

Tobacco Companies Knew of Radiation in Cigarettes, Covered It Up

<http://abcnews.go.com/Health/tobacco-companies-hid-evidence-radiation-cigarettes-decades/story?id=14635963&page=2>

By CARRIE GANN, ABC News Medical Unit - Sept. 29, 2011

Tobacco companies knew that cigarettes contained a radioactive substance called polonium-210, but hid that knowledge from the public for over four decades, a new study of historical documents revealed. Scientists from the University of California, Los Angeles, reviewed 27 previously unanalyzed documents and found that tobacco companies knew about the radioactive content of cigarettes as early as 1959. The companies studied the polonium throughout the 1960s, knew that it caused "cancerous growths" in the lungs of smokers, and even calculated how much radiation a regular smoker would ingest over 20 years. Then, they kept that data secret.

Hrayr Karagueuzian, the study's lead author, said the companies' level of deception surprised him.

"They not only knew of the presence of polonium, but also of its potential to cause cancer," he said.

Karagueuzian and his team replicated the calculations that tobacco company scientists described in these documents and found that the levels of radiation in cigarettes would account for up to 138 deaths for every 1,000 smokers over a period of 25 years.

The study published online in the journal *Nicotine and Tobacco Research*.

Cheryl Heaton, is the CEO of the American Legacy Foundation, the organization created from the 1998 legal settlement against tobacco companies. She said the knowledge that cigarettes contain radiation is disturbing today, but would have been even more unsettling to Americans in the midst of the Cold War-mindset of the 1950s and 1960s.

"This was when we were crawling under our desks during school radiation drills and thinking about building bomb shelters in our backyards," Heaton said. "You probably could not imagine a more ideal time where you would have maximized the impact of that information. Unquestionably, this fact would have reduced smoking if it had been publicized."

She added that most Americans are probably still unaware that cigarettes contain radiation.

Polonium-210 is a radioactive material that emits hazardous particles called alpha particles. There are low levels of it in the soil and the atmosphere, but the fertilizer used to grow tobacco plants contributes to the levels of polonium found in cigarettes.

Dr. John Spangler, a professor of family medicine at the Wake Forest Baptist Medical Center in North Carolina, said when smokers inhale, the radioactive particles damage the tissue on the surface of the lungs, creating "hot spots" of damage. When combined with other cancer-causing chemicals in tobacco, Spangler said the damage from radiation is potent.

"The two together greatly increase your risk of lung cancer," Spangler said. "So tobacco smoke is even more dangerous than you thought before."

David Sutton, a spokesman for Philip Morris USA, the largest U.S. tobacco manufacturer, said the public health community has known about polonium in tobacco for decades.

"Polonium 210 is a naturally occurring element found in the air, soil, and water and therefore can be found in plants, including tobacco," Sutton said.

All tobacco products on the market today still contain the polonium. In 1980, scientists discovered that a process called "acid washing" removes up to 99 percent of polonium-210 from tobacco. The documents reviewed by UCLA scientists reveal that tobacco companies knew of this technique, but declined to use it to remove the radioactive material from their products.

Officially, tobacco companies said acid washing would cost too much and might have a negative impact on tobacco farmers and on the environment. But Karagueuzian said the documents his team reviewed revealed another reason why the industry avoided acid washing for tobacco leaves: the process would alter the nicotine in the plants and make it less able to deliver the "instant nicotine rush" smokers craved.

Sutton said Philip Morris USA does not use acid washing on their products today.

Polonium's radioactive particles don't simply vanish when cigarette smoke blows away. Spangler said smokers may not realize how long this radiation can linger in their homes.

"Some of these radiation particles hang around for decades and decades," Spangler said. "You're emitting radiation when you smoke, and your family, your dog, your cat are all inhaling that radiation. How many smokers want to expose their child to radiation?"

Karagueuzian said he hopes the study will prompt the federal government to take further action to regulate tobacco companies and their products. Last week, the U.S. Food and Drug Administration required tobacco companies to give detailed information about all new tobacco products and changes to existing ones. In June, the agency introduced new [graphic warning labels](#) that will go on all packs of cigarettes and other tobacco products.

"Our study should not be looked at exclusively as an indictment or another charge against tobacco industry," Karagueuzian said. "We hope that our work will provide a solid initial step to remind health officials and the FDA that removal of {polonium}alpha particles should be at the top of the agenda."