

IN MEMORIAM

DOV FRONT, MD, PhD

Dov Front, Chairman of the Department of Nuclear Medicine at the Rambam Medical Center in Haifa, Israel, and Geyser Professor of Radiology at the Faculty of Medicine of the Israel Institute of Technology, passed away suddenly at his home on January 13, 2000. Dov was born in 1939 in Tel-Aviv, graduated from the prestigious Herzlia High School, and received his MD from the Hebrew University in Jerusalem. After military service, Front began his residency in neurology at the Sheba Medical Center. During his training, he became interested in the pathophysiology of hydrocephalus and decided to pursue a PhD thesis on this subject at the University of Groningen in The Netherlands, under the supervision of Professor Lourens Penning. Using radionuclide cysternography in his research, he became acquainted with nuclear medicine. He was attracted by the infinite research opportunities that this new specialty had to offer. He returned to Israel in 1972. Following renewed service in the Israeli Army, with the position of Commander of the Medical Officers Course, he founded the Department of Nuclear Medicine at the Rambam Medical Center in Haifa, which became his scientific home throughout his prolific career.

Front soon established himself as a leading figure at Rambam and at the newly founded School of Medicine. He was one of the founding fathers of nuclear medicine in Israel, and his department evolved into the leading nuclear medicine center there. He was open minded and sought innovation. He was quick to apply new technologies and to investigate and expand their clinical uses. Yet he remained cautious, challenging the assessment of new techniques, never merely settling for what was fashionable.

For Front, excellence was not simply a word or an aspiration. It was the way he insisted that his department undertake both its clinical responsibilities and research. He never settled for less, and this became the standard in the department. He was proud, not only of the large number of studies that were performed daily in his department, but of the high level of patient care that was the goal of his team of physicians, physicists, and technologists.

Basic research with clinical applications was Front's priority. Neither a hobby nor an isolated part of his job, this research became his mission. He believed that top-level research forms the basis for good clinical work and patient care. He was never interested in research solely for the sake of theoretical progress. He always looked for the impact of today's research on tomorrow's clinical practice. Each of us, at an early point in joining his team, was required to read *The Double Helix*, by James Watson and Francis Crick.

Because of his background as a neurologist, Dov Front began his nuclear medicine career with an interest in brain scanning. Before the advent of CT, brain scans were an important part of everyday nuclear medicine practice. He believed that radiopharmaceuticals would provide an answer to problems related to diagnosis and treatment of brain tumors. At the same time, his team also approached other research areas, such as evaluation of the clinical value of ^{99m}Tc -labeled red blood cells and the use of bone scintigraphy in cancer patients.

From research on brain tumors, it was only a short path to studying tumors elsewhere in the body. His research interest in cancer-related issues was to expand over almost 3 decades. As a visiting professor at Harvard in 1980–1981, he was one of the promoters of the clinical use of SPECT and one of the first investigators to develop the concept of quantitative SPECT. These 2 areas led to major achievements in noninvasive evaluation of the dose–response principle for chemotherapy using radiopharmaceuticals.

As coauthor of an editorial in the *JNM* (*J Nucl Med.* 1989;30:1731–1736), Front identified a new goal for our specialty. Nuclear medicine, in his opinion, would play a role beyond imaging and diagnosis of pathologic processes and diseases. He foresaw nuclear medicine as an important tool for monitoring patient response to treatment, especially in oncology. Today an accepted part of clinical practice, this represented a novel approach in nuclear medicine at the time. His pioneering work on this subject began with labeled chemo-

(Continued on page 30N)



Dov Front, MD, PhD
1939–2000

IN MEMORIAM*(Continued from page 28N)*

therapeutic agents but is best appreciated in the use of ^{67}Ga in management of lymphoma. This was one of the principal areas of Front's research after 1984. The concept of a fundamental difference between a residual mass versus residual viable tumor and the use of radiopharmaceuticals for evaluation of response to treatment, early diagnosis of recurrence, and, most recently, for prediction of outcome, were repeatedly stressed in his work. His papers were published in the most prestigious journals in imaging and oncology. His ideas have found wide application beyond ^{67}Ga and are currently being evaluated in PET centers around the world.

During his last few years new research areas had become available for his always inquiring mind. He saw enormous opportunities for clinical investigation with FDG and with coincidence cameras. After years of dreaming and planning, in June 1999 Front became the first to use the hybrid CT/SPECT device intensively in a clinical setting. His enthusiasm once again became contagious. He saw a whole new world of opportunities. His only concern was that retirement, about 5 years in the future, was coming too soon, at the time of nuclear medicine's true beginnings. He would say, "We are just scratching the tip of the iceberg."

Dov Front was an encyclopedic personality. He had many interests beyond medicine. During adolescence, he had pondered whether he was best suited to the study of medicine or history. In 1973, returning to Holland at the end of the Yom Kippur War, his family took a short vacation in Bretagne. In a small bookshop in an equally small town he found Sir William Osler's biography of Harvey Cushing. This is how his passion for the history of medicine began. He believed that the present has roots in the past and that we can best understand the present by appreciating our history. More than a few of his ideas for modern medical research occurred to him while looking through his treasured old books. The accidental acquisition of an expurgated book by the Portuguese Marrano physician

Amatus Lusitanus lit a spark for Front. He studied the life and work of Jewish physicians in the Middle Ages and their contributions to medicine. He was fascinated by the sacrifices they made to maintain both a Jewish identity and their mission as physicians and researchers during the hardships of the Inquisition.

Front was invited to work and bring his creative talent to bear in many countries. But he loved Israel and believed the real achievement was to accomplish all his goals there, even when this meant working twice as hard, far from the large centers and the "old boys" medical network. He always said that "in the end, real contributions are recognized. Nobody can overlook true achievements for long."

As chief of his department at Rambam and as a professor at the Technion, Front also filled another important role. He was the educator and mentor for a whole generation of nuclear medicine physicians. The 14 graduates of his residency program today form the leading force in Israeli nuclear medicine. Thursday-morning conferences at Rambam held more than scientific interest. They were opportunities for Front's pupils to acknowledge his teaching with pride and joy, long after formal education had reached its end. For Front, it was an opportunity to see his principles of medical practice and everyday life philosophy nurtured by younger generations.

It is said, "for some people it is always too soon to leave." Dov Front left his job unfinished. He thought it had just begun. He had so much vision, so many plans for the future. His loving family, his wife and sons, his mother, brother, daughters-in-law, and granddaughter, will miss him dearly. And so will his staff, his disciples and students, his friends, and the nuclear medicine community in Israel and around the world. We were privileged to have had him for so many years. We will miss his presence for many more.

—Ora Israel, MD
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