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# **Teaching Oral Disease Prevention**

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#### **Abstract**

The purpose of this study was for the author to gather information to fulfill a mission: "Prevent Oral Diseases in Children". In mid-1996 five years after retiring from a lifetime in general dental practices in Australia then in England then back in Australia the author returned to general dental practice because his second granddaughter, aged 3 years, had been diagnosed with mild tooth decay in an upper front deciduous tooth. That is why and when his mission began. He became the District Dental Officer for East Arnhem Land in The Northern Territory of Australia in January 1997. He was delighted with this appointment because working with schools, parents, teachers, children and adults he would be in contact with people he considered important for him to fulfill his mission: "Prevent Oral Diseases in Children". He was advised by his superiors that there was no funding available for research but he had their permission to research for his project "Prevent Oral Diseases in Children". His project soon became choosing between the 3,500 year-old "Brush Your Teeth" instruction and his new oral hygiene instruction "Paint Your Mouth". The author chose the submission title Paint Your Mouth versus Brush Your Teeth.

**Keywords:** GC: G-cem Resin Cement; Mpa: Mega Pascals; N: Newton; FRC: Fiber-Reinforced Composite; SARCs: Self-Adhesive Resin Cements; IPN: Semi-Interpenetrating Polymer Network; PMMA: Polymethyl Methacrelate

#### **Prelude**

My now 20 year-long mission to "Prevent Oral Diseases in Children" was recently rewarded when worldwide marketing Who's Who announced me as a "Professional of The Year 2015-2016", qualifying me for inclusion in The Worldwide Who's Who Registry of Executives, Professionals and Entrepreneurs 2015-2016 Edition. [1]

## "Brush Your Teeth" Trail, Year 1,500 BC

Your teeth cle aning instruction, had you lived between 1,500 BC and 1498, would have been "Clean Your Teeth with a Chew Stick". That instruction addressed cleaning stains on teeth. Other means of cleaning stains on teeth were to clean your teeth with fingers and grit or sand. Even clean your teeth with lumps of charcoal!The Chew Stick even now in the 21st Century remains popular in many countries. Chew Sticks are easily made by breaking a twig from a tree, plucking the foliage away and chewing one end until it frayed. The frayed end cleaned the stains from enamel surfaces and also the other end was used as a tooth pick. The sap from some trees was also believed to be also beneficial.

## "Brush Your Teeth" Trail, Year 1498 AD

The sugar trade era that began in the middle of the  $15^{\rm th}$  Century caused enamel of teeth to actually decay, not just to

be stained. But this occurred only on rich people's teeth. Why? Because poor people could not afford to buy sugar or sugary things. In 1498 a Chinese Emperor was granted a Patent for a tooth brush. He had observed the frayed end of a Chew Stick and said to himself "What if the frayed ends at the end were at right angle to the handle instead of being in line with the handle?". His handles were either bone or bamboo. The bristles were taken from the back of a Siberian Hog's neck. The bristles were cemented a right angle to the handle. The Emperor's tooth brush is what is used in most countries in the world today except that plastic has replaced handles of bone and nylon has replaced animal bristles.

The next notable mouth cleaning invention was by "Dr Julien Botot, a Frenchman. Dr Botot who, in 1755, is credited with inventing the first toothpaste. That was followed in the same year with his invention of the first Mouth Wash. He invented both these for his very special patient, King Louis XV of France.

From the middle of the  $20^{\text{th}}$  Century a countless number of new products have been created to assist the promotion of healthier mouths. Tooth brushes have been constantly improved and also so have tooth pastes been improved.

But what is most notable is that the dental profession still advises patients to "Brush Your Teeth"! Today is 24<sup>th</sup> April 2016. The instruction "Brush Your Teeth" began in 1,500 BC. That is

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a total of 35 Centuries plus 16 years for what is now regarded as an extremely important health instruction for everyone to maintain good oral health and to prevent many common, related, general health problems.

Dentists, dental therapists and dental hygienists give hygiene instructions to their patients verbally, usually with the aid of mouth models and a demonstration tooth brush. Patients are advised and shown how to "Brush Your Teeth" with a tooth brush and tooth paste.

Parents at home also similarly instruct their children to "Brush Your Teeth" with a tooth brush and with toothpaste, repeating the same instructions they receive from their dentists, or therapists or hygienists.

But "Brush Your Teeth" is not an ORAL hygiene instruction it is more accurately described as and is a tooth cleaning instruction. It does not take into account that every time food or drinks are put into a mouth, then chewed, all seven surfaces inside of a mouth become dirty and are covered with unhealthy plaque containing millions of undesirable bacteria. Over teeth, gums, tongue, roof, floor, cheeks and lips!

"Brush Your Teeth" is well passed its' use-by-date! [2]

#### Materials and Method

### "Paint Your Mouth" Challenge, Year 2002 AD

**My Mission:** "Prevent Oral Diseases in Children": In 1996, 5 years after retiring from dental practice, my granddaughter was diagnosed with mild tooth decay in an upper front tooth. I was angry with myself and decided I would return to dental practice with this mission: *Prevent Oral Diseases in Children*. My intention was to become an author of children's books that their parents and, hopefully, teachers and schools would use to give children an oral health education.

I found employment as the District Dental Officer, East Arnhem Land, Northern Territory, Australia. This was ideal for my mission because I would be working closely with teachers, schools, parents and children. In 2001 my first ten books were almost ready for printing but were put on hold when, for the third consecutive year the DMFT results for the 6-7 years-old classroom at the remote Alyangula Aboriginal School showed the same pleasing results. No new decay and a lot of arrested decay [3].

I subsequently subjected the instruction 'Brush Your Teeth' to a Strength, Weakness, Opportunity, Threat (SWOT) Analysis. This SWOT analysis revealed 'Brush Your Teeth' was merely a tooth cleaning instruction and had been since 1498. Although in recent times dentists have added instructions to also 'brush your gums' and 'brush your tongues' it clearly indicated that in this the 21st Century, we needed an "oral hygiene instruction", a whole-of-the-mouth hygiene instruction. My new OHI became titled "Treat Your Mouth."

In January 2002 I self-published my first set of 10 soft cover printed books titled "MouthWise Oral HealthCare Manuals. Manual 2, Visits 1 to GarGarThe Dentist" to "Visit 10 to GarGar The Dentist". They were based on my oral hygiene instruction "Treat Your Mouth". In 2007, when I was then working as N.T, Government dentist in Katherine I simply changed the name to "Treat Your Whole Mouth" to emphasise "Whole". But one year later, early in 2008, I asked a classroom of children 'would you like me to show you how to 'Paint Your Mouth'? The children's spontaneous, enthusiastic response was deafening! Prove it yourself, ask any child 'would you like me to show you how to 'Paint Your Mouth' and watch their response. I also found adults showed similar ecstatic responses to "Paint Your Mouth".

In late July 2008 my wife became seriously ill, I had to resign immediately and return permanently back to Adelaide.

Later in 2008 I added two more books to precede the initial ten books, thus had 12 books in the series. They were published as eBooks to enjoy the many benefits of eBooks including, cheapness, making changes to titles and contents and the ability to download graphics. The latter make my eBooks entertaining, interactive and educational with readers, especially children. They can download numerous graphics and keep them in a "My GarGarThe Dentist Activity Album".

#### Results

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This quotation from My Letter to The Editor, British Dental Journal published Oct.9 2015, aptly describes my eBooks listed below [4].

"Inspired by many years of observation and results from this concept I have produced a series of eBooks for not only children but also adults. These are designed to be educating, entertaining and interactive. Special needs and vulnerable children would also greatly benefit from this simple yet cost-effective approach."

My eBooks have each been professionally 5 Star reviewed by Diane Donovan, Senior eBook Reviewer, Midwest Book Reviews.

Teaching Oral Disease Prevention 1 through 12 has also been 5 Star reviewed by Foreword Reviews' reviewer Cindy Wolfe Boynton.

#### **Discussion**

Research for my mission "Prevent Oral Diseases in Children" can more accurately described as observing, querying and testing, nothing more was possible. Working with one dental nurse in makeshift dental rooms within remote Health Clinics throughout East Arnhem Land in the Northern Territory of Australia plus the high demand for treatment coming from adults mainly and from some children made formal research impossible. Dental therapists looked after the needs of most children.

Decayed, missing and filled teeth were recorded for each patient at their first visit

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All relevant patients were given oral hygiene instructions, both adults and children and checked on their subsequent visits.

Patients who attended for regular or irregular examination appointments almost always remarked on how much better their mouths had felt and rarely did I have to chart another decayed tooth or a gingival problem for them.

### Conclusion

The dental hygiene instruction "Brush Your Teeth", in this the 21<sup>st</sup> Century, is not an oral hygiene instruction, it's evana poor dental hygiene instruction. It does not clean all mouth surfaces thus leaves pockets of bacteria laden plaque.

The oral hygiene instruction "Paint Your Mouth" is the preferred and complete oral hygiene instruction. It recommends using a mouth brush and mouth paste containing fluoride to remove unhealthy plaque from all seven mouth surfaces: teeth, gums including gingivae, tongue, roof, floor, cheeks and lips. Then recommends to thoroughly rinse the mouth with water. Finally, to paint all seven surfaces again with brush and paste but this time NOT rinsing with water.

"Paint Your Mouth" leaves a mouth with all seven mouth surfaces covered with healthy, mouth paste ingredients and a greatly reduced number of bacteria in plaque. Certainly a mouth will not only feel fresher for longer and also be protected from all common oral diseases. Personally I paint my mouth 3 times each day after main meal. I also repeat the final step after inbetween drinks or snacks. But twice each day, even once each day is preferable to "Brush Your Teeth".

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