



DENTAL UPDATE

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MOUTHWASH AND CANCER

Mouthwash sales are a triumph of marketing.

Most people do not need them and, unless strong *chlorhexidene* type formulas are used, there is rarely any great benefit.

Even though they can reduce bacteria the effect is usually short lived because bugs quickly grow back if toothbrushing is less than perfect.



Nevertheless, dentists have usually thought of mouthwashes as basically harmless. Now we are starting to rethink that assumption.

Many mouthwashes contain a high percentage of alcohol which is usually added as a preservative for other ingredients, although it is also antibacterial in its own right.

Listerine, for instance, is approximately 26% alcohol - the equivalent of a stiff Scotch and water.

Alcohol levels like this have aroused interest in the profession but intermittent studies have failed to prove major health complications.

Recently Prof. Camile Farah, Director of Research at the Queensland School of Dentistry, reported in an ADA interview that better evidence has now come in. He advised that a 2007 study looking at thousands of patients indicated regular use of alcoholic mouthwash led to at least a **five fold increase** in the incidence of mouth cancer.

These patients did not have traditional risk factors such as smoking or heavy drinking. 'Regular use' was defined as rinsing once or twice a day.

In December 2008 Farah and a colleague followed up and published an article in the Australian Dental Journal reviewing the research. A summary can be accessed on the association's website.

They concluded "...we believe that there is now sufficient evidence to accept the proposition that alcohol-containing mouthwashes contribute to the increased risk of development of oral cancer."

They suggested these type of rinses should be only for short term use and available only under prescription.

A likely mechanism is unclear but experiments have shown alcohol contributes to atrophy of the mouth's surface cells and increases their permeability to carcinogens.

Moreover oral bacteria are known to convert alcohol to traces of carcinogenic acetaldehyde.

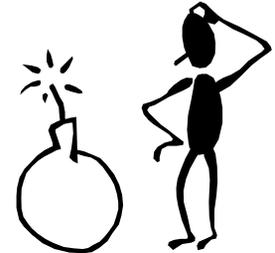
So should these types of mouthwashes be avoided?

Well, some respected academics dispute the interpretation of these studies, so it seems the jury is still out.

The main complaint remains that most rinses are not particularly effective.

They are not great at treating gingivitis, reducing decay, or, after a few hours, reducing the number of bacteria in the mouth.

It is better and perhaps safer to simply pay a little more attention to brushing properly.



A CLEANING HINT

It is always hard to keep the back teeth clean because there is so little room back there. One would think it would help to open up wide, but this only makes things worse since the lips and cheeks tighten up.

Instead close together somewhat. The muscles will relax and it will be a whole lot easier to move the brush freely.



MORE THAN A MARGINAL IMPROVEMENT



People often ask how long white fillings and bondings on front teeth really last. The composite resins can last decades before they fall out, but they have to do more than that – they have to keep on looking good as well. The white resins are very advanced these days – the colours are subtle and surfaces hard and lustrous. The point of weakness has always been the adhesive.

Sad to say, the adhesives up to now have been very, very slightly water soluble. Over time they could weaken at the margins, especially if the fillings were not flush with the tooth surface. Edges would show and begin to look unsightly. They required regular polishing up.

Recently the Fuji corporation brought out a new adhesive that finally overcame the problem.

G Bond is low viscosity and flows readily – just the opposite to thick and tacky. This means its 'film thickness' is thin and the filling materials really fit snug against the enamel surface. Initially it is hydrophilic, so it bonds even if the surface is slightly moisture. On setting it turns the opposite way – hydrophobic. It repels fluid and resists dissolving, which is just what is needed in a wet mouth.

White fillings do not really need to be tougher or shinier – they just need an adhesive that keeps on keeping on. It seems we might now have one.

ROOT FILLINGS

Root fillings, or *nerve canals*, as the Americans like to call them, suffer a really bad press. Everyone knows they are supposed to be very, very painful.

In truth, anything in dentistry can be painful if the anaesthesia is inadequate. On the other hand, if the dentist gives a good injection absolutely nothing should hurt, including root fillings.

The main challenge has always been that they take time because a few basic procedures need to be done thoroughly and carefully.

In some ways root fillings are very straightforward.

When the pulp, or nerve, at the centre of the tooth becomes infected because of bacterial growth, pressure builds up as bugs begin to multiply.

Rather than extract the tooth the pulp must be removed and the remaining canal space totally cleaned and disinfected.

Once the canal, or canals, are free of all debris and bacteria, they are filled and sealed with rubbery *gutta percha* so as to prevent bacteria ever again using the tooth as a breeding ground.

Traditionally dentists have worked slowly, especially when trying to render the canals spotless.

Instruments were usually manipulated by hand and even those that were mechanised could only oscillate back and forth. They cleaned slowly and inefficiently. This was one of the reasons root fillings always took so long to complete.

It was always assumed that if the cleaning files rotated 360 degrees they would spin down the canal and fracture.

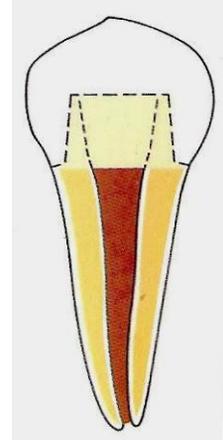
Recently all that has changed. The files are now made of strong, flexible nickel titanium. They do indeed rotate and are driven by motors where the dentist determines the particular speed and torque.

These motors have electronic sensors, which detect when the torque is exceeded. Before the files can jam the action is immediately reversed so they spin *out* of the canal, rather than into it.

This technology does not produce better root fillings but it certainly makes them faster and simpler. The cleaning is virtually automated.

Not only does it clean more quickly, it shapes the canals to a convenient taper, so the rubbery filling points are wedged into position more efficiently, ensuring a more reliable seal at the tip of the tooth.

Dentists are more relaxed and the patients report more comfort and less vibration. Easier all round...



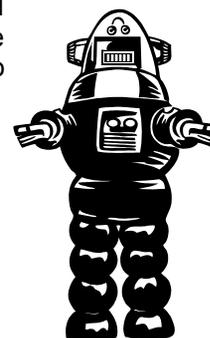
Gutta percha replaces the pulp in the root canal

DANGER, DANGER

The ADA News Bulletin is normally a dry, serious read but every second month it runs a great column called *Clinical Hints*. Author Barrie Gillings recently wrote a funny piece on stupid warning labels. I do not think he would mind a little plagerization...

Toilet brush	Do not use for personal hygiene
Child's scooter	This product moves when pushed
Baby buggy	Remove child before folding
Fishing lure	Harmful if swallowed
CD rack	Do not use as ladder
Electric drill	Not intended for use as dental drill

Then again I suppose you *could* use one in case of emergency...



**Danger,
Will
Robinson,
Danger!**

CHILDRENS' TEETH

Children can grow up never suffering tooth decay. It is less a matter of being born with good teeth than how they are cared for.

Diet is an important and obvious factor. Everyone knows that sweets and cakes can damage teeth but biscuits and chips are almost as bad. However, rather than telling kiddies what they should **not** eat, it makes more sense for parents to instead put the emphasis on the yummy foods that **should** be eaten.

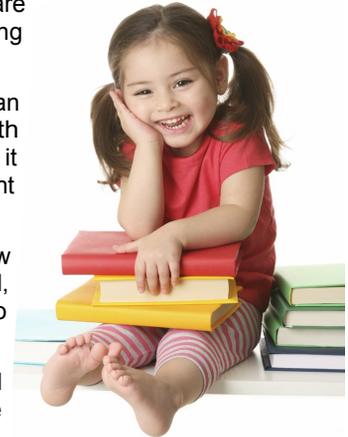
Fruit and nuts are great healthy snacks and children can develop quite a liking if they are encouraged. Cheese will not only help growing bones but also harden teeth by putting calcium into their surface.

Teeth should be cleaned regularly as soon as they erupt even if initially with just a clean damp cloth. Probably the best way to clean young baby teeth though is with regular Tooth Mousse. This is not really a toothpaste but, being derived from dairy products, it will strengthen enamel and help prevent decay. Mousse can actually be used to prevent cavities right up through adolescence by simply applying it with a finger.

Toothpastes should be avoided before two years of age because toddlers do not know how to spit out properly. Most pastes contain fluoride, which can be highly beneficial, except when ingested by growing infants with low body weight. Between the ages of two and five a small amount of low fluoride children's paste should be used.

The idea of a 'first dental appointment' is rather formal and scary. Instead, children should be introduced to the dental clinic when parents have check-ups. They can play on the floor and, when the opportunity arises, have a ride up and down on the dental chair and have their teeth looked at.

That way a trip to the dentist never becomes a source of anxiety.



COOKING AND EVOLUTION

Cooking up a Sunday barbecue is one of life's simple pleasures and runs a close second to sharing it with family and friends. Lately some of us are becoming more sophisticated with our ingredients. As well as sausages, steak and onion rings we are adding things like capsicum, zucchini and tomato and, of course, potato and pumpkin.

Cooking these goodies makes all of them even more tasty and edible. Interestingly, the science shows that it also makes them 20% higher in calories.

In other words, the process of cooking imparts energy to food as well as reducing the energy required to digest it.

These days, when most of us are watching our weight, calories are to be avoided but, to stone age man, they meant survival, more offspring and the possibility of passing genes to future generations.

Anthropologist Professor Richard Wrangham of Harvard University believes controlling fire and cooking were central to our evolution and, in particular, to the rise of our earliest ancestor, Homo Erectus, between 1.6 and 1.9 million years ago.

Erectus probably began consuming a diet similar to our closest relatives today, the great apes. Chimpanzees eat a little meat when they can catch small monkeys but most of their diet consists of terribly unpalatable fruits, seeds and vegetables.

Most of these foods are so fibrous and difficult to digest that the chimps will spend most hours of their day simply sitting and chewing before swallowing.

Their abdomens are large because, even then, the tucker requires a great deal of digesting.

A fifth of their daily energy expenditure is actually directed to the gastro-intestinal tract.

Cordon bleu fine dining would be some time in the future but when rudimentary cooking was first used it would have led to better nutrition and an evolutionary advantage.

Early hominids could suddenly not only survive and multiply more readily, they could divert calories away from their overworked digestive systems and towards features such as greater body size and bigger brains.

Although one would not always suspect it, today 20% of a person's energy actually goes to the brain.

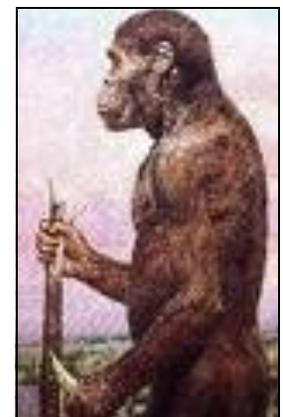
There is archaeological evidence of campside fire half a million years ago but its use may go back much earlier.

This period corresponds to when our ancestors indeed developed larger skulls, smaller guts and nicer looking teeth.

There is a scene in the Stanley Kubrick movie *2001: A Space Odyssey* where the early apemen discover a strange black obelisk on the African savannah, supposedly deposited overnight by some higher beings.

This obelisk has the power to suddenly impart intelligence and it tips the balance towards human evolution.

Personally I am inclined to think the process would have moved along more smartly if the hairy hominids had instead been presented with a portable barbie, some outdoor matches and a decent set of cooking tongs.



THE DANGERS OF MOTORING



The world has a new super car to fantasise about. Age motoring journalist, Joshua Dowling, writes that the **Ferrari California** is the first of its type with an automatic transmission and a practical folding metal roof but is still faster to 100km/h than even its big brother F430.

Yet, although the car is incredibly fast, it is quite capable of dawdling through peak hour traffic.

"It is a weird feeling. Because it is a Ferrari and because of the way it looks, you expect to be thrown around the cabin and have your heart

in your mouth the whole time. But driving this thing is as simple as brushing your teeth."

This is nice to hear and when my Tattsлото numbers come up I will be sure to order one. But I am not so convinced that either driving or toothbrushing are all that terribly simple. Obviously this is especially so when done at the same time.

You see some strange sights on the Nepean Highway. There are drivers reading newspapers, women doing their eyelashes and men shaving, but other day I noticed a lady actually cleaning her teeth! Needless to say she was not doing a particularly good job - of either the driving or the brushing.

It was all rather distressing. I worried about the plaque buildup and felt sorry for her next dentist. Most of all though I felt sorry for the neighbouring motorists when she came to rinse out.

I just hope the low slung car in the next lane was not a Ferrari California with its top down!

BIOFUEL

The suggestion of using biofuel to replace petrol and diesel has become rather contentious.

Everyone realises that we need to eventually find alternatives to oil and struggling farmers are tempted to turn a profit by planting crops suitable for distillation into ethanol. Conversely, on a world scale, food production is dropping because large tracks of land are no longer being used for conventional crops.

Moreover it turns out ethanol is not a very efficient fuel. It requires a great deal of energy input to manufacture and it does not yield nearly as much power as regular petrol. Probably its biggest problem is that it readily absorbs moisture and is easily contaminated. The damage done to car engines is not from the actual ethanol but from water that has crept into the mix.

American scientists recently discovered a better biofuel, that is far more easily and economically produced. 2,5 Dimethylfluran, or DMF, is made from common fruit and vegetable sugars, many of which might otherwise be discarded as waste products. Rather than being put through long distillation processes they are merely subjected to a couple of catalysts and a solvent. The DMF is virtually an artificial petrol with only slightly less power than the regular variety.



If the food / fuel balance can be worked out we may soon get a whole lot more bang for our buckwheat.

ANY PROBLEMS?

I used amalgam for years until the white composite resins became viable alternatives. In the seventies the ingredients were virtually dispensed by hand and mercury droplets would collect in corners and drawers. While amalgam is safe, breathing mercury vapour certainly is not and in massive doses leads to brain damage and psychiatric disorders.

As a matter of course I thought it might be wise to have a precautionary screening, so I rang Dr. John, the friendly local GP who worked next door and asked for a blood mercury test. The line went silent for a few seconds as he considered this request. 'Yes' he replied nervously, 'you have some problems do you Mark?'

I assured him there was nothing a holiday and a tax rebate would not cure.