

DEPARTMENTS
IN MY OPINION



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*Journal of Nuclear Medicine
Technology*

A question asked today by many nuclear medicine technologists is “What happened to in vitro nuclear medicine?—is RIA really still performed by nuclear medicine technologists?” My question is “Is there still a place and need for RIA in nuclear medicine departments, or will it eventually be replaced by automated nonisotopic immunoassays performed by laboratory medicine departments?” “Will those laboratory skills be lost forever by nuclear medicine technologists?”

Following Yalow and Berson’s original work presented in 1955 at The Society of Nuclear Medicine’s Annual Meeting, the concept of competitive RIA emerged. This work provided the basis for development of a variety of immunoassay procedures, thus revolutionizing laboratory techniques and the ability to detect and quantify minute amounts of biological substances. Nuclear medicine laboratories were set up across the country, and nuclear medicine technologists were trained to perform this specialized technology. The Joint Review Committee on Educational Programs in Nuclear Medicine Technology (JRCNMT) included RIA in its curriculum performance objectives for nuclear medicine training programs. This ensured that new graduates would possess the skills needed to perform RIA and to work in a laboratory.

Since these original concepts were developed, advances such as monoclonal antibody production, multiple-well gamma counters, computer-generated data reduction systems, nonisotopic labels, and recently, nonisotopic automation have continued to be developed. The controversy over whether nuclear medicine departments should perform nonisotopic assays continues and the decision remains an individual choice from institution to institution.

When faced with today’s economic climate and the public focus on health care costs, health care providers are pressured to complete as many medical evaluations as possible outside of the hospital, thereby decreasing inpatient time and cost. This demands that laboratories, including nuclear medicine laboratories, decrease turnaround time for patient results. This rapid turnaround time is difficult with batch testing, which is commonly used for RIA. The recent success of automated nonisotopic assays, in meeting these rapid turnaround time demands, leads many to believe that this is the wave of the future.

The Annual Meeting of The Society of Nuclear Medicine and the Technologist Section once offered good, well-attended educational tracks in nonimaging and RIA. In 1990, after devoting much time and energy to assembling a nonimaging and RIA track for the Technologist Section Annual Meeting, I was very disappointed at the level of attendance and interest shown to this topic. Is this an indication that the professional community as a whole has completely lost interest in these topics?

The majority of nuclear medicine departments have turned their backs on this once revolutionary technology, allowing other departments to perform these procedures, utilizing nonisotopic methods. Nuclear medicine technologists, as well, are giving up those skills and techniques needed to perform laboratory tasks. In the proposed JRCNMT Essentials, any time frame for acquiring in vitro experience has been deleted, allowing some programs to offer *no* clinical experience in RIA. These laboratory skills and knowledge will soon be lost completely to the nuclear medicine community.

Laboratory skills, such as the correct use of and maintenance of pipettes will be lost. Knowledge of the correct concentration of solutions, how to make up standards, and the correct technique for collection and handling of body fluids will be lost. In addition to performing RIA, these skills are needed when doing leukocyte labeling, platelet labeling, glomerular filtration rate measurements, total blood volume measurements, or vitamin B12 absorption studies in the laboratory. Are we to lose all of these techniques, also?

Nuclear medicine professionals, including physicians, scientists, and technologists, must not allow this knowledge to be lost to future practitioners. Knowledge of laboratory science, immunoassay technology, and the skills associated with this procedure must continue to be a part of the nuclear medicine domain, or more will be lost than just the ability to perform an RIA procedure.