TheElite Training Group track club

Expanding the area of what is possible
In Track & Field Distance Running & Competent Self-Care in medicine and psychology

www.theetgtrackclub.com

Teeth Cavity Reversal

A major part of TheETG mission is to expand the area of what is possible in competent self-care in medicine and psychology. TheETG’s primary method of achieving that is to proliferate applied science based information by way of free packets containing plain language info for anyone seeking to move themselves or others forward in these areas. TheETG packets attempt to address the following;

“…takes an average of 17 years to translate 14% of original research into benefit…..average of 9 years for interventions recommended as evidence-based practices to be fully adopted.”

“…..the benefits that US health care currently deliver may not outweigh the aggregate health harm it imparts.”
[Journal Of The American Medical Association…Volume 302 #1..July 1, 2009…page 89 - 91]

“……1.5 million U.S. residents are harmed or killed each year because of medication errors, according to an Institute of Medicine report.”

“It is estimated that more than 700,000 individuals are seen in hospital emergency departments for adverse drug events each year in the United States.”
[Centers For Disease Control -- 2015]

“Most drugs are only effective for a small percentage of people who take them.”
[Michael Leavitt -- U.S. Secretary of Health & Human Services 2005 - 2009]

“….A recent study for example, found that only half of all cardiac guidelines are based on scientific evidence.”
[President Barack Obama -- Speech to the American Medical Association -- June 15, 2009]

“All the good things….they don't teach us in medical school, because the drug companies pay for our education.”
[Dr. John Sessions M.D. ]

“Not enough doctors adapt appropriately to new scientific findings…..An insufficient number of medical faculty members are well prepared, effective educators, and too few medical schools prepare their students for a lifetime of learning and change.”
[J.Hilliard,et al. -- The Lancet -- Volume 385 #9969 -- February 21, 2015 -- page 672]

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The traditions of Dentistry.....

--- drilling and filling

--- wisdom tooth removal

Buyer Beware!!!
The government, philanthropists, non-profit organizations, and everyday Americans. Collectively they provided hundreds of Billions of dollars to health related research. There's a large gap between what is known and what get's practiced.

An area of health care in worse shape than the practice of Traditional Medicine is Dentistry.

The only area of health care worse than Dentistry is psychology-psychiatry.

"Documenting the gap between what is occurring in clinical practice and what published research findings suggest should be happening is an important step toward improving care. The authors conducted a study to quantify the concordance between clinical practice and published evidence....."

"Efforts to bring research findings into routine practice are needed...."

W.E. Norton, et al
Concordance between clinical practice and published evidence
Findings from The National Dental Practice-Based Research Network
Journal Of The American Dental Association.....Volume 145 #1, January 2014....page 22 - 31
"...there's little proof that flossing works."

"...Associated Press asked the departments of Health and Human Services and Agriculture for their evidence, and followed up with written requests under the Freedom of Information Act. When the federal government issued its latest dietary guidelines this year, the flossing recommendation had been removed, without notice. In a letter to the AP, the government acknowledged the effectiveness of flossing had never been researched, as required."

"One study review in 2011 did credit floss with a slight reduction in gum inflammation - which can sometimes develop over time into full-fledged gum disease. However, the reviewers ranked the evidence as "very unreliable."

"The two leading professional groups - the American Dental Association and the American Academy of Periodontology, for specialists in gum disease and implants - cited other studies as proof of their claims that flossing prevents buildup of gunk known as plaque, early gum inflammation called gingivitis, and tooth decay. However, most of these studies used outdated methods or tested few people. Some lasted only two weeks, far too brief for a cavity or dental disease to develop. One tested 25 people after only a single use of floss."

"Even companies with a big market share of the flossing business - by next year, the global market is predicted to reach almost $2 billion, with half in the United States, according to publisher MarketSizeInfo.com - struggled to provide convincing evidence of their claims that floss reduces plaque or gingivitis. Yet the industry has paid for most studies and sometimes designed and conducted the research."
What Your Dentist Won't Tell You

Reversing Teeth Cavities

Immune system cells in your saliva are responsible for destroying bacteria in your mouth that reside on your teeth in the form of a thin film ["plaque"]. If the function of your immune system is lower than necessary, or if the amount of bacteria is more than your immune system can cope with, the bacteria will be able to operate relatively unchecked [even though you brush your teeth]. The bacteria produce an acid that can wear away the enamel [outer surface] of your teeth, gradually working their way inside, and digging out a hole [cavity].

Teeth are basically bone. As we all know, bones have the ability to repair themselves when damaged. Thus, the idea of paying money to a dentist, to drill into a tooth, and insert a "filling" into a cavity, should seem somewhat counter to logic and reason. In short, drilling, filling, and capping, should be unnecessary. Teeth are comprised of minerals, such as calcium, phosphate, and fluoride. The acids produced by bacteria can 'demineralize' the inner portion of a tooth, resulting in a hole, called a "cavity".

Filling-In A Cavity

There are thus, 2 mechanisms to address to heal a cavity
1 — neutralize the acid produced by the bacteria, and/or kill the bacteria
2— provide the minerals necessary for the tooth to rebuild itself by filling-in the cavity [calcium, phosphate, and fluoride]

The Role of Brushing Your Teeth

The 2 major purposes of brushing your teeth are
1 — remove bacteria in the form of "plaque" from your teeth
2— remove food particles from your teeth and mouth, since bacteria feed on the carbohydrates

Mechanisms Of Tooth Yellowing and Teeth Whitening

The main mechanisms of tooth stains involve the accumulation of plaque and food particles in microscopic pits and fissures on the front portion of your teeth growth of bacteria that bind to the teeth and are altered in color by interaction with carbohydrate foods and the progressive loss in enamel [exposes the yellow color the dentin layer under the enamel]. These are all reversible by reversing the mechanisms of causation. Reversing the mechanisms of causation can all be addressed by killing bacteria with the use of baking soda and salt, removal of food particles with brushing, and supplying calcium [preferably in liquid form] to rebuild the tooth enamel, and remove pits and fissures. Obviously, since we have an immune system that kills bacteria, it would be wise to do things that boost the immune system, and avoid living in ways that cause immune system suppression.
Cavity reversal

ETG suggestions……..

1 --- Brush your teeth with an electric rotary toothbrush
   [one costs about $20]

2 --- Brush your teeth 3 times per day
   [morning, evening……..and sometime in between]

3 --- use a toothpaste that has liquid calcium

4 --- 4 days per week for 4 weeks [prior to brushing your teeth 3 times each day]
   Kill bacteria, neutralize acids…..
   - put 1 teaspoon baking soda and 1/8 teaspoon sea salt into a 3 ounce cup.
   - add water to fill 1/2 of the cup
   - stir with spoon or rotary toothbrush
   - pour into your mouth and swish around for 30 seconds prior to brushing your teeth
   - rinse with water [avoid swallowing the mixture…..major problems in the stomach may occur]

5 --- Once per day for 2 consecutive days each week for 4 weeks
   Kill bacteria, neutralize acids…..
   - put 3 teaspoons baking soda and 1/4 teaspoon sea salt into a 3 ounce cup
   - add water and stir with a spoon to make a thick paste
   - pour or scoop onto mouth-guards, one for upper teeth and one for lower teeth
   - insert mouth-guards for 5 minutes
   - rinse with water [avoid swallowing the mixture…..major problems in the stomach may occur]
Other stuff to aid in reversing cavities

**provide minerals.....**
--- 4 days per week for 4 weeks [3 times each day]
--- stir in a ⅛ teaspoon of sea salt into a 3 ounce cup of water
--- swish it around in your mouth for 30 seconds to 1 minute [avoid swallowing the solution]
--- rinse with plain water

**Supplements.....**
--- 4 days per week for 4 weeks
--- 1 capsule.......Vitamin K2
--- 1 capsule.......Vitamin D3
--- 1 capsule.......probiotics

**Vitamin K2**
product = vitamin K2
brand name = Jarrow Formulas MK-7 [90mcg]
provides 90mcg [take with food]

**Vitamin D3**
product = small capsule vitamin D3
brand name = Jarrow Formulas Vitamin D3 5000 IU
provides 5000 IU [take with food]

**Probiotics**
product = Probiotics
brand name = Dr Ohira's Probiotics-12 Plus
[take without food]
--- pH & Essential Gene Level Nutrients

The body's pH level is a critical aspect of the ability of cells to adapt to stress, recover from illness, adapt to exercise training, etc.. Keeping your body's pH level in an optimal range is to put the environment inside your body is in state where it can repair itself, build tissue, adapt to stressors, etc.

To put your body in a high state of health you must not only ingest protein in your diet, provide yourself with rest, relaxation, and sleep, but you must also provide the food/nutrients that put and keep your body's pH level in the necessary range, and to consume the essential gene level nutrients [ie. B-vitamins, magnesium, zinc, calcium] that assist the body to repair itself.

Two - three meals a day for several days, consume across the course of the day, 2 - 3 salads containing alkalinizing vegetables. Also take in two - three times a day, across the course of the day, essential gene level nutrients....magnesium [~250mg], calcium [~500mg], zinc [~30mg], B-vitamins [b-complex].

If you'd like to test your urine pH, you can buy pH paper for about $10.00 from a lab in Round Rock, Texas.
[Healthline.cc]
[Quantum Labs.......http://www.qnlabs.com]

Keep in mind that you are looking at the pH of urine. How you choose to do that is up to you. You can do the "stream of flow" method of placing a strip of pH paper in a given position. Or you can choose a less potentially messy method by using a dixie cup to collect a small amount, then dipping the pH strip in to cup. Many Americans are reported to be between 5.5 - 5.8. For them the paper won't change color. You'd like it to turn green to be 6.8 - 7.0 range both in the morning and in the evening.
Keep in mind that even though you're looking at urine pH, what you're really out to measure is the efficacy of your diet and supplement intake, and thusly, the status of the environment inside your body that your cells operate in.

Creating the best environment is helpful over the long term. The use of the pH paper can help you use trial and error to get your diet to a point where things are approaching the ballpark of being optimal and staying that way for most of the day.
Supplements can help make the pH more alkaline [calcium, magnesium, etc]. Generally, most vegetables are alkalinizing foods. Choose alkalinizing foods that you like, thus insuring that you can stick with them over the long term.

Example;
a small salad meal eaten by itself, twice across the day.....comprised of [2 baby carrots, 20 spinach leaves, 1/8 inch slices of cucumber [3], 1/2 of small tomatoe [sliced] 1/2 teaspoon of flax seeds.

Example;
a small plate of vegetables, making a meal eaten by itself, twice across the day....comprised of 1/2 cup of peas, 1/2 cup of corn, 1/2 cup of mixed vegetables.

For a list of foods that can help you get some idea of what foods can make your pH more alkaline see a general list;
“The effect of twice-daily brushing with one of three different dentifrices (Arm & Hammer Dental Care, Arm & Hammer Dental Care Extra Whitening, Crest) on stain removal and tooth whitening was examined 115 volunteers over a period of 12 weeks.”

“The difference between Arm & Hammer Dental Care Extra Whitening and Crest became significant after two weeks of use…..”

“The study also found that Arm & Hammer Dental Care produced a significant increase in tooth whiteness by week 12, whereas Crest showed no such increase at any time during the study.”

“These results suggest that the two Arm & Hammer Baking Soda products are more effective in reducing stain and increasing whiteness than the standard silica-based dentifrice. Their effectiveness is not related to abrasivity…….”

T. E. Koerger, et al.
A Longitudinal Comparison Of Tooth Whitening Resulting From Dentifrice Use

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“This laboratory study investigated the whitening effect of toothbrushing with sodium bicarbonate-based dentifrices compared with standard dentifrices that do not contain sodium bicarbonate.”

“Six dentifrices and a distilled water control were tested for their ability to whiten teeth with intrinsic stain. The dentifrices contained different abrasive systems:…..(Arm and Hammer Dental Care);……..(Crest Regul Toothpaste);…….dicalcium phosphate (Colgate Regular Toothpaste).…..”

“Compared to baseline tooth color, all four sodium bicarbonate-based dentifrices were significantly effective in removing the yellow intrinsic tooth stain, while the water control, silica dentifrice, and dicalcium phosphate dentifrice demonstrated no significant change.”

“The commercial dentifrice containing 65% sodium bicarbonate was also more effective than the commercial silica dentifrice.”

“…..most of the tooth whitening by the sodium bicarbonate-based dentifrices occurred in the first 30 minutes of brushing. In the studies conducted, dentifrices containing high concentrations of sodium bicarbonate were more effective at removing intrinsic tooth stain than dentifrices that do not contain sodium bicarbonate.”

C.J. Kleber, et. Al
Laboratory Assessment Of Tooth Whitening By Sodium Bicarbonate Dentifrices
Journal of Clinical Dentistry….Volume 9 #3….1998…page 72 - 75
The antibacterial activity of baking soda (sodium bicarbonate) was assessed using three different experimental approaches. Standard minimum inhibitory concentration analyses revealed substantial inhibitory activity against Streptococcus mutans that was not due to ionic strength or high osmolarity. Short-term exposure assays showed significant killing of bacterial suspensions when baking soda was combined with the detergent sodium dodecylsulfate. Multiple, brief exposures of sucrose-colonized S mutans to baking soda and sodium dodecylsulfate caused statistically significant decreases in numbers of viable cells. Use of oral health care products with high concentrations of baking soda could conceivably result in decreased levels of cariogenic S mutans in saliva and plaque.

Drake D.

Dows Institute for Dental Research, College of Dentistry, University of Iowa, Iowa City, Iowa, USA.

Antibacterial activity of baking soda.


Dentifrices available on the market today contain sodium bicarbonate in a wide range of concentrations. Anticaries efficacy has been demonstrated for these dentifrices in a variety of tests. New insights were gained in the present study in which the effect of a high-bicarbonate dentifrice on the sucrose-induced demineralization of tooth enamel in situ was examined. With the intraoral Delta Ip system it is possible to follow the minute changes in tooth enamel that essentially model the daily episodes of demineralization accompanying the ingestion of various foods. The results revealed a pronounced effect on the pH of the test plaque and a considerable reduction in mineral loss from the enamel. The effect persisted from more than 1 hour and, during that time, appeared to predominate over the effect of fluoride. These findings suggest that bicarbonate may provide additional protection against the loss of tooth enamel. Such effects may be significant for the design of new high-bicarbonate products.

Kashket S. Yaskell T.

Forsyth Dental Center, Boston, Massachusetts, USA.

Effects of a high-bicarbonate dentifrice on intraoral demineralization.


This investigation evaluated the efficacy of two bicarbonate-containing dentifrices (one with fluoride and one without) against one placebo dentifrice (containing neither fluoride nor bicarbonate) in vivo in a panel of human volunteers to determine whether or not sodium bicarbonate would affect salivary mutans streptococci and lactobacilli. Ten caries-inactive adults were divided randomly into three groups, each of which was exposed to all three dentifrices, in a crossover manner, during three 4-week test periods. Saliva samples were taken at 1-week intervals. Samples were stored on ice, and microbiological analyses were conducted. The statistical analyses showed that, over a 4-week period, there was a statistically significant (p < 0.05) reduction in numbers of mutans streptococci with the two bicarbonate dentifrices as compared with the placebo dentifrice. Although not statistically significant, a similar trend was observed with lactobacilli. Longer-term, large-scale studies need to be conducted to investigate the possible mechanisms of action of sodium bicarbonate on these organisms and to relate the results to possible cariostatic effects in humans.

Legier-Vargas K, Mundorff-Shrestha SA, Featherstone JD, Gwinner LM.

Department of Oral Sciences, Eastman Dental Center, Rochester, N.Y., USA.

Effects of sodium bicarbonate dentifrices on the levels of cariogenic bacteria in human saliva.

We’re always hearing about those frivolous malpractice lawsuits, but we rarely hear about a legal system that makes malpractice perfectly legal and that transforms uninformed consent into informed consent.

These unpublishized pathologies of the legal system were recently described in an important article published by the state bar of California. The article is entitled “20th Century Dental (Mal) Practice in the 21st Century.” The author is Dr. Jay W. Friedman, one of the nation’s leading authorities on dental quality of care.

He says the unnecessary extraction of wisdom teeth may be the prevailing practice, and that the removal of wisdom teeth (necessarily and unnecessarily) accounts for 75 percent of the income of oral surgeons.

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BBC News......Monday, 27 March, 2000

**Leave wisdom teeth in, dentists told**

Dentists have been told not to remove healthy wisdom teeth on the NHS even if their patients want the operation.

The advice comes from the National Institute for Clinical Excellence (NICE) which argues that the removal of healthy teeth is pointless and exposes patients to the risk of nerve damage, infection, bleeding and in extreme cases death.

It suggests only diseased teeth should be removed and says that patients currently waiting for the operation should have their cases reviewed.

The institute estimates that following its guidance could release up to £5m.

But the British Dental Association (BDA) says it has been following similar professional guidance for some time and very few teeth are now removed unnecessarily.

**Pain and discomfort**

The routine removal of wisdom teeth, the "third" set of molars that begin to emerge during teenage years, has always been a controversial area.

If the jaw is not big enough to fully accommodate the teeth, they may become misaligned and start causing pain and discomfort.

When this happens, they may require removal, but sometimes dentists recommend that the teeth are taken out even when they are not causing problems - simply on the strength that they may cause problems in the future.

Although many doctors and dentists believe this is an entirely unnecessary procedure it is still regularly carried out on the NHS.

NICE assesses treatments and tells the NHS whether it is cost effective to use them.

Chief executive of NICE Andrew Dillon said: "If they are not causing a specific problem then they should not be removed. Until it is clearly a problem, there is no reason to do the surgery.

"Sometimes the teeth can right themselves and sometimes, even though they impact, they somehow sort themselves out and there is still no problem.

"It's the idea that we do the surgery on the off-chance that we are addressing."
Your dentist is full of bunk: surgery to remove wisdom teeth is worthless, says British Medical Journal

In a groundbreaking report from the British Medical Journal, researchers who poured over thousands of studies detailing the efficacy of medical and dental procedures have concluded that many popular surgical procedures are completely worthless. Among those is one of the most common procedures performed by your dentist: the removal of so-called "impacted" wisdom teeth. According to the BMJ, this procedure may actually do more harm than good.

I don't trust dentists. I've long suspected dentists of scaring patients into undergoing unnecessary procedures in order to generate more business. My suspicions were confirmed when I visited a dentist in 2001 for a basic checkup. After taking dental x-rays (another health hazard, as new research is showing), my dentist fed me a scare story about how I still had all my wisdom teeth, and that all those teeth needed to be surgically removed. I was absolutely stunned. My wisdom teeth were working just fine: no cavities, no pain, no problems. I had made an appointment for a routine checkup, not to undergo expensive surgery for my wisdom teeth. But my dentist insisted, relying on a variety of scare tactics to try to convince me to undergo this expensive -- and completely unnecessary -- procedure. His behavior was highly unethical. He was using his authority and position as "the dentist" to try to scare me into accepting a surgical procedure that I quite obviously didn't need. In fact, even he couldn't give me a good reason for justifying the surgery other than to say, "We usually remove the wisdom teeth quite early." Which means, of course, that they just order the surgery for every child or teenager who walks into the clinic, regardless of whether they actually need it.

Now, it turns out, the removal of wisdom teeth has been found to be an utterly worthless procedure to begin with. It "may do more harm than good" says the British Medical Journal, after reviewing literally thousands of case studies. So the typical dentist is really just hyping a useless procedure, and if your dentist is anything like the dentist I encountered, they're also using all sorts of highly unethical scare tactics to try to force people into undergoing the procedure. That's downright evil, and yet it's a common practice among dentists in the United States.

Folks, you need to start questioning your dentist. Don't believe everything they tell you. Most of the time, they're full of bunk, or they're just trying to sell you on whatever procedure they get paid for performing. They're not all evil -- many actually believe these procedures will help you, which is why they seem so sincere -- but they are misinformed. Their beliefs are based on medical dogma, not scientific fact. Their beliefs in these procedures are nothing more than a sort of medical pathology, where certain things are just considered "true" and never questioned even though the original basis for accepting them as truth has been proven entirely false.

In the vast majority of cases, you will be healthier and wiser by ignoring the advice of your doctor or dentist and seeking out a naturopathic doctor or other healer. In fact, it's very important to avoid allowing a doctor or dentist to even hit you with a scare story or other manipulation tactic, because most people will just go right along with their advice even when it makes no sense. People don't question medical authorities as much as they should. And dentists know it. They know that most patients will just go ahead and agree to practically anything they recommend. That makes a situation where fraud and exploitation of patients is frighteningly easy to accomplish. Any dentist that wants to generate more revenues for their office can simply start recommending an expensive surgical procedure as "standard practice" and claim, "we always take those teeth out." It might be complete hogwash, but most people -- absurdly -- will buy into it. Don't let that person be you. Keep your dentist honest. Better yet, seek out a "natural" dentist who won't use mercury fillings or highly toxic fluoride, and who will turn to surgery as a last resort rather than a "standard procedure." Don't be tricked into unnecessary (and medically dangerous) surgical procedures that can only cause you harm.

With this attitude, I'm happy to say that I now have eight more teeth than most other people -- those are eight wisdom teeth that many dentists try to remove from the mouths of everyone else. Yes, I feel wiser for keeping them. And no, they don't cause me any problems at all. Go figure.

By the way, I found another dentist who agreed to remove my mercury fillings, but only after calling me a fool for my "outrageous" belief that mercury was somehow dangerous. (Are these dentists for real?) That's what it takes to be a modern dentist: you have to be a complete idiot who has no concept of neurotoxicity, no ethics, and no hesitation twisting the arms of patients into undergoing dangerous procedures. I know this doesn't characterize all dentists, but it sure does describe the vast majority of them.
Xylitol [a sugar in fruit] blocks the ability of viruses to adhere themselves to cells in the nose. Also prevents adherence of bacteria to teeth. One can now buy Xylitol nose sprays for prevention of common cold, and Xylitol mouth rinses for prevention of teeth cavities.

"...the exposure of both cells and bacteria to xylitol reduced the adherence significantly."

"The antiadhesive mechanism remains a matter for speculation, but blocking of bacterial lectins is possible.

T. Kontio, et al
Antiadhesive effects of xylitol on otopathogenic bacteria... See More
Journal of Antimicrobial Chemotherapy....Volume 41...1998...page 563-565
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"Xylitol-containing gummy bear snacks given to young children may prevent plaque, say researchers in an article published July 25 in BMC Oral Health."

"Researchers at the University of Washington, Seattle, examined the effectiveness of xylitol received via a different delivery method: gummy bear snacks."

"They randomly assigned 154 children in first through fifth grade at two elementary schools in rural Washington state to three groups. Children received gummy bears with xylitol concentrations of 15.6 grams per day or 11.7 g per day or malti-tol concentrations of 44.7 g per day. The children were given four gummy bears three times a day during school hours."

"Researchers found reductions in plaque levels for the higher-dose xylitol group....."

"For xylitol to be successfully used in oral health promotion programs among primary-school children, an effective means of delivering xylitol must be identified," said Dr. Ly. "Gummy bears would seem to be more ideal than chewing gum."

Compiled by Amy E. Lund, senior editor.

"To evaluate the effectiveness of xylitol candies on plaque and gingival index scores...."

"Altogether 145 school pupils (105 in the xylitol group and 40 in the control group), with ages ranging from 10 to 27 years (mean age = 14.7 +/- 3.1 years), participated in this 18-month intervention program."

"The school health nurses distributed xylitol candies to the pupils three times during the school day. ’... See More

"Significant differences were found between the xylitol and the control groups in the reduction of Plaque and Gingival Index."

"Consuming xylitol candies three times during school days seemed to reduce both the Plaque and Gingival Index scores. This school-based delivery system offered a practical way to distribute and use xylitol candies,..."

"The regular use of xylitol candies may, therefore, support oral hygiene routines...."

S. Maddi, et al
Effect of xylitol candies on plaque and gingival indices in physically disabled school pupils.
The Journal of Clinical Dentistry.....Volume 17 #1....2006.... page 17 - 21
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"Xylitol...sugar....that occurs naturally in certain fruits and that has been widely used as a sweetener...."

"We have previously shown that xylitol at concentrations of 1 and 5% in the growth medium inhibits the growth of pneumococci (Streptococcus pneumoniae) and that it also reduces the level of adherence of the otopathogens S. pneumoniae and Haemophilus influenzae to nasopharyngeal epithelial cells [cells in the nose]."

"The mechanism of action of xylitol on the inhibition of growth of pneumococci may resemble that previously demonstrated for the xylitol-induced inhibition of growth of mutants group streptococci (Streptococcus mutans)."

"The addition of 5% xylitol to the growth medium resulted in marked growth inhibition....."

"...it seems that xylitol is the only commercially used sugar substitute proven to have an antimicrobial effect...."

"In media containing xylitol the bacteria never achieved the highest point of logarithmic growth....."

"We were able to confirm our earlier finding that xylitol causes marked inhibition of pneumococcal growth."

"Xylitol is then metabolized to xylitol-5-phosphate, which mutants group streptococci cannot utilize further and which may even be toxic to bacteria. It must therefore be expelled from the cell. This futile xylitol cycle consumes energy and results in growth inhibition."

T. Tapiajnen, et al
Effect of Xylitol on Growth of Streptococcus pneumoniae in the Presence of Fructose and Sorbitol
Antimicrobial Agents and Chemotherapy.....Volume 45 #1....January 2001....page 166-169