

DENTAL UPDATE

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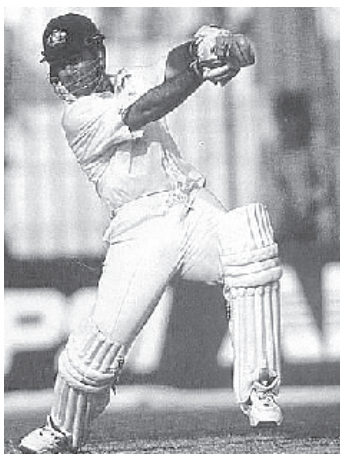
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RICKY PONTING

Ricky Ponting is the world's premier cricketer and arguably Australia's greatest batsman since Bradman. He is a veteran of over a hundred Test matches and, at the time of writing, has hit 32 Test centuries at the remarkable average of just under 60.

He is the only player to have twice won the Allan Border Medal as the Australian cricketer of the year and is currently the ICC Player of the Year.

In his autobiography former captain Steve Waugh wrote about his batting in the 2003/4 Boxing Day Test. 'Ponting's extravagant and deceptively powerful stroke repertoire threw (the) attack off balance as he completed back to back double centuries. This guy is the complete package, having converted his natural gifts into a polished product through dedicated practice, an inquiring mind and a hunger for runs, all of which separates the good from the great.'



Richie Benaud regards Ricky Ponting as Australia's greatest captain of the last thirty years with 23 wins from the 31 occasions he has led the team.

Over the winter layoff Ricky attended the clinic for dental treatment. It was a privilege to be able to help.

Not only is Ricky Ponting a first class sportsman, he is also a good bloke and a gentleman.

As a cricketer I never made it past the University Club Eleven. In my own way it was nice to make just a small contribution to Australian cricket.



A BLEACHING HINT

Everyone is trying to whiten teeth more quickly. Manufacturers favour exotic acceleration techniques such as lasers, lights and so on because they can sell expensive equipment. It makes more sense to look at the chemistry of the bleaching agents.

Throughout the world, either carbamide peroxide or hydrogen peroxide are invariably used. These materials are slightly acidic and manufacturers make them more so to preserve their shelf-life. Unfortunately this acidity retards their interaction with enamel and the whitening is slowed. The bleaches would be more reactive if the pH was higher.

Before starting a course of home bleaching, take a small jam jar and combine a teaspoon of baking powder with three or four of water. This solution is alkaline. Before applying the bleach, rub a little of the liquid onto the teeth to raise the pH.



Not only will the teeth whiten much more quickly, there will be less chance of them becoming cold sensitive.

ABSOLUTELY GORGEOUS

Apart from being drop dead gorgeous, rich and famous, what do Kylie Minogue, Catherine Zeta-Jones and Renee Zelleweger have in common? They have all had premolar teeth extracted for orthodontic reasons.

A couple of years ago *Sixty Minutes* ran a program on how irresponsible orthodontists were allegedly extracting youngsters' teeth, causing profiles to collapse. In fact orthodontists only reluctantly remove teeth to address crowding and are extremely conscious of facial contour and lip support. Studies have shown it is impossible to tell whether teeth have been extracted simply by looking at a person's face and profile.

One of the ironies of the *Sixty Minutes* show was that Kylie was given as an example of a beautiful face, undamaged by the orthodontists. In fact four of her side teeth had been extracted during adolescence.



Some times non-extraction treatments are not all they seem. Because orthodontists need space to straighten teeth, molars are moved backwards in the jaw. As children grow into adults wisdom teeth try to erupt but with insufficient room. Ultimately complicated wisdom tooth extractions are substituted for simple premolar extractions.

TREATING THE SO, SO TOOTH

People think of teeth as either healthy or decayed, sound or infected. In fact often they are somewhere in between and on the brink of decay. Their condition is just 'so, so'.

A tooth's enamel is usually hard and resilient due to its high concentration of mineral, but this actually ebbs and flows through the day. After a few biscuits at morning tea, plaque bacteria grow and their acids etch away a little of the calcium, leading to microscopic softening or 'decalcification'.

In a healthy mouth there is no harm done because mineral from the saliva re-absorbs and the area recalcifies. It is like the water in Port Phillip Bay – the tide flows in and out but the level stays the same.

On the other hand, if diet and cleaning are poor, the bacteria and acidity build up over time and the balance is tipped. The surface becomes porous and chalky and germs start entering the tooth. Once the bugs hit the inner dentine, real decay has begun and a filling is needed.

The best treatment is simply home care, while the problem is still reversible. Brushing in a fluoride gel such as **Colgate Gel Kam** can repair early damage. It stimulates the re-uptake of calcium and phosphate and inhibits further bacterial growth. Most importantly, the fluoride converts the tooth's everyday *hydroxy-appatite* crystals into tough, decay resistant *fluoro-appatite*.

Not only is early decay reversed but the tooth is less liable to decay in the future.

TOOTH MOUSSE PLUS

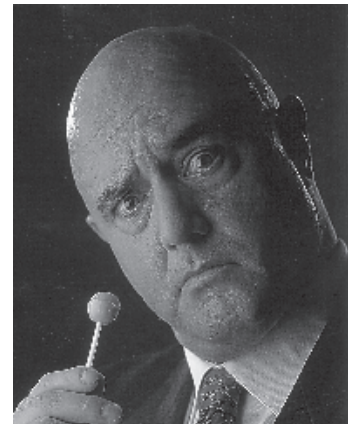
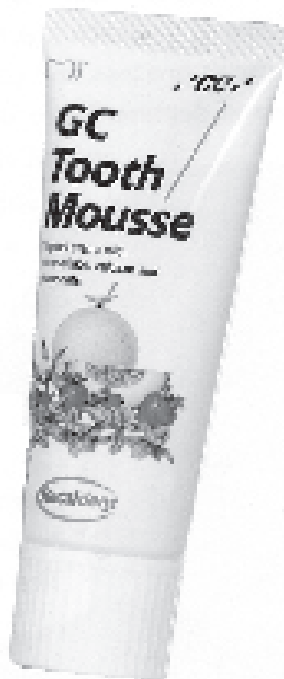
Most people should brush in fluoride gel once a week, as an insurance policy against cavities. However, the gel should be used more frequently if –

- teeth are sensitive with cold,
- have obvious chalky spots, or
- a history of decay.

The other product that helps is Recaldent Tooth Mousse. It compliments fluoride gel and can be applied in combination. The mousse is basically a milk extract and, because it is laden with mineral, it supersaturates the tooth surface with the calcium and phosphate necessary for enamel repair.

Recently the manufacturers brought out a new variation, **Tooth Mousse Plus**, with fluoride combined into the formula.

Adding fluoride is a sensible idea and it makes a good product even better, but the concentration is rather low. If Tooth Mousse is recommended, it should still be used in conjunction with the Gel Kam.



Any refined carbohydrate will lead to more plaque acids and decalcification.

SEALANTS

In the clinic, sealants can also arrest decay.

Traditionally sealants were made of resin and simply blocked the pits and fissures on kiddies' back teeth where food regularly collects. Their drawback was that any softening underneath could sometimes continue, even to the decay stage.

Today's sealants are watery cements that release fluoride to arrest early decay and promote remineralisation, even in the surrounding areas.

A NEW COMBINATION

Consider this - if sealant cements can arrest decay and Recaldent can reharder enamel, wouldn't it be a great idea if the two could be mixed together? In fact, Melbourne researchers have combined these products and are currently running studies. The early results are encouraging.

The cements are actually called Glass Ionomers and they are highly versatile. Australian dentists have used them for years as the base layer inside fillings, to protect the nerve, seal out bacteria and stimulate recalcification. Adding Recaldent does not seem to reduce their strength but it does enhance their reparative capacity.

Trust Aussie dentists to come up with this improvement! After all, Recaldent was developed here in Melbourne and much of the research into the cements was likewise done locally.

WORLD'S FASTEST DENTISTS

The movie, *The World's Fastest Indian*, is based on the true story of a 78 year old New Zealand pensioner, Bert Munro, who lived in a garage and spent his time tinkering with his forty year old Indian Scout motorcycle. Bert had a heart condition and not much money but he certainly had his own ideas on how to recondition a motorbike. In 1967 he took his bike to the Bonneville salt flats in Utah where the young millionaires traditionally vied for the world land speed record.

Bert's competition boasted big budgets and support crews but he took them on and set a world motorcycle speed record that still stands today. At one stage he unofficially got his bike up to 331 kph!

The message is that *smart* beats *expensive*.

Much of today's dental technology is very expensive. Giant companies such as 3M are investing heavily in new gadgetry and spending massively on advertising and sponsorship.



Some of the technology is extremely flash. Cerec machines can automatically mill ceramic to fill a drilled tooth and ozone devices can kill the bacteria in decay. The trouble is that ceramic does not bend around corners, so cavities have to be drilled free of edges, even if these are strong and healthy. Ozone is highly dangerous and removing it is terribly complicated.

The biggest problem is that this machinery can cost the same as a small apartment. Dentists should not feel obliged to recoup their investments. Their judgements should be based purely on the needs of the patient.

A better way to go is limiting the amount of drilling in the first place.

Some Australian dentists are currently reassessing what parts of a decayed tooth have to be drilled and what can be preserved. We are discovering that not all softened dentine is irreversibly damaged, as traditionally believed. Affected dentine can be treated chemically with silver fluoride and cements to seal out bacteria and stimulate repair. It is minimal intervention. The motto could be *less is more!*

If one does a Google search of silver fluoride, one will find most of the research has been done in Australia. The rest of the world has not yet caught up. Because we are drilling less, we may well be the world's fastest dentists.

THE TERMINATED TUNNEL FILLING

The Terminated Tunnel Filling is another example of smart dentistry with less drilling. This new style of filling was developed at our clinic in 2001 and subsequently described in the ADA News Bulletin.

When patients are shown X rays of decay between the walls of their back teeth, they often ask, 'How do you get to it?' Traditionally the honest answer was, 'Only by drilling a lot of healthy enamel.' Most dentists throughout the world drill the biting surface, then across to the edge, then down the side of the tooth. Most of the decay is not where they drill and the tooth is weakened in the process.

In most cases the decay has not even made a physical hole in the side of the tooth – it has turned the outer enamel chalky and the inner dentine rubbery and infected. It is this inner dentine that is the threat.



Rather than drill through the edge of the molar, or down its side, the Terminated Tunnel creates a small access and aims directly at the infected dentine. The side wall of enamel is not drilled but decay is arrested and enamel recalcified chemically, again using silver fluoride and sealant cement. The process only takes a few minutes.

There are more details about this ultra-small filling on our website www.dentalupdate.info, under the section What's New?

GOBBLIGOOP

I was amazed recently to hear an advertisement for *organic* mineral water. I was not sure if this was the one grown without artificial fertilisers. Or maybe it was the water with the little bits of organic matter floating on the surface?

Fine sounding gobbligoop is all about sounding good without actually saying anything – it is like a birthday present with nothing inside. Lately it is even creeping into dentistry. There are now seminars for something called Patient Centred Dentistry. What other sort is there? Investment Portfolio Dentistry springs to mind ...



Journal of International Dentistry last month ran an article on cosmetic crowns.

It concluded "Care should be taken to evaluate the patient's age, gender and anticipated expectations."

It is difficult to imagine a dentist getting most of this wrong, but if a short sighted, d-of-hearing dentist does get confused it would not cause too much disappointment. Most patients do not really have any

expectations. Only *anticipated* expectations.

CLEANING HINT

The hardest part of the mouth to keep clean is the inside of the lower teeth since it is difficult to angle the brush downwards. Rather than try to be double-jointed, change the grip on the brush. Flick it around in the hand so it fits *across* the palm with the thumb on the same side as the fingers. Now raise the elbow up to shoulder level and the brush will automatically slope slightly downwards.

THE FROG IN THE POT

(Do not try this at home!)



People often have trouble understanding how a tooth can have a decay, or even an abscess, without actually hurting. In fact it really *is* surprising – small cavities and early infections can lead to terrible pain while large ones regularly sit there dormant without any tenderness. Often they only show up on X rays.

What determines whether symptoms develop seems to be not the size of the lesion but its *rate of growth*. A large, slow growing cavity stimulates the nerve to shrink back and avoid the advancing bacteria. A nasty abscess growing by increments forces the surrounding jaw bone to resorb around it and there is no obvious pressure build up. In both cases there may not be any hint of trouble until it is too late and the complications are massive and painful.

It is a little like the frog-in-the-pot experiment. If you throw a frog in a pot of boiling water it will immediately jump out, given half a chance. Conversely if you gently place your poor unsuspecting frog in some cold water and gradually heat it up, the frog will bask there contentedly until it *croaks*. You will then have a fine dish of French frog's legs but possibly suffer bad karma in another life time.

There are two morals. Firstly, treat dental problems early and secondly, always check the thermostat on the jacuzzi.

THOSE MERCURY FILLINGS

The public dislikes amalgam fillings because they look ugly and are supposedly linked to a litany of health disorders. Research repeatedly shows amalgam to be safe but, never the less, alternative health practitioners continue to warn about the dangers from 'mercury fillings'

Some time ago at a dental dinner, I sat next to the editor of the Australian Dental Journal. I ventured that maybe there **was** something to the rumours – until I started using mercury fillings I boasted a perfectly full head of hair! The esteemed editor reluctantly agreed. It was only after he had started handling amalgam that his hair thinned out, eyes went bad and his back started chronically aching.

And he probably knew what he was talking about – by this time he had over forty years of experience!

BOND, DENTAL BOND

Dental bonding has been around almost as long as 007, but lately it has become extremely sophisticated. These days it is so strong, the bonding a dentist does to half a tooth is capable of supporting a man's weight. Even 'Q' would be proud of that achievement.

Probably the biggest advances are not so much in the adhesives, but in the white *composite resins* being bonded. Their range is now as varied and versatile as the jobs they are asked to do, particularly on the front teeth.

When incisors are discoloured and dark, composite facings can give them a brand new surface. If front teeth are tucked in and crowded, facings can build them out into the correct position, mimicking the results of orthodontic treatment.

To produce a natural appearance, the resins are applied in layers, like the structure of a real tooth. If it is necessary to cover up dark enamel, the initial undercoat consists of an opaque masking agent, similar to Liquid Paper. Subsequent layers have only moderate opacity, but are designed to absorb the reflected light of the adjacent teeth and blend in for a 'chameleon effect'. The final layer is translucent, highly polished and shiny.

If James Bond's old sparring partner, Jaws, had known about dental bonding he would not have needed those terrible metal crowns on his front teeth.



BUTTON, THE RED

New patients often wonder where the name, Knapp, came from. Germans suggest it is German in origin while the Dutch tell me that it must have come from Holland. Being diplomatic I am not one to argue although the family did live in Britain for centuries and we are probably more British than the Windsors.

Recently one of our Scandinavian patients insisted the name may be Norwegian and that Knapp means "button."

He may be right. A thousand years ago the Vikings regularly took to their long boats and conducted excursions to England (rather like the Balmy Army touring down under.) During the ravaging, pillaging and plundering there may have been the odd romantic liaison. It is quite feasible that Button the Viking was part of a raiding party and is a long lost ancestor.



This is all conjecture, of course, and no one is sure of his complete title or position. Personally I am inclined to think Button The Fierce, Button The Brutal or perhaps even Button The Red sounds consistent with the family disposition. Moreover he was probably the leader of the Viking hordes.

I can just imagine it now. King Norgen stands by a Norwegian fjord addressing his commander for the benefit of the warriors-

'Fare thee well Button! May the gods grant you fresh winds and smooth seas. Do your nation proud! Rape, pillage and plunder and return laden with wheat, gold and flaxen haired maidens. (And by the way Button, this time, don't come back with any more souvenir doilies or tea spoons.)'

My theory is that Button liked the warm beer and cricket so much he decided to stay and so began the English line of "Buttons."