

AT 60, JFK'S NUCLEAR TEST BAN STILL MATTERS ST. LOUIS BABY TOOTH SURVEY HELPED MAKE BAN A REALITY

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This month marks the 60th anniversary of the treaty banning dangerous nuclear weapons tests underwater, in the atmosphere, and in outer space. If not for this agreement on August 5, 1963, following nearly 500 above-ground nuclear explosions conducted by the U.S., the Soviet Union, and England during the most intense phase of the Cold War, many more humans would have suffered life-threatening complications due to nuclear fallout.

The story of the test ban remains a symbol of what can happen in a democratic society when various parties work together to transform public concern into public policy. But the test ban did not come easily in the U.S.

The nation's military and political leaders argued that the Soviet Communist threat justified an escalation in nuclear arms production. But scientists spoke out about the dangers of introducing 100-plus new radioactive elements produced by a nuclear explosion into the environment. Grassroots organizations worked to end above-ground testing. Some political leaders strongly supported a test ban, but talks between the superpowers floundered amid Cold War tensions.

President John F. Kennedy was especially concerned about the sharply rising levels of fallout in the environment and human bodies. In one discussion with science advisor Jerome Wiesner on a rainy day, Kennedy asked "you mean it's in the rain out there?" When Wiesner said it was, the President, according to one first-hand account, became ominously silent for several minutes.

The Cuban Missile Crisis of October 1962, in which nuclear war was narrowly averted, further incentivized President Kennedy and Soviet premier Nikita Khrushchev to reconsider a test ban. Soon after, Kennedy delivered his landmark "peace speech" at American University, in which he publicly proposed a treaty.

Agreement on a test ban between negotiators was reached, and Kennedy lobbied for Senate ratification by securing endorsements from family magazines such as *Cosmopolitan*, *Family Circle*, *McCall's*, *Parents*, *Redbook*, and *Women's Day*. The treaty was easily ratified by the

Senate and signed into law by Kennedy, who considered it his greatest achievement, describing it as “a shaft of light cut into the darkness.”

The test ban treaty of 1963 owed special thanks to St. Louis. Five years earlier, citizen leaders formed the Greater St. Louis Committee for Nuclear Information. At the same time, Washington University faculty recognized the importance of combining scientific information with grassroots advocacy to change public policy and the University and Committee established the Baby Tooth Survey.

The tooth study addressed the critical question of how much radioactive fallout from above-ground tests was entering bodies of humans, especially children (who are most vulnerable to harm from radiation exposure). The study measured the nuclear explosion by-product Strontium-90 (Sr-90), which entered bones and teeth via milk from cows that had eaten contaminated grass.

The study collected 320,000 baby teeth over the next dozen years. The community effort was unprecedented, as schools, libraries, dentists, scout groups, churches, and other institutions urged donations of teeth. Parents, especially mothers, who otherwise were not involved in public policy, took the time to send their child’s teeth. The study found Sr-90 in baby teeth of children born in the mid-1960s were 60 times higher than those born in the early 1950s. Results were published in journals and sent to Kennedy.

The goal of the tooth study was to speed passage of the test ban treaty. The Senate was flooded by letters from St. Louis mothers urging ratification and an end to above-ground tests, citing the fallout that was entering bodies – in particular, Sr-90 in baby teeth. These letters proved to be a factor in converting the once-hesitant Senate to support the treaty.

In the first five years after above-ground tests stopped, Sr-90 levels dramatically fell by more than half in the milk supply and baby teeth in St. Louis and across the U.S., reducing risk of cancer and other diseases. Today, Sr-90 and other radioisotopes are still present in the environment; they are newly produced and released by nuclear reactors, but at lower levels than in 1963.

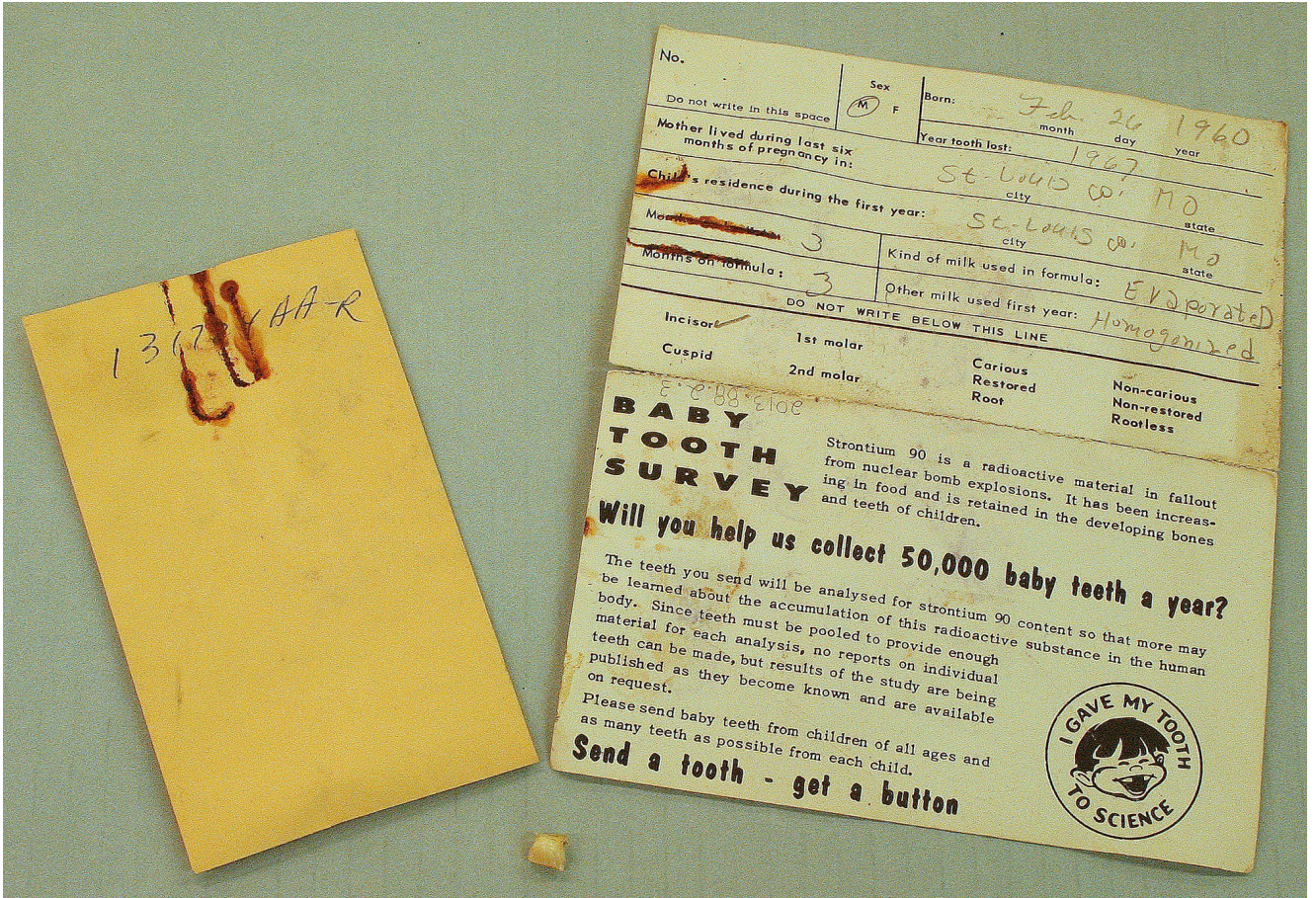
The St. Louis Baby Tooth Survey’s distinct combination of citizen activism and scientific expertise became a model of achievement for later generations. In 2001, Washington University donated 100,000 baby teeth not used in the original survey to the Radiation and Public Health Project to

further research the relationships between chemical uptake in the mid-20th century and health risks on donors, both alive and deceased.

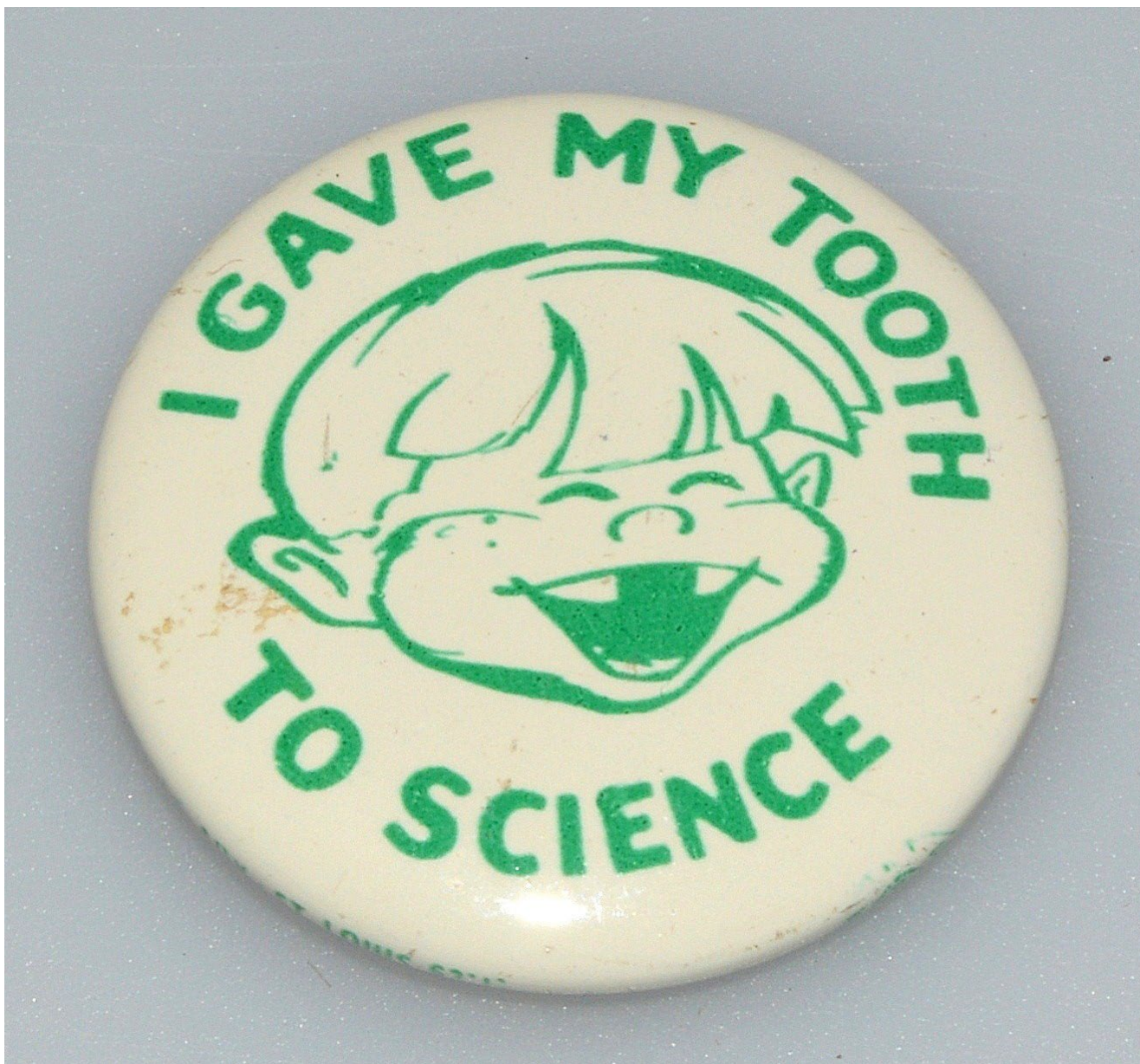
With the health threat of the atom still an important public issue, evident by the strong interest in the recent film *Oppenheimer*, understanding above-ground testing and the importance of the test ban treaty that ended them remains crucial. A great deal of thanks is owed to the many St. Louisans who helped make end above-ground nuclear weapons tests a reality.

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Tooth and information collected from Sean O'Hearn for the Baby Tooth Survey in 1967. Missouri Historical Society Collections.



Children who donated teeth to the Baby Tooth Survey received button pins in the mail like this one from 1969. Missouri Historical Society Collections.