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VeriChip Defends the Safety of Implanted RFID Tags

Topics/Verticals: Health Care

There is no evidence, the company maintains, to support the notion that implanting RFID chips in animals or humans causes tumors.

By Claire Swedberg

Sept. 12, 2007—News reports linking implanted RFID transponders to tumors in lab mice are erroneous and misleading, according to Applied Digital Solutions, a manufacturer of implantable RFID tags, and two of its subsidiaries, Digital Angel and VeriChip. The companies claim there is no evidence to support the notion that the injection of RFID chips under the skin causes tumors of any sort. They bolster this assertion by noting that the Food and Drug Administration (FDA) has approved VeriChip's VeriMed RFID tag for use in humans, that millions of animals have had tags implanted under their skin without developing any tumors and that the mere act of having a hypodermic injection can cause tumors in lab mice.

The initial news article, written by Todd Lewan, a reporter for the Associated Press (AP), first appeared in newspapers and online on Sept. 8. In his article, Lewan wrote: "A series of veterinary and toxicology studies, dating to the mid-1990s, stated that chip implants had 'induced' malignant tumors in some lab mice and rats. 'The transponders were the cause of the tumors,' said Keith Johnson, a retired toxicologic pathologist, explaining in a phone interview the findings of a 1996 study he led at the Dow Chemical Co. in Midland, Mich. Leading cancer specialists reviewed the research for the Associated Press and, while cautioning that animal test results do not necessarily apply to humans, said the findings troubled them."

Lawrence McGill

The AP story was based, in part, on studies supplied to Lewan by RFID critic Katherine Albrecht, director of Consumers Against Supermarket Privacy Invasion and Numbering (CASPIAN). Albrecht has blamed the incidence of cancerous tumors in lab mice on the implanting of RFID transponders under the skin for tracking purposes. In addition, Albrecht has claimed that a French bulldog died from cancer caused by an RFID transponder in 2004, one year after the tag was implanted.

In response to the original AP story and subsequent news coverage, VeriChip released several scientific papers to the press. One such paper was based on research conducted in conjunction with Sandoz Research Institute, now part of pharmaceutical maker Novartis, which found no connection between the incidence of sarcomas (a type of cancerous tumor) and the implantation of RFID tags.

Typically, the RFID tags manufactured by Digital Angel for use in animals, and by VeriChip for implantation in humans, consist of a passive RFID chip and antenna encased in glass. The tags are about the size and shape of a grain of rice and come encoded with a unique identifying number. The tag transmits the ID as an RF signal only when an RFID interrogator is placed close to it. At all other times,

the device remains dormant.

In a telephone interview, Digital Angel's chief technology officer, Zeke Mejia, cites several reasons why the reports should not cause public concern with regard to animals. "The problem," he explains, "is the tests [mentioned in the AP article] were done on mice, which actually have no relation to animals such as pets, or to humans. Lab mice can get a tumor from a grain of sand."

However, Meija says, even the studies themselves may have been misconstrued by Lewan. One example was a French study, cited in the article, which found that about 4.1 percent of the 1,260 implanted mice developed tumors. Although the study did not state any of the tumors were cancerous, the news story implied they were malignant. Mejia states that such an implication "was distorting and really sad to hear."

"I just want to have the truth being published," Mejia says. And from his standpoint, the truth is that the studies fail to prove any connection between tumors in animals and RFID microchip implants.

Veterinary pathologist Lawrence McGill, with the Animal Reference Pathology Laboratory in Salt Lake City, agrees. As a member of the American Veterinary Medical Association (AVMA), McGill says the association continues to endorse the use of RFID chips for tracking pets and livestock. McGill participated in a 2003 epidemiological study on cats for the AVMA's Vaccine Associated Sarcoma Task Force, which included implanted RFID chips.

The task force, McGill says, found no increase in the number of sarcomas due to the implanted RFID tags themselves, though there is a connection between injections and sarcomas in cats. He adds that dogs have almost no incidence of sarcomas at all, based on his own experience and other anecdotal evidence. "Many of us who were involved in the study," he states, "would say the microchips aren't going to cause sarcomas."

McGill predicts the negative press related to the previous studies is not likely to concern veterinarians—the most likely parties to insert the chips in pets and livestock—because the AVMA endorses the use of RFID microchips. He adds that if additional studies are performed to determine if implanted RFID tags can cause sarcomas, they are not likely to be conclusive. "If chips cause sarcomas in pets," he says, "it's going to be so rare the results will be insignificant."

With regard to implants in humans, VeriChip declined to be interviewed for this story, but referred instead to a prepared statement indicating the FDA's approval of VeriChip's VeriMed RFID tag for use in humans speaks for itself. "Research protocol guidelines clearly indicate that making such a link from mice to humans is a very big leap," VeriChip's statement asserts.

To date, VeriChip reports, only about 2,000 humans have implanted VeriMed RFID tags, and no data has shown the implantation of tags in humans to be associated with the appearance of sarcomas. What's more, Mejia says, 10 million fish and more than 12 million dogs and cats have been injected with

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Digital Angel chips, and no sarcomas resulting from the implants have been reported either.

VeriChip points out that laboratory mice and rats have a higher probability than other animals of developing tumors at any injection site, regardless of the type of injection. According to the VeriChip statement, "It is important to note that the incidence of tumor formation in mice/rats from simple injections of any type (including vaccinations) is much higher than in any other type of laboratory animals."

The studies cited in the AP article include one undertaken by Boehringer Ingelheim Pharmaceuticals' Department of Toxicology and Safety Assessment, located in Ridgefield Conn. In that study, 177 animals were injected with RFID chips to identify them. Of those injected, 18 mice developed soft tissue tumors, including some malignancies.

Bayer Corp.'s toxicology department in Stilwell, Kansas, carried out a study of mice as well, and found that tumors surrounding implanted microchip animal identification devices appeared at a rate of approximately 1 percent. All tumors, some of which were malignant, occurred during the second year of the studies. One researcher, who has asked not to be named due to corporate policy, says the argument that his study implies RFID microchips could cause a significant rate of sarcomas in animals or humans is inaccurate.