

PREVENTION  
**Alzheimer's  
Disease: putting  
the focus on  
periodontitis**

10

TREATMENTS  
**Questions with  
answers about  
dry mouth**

16

DID YOU KNOW?  
**Health does  
not accept  
hoaxes**

24

REPORT  
**Teeth for  
a lifetime?  
It's in your  
hands**

28

ADVICE  
**Tips so that  
radiotherapy  
does not harm  
your oral health**

32

UPDATE  
**Rheumatoid  
arthritis and  
periodontitis:  
a relationship  
to talk about**

40

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for Periodontology and  
Dental Implants

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Editor:  
Regina Izquierdo

TAKE CARE OF YOUR

# gums <sup>16</sup>



**Successful  
implant  
treatment:  
a shared  
responsibility**

# Sepa. ORAL HEALTH FOR EVERYONE



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# Preview:

IN DEPTH

## Keys for a successful implant treatment

4

**Implants should not be considered** as consumer products but as medical devices that, as such, require care and attention. Because of this, it is essential that after placement an effort is made to prevent infections in the tissues that surround the implants, and thereby maintain them in perfect condition. The threat of peri-implantitis is real and affects an increasing number of implant bearers.



## PREVENTION

**Alzheimer's Disease: putting the focus on periodontitis** 10



## TREATMENT

**Questions with answers about dry mouth** 16



## INTERVIEW

**Regina Izquierdo Editor of *Cuidatus Encías*** 20



## DID YOU KNOW...?

**Health does not accept hoaxes** 24



## REPORT

**Teeth for a lifetime? It's in your hands** 28



## ADVICE

**Tips so that radiotherapy does not harm your oral health** 32



## OUTREACH

**European Gum Health Day becomes global** 36



## UPDATE

**Rheumatoid arthritis and periodontitis: a relationship to talk about** 40



PRESENTATION

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

## The challenge of peri-implantitis: a shared responsibility

**DENTAL IMPLANTS CAN LAST** for many years in optimal conditions of health, function, and appearance provided that certain requirements are met: that the implant recipient has the necessary conditions of systemic and oral health; that the treatment is performed after detailed diagnosis and planning; that there is sufficient availability of tissues; and that the rehabilitation includes correctly designed prostheses to allow cleansing.

But another essential factor is the patient's involvement throughout the whole process and, above all, their commitment to then taking care of themselves, following the advice on daily hygiene and attending regular check-ups at which it will be the responsibility of the oral-health professionals to detect any anomaly so as to be able to provide a solution as quickly as possible.

And, without doubt, the reality is that, despite all these efforts in both directions, both professionals and patients have to confront peri-implantitis more often than we would like.

Clearly, it is our responsibility to work to the highest possible standards, but it is also our responsibility to inform our patients of the existence of this disease from the start. Education is always the first step in prevention.

### Take Care of Your Gums

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# Keys for a successful implant treatment

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**IMPLANTS CAN BE** the best solution for the problem of the absence of one or various teeth, they can correct the consequences of edentulism, and they can help recover correct mastication. More and more they resemble natural teeth and, in the end, they improve our quality of life.

However, the incorporation of this “artificial root” in our jawbones is not without risks in the short, medium, and long term – above all if the implant is not well indicated, if it is not looked after correctly, or if, simply, it is placed in a mouth that is not periodontally healthy.

Because of this, there is nothing better than our own teeth and implants must be a palliative solution only when it is not possible to maintain the natural dentition.

The implant is not always the best or the only alternative to a natural tooth and efforts should be focused on exhausting the various predictable treatment options that are available to avoid extracting the tooth. In that way, implants should be indicated only in the case of tooth

loss when there are no longer any other options for conservative or restorative treatment. For this reason, implants are performed mainly for functional reasons (to improve masticatory functioning) and less for matters of aesthetics, but only when the tooth is already missing or when it is totally impossible to conserve the natural tooth.

**Nothing is better than our own teeth; implants must be a palliative solution**

**First commandment: implants do not enter diseased gums**

For the placement of one or more implants in the mouth to be a successful treatment in the short, medium, and long term, it is essential that the gums are in an optimal state of health. Deficient periodontal health before the placement of dental implants can reduce the efficacy of this therapeutic resource and substantially reduce its average life. One must not forget that periodontitis is the

main risk factor for developing peri-implantitis. Before placing an implant, the mouth must thus be healthy and free of infections. If there is periodontal disease, it must first be treated and well controlled.

**second commandment: essential precautions**

A dental implant can be for a lifetime, but only if it is looked after correctly. Implants offer excellent results in most patients, but in some cases peri-implant diseases can appear and the implants can fail. After the implants are placed, there must be a programme of follow-up or maintenance, in which the oral-health team will clean teeth and implants, check the stability of the tissues around the implant and the integrity of the restoration and, where necessary, recommend the use of antiseptic agents of other specific treatments. The whole dental team must be involved in informing the patient about the correct hygiene instructions for their case which must be followed without any excuse. →

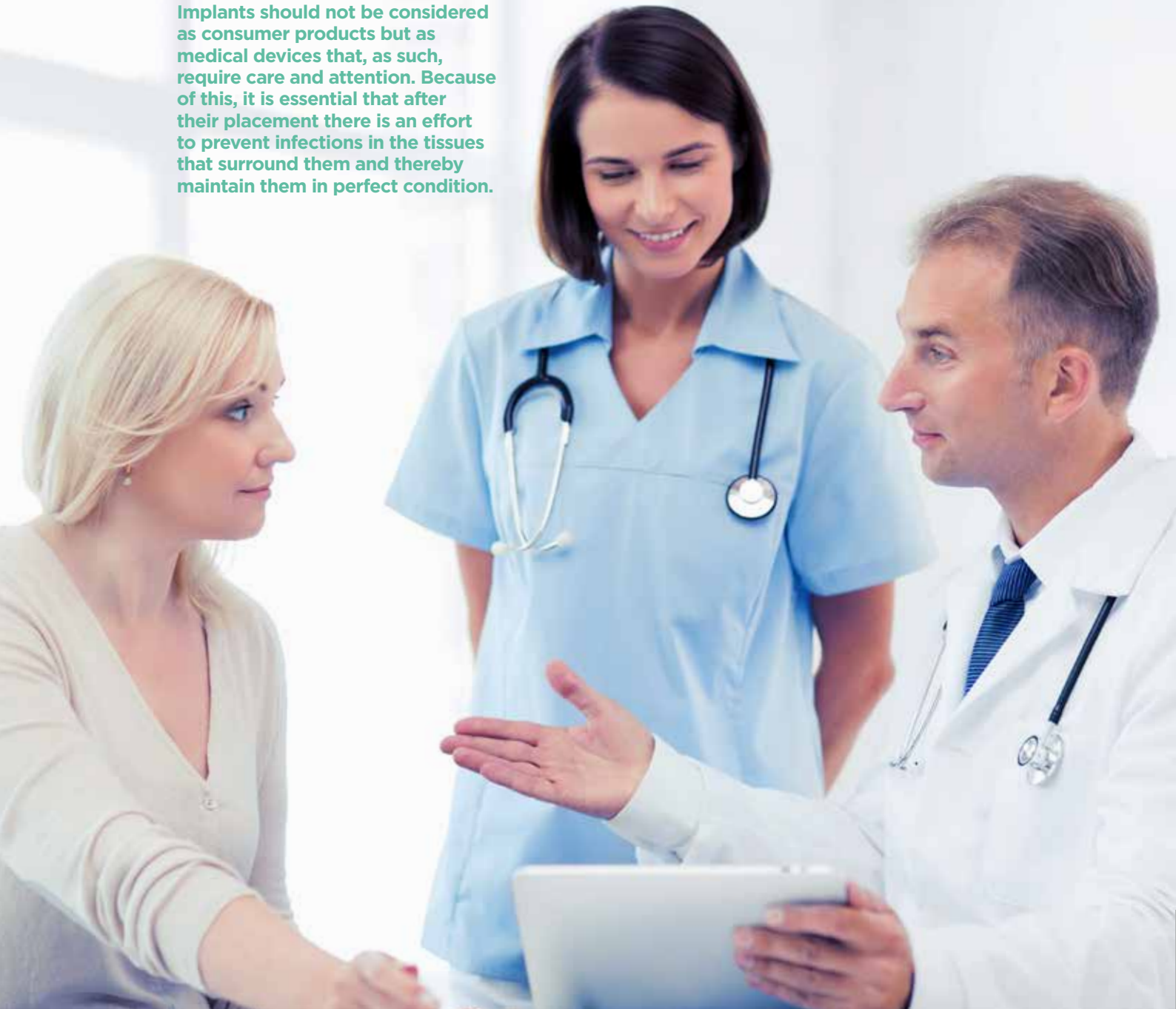
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**“The key is in the planning and prior control of the risk factors: success starts with decisions that are taken long before the dental implants are placed”**



**David Herrera**  
Professor of  
periodontology  
at the  
Complutense  
University of Madrid.

Implants should not be considered as consumer products but as medical devices that, as such, require care and attention. Because of this, it is essential that after their placement there is an effort to prevent infections in the tissues that surround them and thereby maintain them in perfect condition.



**Nuria Vallcorba**  
Honorary Trustee of  
the Sepa Foundation.

**“To maintain oral health in a mouth with implants, it is recommended to brush teeth and implants at least twice a day, not to smoke, to treat their gums before implant treatment, and to visit the dentist or periodontist at least twice a year for comprehensive oral care. Their implants are worth it”**

## Deficient periodontal health before implant placement can reduce the efficacy of this therapeutic resource and substantially reduce its life expectancy

### Third commandment: prevent complications

→ Prevention is the only possible way to reduce the risk of problems around implants and must be the result of a close patient-professional collaboration with the aim of maintaining the health of the placed implants. The prevention of diseases related to the dental implant is paramount, as well as being simple, economic, and effective.

### Risks in integrated implants

In carrying out an implant placement, a bed the size of the implant is carved in the bone and a screw is provided whose material (generally titanium and/or zirconia), after a period of cicatrization, allows the organism to form bone around it, subsuming the implant in our jaw.

An implant cannot be rejected, as the materials of which it is made cannot create allergy or intolerance in the organism as they are considered hypoallergenic. Nonetheless, an implant is subject to a series of factors that mean that not all succeed in anchoring themselves in the bone, and the success rate for this integration varies substantially.

This lack of integration, or early failure – which ranges between 1% and 8% – can be the result of an inadequate healing, the contamination of the implant during placement, a bone bed of insufficient quality, or the application of excessive

forces onto it before cicatrization has been completed. There are many factors that can affect the capacity of the organism to integrate the implant.

All things considered, implantology today – carried out correctly, following sensible surgical protocols, and selecting appropriately those patients who can be bearers of implants – makes it possible to ensure that implants are a successful alternative to replace the teeth whose future cannot be guaranteed.

However, it is once the stage of implant integration has passed (when the implant is already anchored into the bone), that the real challenge for the patient begins – which is to maintain their implants in a correct state of health that allows them to be maintained in the mouth for many years. Once implant integration has been achieved, it is necessary to avoid other risks, such as the appearance of **peri-implant diseases**<sup>1</sup>, which are the group of inflammatory processes that occur in the tissues that surround the tooth.

When the presence of inflammation around the tooth is limited to the alveolar mucosa and there are no signs of bone loss, we say that there is a mucositis.

### Once the challenge of integration of the implant has been overcome, it is necessary to avoid other risks, such as the appearance of peri-implant diseases

This is a reversible lesion provoked by the accumulation of bacterial plaque around the implant, generating an increase in the depth of the sulcus around it and generating bleeding. When this process continues over time it can

lead to bone loss around the implant, in which case we are facing **peri-implantitis**.

A recent study, promoted by the Spanish Society of Periodontology (SEPA), showed that only 36% of 474 dental implants placed in 275 patients were healthy, with perfect conditions of health in the tissues surrounding the implants. While 27% showed signs of inflammation that affected the mucosa/gum surrounding the implant (mucositis), 20% showed bone loss around the implant caused by inflammation (peri-implantitis) and 17% of implants had lost two or more millimetres of bone without actual signs of inflammation. Ultimately, only 31% of patients presented an optimal state of health of their implants.

These overwhelming statistics show the need for a correct care of implants and the real importance of transmitting the appropriate knowledge to patients about how to look after their implants so that, through the combined efforts of the health team at the dental clinic and the patients themselves, the health of dental implants can be maintained.

### Inflammation 'kills' the implant

A crucial factor for conserving the dental implant and prolonging its average life is to understand that it does not respond to inflammatory phenomena in the same way as the natural tooth.

Implants lack the defence mechanisms of teeth, basically because there are very significant differences in the anatomy of the gum that surrounds the tooth and that which is around the implant. Because this defensive response of the organism to the challenge provoked by the presence of bacteria around an implant is very conditioned, the advance of inflammation is always much quicker around an implant than around a tooth.

**“One of the main keys to the long-term success of implants is the prevention of peri-implant diseases. We cannot forget that this prevention must be carried out before, during, and after the placement of the implants”**



**Elena Figuero**

Associate professor and teaching secretary, Department of Clinical Dental Specialisms, Faculty of Dentistry, Complutense University of Madrid.



## Early implant failure: the 3 threats

- 1 Social aspects: mainly smoking and poor oral hygiene.
- 2 Co-existence with other diseases (mainly uncontrolled diabetes and osteoporosis) or treatment with immunosuppressive medication.
- 3 The position of the implant and the type/design of the restorative treatment. Regarding the position of the implant in the mouth, the failure rate is higher when placed in the posterior area of the superior maxilla and in the anterior area of the inferior. The characteristics of the surrounding bone and gum/mucosa are also important, as are the type of design of the implant and the ease of cleaning it – a factor which changes the risk of peri-implant diseases in an appreciable way.

### An implant is subject to a series of factors which mean that not all of them achieve integration with the bone

Because of this, before placing an implant, the patient's mouth must be in a state of perfect periodontal health (gum health) and the patient must be very conscious of the importance of cleaning implants to avoid these diseases.

### Factors that increase inflammatory risk

There are three basic factors that increase the risk of suffering inflammatory problems around implants:

**1) Poor oral hygiene.** The presence of a biofilm of bacteria around implants is the necessary factor for the start of an inflammatory process that can lead to bone loss around the implants.

The risk of peri-implantitis in patients with poor oral hygiene is four times greater than in those with adequate oral hygiene and eight times greater if the hygiene is severely deficient.

**2) Smoking.** The habitual consumption of tobacco not only influences the success of implant integration but also increases by 2.25 times the risk of suffering peri-implantitis in comparison with non-smoking patients. Tobacco is the main systemic risk factor and increases the rate of bone loss by an average of 0.16mm/year. The greater the number →

**A RECENT STUDY, PROMOTED BY** the Spanish Society of Periodontology (SEPA), showed that only 36% of 474 dental implants placed in 275 patients were healthy, with perfect conditions of health in the tissues surrounding the implants. While 27% showed signs of inflammation that affected the mucosa/gum surrounding the implant (mucositis), 20% showed bone loss around the implant caused by inflammation (peri-implantitis) and 17% of implants had lost two or more millimetres of bone without actual signs of inflammation. **Ultimately, only 31% of patients presented an optimal state of health of their implants.**

These overwhelming statistics show the need for a correct care of implants and the real importance of transmitting the appropriate knowledge to patients about how to look after their implants so that, through the combined efforts of the health team at the dental clinic and the patients themselves, the health of dental implants can be maintained.



**Ignacio Sanz Sánchez**  
Associate professor of periodontology at the Complutense University of Madrid.

**“For me, the most important thing is to perform a correct diagnosis and prosthetic planning and to analyse the risk factors related to the patient to eliminate them from the beginning”**

→ of cigarettes per day, the greater the risk and the poor response to treatment increases in an exponential way.

**3) History of periodontitis.** People who have lost their teeth because of gum disease – which is the cause of the bone loss around the teeth – must know that these problems will very often be repeated with the implant if this periodontal disease is not controlled. These patients present 2.17 times more risk of suffering peri-implant problems than those who are periodontally healthy.

A person who has suffered periodontitis can be a candidate to receive an implant, but the disease must be strictly controlled before and after the implant treatment.

There is another series of factors specific to the patient that can condition the appearance of peri-implant problems and which have a more limited – but nonetheless real – significance, such as uncontrolled diabetes, high levels of stress maintained over time, the taking of bisphosphonates, genetic susceptibility to having periodontal problems, and the regular consumption of alcohol.

### The challenge of maintenance

The scientific evidence clearly shows that patients who have received periodontal therapy and who have been introduced into a programme of maintenance show lower degrees of tooth loss. Because of this, the institution of maintenance therapies once active periodontal therapy has been completed is essential for maintaining the health of the teeth. Professional periodontal maintenance consists of removing or

### The dental implant does not respond in the same way to inflammatory phenomena as the natural tooth

controlling sub- and supragingival plaque through the correct use of specific instruments depending on the clinical characteristics and individual needs of each patient.

As a result, the concept of periodontal maintenance has been transferred to patients with dental implants. A lack of follow-up or maintenance treatment after implant placement is associated with a greater incidence of peri-implantitis and implant failure.

Patients subjected to an implant treatment must receive – in an individualized and systematic way – a correct maintenance therapy for the health of the peri-implant tissues. In addition, those with a high risk of peri-implantitis, such as people who are partially edentulous and with treated chronic periodontitis, should be identified and carefully monitored.

Patients must be evaluated at regular intervals to monitor the condition of their peri-implant tissues, and it is also necessary to check their oral hygiene, control the levels of plaque and thereby remove the supra- and subgingival biofilm. It should also be investigated as to whether there are systemic diseases that can affect the evolution of peri-implant diseases, establishing preventive measures adapted to each individual, as well as identifying and removing harmful habits such as smoking.

Equally, it is advised to periodically review the state of the prostheses supported by the implants, their fitting, need for repair, control of the **occlusal condition**<sup>2</sup>, and ease of carrying out hygiene. Preventive therapies are effective in the prevention of biological complications and the loss of implants after a period of observation of at least ten years after the placement of implant-supported prostheses.

All treatment that involves the placement of implants requires informing the patient both of the importance of caring for them and the skills needed to be able to maintain a correct management of the health of their implants. There are many methods for managing the hygiene of implants and the recommendations in this area must be individualized for each patient, with professionals taking on the responsibility for transmitting these skills, and the patient accepting the challenge of correct management in the interest of a successful relationship with their implants.

Accordingly, a fruitful and encouraging line of present and future collaboration is opened with the National Committee for Smoking Prevention (CNPT). “One of the CNPT’s priorities is to join forces and create synergies for the reduction of the epidemic of smoking; with SEPA, this collaboration has been dynamic and fluid”, says the CNPT president. ■

**“The active collaboration of the patient is essential for achieving a successful treatment with implants. Without the adoption of healthy habits and regular check-ups, the risks of peri-implantitis – and, as a result, implant failure – are very high.”**



**Juan Carlos Llodra**  
Professor of preventive and community dentistry at the University of Granada.



In the dental clinic

# 7 essential tasks to prevent disease around your implants

APART FROM INSISTING on the benefits derived from an early diagnosis and good control of bacterial plaque in the oral cavity, there are some other basic actions to follow to be able to perform an optimal professional prevention of diseases such as peri-implantitis.

1. Thoroughly evaluate the patient's medical history (particularly checking their smoking habits).
2. Regularly check peri-implant and periodontal health.
3. Consider carrying out radiographs if there is a suspicion of any anomaly.
4. Check the occlusion and fixing of the prosthetic elements.
5. Dismount the implant-supported rehabilitation if it is considered necessary for a better and more complete cleaning.
6. Motivate and inform the patient about various oral-hygiene measures and their fulfilment.
7. Regularly remove plaque and supra- and subgingival calculus.

## GLOSSARY

1. **Peri-implant diseases:** Those which emerge around the implants; Mucositis and peri-implantitis are notable for their frequency and importance.
2. **Occlusal condition:** In dentistry, occlusion is the name for the way in which the teeth of the upper arch fit with those of the lower arch and determines the mechanical functioning of the mouth for biting, masticating, swallowing, and talking.

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# Alzheimer's Disease:

## putting the focus on periodontitis

For years it has been suspected that one of the possible causes of the appearance of Alzheimer's Disease could be an oral infection (periodontitis). Now, new studies seem to confirm this hypothesis and awaken new hopes.

SECTION CO-ORDINATED BY:

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FOR SEVERAL DECADES it has been a medical challenge to find the main causal factor for this disease, one of the most disabling and worrying today given its serious repercussions for those people who suffer from it and for those around them. Thousands of studies have tried to find the origin of Alzheimer's Disease, whose prevalence is constantly growing across the world, without yet having found a definitive answer. However, solid evidence has recently built up that points towards an element that could be key: periodontitis.

It has been demonstrated that one of the pathogens that most often provokes this periodontal disease is present in the brains of patients with Alzheimer's Disease. The explanation of this phenomenon is still not definitive, but it suggests the existence of a bidirectional association: on one hand, the cognitive deterioration of people with Alzheimer's Disease would impede adequate oral hygiene; on the other hand, it is considered that the chronic immune-inflammatory process and the systemic

inflammation derived from periodontitis would induce neuro-inflammatory phenomena that would predispose to suffering Alzheimer's Disease. But there is still much to clarify as to why periodontitis may provoke such a chain of events that end up giving rise to what is the most common dementia in the world.

### Consistent evidence

Periodontitis and Alzheimer's Disease follow very different trajectories, but they have many similarities. Both are chronic, inflammatory, and can have family patterns or sporadic forms of unknown cause. Their origins are multifactorial and they share certain risk factors, such as genetics, environmental factors, and behavioural factors.

Over the last decade, the possibility that periodontal disease is a significant risk factor for the development of

### Periodontal bacteria and the chronic inflammatory state could explain the origin of Alzheimer's Disease

Alzheimer's Disease in people of advanced age has become established. Although there are many doubts to resolve, it is known that there is a close relationship between the two chronic diseases and that periodontal bacteria and common chronic inflammatory states are implicated.

A recent study in adults with a normal cognitive level has confirmed that there is a relationship between the levels of cerebral A $\beta$ 42 (toxic forms of  $\beta$  amyloid peptides) and levels of dental attachment loss, and that when the cerebral levels of A $\beta$ 42 are higher so too is the loss of periodontal attachment.

Other studies associate initial-moderate periodontitis with an increase in cognitive loss, although more studies are required to verify these results.

Another line of research has documented that the  $\beta$ -amyloid<sup>1</sup> of the brain protects mice from bacterial and viral infections by capturing the invaders and that this protective response against pathogens triggers the formation of amyloid plaques. →

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**"Preventing periodontitis from becoming a systemic disease is the best way to avoid that the neurotoxic components of the oral pathogens reach the brain"**



**Juan Carlos Leza**

Professor of pharmacology, Faculty of Medicine, Complutense University of Madrid.

## Keep your mouth healthy, stave off the risk of Alzheimer's

**CEREBRAL AFFECTATION** by *Porphyromonas gingivalis* is not the result of poor oral hygiene during dementia but would be an early cause that could be associated with the disease before the patient experiences a cognitive loss. The latest research shows how periodontal disease impacts the pathogenesis<sup>2</sup> of Alzheimer's Disease and emphasizes the importance of adequate and early treatment of periodontal disease, above all in older people or those with greater risk of dementia.

Correct brushing and the daily use of a method of interdental cleaning, with the support of antiseptic mouthwashes when these are considered necessary, is essential in the prevention of periodontal disease. But so too is visiting the dentist or periodontist with the aim of identifying the existence of periodontitis and treating it in time. With this, it would even be possible to reduce the risk of developing Alzheimer's or, at least, slowing its evolution.



# What is?

**PERIODONTITIS:** inflammatory disease of bacterial origin, which affects the tooth-supporting tissues, provoking their destruction and, on many occasions, causing tooth loss if a correct treatment is not put in place. The frequency of periodontitis in Spain is 38.4% (rising to 65.1% in people aged over 55).

**ALZHEIMER'S DISEASE:** is an incurable neurodegenerative condition, that begins with occasional memory loss that worsens until affecting all cognitive areas and leading to a severe dementia. It has great social impact

because of its degree of dependency on the family. It is the most common dementia in the world and represents between 60% and 80% of all dementias. It is calculated that it affects 6% of the European population aged over 60, between 4% and 9% of the Spanish population, and almost 40% of people older than 90.

Although it is not necessarily a consequence of ageing, its incidence doubles every five years after the age of 65.

→ It has also been suggested that the relationship between periodontitis and Alzheimer's Disease is mediated, in some way, by Vitamin D. It has been observed that low levels of Vitamin D can predispose to periodontitis and that there is also a relationship between the lack of this vitamin and dementia of the Alzheimer's type.

## The role of periodontal bacteria

It was classically thought that the brain was sterile, as it is isolated from the rest of the organism thanks to the blood-brain barrier. But it is now known that immunological cells, inflammatory mediators, and microbes (including periodontal pathogens) that are in the organism can pass through the blood-brain membrane. In addition, these peripheral pathogens can arrive at the brain through circumventricular organs, cranial nerves, and meningeal canals.

## The prevention of periodontitis, or its early treatment, can offer significant benefits in the approach towards Alzheimer's Disease

Thus, in patients with Alzheimer's Disease, high levels of antibodies to periodontal pathogens such as *Aggregatibacter actinomycetemcomitans*, *Tannerella forsythia*, *Treponema denticola* and *Porphyromonas gingivalis* have been found in plasma.

In recent months, one of these pathogens that are characteristic of periodontal disease has taken on a leading role. Research by an international team of experts has suggested that Alzheimer's could be related to a bacterium that provokes periodontitis.

The presence of *Porphyromonas gingivalis* (one of the most important pathogens in periodontitis) has been found in the brains of patients affected by Alzheimer's, indicating that this bacterium would contribute to the development of this neurological disease, although it is not yet known if it would really be the cause.

## Periodontitis and Alzheimer's Disease follow a very different course but have many similarities

*P. gingivalis* has been successfully isolated in the brains of dead patients with Alzheimer's Disease and the DNA of periodontal bacteria has also been found in the cerebrospinal fluid of living patients.

Toxic enzymes, called **gingipains**, produced and secreted by *Porphyromonas gingivalis* have been found in 90% of brains affected by Alzheimer's. Brains with greater amounts of gingipains have greater quantities of proteins associated with Alzheimer's. Thus, the levels of gingipains affect the amounts of **tau** (protein needed for the normal functioning of the neurones) and **ubiquitin** (which marks the damaged proteins), both proteins that are associated with Alzheimer's.

It has been shown in mice that *Porphyromonas gingivalis* can form amyloid, whose accumulation →

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"Recent research on the effect of gingipain inhibitors opens a new therapeutic path to control the cerebral colonization by *Porphyromonas gingivalis* and the neurodegeneration of Alzheimer's Disease"



**Silvia Roldán**  
Master's degree in periodontology and implants, Complutense University of Madrid.

## Oral hygiene in people with Alzheimer: a task for many hands

PEOPLE WITH ALZHEIMER'S DISEASE generally have reduced motor skills, which means that it can be difficult for them to brush their teeth well, above all in the advanced stages of the disease. Similarly, they not only tend to forget to perform tooth brushing but also do not remember how to do it properly.

All this means that oral hygiene notably worsens in these cases, and the development of conditions such as gingivitis, periodontitis, halitosis, tooth loss, and/or changes in mastication are common, which as well as reducing their quality of life can also provoke a nutritional deficit.

On many occasions, patients with dementia do not prioritize oral health and abandon themselves, leaving carers and family members to take charge of the basic tasks of oral hygiene. It is fundamental that there is permanent contact between the dentist, the person affected, and those involved in their care to be able to know the extent of the patient's limitations.

A dental and periodontal treatment should be introduced in the early stages of dementia, above all to avoid the possible loss of teeth. In this respect, health professionals must perform outreach and raise the population's awareness of the benefits obtained by improving oral health, above all in older people. Correct oral hygiene must be emphasized, with manual or electric brushes, dental floss or interproximal brushes, and appropriate mouthwashes.

If it is really the case that periodontitis contributes to Alzheimer's Disease, good oral hygiene can be a simple way to slow the progression of the dementia.





# How to help the person with Alzheimer's Disease with their oral care?

## 10 practical tips

**1** Make toothbrushing a daily routine.

**2** If the person has forgotten how to brush their teeth, the carer is advised to brush their own teeth in front of them and to guide their hands.

**3** Do the utmost to enable the task: a simple action, such as putting toothpaste onto the brush, can prevent many difficulties.

**4** Sometimes it is difficult to place the toothbrush or the dental floss in the mouth of the patient without angering them, so it is important to choose the best time of day to do this, when they are more cooperative and calm (it does not need to be first thing in the morning or last thing at night).

**5** If they have problems gripping the brush, they can use a handle that is longer, bigger, and fatter. Using an electric brush under supervision is also recommended and can facilitate toothbrushing.

**6** Anti-plaque mouthwashes are also recommended, as long as they are not swallowed.

**7** Dentures: ensure that they fit perfectly and, if this is not the case, go to the dentist to correct them, avoiding irritating the gums and causing problems with chewing. This prosthesis must be removed from the mouth, cleaned and rinsed daily, taking advantage of this situation to clean the gums with a soft brush.

**8** The bathroom is not the only place to clean the teeth. Sometimes it is better to do so in a basin on a table or near the kitchen sink.

**9** If oral care at home is difficult or very annoying for the patient and the family member or carer, go to the dentist every two or three months for regular dental cleaning.

**10** Carry out regular visits (twice a year) to the dentist to rule out caries and to perform oral cleaning.

# Don't forget that...

→ contributes to neurodegeneration in the brains of these rodents. It is believed that this pathogen can travel from the mouth to the brain, while gingipains would be involved in destroying the cerebral neurones.

## Therapeutic consequences

All these findings, as well as corroborating that poor oral hygiene can be a risk factor for suffering Alzheimer's Disease, also open new lines of research for developing medication to tackle this dementia.

The most important risk factor for Alzheimer's Disease is advanced age, but even 20 years before the clinical diagnosis of this pathology one can detect underlying signs that warn of its existence. This has motivated the interest of researchers and clinicians to find resources able to detect or treat Alzheimer's early, before the appearance of the first symptoms. Even though the

disease was discovered 100 years ago, its current treatment is symptomatic, with little effect on the cognition and behaviour of those who suffer from it. But the new evidence of the possible bacterial or inflammatory role opens new ways of treatment that are now being studied. Neuroinflammation is implicated in the progression of Alzheimer's Disease, for which reason it is believed that reducing the inflammatory response could slow or prevent the appearance of cognitive deterioration.

Experimental studies have shown that giving a mouse a medication that joins the gingipains allows the "cleaning" of the brain of *P. gingivalis* better than an antibiotic and reduces the production of  $\beta$ -amyloid and the neurodegeneration that it would produce.

This has led to the suggestion that gingipains could be a possible target for the drugs that treat Alzheimer's and, in fact, experimental treatments on humans

- Recent epidemiological studies show a possible association between periodontitis and Alzheimer's Disease, pointing towards a possible oral origin of this dementia.
- Periodontal pathogens have been found in patients with Alzheimer's.
- More research is required to find more solid evidence to determine the nature of this association.
- Because of this association, novel treatment alternatives are being put forward and it is stressed that care of our gum health is essential.
- Good oral health is also a priority for people with Alzheimer's Disease and it is even thought that it could help reduce the potential risk of suffering this disease.

through the blocking of these toxins are being tested.

But, independently of these promising and still emerging studies, what emerges from this work is a clear recommendation: people with Alzheimer's Disease must take care with their oral hygiene and, in many cases, this will mean the collaboration of carers and/or family members. On the other hand, one must emphasize the importance of early diagnosis and treatment of a possible oral disease, above all periodontal disease. And, what is more, if there is a direct relationship between periodontitis and cognitive loss (as the most recent studies suggest), the prevention of periodontitis – or its early treatment if it has already established itself – could offer significant benefits in the approach towards Alzheimer's Disease. ■

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## GLOSSARY

1.  **$\beta$ -amyloid**: peptide of 36 to 43 amino acids which is synthesized through the precursor protein amyloid and which is the main component of senile plaques (deposits that are found in the brains of patients with Alzheimer's Disease).
2. **Pathogenesis**: refers to the origin and evolution of a disease with all the factors that are involved in it.

SECTION SPONSORED BY:



# Questions with answers about dry mouth

SECTION CO-ORDINATED BY:

Nerea Sánchez  
Master's degree in  
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University of Madrid

“DRY MOUTH” is the perception of having a lesser amount of saliva in the mouth. In cases where there is an objective reduction of the flow of saliva (<0.5-0.7 ml/min of stimulated saliva), this condition is known as “hyposialia”.

However, when the person feels that they have less saliva but the flow of saliva is not below this level, it is known as “xerostomia” and is considered to be a subjective sensation of oral dryness, which sometimes results from changes that are qualitative as well as quantitative in the composition of the saliva.

It is considered that between 5% and 45% of adult people have the sensation of having a “dry mouth”. It is more common among women and seems to increase with age, significantly affecting the geriatric population and being a major reason for seeking a consultation with a dentist.

## Why does dry mouth occur?

This condition is fundamentally related to the consumption of certain medications, with suffering from specific diseases, and with radiotherapy of the head and neck.

### Medication:

- Anticholinergic medication, above all the antagonists of the M3 muscarinic receptors, used as a **bronchodilator treatment** for respiratory conditions (such as chronic obstructive pulmonary disease, COPD). They have the effect that the saliva generated has a thicker consistency.
- Other bronchodilator medications, the beta-2 agonists, used to treat asthma and other respiratory conditions.
- Medication to treat hypertension: **anti-hypertensive** drugs of the diuretic type, calcium channel blockers, angiotensin-

A lot is said about this condition which affects many people (and is particularly common in women and people of advanced age), but there is a general lack of knowledge about what a dry mouth is, what causes it, and what consequences it can have.

## Certain medications, specific diseases, and radiotherapy increase the risk of suffering from dry mouth

converting enzyme (ACE) inhibitors, and beta-blockers have been associated with a reduction in salivary flow.

- **Anti-retroviral** medications used in the treatment of HIV/AIDS.
- **Muscle relaxants**, such as tizanidine.
- Medication for **anxiety**, such as the benzodiazepines.
- **Antidepressants**, such as selective serotonin reuptake inhibitors and tricyclics.
- **Chemotherapy agents**, which are associated with dry mouth in a transitory way. →

WORDS  
OF THE  
EXPERTS

“Xerostomia can affect the quality of life of our patients, so it is fundamental to carry out a good medical history to diagnose and treat it”



**Gerardo Gómez Moreno**

Professor at the University of Granada. Dentistry in medically compromised patients.



## Where is saliva produced?

- In the major salivary glands: parotid, submandibular, and sublingual (which secrete 90% of saliva).
- In the lesser salivary glands: these are found in the palate, and on the inside of the lips and cheeks.

## Main symptoms

The most common symptoms mentioned by people who suffer from dry mouth are:

- Difficulty in speaking and swallowing.
- Alteration in the taste of food.
- Instability of dentures.
- Ulcers in mucosa and lips.
- Burning sensation mainly on the tongue.

## Visit the dental clinic

·In having a greater risk of oral infections, it is necessary to maximise oral hygiene and visit the dentist regularly to rule out caries, gum diseases, and other presentations.



**Juan Blanco**  
Professor of  
periodontology  
at the University  
of Santiago de  
Compostela.

**“The saliva is not what is important, but it is necessary that there is an equilibrium in the oral ecosystem that provides innate (local) immunity and which can thereby reduce the prevalence of oral diseases”**

→ **Systemic diseases:**

- **Sjögren syndrome:** an autoimmune disease that mainly affects the salivary and tear glands, producing hyposialia (“objective dry mouth”) and dry xerophthalmia/keratoconjunctivitis. This disease is more common in middle-aged women who may also suffer from another autoimmune disease of the connective tissue, such as rheumatoid arthritis.
- Other diseases have been described that can produce dry mouth, such as **diabetes mellitus 1 and 2, hypothyroidism, Parkinson’s Disease, depression, and HIV infection.**

**Radiotherapy:**

Radiotherapy of the head and neck required for the treatment of certain cancers frequently produces a change in the salivary glands, of greater or lesser scale depending on the dose of radiation received. This can lead to a reduction of the salivary flow (which increases during the therapy sessions) or even to a complete loss of secretion of the gland in the case of the complete destruction of the parenchyma.

**How can a dry mouth affect oral health?**

People with an objective reduction of saliva can have a greater predisposition towards:

- Suffering oral ulcers (sores).
- Caries.
- Gum diseases: gingivitis (or inflammation) and periodontitis (destruction of the tooth-supporting apparatus).
- Superinfection by candida (fungus present in a normal way in the healthy state which increases in number and produces disease).
- Bacterial sialadenitis (disease of the salivary glands).
- Halitosis or bad breath.

**People with reduced salivation have a greater predisposition to suffer other conditions in the mouth**

**How can it be alleviated?**

- As certain medications are the main causes of dry mouth, it is advisable to visit the doctor to evaluate if you are taking one of these medications and if it is possible to reduce or replace it. In the case of suffering Sjögren syndrome, it is essential to detect this via specific medical tests and with a close collaboration between different health professionals.
- Hydration of the oral cavity through the very frequent consumption of water and liquids (at least two litres of water per day). Avoid coffee and alcohol, which are related to a reduction of the flow of saliva.
- Consume products that stimulate saliva, such as chewing gum and sugar-free sweets; the consumption of acidic and citrus-based drinks also stimulates the salivary flow.
- Salivary substitutes and preparations of artificial saliva (carboxymethyl cellulose and mucins), which moisten the oral mucosa and carry components of saliva that alleviate the oral dryness. It is necessary to apply them to the whole mouth, including the area beneath the tongue, where one can place a greater amount that serves as a reservoir. Their effect is not prolonged: it lasts for around 10-15 minutes.
- Specific mouthwashes for xerostomia based on lubricating oils and antibacterial, soothing, and cicatrizing agents.
- Medication that stimulate secretion by the glandular tissue, such as pilocarpine and cevimeline (which must be prescribed by the physician). ■

WORDS OF  
THE EXPERTS

**“Dry mouth is a complex situation both in terms of its diagnosis and its treatment. Saliva plays an important role in oral health and can affect the quality of life of our patients”**



**Leticia Bagán**  
Associate professor  
of oral medicine,  
University of  
Valencia.

**“At the dental clinic we can help patients with dry mouth and xerostomia, through advice and therapeutic guidelines that help minimise the discomfort and complications produced”**



**Lorenzo de Arriba de la Fuente**  
Associate professor,  
Faculty of Dentistry,  
Complutense University  
of Madrid.

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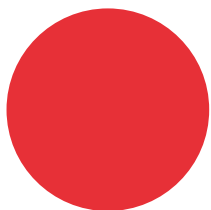
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# The dental clinic is an ideal setting for health education'

**REGINA IZQUIERDO**  
EDITOR OF  
*CUIDA TUS ENCÍAS*



## SECTION CO-ORDINATED BY:

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**Dr Regina Izquierdo is spokesperson for the management board of the Spanish Society of Periodontology (SEPA) and responsible for this scientific society's outreach work, among other areas. She is also the editor of the magazine "Cuida tus Encías". In this interview, she reflects on various aspects related to the dissemination of information about oral health.**

**As editor of "CTE", how do you evaluate the role played by this publication and the way it has evolved over the years?**

*Cuida tus encías* is a magazine with an innovative outreach focus in the world of dentistry. Its aim is to promote periodontal and oral health, offering accurate information on different diseases, their prevention, their diagnosis, and their optimal treatment.

From its beginnings, in 2011, this publication has focused on the general population, but it also tries to meet the need for information on oral-health topics of other health professionals who are not involved in dentistry. And over time it has also become an element of reference information for general dentists and dental specialisms other than periodontology.

Clearly, it was a risky gamble and it was a success to arrive at issue number 10, at which point it was evident that the magazine had consolidated itself as a useful and necessary outreach tool. In fact, this publication has attracted the

attention of other scientific societies of periodontology, both European and American, so that it is now translated into various languages and distributed in different countries.

Over these eight years of life, it has undergone a constant evolution that has been particularly evident in its adaptation to everyday and less scientific language, and in the way of focusing on topics to increase understanding by the general population.

In this last stage, during which I have been editor, we have tried not to rest on our laurels and to respond to many of the questions that are raised every day by patients in our practices. For this reason, we try to cover a greater variety of topics that concern the population and/or which are current. This is the real challenge each and every time we put forward a new edition of the magazine.

**This publication has attracted the attention of other scientific societies of periodontology around the world**

**To what extent is information, rigorous and professional, fundamental in the care of oral health?**

New technologies imply a great advance and represent a very useful tool in terms of knowledge in providing

***Cuida tus encías* is a magazine with an innovative outreach focus in the world of dentistry**

information so that everyone can access it with a simple click. But, on the other hand, part of the information that circulates around the internet without control and without any type of filter is a real risk, as it has no scientific rigour or it is simply false information.

In our magazine we try to combat these "false truths" and to "cast light", clarifying controversial topics, such as in this issue where we provide information about the supposed lack of safety in certain treatments such as root-canal work or, in a future issue, about the "possible serious secondary effects" derived from the use of certain mouthwashes.

Unfortunately, certain false and unfounded beliefs remain in the minds of many people, so we have to continue to work against this, to try to remove them from the collective subconscious. For example, beliefs relating to pregnancy, breastfeeding, and the inappropriateness of carrying out dental treatment during these periods; regarding doubts about the effectiveness of periodontal treatment for maintaining teeth throughout the whole of life; and in relation to the lack of complications in implant therapy → and their "lifetime guarantee".

The whole dental team should be involved in promoting healthy lifestyle habits to their patients

## A change of trend in oral-health care

ACCORDING TO THE CONCLUSIONS of the *Libro Blanco de Salud Bucodental* ["White Book of Oral Health"] of the Council of Dentists and the Spanish Dental Federation of 2015, there is a trend towards improvement in oral-hygiene habits. It is estimated that 80% of adults brush their teeth at least twice a day (20 years ago, less than 60% did) and the use of auxiliary methods of hygiene – such as mouthwashes, dental floss, and interdental brushes – is growing significantly.

In this respect, regarding raising patient awareness of oral health, "everything seems to indicate that things are changing for the better and that the Spanish population is more and more mentally prepared in maintaining and improving their oral health," says Dr Regina Izquierdo.

Although there are no hard data on this subject, the results of a population survey on oral health in Spain in 2015 indicated that six of every 10 Spaniards placed in the same position their general health and their oral health in terms of the degree of concern. "This could indicate that the adult population seems to be aware of the relevance of their oral health within the context of their general health," highlights the editor of "CTE", who admits that "it would be very interesting to evaluate the repercussion of all these preventive efforts, analysing the population's appreciation of the importance of oral health in more detail with new studies.

## About 70% of the Spanish population passes through our clinics

### → How do you evaluate the role of the dental team in this work of training and informing the patient, both about their oral health and their general health?

The dental clinic is the ideal environment to provide health education, as we are health professionals. About 70% of the Spanish population pass through our clinics, theoretically “healthy” and for that reason not visiting their general practitioner. Because of this, it should be part of our daily work and our responsibility to try to help our patients to create healthy lifestyles and, ultimately, improve their quality of life. This would include not only advice on oral hygiene but also reminding them on the principles of health nutrition, the importance of avoiding a sedentary lifestyle and of controlling stress, together with smoking cessation. The whole dental team should be involved and be unanimous in transmitting a message of HEALTH, in capital letters... because health is an integrated concept that includes the whole body.

### So, the dental clinic takes on an important role in promoting health habits

Exactly. Receiving quality information, which shows how to maintain a healthy mouth, and giving preventive options are increasingly an important part of the assessment and the expectations of the patients who come to the dental clinic. Oral-health professionals are in an ideal situation for this, not only because of the access we have to a wide sector of the population but also because we are “trained to motivate” our patients so that they change their oral-hygiene habits, and this motivation is easy to translate into other aspects of health.

There is an undoubted health and social benefit to actions such as enabling our patients to stop smoking

and control their weight (eating better and getting more exercise) and their stress. Without a doubt, these factors have a great impact on the appearance and/or progression of many chronic diseases.

In addition, we know about the strong bidirectional association between periodontal disease and diabetes, and it has also been demonstrated that there is increased cardiovascular risk in people with untreated periodontitis. Similarly, there is evidence that basic periodontal treatment improves glycaemic control in the short term in people with diabetes, which is associated with a reduction in the number of complications and even with a reduction in pharmaceutical spending (by reducing the need for a second glucose-lowering drug).

But we can go even further. In Spain there are around 14 million people with hypertension, of which a quarter are unaware of their status and more than half are poorly controlled. If the simple taking of blood pressure is included in our consultations as something routine (for example, during initial visits or before any action that requires local anaesthetic) we would reduce the percentage of undiagnosed hypertension patients. If mortality today from hypertension diseases is what is most increasing, it is clear that this very simple intervention could have an impact on the population.

### Fortunately, there is more and more ‘pink’ thinking, the colour of healthy gums

### In recent years, there have been many studies which, from different fields, closely associate periodontal health and general health. Are we really able to establish a direct link between the health of the mouth and general health?

The concept of “periodontal medicine” was born more than 20 years ago thanks to Dr Offenbacher, a pioneer in this field of research in periodontology in which the association between infection of the gums and

systemic disease is studied, as well as the therapeutic and preventive implications.

The evidence about the relationship between gum diseases and those systemic diseases linked to lifestyle has encouraged the scientific development of periodontology to focus preferentially in this area. It is true that this scientific content about periodontal medicine does not have an immediate repercussion in clinical practice, but it shows the most relevant and promising trend in periodontology and in the dentistry of the future. Not only is this changing our knowledge about the impact of this infectious and inflammatory process at the local level, and on the rest of the organism, but it also implies the appreciation by the medical profession of the importance of oral health in the context of general health. This is the line of work of the “Alliance for Health”, promoted by the SEPA Foundation with the collaboration of many medical scientific societies, something that was unthinkable a few years ago.

### How is it that something so small, such as the gums, can have such importance to general health?

For many years, the dentist has been concerned more with maintaining the health of the tooth, hardly taking into account the gums or the rest of the tissues that surround and support it. But also, for a long time (and even today) it has been considered that periodontal disease was a degenerative condition and that, with aging, it was normal that teeth would be lost. Fortunately, there is more and more “pink” thinking, the colour of the healthy gum, and basic periodontal treatment has become the essential preliminary step before any type of dental approach. Preventing periodontal disease and treating diseased gums that bleed are essential not only for oral health but also to be able to enjoy a better general health, by minimizing the presence of periodontal pathogens that end up producing disease remotely, whether directly or indirectly. ■

#### MESSAGES TO CONSIDER

"There are certain false and unfounded beliefs in relation to oral health against which we must continue to work"

There is a strong bidirectional relationship between periodontal disease and diabetes, and an increased cardiovascular risk in people with untreated periodontitis has also been demonstrated"

"A simple measure, such as regularly taking the blood pressure of our patients, can have significant health repercussions"

"There is a growing awareness among the medical profession of the importance of oral health in general health"

# Intro

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- Interviews
- Tips
- Prevention
- Treatment

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# Health does not accept hoaxes

The 2.0 technology and social media, combined with the population's typical interest in health information, has multiplied the sources of information and, as a result, the risk of spreading hoaxes. Oral health is not exempt from them.

SECTION CO-ORDINATED BY:

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**CURIOSITY IS** a condition of the human being that has allowed us to survive as a species over the centuries and which has made possible many advances in all areas of our lives until reaching the level of comfort that we now enjoy in the so-called first world. One of the most revolutionary advances – and one that, without a doubt, has most changed our lives – has been the eruption of computing and communication and information technology, with all that this brings with it. With a simple “click” we can obtain information that would previously have taken days or weeks to acquire. But this has also opened the door to numerous hoaxes, which is to say, untruths articulated in a deliberate way so that they are perceived as truth.

## Greater quantity, less rigour?

The generalized use of new communications technologies, and especially social media, has enabled to population to have access to a vast amount of health information.

It is estimated that 60% of internet users seek information about health and this is the main reason for searching in tools such as Google. However, not all the information that is offered is reliable, it is very contrasting, and ends up confusing gossip with rigorous and useful news.

Publications about health on the web and on social networks do not always express the whole truth, they are often out-of-date or fail to consider the latest medical advances, so this content can be confusing, wrong, and inexact. This increases the risk that it can produce disinformation, alarm, and social concern, generating confusion, mistrust, and doubt among certain sectors (often the most vulnerable ones). Much of this information can even put

people's lives at risk and generate false expectations or discredit evidence that is backed by science. Without a doubt, in matters of health both evidence and scientific rigour are crucial.

## The example of "Health without hoaxes"

The essence of a news story is, by definition, to narrate or tell something that has happened, something that is real. But, unfortunately, every day there are more and more hoaxes on the internet and social networks that concern health, including dentistry.

To try to counteract this avalanche of fake news, the Asociación de Investigadores en eSalud (AIIES) [Association of Researchers in e-Health] has promoted the creation of a website (<https://saludsinbulos.com>), with the main aim of combating this false information. *Salud sin Bulos* ['Health without Hoaxes'] works alongside scientific societies, health institutions, and professional

The patient who is given adequate information by their doctor is more collaborative and less likely to believe hoaxes





## 5 tips for obtaining quality health information on the internet

1

The source from which the information derives must be clearly identified; it should cite who is providing the information and it should be easy to identify the informer

2

True information does not tend towards exaggeration and is limited to facts that are scientifically proven; it is faithful to facts and does not speculate

3

Up to date. It is sensible to look at the date of publication, as the information could be old

4

There should be no conflicts of interests, and the author should make this clear

5

Any piece of advice or commentary should be backed by scientific evidence

WORDS  
OF THE  
EXPERTS

"In oral care, *"chemophobia"* makes no sense. It was 'natural' to live 35 years and, as life expectancy increased, to die without teeth. Look for hygiene products with the Sepa seal, supported by rigorous scientific studies."



**Ana Berlanga**

Teacher of the master's degree in implant surgery and periodontology, University of Lleida.

## WhatsApp, the biggest ally of health hoaxes

**THE INSTANT MESSAGING APPLICATION**  
WhatsApp is the channel through which most health hoaxes are shared, according to the conclusions of the III EHON (eHealth On) report, "Cómo actuar frente al Dr. Google?" [How to act against Dr Google?], published by the #SaludSinBulos institute.

Half of the participants in this survey considered that the popular network of instant messaging is the main means through which health hoaxes are distributed. Its ease of use and high penetration of the Spanish population have made WhatsApp a

key agent in the spreading of "fake news". According to Carlos Mateos, co-ordinator of #SaludSinBulos, "the main danger of WhatsApp is that the alert reaches us from a source of confidence, it is not possible to act in a massive way to provide information with rigour, and it is very widespread among the population, so it is able to spread hoaxes very quickly."

For 11% of those surveyed, after WhatsApp, the social networks Twitter and Facebook occupied second place as channels for spreading hoaxes.

### → The helplessness of patients, who have difficulty distinguishing true information from false, has been called "infoxication"

bodies and has set up an observatory of health hoaxes on the internet. It has been particularly active in the communications media and on social networks, where it has popularized the hashtag #SaludSinBulos.

A novel contribution of this initiative is that it invites people to contribute to detecting and denouncing false or erroneous content in the field of health. In fact, it offers the possibility of online notification of suspicions about the hoaxes that are circulated by the internet and social media. Then, the internal team takes charge of analysing the most highlighted news items about health where the informational treatment has been alarmist in order to expose their origins and implications for patients using scientific arguments.

### Other interesting initiatives

The work of these portals is also complemented by tools such as **Adverif.ai** (<http://adverifai.com>), software based

on artificial intelligence that locates and identifies false and/or malicious news, malware, and other types of problematic content on the internet.

This programme scans all the content to detect, via algorithms and deep learning, patterns and indications of some type of irregularity: headlines that do not coincide with the following content or which contain an excess of capital letters.

This software also has a database with thousands of false and true stories that is updated every week.

### Concern among professionals

The first study of hoaxes in health was carried out recently, based on a survey that involved 300 professionals in medicine in all of Spain's autonomous regions, with individuals between 25 and 70 years of age.

Among other findings, it highlighted that 69% had been obliged to refute a false news item about health. The most common hoaxes refer to pseudotherapies, food, and cancer, often offering treatments that have not been proven or evaluated correctly through strict and precise scientific studies. While 69% of the hoaxes are on the internet, 48% were

### When a hoax goes viral, it is very difficult that a later disproof will have the same level of impact

heard via people's closest circle, and 30% transmitted via WhatsApp.

An essential element for combatting hoaxes is the doctor-patient relationship. Some professionals respond evasively, telling the patient not to consult the internet; however, it has been demonstrated that the patient who is adequately informed by their doctor is the most collaborative and is less likely to believe hoaxes. In this context, health professionals are advised to use a language that is more accessible and simpler for the general population.

It is considered essential that health professionals, including all those who work in the field of dentistry, invest in offering their patients the greatest possible clarifications, in a way that is precise, timely, simple, and (of course) TRUE. These professionals have the training and the appropriate knowledge, and act on the base of scientific evidence that is provided by rigorous and well-designed studies. ■

**It is estimated that 60% of internet users seek information about health**

## An example of disinformation: the safety of endodontics

**IN A SHORT SPACE OF TIME**, various examples of hoaxes related to root-canal treatment or endodontics have emerged, suggesting possible risks to health from this procedure which, in fact, is a highly safe treatment, amply proven, and which resolves infections that left untreated can provoke problems in the patient's general health.

Netflix recently showed a video called *Root cause* in which root-canal treatment was questioned. It speculated about the risks of contracting cancer and cardiovascular diseases. The General Council of Dentists (CGD) has denounced these claims as false and alarmist, recalling that "endodontic treatment is safe, simple, and very beneficial".

According to an official communication, "The declarations in the documentary do not have scientific rigour and cause social alarm and confusion among citizens, and we categorically

refute them." Indeed, the Council has made an official complaint about this situation to the relevant health authorities.

The priority of dentistry is to save and maintain the natural dentition and, when this is not possible, the alternative is extraction and replacement of the tooth. A vast number of teeth are treated and saved every day with an endodontic treatment, something which is supported and demonstrated scientifically by many recent clinical studies. Without these treatments, the majority of the population would be edentulous.

Endodontics is a specialism recognised since 1963 by the American Dental Association. Endodontists are specialists who save teeth using special techniques and technologies to carry out root-canal treatment as well as diagnosing and treating dental pain.

The efficacy of endodontics is well established. However, information continues to circulate around the internet that can cause patients to question its safety. According to the American Association of Endodontists, this false claim is based on poorly designed and old research, carried out almost a century ago, long before modern medicine.

Today there is no valid scientific evidence about the link between endodontics and diseases in other parts of the body. It is important that information on the Net is objective and accurate, based on the scientific evidence that is provided by scientific publications that are well put together and prestigious.

For this reason, before trusting any claim coming from the internet or social networks, or if there is any doubt about a dental treatment that is proposed to us, one should visit a dental professional who inspires confidence or consult the official websites of institutions, associations, or professional groups.

### GLOSSARY

- 1. Chemophobia:** as an aversion to chemical products and a preference for natural therapies and products.



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# Teeth for a lifetime? It's in your hands

SECTION CO-ORDINATED BY:

**Olalla Argibay**  
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**THE MOST RECENT SURVEYS** about oral health carried out in our country highlight that about 90% of the population in Spain aged over 35 shows some problem related to the gums. Periodontal diseases are infectious diseases of bacterial origin that affect the tissues that surround the teeth. Their origin is multifactorial and includes genetic, environment, and local factors.

Gingivitis and periodontitis are the two main periodontal diseases. When only the gum is affected, it is known as gingivitis and is a reversible inflammation. In the case of periodontitis, as well as inflammation of the gums there is an irreversible destruction of the tissues that support the tooth (alveolar bone), putting its survival at risk.

At the oral level, the most tangible effect of periodontal diseases and the real end-point of this disease is the loss of teeth, which brings with it the arrival of problems with chewing and in the

**About 90% of the population in Spain aged over 35 presents some kind of problem related to the gums**

aesthetic appearance of the mouth. In addition, these diseases can manifest in different ways with bleeding, halitosis, gingival recession (or gum loss), separation of teeth, dental mobility, abscesses, pain... and can negatively affect quality of life.

**Benefits of periodontal treatment**

One of the main benefits of periodontal treatment at the oral level is that it avoids the loss of teeth; in fact, the available scientific evidence shows that this therapy is fundamental in reducing the rates of dental "mortality".

The main aim of periodontal treatment is the long-term maintenance of natural teeth in a state that is healthy, functional,

The natural teeth that "grow" in the mouth after the first temporary dentition (or milk teeth) are a treasure that should remain with us throughout our lives if we know how to protect them ... with the quality of life and benefits that this entails.

aesthetically acceptable, and free of pain. For this, the priority is to slow the development of this inflammatory disease and control the possible associated risk factors, such as smoking, stress, general diseases such as diabetes, etc.

Data obtained in recent studies shows that patients who receive adequate periodontal treatment lose on average 0.1 teeth per person per year compared with 0.6 teeth per person per year among patients who do not receive treatment. However, these results are obtained and maintained only when the patient receives adequate and regular maintenance therapy.

**Scaling and root planing**

In the treatment of periodontitis, the main objective is to carry out a therapy of disinfection through the removal of the bacterial plaque that forms on the root surface of teeth, below the gum, in the interior of the periodontal pockets that are produced by bone loss.

WORDS  
OF THE  
EXPERTS

**"Periodontal maintenance visits are fundamental for the short- and long-term success of periodontal treatment and for this the collaboration of the patient is essential"**



**Angels Pujol**  
Teacher of the  
master's degree in  
periodontology at  
the International  
University of Catalonia.



### When periodontal disease is more advanced, scaling and root planing alone is normally not enough and surgery is also required

This takes place in distinct stages, depending on the seriousness of the disease and the number of teeth present in the mouth. For this reason, before starting the treatment, a detailed study should be made that evaluates the degree of affection (bone loss, gum loss, dental mobility...) that each tooth presents. This study will help establish a correct diagnosis, the treatment plan to follow, and enable later monitoring of the patient.

The first part of the treatment for plaque removal is known as scaling and root planing, or the basic anti-inflammatory phase. It is carried out through ultrasonic and manual instruments that help remove the

deposits of calculus and plaque formed on the root surface below the gum. The aim of this procedure is to treat the root of the tooth and not the soft tissues (the gums) that surround it. The treatment of this internal part of the gum was a common procedure in the 1970s and received the name "curettage". An article published in the 1980s showed that this did not induce any additional improvement compared with carrying out scaling and root planing and, as a result, this technique stopped being performed.

### Periodontal surgery

From a month and a half after having carried out the basic phase, a revision or reevaluation is performed which analyses the response to the treatment. The treatment to follow will be decided depending on the degree of affection or seriousness of the disease and the evolution of the case.

When the phase of scaling and root planing eliminates the calculus below the

gum, it improves a clinical improvement that is translated into the reduction or disappearance of the periodontal pockets, bleeding, and inflammation. In this case, the patient will move to a periodontal-maintenance stage focused on "maintaining" the results optioned from this active phase of the treatment over the long term.

However, when periodontal disease is more advanced, the basic treatment described above is not normally enough and it is necessary to move to a more advanced treatment, that will consist of carrying out minor surgery on the gums.

The aim of this periodontal surgery is to clean the areas that are difficult to access more deeply, in order to effectively remove the plaque and the accumulated bacteria. In addition, it allows access to the bone to remodel it and, in some cases, regenerate it. At other times, the aim is the complete or partial recovery of the gum that has been lost or to modify an inadequate gum contour. →



**Marta Segarra**  
Teacher of  
Periodontics  
University  
of Valencia.

**"The quality and frequency of professional periodontal maintenance is the key to greater tooth survival"**

## What does periodontal maintenance treatment involve??

VARIOUS PUBLISHED STUDIES show that superficial so-called "mouth cleanings", carried out on an occasional basis, without the required regularity and care, are not enough to stop the advance of periodontal diseases. Because of this, it is necessary to distinguish between this practice and professional maintenance treatment.

In a periodontal maintenance session, as well as cleaning the teeth, a full professional follow-up is performed in which the evolution of the patient will be evaluated with the aim of determining the relevant treatment to maintain the periodontal health re-established after the treatment, trying to prevent the disease from becoming active again.

In each visit, a complete and careful exploration of the whole mouth is carried out, especially of the teeth and gums, to check the current situation with regard to previous periods. Changes in general health or medication that can influence the evolution of the disease are also checked. If any zone shows changes at the clinical level or if the patient refers to any discomfort, the examination should be completed with radiographies and other complementary tests that help to determine the diagnosis.

Those zones in which a greater risk of relapse into periodontal disease are detected must be closely watched and treatment performed there that is considered suitable to prevent any disease progression.

In addition, there should always be an evaluation of the efficacy of the patient's hygiene habits, as these are a fundamental pillar for controlling the disease. These must be adapted to the characteristics and needs of each patient in relation to the changes that are presented in the mouth after treatment, such as the placement of implants or prostheses, or after the appearance of any disease.

The professional will carefully remove the calculus and bacterial plaque ("tartar"), pigmentations and roughness of the teeth, both above and below the gum. If necessary, antiseptics or specific medication will be applied or prescribed.

The objective is that with all this information, the patient has a clear idea of the current state of their mouth and whether any additional treatment is required. In this way, the co-responsibility of patients in the care of their mouths is encouraged, as they are more conscious of the factors that can worsen their situation and provoke the loss of teeth. They will also have basic knowledge about what they can do to improve and take care of their oral health. The patient must adopt a proactive attitude and be an ally in the care of their oral health and not remain a passive subject who goes to the dentist only so "they can clean my mouth". This is the key to success in periodontal treatment and maintenance: being an ally of the professional in the achievement of a maintained and long-lasting oral health.





→ Not performing this surgical approach in those patients who require it is associated with an incomplete disinfection and will not achieve adequate conditioning of the tissues.

This is important for allowing the performance of a suitable and effective daily hygiene routine by the patient, as well as to facilitate the removal of plaque below the gum by the professional during the required periodontal maintenance visits.

The combination of both phases is fundamental for achieving disinfection in the most advanced cases, creating an optimal gingival health that will be able to be maintained over time. On the contrary, not performing a complete treatment leaves zones of the tooth surface untreated, zones that are a risk for a future relapse and progression of the disease.

With all this, periodontal surgery is not a definitive treatment of the disease, if it is not followed by correct oral-hygiene measures, and if the corresponding periodontal maintenance is not completed, this intervention will have been practically useless.

### **Importance of periodontal maintenance**

Maintaining healthy gums after the active treatment requires being very constant with the care, as bacterial aggression on

### **The first part of the treatment to remove plaque is known as scaling and root planing**

the gums is continuous and continues throughout one's life even after having carried out the optimal treatment of periodontal disease. It is thus very important not to forget to perform correct and adequate oral hygiene every day, which must be guided by a professional.

Follow-up and the necessary treatment to prevent bacteria from returning and provoking periodontal destruction is also essential. For this, once the active phase of periodontal treatment is over, a preventive phase begins aimed at the long-term maintenance of the health achieved, avoiding that the disease progresses again.

This phase of periodontal support or maintenance tries to control the bacterial plaque that accumulates below the gum, and it is the essential complement to the oral hygiene that patients themselves must perform every day. The most important aspect of this phase will be to prevent the progression of the disease, which could become active again, and if this happens to detect the relapse as quickly as possible to be able to treat it in the best possible way to reduce the possibility of losing teeth. ■

WORDS  
OF THE  
EXPERTS

**“Periodontal diseases destroy the tissues that support the teeth but with the right treatment these can last many years”**



**Pilar Batalla**  
Associate professor  
of periodontology,  
University of Santiago  
de Compostela.



# Tips so that radiotherapy does not harm your oral health

About 50% of patients with cancer in the head or neck are treated with radiotherapy, a treatment that can have a particularly damaging effect on the health of your mouth. We offer some tips on how to avoid or alleviate these consequences.

## SECTION CO-ORDINATED BY:

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

**RADIOTHERAPY IS BASED** on the use of ionising radiation that produce cellular death by various mechanisms. The response of tissues depends on factors such as the location and oxygenation of the tumour, its sensitivity to radiation, and the total time of administration. It has become a customary treatment for tackling various types of oncological diseases.

Radiation tends to be administered in equal doses daily, so that its effect reaches the maximum possible number of carcinogenic cells and favours tolerance by the rest of the tissues. The unit of measurement is the gray (Gy) and patients treated with curative aims receive doses between 50 and 70 Gy little by little.

### Repercussions in the mouth

Radiotherapy of the head and neck can cause various acute or chronic problems

### Before, during, and after the application of radiotherapy measures can and should be taken to minimize its possible negative effect of oral health

in the oral cavity including: mucositis, changes in the sense of taste, reduction of salivary flow or dry mouth, increase in the incidence of caries, trismus\*, oral infections, alterations in dental development in children, and the later appearance of osteoradionecrosis.

### Mucositis

is an inflammatory reaction of the oral mucosa and oropharynx. It is, without doubt, the most common side-effect in patients who undergo this treatment, with an incidence of 80%. It appears between one and two weeks from the start

of the radiotherapy, it is reversible, and tends to disappear between two and three weeks of ending the treatment. Clinically, one observes reddening, atrophy, and ulceration of the mucosa; it is very painful and can cause difficulties in speaking or swallowing.

**Treatment:** it is recommended to use a mouth rinse of water with salt and sodium bicarbonate. One can also use, in gel or mouthwash forms: amifostine, sucralfate, chlorhexidine, povidone-iodine, *Aloe vera*, hyaluronic acid, bencidamide, topical lidocaine, or systemic analgesics. Avoid tobacco and alcohol. It is recommended to follow a soft diet avoiding irritating foodstuffs (spicy, acid, crunchy, or hard) and to maintain hydration, avoiding hot drinks, as coldness provides a significant sense of relief.







## For periodontal patient:

### Before receiving radiotherapy, one should...

- Consult the radiotherapist to know the current situation and the treatment that will be given to the patient.
- Carry out a detailed clinical history through clinical and radiological exploration. Evaluate the oral state and note the antineoplastic treatment that the patient will receive, its characteristics, radiated areas, the individual and total doses of the radiotherapy that will be received.
- Evaluate the levels of saliva with a quantitative sialometry, if necessary.
- Evaluate the interincisal distance at maximum opening.
- Strengthen oral-health measures: brush three times a day with a toothpaste with a high fluoride content (2,500ppm), use interdental hygiene tools, take impressions for the making of individual cuvettes to apply topical fluoride in gel form for five minutes once per day or for making lead-based intraoral protectors (which are used in treatments of interstitial radiotherapy).  
Treatments that irritate the mucosa must be avoided, such as toothpastes with a high content of sodium lauryl sulphate. Chlorhexidine can be applied in gel every three months.
- Carrying out conservative treatments as necessary: mouth cleaning, scaling, fillings, endodontics, sealing of pits and fissures in children, polishing all sharp or rough margins, retouching removable prostheses so that they do not produce lesions in the mucosa...
- Exodontia or tooth extraction: should be carried out two to three weeks before starting radiotherapy, and earlier in the case of surgical extractions, periodontal or pre-prosthetic surgery, previous infections, or in specific diseases such as diabetes. They must be atraumatic and with primary closure (stitches), trying to regularise the bone ridges in advance.

## Oral considerations during radiotherapy

- Avoid invasive treatments such as extractions.
- Perform the indicated oral-hygiene routine before treatment, preferably with a soft-bristled brush, avoiding mentholated toothpastes (which are less tolerated) and also using antiseptic mouthwashes of chlorhexidine or, alternatively, a saline solution or a solution of sodium bicarbonate, or a mixture of both.
- Soft and anticariogenic diet, avoiding sugary and spicy foods and alcoholic drinks or mouthwashes. Avoid tobacco.
- Remove the prostheses.
- Treatment of the effects that can appear during radiotherapy treatment, such as mucositis, dry mouth, alteration of taste, and candida infection.
- Prevention of trismus with exercise at home to maintain the maximum opening.
- Protection of the salivary glands during radiation with lead protectors.

### → The disorder that affects the sense of taste

Tends to occur through affecting the papillae and the taste buds of the tongue.

It appears two weeks after the start of radiotherapy and tends to occur before mucositis. Its recovery tends to happen after 120 days, if 60Gy has not been exceeded.

**Treatment:** the use of vitamins, zinc, and protein supplements is recommended.

### Dry mouth

Occurs through a lesion of the salivary glands. It appears after two weeks; at first a more viscous saliva is observed and then there is a decrease. It is reversible six to 12 months after completing radiotherapy, if this has not exceeded 70Gy.

**Treatment:** rinsing the mouth frequently with water and moistening mouth rinses is recommended together with the use

of a radioprotector (amifostine). Saliva substitutes can be used: carboxymethyl cellulose, synthetic saliva, and artificial saliva. Stimulants such as tablets/sweets of malic acid, chewing gums, pilocarpine, or bethanechol can also be used.

### Halitosis

Another adverse consequence of radiotherapy at the oral level is halitosis or bad breath. This effect is related to a reduction in salivary flow and the accumulation of bacterial plaque on the surface of the tongue.

**Treatment:** one tries to reduce the number of bacteria that produce bad odour left on the rear underside of the tongue and in the sulcus or periodontal pocket, as well as the volatilization of malodorous products.

Among the antimicrobial agents used in treatment are mouthwashes of chlorhexidine in low concentration

### Mucositis is the most common side-effect associated with radiotherapy, with an incidence of 80%.

(0.05%) for gargling, Cetylpyridinium chloride, and zinc lactate.

### Caries

The increase in the production of caries after radiotherapy is related to various factors, such as dry mouth, the increase of cariogenic bacteria (such as *S.mutans*), alterations in the composition of the saliva, or a reduction in the amount of saliva.

This requires adopting a softer diet, with an increase in carbohydrates, which increases the risk of caries. This type of caries normally affects the cervical faces or the necks of the tooth, incisal borders, and apices.

WORDS  
OF THE  
EXPERTS

**“A septic mouth will lead to a worse evolution of the mucous lesions produced by radiotherapy”**



**Yolanda Jiménez**  
Professor of  
stomatology at  
the University of  
Valencia.

## And after the radiotherapy...

- Full oral check-up to evaluate and treat any chronic complication: every month in the first semester, every three months for the first year, and every six months until three years have passed. It is recommended to carry out a panoramic radiography at six months. The plaque indices and periodontal status will be checked.
- Strengthen oral hygiene, apply fluoridation and chlorhexidine gel every three months.
- Avoid extractions during the first year. Endodontics is the treatment of choice in many cases. If they are unavoidable, extractions must be atraumatic, and the use is indicated of a chlorhexidine mouthwash for two weeks and antibiotic coverage from 48 hours before the extraction until seven to 15 days afterwards.

The use of hyperbaric oxygen is also recommended, as this raises the levels and diffusion of oxygen, increasing the synthesis of collagen, angiogenesis, and bone metabolism (20-30 sessions before extraction and 10 sessions after having performed it).

- Avoid the use of complete or removable prostheses for three to six months and later carry out filling with tissue conditioner.
- Perform oral exercises for trismus.
- Treatment of adverse oral effects that can appear during radiotherapy treatment.
- Early diagnosis of possible relapses.

**Preventive measures and treatment:** follow an anticariogenic diet (avoiding where possible sugary foodstuffs and/or drinks), use toothpaste with 2,500ppm fluoride, topical fluoride daily, chlorhexidine mouth rinses and gel. As treatment, it is essential to carry out fillings/endodontics.

### Infections

During the period of radiotherapy, infections from *Candida albicans* can increase. The reduction of saliva and changes in the oral mucosa can encourage infections by these species.

**Treatment:** under medical prescription, antifungal medications can be used, whether topically (nystatin or miconazole gel) or systemic (in the case of severe infection, fluconazole, ketoconazole, or itraconazole).

## Radiotherapy of the head or neck can cause various complications in the oral cavity

### Trismus

Is defined as the incapacity to open the mouth completely because of a constant and unconscious contraction of the mandibular muscles and tends to appear three to six months after radiotherapy.

**Treatment:** performing oral exercises at home, mechanotherapy, or kinesitherapy.

### Osteoradionecrosis

One of the long-term changes that can appear and which is most serious is osteoradionecrosis. This affects an area of bone that has been exposed to radiation and which remains exposed without any trend towards spontaneous healing.

**Treatment:** in small lesions, conservative therapy with chlorhexidine mouthwashes and antibiotics is recommended; in larger or refractory lesions, one can use the hyperbaric chamber or surgical treatment in hospital.

### Dental development of children

Radiotherapy can also influence the dental development of children. It can cause the absence of teeth or agenesis, development of short and sharp-edged roots, premature apical closure, microdontia, calcification, premature eruption of teeth, hypoplasia in the crown or inhibition of the formation of dentine. The conditions tend to originate with radiation doses above 50Gy. ■



**Jose Manuel Aguirre**  
Professor  
of University  
of the Basque  
Country.

**“All patients who are given oncological radiotherapy must turn up with a healthy oral cavity, maintain good oral hygiene with non-aggressive products, and have a good diet with correct hydration”**

# European Gum Health Day becomes global

## SECTION CO-ORDINATED BY:

**Mónica Muñoz**  
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**GUM HEALTH DAY** formerly European Gum Health Day), which is held on May 12, has become the biggest global initiative to improve the care of gum health as a key factor in maintaining and encouraging good oral and general health.

This time, the main slogan for the campaign is “Healthy gums, beautiful smile”, highlighting the aesthetic impact of periodontal health (accompanying the action with numerous promotional and educational materials).

The various national societies of periodontology that are part of the EFP participate in the initiative, organizing numerous scientific and, above all, outreach activities.

Among the activities already confirmed are free periodontal check-ups, handing out informative leaflets (together with toothbrushes, toothpaste, and other oral-hygiene materials), lectures by periodontal specialists, dissemination in the communications media, and an ambitious campaign on social media.

## Beyond Europe

The scale of this initiative has expanded since its beginnings. This time, not only are societies affiliated to the EFP organizing events, so too are other national societies of periodontology. It is expected to exceed the total of 41 scientific societies that took part in this awareness day in 2018 (29 of the 30 EFP-affiliated societies and 12 from Latin America).

This year will include contributions from the scientific periodontal societies of Georgia, Lithuania, Brazil, Lebanon, and Taiwan. In addition, a more important role will be played by scientific societies that belong to the Ibero-Panamerican Federation of Periodontology (FIPP), with the representation of countries such as the Dominican Republic, Mexico, Panama, Columbia, Venezuela, Chile, Ecuador, Peru, Bolivia, Uruguay, and Argentina.

As Prof. Lior Shapira, co-ordinator of Gum Health Day 2019, highlights, “Gum Health Day is an important initiative of the EFP to promote periodontal health worldwide and our national societies are enthusiastic to contribute to its success.”.

An initiative that emerged in 2014 from the European Federation of Periodontology (EFP) and promoted by the Spanish Society of Periodontology (SEPA) has become a global benchmark in outreach and the promotion of oral-health habits, as well as in raising awareness of the problem of gum diseases.

## Activities in Spain

**IN SPAIN, SEPA HAS PLANNED** various communications actions to contribute to the success of this Gum Health Day. As the main activity, on May 14, it plans to present a report on “Oral health in the pregnant woman”, developed by the joint working group of SEPA and the Spanish Society of Gynaecology and Obstetrics (SEGO). After the presentation, there will be a discussion for health professionals about this topic, aimed mainly at gynaecologists, midwives, dentists, hygienists, dental students, pharmacists, and primary-care doctors. This debate will be transmitted via streaming from the Casa de las Encías (the SEPA Gum Health Centre in Madrid).

Furthermore, within the context of the Congress of Periodontology and Oral Health, which takes place in Valencia from May 29 to June 1, there will be a campaign of free dental check-ups and the provision of information to the public.

Together with this, a promotional video has been prepared and there will be an increase in the dissemination of news about periodontal health within internal channels of communication and on the website [www.cuidatusencias.es](http://www.cuidatusencias.es), as well as on social media.

**GUM  
HEALTH  
DAY**

**12 MAY 2019**

Promoted by the  
European Federation  
of Periodontology

**Healthy gums,  
beautiful smile**



[gumhealthday.efp.org](http://gumhealthday.efp.org)



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# Implant therapy: the patient speaks

Two real cases, of patients who have received implant therapy, reflect the doubts that often exist about this therapeutic approach and the benefits that are obtained.



**Alberto Pablo Bernués**  
Paciente de  
Valencia.

ALBERTO PABLO BERNUÉS visited the periodontist's clinic at the recommendation of his own dentist, after receiving advice because of the presence of inflamed and bleeding gums. *"In my case, bad habits such as smoking and a deficient oral cleaning provoked the appearance of periodontal disease and the loss of various teeth."*

To tackle this problem, a periodontal treatment was started, and it was later decided to opt for implant therapy. *"The periodontists who treated me placed a special emphasis on the correct cleaning of the interdental spaces to prevent or limit possible complications,"* informs Albert, who also recognizes that *"finally quitting smoking and the substantial improvement in oral cleaning has allowed me to have my first implant and a significant improvement of the whole of my mouth."*

He highlights that *"in my case, having quit smoking significantly increased the success of the treatment."*

With his dental implants, Alberto now accepts that he must follow a series of regular care measures. *"Having once more the teeth that were lost is a big enough*

*incentive to follow a correct maintenance treatment; to eat and speak in a natural way is priceless... not to mention the aesthetic benefits."* The positive impact of the treatment even reaches general health, as *"moving from having inflamed gums, a little bleeding, pain, and the lack of teeth to not having these problems is very important and your general health improves in a notable way."*

However, Alberto admits that before having his dental implants his knowledge about oral care was *"scant, almost non-existent"* and he considers that *"if from childhood defects in cleaning had been corrected, many dental diseases would be minimized or constrained."*

In general, Alberto is content with the oral care he has received, *"although it is slow work, it achieves some very satisfactory results. I also have to thank their insistence on stopping smoking."*



**Antonio Torres**  
Paciente de  
Ciudad Real.

## Another success

For Antonio Torres, attending the periodontist's clinic was almost an obligation, as a result of non-existent hygiene habits and smoking.

*"I had never taken care of my mouth. I started to look after myself once the doctor explained to me how my teeth and gums were,"* he says.

Before placing implants, *"the doctor showed me how to look after my mouth and made me demonstrate that I was motivated to do so and that I could do it: without this she would not have given me the implants,"* this patient recognizes, and he now understands that *"this is vital and essential for the long-term maintenance of my implants."* Nonetheless, Antonio remembers that *"I was thinking that removing the teeth and giving me implants would put an end to all my problems and that I would not need any care or maintenance treatment."*

His life has changed, as have his ideas about the importance of fulfilling routine hygiene and going for regular check-ups with his dentist. *"I am aware that good daily hygiene and maintenance visits are necessary to keep the gums healthy and thereby maintain the health of my teeth and implants."* On top of that, Antonio declares that *"now I know that a mouth with periodontal infections and caries can lead to serious health problems."*

The end-result, in his opinion, is satisfactory. *"I am very content. Despite my reservations, they knew how to transmit the importance of the treatment and of looking after my mouth, and they showed me how to do it,"* concludes Antonio.

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# ¿EL SECRETO DE UNA BOCA MÁS SANA?

## ENCÍAS REVITALIZADAS Y ESMALTE FUERTE



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

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

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

### AYUDA A MANTENER TU BOCA Y TU CUERPO SANO



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



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



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

\*Testado en laboratorio sobre esmalte debilitado.

# Rheumatoid arthritis and periodontitis: a relationship to talk about

SECTION CO-ORDINATED BY:

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**Recent research has shown the existence of a greater prevalence of periodontitis in patients with rheumatoid arthritis (RA), as well as a direct relationship between the seriousness of the periodontal disease (PD) and the severity of the arthritis.**

Rheumatoid arthritis and periodontitis are two chronic inflammatory diseases characterized by the excessive degrading of tissues rich in collagen: periodontal ligament and alveolar bone in the case of PD and cartilage and other periarticular tissues in the case of RA. In both diseases, the same enzymes are typically implicated in the process of destruction: the metalloproteinases. There are many similarities between them in terms of causal factors, more

and more studies relate them to each other, and in recent years understanding of this interrelationship has advanced considerably.

Inflammation plays key role both in the origin and the progression of arthritis, as is the case with periodontitis. In both diseases there is an imbalance between the proinflammatory and the anti-inflammatory mediators towards aggressions, which provokes a hyperinflammatory response in the patient.

Rheumatoid arthritis is an autoimmune disease that affects 1% of the population and which is characterized by recurrent cycles of destructive disease of the cartilage and the articular bone that, if it is not treated, leads to the loss of mobility and function.

## Growing evidence

ONE OF THE EARLIER and most used markers in the diagnosis of RA is the anti-citrullinated protein antibody (ACPA). This is an antibody directed against one or more proteins of the individual. It has been seen that ACPA-positive patients have more probability of suffering periodontal disease than ACPA-negative ones. An association has also been observed between the levels of ACPA and antibodies for P. gingivalis, one of the characteristic pathogens of periodontal disease.

## INFLAMMATION PLAYS AN IMPORTANT ROLE BOTH IN THE ORIGIN AND PROGRESSION OF ARTHRITIS, AS IS THE CASE WITH PERIODONTITIS

Similarly, it has been demonstrated that patients with periodontitis have more probability of being positive for the rheumatoid factor and can have high levels of ACPA blood markers.

These results have been confirmed more recently by research carried out at the rheumatology service of the Hospital of the Canary Islands.

Intervention studies have provided evidence that the treatment of periodontitis in people with RA improves clinical and biological markers in these patients, for which reason periodontal diagnosis and – where necessary – treatment of periodontitis would be important weapons to tackle rheumatoid arthritis.



# ¿Oil pulling for periodontal care? Doubts, certainties, and precautions



**In recent years, it has become common to hear questions from patients in dental consultations almost every day about gargling with natural oils or even whether it is good to rub the gums with tea-tree oil or coconut oil.**

THE NUMBER OF PEOPLE who demand the use of natural treatments is growing exponentially. More and more properties are being attributed to coconut oil. But, what is all this based on? What truth is there in these procedures?

People most involved in the use of natural products will have heard of “oil pulling” with sesame oil. This is an ancient procedure, coming from Indian Ayurvedic techniques, which consists of swishing sesame oil in the mouth for 20 minutes. Gargling must continue until the viscosity of the oil changes and it becomes milky. Traditionally, it was believed that this mouthwash removed bacteria from the mouth and had a positive influence on preventing the colonization of bacteria in other parts of the organism.

For many years, it has been considered a pseudoscience and that its hypothetical effect was nothing

more than the placebo effect. However, in recent years studies have observed that its favourable results, in terms of preventing the accumulation of biofilm and gingivitis, are based on a saponification of the fats in the oil, which provokes the formation of bicarbonate ions that are effective cleansing agents.

The original procedure was with sesame oil, but there is a trend to use coconut oil because of its better taste and its high antioxidant content. Even so, it must not be swallowed or breathed in accidentally, to avoid the entrance of toxins along with the oil. After 20 minutes, the oil must be spat out, the mouth rinsed profoundly, and the teeth cleaned carefully, together with the use of dental floss or interdental brushes.

It remains a natural mouthwash, which could be equivalent, according to certain studies, to a mouthwash of a chemical variety but without its

side-effects (at least those that are well known), but with the inconvenience that this procedure requires a lot of time to be performed in a correct way (which makes compliance complicated).

In any case, it is an additional treatment (adjuvant) to mechanical cleaning with toothbrush and dental floss.

# Propolis and health of the gums



The high levels of periodontal disease at the global level is a very significant public-health problem today, which shows the need to improve the oral hygiene of the whole population. In addition, in the care of the mouth there are zones that are particularly complicated in terms of hygiene or which require the use of different hygiene measures.

As a preventive method in addition to tooth-brushing, it is often recommended to use dental floss and/or interdental brushes and toothpastes and/or mouthwashes with chemical substances that inhibit dental plaque, with the aim of preventing gingivitis.

The problem with these chemical products is that their long-term use (as is the case, for example, with chlorhexidine) can provoke various adverse effects. This has motivated interest in various natural products that have been used for centuries as antibacterial substances, seeking to find a similar efficacy but avoiding the collateral effects of the chemical products.

## Propolis is one of the most studied of natural substances

Propolis is one of the most studied natural substances. It is the name of a resinous and adhesive material produced by bees and collected from the secretions of plants, enriched with their saliva and used by them in the construction of hives. It is the main weapon of bees against bacteria, viruses, and other parasites.

The ancient Egyptians used it to embalm their dead and the ancient Greeks to treat abscesses. It seems that its bacterial activity depends on the synergy between its various components, among which the important ones include flavonoids, which are powerful antioxidants.

In terms of oral health, it has been introduced as an active ingredient in mouthwashes, toothpastes, and even chewing gums, with the aim of preventing the accumulation of bacterial plaque and, as a consequence, the appearance of gingivitis. There are few scientific studies of the subject.

However, a clinical trial published in 2018, in which the test group used a gel of propolis as an adjunct to anti-inflammatory periodontal treatment (scaling and root planing), obtained the same results as a control group which received the application of chlorhexidine gel together with scaling and root planing. In addition, the use of propolis gel seems to reduce oxidative stress significantly.

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# Take care of your gums

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

Two times a day



Brush your gums and teeth with toothpaste.



Use dental floss or interdental brush.



Reinforce your hygiene with mouthwash.

Every 3 months



Change your tooth brush.



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

## WHAT ARE GUM DISEASES?

### GINGIVITIS

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

### PERIODONTITIS

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

## WARNING SIGNS

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

## RISK FACTORS

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