

## Nuclear Medicine: Why The U.S. Lags Behind

Why does the nation that pioneered so many nuclear technologies now lag behind Europe and elsewhere in the pursuit of lifesaving nuclear medicine? The reason lies in the ignorance and fear of radiation promoted by the anti-nuclear forces, the short-sightedness of Federal budget-cutters, and the unwillingness of medical practitioners to give up traditional ways of treatment. The consequence is measured in lives cut short, because the best available tests and treatments were not used to heal the patient.

In tandem with advances in imaging technologies, which allow us to “see” in the very small, new nuclear medicine techniques, using short-lived radioisotopes, enable doctors to finely target the treatment of cancerous tumors and eradicate malignant cells without harming surrounding tissue. This kind of fine-tuning—for example, attaching a radioisotope to an antibody that makes its way to the tumor site—is more effective and has fewer side-effects than the conventional brute-force chemo and radia-

tion combination treatments for cancer, which debilitate the patient and often damage healthy organs. The promise is that in the future, as the isotope economy develops, medical treatment will move out of the present “dark age.”

There are upwards of 113 million diagnostic tests and cancer treatments using nuclear isotopes yearly in the United States. Yet, 90% of the isotopes used must be imported, because this nation has not developed the facilities to produce isotopes. And in 2005, for no good reason, the Department of Energy shut down the Fast Flux Test Facility in Washington, a reactor designed to produce medical isotopes. As a result, many researchers working on cancer treatments cannot get the short-lived specialty radioisotopes needed for their research.

Nuclear medicine is not limited to cancer treatment. In January, researchers reported that they had successfully sent radioactive bismuth-213 and rhenium-188 to target HIV (AIDS)-virus infected cells in mice. “Both isotopes proved effective in eliminating the virus-infected cells from the mice, and no acute toxicities were noted,” researchers stated. They noted that the same type of treatment could be developed for treating people with the AIDS virus, as well as other viral killers such as hepatitis C or Ebola.—*Marjorie Mazel Hecht*