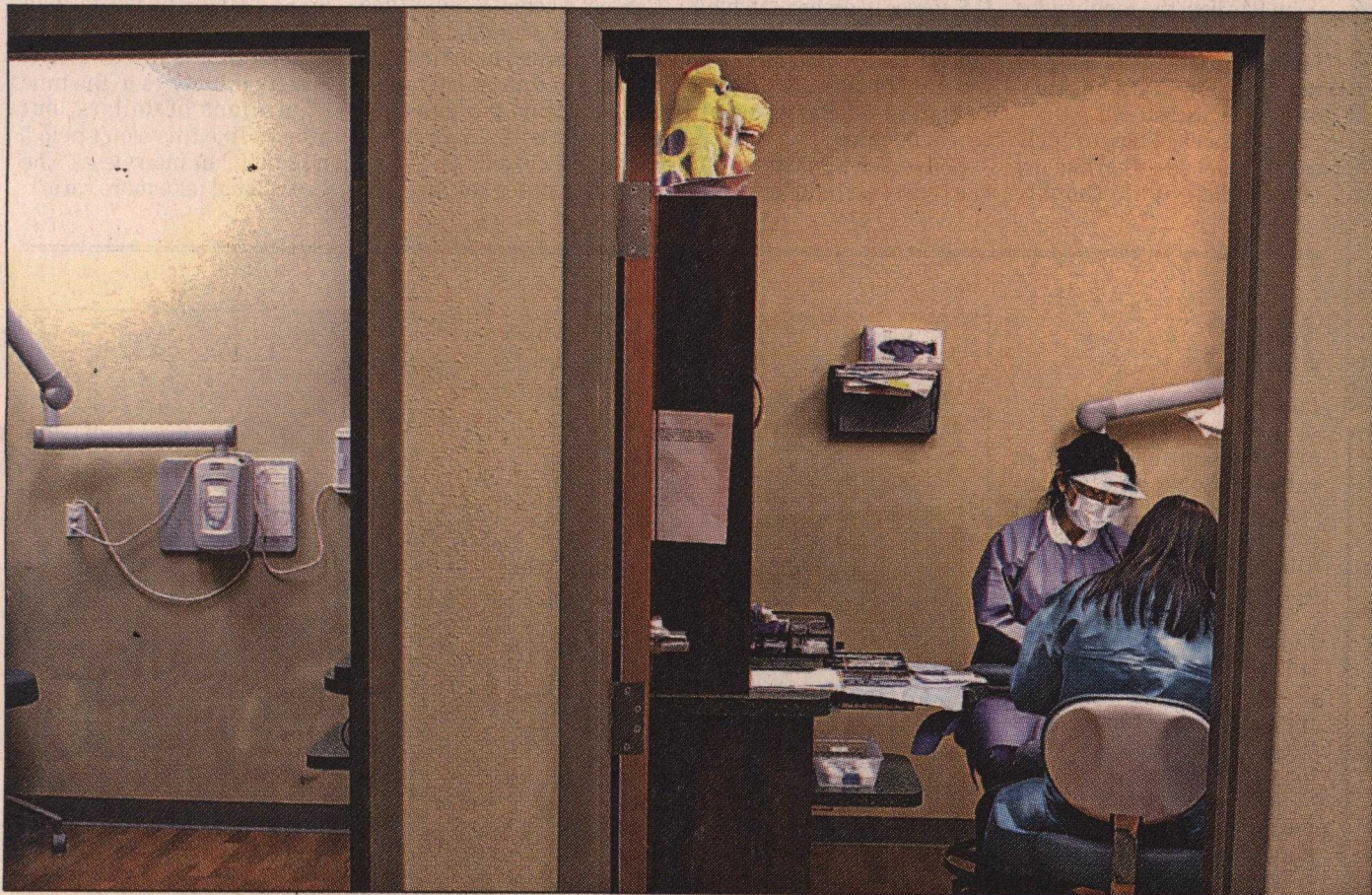


WATSONVILLE AT CENTER OF FLUORIDE DEBATE



SHMUEL THALER/SENTINEL

Elizabeth Hernandez assists Dr. Cristina Landayan as she fills a cavity on a patient at Salud Para La Gente in Watsonville last week.

Backers continue to fight as support wanes

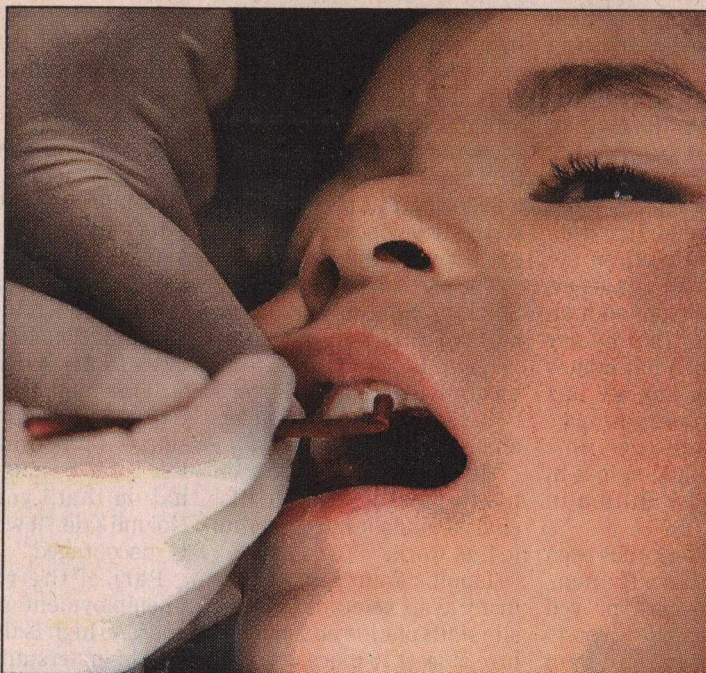
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WATSONVILLE — Chew on this.

Taking a bite out of an epidemic of tooth decay among Watsonville's children by fluoridating the water seemed like a no-brainer 10 years ago. After all, communities across the United States have been adding fluoride to their water to protect teeth against cavities for more than 50 years, and no less than the Centers for Disease Control and Prevention hails the practice as one of the 10 greatest public health advances of the 20th century.

But a decade after the City Council voted to become the first to fluoridate



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Dr. Juei Kao applies fluoride to the teeth of patient Ian Imperio at Dientes.

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in Santa Cruz County, the chemical has yet to flow through taps. Battles at the ballot box and in court stalled the endeavor and now the cost threatens to kill it.

And nationwide, opposition to water fluoridation is growing across the political spectrum, from people with libertarian leanings to civil rights leaders.

It's enough to make backers gnash their teeth.

"This isn't something that we're slowly expanding across the country and getting one more community (fluoridated) across the United States. This is people actually saying we should take this out of the water," said Dr. Bill Maas, former director of the oral health division at the CDC's National Center for Chronic Disease Prevention and Health Promotion and a consultant with a new national campaign backing community water fluoridation. "It's amazing to us how it's resonating with people. We think it's very scary."

Fluoride foes are smiling. And why not? After being depicted as members of a fanatical fringe for decades, they've gained strength among those concerned that questions about safety and effectiveness haven't been fully answered. Andrew Young, a colleague of Martin Luther King Jr. and former U.S. ambassador to the United Nations, came out in support of ending fluoridation in his home state of Georgia early last year. In July, the League of United Latin American Citizens, the oldest and largest Latino advocacy group in the nation, went on record opposing the practice and supporting efforts to stop "forced medication through the public water system because it violates civil rights."

Though backers scored a big victory earlier this month when Santa Clara Valley Water District leaders voted to support fluoridation, the tide is turning against them, said Nick Bulaich, who's at the forefront of the Watsonville anti-fluoride movement. He said supporters are growing desperate as more and more

people are challenging them.

"You're having cities voting it out in Alaska, Florida, New York," he said. "For sure, it's turning, and the reason is the pro-fluoride doesn't have any science behind them, at least any sound science."

DECADES OF DATA

Grand Rapids, Mich., became the first community in the country to fluoridate in 1945 and by 1950 the city's population had experienced a dramatic drop in cavities. A year later, the U.S. Public Health Service adopted a policy of supporting water fluoridation. Today, fluoride is added to 72 percent of the nation's public water supplies, affecting the drinking water of 62 percent of Americans.

According to the CDC, the nation saw a 40 percent to 70 percent drop in tooth decay among children and a 40 to 60 percent decline in tooth loss in adults between 1945 and 1999.

But California didn't jump on fluoridation as did other parts of the country, and lawmakers sought to remedy the situation with a mandate for water systems with 10,000 or more customers to add fluoride if money was provided by an outside entity.

After the law went into effect in 1998, the Santa Cruz City Council put the decision in the hands of voters who promptly banned fluoridation. Then the action shifted to Watsonville, where health professionals saw a greater need. Again voters said no.

"It was painfully close in both places," said Cynthia Mathews, who supported fluoridation as a member of the Santa Cruz City Council. "It's a dedicated opposition movement that deals very effectively in fear and selective statements. But when you look at the science and the overwhelming medical opinion, it's that this is a common sense investment in community health."

DRILLING DOWN

Major health organizations, including the American Academy of Pediatrics, the American Medical Association, the American Dental Association and the World Health Organization, support water fluoridation.

But that hasn't assuaged the concerns of opponents. They point to research such as a 2005 study by a Harvard researcher who looked at the fluoride exposure in patients with osteosarcoma, a rare bone cancer, and found that those with the highest exposures had a greater probability of getting the cancer. Subsequent research, including a second Harvard study, found no association between fluoride levels and the bone cancer. That's been the case again and again, say proponents, who maintain foes either misunderstand or misrepresent the science.

Another concern is the source of fluoride, which foes describe as a toxic waste product of the phosphate fertilizer industry. Supporters, who prefer the term "byproduct," note compounds meet drinking water standards set by the American National Standards Institute and the National Sanitation Foundation as safe for human consumption.

Opponents also worry about dosage, particularly since fluoride is widely available in dental care products and may be present in processed food and beverages.

"Everyone drinks different amounts of water," said Bulaich. "What we have is a cookie-cutter approach."

Studies in rats showed it took massive doses, well above what could be reasonably expected to be consumed by humans, to pose health risks. The only effect observed from slightly higher than recommended levels is a cosmetic condition known as fluorosis.

But in recognition of the fluorosis issue and the increased availability of fluoride sources, the U.S. Environmental Health Agency lowered the maximum recommendation for fluoride levels in water in January.

DENTAL GAP

At Salud Para La Gente's Clinica del Valle del Pajaro on Monday, Dr. Cristina Landayan prepared to fill a cavity in the mouth of a 5-year-old. The kindergartner already has lost a tooth to infection and, when he smiles, the gap is surrounded by metal caps.

Landayan said she was

A SAMPLING OF STUDIES

Water fluoridation has been a hot topic among researchers. Here are some relevant studies.

ORIGINAL RESEARCH

■ 'Age-specific fluoride exposure in drinking water and osteosarcoma' by Bassin E.B. et al., Harvard University. Published 2006, Cancer Causes and Control. Looked at osteosarcoma patients from 11 hospitals who were diagnosed between 1989 and 1992. Found a correlation between estimated fluoride levels in drinking water and osteosarcoma. The finding is not supported by previous data and more studies are needed to replicate.

■ 'An assessment of bone fluoride and osteosarcoma.' F.M. Kim et al., Harvard University. Published 2011 in Journal of Dental Research. The follow up study to the Bassin osteosarcoma study. Found no significant association between bone fluoride levels and osteosarcoma risk.

■ 'Effectiveness of water fluoridation' by E. Newbrun, UC San Francisco. Published in 1989, Journal of Public Health Dentistry. Surveyed statistics from decade prior to 1989. Found community fluoridation responsible for 30-60 percent of decrease in caries in communities in the U.S., Australia, Britain, Canada, Ireland, and New Zealand.

■ 'NTP Toxicology and Carcinogenesis Studies of Sodium Fluoride,' by National Toxicology Program technical report series. Published 1990. A two-year study dosed rats at 0, 25, 100 and 175 ppm sodium fluoride. Weight and survival were not different. The rats in the higher dosages had more fluorosis. The highest dosed group of females had more osteosclerosis in long bones. The highest two groups of males had some osteosarcoma, but not at a significant level.

REVIEWS

■ 'Reviews of evidence on interventions to prevent dental caries, oral and pharyngeal cancers, and sports-related craniofacial injuries.' B.I. Truman et al., CDC. Published 2002, American Journal of Preventative Medicine. Found strong evidence that community water fluoridation reduces caries.

■ 'Epidemiology of bone tumors in children and young adults.' R. Eyre et al., University of Leeds, Newcastle University and University of Manchester, England. Published in 2009, Pediatric Blood & Cancer. Review of papers about bone cancer from 1970 to 2008 did not find evidence of fluoride causing cancer.

■ 'Fluoride in Drinking-water' edited by K. Bailey et al., World Health Organization. Published 2006, WHO drinking water quality series. A summary of evidence on the occurrence of fluoride, its health effects, methods to reduce excess levels and analysis techniques. Low concentrations are good for teeth, but excessive concentrations (more than 4.32 ppm) can lead to skeletal fluorosis.

shocked at the condition of children's teeth when in 2004 she moved to Watsonville from Hayward, where the water is fluoridated. The little boy she treated Monday is no exception, she said.

"It's surprised me to see a lot of kids like that," Landayan said. "There's a lot of cavities."

In 2001, Dientes Community Dental Care reported that its screening of more than 10,000 Watsonville school children during a three-year period found 75 percent had untreated decay.

The situation doesn't seem to have improved much.

In 2010, Salud, which served nearly 6,000 dental patients aged 18 and younger last year, found less than 10 percent of kindergartners in schools in Watsonville and the surrounding area had what dentists considered healthy teeth. At one school, which was not identified, 25 percent of kindergartners had pronounced cavities.

Landayan said many factors play into poor dental health, including economic status, education and nutrition. Fluoride rinses and varnishes can help, but they require families

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to take steps they may not be able to afford. Water fluoridation might not cure all dental ills, she said, but it helps prevent decay and there's no question of access when it comes out of the kitchen tap.

"It's not a magic bullet," said Salud spokeswoman Sara Clarenbach. "But it's an arrow in the quiver."

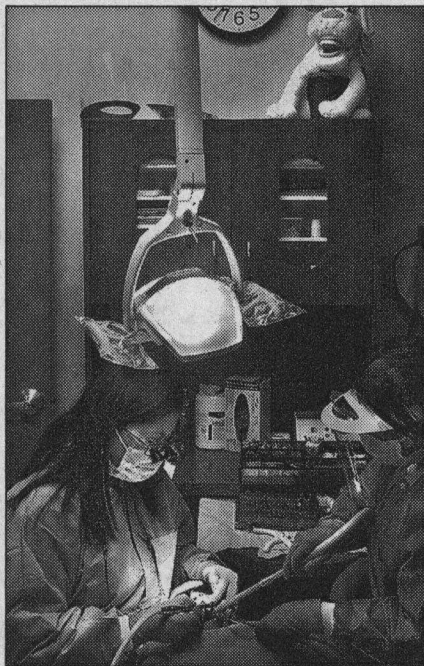
COST OF CARE

Watsonville fought forced fluoridation all the way to the California Supreme Court, which declined to hear its appeal of a ruling that gave state law precedence over local ordinance — a decision that has implications for Santa Cruz though there have been no moves to revisit the issue there.

In Watsonville, a handful of foes continue to grind away at the issue, often showing up at City Council meetings to urge officials to reconsider. Two members of the council — Emilio Martinez and Nancy Bilicich — have called for reopening the issue.

Bilicich said she's concerned about putting any additive in the water, especially one that's caused so much controversy and has been the subject of so many conflicting studies.

"Yes, we have an issue with youth and tooth decay, but what way do we address it," Bilicich said, "I'm all for youth, but is there a better way, whether fluoride



SHMUEL THALER/SENTINEL

Dentist Cristina Landayan, left, fills a patient's cavity at Salud Para La Gente with dental assistant Elizabeth Hernandez.

tablets or pills or better education about what is bad for teeth?"

In the end, the question of Watsonville's water may come down to economics.

Officials anticipated that installing and operating a fluoridation system would be on the expensive side because the city relies on more than dozen wells and treats its water separately at each one. But when the lowest bid came in at \$2.7

million, \$1 million more than estimated, the project stalled.

The California Dental Association Foundation, which pledged to pay for construction and two years of operations, is reviewing bids. If it backs out — its contract sets a maximum payout — fluoridation is likely dead.

If the bid is accepted, fluoridation will cost about \$50 a person to implement and short of \$4 a person annually for operations. That's considerably more than the 50 cents per person that formed the basis of a study that concluded every dollar invested in fluoridation saved \$38 in dental treatment.

Maas, the former CDC administrator, said the study looked at an average and the savings could be less in some communities. But he said the cost of repairing decay with fillings and crowns isn't getting any cheaper.

"Even if you only save \$4, if you promise me \$4 for every dollar, I'm going to give you as many dollars as I can," he said. And a "sound tooth is so much better off."

But opponents think it's folly to go forward even with the grant from the dental group. Bilicich wonders what happens after the two years are up and operations money stops flowing. Watsonville can't afford to pick up the tab, she said.

Bilicich said it would have made more sense to fluoridate in Santa Cruz, which has one water source and treatment plant.

"It would be less expensive with one water source vs. 13 in Watsonville," she said. "That's huge, but that's not where we are."