Grand Rapids Fluoridation Commemorative

1945 - 1995

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50 Years of Fluoride, 50 Years of Health

The Bicentennial of Water Fluoridation is Celebrated in a Grand Style
Where It All Began... In Grand Rapids, Michigan

“What was oral health like 50 years ago?” Whenever Grand Rapids dentist Dr. Jim Wieland presents lectures on the topic of fluoridation—which he’s often asked to do—he asks and then answers that question. The effect on his audience is always dramatic. Younger dentists are astounded. Older dentists find unhappy remembrances stirring.

“If you were graduating from high school 50 years ago,” Wieland notes, “several of your classmates would already be wearing full dentures. The majority of Americans lost all or most of their teeth by age 25. The number one reason why World War II recruits were rejected was because they didn’t even have as few as 6 healthy functioning teeth.” Wieland goes on to recall how Dr. Willard VerMeulen, a local dentist who set up practice in the 1920s, always kept several beds in his office to accommodate the many patients who were having all of their teeth removed under general anesthetic. “Dr. VerMeulen typically placed 20 to 25 dentures every week,” says Wieland. “In my busy practice, I only place 4 or 5 dentures a year. When you compare those numbers, it becomes apparent that 50 years of water fluoridation have had an amazing impact on the health and quality of life here in Grand Rapids and indeed the world.”

It was a 15-year study, begun in 1945 and conducted in Grand Rapids and nearby Muskegon, Michigan, that conclusively proved the value of fluoridated water in strengthening tooth enamel and preventing decay. Today, water fluoridation is acknowledged as a public health milestone and one of the most significant success stories in the history of dentistry.

In 1986, a small group of dentists gathered in the basement of the MDA building in Grand Rapids to begin planning a commemorative celebration of water fluoridation. Their original idea was to dedicate a state historical marker. It was agreed that the Fluoride Commemorative Project should coincide with the MDA’s annual meeting in Grand Rapids. After all, it seemed only right that the event should be held in the city where the initial fluoridation experiment was conducted.

Jim Wieland was part of that group, known as the Fluoride Commemorative Committee. He recalls how “suddenly it occurred to us that in 1988, the date of the annual meeting, we would be celebrating the forty-third anniversary of fluoridation. We realized it would make much more sense to hold a fiftieth anniversary event on a much bigger scale, with a monument of some kind.”

Thus began nearly seven long years of meetings, proposals, fundraising campaigns, petitions to government bureaus, consultations with artists, and conferences with municipal representatives. Jim Wieland and co-chair and Grand Rapids dentist Dr. Kim Erickson headed up the planning committee, with ample help from colleagues, local government officials, and interested citizens.

There were setbacks along the way, many of them having to do with money. For example, the idea of a $300,000 commemorative fountain in the Grand River was scrapped as being financially unrealistic. But there were also notable successes.

Meanwhile, the University of Michigan School of Dentistry—Walter Loesche in particular—was putting together the Fiftieth Fluoride Anniversary Scientific Symposium, a related but separate project. At a meeting in 1994, it became clear to Grand Rapids planners that their commemorative event would be much more compelling if the symposium and monument projects were combined. Within five weeks, a team of dentists, U-M administrators and others wrote a business plan and made a presentation, asking Delta Dental Fund to make a leadership gift to the joint effort. “Our group put in untold hours,” Wieland recalls, adding that “Arnie Morawa at the University of Michigan wrote a crucial letter of support.”

The response was favorable. Delta Dental accepted the challenge and a $75,000 gift was forthcoming. Other major donations soon followed: $25,000 from the American Dental Association and $15,000 each from the West Michigan Dental Society, the Michigan Dental Association, the Grand Rapids Foundation, and Procter & Gamble.

Although planners hadn’t dared to hope for more than 200 participants, a total of 254 people turned up for the two-day event held on September 15 and 16. The symposium, which was organized by the University of Michigan School of Dentistry, attracted a capacity crowd and lived up to its promise of being an “international” meeting. In
addition to dental and public health professionals from throughout the United States, the audience included nearly a dozen representatives from Japan, one from South Korea, and others from Sweden, Switzerland, Norway, England, Wales, and Ireland. A number of professional organizations were represented, among them the Center for Disease Control and the National Institute of Dental Research. There was also a strong contingent from the University of Michigan itself, which was especially appropriate since much of the basic research on the 1.0 ppm of fluoride was done at Michigan by Dr. Philip Jay. School of Dentistry Dean J. Bernard Machen served as moderator for the first panel discussion.

Other highlights of the two days included a banquet featuring keynote speaker Art Ulene, M.D. and medical reporter for NBC-TV, and the unveiling of the long-planned historic monument on the Grand Rapids Riverwalk.

“We have heard nothing but positive comments,” Wieland reports. “Some of the best oral health scientists in the world came together in Grand Rapids to celebrate a major event. People were excited to be here. For some, who struggle to introduce fluoridation into communities on a daily basis, it was an emotional moment. To them, Grand Rapids is the touchstone, the well-spring of fluoridation.”

When asked if the aftermath of the event has been something of a letdown, Wieland will only admit that he’s been catching up on his sleep and writing many thank-you notes. “One of those thank-you’s should definitely go to Debbie Montague and Arnie Morawa at the U-M School of Dentistry,” he insists. “They helped us make a good event even better, to bring it up to the next level. And they were unbelievably helpful in making sure that all the minute details were taken care of and everything went well.”

On September 15, dozens of people gathered for the unveiling of an historic monument in a riverside park in downtown Grand Rapids. Designed by Steve Pierpoint, a municipal employee who donated his time and talent to the project, the marble monument is intended to educate the public on the health benefits of fluoridation. The first five panels represent the decades that have passed since the 1945 Grand Rapids experiment. Inscribed on each are the names of individuals who made pivotal contributions to the progress of fluoridation. The sixth panel features a fluoridated water fountain built into a portal.

* Did you know that:

- Today, over 144 million Americans in approximately 10,500 communities drink fluoridated water.

- Water fluoridation is one of the best public health bargains around, costing an average of 51 cents per person per year—the price of a typical candy bar.

- Over a lifetime, the $38.25 expenditure for fluoride is less than the average cost of a dental filling, about $42.

- From 1971 through the mid-1980s, three national surveys of children’s oral health showed a continued decline in dental cavities, a trend attributed largely to the widespread use of fluoride in community water supplies, toothpaste, and other forms.

- The most recent survey in 1986-87 found that American children had 36 percent fewer cavities than they did at the beginning of the 1980s.

- Studies show that even today, children who have always lived in a fluoridated community have up to 25 percent less decay than youngsters who have never lived in a fluoridated area.

- Exactly how fluoride prevents cavities is not fully understood, but scientists do know that fluoridated water most benefits those who drink it from birth and that the protection holds throughout the life of those people who live in fluoridated communities.

* Thanks to Dr. Jim Wieland, who provided the information for this section.
At the turn of the century, an enterprising Colorado Springs dentist by the name of Frederick McKay happened to notice dark mottled stains in the crystal structure of his patients' teeth. After following the disorder for 25 years, he appealed to the U.S. Public Health Service to determine the cause.

Dr. McKay's request was granted. In 1928, he and Dr. Grover Kempf of the U.S. Public Health Service teamed up and paid a visit to Bauxite, Arkansas, where the Aluminum Company of America (ALCOA) produced aluminum. In Bauxite, the two researchers found the now-familiar brown stain on the teeth of the town's children. ALCOA's chief chemist, anxious to disprove the rumor that aluminum cookware was poisonous, tested the town's water supply and discovered exceptionally high levels of the naturally occurring element fluoride. Water samples from other nearby communities revealed the same results.

As a consequence of those tests, the Public Health Service's newly formed National Institutes of Health (NIH) mounted a major research effort and studied the problem throughout the 1930s. This research was led by Dr. H. Trendley Dean, the first dental officer of the NIH.

What Dean discovered was that drinking water with a fluoride concentration of 1.0 parts per million (ppm) eliminated the fluorosis. With further study and analysis, Dean and Dr. Philip Jay of the University of Michigan conclusively linked fluoride in drinking water at 1.0 ppm to the prevention of tooth decay.

The two scientists also conducted careful studies of communities with naturally occurring fluoride in their water systems and found no ill effects other than the fluorosis. With the safety issue settled and the concentration problem solved, it was time for a long-term study.

Grand Rapids was chosen as the site for the study because of its large school-age population, the cooperative attitude of its citizenry, and the fact that its water was consistently free of fluoride—as was the water supply of Muskegon, the control community. The West Michigan Dental Society fully supported the project and helped convince the city commission to approve the experiment to monitor the rate of tooth decay in the city's 30,000 school children.

At 4:00 p.m. on January 25, 1945, Grand Rapids became the first community in the world to adjust the level of fluoride in its water supply. Newburgh, New York, followed about three months later and Brampton, Ontario, did the same shortly thereafter.

The monumental Grand Rapids study, which went on for 15 years, proved water fluoridation to be one of the most efficient, effective public health measures in history. In fact, after just 11 years scientists reported that the rate of dental cavities had dropped by more than 60 percent. Earlier evidence had been so compelling that the city of Muskegon dropped out of the study during the sixth year in order to fluoridate its own water supply.

Today, approximately 145 million people in more than 10,000 U.S. communities have fluoridated water. Worldwide, 280 million people enjoy the health benefits of water fluoridation. Thanks in large part to the pioneering spirit of the people of Grand Rapids, the widespread misery once caused by tooth decay is now hard for us even to imagine.