



DENTAL UPDATE

A Bi-Annual Newsletter - No. 38

Dr. Mark Knapp B.D.S. Dentist

48 Toorak Rd. South Yarra 3141 Ph. 9867 6405 www.dentalupdate.info

TOOTH WHITENING

What is the best way to whiten teeth?

The only technique proven to produce obviously whiter teeth is 'home bleaching' with professionally constructed mouthguard trays and gel. This approach has been used for decades and it always works. No other technique is as effective or permanent.

The trays are made of a very thin transparent plastic and usually cover the ten front teeth. It is important they are designed to fit accurately, not just for comfort, but to prevent the bleach leaking out and being diluted by saliva.

The most common bleaching agent is carbamide peroxide gel, occasionally its variation, hydrogen peroxide, is substituted. The concentration usually ranges from 10% to 16%.

Surprisingly, stronger solutions do not seem to produce whiter smiles or work significantly faster, since they still require time to penetrate the surface.

How white will the teeth become?

Everybody's teeth have an upper limit as to how white they will end up. When that level is reached, prolonged bleaching will not have any further effect. There is always a significant improvement, sometimes spectacular, although if patients are expecting teeth to look artificial, like bathroom porcelain or liquid paper, they will usually be disappointed.

But I do not want my teeth to be too white.

The whitening is a gradual process, so simply stop when you are satisfied with the colour. [See over page...](#)



THE ATTRACTIVENESS HALO



There are many reasons to treat decayed or tender teeth. Most times though, people want to have nice front teeth just for the sake of appearance.

While intuitively this seems perfectly natural it also makes sense scientifically. Researchers have found that attractive individuals are generally respected and thought of more highly than the, shall we say, *aesthetically challenged*.

Folk are more likely to attribute these people with desirable traits, such as honesty and kindness, than the rest of the population.

Sociologists call this the Attractiveness Halo.

This colouring of judgement may appear strange, but it does make sense biologically. The features we consider *attractive* are often associated with health and facial symmetry and, believe it or not, with being average. In essence, these qualities are desirable breeding qualities and this unconsciously distorts our perception of behaviour and character.

The Halo Effect explains why, in the old westerns the heroes were always handsome and the villains just *looked* so evil. It also explains why Lady Diana was universally admired for her charity work while most of the Plain Janes working for UNICEF remain completely unheralded.

It is also why, when new patients ask the receptionist if I am an aesthetic dentist, she assures them I hardly look a day over fifty!

COURTESY

Catching a crowded tram to the city, the other day, a lady stood up to offer me her seat.

I was horrified!

It is said that young people do not have much respect for their elders these days .

Firstly, though, she was not so young and, secondly, I do not feel particularly elderly.

That settles it! I have got to start looking after my appearance.

Next week I am *definitely* going to start whitening my teeth!



How long does the whitening take?

The timing ranges from two to five weeks, with the average being three. After that any improvements are minor.

To be effective the bleaching gel should act on the enamel for about two hours a day.

For most people the easiest way is to place a tiny amount in the trays and wear them overnight. (It would be nice if this gave eight hours worth of whitening but the efficacy of the gel drops by half after a couple of hours.)

Alternatively, another smart approach is to wear the trays in blocks of thirty minutes, four times a day, when say, driving to work or watching television. This will give a marginally faster result because it ensures that full strength bleach is always interacting with the enamel.

Most people see a colour change after just a few days although occasionally it takes a week or two before an improvement is really apparent.

Is whitening safe?

Home bleaching is an extremely safe procedure, unlike *Office Bleaching*, performed in the dental chair over an hour using very strong chemicals, usually for little result.

While there are no long term complications, some people occasionally report transient tooth sensitivity, particularly to cold.

This minor hiccup is easily overcome by using a 'desensitising agent' for a few days. The best is Colgate's **Neutrafluor 5000 Sensitive Toothpaste**.

Neutrafluor works two ways. It has a high level of fluoride to help block the tiny organ pipe *tubules* which convey temperature change to the pulp. By narrowing their bore and the increasing the tooth's mineral density it creates an insulating barrier for the pulp.

The toothpaste also contains potassium nitrate which inhibits sensory transmission in the tooth's nerve fibres. It effectively acts as a soothing anaesthetic. Sensodyne has a similar effect.

The best way to apply it is inside the bleaching trays. Rather than use the bleach, simply substitute the Neutrafluor for a few nights.

Bleaching does *not* damage the teeth. In fact being antibacterial it is sometimes used to *prevent* decay and gum disease when elderly or handicapped people can not brush properly.

How long will the whitening last?

This is a slightly contentious issue. In my experience there is no significant relapse although, as people continue to get older, their teeth do continue to darken with age. Of course it is easy to repeat the bleaching for a few days ever year or so.

Does it whiten old fillings?

The answer is no. There is no effect. This means that if old fillings are to be replaced it might be best to do the bleaching first, so as to determine which colour match to use.

What about whitening toothpastes?



Bleaching agents have to stay in contact with enamel for a couple of hours at a significant concentration to have any real effect. Whitening toothpastes have an extremely low concentration of bleach and, when brushed onto the teeth and diluted by saliva, the level drops to almost zero after a few minutes.

Whitening pastes are quite ineffective.

What about laser whitening?

It is impossible to really change the colour of teeth in an hour or so, irrespective of fancy lights or lasers.

Any difference is an illusion due to teeth drying out.

If someone falls asleep with their mouth open, the surface of their enamel dries and the teeth will look whiter for a few minutes until the moisture is reabsorbed.

It is basically the same with *In Office* bleaching. Any whitening is only temporary.

Is there any way to speed up the whitening?

Stronger bleaches lead to more sensitivity but teeth do not respond by whitening more quickly.

The most practical step is raising the pH slightly, by rubbing a little bicarbonate solution on the teeth before bleaching.

Simply place a teaspoon of baking soda powder in an empty jam jar and add a little water to dissolve. Use a finger to smear some on the front teeth and the surface will become slightly alkaline, so accelerating the action of the bleaching gel.

HINTS OF JURASSIC PARK



A decade ago Carolina University palaeontologist Mary Schweitzer controversially announced that she and her colleagues had discovered 'fibrous and flexible' organic tissue and even the remains of red blood cells in 67 million year old Tyrannosaurus Rex fossils. Also identified were traces of feathers.

It had previously been assumed that when creatures fossilized their bones turned entirely to rock and all other tissues disappeared. Instead Schweitzer reported 'The bones were mummified without being completely fossilized. Most organic material like DNA will not last longer than 30,000 years, but, collagen proteins for instance are very robust. I have seen them in specimens up to 130 million years old.'

The material was analysed using a variety of tests over the ensuing years. Specific antigen-targeting antibodies identified proteins found only in birds, consistent with what one would expect of dinosaurs. Even some segments of DNA were found.

Recent studies at Imperial College London have confirmed her results, again finding fibrous tissue and remnants of blood cells. Electron microscopes showed a very similar appearance to the particular red blood cells and blood vessels of emus and fibrous tissue with the same characteristic *banding* pattern as collagen.

Mass spectrometry also identified collagen and chemicals consistent with emu blood.

These findings are fascinating. The style of blood vessels and cells suggest that some dinosaurs were indeed warm blooded. The presence of feathers also implies this because, apart from providing camouflage for a predator, they would also allow the regulation of body temperature (although a T. Rex with feathers is as bizarre as Mike Tyson in a feather boa!)

The other conclusion is that science has finally proven ***you can get blood from a stone.***

RADIOACTIVE TOOTHPASTE



Back in the 1950s, assistants in shoe stores routinely took X rays of children's feet to ensure their new shoes fitted correctly.

As youngsters, baby boomers wore beautifully fitting shoes and, as an added bonus, when we took them off we could often

see in the dark, due to the soft glow emanating from our toes.

At the same time in America some dentists were even more creative with radiation and routinely added uranium to the porcelain of their crowns. Their patients would have boasted truly radiant smiles, even if they did set off Geiger counters.

Apparently, though, the Germans trumped us all forty years earlier. In the first part of the century, the Auer company added radioactive thorium to its toothpastes to make teeth sparkle.

When the British scientist, James Chadwick, was held as a POW during World War 1, he continued his physics research by conducting experiments using German toothpaste.

Later in 1932, he went on to discover the atom's *neutron* but sadly for the world of dentistry it was *not* through exploding tubes of toothpaste!

Auer toothpaste was manufactured for decades although it disappeared during the second WW when the company diverted its radioactive oxides out of the bathroom and into Werner Heisenberg's atomic bomb experiments.

Frankly, today's whitening toothpastes have a lot of ground to make up!

DENTIST SHINES

Andy Warhol once said that, in the future, everyone would be famous for fifteen minutes.

Some months back I received my fifteen minutes, being interviewed by *Australasian Dentist* about my role in developing the Plaq Pro toothpaste system.

Much of the conversation was garbled but I did manage to throw in one decent line - 'People think that dental surgeries run on electricity. They don't! They run on credibility.'

It is probably true, isn't it?



COSMETIC BONDING - BEFORE AND AFTERS

There are so many ways to correct chipped, crooked or misshaped teeth. Most involve drilling teeth aggressively and then having a laboratory manufacture porcelain which is then cemented over carved down teeth.

The technique can regularly produce aesthetic results but it is irreversible, time consuming and expensive and can occasionally lead to nerve damage due to the amount of enamel removed.

An alternative approach is direct composite bonding, where material is built up and adhered directly onto the tooth.

Below are some examples. Space does not allow for describing the details of each case but check our website for some of the articles I have published on the subject. Alternatively ask the surgery for details.

SPACES



MISSHAPEN TOOTH



FRACTURED TOOTH



CHANGING APPEARANCE OF TEETH

