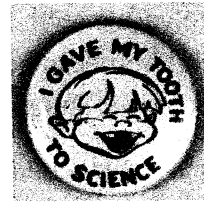


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The Tooth Fairy goes scientific

By Alexandra Lord, April 27, 2015

Who collects baby teeth? Most of us would say "the Tooth Fairy." But in the late 1950s and 1960s, the Tooth Fairy had a competitor in both the United States and Canada. Beginning in 1958, scientists at Washington University began collecting baby teeth from children in St. Louis, Missouri. A few years later, a Canadian housewife urged her government to do the same and, within weeks, her mailbox was overflowing with baby teeth from children across Canada.

The goal of these two programs was not to put the Tooth Fairy out of business. Instead, children were urged to give their teeth "to science." Parents whose children participated in the study still had the option of giving their children the nickel or dime traditionally given by the Tooth Fairy, but rather than being added to the Tooth Fairy's collection of teeth, teeth given "to science" were used in a longitudinal study looking at possible links between cancer rates and the fallout produced by the detonation of the first atomic bomb at the White Sands Proving Ground in 1945 as well as the hundreds of nuclear tests conducted by the United States and the USSR between 1945 and 1963.

By collecting a large number of baby teeth, scientists could assess and compare cancer rates with the presence or absence of strontium-90 in an individual's bones. A radioactive isotope produced by nuclear fission, strontium-90 had an "affinity for bone" and scientists in the 1950s and 1960s feared that it could cause cancer. Although teeth are not bone, similarities between the formation of bone and teeth mean that studying one can often lead to insights into the other.

Borne by high winds, strontium-90 had not only contaminated vegetables across the country, it had also contaminated the nation's meat and milk supply (meat and milk of animals who had consumed contaminated hay and grass tended to have high levels of strontium-90 which could be passed on to those who consumed these foods). Prevailing wind patterns meant that the Midwest had some of the nation's highest levels of strontium-90; St. Louis' position within these broader weather patterns had led to its becoming one of the area's hot points for this fallout. Preliminary reports had indicated that milk produced in the St. Louis area had one of the highest levels of strontium-90 in the country, making the city an ideal site for a study of this type.

The scientists conducting the study needed both teeth which were formed before the presence of a significant amount of strontium-90 in the environment as well as teeth produced after strontium-90 had been introduced into the environment. As a result, scientists needed to collect baby teeth from people who were born before 1945 as well as baby teeth from children born after 1945. Because children typically lose their teeth between the ages of 5 and 13, the study needed

to move quickly to gather teeth from children born before 1945. The window for the collection of baby teeth in children born before 1945 was, a contemporary newspaper warned darkly, "running out" even as the study was being launched.

Early results indicated that children born after 1945 had high levels of strontium-90. Concerns over these early results influenced President John F. Kennedy as a Partial Test Ban Treaty was being negotiated between the U.S., the Soviet Union, and Britain. Following the implementation of the test ban in 1963, levels of strontium-90 dropped, with children born after 1968 having significantly lower levels than children born just five years earlier.

Reading Comprehension Questions

Highlight the passage and write the question number next to the part of the reading that you found the answer

1. What was the purpose of children giving their teeth "to science"?
2. What is Strontium 90?
3. What did scientists think that Strontium 90 caused?
4. Why do you think scientists collected teeth and not bones?
5. Why was St. Louis and area that had high levels of Strontium 90?
6. Which group of children were found to have the highest levels of Strontium 90?