Fluoride for ya' teeth

(Continued from page 13)

experienced a 32.2% decrease in tooth decay rate. Those treated with calcium phosphate-containing gels (0.5% calcium and 2.0% phosphate) experienced a 67.7% decrease in tooth decay rate. This study was published in *Stomatologiya*, vol. 62, pp. 7-10 (1983).

Recent theories that claim that fluoride stimulates remineralization of the teeth have been used recently by toothpaste manufacturers in their advertising. The following study, "Effect of an Acid Phosphate Fluoride Pretreatment on in vitro Remineralization of Initial Enamel Lesions", published in *Caries Res.*, vol. 18, pp. 344-347 (1984), appears to blow a hole in that claim. This study found that short-term acid phosphate fluoride pretreatment inhibits subsequent remineralization of initial enamel lesions.

So how does topical fluoride work? At concentrations used in toothpastes and as topical applications in the dentist's office, fluoride may have a temporary bactericidal effect. But the following studies indicate that fluoride forms a cruddy coating with calcium which coats the teeth and this coating could conceivably reduce tooth decay.

The first study, "Structure of Enamel Surfaces Treated With Topical Fluoride" was published in the *Journal of Dental Research*, volume 63, pp. 6-12 in 1984. It found the fluoride applied to tooth enamel produced calcium fluoride microcrystals.

The second study, "Formation of Calcium Fluoride on Apatite in Acidic Fluoride Solutions" and published in the *Journal of Osaka University Dental School*, volume 23, pp. 23-30 (1983) worked with synthetic hydroxyapatite pellets agitated in acidic fluoride solutions. After 3 hours of agitation, the apatite pellet surface was completely covered with calcium fluoride particles and double layers of calcium fluoride were formed.

Look Before You Leap

Before anyone starts to go in the toothpaste business to start marketing a new toothpaste with copper, he or she should be advised that copper is not without its own harmful effects. Those opposed to the use of the highly toxic chemical, fluoride, for the alleged reduction in tooth decay are all too often willing to accept any substitute without careful investigation.

Recently, a report came out of the Robert Wood Johnson Foundation and found that topical administration of fluoride was virtually ineffective in reducing tooth decay. However they found that dental sealants were exceptionally effective. Before the ink had dried on the report, some fluoridation opponents began discussing sealants as an alternative to fluoride. Fluoridation supporters stated: "Sealants are not a substitute for fluorides...Sealants should be used along with fluorides.

But who was willing to step back and find out if there was any problem with sealants?

Sealants: What Are They Made Of?

CHA contacted the U.S. National Institute of Dental Research to find out the composition of the sealant resins. No one there knew. After finally contacting the manufacturers, we found that there were three basic kinds, two of which were light activated and one which was chemically activated. The chemically activated one was used for sealants.

At about the same time, one of our patrons notified us of experiencing "what a radiation burn must feel like" around the mouth after having a tooth filled with the chemically activated resin. The pain persisted for about 6 weeks.

And then the bad news came back. The chemically activated sealants used benzoyl peroxide as an activator. Benzoyl peroxide has been found to promote cancer growth *(Science*, vol. 213, pages 1023-1024 (1981). However, it apparently cannot produce cancer without another agent which starts the cancer process going. Sunlight is one such agent. Unfortunately, urethane is another such agent, and even more unfortunately, the chemically activated resins used for restorations and sealants contain a urethane component.

Benzoyl Peroxide Also Used For Acne.

A recent fad using benzoyl peroxide for the treatment of acne has erupted. As effective as it may be, in view of the potential for danger, one might at least be advised to pick up the issue of *Science* listed above and read it before continuing on with the therapy.

Leading Japanese Investigators Report: "Sodium Fluoride Is Potentially Dangerous To Humans"

In 1983, **Fluoride: The Aging Factor** reported the work of Dr. Takeki Tsutsui and coworkers showing that fluoride induced chromosomal damage. In 1984, these results were reported in a leading U.S. cancer journal, *Cancer Research*. Recently, this group has published two additional studies. These studies differ from the earlier study in that while the earlier study used hamster cells, the two more recent studies used human cells.

The first of the two more recent studies was published in *Mutation Research*, volume 139, pages 193-198 in 1984. Human cells were treated with 2 ppm fluoride for 24 hours. About 70% of the cells were killed. Treatment with 9 ppm fluoride for 24 hours resulted in chromosome damage. Fluoride exposure also led to metabolic alterations (interference wih DNA synthesis) indicative of chromosome damage. In their second study, published in *Mutation Research*, volume 140, pp. 43-48. Tsutsui and coworkers found that fluoride exposure also led to metabolic alteration indicative of chromosome damage in human keratinocytes taken from the inside of the cheeks of volunteers.

Another Japanese research team found that exposure of enamel cells to 15 ppm fluoride caused a degeneration of enamel cell nuclei and a clumping of chromosomes. Their study, entitled "Effects of Sodium Fluoride on Rat Molars" was published in *Shigaki*, vol. 70, pp 1296-1306 (1983).

Still yet another Japanese research team, concerned because sodium fluoride is used for the prevention of dental caries, found that sodium fluoride inhibits DNA, RNA, and protein synthesis in white blood cells (lymphocytes), and in the spleen of mice fed sodium fluoride. This study was published in the journal, *Shika Gakuho*, vol. 84, pp. 229-51 (1984).

In another related study, Russian investigators found that treating cells with as little as 1.5 ppm fluoride affected cell division. Fluoride also affected DNA, RNA, and protein synthesis by the cells. Fluoride-induced damage to the cell during cell division was also noted. This work was published in *Tsitologiya*, vol. 26, pp. 299-306 (1984).

Please support us in our effort to bring an end to fluoridation by sending your tax deductible donation today. Those sending in $25 or more will receive a hard-bound copy of **Fluoride: The Aging Factor** free, (regular price $11.95) and 100 fluorosis brochures. (Brochures sent by request only.) As a patron, additional copies of the book may be purchased at the price of $5 per copy and additional fluorosis brochures at $10 per 100 copies. For further information call 413-785-5050.

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