# DENTAL UPDATE

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## GUM DISEASE & HOW TO FIX IT

*More people lose teeth through gum disease than tooth decay. The best way to treat it is early on.*

### What is gum disease?

The most common form is gingivitis with the edges of the gums looking red and puffy. Occasionally they will be tender with brushing and even bleed too easily. Gingivitis is actually the most common disease in the world.

### If gingivitis is so common, why is it a problem?

A more severe, advanced form is periodontal disease - what our grand-parents called *pyorrhoea*. If left untreated, gingivitis progresses to this 'periodontitis'. It occurs when the gums lose their attachment and subtly pull away from the neck of the roots, creating pockets.

A vicious cycle sets up with plaque collecting in the pockets, away from view. Eventually the bone supporting the teeth shrinks back and they become wobbly.

### What causes gum disease?

Overwhelmingly the cause is simply plaque, the sticky buildup we usually notice around our teeth a few hours after eating.

It is full of bacteria and these bugs not only produce acids that can cause decay, they also create poisons, or toxins, that damage the gums by attacking their proteins. If left in place long enough, plaque will allow bacteria to actually enter and infect the gums.

**(Continued Page 2...)**

## ELEPHANT STAMP

One of the clinic's more, shall we say, *grown-up* patients presented for a routine checkup the other day.

Her teeth were mature but healthy and her oral hygiene so good that absolutely nothing had to be done.

As she was leaving I explained that her cleaning was virtually perfect.

She asked 'Do I get a star?'

*No* I replied, *You get an ELEPHANT STAMP!*

At this she looked up rather slyly and enquired 'Where?'

There is some information that should forever remain confidential...

## CONTROVERSY

The Financial Review is not the sort of newspaper one would expect to explore oral hygiene but recently it published an article entitled The Great Toothbrush Conspiracy. Its author wrote 'Why does your toothbrush look like a sports shoe? What exactly is the point?'

He suggested the variety of different styles were simply to boost sales and the special features little more than grimmicks.

One of the specialists interviewed commented 'Forget ergonomic grips and multi-layered, coloured bristles. Nothing quite does the trick like a traditional broom-like brush with an even layer of soft bristles... The myriad of designs consumers are confronted with at the supermarket are little more than marketing exercises. They are just fashion.'

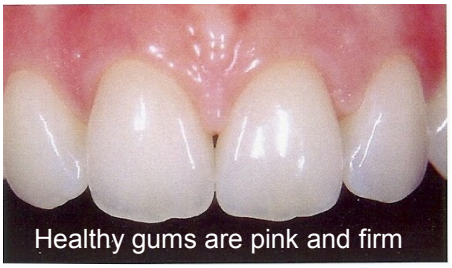
That is basically the same as I have been arguing for years.

## GUM DISEASE & HOW TO FIX IT (Continued)

### So how can it be treated?

Gum disease needs to be treated as a team effort, between the dentist and patient. The role of the dentist is usually to remove the hard tartar, or *calculus*, that often clings to the roots and is so difficult to budge with a toothbrush. This calculus is really dried out plaque, together with calcium that precipitates from the saliva. It effectively changes the contours of the teeth, so they lose their streamlining and trap even more plaque.

The role of the patient is simply to clean more efficiently, especially around the edges of the gums. This sounds straightforward but it is often easy in theory and difficult in practice.


Healthy gums are pink and firm

### But most people already toothbrush each day.

Most people do not try to brush the edges of the gums. The junction of the tooth root and gum is the ideal spot for food and bugs to collect. As children, our parents and dentists used to urge us to brush our teeth, but the gums were usually not mentioned. It is the most important area to brush because it is where plaque primarily develops.

### But gums hurt and bleed when they are brushed!

This is analogous to a get-fit program. If a person is terribly unfit and starts exercising, their condition will worsen before it gets better. The trick is to preserve and not be discouraged.

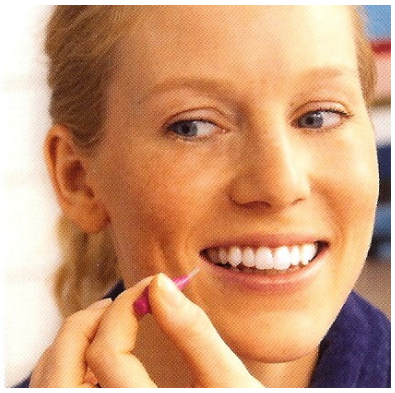
If gums are brushed they will become a little tender for a few days but will improve dramatically within a week. Use a soft brush, close the jaws somewhat and brush aggressively in circles.

### So should the gums be brushed separately?

No, not really. When brushing the inner and outer surfaces of the teeth (the sides) simply enlarge the brushing stroke to *include* the gums. The teeth will actually end up cleaner than ever before.

### What about flossing?

Flossing can only help, even if it is just between the lower front teeth where plaque and calculus build up the most.



When gum disease is well established, with gaps between the back teeth opening up, flossing is probably less effective than using an interdental brush (like a bottle brush) to clean between the spaces. A good brand is a **TePe Brush (pink)**.

### Do mouthwashes help?

I was wondering when you would ask that question. Mouthwashes are not nearly as effective as their advertising suggests. No matter how strong they may be, bugs will quickly regrow if there is nutrient food debris available. Mouthwashes can never be more than an adjunct to better brushing.

Chlorhexidene rinses are the strongest and the best is **Curasept Mouthwash**. Unlike other brands it does *not* stain the teeth but it should be used in conjunction with **Curasept Toothpaste**, since regular toothpastes will inactivate the chlorhexidene.

Curasept is unavailable in many pharmacies but it is sold locally.

### Is it just as simple as that?

There *are* other factors. Brushing sideways will traumatise the gums and cause recession. One should brush hard, but in circles, not sideways.

Too many extractions will lead to bone loss around neighbouring teeth and, in turn, require them to overwork during eating. This extra biting load can over-stress their supporting gum and bone. (Avoid extractions!)

And some people do an excellent job of cleaning but, unfortunately, are especially sensitive to any minor plaque that is overlooked.

In most cases, though, the answer is simply better cleaning. In case I did not mention it earlier **BRUSH THE GUMS!**

## GUMS & HEALTH

Advanced gum disease has been linked to a number of general health disorders including diabetes, arthritis, cardiovascular disease and low birthweight babies.

Of course, a statistical link does not prove a cause-and-effect relationship, but for heart disease, the connection with gum infection is virtually proven.

Bacteria from the gums have been identified building up in arterial walls and even invading the cells of coronary vessels, leading to inflammation and swelling around the heart.

Their toxins interact with platelets and the body responds by increasing the level of white cells and clot forming fibrinogen in the blood stream.

The result is a higher incidence of atherosclerosis and thrombosis.

## RADIO WAVES

PT Barnum once said that any publicity is good publicity.

We did some work recently for 3MP radio personality Mark Irvine. When he left the clinic he was rather numb, but not only that, he was still numb when he presented his program a couple of hours later.

Just in case listeners thought his word slurring and mumbling was for all the wrong reasons, Mark explained over the air where he had been that morning and exactly who was responsible.

Word quickly spread through the neighbourhood.

Mark, I really appreciate the notoriety but next time can you please remember to give the address and contact details?

## THE PIG

***The following might well serve as a salutary lesson for those of us who enjoy the occasional shiraz.***

T'was an evening in November
As I very well remember,
I was walking down the street in drunken pride.
But my knees were all aflutter
So I fell down in the gutter
And a pig came by and lay down by my side.

Yes I lay there in the gutter
Thinking thoughts I could not utter
When a lady walking by did softly say
'You can tell a man who boozes
By the company he chooses.'
So the pig got up and slowly walked away.

*Anon*

## CARBON DATING

Every now and again archaeologists discover artefacts from primitive civilizations or even remains from early humans. Then carbon dating somehow puts an age on these finds. This type of insight is amazing but have you ever wondered how the technique actually works?

Scientists tell us it depends on measuring the sample's level of Carbon$^{14}$. C$^{14}$ is a rare isotope variation of the usual Carbon$^{12}$, having two more neutrons in its nucleus. It is radioactively unstable and breaks down to regular carbon after a half life of about 6000 years. But how is this relevant to its presence in the clay pottery or the bone specimens? After all, just about all the elements here on earth are older than the solar system!

It turns out most Carbon$^{14}$ is created in the atmosphere when cosmic rays strike atoms of nitrogen, knocking a proton out of the nucleus to produce carbon and shunting in an extra neutron. The isotope quickly finds its way into the oceans and soil and is taken up in the food chain and surrounds.

**The Dead Sea Scrolls are dated at 2000 years old.**

So when, for instance, the papyrus in the Dead Sea Scrolls is analysed, scientists are able to measure the amount of remaining C$^{14}$ and determine when the original plants grew and were converted into writing paper.

Carbon dating is useful back to approximately 60,000 years since, after longer than that time, the level of isotope has dropped too low. Dating the fossils of dinosaurs is therefore more difficult and depends on estimates from the adjacent rock. Of course another way to put a date on an old fossil is to check his musical tastes. If he listens to Bob Dylan one can be sure he is an aging baby boomer and grew up in the late 60s.

## STAFF NEWS

Our nurse Michelle recently gave notice to travel overseas and catch up with family in America and Austria. She had been with us for four years and we are sorry to see her go.

Happily our new assistant, Jan, is learning quickly and seems to be making an impression with the clientele. Last week a very apprehensive patient was relieved to discover her treatment was not as unpleasant as anticipated and, on leaving, she turned back through the surgery door and yelled to the back room 'Very – happy – JAN!'

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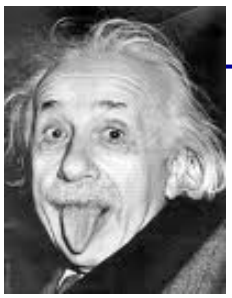
Facebook on the internet often gets a bad rap with stories of cyber bullying and violation of privacy etc. On the other hand it can have practical application. Our nurse Lisa found a wallet on the street recently. The identification details were scant but the surname was unusual so Lisa traced the owner through Facebook. How is that for ingenuity?



# NEW IDEAS

When Einstein published his famous paper on Relativity over a century ago the immediate response was – almost nothing! Hardly anyone read it. Sometimes new ideas take a while to catch on.

In dentistry the design of fillings was established back in Einstein's time and the major principle was - always drill out the decay! Recently, though, researchers have shown there are smarter ways of treating cavities than simply drilling.

So have these advances caught on? Afraid not! In dentistry some new ideas can take a *very* long time to catch on.

If you think about it, decay is really a sort of tooth infection, with germs burrowing into the tooth. If a foot develops an infection it requires treatment but not necessarily amputation. Infected dentine is likewise a problem but perhaps not all of it needs to be drilled away.

We have known for a while that surface decay often reverses. It is common to see brown spots on enamel, suggesting it has initially softened but then changed its mind, usually because diet and cleaning improved and mineral has flowed back into the surface. These areas of *arrested decay* are actually tougher and harder than the original enamel.

Traditionally dentists believed deep decay only worsened and they drilled even till the nerve became damaged and the tooth weakened!

Lately, the need for such deep drilling has been questioned. Experiments have shown that if a cavity is *sealed* with gluey cement and bacteria are deprived of nutrient, the decay simply dies off.

Glass ionomer cements make fabulous under-coats at the base of fillings. They block plaque nutrients out of the cavity, raise the pH to combat bacteria and release mineral to reharden dentine.

In the meantime, the pulp at the centre of the tooth joins in by releasing its own chemicals to further attack the germs and repair damage. All teeth really need is a decent, fighting chance against decay.

# VIVA LA REVOLUTION

A few Australian researchers are leading the revolution. They have suggested a sensible approach is to firstly remove any bad, rubbery decay and then kill off remaining bacteria with a silver fluoride solution before sealing with cement.

Last year I published a piece in the ADA Bulletin entitled ***The Case for Minimal Intervention***, summarising the research. Copies are available at the clinic.

These new concepts mean teeth need not be drilled as much and will suffer less complications. The trouble is most dentists have not noticed the developments. They are not back in the 1990s, they are still driving a horse and buggy.

There has been a paradigm shift but they do not quite know it yet!

# A CLEANING HINT

Most toothpastes contain fluoride, which can harden up teeth at any age and even help arrest early decay.

After brushing, rather than rinse and wash all the prevention away, why not simply spit out the excess toothpaste foam ?

That way the fluoride will have a greater chance to remineralise any weakened enamel.

# RACING CAR OF FILLINGS

The Lotus Formula 1 cars of Colin Chapman won seven Constructors Titles during the sixties and seventies, regularly defeating bigger, more fashionable companies such as Ferrari.

Lotus championed innovation and was the first to place its engine behind the driver, ('mid-engined') for better weight distribution and the first to fully utilise aerodynamics, culminating in the famous 'ground effects'.

This revolutionary design effectively sucked the car down to the road, due to the partial vacuum generated by air flow trapped under the body.

The concept was eventually banned because it produced such massive G-forces during cornering that drivers nearly blacked out.

Probably Chapman's greatest insight was that power-to-weight ratio could be improved by reducing a car's weight and that a lighter car would perform and handle better.

Rather than adding power with larger, heavier engines, he enthused about 'adding lightness' to the design.

If Chapman had lived on he would probably have approved of today's Minimal Intervention Dentistry and been horrified by the drilling associated with some porcelain reconstructions.

MI dentistry seeks to reduce drilling and preserve healthy tooth structure. If a cavity has to be drilled, the dentist should increase the smallness.

The principle is to *add lightness.*