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**REPLY:** Dr. Park has some difficulties in the interpretation of Table 2. The total number of subjects studied were 63. Two patients were not included in Table 2. They are mentioned in *Results*: "One patient in the 1073 MBq group required five doses for complete ablation and one patient in the 3700 MBq group received four doses but was not ablated by this dose."

Table 2 shows that 26 patients *only* received one dose of 1073 MBq <sup>131</sup>I *within* the observation period and 21 were ablated. In the 3700 MBq group, 17 received *only* one dose *within* the observation period and 14 were ablated. Similarly, for 31 resp., 22 patients received *only* two doses and for 35 resp., 26 received *only* three doses *within* the observation period in the 1073 and the 3700 MBq groups. Those who were not ablated with one, two or three doses received further treatment *after* the follow-up period.

The 1073 and the 3700 MBq groups were comparable as regard to thyroid status before ablation. As mentioned in *Patients and Methods*, there was no statistical significant difference between the numbers in the two groups studied in the hypothyroid state and after TSH-stimulation (46% versus 39%).

As long as no studies exist dealing with the optimal interval between ablation doses and no studies have demonstrated convincingly that "low" doses of radioiodine reduce thyroid uptake function without impairing the growth of the carcinoma, we believe it is futile to enter a discussion on these matters. Instead studies should be conducted that will answer these questions. In that way, the treatment of thyroid cancer will be based on research and not on conventions and assumptions.

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## A Source of Toxic Gas Leakage in a Nuclear Medicine Department

**TO THE EDITOR:** It is not unusual to find a nuclear medicine department located on the ground floor or basement of a major hospital. Departments located on the ground floor, however, are susceptible to unique environmental problems because of their setting, including pollution of the air by unvented gases.

We recently experienced a disastrous leakage of toxic gas from an unexpected source located in a clinical imaging room. One

morning, technologists working in an imaging room detected an unpleasant odor which they attributed to sewage. Gradually, the odor intensified and spread to the adjacent room. Two individuals working in that room became sick: one developed nausea and vomiting, the other developed a severe headache. Environmental safety officers monitoring the area with a portable ambient air analyzer, a single-beam infrared spectrophotometer, MIRAN 1B (The Foxboro Co., So. Norwalk, CT), discovered a mixture of hydrogen sulfide (H<sub>2</sub>S) and sulfur dioxide (SO<sub>2</sub>). The concentration of the sulfur dioxide reached a high of 4.9 ppm. Five parts per million is considered a toxic level (1). The area was closed to personnel. Six hours after the initial discovery engineers identified the source of the leak—four 12-volt batteries in a mobile gamma camera (Technicare, Model 420). The battery charger had malfunctioned and all four batteries in the camera were damaged.

It took the environmental engineers several hours to locate the source of the leak because we had assured them that the gamma cameras did not contain any material capable of producing hydrogen sulfide. Twelve-volt automobile batteries are used for the mobile gamma camera. The battery chambers are filled with a mixture containing 28% sulfuric acid. If acid leaks from the batteries, a chemical reaction with the material it comes into contact with may produce a variety of gasses, such as SO<sub>2</sub>, HSO<sub>3</sub>, or H<sub>2</sub>S. Generally, the use of hazardous chemicals in the hospital comes under the control of the Occupational Safety and Health Administration (OSHA). OSHA, it should be noted, does not list these batteries as a potential source of hazardous chemicals or gas.

## REFERENCE

- Appendix Table. Manual of MIRAN 1B Ambient Air Analyzer. The Foxboro Co., So. Norwalk, CT, 1989.

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## "Eliminating" Hyperthyroidism

**TO THE EDITOR:** The paper of Nordyke and Gilbert (1) provides an opportunity to reexamine the issues involved in "eliminating" hyperthyroidism by use of radioiodide. The major fact is that no single dose of radioiodide will "cure" all patients, while avoiding hypothyroidism. We are therefore left with the difficult situation of "comparing apples and oranges."

1. The only apparent argument against large dose initial radioiodide therapy is concern about radiation exposure. The major excretory pathway for iodide is via the urinary system. Ingestion of quantities of fluids, and frequent urination, will reduce the bladder radiation dose as well as exposure of the ovaries or testes from urinary radioiodide. This should be emphasized to patients when radioiodide is administered.

2. Nordyke and Gilbert (1) make the point that there is added