some dynamic studies which require rapid-sequential imaging with a scintillation camera.

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REFERENCE

1. KONIKOWSKI T, JAHNS MF, HAYNIE TP, et al: Brain tumor-scanning agents compared in an animal model. *J Nucl Med* 16: 200–207, 1975

REPLY

We are most appreciative of Dr. Sear's remarks on our paper "Brain Tumor-Scanning Agents Compared in an Animal Model." Dr. Sear's comments broaden the perspectives of our report to include the important aspect of radiation dosimetry. While we chose to present our data emphasizing biologic distribution, we were careful to point out that our rating system classified compounds only on this basis. However, not to overlook the importance of radiation dose, we did present whole-body dose data.

It is very true that the activity of any radiopharmaceutical administered for diagnostic purposes is limited by the whole-body and critical-organ dose to the patient. However, rating systems for radiopharmaceuticals that include radiation dosimetry, such as the one Dr. Sear presents, are based upon a generalized "population" approach. Deviations from this general rule may occur in specific medical handling of individual patients, especially in the field of cancer. The radiation dose to the patient must always be weighed against his individual needs and the information to be gained; this is a professional judgment which must be made by the physician. Dr. Sear discusses some of these considerations when he speaks of tumors near the base of the brain and of dynamic studies.

There are many ways of expressing data in animal distribution studies, such as percent dose per gram, percent kilogram dose per gram, percent dose per organ, or percent dose per 1% body weight; and certainly tumor concentration can be expressed in millicuries per gram per rad total-body dose as suggested by Dr. Sear, if one's primary concern is radiation dosimetry. This latter means of expression, how-

ever, says nothing about the relative distribution of target to nontarget areas and so is unsatisfactory from the standpoint of biologic distribution. Also, since it is based on whole-body dose, Dr. Sear's system does not take into account radiation dose to specific organs which may be critical, e.g., ^{203}Hg and the kidney.

We tried to emphasize that our data and data handling related only to biologic distribution: "Other parameters such as biological clearance and radiation decay characteristics that affect radiation dose to the patient must be considered in any type of comparison. Frequently the product having good radiation and clearance characteristics, i.e., ^{99m}Tc-pertechnetate, has poor distribution, and the substance having the best distribution pattern, i.e., ^{111}In-chloride, has other unfavorable properties."

This exchange of letters emphasizes the problem practitioners of nuclear medicine face when they attempt to optimize procedures. We think it illustrates how difficult it is to satisfy completely all members of the nuclear medicine team, e.g., the clinician, the radiochemist, the radiobiologist, the radiopharmacologist, and the radiation physicist. We thank Dr. Sear for emphasizing the radiation dose aspects of a very complex situation.

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SCINTILLATION CAMERA VERSUS RECTILINEAR SCANNER FOR LIVER IMAGING

In the abstract of a recent article (1), Oster et al claim "it is apparent that the multiple-view scintillation camera technique is not superior to the rectilinear two-view scans for studying the liver." However, the evidence they present fails to support this startling comment.

The authors' series consists of 125 patients, 122 of whom had liver disease proved by biopsy and

only three of whom were normal. Hepatic scintigrams were performed on all patients with an unspecified scintillation camera. The scintigrams of 97 of the 122 abnormal patients were correctly called "positive," for a true-positive ratio (TPR) (2) of 0.8. Oster et al tell us that there were "almost no false-positive interpretations," reflecting "a degree of sophistication of interpretations." They seem to have