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TAKE CARE OF YOUR

gums¹⁵

Outreach magazine of the SEPA Foundation for Periodontology and Dental Implants

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Editor:
Regina Izquierdo



The dental clinic in the fight against smoking

Sepa.

Periodontology for everyone



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IN DEPTH

The dental clinic, an ally against smoking 4

Stopping smoking is key to the prevention and control of diseases of the gums and dental implants, as well as to guaranteeing better general health. Because of this, the dental clinic is positioning itself as an active promotor of measures to prevent and control this harmful habit.



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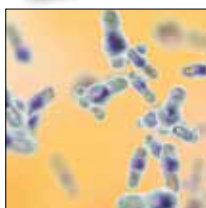
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PRESENTATION

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

Innovation: a risk activity that must be practised

WE LIVE AT a time of constant change, in which access to knowledge is wider than ever and the population's interest in wanting to know and understand more is undeniable.

I recall with particular affection the first meeting I had with the editorial committee of this magazine some months ago in Seville.

It was a big moment in which an extraordinary storm of ideas was generated, the fruit of mutual understanding, complicity, vision, involvement, and above all the desire to work to continue informing, training, and increasing awareness in the population about the importance of health – oral and general – in every respect. It was so stimulating that it strengthened the need to fight to continue defending and renewing our commitment to patients.

At this meeting, we strengthened the idea that change is necessary to carry on growing, with the conviction that this change must be conceived from the constant renewal of topics, content, and approaches. Informing rigorously but with courage, leaving behind prejudices in order to speak in terms of reality, and always sensitive to what patients demand and need – as they are the real aim and meaning of this publication.

Science owes its existence to innovation and the need to explore. Thus, we cast aside conventionalisms and taboos and share with our readers – sensitively and respectfully – all those topics that seem interesting so that we can continue to advance and widen our concern and, thereby, our knowledge.

Take Care of Your Gums

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The dental clinic against smoking

SECTION CO-ORDINATED BY:

Juan Puchades Rufino
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SMOKING IS OF HUGE importance in the development and progression of periodontitis, it limits the response to periodontal treatment, and it also has serious consequences in implant therapy. Given that smoking is a modifiable risk factor, introducing techniques of smoking cessation in the dental clinic should form part of our treatment, along with controlling plaque and offering dietary advice.

Although the effects of smoking on general health are well known and include worrying data on its impact on life expectancy and quality of life, there is still a certain lack of knowledge in society about its influence on oral health, even though it causes significant changes and has major social, health, and economic repercussions.

To try to cast light on these aspects, to update the evidence, and to agree recommendations, the working group of the Spanish Society of Periodontology and Osteointegration (SEPA) and the National Committee for the Prevention of Tobacco Use (CNPT) has created a report on "Smoking cessation and oral health", which

also includes an extensive bibliography and answers to frequently asked questions on this topic. The aim is also to highlight the important role that can be played by oral-health professionals in preventing smoking, in establishing measures for giving up the habit, and in providing advice to smokers via the dental clinic.

"Smoking affects nearly the entire organism, but as it enters the human body through the mouth it is there where the first problems occur," said Adrián Guerrero, president of SEPA.

Smoking has a prevalence of 28% of the Spanish population, slightly higher than the European average

"Leaving aside oral cancer, the main problems are caused at the periodontal level, so the idea of producing this report is both excellent and very logical." In addition, as indicated by Francisco Rodríguez Lozano, president of the European Network for Smoking and

Stopping smoking is key to preventing and controlling diseases of the gums and dental implants as well as to guaranteeing better general health

Tobacco Prevention, "the dentist is in an exceptional position to transmit messages of health, as the whole population (including those who are not ill) passes through (or should pass through) the dental clinic. Today, the network of dental clinics in Spain is very extensive, even reaching places where there are no health centres."

Negative impact on oral health

According to this report, smoking negatively affects oral health, and is a risk factor for the appearance of oral cancer, various lesions of the mucosa, and periodontal and peri-implant diseases.

Among other effects, the smoking habit encourages the development and progression of periodontitis, limits the response to periodontal treatment, and has serious consequences in implant therapy. Among other things, this can lead to tooth loss, significant aesthetic consequences, poorer quality of life, and the worsening of general health through the systemic implications of periodontitis. →

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"Dentists, like other health professions, must help their patients give up smoking"



Francisco Rodríguez Lozano
President of the ENSP
(European Network for Smoking and Tobacco Prevention).

Data for reflection

Smoking's prevalence among the Spanish population reaches 28% and is one of the main problems of public health and the main cause of avoidable illness and death. It causes 700,000 deaths each year in Europe (52,000 in Spain), serious problems of disability, and a significant cost in health expenditure.



Regina Dalmau
Cardiologist
President of the
National Committee
for the Prevention of
Tobacco Use (CNPT).

“The consumption of tobacco causes multisystemic damage and is the cause of premature death”



Tobacco negatively affects oral health, being a risk factor for the appearance of oral cancer, various lesions in the mucosa, periodontal diseases, and peri-implant diseases

→ “Smoking not only increases the risk of developing periodontitis, but also of significantly affecting the response to periodontal therapy, whether surgical or non-surgical,” notes Regina Dalmau, president of the CNPT.

By various mechanisms, smoking promotes the pro-inflammatory state that underlies periodontal diseases, alters the natural barriers against infection, and directly damages the oral epithelial cells.

Ultimately, as doctors Regina Dalmau and Regina Izquierdo (the latter a spokesperson for the SEPA management board) agree: “Oral health is clearly seen to be damaged by smoking.” But, these experts add, there is a positive message: “Many oral problems are preventable or can be improved is smoking cessation is established.”

The smoking habit has many negative effects in the oral cavity. From the qualitative point of view, “its relationship with oral cancer is clearly the most serious harmful effect to consider, as well as its relationship to other potentially malignant lesions of the oral mucosa,” indicates the periodontist Regina Izquierdo. But, from a quantitative point of view, its importance lies more in periodontitis, as this disease affects

a significant percentage of the adult population (it is estimated that eight out of every ten adults aged over 35 in Spain has some kind of periodontal disease).

Smoking contributes to the development of the most serious cases of periodontitis. In fact, it is an independent risk factor for the appearance of periodontal disease, as it has been demonstrated that smokers present between two-and-a-half and six times more risk of dental attachment loss (gingival and bone support of the teeth) than non-smokers.

In addition, comparative studies between periodontal patients who are smokers and those who are non-smokers conclude that smokers present greater risk of disease progression and greater loss of teeth, a greater pace of disease progression of periodontal diseases, a worse response to periodontal treatment, and worse cicatrization of tissues, as well as a higher rate of failure in treatment with dental implants and a greater risk of developing infections around implants (peri-implantitis).

Smoking provokes a dose-dependent effect on the tissues of the oral cavity states Dr Cristina Vallès.

In patients who smoke more than 20 cigarettes a day, the rate of progression of periodontal disease is 2.3 times quicker than in non-smokers. Similarly, the risk of losing teeth and implants from periodontal and peri-implant disease increases in patients considered to be heavy smokers (those who smoke more than one packet a day).



Change habits and join forces

“This report is a call to action to all health professionals about the responsibility we share in the prevention and treatment of smoking,” says Regina Dalmau, who highlights in particular “the benefit that can be obtained in involving oral-health professionals, in their various entities, in the prevention and treatment of smoking.” According to the president of the CNPT, some brief advice from the professional, “as it is given in the context of problems of periodontal health, can have a greater effectiveness and it seems to me to be an initiative that is very much needed.”

Until now in Europe, and even in Spain, all attempts that had been made by administrations and professional

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“The prevention and control of the smoking habit is key to improving the quality of care in our clinics”



Regina Izquierdo
Associate professor of periodontology at the University of Valencia. Co-ordinator of the SEPA-CNPT working group.



The dental clinic plays a fundamental role in the establishment of basic measures of advice on giving up smoking

institutions to involve dentists in the fight against smoking have centred on its clear relationship with oral cancer. However, as pointed out by Francisco Rodríguez Lozano, president of the European Network for Smoking and Tobacco Prevention, “the emphasis is now placed on the close relationship with periodontal diseases – the first time that something like this has been done in Europe.”

“Smoking cessation must be carried out by a multidisciplinary team, in which oral-health professionals play an important role”

The important role of dentists

Given that tobacco is a modifiable risk factor, dentists have an important role to play in the prevention of these harmful effects from tobacco.

Introducing techniques of smoking cessation in the dental clinic should therefore form part of the treatments that are provided.

Dental professionals in general have a relationship of loyalty and confidence with their patients, which makes them reference points in health. “The advice from a dentist undoubtedly has a more favourable impact on the motivation of patients when modifying their lifestyle,” claims the head of the CNPT. But not only this, as Regina Dalmau adds that “if this advice is also accompanied by a

positive message about the likely benefits on oral health from stopping smoking, its effectiveness will be even greater.”

There is scientific evidence that advice and counselling have a dose-response effect on abstaining from smoking and can at least double the probability of smoking cessation in relation to those who attempt it without any professional help. “In the dental clinic, we can educate people about stopping smoking and apply simple and effective intervention strategies”, assures Regina Izquierdo, although “it is important to emphasize that the whole dental team (dentists, hygienists, auxiliaries, and receptionists) must be involved in this task.”

SEPA stresses that all the components of the oral-healthcare team must be aware of the relationship between →



Gerardo Gómez Moreno
Chair of the Faculty of Dentistry, University of Granada.

→ the smoking habit and oral disease and that they should transmit and strengthen recommendations against tobacco and involve themselves in the smoking-cessation programmes.

“Many professionals have not got involved before now because of a lack of adequate preparation or training,” said Dr Bettina Alonso, of the Department of Dental Clinical Specialisms of the Faculty of Dentistry at the Complutense University of Madrid. “But with such a comprehensive review as made in this report, we are synthesizing all the knowledge to facilitate this learning – so it will no longer be an excuse that we do not know how to do it and how to apply it in the clinic.”

For this expert, “the time has come for stopping smoking to form part of the dental treatment plan and, even more, for it to be even more widely known that stopping smoking is fundamental to the prevention and control of periodontal and peri-implant diseases.”

Multidisciplinary collaboration

The “Smoking Cessation and Oral Health” working group, formed of the National Committee for the Prevention of Tobacco Use and the Spanish Society of Periodontology, “represents an innovative and very necessary initiative,” according to Dr Regina Izquierdo. In her opinion, “it is another example of scientific and institutional co-operation that allows

Most smokers can give up without any pharmacological support

us to establish combined strategies with the aim of stimulating and promoting smoking cessation from the dental clinic, as well as including control of tobacco use within the health-promotion programmes that are part of the Alliance for Periodontal and General Health that is led by the SEPA Foundation.”

In the same line, Regina Dalmau says that “the experience could not have been better: the enthusiasm with which the SEPA professionals worked is a real injection of energy for the CNPT and confirms the commitment of this scientific and professional society to the prevention of many diseases related to smoking and to the promotion of healthy lifestyles.”

In this respect, it opens a fruitful and promising line of collaboration between these two societies in the present and the future. One of the CNPT’s priorities is to join forces and create synergies for the reduction of the epidemic of tobacco use; with SEPA, that collaboration has been dynamic and fluid,” assured the CNPT president. ■

“The dental team is in a privileged position to help our patients who are smokers give up smoking”

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Positive effects of quitting smoking

Stopping this habit has several positive effects:

At the general level: the risk of heart attacks is reduced a few days after giving up smoking; blood pressure and cholesterol soon fall; the capacity to perform exercise and all kinds of activities increases; lung function improves within days; the effect of infections of the respiratory tract is reduced, as is coughing; there is rapid fall in the risk of cancer of the lung, mouth, larynx, bladder, stomach, oesophagus, and kidney; skin will look better.

At the oral level: clearly reduces the risk of oral cancer; reduces the occurrence of oral leukoplasia (many of these lesions even disappear); improves the sense of taste and smell; reduces halitosis.

At the periodontal level: four to six weeks after quitting smoking, the vascularization of the gums begins to recover, which would facilitate (among other things) an earlier diagnosis of periodontal diseases; improves the response to various periodontal treatments; the differences with non-smokers disappear almost immediately.

At the implant level: reduces the risk of failure in implant treatment as well as the appearance of peri-implant disease.



Bettina Alonso

Professor of the degree and master's degree courses at the Faculty of Dentistry, UCM
Member of the SEPA-CNPT working group.



Simplified protocol for giving up smoking

What can the dental clinic provide?

"From the dental clinic, we dentistry professionals have an important role to play against smoking," says Gerardo Gómez-Moreno, chair at the University of Granada (Dentistry in Special Patients) and member of SEPA. This role, in this expert's opinion, can be summed up in five essential activities:

- 1. Health advice:** find out if the person smokes, analyse if he or she is prepared to give up, and give advice on quitting smoking.
- 2. Information:** so that patients understand the risk for oral and general health implied by smoking.
- 3. Assessment:** where they can go to seek help.
- 4. Motivation and follow-up.**
- 5. Facilitate the process of quitting smoking.**

All of this, according to Gerardo Gómez-Moreno, "needs time, and to be able to put this into practice, it is essential to make a detailed clinical record in the dental clinic."

5 steps to tackle smoking in the dental clinic

- 1 Quantify the habit:** establish a correct diagnosis of the type of habit that an individual subject has, to better provide a pattern for the most effective treatment.
- 2 A job for everyone:** all the staff of the clinic must be involved in the process of tobacco cessation.
- 3 There is no lack of reasons:** helping someone give up smoking is gratifying; the team of the periodontal clinic is made up of health professionals; installing follow-up is easy because periodontal patients regularly visit the clinic; the interventions are not complicated and do not require much time; evidence shows that clinical treatments for smoking cessation during dental care are as effective as in any other healthcare environment; the prestige of the professional and the loyalty of patients is strengthened.
- 4 First of all:** the characteristics of the smoking habit must be known, and performance targets set in the periodontal clinic.
- 5 Action:** the treatment of smoking should be approached from a psychosocial and pharmacological point of view.

Four steps to follow in the dental clinic:

- 1 Identify:** first of all, ask if the patient smokes and if they want to give up. Make an accurate patient history of their smoking habit, gathering all the useful data about their behaviour. This should include the Fagerström test, which will determine the degree of nicotine dependence. The degree of motivation should be evaluated with the Richmond test.
- 2 Advise:** both in the first visit (taking advantage of explaining their periodontal situation) and in maintenance visits (ask them about their interest in giving up smoking).
- 3 Help:** through the clinical interview one can learn about the possible obstacles, atmosphere, and circumstances surrounding the patient, the history of previous attempts or relapses, hopes and fears, the stimuli, and the benefits that the patient believes giving up smoking will bring. Simple self-recorded records of their habit are also recommended, to obtain as much information as possible.
- 4 Make: During the treatment phase:** make a list of reasons to continue or to quit smoking; establish a date for quitting; a self-register and search for external support from family and friends; explain transitory symptoms and prepare the patient for possible relapses; where appropriate, look for psychological or pharmacological support (with nicotine-substitution therapies).
During the maintenance phase: follow-up, predicting temptations and occasional consumption, and monitoring relapses; congratulating the patient, at all times, on their progress.

"It is essential to apply a protocol of smoking cessation to improve the response to periodontal and implant treatment"



Cristina Vallès Vegas

Co-ordinator of the master's degree in periodontology at the International University of Catalonia.

Dental traumas: advice on how to prevent them and how to act

We offer you some tips to prevent dental traumas and to know what to do in inevitable cases

SECTION CO-ORDINATED BY:

Olalla Argibay
Master's degree in periodontology and implants, University of Santiago de Compostela

DESPITE THE MEASURES ataken with the aim of reducing the number of dental traumas, most studies show that their occurrence has not changed in recent years and that they are relatively high in young patients and children.

The beginning: mouth guards

Wearing mouth guards when playing contact sports is one of the most common means of avoiding these traumas.

However, many studies that have evaluated this kind of device focus on the materials used in their manufacture and how they behave under controlled laboratory conditions, while the few that have evaluated their protective efficacy in humans have a low level of evidence and not all agree about the extent to which they protect the dentition.

Historically, the first mouth guards can be traced back to the end of the 19th century when an English dentist - Woolf Krause - used strips of gutta-percha on the maxillary teeth of a boxer to protect the oral tissues. Later, around 1910, a boxer notified the use of a reusable

mouthpiece designed by Philip Krause, son of Woolf Krause, which later developed into what we know today as a mouth guard.

Mouth and face guards are the most common resources for trying to minimize or avoid the consequences of dental trauma

Types of device

Today, there is a wide variety of resources to enable dental protection, but mouth guards and face guards are the most notable.

Mouth guards: Until now there have been few investigations that have evaluated their protective efficacy and most of these studies are of low scientific rigour.

Not all the published studies have demonstrated a beneficial effect from the use of mouth guards. Some studies show that users of mouth guards have lower rates of dental lesions and referrals to the dental clinic than non-users; however, there are no appreciable differences

between the users and non-users of mouth guards regarding damage to the soft tissues. Other studies have not shown a statistically significant association between dental, labial, or oral lesions and the use or non-use of mouth guards. Nor is there solid evidence that using mouth guards protects against cerebral contusions.

Face guards: In 1955, the first data on the use of face guards in American football appeared. Around 1959, the first data appeared on the use of face guards in the form of masks worn by goalkeepers in hockey. This type of mask, made from polycarbonate, prefabricated or customized, provides an adequate protection of the face, but in certain activities may not protect the individual's teeth if they receive an impact underneath the chin.

The best option - prevention

It is estimated that between 20-30% of adolescents aged 18 suffer dental damage. Most of these traumas occur at times of leisure or play rather than in organized sports. →

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Carlota Suárez Tuero
Master's degree in prosthodontics, University of Washington, Seattle.

“Often dental trauma cannot be avoided; however, it can be prevented through the use of mouth guards in risk situations”

Keys to prevent trauma in temporary teeth

- Do not use infant walkers.
- Do not allow children to use skates without protection.
- Show your children how to look after their teeth and those of their friends when they are playing, avoiding blows to the teeth.
- Avoid obstacles that can cause a child to trip over.
- Recommend no pushing when playing.
- Instruct the child to remain seated on the swing and not to jump off when it is moving.
- Use the steps when getting out of the swimming pool.
- If the child takes part in sports such as rugby, hockey, karate, cycling, skiing, skating, or any activity that involves potential trauma to the facial area, ensure that they use a helmet or mouth guard.



What to do about a dental trauma?

7 tips

If the tooth is broken or avulsed,¹ would you know what to do? We give some practical advice

1 Locate the tooth. Hold the tooth by the whitest part (crown) not by the root.

2 If the tooth has come out, immediately try to replace it.

3 If it is contaminated, clean it briefly with cold water from the tap and put it back in its place.

4 Once the tooth is placed in its position, bite a handkerchief to keep it in place and go to your dentist immediately.

5 If it is not possible to place the tooth, put it in milk or a saline solution. If neither of these options is available, place the tooth between the cheek and the gums and visit the dentist as soon as possible.

6 Children aged between 7 and 10 years old are more at risk of suffering an avulsion or the tooth's coming out of its socket because of the elasticity of the bone at this age. It is necessary to increase precautions at these ages.

7 During the healing period, it is essential to follow good oral hygiene.



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“The main way to prevent dental trauma is the use of a protective split, so the teeth are protected, and the forces of the blow are distributed in a homogenous way”



Vicente Platón
Specialist in periodontology and implants. Associate professor of the master's degree in periodontology and implants (International University of Catalonia).

→ According to some studies, 48% of these traumas take place at school, while 8% occur during the performance of a sport or in cases of violent confrontation.

The best preventive measures are focused on avoiding these traumas and on knowing how to act if they occur.

This education must be carried out with both sexes, as the incidence of these traumas is more or less identical between men and women.

Special strategic measures should be adopted in people with a previous history of dental or oral traumas and in patients with overbite,² in whom the placement of preventive orthodontic treatment would be indicated.

A Swedish study discovered that children who suffered their first dental trauma before reaching nine years of age a probability of suffering another trauma that was 8.4 times greater than children who suffered their first trauma at 12 years.

It is important to carry out an evaluation of the risk of games and sports activities, as well as instructing children and those responsible for them in how to act when faced with a dental trauma.

Special strategic measures must be adopted in people with a previous history of dental trauma

dentist quickly

Especially in cases of a dental trauma in permanent teeth, it is essential to consult a dentist immediately after the accident. If treatment is received early:

- **There is a greater chance** of preserving the vitality of the tooth.
- **A more conservative treatment** will be carried out.
- **It will improve the prognosis.**
- **Complications will be prevented,** and a more expensive treatment will be avoided.
- **It is very important** that all trauma lesions are diagnosed, treated, and controlled promptly. ■

Priority, visit the

“A prominent overbite is one of the risk factors for trauma of the upper central incisors”



Meritxell Losada

Collaborating teacher of the master's degree in periodontology at the International University of Catalonia.

GLOSSARY

1. **Dental avulsion:** a tooth, maintaining its integrity, comes out of its housing in the bone as the result of a trauma: that is to say, the whole tooth completely leaves its socket.
2. **Overbite:** when the upper incisors are excessively advanced in relation to the lower incisors.

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Have no doubts about your dental hygiene

Although the basic advice about oral hygiene are widely known by the general population, there are still some myths, errors and ... certain doubts; we resolve some of these

SECTION CO-ORDINATED BY:

Desirée Abellán
Associate professor,
Master's degree in
periodontology,
International University
of Catalonia.

Is using a toothbrush enough?

BRUSHING IS the commonest form of oral hygiene. The toothbrush, when it is used correctly, should not produce any damage; when it is used in combination with toothpaste, it can remove stains that appear on the surface of the tooth and is the most appropriate tool for applying therapeutic substances. However, the use of the toothbrush alone is not capable of removing all bacterial plaque, as it is not able to access the interdental surfaces sufficiently.

Using only a toothbrush it is not possible to remove all the bacterial plaque

Is one type of manual brush better than another?

There is no toothbrush that is ideal for everybody. The choice of toothbrush is a question of individual preference and, as a result, does not depend on whether one type of brush has been shown to be better than other. In the absence of clear evidence, the best toothbrush is the one used correctly by the patient.

There is no ideal toothbrush for everybody

Is there any method of toothbrushing that is better in caring for implants?

There is no evidence today about which method is better for the correct hygiene around dental implants, consequently the approach that we adopt is based on knowledge about the care of natural teeth.

Hygiene of implants must meet the same criteria and objectives as hygiene of natural teeth

How much time should be spent on cleaning the teeth?

The American Dental Association recommends brushing at least twice a day, using a fluoride toothpaste and using methods of interproximal cleaning with dental floss or interproximal brushes. However, there is no consensus on the optimal frequency of toothbrushing.

Toothbrushing should be performed at least twice a day

How long should toothbrushing take?

The duration of toothbrushing is related to the amount of bacterial plaque removed during the brushing.

Scientific studies have shown that two minutes of brushing obtains an optimal

efficacy in reducing bacterial plaque, both with the use of electric and manual brushes. So, one should try to brush for two minutes or more, regardless of the type of brush used.

Toothbrushing should take at least two minutes

How often should one change the toothbrush?

The fibres of toothbrushes lose their form when they are used and, as a result, they lose the capacity to remove bacterial plaque in the correct way.

In general, the exact moment in which a toothbrush should be replaced is difficult to determine, but the general recommendations are that it should be replaced every three or four months.

In addition, as a result of the variability between one person and another of techniques used and the force of brushing, the degree of wear can also vary between individuals. Scientific studies have examined the efficacy of worn toothbrushes in comparison with new ones. Worn brushes show less removal of bacterial plaque in comparison with new brushes; in addition, the rate of wearing seems to be a determining factor in the loss of efficacy.

The toothbrush should be replaced every 3-4 months



Is a manual or an electric toothbrush better?

Electric toothbrushes remove bacterial plaque more quickly: the same amount is removed in six minutes of manual brushing as in one minute with an electric brush. At present, there is enough evidence to consider that only those electric brushes with the rotational-oscillating system are superior to manual brushes in reducing bacterial plaque and gingivitis.

The same amount of bacterial plaque is removed in six minutes of manual brushing as in one minute with an electric brush

What unwanted effects can result for badly performed toothbrushing?

Trauma on the surface of the teeth provokes the abrasion of the cervical zone, or the zone of the neck of the tooth.

These abrasions have a multifactorial cause but are often related to the rigidity or hardness of the tooth brush, the method of brushing, and the frequency of brushing. Brushing teeth with an excessive pressure and many times a day can provoke dental abrasions and gingival recessions.

Brushing teeth with excessive pressure and many times per day can provoke dental abrasions

If I brush with more force, do I brush better?

After a certain amount of pressure, studies have shown that there is no significant improvement in the removal of bacterial plaque.

For this reason, it is better to brush correctly than to brush with more force.

It is better to brush correctly than to brush with a lot of force

Is using a dental irrigator alone enough?

The use of irrigators alone is not enough; they are considered a monotherapy designed to complement or improve other methods of oral hygiene, such as brushing and flossing.

Using irrigators alone is not enough

Does a toothpaste clean more when there is more foam?

The foamy effect produced by certain compounds in toothpastes could be beneficial in cleaning bacterial plaque released from the teeth and leaving an agreeable sensation of cleanliness – but no more than that.

A toothpaste is not necessarily better because it generates more foam

What are interdental brushes and what are they used for?

They are small brushes of a reduced and adapted size; various sizes are needed to adjust to the different interproximal spaces.

When they are not used correctly, they can produce dental hypersensitivity; to minimize the risk of abrasion of hard tissues, it is recommended to use the interproximal brushes without toothpaste. They can be used as a tool for the application of certain substances (such as fluoride or antimicrobial agents). Interdental brushes must be changed when their fibres are lost or are deformed. ■

Various sizes of interdental brush are needed, to adapt to the different interproximal spaces

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Tooth whitening: all that glisters is not gold

Tooth whitening has become one of the treatments most demanded by patients in the dental clinic. More and more, we want more attractive smiles with whiter teeth. But not all the resources used to do this have proven efficacy and safety

SECTION CO-ORDINATED BY:

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THE INCREASE IN DEMAND for tooth-whitening procedures has encouraged the proliferation of centres that offer this type of resource.

In addition, multiple systems for whitening teeth have been developed: from products for home use such as toothpastes to the use of agents of greater strength and concentration.

All these products must pass certain necessary quality controls and must be used as recommended and supervised by the dentist.

Why do teeth “yellow”?

During a lifetime, the enamel (the most external layer of the crown of the tooth) wears away and becomes transparent, and the yellower colour of the layer of mineralized tissue (dentine) beneath is revealed. Also, over time, certain chromogenous¹ substances can accumulate on the teeth and produce stains and dyeing. Above all, foodstuffs such as wine, tea, coffee, and red fruits

rich in tannin are frequent causes of staining, along with tobacco and certain medications, including iron or antiseptic agents (such as chlorhexidine) when they are used in a continuous way.

What does it involve?

Tooth whitening is any process leading to lightening the colour of the tooth, through the physical removal of stains on the tooth surface and chemical reactions to lighten its colour.

The whitening agent in most products is hydrogen peroxide or carbamide peroxide, typically in the form of a gel and at different concentrations. These are oxidizing agents that penetrate the tooth and release free radicals charged with decomposing the organic molecules responsible for the staining.

Types of whitening

There are two main types of whitening that can be carried out from the dental clinic:

Buying whitening products over the internet does not guarantee their safety or suitability

a) **“Outpatient” whitening:** The patient does this at home, using the material, recommendations, and precautions provided by their dentist. They use transparent plastic mouthguards made from a mould of the mouth, in which the whitening gel (typically of carbamide peroxide, 10-22%) is placed by using syringes. The dentist will explain the number of hours per day that this device must be worn and the number of weeks that it must be used (which tends not to be more than four weeks). →

THE
OPINION
OF THE
EXPERTS

“Tooth whitening should be carried out under the strict control of the dentist to guarantee the health of the oral tissues”



Beatriz Hernando
Associate professor
of conservative
dentistry.
Complutense
University of Madrid.

The risks of unsupervised tooth whitening

There are many risks from the unsupervised use of tooth whiteners. **We highlight just seven:**

- 1. The detection of caries, gum disease, and other oral diseases is ignored.**
- 2. Greater erosion and wear of the teeth.** The composition of many whitening products includes abrasive particles that encourage the deterioration of the tooth surface if not used properly.
- 3. Tooth sensitivity can appear.** If the treatment is carried out in the dental clinic, our dentist can explain the steps to take if there is an increase in the sensitivity of our teeth.
- 4. Not all teeth can be whitened.** People who take certain antibiotics (tetracyclines) or who consumed an excess of fluoride in water when their teeth were being formed and developed present stains on the surface that –depending on the degree of affectation – may or may not be susceptible to whitening. The same occurs with other congenital or developmental disorders that affect the enamel. It is also not possible to whiten teeth with crowns or caps, as the surface of the tooth, which is what is whitened, is covered by ceramic and/or metal. In these cases, with an unsupervised whitening, the person will be exposed to the secondary effects of whitening without obtaining any additional benefit.
- 5. Unequal whitening in the different zones of the tooth.** Teeth that have an area that is restored or filled cannot be whitened in a uniform way. In the dental clinic, our dentist can advise us about this effect and provide possible solutions for an adequate aesthetic result.
- 6. The persistence of marks and stains that should have been removed in a prior cleaning of the teeth by the dentist.**
- 7. A lesser whitening effect** when using unsupervised products, which include whitening agents at a lower concentration than those that can be prescribed by dentists.

“The low concentration of peroxide in the whitening toothpastes from the pharmacy means that they are only a maintenance for treatment carried out by a professional in the dental clinic”



Carlos Oteo Morilla

Collaborating professor in the degree in dentistry at the UCM and master's degree in aesthetic dentistry at the UCM.



THE OPINION
OF THE
EXPERTS

“Tooth whitening is not a product, it is the result of a treatment; this has to be well understood to achieve a safe whitening that is effective over the long term”



Iria López

Co-director, master's degree in aesthetics at the European University of Madrid.

“The colour of the teeth is the cause of greatest dissatisfaction among patients, even more than the position or form of the teeth”



Juanjo Iturralde

Collaborating professor. Master's degree in dental aesthetics and implantology.



→ **b) Whitening “at the clinic”:** this technique is carried out in the dental clinic. The dentist first protects the gums and then places the whitening gel (usually hydrogen peroxide, at 35-40%), which will be activated through heat and/or a light source. This is normally carried out in four sessions of some 15-20 minutes each, but this can vary according to the product. It can also be done using laser.

Always under the dentist's supervision

Dental whitening is a highly demanded treatment that always requires explanation and supervision by a dentist.

Teeth are formed not only by hard and mineralized structures (such as enamel and dentine) but also by a nervous system and by blood vessels that can be affected if this treatment is not performed correctly.

Only the dentist has the appropriate knowledge to diagnose and guide the patient in tooth whitening. In addition, it is essential that, before starting the treatment, the dentist checks the mouth and confirms that we are not suffering from any oral infection (such as caries or periodontitis), as our teeth and gums could be damaged to a greater extent.

The only safe whitening is one that is supervised by the dentist.

The only safe whitening is one that is supervised by the dentist

Risks

Unsupervised dental-whitening procedures carry certain risks. The sale of this type of product in pharmacies or over the internet, without the necessary indications and explanations from the dentist, can lead to disastrous consequences. It is easy to buy “whitening kits” over the internet that involve plastic mouthguards into which a “whitening” agent is placed or “whitening strips” that are placed on the teeth. In a similar way, pharmacies and parapharmacies sell whitening products that, not being controlled by dentists, carry certain risks.

All these products have whitening agents that, being present in very low percentages, can lighten the colour of the teeth but require more usage time than the products used in the dental clinic that, as they are monitored by dentists, have a higher concentration of the whitening agent and produce their effects more quickly. ■

GLOSSARY

- 1. Chromogenic substances:** those that provoke a type of coloration of the teeth, in the area near the gum; they are small brown or black stains on the surface of the teeth and are not removed by daily brushing.

NUEVO

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



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

*Testado en laboratorio sobre esmalte debilitado.

SECTION CO-ORDINATED BY:

Assumpta Carrasquer
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Hormonal changes in women influence the health of their gums''

JUAN MARIO TROYANO LUQUE

CHAIR OF OBSTETRICS AND GYNAECOLOGY
AND PRESIDENT OF THE GOVERNING AND
ADVISORY COUNCIL OF THE SCIENTIFIC
COMMITTEE OF THE SPANISH SOCIETY OF
GYNAECOLOGY AND OBSTETRICS (SEGO)

Midwives and gynaecologists are increasingly promoting correct oral health among women and, specifically, among pregnant women. They are also more and more connected with dentists, in pursuit of a common goal. Dr Juan Mario Troyano Luque, chair of obstetrics and gynaecology and president of the governing and advisory council of the scientific committee of the Spanish Society of Gynaecology and Obstetrics (SEGO), highlights in this interview the importance of oral health in women and some joint initiatives with the Spanish Society of Periodontology (SEPA).

Why a SEGO-SEPA work group on women and oral health?

Although the two specialities are concerned with separate clinical entities that are well differentiated – periodontal disease and the risk of premature birth and other pregnancy complications – both SEPA and SEGO are trying to call attention to the fact that these problems are related. We should not forget that periodontitis, like other infectious diseases of the mouth, is another cause of premature birth and the untimely breaking of the amniotic sac. Because of this, it has an influence in perinatal morbidity and mortality through infectious focal points in the gums that are spread via the blood stream towards the uterus.

In the face of this evidence, both scientific societies have a shared obligation and responsibility to investigate other risk factors so that dentists and gynaecologists can try to reduce the rate of premature birth, whose consequences continue to be a real public-health problem with a high healthcare cost.

As a result, it is necessary to establish a strategic alliance between SEGO and SEPA to work together to design action points in

the prevention of premature birth through effective oral health in the woman and, in our case, the pregnant woman.

In addition, we should propose a suitable therapy when gum disease is present, as it has been demonstrated that appropriate treatment and follow-up of periodontal disease significantly reduces the negative consequences for the foetus and new-born child.

Establishing therapeutic strategies for periodontitis during pregnancy is fundamental

In what way do hormonal changes affect oral health during a woman's life?

Women, above all those of child-bearing age, are subject to a series of cyclical hormonal changes with a very strong influence on their organism and their mucosa (genital and gingival). The menstrual cycle, puberty, the intake of hormones (contraceptives), pregnancy, lactation, and the menopause are situations associated with a greater vulnerability and, as a result, encourage a greater incidence of risk factors such as gums that bleed at the slightest friction or even spontaneously. These small lesions can lead to inflammation (gingivitis), pain, bad breath, mobility and/or loss of teeth because of periodontitis. Without doubt, the hormonal changes that take place in women have an influence on the health of their gums.

So, girls should pay special attention to their oral health during puberty?

In the period of puberty, the effects of hormonal changes on the gums first appear, together with caries and pre-existing morphological

Pregnant women with untreated periodontal disease have a six times higher risk of suffering a premature birth or having underweight foetuses

alterations from childhood. However, the cause of gum diseases at these ages is an inadequate performance of hygiene, as periodontal disease per se has a lower incidence than in adult women.

Nonetheless, the onset of puberty – and, with it, the first hormonal changes – has an impact on the stability of the gums, as they unleash a vascular increase and an increase in inflammation, they provoke bleeding of the gums, and give rise to the negative evolution of primary gingivitis.

And, from the point of view of oral health, what happens in the adult woman?

The healthy adult woman maintains her sexual hormonal production over some 35 years, in which she can potentially become pregnant.

Throughout this period, she is basically subjected to the sequential action, every 28 days, of the oestrogens.

Essentially, the oestrogens influence the monthly cyclical growth of the arteries and veins of the gums, along with that of collagen, increasing salivation and thereby increasing defences against infections. But, on the other hand, the oestrogens increase the “porosity” and the width of the arteries and veins of the gums, making them more vulnerable to any type of aggression, including infections, if there is a lack of adequate hygiene and control. Progesterone, in contrast, provokes the increase of leucocytes and a certain temporary atrophy of →



“Periodontal disease in the mother should be considered as a risk factor for premature birth and low birthweight”

The interview in 10 phrases

- Periodontitis is a cause of premature birth and breaking of the amniotic sac and, as a result, it affects perinatal mortality and morbidity.
- SEGO and SEPA are working together to design action points in the prevention of foetal prematurity through an efficient oral health in women.
- A correct monitoring and treatment of periodontal diseases significantly minimises the negative consequences on the foetus and new-born child.
- Hormonal changes in the woman have a huge influence on the health of her gums.
- Any disequilibrium between oestrogen and progesterone represents a risk factor for gingivitis.
- Any alteration of the ovarian hormonal function has an impact on the risk of developing gum diseases.
- The presence of periodontal disease can have grave consequences for the foetus and the mother.
- Before a woman becomes pregnant, a good state of general and oral health should be planned.
- Poor maternal oral health will have negative influences on the state of the foetus.
- It is important to maintain proactive alliances between obstetricians-gynaecologists and dentists.

Diagnosis and early treatment of periodontitis, even before pregnancy, is a determining factor in mitigating obstetric disease

→ the gums, which encourages inflammatory periodontal phenomena.

Thus, any disequilibrium between these two hormones represents a risk factor for gingivitis.

Is the menopause also a risk period for periodontal disease?

The menopause, a period in which ovarian hormonal production falls significantly, contributes to a stabilization of tissues, but – on the other hand – to a progressive atrophy of the gums, combined with the chronological factor of ageing. The loss of elasticity, the reduction in salivation, epithelial fragility, and the decrease in the blood vessels means that in this period of a woman's life there is an increase in oral diseases – not only because of osteoporosis, atrophy of the alveolar bones, and the loss of teeth, but also because of the deterioration of the gums. Hormonal treatments have demonstrated a positive result in healthy women, when correct dental care is maintained.

Ultimately, any alteration of the ovarian hormonal function has an impact on the risk of developing diseases of the gums. If, in addition, oral health is not correct, there will be serious consequences in terms of the appearance of diseases.

How do you explain the relationship between the premature births of underweight children and the poor health of the mother's gums?

Periodontal infection, through the narrow blood vessels, represents another route of dissemination via the blood and can produce intrauterine infections, generally of a bacterial nature. Oral bacteria are capable of crossing the blood circulation of the gums and can be detected in the general vascular territory of the pregnant woman, which means that the mouth can constitute another source and a significant reserve of microbes that affect the uterine cavity and, as a result, gestation. There is a relationship between periodontal disease and the risk of remote infection, or infection of the placenta or amniotic fluid (chorioamnionitis), affecting the foetus and with serious consequences both for it and for the mother. Periodontal disease should be considered as a risk factor for premature birth and low birthweight.

So, do you consider it appropriate to recommend to a woman that, before planning a pregnancy, she deals with her oral health?

Before a woman gets pregnant, she should previously plan a good state of health, general and oral. She should have a correct and professional check-up from the dental point of view, preventing or treating any condition that could influence a possible oral infection at risk of manifesting itself during a planned future pregnancy.

How does the transmission of bacteria from mother to child affect the foetus and the newborn child?

Poor maternal oral health will have negative influences on the foetal state.

If there is a bacterial transmission through the blood stream from the mother to the foetus, this will be able to infect her uterus and – both in the uterus and in the birth – clinical symptoms may manifest that are in some cases extremely serious, such as pneumonias, encephalitis, digestive infections, not counting the high level of premature birth, which will have even more repercussions on the physical state of these foetuses. Perinatal mortality, low birthweight, and respiratory insufficiency because of foetal immaturity go hand in hand with prematurity and the untimely breaking of the amniotic sac, which is common among other conditions, in cases of secondary and chronic periodontitis.

Does pregnancy itself have a negative effect on a mother's oral health?

Fifty percent of pregnancies that present periodontitis develop a progressive evolution of the disease during the period of gestation. There is no doubt about it: pregnancy aggravates existing gum diseases. However, pregnancy itself is not necessarily a period in which tooth loss is produced.

From the gynaecological point of view, what importance is given to the woman's oral health?

Today, no evaluation of a specific obstetric and/or gynaecological pathology is conceived that does not include an appropriate evaluation of the patient's oral health, although it is a trend that is still not included in all gynaecological and obstetric protocols.

What do you think the dental clinic can provide in promoting women's health? And – the other way around – how can gynaecologists and experts in women's health contribute to the prevention of oral disease and the promotion of oral health?

A great deal. Because of this, it is important to maintain proactive alliances between obstetricians-gynaecologists and dentists (periodontists) to carry out combined detection and treatment plans for gum disease. All these professionals have a job to do in making women aware of the importance of looking after their oral health. We do not forget that good periodontal health reduces the risk of prematurity, low birthweight, and perinatal mortality, as well as pre-existing maternal complications such as diabetes, cardiac disease, and other diseases. ■

Fifty percent of pregnant women with periodontitis develop a progressive evolution of the disease during gestation



A joint task

The Spanish Society of Periodontology (SEPA) and the Spanish Society of Gynaecology and Obstetrics (SEGO) have set up a work group on women's oral health, which is supported by Oral B. Experts from both scientific societies are carrying out such initiatives as the distribution of guidelines from the European Federation of Periodontology, the launch of a report on oral health in women, the creation of a practical guide to medication and treatment of pregnant women in the dental clinic, and the design of a clinical trial in this area.



Frequently asked questions

Can oral problems in pregnant women be treated?

The diagnosis and early treatment of periodontitis, even before pregnancy, is a determining factor in minimising obstetric disease. Because of this, progression must be slowed through good hygiene, prevention, and a suitable treatment if this is necessary.

Advanced periodontitis represents a greater risk to the foetus than the majority of diagnostics and treatments needed at any point during the pregnancy. Pregnant women with untreated periodontal disease have a six times higher risk of suffering a premature birth and of having low-weight foetuses compared with those who have been treated.

Gynaecologists/obstetricians and dentists have a common goal: encouraging better health in the woman through generating habits of dental hygiene and preventing oral diseases, which affect not only the health of the mouth but also general health

What techniques and medications can be used?

Techniques such as curetting, strict plaque control, and follow-up by the dentist, as well as suitable antibiotic coverage if necessary, are resources that can be contemplated during pregnancy and during postpartum and breastfeeding.

And during breastfeeding?

The definitive formation of the foetal organs ends around the fourteenth week of gestation, so from that moment there is a significant reduction in the side-effects of medications, including antibiotics.

SEGO and SEPA are jointly designing action points for the prevention of premature birth through efficient oral health in women

From this gestational age, and in relation to chronological foetal development, side-effects are practically non-existent during breastfeeding, if appropriate guidelines are followed.

Is it necessary to adopt special considerations when making complex treatments or those that require x-rays, anaesthesia...?

In these cases, dentists do not usually perform therapeutic actions – above all exceptional ones – without an assessment from an obstetrician. Thus, general and diagnostic practices (such as x-rays, magnetic resonance, the administration of local and general anaesthetic) like any dental technique can be carried out during pregnancy after 14-16 weeks without any manifest risk to the foetus. The benefit of a necessary and appropriate treatment outweighs the theoretical side-effects, above all if what is chosen is suitable and harmless.

All dental techniques and therapies can be carried out, practically without any foetal risk, after 16 weeks of pregnancy, and the more advanced the pregnancy the fewer repercussions for the foetus.

But, in the face of any doubt, always rely on the assessment of the obstetrician.

Oral health, a barrier against sexually transmitted diseases

With appropriate measures, and ensuring correct oral health, many sexually transmitted diseases can be avoided

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THERE IS A CLOSE and inevitable relationship between oral sex and oral health, and there are certain risks that people should be aware of.

The presence of lesions in the mouth or gums, such as cuts or wounds, are a direct gateway for viruses, fungal infections, and bacteria in a way that oral sex without protection increases the risk of contracting various sexually transmitted diseases (STD), including syphilis, herpes, the human papilloma virus (HPV), the human immunodeficiency virus (HIV), as well as the risk of developing certain types of cancer.

According to the World Health Organization, every day more than a million people contract a sexually transmitted disease. Among the more than 30 known viruses, bacteria, and parasites that are transmitted by sexual contact, eight have a high incidence and, of these, four are curable (syphilis, gonorrhoea, chlamydia, trichomoniasis)

The dentist, as a professional used to exploring the oral cavity, can detect the possible existence of an STD

The risk of STD

STDs are contracted by sexual contact, including vaginal, anal, and oral sex.

Some of these – such as hepatitis B and HIV – can also be contracted through contact with infected blood.

One can have an STD without showing disease symptoms. The main means of transmitting STD in the mouth is produced by contact with bodily fluids.

In most cases, the presence of oral ulcers means that the fluids from the genitals of the affected partner enter the organism, giving rise to a localized infection. The diseases can also be transmitted from the mouth of someone affected to the genitals of the other person. →

Every day more than a million people contract a sexually transmitted disease

Warning signs

Among the symptoms present in the oral cavity that can indicate the presence of an STD are:

- Sores in the mouth, which may not be painful.
- Lesions similar to labial herpes and fever blisters around the mouth.
- Sore throat with difficulty in swallowing.
- Continuous inflammation of the tonsils.
- Reddening with white marks that resemble throat infections.
- White or yellow secretion.

To obtain a diagnosis, it will always be necessary to confirm whether these symptoms involve a sexually transmitted disease, visiting the medical specialist to carry out the appropriate analysis.

Some things you should know about HPV

How common is oral HPV?

In a study carried out in Italy and published in January 2017, the prevalence of oral HPV infection was around 4% – of which, 1.6% were associated with high-risk viral types (such as type 16).

How does it cause oropharyngeal cancer?

The body habitually fights infection by HPV in a natural way. This virus infects the epithelium but if this infection persists and progresses it can lead to normal cells becoming abnormal.

The cancer caused by HPV often develops years after the infection is contracted. Most often, these changes in the cells are neither seen nor felt, and the infected cells return to normality.

How to reduce the risk of contracting or transmitting oral HPV?

It is thought that condoms and latex dental barriers, if used habitually and correctly, can reduce the risk of transmitting HPV during oral sexual relations. More research is needed to understand the way in which oral HPV is transmitted, how it can be prevented, and who has more likelihood of presenting health problems as a result of an oral HPV infection.

Is there any simple test to find out if I have an oral HPV infection?

There is no test for diagnosing HPV in the mouth or throat that is approved by the US Food and Drug Administration (FDA). More research is needed to know if carrying out tests to detect oropharyngeal cancers would have health benefits. Consult your dentist in case of any symptom.

POOR ORAL HEALTH IS A RISK FACTOR FOR INFECTION BY THE HUMAN PAPILLOMA VIRUS

Can the vaccination against HPV prevent oral HPV and oropharyngeal cancers?

The vaccines against HPV that are available today were originally designed to prevent cervical cancer and other types of less common genital cancer.

Two recent studies confirm that they are also effective in preventing oral infection and it is possible that the vaccine against HPV might also prevent oropharyngeal cancers, as it prevents the initial infection by the types of HPV that can cause them. However, extensive studies to determine if this is the case have not yet been carried out.





Some things you should know about oropharyngeal cancer

What is it?

This type of tumour appears above all in the tonsils, followed by the base of the tongue (making its detection difficult), which means that an early diagnosis is fundamental.

Signs and symptoms

Among the most characteristic signs and symptoms are persistent pain in the throat, ear pains, hoarseness, inflamed lymph nodes, pain when swallowing, and unexplained weight loss. Some people present neither signs nor symptoms.

Frequency

Although incidence varies widely depending on the geographical area studied and the period of time, according to a study carried out in Spain by Dr Juan P. Rodrigo et al., published in the *International Journal of Cancer* in 2014, between 1990-1999 there was an incidence of 1.8%, rising to 6.1% in the period 2000-2009.

→ The dentist, as a professional accustomed to exploring the oral cavity, is able to detect the possible existence of a sexually transmitted disease in the patient.

All this means that routine check-ups are essential, as they can help detect an STD promptly and treatment can be started as early as possible.

The correct use of condoms in oral sex reduces - but does not eliminate - the risk of acquiring and becoming infected with any STD

The example of HPV

HPV is one of the most common sexually transmitted diseases. The HPV family has more than 150 viral types that, because of their relationship with cervical cancer, can be high or low risk. Most varieties of HPV are not harmful to people.

Infections produced by the high-risk types follow a silent course, without symptoms. They persist more easily than other types and they are related to the appearance of cancers. HPV can

infect the mucous areas of the cervix, the vagina, the vulva, the anus, the penis, the oral cavity, the oropharynx, and the larynx. Most infections follow a benign course and are resolved spontaneously, disappearing before they can cause health problems. About 30% of cases of oropharyngeal cancer are related to the Human Papilloma Virus (HPV): this tumour has increased in the last two decades in some of the countries with highest incomes, directly related to the increase in HPV infection. Oropharyngeal cancer provoked by HPV is now more common than that produced by the consumption of tobacco.

According to the American Association for Cancer Research, poor oral health is a risk factor for HPV, independently of smoking status or sexual habits (such as oral sex). For this reason - and taking into account that oral hygiene is fundamental to oral health - public-health interventions to promote these additional oral-hygiene measures to prevent HPV-related oral tumours are recommended.

Oral sex and a high number of sexual partners is one of the main ways for HPV to spread beyond the genital area. ■

The pleasure of prevention

The best form of preventing infection by an oral STD is practising safe sex, which also includes safe oral sex: even so, it is not clear that this can avoid 100% of infections, above all in relation to HPV. It is also essential to maintain a high level of oral hygiene, which reduces the risk of developing any type of oral wound or infection.

Antibiotic resistance: a public-health problem

Resistance to antibiotics has grown significantly in recent years. From the dental clinic we can help ease this problem

SECTION CO-ORDINATED BY:

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ANTIMICROBIAL RESISTANCE occurs when microorganisms (bacteria, fungi, viruses, and parasites) change after being exposed to antimicrobial (antibiotic, fungicidal, antiviral, anthelmintic) medication, developing mechanisms of resistance to the effect of the drugs (super bacteria or “super bugs”).

Since Alexander Fleming discovered penicillin in 1928, when verifying that certain colonies of *staphylococcus aureus* were destroyed by the growth and contamination of the fungus *penicillium*, antibiotic treatment has played a big role in the control of bacterial infections and has increased life expectancy. However, the bad use or abuse of these substances can have an undesired effect. Because of this, antibiotics must be taken with precaution, so that they can continue being effective for the longest possible amount of time.

What is it?

Antibiotic resistance appears when antibiotics select the resistant microorganisms and eliminate the susceptible ones. The medications then

Antibiotic resistance means that these medications become less effective, infections persist, and the risk of infection increases

become less effective, infections remain in the body, and there is an increased risk of transmitting them to other people. As the WHO (World Health Organization) established in 2016, resistance to antibiotics is a natural phenomenon, although the improper use and abuse in humans and animals selects the process and increases its appearance. At the same time, this international institution recognized that “it is one of the greatest threats to global health,” and could affect any person, age, or country.

The WHO even said that there are more and more infections (pneumonia, tuberculosis...) whose treatment is becoming more difficult because of the loss of efficacy of antibiotics (prolonging the length of hospital stays and increasing mortality).

It is even claimed that the success of major surgery, organ transplants, or chemotherapy could be compromised by infections caused by resistant microorganisms.

What provokes resistance?

Bacteria are everywhere and multiply rapidly. We have more bacteria in our body than human cells. They are not always harmful to the body, and are often needed and beneficial, although if they grow, they can end up provoking infections.

Bacteria are programmed to survive: “adapt or die”, and they transform into super bacteria.¹

Resistant bacteria are found in humans, animals, food, water, earth, and air. Their propagation takes place between humans and between humans and animals, and is greater today because of the large movement of people across the world.

There are two fundamental types of resistance to antibiotics, the intrinsic (belonging to all members of a species) and the acquired (bacteria can suffer random

THE
OPINION
OF THE
EXPERTS

David Herrera

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“The use of antibiotics is increasing in dentistry: a prudent and rational use of systemic antibiotics is required”



mutations and are able to transfer genetic information – in this case resistance to antibiotics – to other bacteria).

The selection of resistances by antibiotics results from two main causes:

- 1. Abuse and bad use of antibiotics in humans and animals, as well as incorrect use by patients.**
- 2. Excess of antibiotic prophylaxis.**

Resistance is ‘fattened’ in farms

Only 20% of antibiotics that are used in farms with overcrowded animals are used to treat infections in the animals, while 80% are used with the main aim of promoting growth and avoiding infections caused by overcrowding. Farms are, in many cases, real breeding grounds for “super bacteria”.¹

In the European Union, it is not allowed to administer antibiotics to fatten animals, but their use is permitted to guarantee the safety of animals and humans, which means that their use will continue growing through the intensification of livestock farming and aquaculture.³

How is it spread?

Resistance to antibiotics is spread through two main routes in the following way:

1. Animal/crop route

- a) Antibiotics are administered both to animals and to crops.
- b) Animals develop bacteria in their intestines that are resistant to drugs.
- c) The drug-resistant bacteria reach human beings through food, the environment (water, soil, air), or through direct human-animal contact.
- d) The drug-resistant bacteria spread among people.

2. Human route

- a) Antibiotics are given to patients, which can allow drug-resistant bacteria to develop in the intestine.
- b) The patient attends a hospital or clinic.
- c) The drug-resistant bacteria spread to other patients through the lack of hygiene and in dirty hospitals.
- d) Drug-resistant bacteria spread between people. →



Paula Matesanz

Periodontist.
Spokesperson of the
management board of
the Spanish Society of
Periodontology.

“The responsibility of everyone in the dental team is to identify the cases in which we must associate an antibiotic – systemic or local – as an adjuvant to mechanical treatment”

→ **Prevention**

To prevent the spread of resistance to antibiotics, according to the WHO, the general population should:

- a) Use antibiotics only when a certified medical professional prescribes them.
- b) Always take the antibiotic for the prescribed period, even if feeling better.
- c) Never use left-over antibiotics.
- d) Never share antibiotics with other people.
- e) Prevent infections by frequent hand-washing, covering the mouth when sneezing, food hygiene, avoiding sick people, and keeping vaccines up to date.

Within a global action plan against antimicrobial resistance, it is essential to carry out information campaigns with doctors and patients, strengthen monitoring and research (with the development of new medications and vaccines), modify current behaviour in using antibiotics, and adopt measures aimed at reducing the incidence and spread of infections.

A problem at the dental level

It is estimated that dentists prescribe about 10% of antibiotics, thus their role is essential in preventing and controlling antibiotic resistance.

According to WHO advice, dentists must ask whether they always apply the prevention and treatment controls of infections, whether they prescribe

Antibiotics must be taken with precaution, so that they continue to be effective for the maximum amount of time

A very high percentage of patients with periodontal disease present periodontal pathogens that are resistant to antibiotics

antibiotics only when they are necessary and in accordance with current guidelines, whether they show patients how to take antibiotics correctly and explain to them what antibiotic resistance is and what are the risks involved in the excessive use of these drugs. In addition, they should ask patients if they are taking or have taken antibiotics and they should explain basic measures to avoid infection.

As the main recommendation, dentists should not prescribe antibiotics as a substitute for a correct dental treatment and never alone – that is to say, they have to diagnose the cause of the infection, decide the most appropriate dental treatment, and evaluate the need to prescribe antibiotics.

About 90% of the antibiotic prescriptions made by dentists use medications such as amoxicillin, metronidazole, and amoxicillin + clavulanic acid. In 5.6% of prescriptions, the choice is a combination of antibiotics (the most frequent being amoxicillin and metronidazole).

With all this, one is reminded that the most efficient way to prevent the development of antibiotic resistance is the use of antibiotics only in those cases where they are essential, at suitable doses, and for the shortest possible duration to ensure the elimination of the pathogen involved in the infection.

A classic study (by TJ Pallasch et al.), which evaluated antibiotic resistance

and its impact on the dental community, detailed the main bad uses to which antibiotic therapy has been put in the dental practice.

In other cases, this resource is wrongly used in the prevention of postsurgical infection that is unlikely to appear, as an analgesic in endodontics, as a substitute for mechanical treatment in place of incision and drainage, in the treatment of chronic periodontitis. Antibiotics are also wrongly used when they are used to prevent legal action for negligence, or when they are prescribed in inappropriate situations, doses, and durations. →

GLOSSARY

1. **Super bacteria (also "super bugs")**: a term used to refer to strains of bacteria that are resistant to most antibiotics that are in common use.
2. **Bacteraemia**: temporary discharge of bacteria in the blood from an infectious centre.
3. **Aquaculture**: technique of directing and encouraging the reproduction of fish, shellfish, and seaweed in fresh or salt water.

THE
OPINION
OF THE
EXPERTS

Àlex Fernández Solanas

Associate professor of pharmacology in the degree in dentistry at the University of Barcelona.



"How we use antibiotics will to a large degree determine future bacterial resistance"

The six cardinal sins

- 1 **Excessive prescription of antibiotics**
- 2 **Not ending the antibiotic treatment within the prescribed period and/or employing it in inadequate doses**
- 3 **Excessive use of antibiotics in the rearing of livestock and fish, and in crops**
- 4 **Lack of hygiene and deficient sanitation**
- 5 **Lack of development of new antibiotics**
- 6 **Inadequate control of infections in hospitals and clinics**

→ At the periodontal level

A very high percentage of patients with periodontal disease present periodontal pathogens that are resistant to antibiotics.

The extensive use of systemic antibiotics in Spain reflects the high resistance level of the subgingival flora in patients with periodontitis. At the recent EuroPerio9 – the world's most important congress in periodontology – a study was presented which highlighted that the resistance to antibiotics among patients with serious gum disease is growing, which has raised alarm about the indiscriminate use of antibiotics in periodontal treatment.

As the author of this study, carried out in Germany, highlights, “today, most systemic antibiotic treatment is prescribed without the guidance of a prior microbiological study.”



Ana Echeverría
Master's degree in periodontology and implants from the UCM and board of the European Federation of Periodontology.

One of the risks of this approach is that the specific periodontal pathogens are resistant or little susceptible to the antibiotic selected, which will affect the effectiveness of the antimicrobial treatment and increase the risk of treatment failure, explained Dr. Karin Jepsen, of the Department of Periodontology at the University of Bonn (Germany), adding that “the indiscriminate use of antibiotics in the treatment of periodontitis is leading to a greater resistance to these powerful medications.”

The study shows that patients with

periodontal disease more often present multiple species of periodontal pathogens that can vary in their degree of resistance to antibiotics and that the oral microbiota also seems to be a significant reservoir or transferable antimicrobial resistance.” ■

“A healthy diet, balanced and rich in nutrients, is advisable to prevent the appearance of caries and periodontal disease”



Don't let sugar sour your oral health

Sugar is a basic component of our diet but, consumed excessively, poses a risk to our general health and, in particular, to the health of the mouth. And it is not always easy to identify the products that contain hidden sugars

WE LIVE TODAY in a society in which the abuse of sugar consumption – like that of fat and salt – has become a global problem of public health. Diabetes, obesity, cardiovascular risk, and caries are only some of the diseases related directly to the excessive consumption of sugar.

Sugars are a common element of any diet, forming part of the wider family of sweeteners. They are substances that are added to food and drink to create a sensation of sweetness but, at the same time, they are an essential source of daily energetic intake.

When they are consumed excessively, they are one of the most harmful foodstuffs, and it is recommended that only 10% of the calories consumed daily should come from sugar. Put another way, if every day you consume 2,000 calories, only 200 should come from sugar (an amount equivalent to seven teaspoons of dessert).

It is recommended that only 10% of daily calorific intake comes from sugars

A “very sweet” society

In recent years, the global consumption of sugar has tripled, and it continues to increase, causing concern to the World Health Organization (WHO), which has carried out various initiatives to reduce the consumption of sugar across the world. In Spain, the problem is of great importance, as the average consumption of sugars is double the amount recommended by the WHO.

These measures are focused mainly on the intake of “free sugars”. These sugars are present in most of the food that we eat every day, such as energy drinks and snacks, and are added by manufacturers, cooks, or consumers to the products that we consume. Free sugars are differentiated from “intrinsic sugars”, which are present in a natural

way in various foodstuffs (such as fresh fruit and vegetables), about which there is no evidence of adverse effects on general health.

One of the main concerns of organizations such as the WHO is the difficulty that consumers have in identifying those elements that are consumed habitually in which hidden sugar is added by manufacturers. The sugar content in food is described in the list of ingredients, but not in the nutritional information that describes only the total amount of sugar, including that which is of a natural form.

Sugar and general health

The main problem stems from the difficulty in controlling the amount of sugar in the food that we consume, which is added to that we add, going way beyond the advised limit.

When sugar enters the organism, it decomposes into glucose and fructose: glucose is vital for cells and can be



THE
OPINION
OF THE
EXPERTS



Alex Pico

Collaborating professor of the master's degree in periodontology, University of Santiago de Compostela.

“We should pay attention to the label and reduce the consumption of elements with high levels of added sugar”

→ produced in a natural way by our body, while fructose when ingested in large quantities is difficult for the organism to metabolize.

A continued excess can provoke obesity (through the increase in calorific intake), which brings with it a host of health problems (more risk of suffering cardiovascular diseases, diabetes, hypertension...).

Sugar in the oral cavity

The consumption of sugar alters the mix of bacteria in the mouth, encouraging the presence of bacteria that convert sugar into acids; among other consequences, these acids demineralize the enamel of the teeth.

Repeated episodes of sugar consumption during the whole day increase the frequency of acid attacks and the risk of developing dental caries. Sugar is the main cause of caries, a problem that particularly affects children, as they are consumers of food with high levels of sugar: biscuits, ice creams, sweets.

The key to preventing the effects of sugar on teeth consists of moderating consumption, replacing the foods with most sugar with healthier alternatives. One of these changes includes drinking

Repeated episodes of consuming sugar during the day increase the frequency of acid attacks and the risk of developing caries

water rather than soft drinks (which contain hidden sugars), and avoiding eating between meals, as the food consumed at these times tends to have a high concentration of sugars.

In addition, one must take care of oral health, with special attention paid to children. It is recommended carrying out correct toothbrushing after every meal, which will help reduce the levels of sugar and prevent the development of diseases such as caries.

Similarly, visiting the dentist regularly is also recommended so that diseases can be detected in the early stages of their development. ■



THE INVISIBLE ENEMY: FOOD TO WATCH

There is a long list of frequently consumed food that contains "hidden" sugar. Among these:

Sliced bread. In this type of bread, as in other products, sugar acts as a preservative.

Sports and energy drinks. Indicated for people who practise sports; they generally contain a high level of sugar.

Flavoured water and packaged juices. As well as containing natural sugar, they have a large amount of added sugar as a preservative.

Tomato preserves. Sugar reduces the acidity of the fried tomato.

Sauces. Sugar acts as a preservative in ketchup, mayonnaise, red sauce...

Snacks and savoury biscuits. Contain a large amount of salt and added sugar to strengthen their taste.



Leticia Caneiro
Collaborating professor of the master's degree in periodontology, University of Santiago de Compostela.

“We should reduce the consumption of hidden sugars in the diet and encourage toothbrushing within the 20 minutes after their ingestion”



BE CAREFUL WITH "LIGHT"

Equal attention should be paid to products considered "light" or low in fat, as this does not imply that they are free of sugar. Products labelled 0% or "without added sugar" tend to have some type of sweetener or glucose, one of the components of sucrose.

Oral health: the patient's experience

Patients are the focus of the dental practice: without them, it has no meaning

SECTION CO-ORDINATED BY:

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Teresa Gonzalvo
Patient.

“I have always been very concerned with the health and state of my mouth”

I WENT TO THE CLINIC on the advice of my husband, who had received implants and was very pleased with them. I have always taken great care of my mouth and have tried to go to all the regular check-ups. I have not had serious problems, but I have always thought that it is better to prevent and review the treatments that I have had, and thereby avoid possible complications or be on top of them.

For more than 15 years, I have visited the same clinic and over this time I have regularly complied with the check-ups and cleanings. They have ensured that my gums were healthy. They had to remove a couple of teeth that had old crowns and they have also placed implants.

And they have also carried out an aesthetic tweak to make my smile look younger.

I have always been very concerned about the health and state of my mouth.

I am concerned that it is healthy and looks good. For me, it is very important to be able to eat well. I understand that having difficulties in chewing food properly, and if you also have infections, cannot be good for general health. And it also seems to me to be very important in terms of personal relationships: I pay a lot of attention to the mouths of other people and believe that having a mouth that looks good and without bad breath is fundamental. This gives me peace and security, and makes my smile wider, because I have nothing to hide. Something particularly important to me is the work that is done by my dentist and, in general, by the clinical team.

I have full confidence in the doctor and her team. I believe that they are very up to date, that they constantly update themselves, and this gives security to the patients. In fact, all the family comes... I believe that they are very concerned about us, about our oral health, and that they always try to provide the most suitable treatment for each person.

“Having a mouth that looks good and without bad breath is fundamental”



Eva Gómez
Patient.

“Thanks to greater care of my mouth, I feel that my general health is also more under control and is in a better state”

I WENT TO THE CLINIC because of orthodontics that I needed, and which could have involved surgery. Although it was sorted out, there was mobility in some teeth.

It is true that, until that point, I had not performed an adequate care and maintenance of my oral health. I was obliged to go to the dental clinic because my mouth did not close well and only the rear teeth worked. Not all of them fitted properly. I had a very open occlusion.

In fact, I have a periodontal disease that needs to be controlled. I have now spent six to seven years in controlling the disease, to try to cure it and avoid possible consequences.



Empar Minguet
Patient.

What is certain is that, thanks to greater care of my mouth, I feel that my general health is more controlled and has improved. Without any doubt, I feel better generally. There is no mobility in any tooth, they are stronger, and my gums are healthy.

But, because of this, the professional control of my oral health is more frequent – roughly three times a year.

Thanks to the great professionalism of the dental team that looks after me, my mouth is very well controlled.

But it would not be like this if I were a patient who did not comply with the personal part of cleaning, diet, use of interdental brushes... which I carry out every day. To have a healthy mouth, it is essential that there is a professional dental team and the patient needs to be involved; the key to success in having a healthy mouth is in the combination of many related factors.

“To have a healthy mouth, it is essential that there is a professional dental team and patient needs to be involved”

“Following the guidelines of my dentist and the clinical team has allowed me to keep infection at bay and to have a healthy mouth”

AFTER THE BIRTH OF MY SECOND DAUGHTER, I noticed that my gums did not go back to being healthy like they were before.

In addition, I started to have problems when I was eating. The same thing had happened in my first pregnancy, but my gynaecologist did not think it very important: “it tends to happen, it will go away...”; and it did go away. But now it is not like that.

Several months passed before I decided to visit the dentist. Apart from some caries which I had as a child, and which involved the loss of teeth, I have never had problems with my mouth. Thus, I associated going to the dentist only when the situation was irredeemable.

I went to the periodontist when, as well as continuing to have inflamed gums, it was uncomfortable to bite into a piece of fruit (even though it was ripe). An acquaintance, who has a similar problem to mine, recommended a periodontal clinic.

When I arrived at the clinic, in January 2001, the pregnancy gingivitis had become periodontitis and I was two months short of my 37th birthday. I knew perfectly well what this meant:

“the tissues that surround and support the teeth are diseased, they are destroyed because of bacteria, the teeth move and fall out.”

Treatment was necessary if I wanted to stop the infection: four sessions of scaling, with follow-up every four months, then every six, and, over time, every nine months.

In December 2002, my mouth was strong and my gums were rosy. A more complicated treatment, that would involve surgery, was not necessary and, of course, I thought about doing everything possible to make sure that this would never be necessary.

Over the following 17 years, until today, every nine months I have continued going to the check-ups and maintenance visits. Establishing these points of control and following the guidelines of my dentist and the clinical team have allowed me to keep infection at bay and to have a healthy mouth.

But this last year, a “bitter olive” – one of those prepared in the area of Marina Alta and which I really love – caused me a problem.

I carelessly bit into it and the result was a vertical fissure of a tooth, with no remedy other than extraction. And this is where I am this right now, following the instructions of my dentist for the replacement of the fractured tooth with an implant.

“After the birth of my second daughter, I noticed that my gums did not go back to being healthy like they were before”

Millennials fail in oral hygiene

SECTION CO-ORDINATED BY:

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YOUNG PEOPLE, according to surveys, say they are very concerned with their oral health, especially with the risk of losing teeth in the future.

However, a survey of more than 2,000 people, carried out in the United States and published in the New York Post, warns that one in three millennials brush their teeth only once a day.

The results of the survey also indicate that most of these young people have no problem in letting two days pass between brushing their teeth for various reasons.

These young people also tend to postpone their appointments for dental check-ups. They tend to have more fear of the dentist than other age groups.

In fact, the majority prefer speaking in public before going to the dentist.

The responses to the survey as very curious: one in three would prefer to spend the whole day working to going to the dentist, while a similar

Fear of the dentist, one of the main reasons for the oral-care deficit in this population

proportion would prefer not having sexual relations during a month or speaking in public to a crowd of more than 50 people to going for their check-up appointment with their dentist.

In addition, millennials are more likely to invent excuses for not going to the dentist (50%) than people aged 55 or more (36%). The excuses reach the point that 25% of them avoid going to the dentist only because they do not like the flavour of the products used. Those that admit odontophobia – or fear of the dentist – claim that this fear started between 10 and 15 years of age.

Starting from this evidence, the dentist's work with adolescents is fundamental, to establish good habits and a strong motivation to six routine measures of caring for oral health.

Poor periodontal health has a negative impact on sight

PERIODONTAL DISEASE, as well as producing inflammation, bleeding gums, and the loss of bone that supports the teeth, is related to other diseases at a general level.

Among these diseases, the link between poor gum health and cardiovascular disease, diabetes, and negative events in pregnancy (such as premature birth and low birthweight) are well known.

Today, a third of the publications in periodontology are dedicated to studying these relations: up to 57 systemic diseases have been related to periodontitis.

However, this field of research is bringing new forms of evidence.

Recently, it has been suggested that periodontal disease may also be related with age-related macular degeneration, which is one of the main causes of blindness in people aged over 50.

In a study that included more than 1,700 patients, the relationship between different periodontal pathogens and macular degeneration was analysed. It was observed that these patients tended to be of advanced age, with high systolic arterial pressure and diabetes, but no relation was found with periodontal pathogens.

Nonetheless, it did highlight a greater loss of alveolar bone in patients with macular degeneration, with a four times greater risk of suffering it.

In addition, it is known that people who have visual deterioration present more difficulties in brushing teeth and

Melanoma: also in the gums?



maintaining an adequate oral health. In this respect, in 2015 periodontal examinations were performed on 52 institutionalised individuals with visual deterioration, confirming a worse periodontal situation in those who had lost sight gradually compared with those who presented congenital blindness.

IN A STUDY THAT INCLUDED MORE THAN 1,700 PATIENTS, THE RELATIONSHIP BETWEEN DIFFERENT PERIODONTAL PATHOGENS AND MACULAR DEGENERATION WAS ANALYSED

Together with this, recent research by the University of Augusta (USA), as yet unpublished, has discovered that a periodontal pathogen – *P. gingivalis* – has the capacity to invade the epithelial cells of the human retinal pigment and increase the expression of genes implicated in macular degeneration.

WHEN THE HOT WEATHER STARTS starts and the number of hours exposed to the sun's rays increases, there is a lot of advice about solar protection to avoid skin cancer, above all the much-feared melanoma.

Melanoma is a malignant tumour that produces melanin at the basal layer of the epithelium, affecting not only the skin but also able to impinge on the mucosa of the whole body. Because of its painless growth, check-ups are very important to be able to perform a diagnosis as early as possible.

The prognosis of melanoma that primarily affects the mucous membranes can be even more mortal than the melanoma that initially appears on the skin. The mucosa that are most seen to be affected are the conjunctive mucosa, the maxillary sinus, the oral mucosa, the pharynx, the larynx, and the upper tract of the oesophagus.

In 80% of cases within in oral cavity, melanoma presents itself in the gums and the palate. In the initial phases, the appearance is like a pigmented patch,

In 80% of cases within the oral cavity, melanoma presents itself in the gums and the palate

with alteration of the colour and texture of the mucosa, but with no other type of symptomology. It spreads rapidly, in the form of metastasis, to lymph nodes, lungs, and liver.

However, an early diagnosis, with an extensive biopsy, together with the appropriate treatment through radiotherapy, chemotherapy, or immunotherapy, can improve the prognosis of this tumour, known by dermatologists and oncologists as the most unpredictable of cancers.

Primary intraoral melanomas, although not frequent, differ from the cutaneous ones in their behaviour and prognosis. Because of this, an early diagnosis that differentiates them from other pigmented lesions in the oral cavity is essential, above all if they appear in regions of high risk, such as the gums or the palate.

Vitamina C and periodontal health

SECTION CO-ORDINATED BY:

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Master's degree in periodontology and implants. Complutense University of Madrid.



POOR NUTRITION INCREASES the risk of the appearance of diseases of the gums, and nutritional factors are of vital importance to maintain the narrow equilibrium between bacteria and the response towards them developed by the organism.

Vitamin C, or L-ascorbic acid, is a substance that acts as an enzymatic cofactor in multiple metabolic reactions necessary to establish the collagen network, for which it would have an essential function in the maintenance of the integrity of the connective tissue in the periodontium.

In addition, vitamin C also intervenes in processes such as bacterial phagocytosis and cicatrization.

Serious vitamin-C deficiency is the cause of a disease known as scurvy, characterized by tiredness, weight loss, and generalized haemorrhages, including spontaneous gingival bleeding.

What is not clear is whether the existence of slight deficiencies of vitamin C can also affect the periodontium.

Various studies in animals and humans have been carried out in which it has been attempted to relate these parameters, but until now the results have been controversial: some studies have found a relation, but others have not, above all because of the difficulty in homogenizing the definitions of illness and the form in ingesting the vitamin.

What is clear is that fruit rich in vitamin C – such as kiwi, citrus fruits, red grapes, and strawberries – are important foodstuffs in our diet, very rich in antioxidants, fundamental to the biological processes of the gums.

In fact, young adults who do not eat fruit tend to have less healthy gums.

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**GIN-
GIVI-
TIS.**

Superficial inflammation of the gums. Bleeding is the main warning sign. If it is not treated properly it can develop into periodontitis.

**PERI-
DON-
TITIS.**

Deep inflection of the gums and the other tissues that support the tooth. It can lead to the loss of teeth. It has repercussions for general health: it increases the risk of cardiovascular disease, diabetes, and preterm birth.

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SEPA SOCIEDAD ESPAÑOLA DE PERIODONCIA E IMPLANTES DENTALES

2 times a day, act:

Every 3 months

Every 6 months

- 1** Brush your gums and teeth using a toothpaste
- 2** Use dental floss or interdental brushes
- 3** Strengthen your hygiene with a mouth rinse
- 4** Get a new toothbrush
- 5** Visit your dentist or periodontist for a gum check-up and to have your mouth cleaned

SEPA recommends the use of products that are scientifically endorsed.



Risk factors

- **Smoking.**
- **Stress.**
- **General Diseases** or lowered defences: diabetes, osteoporosis, HIV, herpes, transplants, etc...
- **Hormonal changes:** pregnancy, menopause.
- **Family history.**



Warning Signs

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



Simple Treatments

- **Improve oral hygiene.**
- **Complete cleaning** of bacterial plaque on the gums.
- **Evaluation** of periodontal status.
- **Control of plaque and bacteria** below the gums (scaling).
- **In advanced cases,** minor surgery.



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