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OPTIMAL FLUORIDE LEVEL IS CRITICAL

A recent study conducted by the Dental School, Creighton University, showed an overall caries reduction of 44 percent between fluoride levels of 0.6 parts per million (ppm) natural and 1.0 ppm adjusted.

Although these results are very commonplace in fluoridation literature, this particular study is unique because it dramatically demonstrates: (1) How ineffective sub-optimal fluoride levels actually are in preventing dental cavities; (2) how the optimal level must be precisely determined for each community; and (3) how crucial high quality monitoring and surveillance programs are to the dental health of this Nation.

An abstract of the Creighton study, published by the American Dental Association, is enclosed.

Dental Disease Prevention Activity
Bureau of State Services

Enclosure

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ADA NEWS

AMERICAN DENTAL ASSOCIATION NEWS SEPTEMBER 1-8, 1980

Omaha's fluoridation from .6 to 1 ppm reduces caries 44%

Omaha—Parents here probably noticed it in the family checkups. Dentists have noticed it in the changing direction of their practices.

Parents and dentists are seeing the positive effects of fluoride in preventing tooth decay in children, according to a study by the Creighton University dental school.

"We're proving that fluoride had the effects we predicted before it was added to the water supply 11 years ago," said Dr. Frank Ayers, associate professor of dentistry for children. He directed the study with help from the University's computer system.

Charts of children ages 4 through 12 who received treatment in the children's dental clinic at Creighton before fluoride was added to the Omaha water supply in January 1969 were compared to charts of youngsters of the same ages last fall.

Charts of 500 pre-fluoride and 500 post-fluoride patients were reviewed. After the non-Omahans were excluded, 307 pre-fluoride and 402 post-fluoride patient charts remained for the study.

44% reduction

The researchers found a 51% caries reduction in the primary teeth and a 38% reduction in the permanent teeth, an overall caries reduction of 44% from pre- to post-fluoride patients.

Dr. Ayers said the findings were most dramatic in the 4 year olds. There was a 73% drop in caries in this group.

The number of decayed surfaces and filled surfaces were counted in the primary teeth. In the permanent teeth, decayed surfaces, filled surfaces, and missing teeth lost to decay were counted.

The results of the study are consistent with studies in other cities where fluoride has been added to the water supply, he said. Results normally run from 40% to 60% reduction.

"We weren't trying to draw any new conclusions," Dr. Ayers said, "but we hadn't expected to see such dramatic changes because there was such a small change in the fluoride content of Omaha's water supply."

Surprised at intensity

In many other cities that have been studied, only trace elements or virtually no fluoride had been present in the pre-fluoridation water supply. However, Omaha's water supply contained .6 parts per million naturally, before fluoridation.

With fluoridation, Omaha's water supply was increased to 1.0 parts per million, the optimal amount, Dr. Ayers said. With an increase of only .4 parts per million, he was surprised to see the caries reduction percentages so high.

At .7 or .8 parts per million, caries reduction results begin to be seen, he said. Most cities with a rate of .7 or .8 naturally do not fluoridate their water supply. Omaha was just below that amount.

More improvements ahead

Dr. Ayers said he felt the results would continue to improve as patients get older and as older populations are compared.

Dentists as well as dental patients are benefitting from the fluoride added to the Omaha water supply, Dr. Ayers said. The reduction in caries is already affecting dental practice. Dentists can see more patients and have more time for patient education and other areas of prevention—such as diet control, monitoring growth and development, and orthodontic care—not all repair work. Also, there is less cost to the patient for having cavities filled.

Dr. Robert Vining, dean of the dental school, said he has been aware of the impact fluoride has had on the teeth of young Omahans for some time. The results of the study substantiate his contention that the addition of fluoride to community water supplies is "one of the most important health care measures provided" to the people of the nation.

—*Rebecca Horan*