How it began: Dr. David Scott, at left, examines a student in a fluoride study after Grand Rapids became the first city in the country to add fluoride to its municipal water system in 1945. At right, a worker adds fluoride to the Grand Rapids water system.
DENTAL CARIES, 1930-1945

1) THE PROBLEM—SEVERE

2) THE STUDY—EXTENSIVE

3) THE RESULTS—AMAZING!
1) THE PROBLEM---SEVERE

• 1930s, extremely high caries rate
• Dr. Bill VerMeulen was booked solid on Saturdays to remove all teeth and do dentures for teenagers, often to look nice for their graduation or wedding
• At 6 years of age, 80% of children had an average of 14 cavities
• By age 55, half of all Americans needed dentures
Dr. Bill VerMeulen

Did extractions and dentures for teenagers with “rotting stumps” for teeth.

Dr. Willard B. VerMeulen practiced dentistry in Grand Rapids for 63 years, from 1924 until his retirement in this Fulton St. office.
The Problem---continued

• Dr. Ray Stevens father recalled that 75% of his dental practice was extractions and dentures

• In 1938, only 6 apposing teeth were required to enter the military. 10% of draftees were rejected for dental reasons, the largest cause. During the war, that requirement was lifted, and 40% of young draftees needed immediate treatment for dental pain!
2) THE STUDY---EXTENSIVE

- Research showed the benefits of natural fluoride in the water supply, optimum 1 ppm.
- Philip Jay at the University of Michigan did much caries research.
- Grand Rapids was selected for its fluoride free water supply and capable filtration plant.
- Muskegon, with the same water supply, was selected as the control.
My connection to the study

My father, Dr. Russell E. Klinesteker, was President of the West Michigan District Dental Society in 1944 and made a strong case to convince the Grand Rapids Board of Education and City Council to accept the study. Public cooperation was outstanding due to the severity of caries.

--I was in Kindergarten in 1945 and remember the dental exams and saliva samples taken.
--Dr. David B. Scott stayed at our house while in town doing the exams for the study.
--My 2 sisters and I benefited with extremely low caries rates.
Saliva sample container included wax to chew and glass bottle to spit in.

Tin cylinder used in study.
LACTOBACILLIS TESTING

Collection of saliva samples from Grand Rapids schoolchildren.
THE STUDY BEGAN
THURSDAY, JANUARY 25, 1945

• Grand Rapids was first city in the world to fluoridate its water
• The 15 year study, included X-Rays, saliva samples, urinalysis, and 150,000 dental exams
• Dr. David B. Scott, USPHS, directed the study all 15 years
• Was the longest and most thorough public health study ever done, and resulted in the formation of the NIDR in 1948
THE RESULTS---AMAZING!

• A dramatic 60-65% reduction in dental decay!
• After 5 years, the control city (Muskegon) dropped out of the study and fluoridated its’ own water!
• Fluoridation has continued to be one of the most tested, cost effective, and proven safe Public Health measures---ever!
• Fluoride is present in all U.S. groundwater supplies to some extent. A lethal dose of fluoride is 5-10 grams. That is equivalent to drinking 10,000 8-ounce glasses of fluoridated water---all at once!
THE RESULTS, CONTINUED

• As a result of this study, fluoridation has spread around the World, benefiting millions
• The ADA, AMA, CDC, WHO, USPHS, FDA, NIH, NIDR, HHS, EPA, AHA, and many more still support fluoridation
• Most bottled water does not have optimal fluoride, and some decay is returning
• The fight continues. The stakes are high, especially to help those who resist dental treatment due to fear or inability to pay.
Marble Monument Celebrating 50 years

-1995 Dedication in G R Downtown on the river
-Needed removal due to new construction
-Replaced by “Steel Water” sculpture in 2007
-Will be restored at Delta Dental campus in Okemos, MI
Cyril Lixenbergs Sculpture

“STEEL WATER”

- 33 feet tall, 5 tons of steel
- Dedicated in 2007
- Downtown on the Grand River in front of the Marriott Hotel
Michigan Historical Marker

-Bronze plaque in front of GR water treatment plant, 1430 Monroe NW
-Dedicated September 2010

Dr. Bouws    Dr. Wieland    Dr. Klinesteker
Grand Rapids Water Treatment Plant

-Restored to contain condos and businesses
A 7-year campaign to convince the Citizens Stamp Advisory Committee to issue a Fluoride stamp in 1995 included 6,000 of these postcards distributed to dentists and stamp/postcard collectors around the world. The result? Stamps honoring cartoons!
Past Fluoridation
Symposiums/Celebrations in G.R.

• 25 years—1970, Gerald R. Ford, speaker
• 40 years symposium—1988 NIDR “Thank You, Grand Rapids”
• 50 years—1995 Celebration, Symposium, and marble monument dedication
• 2007 “Steel Water” sculpture by Cyril Lixenberg dedication
• 2010 Michigan Historical Marker
• What does the future hold? It’s up to you!