Information sheet : Gum disease (Gingivitis and Periodontitis)

(This information sheet contains generic information and must be read in conjunction with your personalised treatment plan for specific advice)

Gum disease is an infection caused by bacteria that live naturally in your mouth. The bacteria collect on the teeth daily in a highly organised and sticky layer (a biofilm) which we know as **plaque**.

The bacteria grow from the crevice where the tooth meets the gum line, 360 degrees around every tooth. Therefore, the important area to keep clean is in the gutter around each tooth where it meets the gum, including the area between the teeth.

Early gum disease - Gingivitis

Plaque bacteria produce toxins. The direct effect of these toxins on the gums plus your immune system's response to the bacteria result in gum inflammation. This inflammation is visible as swelling, redness and bleeding on contact, especially when you brush your teeth. This condition is known as ***gingivitis***.

Bleeding gums are NOT normal. It indicates that bacteria have been left in contact with the gums for a long period and are producing chemicals that are damaging the tissues. When plaque is left undisturbed for a few days, the minerals in your saliva cause these deposits to harden into calculus (tartar) which can only be removed professionally. Calculus is always covered in plaque and is a rough surface against which more bacteria can adhere.

Figure 1 - Gingivitis and calculus before

Figure 2 - Gingivitis reduced after cleaning

Treatment is easy!

Gingivitis is entirely reversible by thorough removal of the bacteria (plaque). This can only be achieved with thorough twice daily brushing, flossing and use of special cleaning aids to clean between the teeth which we will provide for you. Where calculus has developed, professional cleaning is required with our dental hygienist / therapist or periodontist.

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T: 020 7323 3041 | F: 020 7637 4621 | E: info@lciad.co.uk | W: www.lciad.co.uk

Often patients may refrain from brushing because gums bleed. In fact, it is these bleeding areas that need to be brushed more thoroughly to remove the bacteria. The inflammation and the bleeding will then diminish and stop in a matter of days.

Gingivitis in pregnancy

The gums of patients who are pregnant may have exuberant reactions to dental plaque. This can lead to swollen gums that bleed very easily and are sore. This is known as **pregnancy gingivitis**. Swollen gums harbour more bacteria as the crevice becomes deeper. Cleaning is even more important but even more difficult. Expectant mothers who experience this should attend to see the dental hygienist regularly throughout their pregnancy to reduce the risk of this becoming troublesome.

Problems with allowing plaque accumulation to continue include:

- Unsightly, unhealthy bleeding gums
- Increased bad breath
- Increased risk of decay at the gum line and between the teeth, especially around previous dental work. Plaque also leads to decay.
- Increased risk of advancing to destructive gum disease (periodontitis) and therefore risk of future gum recession and tooth loss.

Established and advanced gum disease – Periodontitis or periodontal disease

When the inflammation of gingivitis persists for a long period, in patients who are susceptible, the gum will start to detach from the root surface and the bone support of the tooth will start to recede under the gum.

Instead of a crevice, a deeper **pocket** is formed under the visible gum line. The tooth has started to lose support. This is known as ***periodontitis***. The gum separates from the tooth surface. Exposure of the root surface following this gum separation and pocket formation then allows the bacteria to migrate deeper under the gum and adhere to the root surface. The toxic chemicals are absorbed into the root surface, thereby contaminating it.

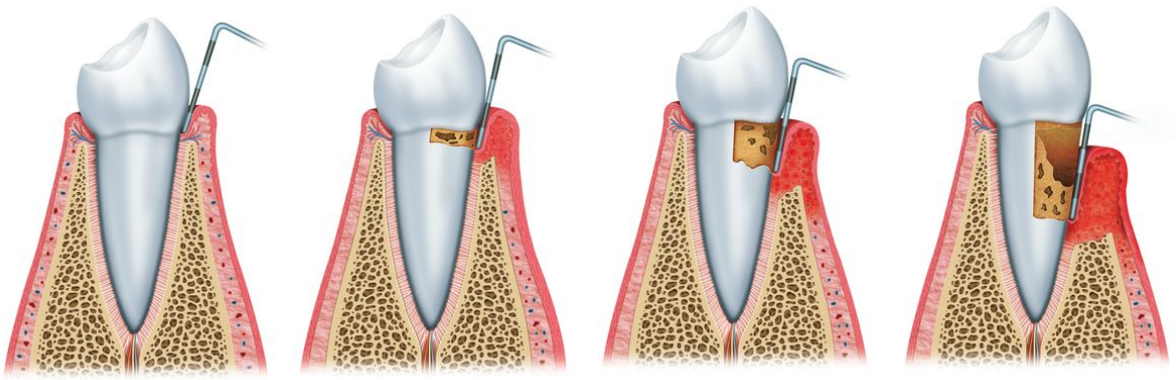

Figure 3 - Gingivitis, early, moderate and advanced periodontitis

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The bacteria secrete chemicals that are toxic to the gum tissues and produce unpleasant-smelling chemicals (known as **VSC's** or **volatile sulphur compounds**). This also leads to **halitosis** (bad breath) in patients with periodontal disease.

The normal depth of a gum crevice around a tooth is 0-3mm. Pockets of 4mm and above are regarded as being impossible to keep adequately clean by normal home-care. It is within these deep pockets that bacteria then proliferate as plaque and continue the destructive process. This gradually makes the pockets deeper, which in turn fill with an ever-greater volume of plaque bacteria. The disease will continue, often in bursts of activity especially when you are feeling run down or unwell.

Periodontitis will not stop or reverse without treatment.

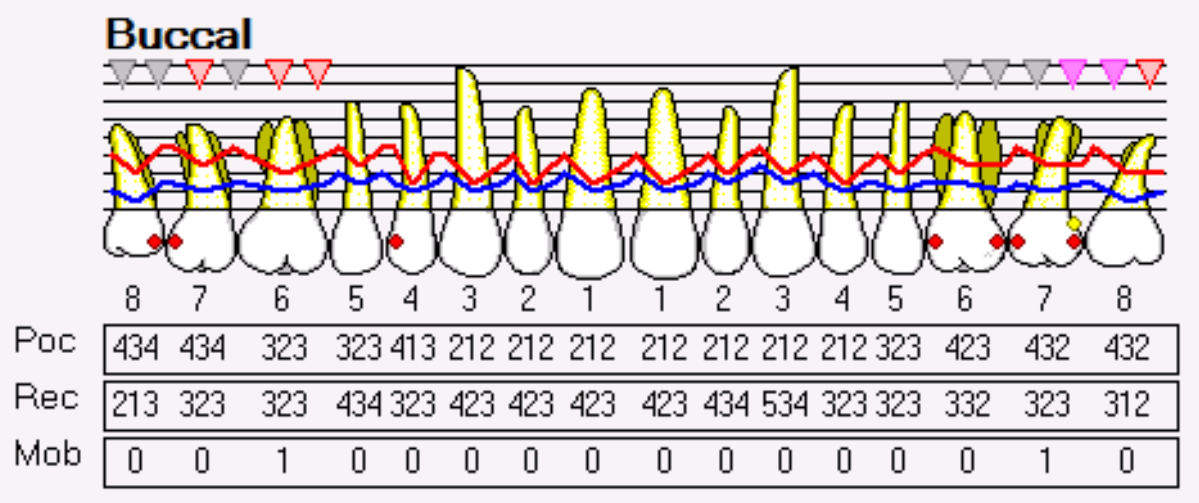
Periodontal disease causes gradual loss of bone from around the teeth by infection. If unchecked, the teeth may start to become loose or to gradually drift from their positions under the influence of chewing forces.

The bone loss that is seen is not a result of bone infection but is a slow-motion attempt by the bone to run away from the inflammation site.

Diagnosis and monitoring

A map of your gum condition called a 6 point pocket chart (6PPC) will be carried out periodically during your care at LCIAD.

We will record the pocket depth (Poc), the degree of recession (Rec) and tooth mobility (Mob) and the presence of bleeding (red dot) or pus (yellow dot). We also record whether the root division areas under the gum have been exposed by disease (triangles) in patients with periodontitis. We will also take x-rays to monitor bone support around the teeth. This will be recorded and act as a baseline for your initial treatment and as a reference point for future maintenance.



Even sites that may not initially look inflamed may have deep pocketing as can be seen below. The pockets read 8mm and 10mm respectively even though the gum superficially may look healthy.

Results of treatment

Improvements are immediately visible after initial treatment with reduced pocket depths, less bleeding, less mobility and root division exposure due to reduction in inflammation.

The radiographs below show where initial treatment has been successful. Here, bone has spontaneously regenerated after treatment because inflammation has been controlled. Bone that had previously disappeared as a result of inflammation has regenerated in the areas indicated by the arrows.

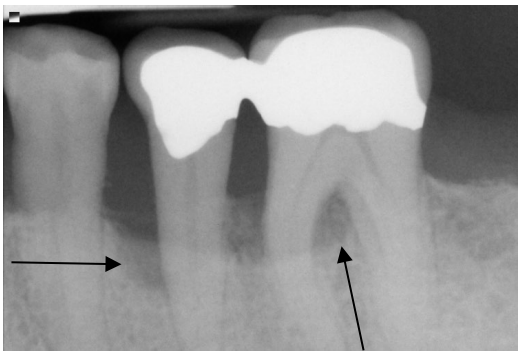


Figure 4 - Before treatment. Note bone loss

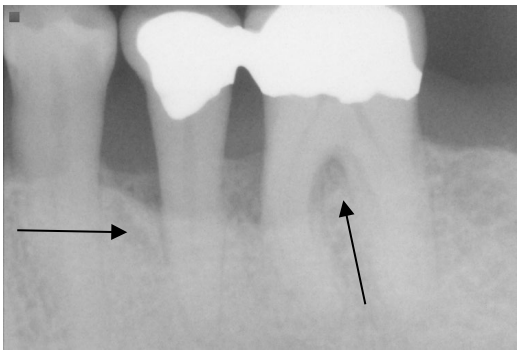


Figure 5 - Bone regeneration after initial therapy

Prevention and treatment

One cannot get rid of the bacteria in one's mouth completely, since their function is protective, like skin or gut bacteria.

But, for a variety of reasons, some people are susceptible to gum damage by these bacteria. The reasons are partly due to bacterial types (which become more damaging as the disease advances), partly due to your immune and genetic makeup (different people react differently to plaque and the same person may react

differently at different times) and partly due to local factors such as cleaning ability, tooth and gum anatomy and the presence and quality of existing dental work.

Deeper pockets allow an environment to develop that favours growth of more damaging types of bacteria. The more pocket volume you have the greater the bulk and the virulence of the types of bacteria and the greater the damage that is done.

- A patient with 28 teeth and an average of 6mm pocket depth in each of 6 sites around each tooth site has a surface area of gum inside the pockets that is inflamed and covered in bacteria equivalent roughly to the size of one's palm. Imagine a sore this size on your skin which is covered in bacteria. This is what is happening in your mouth though it appears hidden. Bacteria constantly enter the bloodstream from these sites.

There is also now good evidence that:

- Especially in men, bacteria from these pockets circulate around the body and cause damage to the lining of blood vessels. This in turn may predispose to earlier coronary artery disease.
- In women, periodontal disease in pregnancy is linked to lower birth weight babies.

Bacterial plaque is the cause of both gingivitis and periodontitis.

However, the body's response to the volume of plaque is a critical factor in whether the disease advances. Some people barely ever brush their teeth, yet disease does not advance even after many years of neglect. Others may have immaculate oral hygiene and are meticulous with their cleaning, yet disease still seems to advance. Most of the population sit somewhere on the spectrum in between. However, there is no doubt that a reduction in plaque volume and improvement in cleaning will lead to a marked improvement in gum health and breath odour.

Furthermore, regular professional hygiene care will significantly prolong the life of natural teeth in patients susceptible to gum disease. There is a very clear correlation between the frequency of professional dental hygiene maintenance and the length of time that teeth affected by advanced gum disease can be maintained.

Systemic and other factors

Occasionally, systemic conditions may be contributing to the problem by damping down your natural immune response to these bacteria.

The most common by far is diabetes, which can run in families. In diabetes, the white blood cells of your immune system that normally keep your oral bacteria at bay behave more sluggishly. Diabetes and periodontal disease are intricately linked, with one affecting the severity of the other, so if you do have a tendency, it is best to discover it or rule it out or control it at an early stage.

We normally advise patients presenting with advanced disease to arrange an up-to-date diabetes test with your GP as soon as practicable.

Smoking is another highly significant risk factor. Smokers consistently have worse gum disease than non-smokers across a population. They are more likely to have more rapidly advancing disease, respond less well to treatment and tend to lose more teeth than non-smokers.

Our advice as healthcare professionals is always for you to stop smoking completely. We can assist with advice for smoking cessation or refer you to third part help via your NHS GP by telephoning **0300 123 1044** or visiting: https://www.nhs.uk/live-well/quit-smoking/nhs-stop-smoking-services-help-you-quit/ or private smoking cessation programmes such as Allen Carr's Easyway stop smoking method which is known for its high success rate: https://www.allencarr.com/easyway-stop-smoking/ .

Objectives of treatment

The overall objectives for treatment are:

- to remove adherent bacteria from all tooth surfaces within the pockets
- to maintain consistently low plaque levels and ensure your home cleaning is effective
- to allow natural healing of the gums and gum reattachment back onto a clean root surface in a clean environment where plaque is not allowed to accumulate.
- to keep your natural teeth as far as possible unless the expectation for recovery is unrealistic or trying to maintain a diseased tooth risks further damage to your tissues.

1. To eliminate as much of the pocketing as possible.

Periodontal treatment involves physically cleaning all exposed root surfaces under the gum line under local anaesthetic for your comfort. This will involve removal of all deposits of calculus (tartar) and also smoothing and polishing or even replacing any dental work that prevents good oral hygiene access.

We would normally advise this deep cleaning is carried out in one day (known as **full mouth disinfection**) to reduce the risk of re-contamination of cleaned sites. This procedure will remove most of the toxins and allow a degree of healing. Occasionally some teeth may simply be affected beyond reasonable hope of saving. If the bone loss is very advanced and we may advise that these teeth are removed early to prevent more bone damage.

We will sometimes give you one or two types of antibiotics to take starting just before treatment and for 7 or sometimes up to 14 days afterwards. These will help to keep bacterial numbers under the gum reduced during the healing phase and be in your system from the start of treatment when bacterial numbers in the bloodstream increase during and immediately after cleaning.

We would normally prescribed Amoxycillin 500mg (or Clindamycin 150mg) and Metronidazole 400mg 8 hourly, starting on the morning of your visit. This regimen is very successful at reducing bacterial numbers during healing but will have certain side effects. Primarily, it may give you a tummy upset due to disrupting gut bacteria. We would recommend taking "friendly bacteria" supplements containing Lactobacillus and Acidophilus bacteria (available in most bio-yoghurts) to help avoid this. Health food shops will sell gut bacterial replenishment tablets which can be taken. Please do not drink alcohol during your course of antibiotics, since there is a specific reaction of Metronidazole with alcohol that may make you feel ill.

2. **To keep and restore as much of the bone lost as possible.**

Removing bacterial plaque load from the tooth and root surfaces will help to keep bone from being lost further. In some areas, there may even be some spontaneous bone regeneration as a direct result of the body's own healing process as seen in the x-rays above.

However, in areas where there has been extensive bone loss, spontaneous regeneration will be limited. There are surgical methods for building up new bone for improving the support of the affected teeth and eliminating persistent deep or irregular pockets. We will go over these with you in more detail as required following this initial cleaning phase.

3. **To commence a maintenance programme.**

This is as important as the initial treatment itself. Your susceptibility to gum disease is unlikely to change, so daily home cleaning needs to be of a very high standard to enable control of the disease in the future. The importance of very regular (ideally 6-8 weekly) maintenance visits with our hygienist / therapist once the initial cleaning has been completed cannot be overstressed.

Studies over decades have repeatedly and consistently confirmed that the long-term success of periodontal treatment is related directly to the frequency and quality of maintenance visits as well as the quality of initial therapy. The response of the tissues and the individual teeth will allow us then to make better-informed decisions regarding long-term care and maintenance.

What to expect after treatment?

Following cleaning, the gums will be somewhat sore for a day or two. The level of discomfort is usually not so great as to stop you from going on about your daily business and we will provide anti-inflammatory medication after your treatment for controlling any discomfort.

There will be some gum recession over the next few weeks as your inflamed tissues heal. The gums shrink back slightly from their current positions. This is not further loss of gum but merely shrinkage of inflamed tissues to healthy levels.

Unfortunately, visible exposure of the root due to recession of the gum after treatment is an unavoidable consequence of periodontal disease and its treatment. This is alluded to in a famous statement that patients with periodontal disease have the choice of "longer teeth or teeth no longer". However, despite this recession, healthy teeth with reduced bone support can remain perfectly functional if the disease process is halted and controlled and the pocket depths are reduced.

The sensitivity of the teeth to temperature will also temporarily increase in most cases, though this is transient and will resolve of its own accord over a week or two.

It may be difficult for you to clean properly for a few days if the gums are sore, but you will be provided with an antiseptic mouthwash (**Corsodyl or Curasept**) which both contain **chlorhexidine gluconate** as their active ingredient.

Chlorhexidine gluconate is a very effective substance at preventing new bacterial growth. Corsodyl or Curasept are used commonly as a "chemical toothbrush" to control plaque levels during healing. They can be used for long periods but have the tendency to stain teeth so most patients only use them for a week or two until they are able to thoroughly clean their teeth normally. Curasept tends to stain teeth less than Corsodyl.

However, neither Corsodyl nor Curasept removes established plaque adherent to the teeth and is not a treatment in itself for gum disease as the TV adverts may suggest.

Long term outlook

Whilst much of gum disease can be successfully treated and controlled with the above procedures, further intervention is required in areas that prove resistant to the initial treatment. This may involve simply repeating the deep cleaning procedure in selected sites a second time.

Alternatively, surgical procedures to regenerate bone and gum can be used that will be targeted at specific sites and these will be discussed with you when your initial response to the above therapy is assessed a few months after treatment.

Lifelong care and prevention.

There is no doubt that patients susceptible to gum disease require lifelong hygiene maintenance to ensure disease remains controlled. Targeted hygienist visits aver 6-12 weeks are routine. This is a small investment to keep teeth and bone that would otherwise be lost. Replacement of teeth with dental implants or bridges is substantially more costly than maintaining your own teeth with regular targeted hygienist visits with a hygienist that is familiar with your mouth and response to treatment over time.

Teeth lost through gum disease are very challenging to replace with dental implants due to the concurrent loss of bone. Dental implant treatment in such patients is compromised by sparse availability of bone which may need to be augmented by separate surgical procedures.

Even once carried out, implants in patients who have lost teeth through periodontitis are also susceptible to the same type of diseases called **peri-implant mucositis** (equivalent to gingivitis) and **peri-implantitis** (equivalent to periodontitis) where bone is lost from around implants.

Therefore, targeted maintenance and immaculate levels of oral hygiene must be maintained for long term stability of results.

LCIAD is a centre with an established specialist periodontal expertise to assist you at all stages of your treatment and maintenance as well as replacing teeth that cannot be saved due to advanced disease.

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