

DENTAL UPDATE

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Dr Mark Knapp B.D.S. (Adel.) Dental Surgeon

48 Toorak Road South Yarra 3141 Phone: 9867 6405. www.dentalupdate.info



GOLD MEDAL PATIENT

One of our patients has been doing a whole lot of smiling lately.

How is this for success? Leading the Hockeyroos in the Commonwealth Games, hitting the winning goal, receiving a Gold Medal, being photographed with the British Prime Minister and then, to top it all off, driving in the Melbourne Grande Prix Celebrity Challenge!

Nikki Hudson, OAM, is known as the Golden Girl of Australian hockey and is a team veteran of 234 games.

Nikki contacted us just before Christmas and flew down from Queensland especially to get some dental work done. It was a pleasure to be able to help.

Going into the Commonwealth Games I was naturally checking the hockey matches closely. In 2000 Nikki had vice-captained the Australian Women's hockey team that took out the Gold Medal at the Sydney Olympics and in 2003 captained them to win the prestigious Championship Trophy. The Hockeyroos were narrow favourites here in Melbourne.

In the final, Australia and India were locked nil all with eight minutes to go when Nikki received a sharp pass from left field and angled it into the net for a goal.

It could not happen to a more deserving player. Nikki has a personality as nice as her smile.



LISTERINE WHITENING

The nicest thing that can be said about some 'whitening' products from the supermarket is that they miss the point. One new toothpaste was advertised recently as having the *Secret of Effective Whitening*. According to the ad 'the polishing particles lift stains and discolouration every time you brush your teeth.' This is like expecting to change your skin tone when you wash your hands - any dirt from the gardening comes off but the colour stays the same!

A greater concern is that abrasive toothpaste will scratch the enamel and eventually expose the yellow dentine underneath.

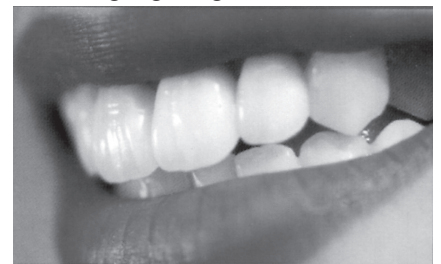
One new product promises to be a tiny step in the right direction. **Listerine Whitening** contains a small concentration of hydrogen peroxide which is the chemical dentists use to bleach the teeth. While any change to the real colour of teeth is probably minuscule, the peroxide may help better lift off external stains like tea and coffee.

More significantly, the peroxide releases oxygen molecules, which tend to kill off mouth bacteria and, as a side effect, reduce bad breath.

Some other products have a similar action and are probably more effective still at killing bugs. **Oral B Amosan** powder is not marketed aggressively and is often overlooked but it releases oxygen in abundance. When dissolved in warm water, it is a very powerful mouthwash, especially for gum infections.

Decades ago the original, classic mouthwash was actually watered down hydrogen peroxide, although getting the concentration right at home was a risky sort of business.

In highly concentrated form hydrogen peroxide literally is rocket fuel - as used by NASA in their experimental launch vehicles!



GAP FILLER

Occasionally the porcelain crown that has served well on a front tooth for over twenty years starts to show its age; the gums recede, exposing the tooth root and the dark edge of the cap slowly becomes visible.

Ideally the best solution is to replace the crown, but as an alternative, dentists sometimes attempt to fill the gap above the crown and cover over the root. It is a frustrating task, because the composite materials are invariably too translucent

and fail to mask out the darkness underneath.

3M have recently released a new material that helps solve the problem. Their highly opaque *Masking Agent* is painted on like Liquid Paper and acts as an undercoat.

The dentist then places the correct shade of composite resin and the crown suddenly appears 1 or 2 mm. longer and disappears into the gums. No more gaps.

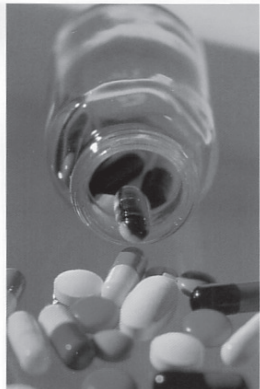
QUESTION AND ANSWERS

It has come to the attention of management that some of our patients have not been paying attention. To test your knowledge of dentistry here are fourteen True or Falses. Anyone who answers ten correctly will receive a hearty pat on the back and an elephant stamp. The answers are on page 3. No cheating now.

1. Impacted wisdom teeth crowd the mouth. True / False
2. Adult toothpaste is bad for young children. True / False
3. Root filled teeth change colour. True / False
4. It is easier to move children's teeth. True / False
5. Teeth become weaker with age. True / False
6. Chewing gum damages the teeth. True / False
7. White fillings are weaker than silver amalgam fillings. True / False
8. Amalgam fillings are banned in Europe because of the health risks. True / False
9. Brushing too hard damages the gums and tooth roots. True / False
10. Taking fluoride tablets in childhood harden up the teeth. True / False
11. Children's adult molars come through as their baby teeth are lost. True / False
12. Electric brushes clean better. True / False
13. Bleaching weakens the teeth. True / False
14. Fluoride prevents decay in adult teeth. True / False



BIPHOSPHONATES



When osteoporosis or cancer has threatened to weaken bones, doctors have often prescribed a class of drugs called biphosphonates. These halt the thinning process by virtually pressing a *pause button* on bone's natural degeneration/regeneration process. On a cellular level the bone stops breaking down, but it also loses the ability to regrow and repair itself.

In the last year or so reports have been coming in of patients who are taking biphosphonates experiencing major complications following dental extractions. Even after twelve months some extraction sites refuse to heal properly.

Both doctors and dentists are today becoming aware of the problem and taking necessary precautions. Although only 10% of patients are effected, any extractions should preferably be done *before* prescribing. Any subsequent extractions should be done with great care. One specialist has even advocated an ultra-slow extraction over a number weeks using rubber bands.

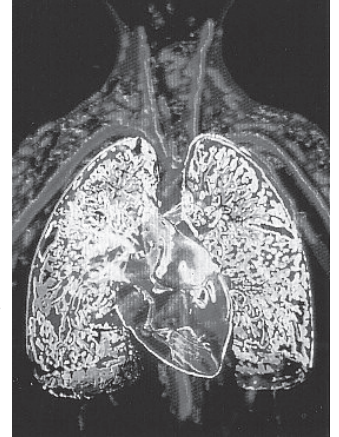
The lesson for patients is this – if the doctor decides to prescribe new medications, keep the dentist informed.

GUM DISEASE & THE HEART

There seems to be a link between severe gum disease and cardiovascular conditions such as arteriosclerosis and heart attack.

Periodontal (gum) disease is the most common disease in the world. Most gum infections are minor and easily treated with better brushing. When the condition is deep and extensive, though, the associated bacteria find their way into the blood stream.

These bacteria raise the body's level of fibrinogen, which is associated with clotting. Levels of *C-Reactive Protein*, known to cause heart troubles, also go up. Some bugs even build up in thickening of the arterial walls and others invade the cells of coronary vessels, leading to inflammation and swelling around the heart.



Many of the factors associated with gum disease, such as smoking and poor diet, are the same that contribute to cardio disease and it is hard to prove a direct link. The evidence is starting to come in however. The good news is that one recent study showed reducing gum disease actually led to less risk of heart attack and stroke.

SNIGGER, SNIGGER

Everyone hates finding typographical errors in their letter or presentation, but it is great fun finding typos in someone else's. In 1993 I was dismayed when an article on anaesthesia I wrote for the Australian Dental Journal had the term 'interproximal *col* area' changed by the ADA to 'interproximal *cool* area'.

On the other hand, when one of the Macquarie St. specialists attacked my comments and subsequently published on the same subject, it was lovely to find him writing authoritatively about the famous 'cool area.' His musings are now in the dental libraries for the next hundred years.

Last year down on the Mornington Peninsula, the local paper ran an expensive full page ad by a highly respected local dentist who was moving back to the area. Unfortunately his proof reading was not as good as his dentistry. Apparently he practiced *easthetic* dentistry, cared for his *parents* and, most impressively of all, ran a high quality *denial* service.

After considering these claims I eventually came to the conclusion he was probably onto something. There might well be a place for an effective denial service and our patients could only welcome some occasional good news.

'Yes Mrs. Bloggs, the tooth does have an abscess, but it shouldn't ever cause trouble.'

'Well Mr. Dogsboddy, your teeth do have decay but use a mouthwash and the germs are sure to go away'

Perhaps it is time reality took a back seat. We can all do with a little more encouragement. What do you think? I think there had beter not be any typos in this newsletter or I will knot heer the end of it!

ANSWERS



Fluoride does not normally effect sound adult teeth, however when decay first begins, plaque acids leach away mineral and weaken the surface. The enamel then starts to mimic that of a young child. Topical fluoride stimulates mineral uptake and rehardening and can arrest early decay.



14. **True** Fluoride prevents decay in adult teeth.

13. **False** Bleaching occasionally makes the teeth cold sensitive, but if treated sensibly, the effect is only transient.

12. **True** The real answer is yes and no. Clinical studies show that the electric ones do clean better but, in the real world, the electrical motion can make people lackadaisical about their brushing. They forget to actually brush. There is nothing wrong with using a normal soft toothbrush.

11. **True** Children's adult molars erupt *behind* their deciduous teeth. They do not replace teeth.

10. **False** Kids' adult six-year-old molars erupt *behind* their deciduous teeth. They do not replace teeth.

9. **False** Brushing too hard *sideways*, especially with anything but a soft toothbrush, can cause gum recession and root abrasion. It is important to brush hard, but in large circles.

8. **False** Amalgam is being phased out in some European countries because of environmental concerns about its manufacture and the resultant by products. Some years ago a Victorian manufacturer was fined for polluting and falling to properly dispose of industrial waste.

7. **True** Young children tend to swallow their toothpaste and regular adult paste contains more fluoride than they need. If too much is ingested it can cause white spots and mottling in developing teeth. Up to the age of four, only a small amount of junior paste ought to be used. Fluoride certainly hardens up teeth but it has to be monitored.

6. **False** Root filled teeth always change colour. If the dentist fails to remove all debris from inside the tooth, or more likely, treats it too late when pulp damage has led to debris seeping into the dentine, then the tooth will darken. On the other hand, if he/she does the root filling early and thoroughly there should be no colour change.

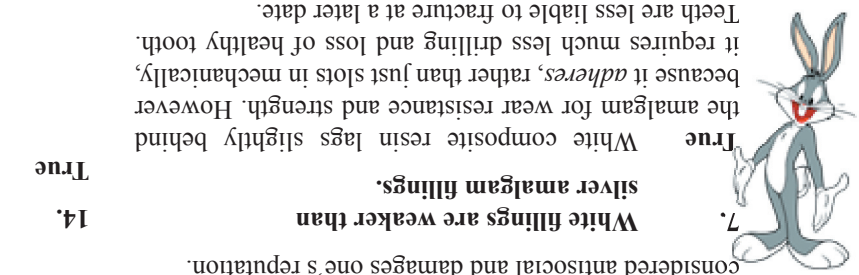
5. **False** Teeth become weaker with age. Teeth become harder with age and generally less liable to decay but unfortunately they do become more inclined to fracture.

4. **True** The easiest time to move teeth is during early adolescence but orthodontists can still move adult teeth very successfully.

3. **False** Chewing gum positively helps the teeth, particularly if a sugarless gum is used. The chewing stimulates saliva flow so that enzymes fight bacteria and plaque acids are neutralised. Leaving gum on pavements, however, is considered antisocial and damages one's reputation.

2. **True** White composite resin lags slightly behind the amalgam for wear resistance and strength. However because it *adheres*, rather than just slots in mechanically, it requires much less drilling and loss of healthy tooth. Teeth are less liable to fracture at a later date.

1. **False** Impacted wisdom teeth crowd the mouth. Wisdom teeth can cause infection and occasionally damage the molars in front but they do not contribute to crowding. People without wisdom teeth are liable to suffer the same crowding, which is due to a natural shifting called *mesial drift*.



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DENTIST OF THE YEAR?

Everyone appreciates a little recognition and I was thrilled the other day to unwrap the latest edition of *Australasian Dentist* and discover that I had been named Dentist of the Year on the magazine's front cover. Fame at last! What was more, as a prize, I had received my very own credit card from one of the new finance groups.

Strangely enough, I discovered later there had been some sort of clerical mistake and the company had forgotten to put any money in the account. The mystery deepened when I flicked through the magazine – there was no mention of Knapp's achievements, just a few articles about the fancy new credit company and their marketing promotions. If I was cynical, I would suspect I had been conned.

Still, I should not be disappointed. Last month I actually received a personalised letter from Ron Walker, Chairman of the Commonwealth Games Corporation, inviting me to attend the opening ceremony. Too bad I was busy that night...

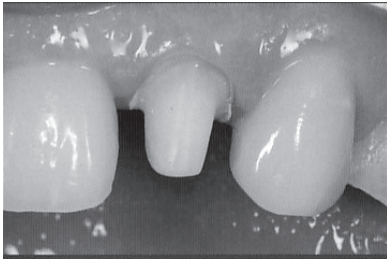
CROWNS – A BIG ADVANCE

Lots of people have heard of zirconia. It is famous for making up artificial diamonds but it can also be the basis of beautiful porcelain crowns.

Putting a crown over a broken or discoloured tooth can be the ultimate. When back teeth require massive restorations crowns can provide much greater strength and more subtle contour and contact than fillings. On front teeth the look can appear absolutely natural.

There are some drawbacks though. Achieving the balance between strength and appearance has been a challenge. When a crown is placed on a front tooth and the bite is light there is no problem – a pure porcelain crown is constructed. Like a real tooth it will be translucent at the tips and disappear into the gums so no edge is seen.

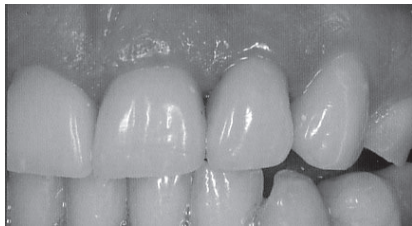
But if the bite is heavy and teeth wear down, porcelain can be liable to fracture and the crown has to be re-enforced with a tough inner core of metal. Traditionally, either nickel/chrome or gold are used and, to prevent the shadow showing through, technicians mask the darkness by using undercoat layers of opaque white porcelain. Unless the technician is skilful the realism and subtlety tends to be lost.



In the last few years white zirconia (zirconium oxide) has become a real alternative as a core material. It is virtually as strong as the metal and has

what is known as ‘transformational toughness’ – cracks do not open up.

Most importantly, because there is no shadow to block out, very translucent porcelain can be used, mimicking the look of real enamel and real front teeth. Halleluiah!



THE BIG BUT

Dentists who routinely insist on placing crowns on live teeth need to think twice.

The teeth have to be prepared with a slight taper (6°) and this requires a great deal of drilling. One lecturer has cynically described this as ‘putting them through a pencil sharpener’. Inevitably there has to be some small degree of nerve irritation and about 17% of teeth eventually die and head towards abscesses.

Obviously this is not an issue when teeth have been root filled but, when a tooth is alive and kicking, there has to be a good reason to place a crown.

YOU ARE NOT GOING TO BELIEVE THIS!



People are justifiably nervous about radiation and X rays, but there is growing evidence that, just perhaps, a small amount of exposure is actually good for you.

For the last fifty years scientists have subscribed to the *Linear No Threshold Theory* which proposes that all radiation is dangerous and

the danger goes up or down according to the dose. This thinking is now being challenged.

There is no doubt high exposures to radiation cause cancer and death. Conversely low levels seem to stimulate the immune system and cancer levels actually drop.

Studies in Canada and the UK showed that nuclear plant workers have 50% less cancer than average. In the US and China, surveys have shown the higher the natural background radiation, the lower the rate of cancer. Laboratory tests show the same trend.

This concept of an effect varying with the dose is called *Hormesis*. There are many examples in nature. Excessive drinking leads to dementia and liver damage, but one or two glasses of red wine wards off cardiovascular disease. Taking in a little sunlight is essential for Vitamin D but too much leads to skin cancer. The list goes on.

So what should we take from the research? Probably very little. Doctors, dentists and patients should still be careful about X rays etc. and try to minimise exposures, but it is worthwhile putting some of the fears into perspective.

THE MULTIVERSE

After devising the Big Bang model for the origin of the universe decades ago, scientists have recently come up with theories as to how it could all actually pop into being, just by itself.

But rather than doing away with the need for a creator, some physicists are now expressing amazement that the universe is *fine tuned* to actually work. They point out, for example, that if gravity was just slightly stronger or the mass of an electron was just a fraction lighter, the universe would have either collapsed or blown apart.

Professor Paul Davies sees this as evidence of a designer God. Others believe there must be a multiple collection of different universes.

At a conference last year, physicist Martin Rees stated he was so sure of the existence of a *multiverse*, he was prepared to bet the life of his dog on it. Andrei Linde went one better and bet his own life.

Professor Steven Weinberg had the final say; ‘As for me, I have enough confidence in the multiverse to bet the lives of both Andrei Linde and Martin Rees’ dog!’ Wow!

