, which is served by a space devoted specifically to tackling aspects of citizen awareness and outreach.

The important thing is to enjoy good periodontal health...and keep it

Not properly treating periodontitis can have very negative consequence for the patient's oral health, but also for his or her general health. But it is not only essential to act during the active phase of the disease, but also to carry on with a strict treatment and maintenance plan

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

PERIODONTITIS IS A CHRONIC inflammatory disease, produced by bacteria that affect the tissues surrounding and supporting the teeth.

This disease affects a high percentage of the population, and is especially frequent in the over-30s and over-40s.

The keys to initial treatment

Correct treatment of periodontitis calls for close co-operation between the person suffering this condition and the periodontist.

In the dental surgery, it is necessary to carry out scaling and root planing treatment (commonly also called, incorrectly, curettage) to eliminate the accumulated bacteria above and below the gum, thus resolving the inflammation.

Meanwhile, the patient should then carry out a daily oral hygiene practice of interdental cleaning (dental floss or interdental brushes) in order to remove food remains and bacteria deposits that, if not eliminated, will lead to gum inflammation returning.

After the initial phase of periodontal therapy, it is indispensable for all treated persons to be put into a "periodontal maintenance" programme, visits made periodically to keep the disease at bay and avoid relapses.

The importance of periodontal maintenance

This programme is fully justified. Periodontitis impacts susceptible persons in particular, ensuring that however much the condition has been treated and stabilised, if bacterial plaque accumulates anew in the gum, inflammation will occur again.

It is, therefore, fundamental not only to establish good daily oral hygiene, but also to visit the specialist for periodontal maintenance with a frequency set according to the degree of disease and the patient's susceptibility.

→

WORDS OF THE EXPERTS

"Once periodontitis is controlled, it is essential to keep the gums healthy. Maintenance sessions every four to six months allow long-term gingival health to be stabilised, and are a fundamental part of monitoring and control of periodontal disease"

Dr. Pedro Almiñana
Master in Periodontology and Osseointegration, University of Valencia.

Our general health will be grateful

GUM DISEASE has been linked in multiple scientific studies to cardiovascular diseases, diabetes mellitus, rheumatoid arthritis, and Alzheimer's disease, and in a way that people with uncontrolled periodontitis present greater risk of developing these pathologies, and that they become more severe.

It has also been shown that pregnant women with periodontitis are exposed to greater risk of preterm birth (before 37 weeks) and of low birth weight.

So, treating periodontitis and following a strict periodontal maintenance programme is fundamental, not only for the health of the mouth, but also for our general health and to avoid complications during pregnancy.

Dra. Reyes Jaramillo
Master in Periodontology and implants, University of Sevilla.

"Maintenance treatment is essential for long-term control of periodontitis"

Maintenance treatment: when?

THE PERIODONTIST IS IN CHARGE of indicating how often it is necessary to visit for periodontal maintenance. In general, this is usually carried out every four to six months, except in specific cases, in which the appointment frequency might be reduced even more.

The time interval between each maintenance treatment session will depend fundamentally on the risk of relapse into illness, and for this reason an assessment is necessary of the quality of the oral hygiene carried out by the patient and the severity of the periodontitis that has been treated. The poorer our cleaning and the more advanced the periodontitis we suffer from, the shorter the intervals between visits.

Other factors that influence the setting of periodontal maintenance treatment intervals are smoking and having conditions such as diabetes mellitus. Smoking is directly related to gum disease; it is best to stop smoking completely so as to stabilise the periodontitis, but if the patient continues to smoke, he or she is exposed to greater risk of relapsing and, therefore, the professional will set more frequent maintenance visits.

Control of blood sugar levels is also associated with the destruction of tooth support tissue. For this reason, before beginning treatment, it is essential for diabetes to be completely under control. If blood sugar levels are correct during periodontal maintenance, the patient will have no greater risk of relapse than non-diabetic patients.

Do not confuse gum cleaning and periodontal maintenance

CLEANING THE GUMS is one of the parts of periodontal maintenance, but it must not be carried out in isolation. So-called "conventional" cleaning or "dental prophylaxis" must only be carried out in persons who present no loss of the tissues that support the teeth.

If the patient has periodontitis, it is crucial to carry out "full" maintenance treatment.

The professional doing this must be expert in this kind of treatment, since gum cleaning requires great meticulousness and specific knowledge, far more than what is needed for a simple, standard clean. Furthermore, in the case of accumulated bacterial plaque under the gum, and/or relapsed periodontitis, it is fundamental to detect these early and begin treatment to recover good health.

Para el correcto tratamiento de la periodontitis es necesaria la estrecha colaboración entre el paciente y el periodoncista

What does it consist of?

In general, the periodontal maintenance visit comprises several phases: monitoring the state of the gums, cleaning them, and cleaning and polishing the teeth.

Monitoring

To begin with, the professional checks the gums, evaluating how well oral hygiene has been carried out and indicating the zones in the mouth where cleaning must be improved, pointing out how to do so. This is especially important when a "new element" has been introduced, such as orthodontic treatment or implant therapy. Then, a check must be made on the appearance of any new risk factors (smoking, systemic conditions, medication, stress,...) that might increase susceptibility to periodontal disease.

A "periodontograph" will be made. This is a sort of chart that records the state of the gums and clearly shows the case evolution over all maintenance visits. If there is a relapse of the disease in any area, this data lets the periodontist detect it and then perform the required treatment. When necessary, control x-rays will also be carried out to evaluate the stability of the bone support for the tooth and/or diagnose other possible associated pathologies, such as caries or infection in the tooth root. Depending on the state of the gums, the next maintenance visit can be set.

Gum cleaning

Using certain ultrasonic, sonic, and curette tools—among others—the accumulated plaque and tartar remains. This cleaning is usually carried out without anaesthesia, except in cases of hypersensitivity or when there is need for occasional treatment under the gum.

Cleaning/polishing of teeth

To get rid of stains and plaque remnants. Fluor is sometimes applied as a preventive treatment for caries, or gels to reduce hypersensitivity. ■

"Long-term studies show that patients who regularly attend periodontal maintenance appointments conserve their teeth longer and in better condition"

Dra. Pilar Batalla
Associate Professor of Periodontology, University of Santiago de Compostela.

WORDS OF THE EXPERTS

"Periodontal maintenance plays a key role in long-term control of periodontal diseases. If the patient does not keep up with periodontal maintenance appointments, the risk of relapse increases"

Dr. Jaime Alcaraz
Master Periodontology and Implants, UCM.

The importance of good mastication... above all if you are missing teeth

The absence of teeth in the oral cavity, whether through traumatic injury or as a consequence of conditions such as periodontitis or caries, has importance consequences that impact correct bite and food mastication, and in some cases the appearance of disorders such as posterior bite collapse

SECTION COORDINATED BY:
Juan Puchades Rufino
Associate Professor in Periodontology at the University of Valencia.

TO AVOID THE APPEARANCE of this syndrome, the recommendation is to replace the teeth that have been lost, and not merely for aesthetic reasons, since although one thinks that chewing can be the same with fewer teeth, the reality is very different.

Poster bite collapse is a pathology of the occlusion of the mouth, which is not an entity in itself but the result of a process by which the absence of teeth and loss of supporting dental bone (associated with periodontal problems) leads to permanent pathological displacement of teeth.

Why does it happen?

The main causative factor of this syndrome is the absence of teeth (generally the posterior pieces, in other words molars and premolars) that have not been replaced in a short period of time. This causes the dental arcades to present wide gaps between the teeth present and the bite planes of both arcades are altered.

When a tooth loses its antagonist (opposite number) or an adjacent tooth, a natural phase of re-adaptation to this reality is begun, making the tooth move in search of contact with another dental piece. This job is especially active during the first six months following loss, although the process really does not cease until the tooth finds its equilibrium anew.

Types

If the tooth missing is the next one along, the tooth will cover part of that space, shifting towards it, but this displacement will be joined by a certain rotation or twist. The sum of the displacement and the rotation generally creates an unstable occlusion.

If the tooth lost is the antagonist, the tooth extrudes (in other words, it comes out of its alveolus (socket). If, over many years, the tooth does not find the antagonist it might make contact with the gum of the opposite arcade when the patient closes his or her mouth on finding no prior contact.

Implications

One of the main consequences of the loss of teeth is that the contacts created a posteriori between the remaining teeth are often not physiological.

For this reason, in these patients it is normal for there to be premature contacts for some teeth, or even undesired contacts that prevent correct occlusion .

The anterior teeth fan out, creating gaps between the teeth called →

WORDS OF THE EXPERTS

"Current dentistry gives us marvellous ways of bringing back health, function, and looking through multidisciplinary treatment, thus changing the pattern of deterioration in the patient and and the patient's mouth, achieving stability over time, and even the prevention of future problems"

Dra. Xiana Pousa
Master in Periodontology and Implants, Complutense University, Madrid.

Bite collapse: practical advice

How to prevent it

THE KEY, TOP PRIORITY goal is to try to avoid tooth loss and reaching this clinical situation. All treatment oriented towards putting the brakes on this process is always less expensive on all levels than having to solve it once it has developed. To manage this:

- Check and take care of your gums, avoiding the loss of bone support between the teeth through proper prevention and correct treatment
- Check for the presence of caries regularly; all caries detected and treated in time is a victory
- Avoid losing teeth; they are better than any restoration that can be carried out. Whenever possible, opt for treating a bad tooth that can be maintained, instead of having it taken out and looking for an alternative
- If you do lose a tooth, have it replaced as soon as possible to avoid the displacements its absence will cause
- A pathological occlusion is a source of problems for the teeth and for the articulation of the joint in the future. A mouth that has been cleaned up allows for orthodontic and other treatments to be used independently of the patient's age

Posterior bite collapse is caused by missing teeth, associated with problems in the gum and bone of the tooth support, which brings about the permanent displacement of the teeth

→ diastemas (the incisors are displaced forward and sideways resembling a fan).

This situation is produced because patients, on losing posterior teeth (prepared for grinding food) begin to take the food bolus to the anterior section.

This is often accompanied by problems in the gum and supporting bone of the teeth. Thus, the patient then eats only with the anterior teeth, which are not designed to grind but to cut. All this causes the anterior teeth to lose correct chewing function, and the excessive occlusal forces they support cause the tooth to be displaced.

As a consequence of this whole process, there is loss in the vertical dimension of occlusion. This refers to the vertical position of the jaw in relation to the maxilla when the upper and lower teeth rub together in the fully closed position. The fact that this distance is shortened often means the posterior sections cannot be restored because there is no longer sufficient space to place normal-sized teeth. Hence, despite the desire to place new teeth where the natural ones have been lost, the displacement of neighbouring and antagonist pieces leave no space to place them.

But besides this bite collapse syndrome, there can also be repercussions for the mandibular joint, with joint problems resulting from the occlusal pathology.

How can you tackle bite collapse?

To deal with these difficulties, an exhaustive examination of this process is necessary, since a generalised condition exists in the mouth that encompasses the health of the remaining teeth, the bad position of the teeth present, the lack of spaces for placing new teeth, and the consequences in health and function deriving from all this.

a) Initial diagnostic stage

In the evolution of an occlusal condition posterior bite collapse is the result of a series of events that begins with tooth loss. The syndrome adds together the consequences created by an occlusal trauma and gum inflammation, in which bacterial plaque plays a key role in the development of periodontal disease, which is worsened by the occlusal trauma. These, therefore, are essential aspects to correct through interdisciplinary treatment. In the initial diagnostic stage, it is fundamental to carry out a good study of the state of the gums and the tooth-supporting bone, with the aim of finding out if the teeth present in the mouth are maintainable over time.

b) Initial hygiene stage

The main objective of this stage is the control and elimination of all the infectious sites in the gums and teeth.

The treatment of periodontal disease must guide patients in acquiring knowledge that allows them to secure the health of their gums in the future, and it should eradicate all infection by getting rid of all supra-and subgingival biofilm deposits. Control at dental level will be carried out to eliminate all existing caries, correcting defective, cracked, or poorly-shaped restorations;

The most important thing is to try to avoid tooth loss and this reaching a clinical situation; all treatment aimed at stopping this process is always less expensive on all levels that solving it once it has set in

WORDS OF THE EXPERTS

"Letting time drag on before replacing lost teeth must be avoided, because this can lead to an increase in masticatory and aesthetic problems such as, for example, posterior bite collapse"

Dr. Andrés López
Co-director of Master in Periodontology and Osseointegration at the University of Valencia.

Treating it

in addition, endodontic treatment should be carried out if the tooth needs this.

In this first phase, all premature occlusal contacts should be corrected if they are pathological for the teeth.

This initial stage of elimination of infection must always be carried out along with correct long-term control; the subsequent phase should not be started until the patient is able to control levels of bacterial biofilm, and also not before the prognosis of the remaining teeth is the right one for continuation of treatment.

c) Initial reassessment phase

In this phase, the level of oral hygiene attained by the patient needs to be assessed, and it should be reinforced in order to motivate the achieving of optimum oral hygiene.

The displacement of a tooth that has no antagonist (opposite tooth) or adjacent tooth will not stop until it reaches equilibrium anew

The response of the supporting tissues to the procedures carried out in the initial phase should also be assessed, with control of infectious and inflammatory processes.

d) Initial corrective phase

The majority of patients who present this syndrome require interdisciplinary management in which periodontics, orthodontics and, in some cases, maxillofacial surgery all play a major role.

Orthodontics can be of great help in periodontal and restorative treatment, in which dental alignment and levelling aid the reaching of targeted objectives. →

IN THE EVENT you need to receive treatment because bite collapse has occurred:

- **Accept that getting back the full health of your remaining teeth is a fundamental step**
- **Any treatment will end up failing if periodontal health is not established: looking after your gums and keeping them healthy is key in the short, medium, and long term. Maintenance and control of periodontal disease is obligatory**
- **Be aware that treatment can be prolonged and tedious...but necessary**
- **Take advice from good professionals who will take the necessities of your case into account when planning your treatment. Seek empathy with them, because the road tends to be a long one, and you have to travel along it together**

One of the main consequences of the loss of teeth is that the contacts created between the remaining teeth are not physiological

→ Prior to mounting orthodontic appliances, it is recommended that a healthy periodontium has been achieved despite being diminished because of periodontal disease, and that patients wearing orthodontic aparatology during this stage should be followed up very carefully also by the periodontist (generally, at two to four month intervals), so that the health of the gums can be maintained with guarantees, the bone support of the teeth is stable and, consequently, that there is no major disorder affecting the periodontium and that it is kept in a healthy state.

In the initial diagnostic phase, it is fundamental to carry out a good study of the state of the gums and tooth bone support

When the orthodontic treatment is complete, or if this were not necessary, the stage in which definitive rehabilitation is planned should be initiated. A first step is to carry out a "prognostic wax-up" using articulated study models, through which a prediction can be made that will be close to the result final restoration might obtain, as well as serving as a guide for provisional restorations.

In this stage, the implants are placed in the zones that need them, or bridges are placed over teeth being provisionally rehabilitated. Here, the recommendation favours the placing of removable partial transitional prostheses to recover posterior support, thus beginning to achieve the proposed aims. With provisionals and transitional prostheses, the patient must achieve correct occlusion. In this phase, the trauma caused by occlusion and gum inflammation must be perfectly controlled, and the patient must be able to carry out mastication correctly.

Following the initial correction phase, reassessment must be made of the periodontal, dental, occlusal, articular, and muscular state

e) Final reassessment phase

Following the initial corrective stage, the periodontal, dental, occlusal, articular, and muscular states must be reassessed, since the idea is for provisional restorations to achieve what is aimed for in the definitive restoration, this being the right moment to carry out any necessary corrections. Aesthetic surgery may be required in the anterior sector, as well as new endodontic treatments or new pre-prosthetic periodontal surgery, above all if retention fails in any area of the fixed restoration zone.

A pathological occlusion is a source of problems for the teeth and for the articulation of the jaw in the future

f) Final corrective phase

In this phase, the definitive restoration teeth and implants are put in place and cemented, maintaining the vertical dimension of occlusion that has previously undergone adaptation.

g) Maintenance phase

Follow-up must be carried out in good time of the periodontal, dental, occlusal, muscular, and articular state, classifying the patient according to risk in some of these areas. As patients tend to have some history of periodontal disease, it is recommendable at first to set short intervals between control appointments so as to verify whether the patient is capable of carrying out proper oral hygiene. Later, these can be more spread out.

Maintenance in this type of patient is the right road to follow towards long-term success. ■

"Diagnosis and correct treatment of posterior bite collapse is of great importance for improving the long-term prognosis of rehabilitation in our periodontal patients"

Dr. Óscar González
Professor of PhD in Periodontology, UCM.

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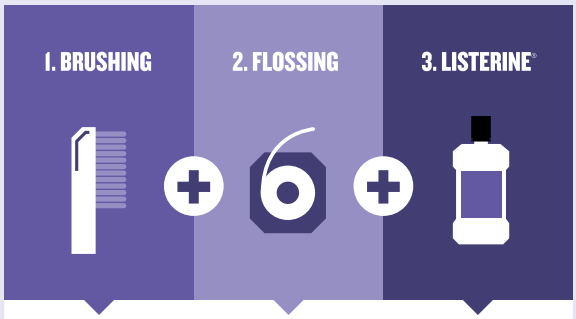

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Exposing hoaxes: mouthwashes with alcohol and holistic dentistry

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IN KEEPING with the line followed in earlier issues of this magazine, we are going to tackle two new aspects about which conflicting news and information has been circulating on internet and social networks: on the one side, the relation between the use of mouthwashes that contain alcohol in their formulas and the development of oral cancer; on the other, the provision of holistic dental services in some dental clinics as a seal of the distinction of said centres.

Mouthwashes with alcohol and oral cancer

Alcohol consumption is a risk factor for the appearance of oral cancer. For some years now, it has been considered to be an independent factor, despite the fact that it is often associated with smoking: in fact, almost 80% of all oropharyngeal cancers present both risk factors (smoking and alcohol). Alcohol consumption itself multiplies by six times the risk of suffering from oropharyngeal cancer.

Mouthwashes are prepared liquids designed for use around the teeth, the mucous membranes of the oral cavity, and the pharynx. It delivers an antiseptic, astringent, or calmative

Alcohol consumption is a risk factor for the appearance of oral cancer

action, depending on its formula and principal active ingredient. In addition, mouthwashes carry the benefit that their therapeutic activity can get to hard-to-reach areas, so they amount to an ideal complement in daily oral hygiene in some cases.

Alcohol is used as part of the formula in some mouthwashes, acting as a preservative in one way, and as a solvent of other active ingredients (antimicrobials, antifungal agents, analgesics, astringents,...) in another.

The use of alcohol in a mouthwash can, however, involve certain negative secondary effects, among which the following stand out:

Pain. With an intensity directly proportional to the concentration of alcohol present in the mouthwash: levels of alcohol below 10% generally do not produce major pain.

Oral mucosa lesions. Alcohol has a caustic effect and, therefore, it destroys →

Mouthwashes that contain alcohol do not cause oral cancer, and so-called holistic dentistry (the term used as a slogan in some dental clinics based on alternative medicine) is not the solution to many of the problems of oral health. Here, we will intend to debunk these two new hoaxes

Mouthwashes with alcohol: when not to use them

THERE ARE SITUATIONS and conditions for which the use of mouthwashes that contain alcohol in their ingredients is not recommended:

- In the presence of lesions in the mucosa
- If x-rays have recently been taken of the head and neck
- In children, because of the risk of accidental intoxication
- Alcoholics; in desperate situations, they may ingest the mouthwash as a substitute for drink
- Patients taking metranizadole (antibiotic) and disulfiram (a medicine to treat chronic alcoholism)

→ tissues in the oral cavity, but when the concentration of alcohol surpasses 25%. These lesions can present as petechiae (small red spots), ulcerations, or as white lesions.

Oral dryness or xerostomia. It can produce dryness in the oral tissues on modifying the quality and quantity of saliva, which can increase the risk of the appearance of dental caries, for example.

In recent years, the percentage of alcohol present in mouthwashes has been reduced

At the end of the 1970s, scientific publications appeared that suggested a possible association between daily mouthwash use with rinses high in alcohol content, and the appearance of oral cancer. As a precautionary measure, the tendency became the reduction in alcohol percentage in mouthwashes; however, no scientific evidence exists to show that the use of mouthwashes with alcohol might be a risk factor for developing oral cancer. This notwithstanding, there is no evidence either that alcohol boosts the effect of antiplaque agents in mouthwashes. The General Council of Dental Colleges in Spain, the US Food and Drug Administration, the American Dental Association, and the National Cancer Institute all accept alcohol as a safe component in mouthwash formulas and that they can be used, preferably with a prescription from a dentist.

No scientific evidence exists to show that the use of mouthwashes with alcohol is a risk factor for developing oral cancer

Holistic dentistry

For some time now it is not uncommon to find a certain term in publicity for some dental clinics, an differentiating them from the competition, and some clinics define themselves according to their practising of "holistic dentistry".

The term holistic comes from Greek and means "totality" or "whole". It is a position that defends that systems and their properties should be analysed as a whole and not by the parts that make up the whole.

Based on these principles, there are clinics that advertise or offer a type of dentistry they claim to be more personalised and individualised, not as standardised as in other clinics.

They claim to treat the oral cavity as a part of the human body and not as an isolated space.

But what professional today has any doubt that the human body is a whole and that the different medical specialties are all interrelated?

Even more than this, any health professional is aware of the intimate mind-body relationship that exists and what this means for the development and outbreak of any pathology. Any of us might think about the relation between stress and myocardial infarction, for example.

Specifically in the field of dentistry, both research and prevention is increasingly combined through close ties with medical societies from different specialties such as pneumology, cardiology, gynaecology,...

Holistic medicine employs so-called alternative medicines, such as homeopathy, acupuncture, hypnosis, meditation, and lifestyle changes to achieve a healthier life (stopping smoking, modifying diet, more activity).

But no one today is ignorant of the fact that if we have a healthy lifestyle we will have more opportunities to enjoy good health and that our body will respond better to external aggression such as bacterial infection, for example.

In respect of the use of alternative medicine to solve and treat pathologies in the oral cavity sphere, there is no doubt that some of them can help to control conditions: the stress involved in going to the dental clinic, for example. Nevertheless, no scientific evidence exists to demonstrate that these therapies alone can cure or treat oral pathologies such as caries, periodontal treatment, or apical abscesses.

Terms and slogans such as "holistic dentistry" should not be used to engage or catch the attention of the consumer/patient in any dishonest way. If someone has doubts or questions about the latest advances in treatment or different therapeutic options for an oral pathology, it is advisable for them to consult their trusted dentist and/or inform themselves through the official websites of leading scientific websites (Spanish Society of Peridontology, of Endodontics,...) of the different dentistry specialties, or at official college of dentists in their locality.

Your health depends to a large part on you yourself: get informed! ■

No scientific evidence exists to show that alternative therapies alone cure or serve for treating oral pathologies such as caries or periodontal treatment

3 things you should know about alcohol and mouthwashes

1 **A mouthwash is neither better nor stronger according to the amount of alcohol it contains or does not contain**

2 Alcohol is not a necessary element of our daily oral hygiene, nor does it represent added value

3 **The presence of alcohol in mouthwashes does not represent a threat to health, except in certain situations or clinical conditions**

The new cuidatusencias.es brings you more information, accessibility, and interactivity

Design of the new www.cuidatusencias.es page.

THE LEADING INFORMATION portal in Spanish on oral and dental health, promoted by the Spanish Society of Periodontology (SEPA), has undergone a makeover, widening and diversifying content, and making a definitive leap to a new era in online communication.

cuidatusencias.es is now even more in line with the growing needs and demands relating to information on oral health and hygiene among the general public and dentistry professionals, with special focus on gum health, multiplying its offer and variety of resources and formats.

Its mission stays the same: to offer rigorous and true outreach info on the public's oral and dental health, both at national and international level, in order to promote health. Its aims, however, have taken a more ambitious turn towards multiplying its impact and reach across different social network channels.

Aesthetically, the website has undergone an extraordinary transformation, image being prioritised, and adopting not only a more striking, intuitive, and visual look, but also building in the latest in interactivity, in a clear attempt to viralise oral health information. Social networks are now definitively part of the website, as well as audiovisual resources.

The website is formatted for desktop, tablet, and mobile viewing, and it is also set up as a multi-language portal.

The new technical support also allows access to videos and podcasts, population surveys, self-assessment resources, live connection with experts, and access to information on the nearest dental clinics.

Among other sections, the new web has facilitated specific channels on gums, prevention, implants, aesthetic aspects, oral health, general health, and oral cavity hygiene advice. And the info is displayed in different formats, whether it is news, features, interviews, patient accounts, or expert opinion, all with the aim of adjusting to time limitations for reading and the information demands of each user. And special emphasis is placed on the ever-increasing information need in order to expose oral health fake news.

cuidatusencias.es has become universal. It crosses borders, tackling subjects and taking on tones to find common interest for everyone, regardless of their geographic location. It is a challenge that calls for great commitment, thus matching the SEPA mission to bring Oral Health and Periodontology to @ll.

The patient experience, the key to success in health promotion

IN ITS PUSH TO BOOST healthy lifestyle habits, influencing both oral health and general health, the Spanish Society of Periodontology (SEPA) is increasing its participation in training and informative projects that place the patient/citizen as the central figure.

This falls perfectly into line with the Society's involvement in the successful Diabetes Experience Day.

The Malaga Trade Fair and Conference Centre, where the planned SEPA 2020 Congress of Periodontology was due to take place, hosted the 7th Diabetes Experience Day, an international event run by Canal Diabetes that attracted more than 1,000 visitors, becoming an obligatory date in the diaries of persons with diabetes and professionals working with the condition.

The growth of this event over such a short period has already reached the American continent, marked by an outstanding success of the Argentinian Diabetes Experience Day.

From SEPA, and given the close link between gum health and diabetes, full support was given to the gathering, whose main mission is, according to its organiser, Ángel Ramírez, "to give a voice and visibility to diabetes, a silent illness that many people suffer."

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Take Care of Your Gums renews its website

COMING NEXT

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CASA DE LAS ENCIAS

"Sustainable" toothbrushes, or the future of wood

Approximately 160 million toothbrushes are sold each year in Spain, amounting to around 2,800 tonnes of non-recyclable waste

SECTION COORDINATED BY:
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TOOTH BRUSHING IS indispensable for correct oral hygiene. If expert recommendations are followed, every 1 to 3 months we must change our brush; the filaments split and the efficacy of the brushing is diminished.

Because of this, each person throws away between four and twelve brushes per year. In Spain, approximately 160 million toothbrushes are sold each year, which adds up to 2,800 tonnes of non-recyclable waste.

A brush is normally made of a handle and a head, both normally of plastic, and with filaments of nylon or polyester. Nylon has been used since the invention of brushes in the 1930s; previously filaments were made from bristles taken from boar or horse.

The increase in intensity of sustainability awareness has made companies start to think about the materials used for making toothbrushes.

Non-plastic materials are beginning to be introduced into handle construction, such as wood, with the aim that these can enter the recycling chain and contribute to the reduction of the environmental impact; in this case, they can be thrown in with organic waste or be used directly as firewood.

They are mostly made from waxed beechwood, using beeswax, or from bamboo, which has the advantage of possessing antibacterial agents. The filaments of these wooden brushes can be of two main types: natural, made from boar bristles (the animals being bred specifically in small farms, because the quality of the material depends on the wellbeing of the animal, although these brushes would not be acceptable to vegans) or made from biodegradable plastics, which generally come from corn, sugar cane, cellulose, or even castor oil. But all that glitters is not gold. Studies exist that have shown that many of the brushes sold as 100% bamboo, with bamboo filaments, on analysis have been found to be made of nylon or polyester.

In other cases, makers have advertised bristles of nylon 4 (somewhat biodegradable plastic) when they are really using nylon 6, which is not biodegradable.

It is recommended, therefore, that if this type of brush is used, when throwing them into the rubbish as an organic product, the filaments should be pulled out with pliers.

Without doubt, the world of sustainable tooth brushes is growing, but proper studies need to be carried out to analyse the efficacy and safety of these types of filaments.

"Grillz", a fashion that can affect your gum health

The Spanish Society of Periodontology advises against following these trends

WHO HAS NOT HEARD ABOUT "grillz" or "grills", metallic covers for the teeth of the kind worn by the latest diva of Spanish music, Rosalía?

They may seem like something new or a trending eccentricity, but they are not.

They became fashionable in the 1980s when used by US hip-hop and rap singers as an expression of economic status. These frontal covers were made in dental clinics using noble metals (gold and platinum) and even diamonds. As a response, in 2006, the communication wing of the American Dental Association, in cooperation with the journal JADA, presented a report for dental patients, explaining that, although no studies existed showing that these fronts were damaging to oral health, there were also no studies affirming the opposite.

As with every fashion, it faded, and the taste for decorating the teeth with these metals, in some cases permanently (meaning definitive drilling) and in others temporarily (in other words, wearable and removable) was not in vogue for a number of years. Suddenly, Rosalía brought back these tooth covers. This has led to many adolescents wanting to emulate their idols, and for this the best way of doing it is to buy grills online and put them on themselves.

To this end, explanatory videos exist on YouTube to show how to fit them onto the teeth, which is pure folly.

It is important to understand that in these cases the grills have not been designed by a dentist, nor do they perfectly fit each user. Thus, it is normal for food remains to accumulate in the gaps between grills and teeth, creating an ideal breeding ground for nesting bacteria, from which infections will arise.

Furthermore, the grills probably stop the mouth from closing properly, thus causing functional overload on the teeth. They can even cause contact or grazing around the gum, leading to inflammation, ulceration, and similar problems. Given that these are usually detachable, the wearer of these covers should limit the time of use to avoid problems. They should be taken off for eating, cleaned daily to eliminate the plaque accumulated, but obviously not with cleaners specifically for jewellery, which could be dangerous if ingested.

The Spanish Society of Periodontology has taken up a position advising against following such fashions that endanger oral health and that have no scientific endorsement of safety.

The best dental aesthetic is achieved by adopting good hygiene habits and optimum tooth and gum health.

Shitake mushrooms and gingival health

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GINGIVITIS IS AN INFLAMMATION in the gums. According to the latest classification of periodontal diseases, the way to diagnose gingivitis is through gentle ultrasound of the gingival grooves. A person is considered to have gingivitis if the percentage of gingival surfaces bleeding is higher than 10% and the ultrasound probing depths less than or equal to 3mm.

Gingivitis is one of the most frequent infectious diseases in humans, and it is preventable and treatable, being totally reversible if the plaque biofilm around the gingival margin is eliminated and oral hygiene improved. If this is not achieved, and the condition becomes chronic, gingivitis can progress in many cases to periodontitis.

Ideally, all possible resources should be used to prevent gingivitis. If a person has good brushing and correct interdental technique, the appearance of gingivitis can be avoided, but sometimes other aids are required. The use of functional foods—or "super foods"— is on the rise. These, such as blueberries, have infection-fighting and anti-inflammatory properties.

Shitake mushrooms have infection-fighting properties

A very interesting functional food, owing to its excellent properties for health, are mushrooms, and among them the shitake (Lentinula edodes), which has been used in Asia for centuries because of its numerous beneficial effects. This food contains nine essential amino acids, fibre, vitamins and minerals, and dismutase superoxide, which gives it key antioxidant properties.

In relation to oral health, in vitro studies carried out in recent years and artificial mouth models have shown that shitake mushrooms can prevent the formation of biofilm and bacterial coaggregation. Therefore, they have infection-fighting properties. Among options for using them is the creation of mouthwashes containing shitake extracts, an option currently being researched.

What is clear is that mushrooms are very healthy foods for general health and should be part of a healthy diet.

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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

Every 6 months

- 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**

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