SPECTAMINE®

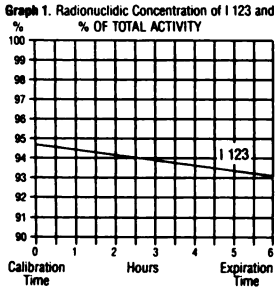
Iofetamine HCl I 123 Injection

DIAGNOSTIC–FOR INTRAVENOUS USE

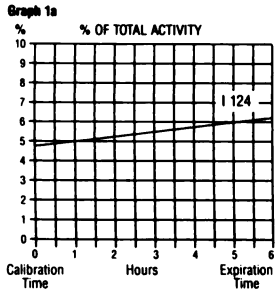
DESCRIPTION: SPECTAMINE® Iofetamine HCl I 123 Injection, is supplied as a sterile, apyrogenic, aqueous, isotonic sodium chloride solution for intravenous administration. Each milliliter of the solution contains 37 megabecquerels (1 millicurie) of iofetamine HCl I 123 at calibration time, 0.15 milligram iofetamine HCl, 0.017 millimole sodium phosphate, and 8.0 milligrams sodium chloride for isotonicity. The pH is adjusted to 4.5-6.0 with sodium hydroxide or hydrochloric acid. SPECTAMINE contains no bacteriostatic preservative. The radionuclidic composition at calibration time is not less than 94.7 percent I 123, not more than 4.8 percent I 124, and not more than 0.5 percent all others (I 125, I 126, I 130 and Te 121). The radionuclidic composition at the 6-hour expiration time is not less than 93.1 percent I 123, not more than 6.2 percent I 124, and not more than 0.7 percent all others.

The ratio of the concentration of I 123 to I 124 decreases with time. Graph 1 shows the minimum concentration of I 123 and the maximum concentration of I 124 as a function of time.

Graph 1. Radionuclidic Concentration of I 123 and I 124



Graph 1a



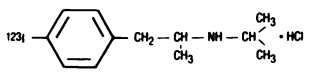
Graph 1b

The chemical names are ^{123}I-d,l-N-isopropyl-p-iodoamphetamine hydrochloride; (±)-4-(iodo-^{123}I)-α-methyl-N-(1-methylethyl)benzeneethanamine hydrochloride; and (±)-p-iodo-^{123}I-N-isopropyl-α-methylphenethylamine hydrochloride.

Molecular formula: $C_{12}H_{19}N^{123}ICl$

Molecular weight: 335.74

Structural formula:



PHYSICAL CHARACTERISTICS: Iodine I 123 decays by electron capture with a physical half-life of 13.2 hours[1]. The photon that is useful for detection and imaging studies is given in Table 1. The user should be aware that I 124, which is present as a long-lived contaminant in I 123, has a high energy gamma ray (602.7 keV) with an absolute intensity of 59%; thus, a higher energy collimator may be advantageous.

Table 1. Principal Radiation Emission Data[1]

Radiation	Mean %/Disintegration	Mean Energy (keV)
Gamma-2	83.4	159

1 Kocher, David C., "Radioactive Decay Data Tables," DOE/TIC-11026, 122 (1981)

EXTERNAL RADIATION: The specific gamma ray constant for I 123 is 1.60 R/hr-mCi at 1 cm. The first half-value thickness of lead (Pb) for I 123 is 0.005 cm. A range of coefficients of attenuation of the radiation emitted by this radionuclide can be achieved by the interposition of various thicknesses of Pb and is shown in Table 2. For example, the use of 1.63 cm of Pb will decrease the external radiation exposure by a factor of about 1,000.

Table 2. Radiation Attenuation By Lead (Pb) Shielding[2]

Shield Thickness (Pb) cm	Coefficient of Attenuation
0.005	0.5
0.10	10^{-1}
0.88	10^{-2}
1.63	10^{-3}
2.48	10^{-4}

2 Method of calculation: Data supplied by Oak Ridge Associated Universities, Radiopharmaceutical Internal Dose Information Center, 1984

Note that these estimates of attenuation do not take into consideration the presence of longer-lived contaminants with higher energy photons, namely, I 124, I 126, I 130 and Te 121.

To permit correction for physical decay of I 123, the fractions that remain at selected intervals after the time of calibration are shown in Table 3.

CLINICAL PHARMACOLOGY: Iofetamine HCl I 123 is lipid soluble. In humans, the percentages remaining in the brain, liver and lungs, respectively, at 1, 5 and 22 hours, were: 5.7, 4.1, 2.1; 12.5, 14.1, 5.5; and, 16.8, 10.6, 6.1. None of these studies demonstrated any constant plateaus in concentration within any organ. Animal studies have shown that iofetamine HCl I 123 is removed from the circulation via first pass metabolism primarily by the brain and liver; the extraction fraction in the brain is 74-92%. This metabolism may be partially dependent on pH. The ratio of concentration in gray to white matter in primate studies varied considerably with time, being 2.4 at 15 minutes, 2.2 at 1 hour, 1.8 at 4 hours and 0.6 at 24 hours. Animal data suggest that retention in the brain is due to binding by relatively non-specific, high-capacity binding sites.

Table 3. Physical Decay Chart:
Iodine I 123, Half-life 13.2 hours

Hours	Fraction Remaining
0*	1.000
1	0.949
2	0.900
3	0.854
4	0.811
5	0.769
6	0.730

*Calibration Time

Iofetamine HCl I 123 distributes rapidly from the blood into body tissues. The concentration in the blood falls to about 3-8.5% of the injected dose, 6-10 minutes after administration and to about 2.5% after 20 minutes. The apparent volume of distribution is 582 ± 146 liters (mean ± 1 S.D.) and less than 10% is bound to plasma proteins.

Elimination of the drug from the plasma is biexponential with a fast biological half-life of 1.6 ± 1.2 hours and a slow biological half-life of 10.9 ± 6.1 hours. The total plasma clearance and urinary clearance are 1550 ± 500 and 21 ± 12 ml per minute, respectively. The principal route of excretion is renal. About 20% of the dose is excreted after one day, 40% after two days and 48% after three days. Most of the radioactivity in plasma beyond 24 hours following the dose is due to metabolites of the parent drug which have comparatively slower clearance. Therefore, plasma radioactivity may appear approximately similar from one hour to 96 hours post dosing.

The two major metabolites are p-iodoamphetamine and p-iodobenzoic acid. Plasma p-iodoamphetamine levels initially increase up to 8 to 10 hours post-dosing and then decrease with a terminal half-life of approximately 48 hours. p-Iodoamphetamine is further metabolized to p-iodobenzoic acid. Continuous accumulation of p-iodobenzoic acid in plasma is noticed up to 44 hours post dose; it is excreted in the urine as p-iodohippuric acid after conjugation with glycine.

INDICATIONS AND USAGE: SPECTAMINE (Iofetamine HCl I 123 Injection) is recommended for use as a lipid-soluble brain-imaging agent. It has been shown to be useful in the evaluation of nonlacunar stroke especially when used within 96 hours of onset of focal neurological deficit. The rates of agreement between abnormal images and the neurological examination suggestive of ischemic cerebrovascular insufficiency, appear to increase with the severity of symptoms. Its usefulness for the measurement of cerebral blood flow has not been established.

CONTRAINDICATIONS: None known.

WARNINGS: SPECTAMINE (Iofetamine HCl I 123 Injection) should not be administered to individuals with known hypersensitivity to sympathomimetic amines or to those individuals taking monoamine oxidase inhibitors.

PRECAUTIONS: ***General*** Some primate (Macaca fascicularis) studies have shown marked eye uptake of iofetamine HCl I 123. Localization has not been studied in the isolated human eye although in vivo images suggest the concentration of iofetamine HCl I 123 is below the limit of detection. Individual human variations in pharmacokinetics of this drug and the long-term effect on the eye have not been elucidated.

The contents of the vial are radioactive. Adequate shielding of the preparation must be maintained at all times.

Do not use after the expiration time and date (6 hours after calibration time) stated on the label.

Potassium Iodide Oral Solution should be administered before the examination to minimize thyroid uptake of iodine 123.

The prescribed iofetamine HCl I 123 dose should be administered as soon as practical from the time of receipt of the product (i.e., as close to calibration time or before, if possible), in order to minimize the fraction of radiation exposure due to relative increase of radionuclidic contaminants with time.

To minimize radiation dose to the bladder, the patient should be encouraged to drink fluids and void frequently.

SPECTAMINE, as well as other radioactive drugs, must be handled with care. Appropriate safety measures should be used to minimize radiation exposure to clinical personnel. Care should also be taken to minimize radiation exposure to the patient consistent with proper patient management.

Radiopharmaceuticals should be used only by physicians who are qualified by training and experience in the safe use and handling of radionuclides, and whose experience and training have been approved by the appropriate government agency authorized to license the use of radionuclides.

Drug Interactions There has been a single report of elevated diastolic hypertension (about 30 mm Hg) occurring 18 hours after administration of SPECTAMINE in a patient maintained on therapeutic doses of valproic acid.

Concurrent use of monoamine oxidase (MAO) inhibitors and compounds containing the amphetamine structure has been known to result in hypertensive crisis. Caution, therefore, should be exercised when administering SPECTAMINE (Iofetamine HCl I 123 Injection) to individuals taking medications known to potentiate the effects of sympathomimetic amines. It is recommended that SPECTAMINE not be administered during or within 14 days following administration of MAO inhibitors.

Sympathomimetic amines may affect the biodistribution of SPECTAMINE and, thus, may influence the image quality and diagnostic utility of the image.

Carcinogenesis, Mutagenesis, Impairment of Fertility No long-term animal studies have been performed to evaluate carcinogenic potential, mutagenic potential or effects on fertility in male or female animals. The Ames test was negative for mutagenic effects.

Pregnancy Category C Animal reproduction studies have not been conducted with SPECTAMINE. It is also not known whether SPECTAMINE can cause fetal harm when administered to a man or a pregnant woman or can affect reproduction capacity. SPECTAMINE should be given to a pregnant woman only if clearly needed.

Ideally, examinations using radiopharmaceuticals, especially those elective in nature, in women of childbearing capability, should be performed during the first few (approximately ten) days following the onset of menses.

Nursing Mothers Since Iodine I 123 is excreted in human milk, formula feeding should be substituted for breast feeding if the agent must be administered to the mother during lactation.

Pediatric Use Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: In a clinical study in 93 patients with sudden onset of focal neurological deficit, e.g., cerebral infarction, 7 patients died within 2 to 55 days after administration. The deaths were considered to be a result of the disease state. Although there was no concurrent control group, statistics from historical controls support this evaluation.

There is evidence suggesting that the administration of 1 to 2 milligrams of iofetamine HCl, the carrier in SPECTAMINE, may increase systolic blood pressure by about 10 mm Hg. In a patient with a history of hypertension, there has been a single report of sudden onset of hypertension and dizziness with transient chest tightness which occurred 5-10 minutes after administration of SPECTAMINE. One case of transient unilateral hearing loss also was reported several hours after the use of SPECTAMINE in a patient with a coincidental upper respiratory infection.

As with all organic-iodine-containing compounds, the possibility of allergic reactions must be considered.

DOSAGE AND ADMINISTRATION: The recommended intravenous dose for SPECTAMINE (Iofetamine HCl I 123 Injection) in the average adult patient (70 kg) is 111 to 222 megabecquerels (3 to 6 millicuries).

It is desirable to decrease thyroid accumulation of radioactive iodine by administering three drops of Potassium Iodide Oral Solution 1/2-1 hour before injection of SPECTAMINE.

Use contents of the vial up to six (6) hours after calibration time and date. Thereafter, discard the vial with its contents in accord with standard safety procedures.

SPECTAMINE is supplied as a sterile, apyrogenic, aqueous, isotonic sodium chloride solution in vials. Aseptic procedures and a shielded syringe should be employed when withdrawing doses for administration. The user should wear waterproof gloves during the administration procedure.

The patient dose should be measured by a suitable radioactivity calibration system immediately before administration.

SPECTAMINE should be administered by direct venipuncture. Imaging is optimal at about 10 minutes to 5 hours after injection of the drug.

Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration whenever solution and container permit.

RADIATION DOSIMETRY: The estimated absorbed radiation dose to an average adult patient (70 kg) from an intravenous administration of a maximum recommended dose of 222 megabecquerels (6 millicuries) of SPECTAMINE at time of calibration and time of expiration are shown in Table 4. Radiation dose estimates include contributions from I 124, I 125, I 126, and I 130 impurities. Estimates are based on complete thyroid blockage.

Table 4. Estimated Absorbed Radiation Dose[1]

Target Organ	At Calibration Time		At Expiration Time (6 hours after calibration)	
	mGy/222 MBq	rad/6 mCi	mGy/222 MBq	rad/6 mCi
Brain	5.8	0.58	6.6	0.66
Retina	44	4.4	47	4.7
Lens	7.6	0.76	9.0	0.90
Lung	14	1.4	16	1.6
Liver	13	1.3	14	1.4
Kidneys	4.2	0.42	4.7	0.47
Bladder	22	2.2	25	2.5
Thyroid	2.0[2]	0.20[2]	2.3[2]	0.23[2]
Testes	3.8	0.38	4.4	0.44
Ovaries	4.7	0.47	5.3	0.53
Red Marrow	5.2	0.52	5.8	0.58
Total Body	4.6	0.46	5.2	0.52

1 Data supplied by Oak Ridge Associated Universities, Radiopharmaceutical Internal Dose Information Center, 1987. Rocky Mountain Medical Physics, Inc., Lakewood, Colorado, 1985

2 If thyroid uptake of iodine 123 is not blocked with potassium iodide and thyroid uptake is 25%, the estimated absorbed radiation dose to the thyroid is 370 milligrays (37 rads) if 222 MBq (6 mCi) of the drug is administered at calibration time and 470 milligrays (47 rads) if it is administered at expiration time

HOW SUPPLIED: SPECTAMINE is supplied in nominal 3.5 ml vials as a sterile, apyrogenic, aqueous, isotonic sodium chloride solution for intravenous injection. Each milliliter contains 37 megabecquerels (1 mCi) of iofetamine HCl I 123 at calibration time.

It is available in individual vials containing 111 megabecquerels (3 mCi) of iofetamine HCl I 123 at calibration time in a volume of 3 ml.

Vials are packaged in individual lead shields with plastic outer container.

Special Handling and Precautions The contents of the vial are radioactive and adequate shielding and handling precautions must be maintained. The user should wear waterproof gloves and use shielding at all times when handling the vial.

National Drug Code number is: 17156-211-09

Storage Store vial in its lead shield at a temperature of 5-30°C. Do not freeze.

Disposal Users should monitor the amount of radioactivity present prior to disposal of this product. Storage and disposal of SPECTAMINE should be in accordance with the conditions of Agreement State or Licensing State licenses and regulations, or other regulatory agency authorized to license the use of radionuclides.

Issued December 1987

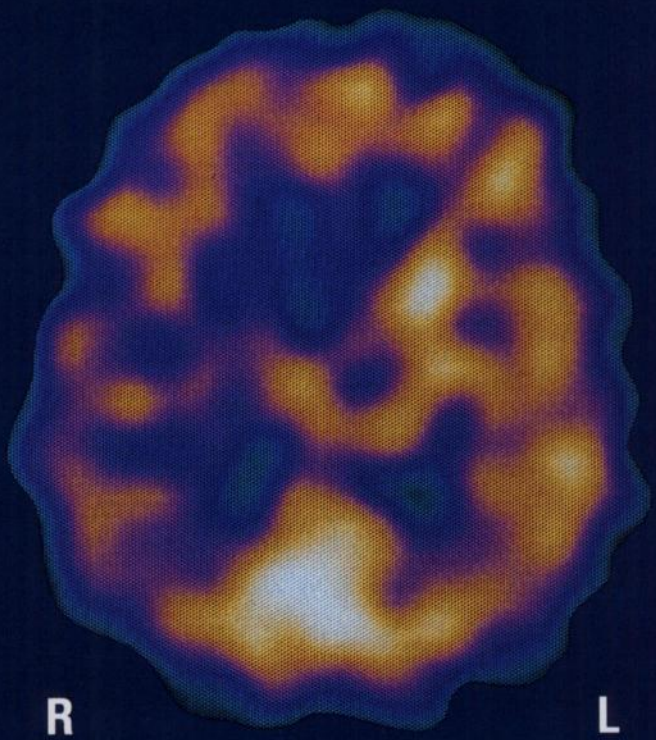
ROCHE®

medi+physics®

a subsidiary of Hoffmann-La Roche Inc.

Medi-Physics, Inc.
140 East Ridgewood Avenue
Paramus, NJ 07652

The dawn of metabolic brain imaging in the evaluation of stroke... and a new day for nuclear medicine



Patient history:
Patricia M, a 44-year-old woman with a history of hypertension, previous TIAs, right carotid endarterectomy

Reason for admission:
Onset of left-sided weakness and numbness

CT interpretation:
Normal

SPECTamine interpretation:
Decreased right hemisphere uptake in the region of the caudate nucleus, and less pronounced decrease in uptake in the right temporal lobe and lower right parietal lobe

SPECTamine image courtesy of the Medical College of Wisconsin, Milwaukee, WI

Medi-Physics proudly announces the availability of

SPECTamine®

Iofetamine HCl I 123 Injection

Your partner in advancing nuclear medicine

medi+physics®

ROCHE® a subsidiary of Hoffmann-La Roche Inc.

Medi-Physics, Inc.
140 East Ridgewood Avenue
Paramus, NJ 07652

For additional information, call Medi-Physics SPECTamine® Hotline 1-800-451-7732

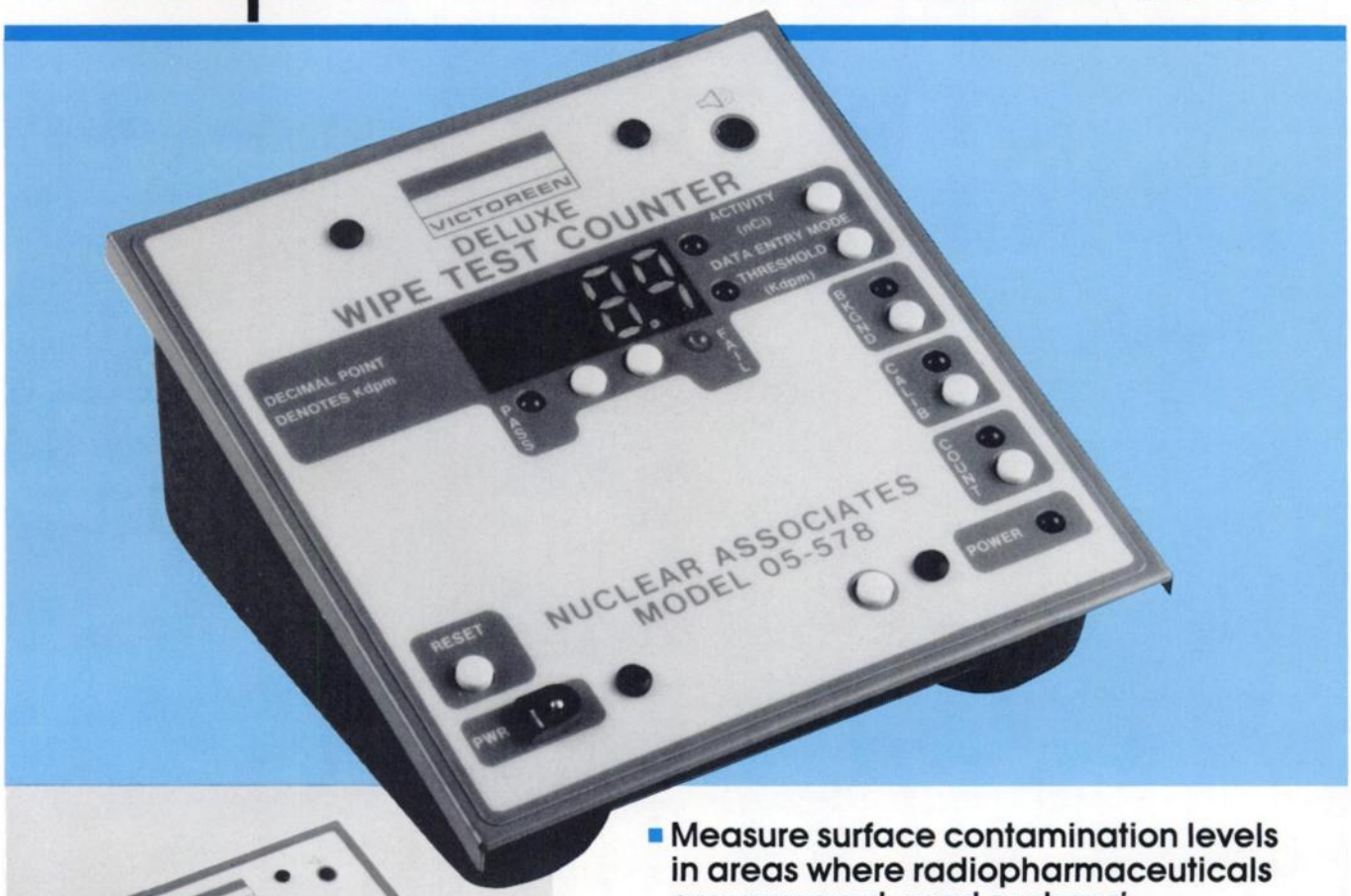
Please see preceding page for full prescribing information.

Circle Reader Service No. 30

Now there's an easy way to meet the new NRC requirements for wipe testing!

NEW!

Wipe Test Counters



- Measure surface contamination levels in areas where radiopharmaceuticals are prepared, used or stored.
- Meet new Nuclear Regulatory Commission requirements for determining contamination levels.
- Dedicated instruments are low in cost, easy to use.

Both the Deluxe Wipe Test Counter (with LED digital display) and the Standard Wipe Test Counter include a ^{137}Cs, 1 μCi test source, plus a package of 200 pre-numbered ½" diameter wipes.

For more details, request Bulletin 407-35
Circle Reader Service No. 2

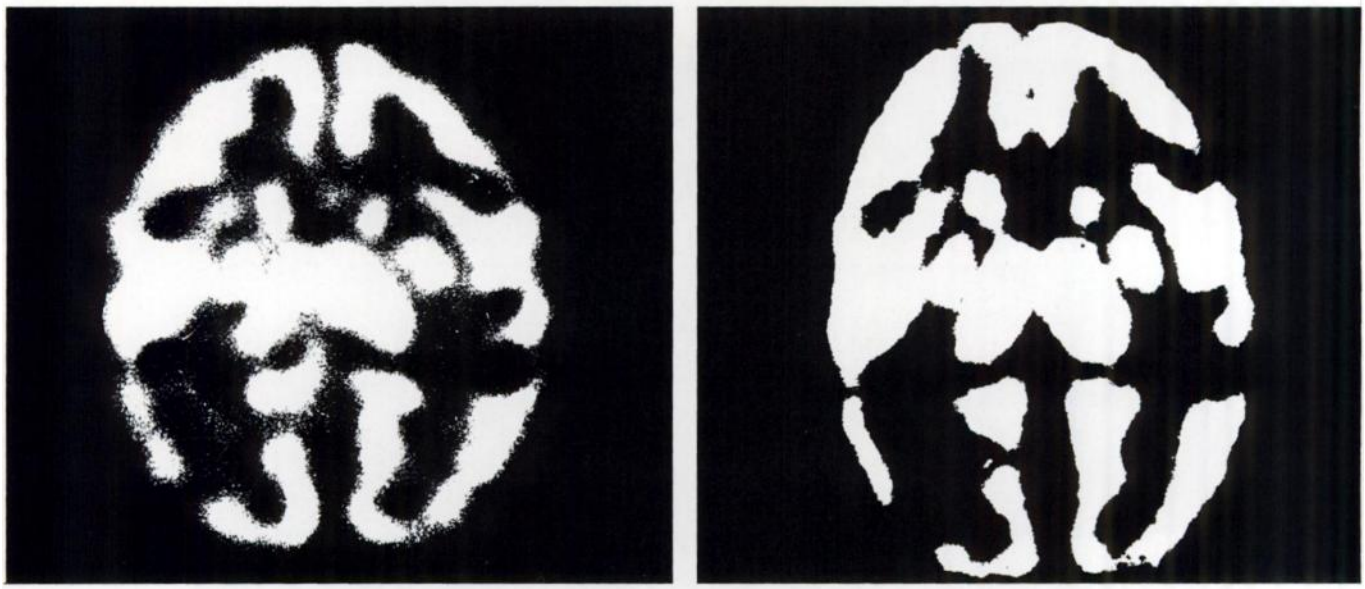
NUCLEAR ASSOCIATES

VICTOREEN

A Division of VICTOREEN, INC.
100 VOICE ROAD
CARLE PLACE, NY 11514-1593
(516) 741-6360

"SPET" IS HERE !!!

One of These Phantom Studies Is From a Multi-Million Dollar "PET" Installation...
The Other Was Performed on an SME Model 810 "SPET" Clinical System...



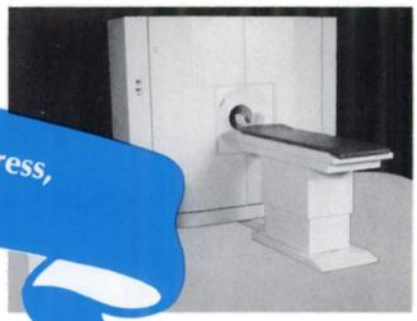
If You Have Any Difficulty in Telling Them Apart...
...Then You Need to Know More About "SPET"

which includes:

- Both Single Slice *and* Multiple Slice Capability
- High Resolution *and* High Sensitivity
- Dynamic Study Capability
- Quality Single Slice Images in Less Than One (1) Minute
- Dedicated Imaging of Brain Function
- Images *All* Radionuclides

"SPET" = PET QUALITY AT SPECT PRICES!

Visit us at the European Congress, in Milan—Booth 9-4



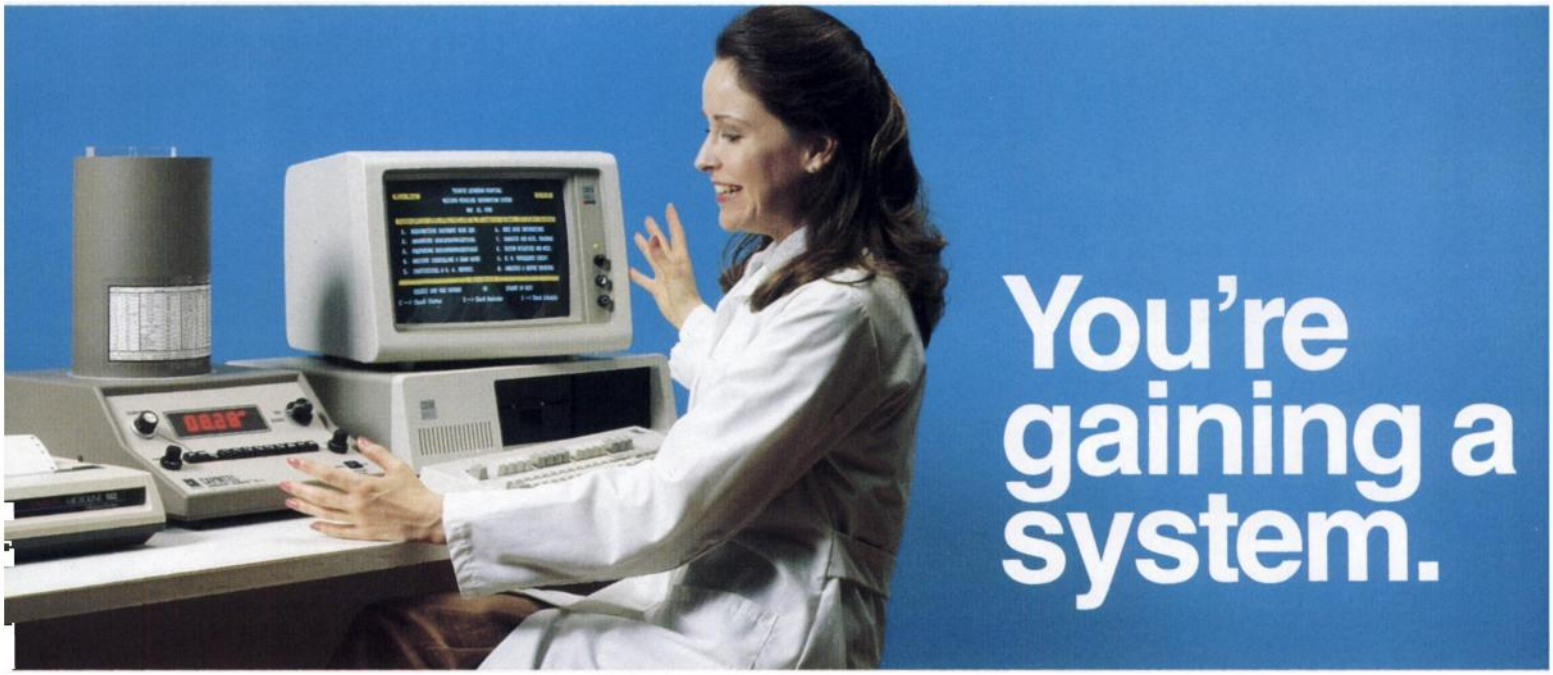
SME Strichman Medical Equipment, Inc.

FOR ADDITIONAL INFORMATION PLEASE CONTACT US . . .

93 West Street Medfield, MA 02052 Tel. 617-359-5312 Fax. 617-359-5320

Larsbjornsstraede 7A 1454 Copenhagen K. Denmark Tel. 45-1-32-47-61 Fax. 45-1-32-61-47

CIRCLE 120 ON READER SERVICE CARD



Send us your old Capintec dose calibrator and we'll give you money off our new CRC®-PC Nuclear Medicine Management System.

TRADE UP to a CRC-PC 7 System and we'll give you $500 off, or TRADE UP to a CRC-PC 12 or 12R System, and Capintec will give you $1000 off the purchase price of the new System.

Either way, you benefit. You get the most advanced calibrator systems available PLUS a computerized information system for both your radiopharmaceutical and department management needs. Everything from dose preparation to data analysis to patient scheduling is computerized in a totally integrated system.

Now, you can spend more time caring for patients and less time managing data. At Capintec, we're working harder to make your job easier.

Call now for details: In New Jersey (201) 825-9500, Toll-Free (800) 631-3826.

CRC is a registered trademark of Capintec, Inc.

CAPINTEC, INC.

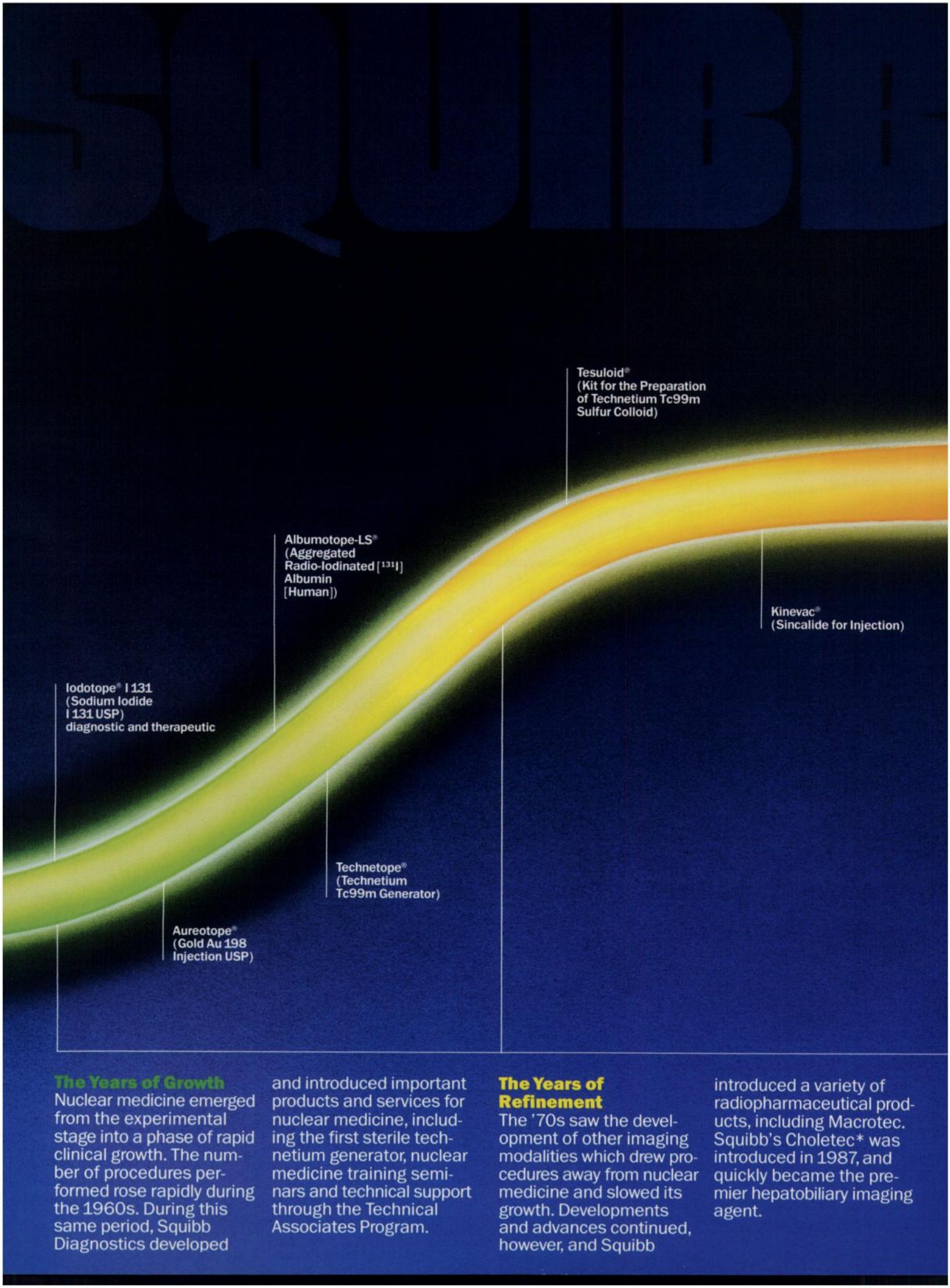
6 Arrow Road, Ramsey, New Jersey USA 07446
Toll Free (800) 631-3826 or (201) 825-9500
Telex: 642375 (CAPINTEC RASY)

CIRCLE 9 ON READER SERVICE CARD

SQUIBB

A Profile of Progress in Nuclear Medicine

SQUIBB™
Diagnostics



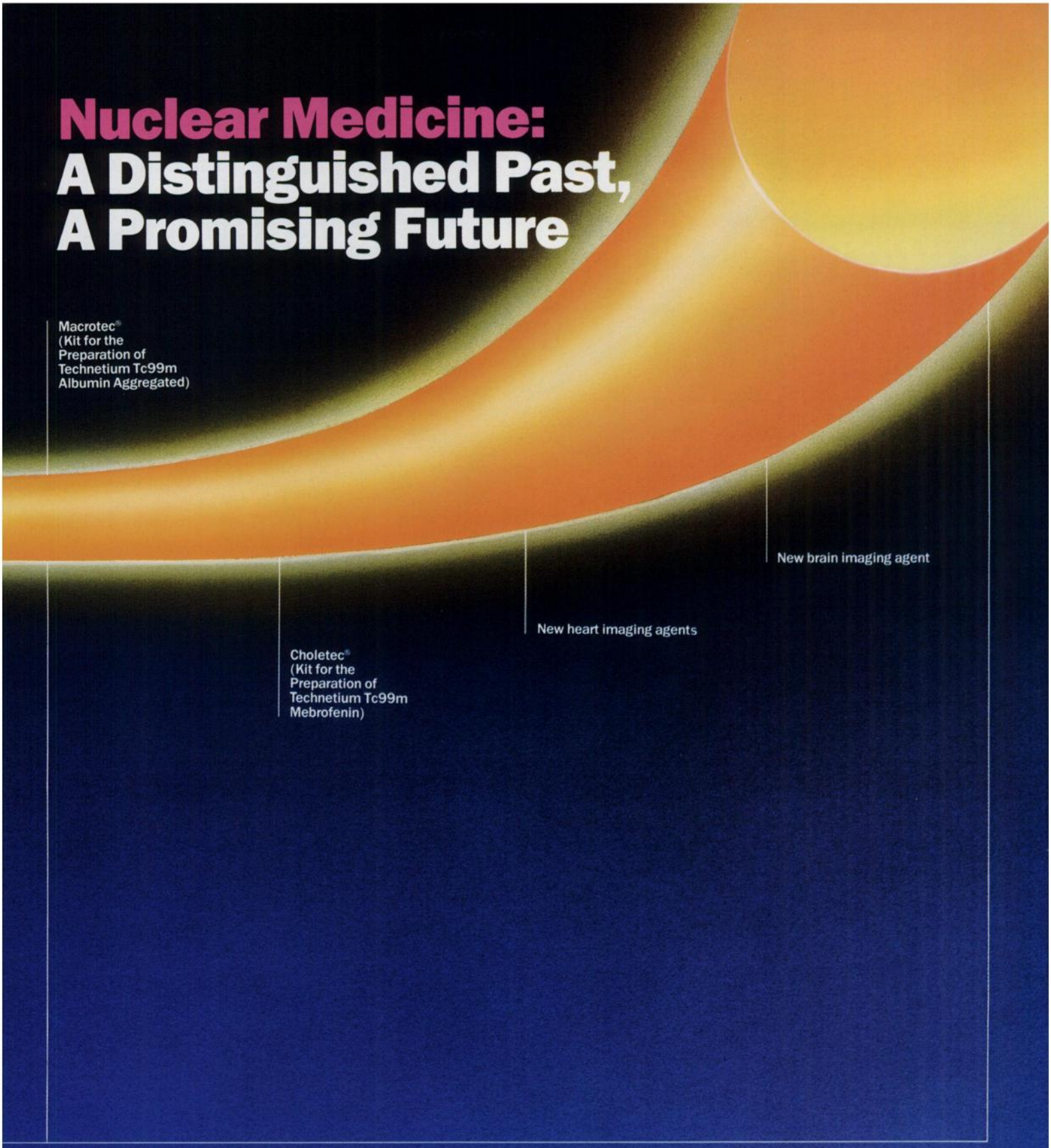
The Years of Growth

Nuclear medicine emerged from the experimental stage into a phase of rapid clinical growth. The number of procedures performed rose rapidly during the 1960s. During this same period, Squibb Diagnostics developed and introduced important products and services for nuclear medicine, including the first sterile technetium generator, nuclear medicine training seminars and technical support through the Technical Associates Program.

The Years of Refinement

The '70s saw the development of other imaging modalities which drew procedures away from nuclear medicine and slowed its growth. Developments and advances continued, however, and Squibb introduced a variety of radiopharmaceutical products, including Macrotec. Squibb's Choletec* was introduced in 1987, and quickly became the premier hepatobiliary imaging agent.

Nuclear Medicine: A Distinguished Past, A Promising Future



The Years of Promise
The future of nuclear medicine is bright, and Squibb's contributions to it continue. New Squibb brain and heart agents are now in clinical development. In addition to extensive research and development, the Squibb contribution to nuclear medicine continues with technical support and professional education programs.

*See brief summary on following page.

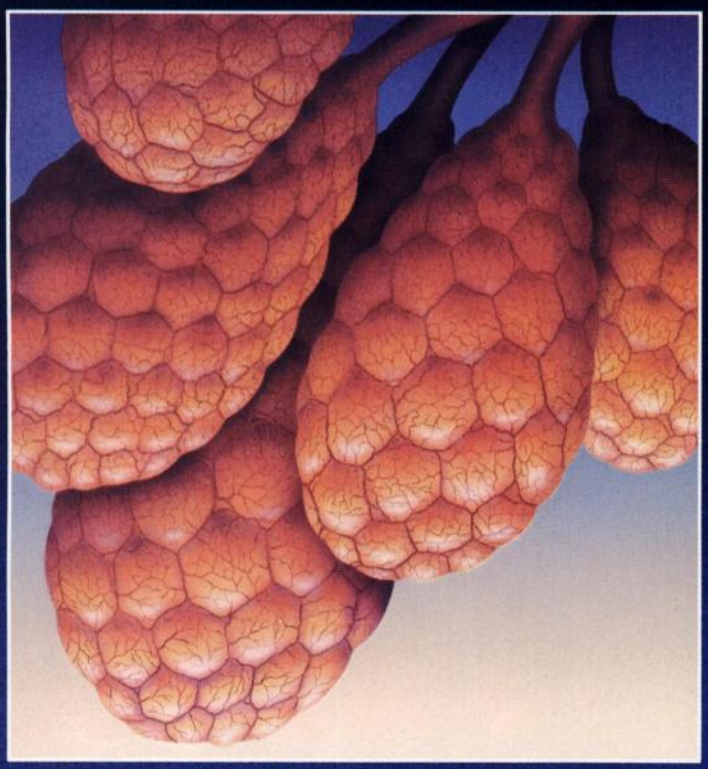
Call 1-800-257-5181 for educational materials, product information or technical assistance. In New Jersey: 1-800-582-5913

SQUIBB™ Diagnostics

MACROTEC®

(Kit for the Preparation of Technetium Tc 99m Albumin Aggregated)

The Highest Radiochemical Purity, The Lowest Supernatant Activity*



"It can be assumed that maximum target-to-background ratios in lung perfusion imaging are associated with minimum supernatant activity levels."*

In a multicenter in vitro evaluation of MAA kits, MACROTEC demonstrated the highest radiochemical purity and the lowest supernatant activity of all kits tested.* MACROTEC tested consistently better than other kits, with the lowest supernatant activity levels at the time of reconstitution and 6 hours postpreparation.

*Callahan RJ, Swanson DP, et al. A multi-institutional in vitro evaluation of commercial Tc 99m Macroaggregated Albumin Kits. J Nucl Med Tech;14:(No. 4)206-209, 1986

MACROTEC demonstrated the highest radiochemical purity (RCP) as measured by supernatant activity

LOW SUPERNATANT ACTIVITY—for high target-to-background ratios

OPTIMAL PARTICLE SIZE—more than 90% of particles in the 10-90 micron range for diagnostic efficacy and reduced activity in the liver and nontarget areas

LOW RADIATION EXPOSURE—consistent with ALARA (as low as reasonably achievable)

A UNIQUE INDICATION—the only MAA product indicated for use in isotopic venography

MACROTEC®
Kit for the Preparation of Technetium Tc 99m Albumin Aggregated
Diagnostic—For Intravenous Use

DESCRIPTION

Macrotec is a sterile, nonpyrogenic, lyophilized preparation of albumin aggregated. Each 5 mL vial of Macrotec contains 1.5 mg of Albumin Aggregated, 10.0 mg Albumin Human, 0.07 mg (minimum) stannous chloride ($SnCl_2 \cdot 2H_2O$) and 0.19 mg total tin, maximum (as stannous chloride, $SnCl_2 \cdot 2H_2O$), 1.8 mg of sodium chloride with trace amounts of sodium acetate, acetic acid and hydrochloric acid. Macrotec contains no preservatives. The pH of the reconstituted product is between 3.8 and 8.0.

The aggregated particles are formed by denaturation of Albumin Human in a heating and precipitation process. Each vial contains 2-7 million particles, 90% of which are between 10 and 90 microns in size. The average size is 20 to 40 microns; no particles are greater than 150 microns.

Reconstitution of Macrotec with sterile sodium pertechnetate Tc 99m forms an aqueous suspension of Technetium Tc 99m Albumin Aggregated for diagnostic use by intravenous injection. No less than 90% of the pertechnetate Tc 99m added to the reaction vial is bound to the aggregates at preparation time and remains bound throughout the 6-hour lifetime of the suspension.

INDICATIONS AND USAGE

Lung Imaging

Macrotec (Kit for the Preparation of Technetium Tc 99m Albumin Aggregated) is a lung imaging agent which may be used as an adjunct in the evaluation of pulmonary perfusion in adults and children. It is useful in the early detection of pulmonary emboli and in the evaluation of the status of the pulmonary circulation in such conditions as pulmonary neoplasm, pulmonary tuberculosis and emphysema.

Isotopic Venography

Macrotec is also indicated for use in isotopic venography as an adjunct in the screening, diagnosis and management of deep vein thrombosis in the lower extremities.

Combined isotopic venography of the lower extremities and the pulmonary vasculature may be performed.

CONTRAINDICATIONS

Technetium Tc 99m Albumin Aggregated injection should not be administered to patients with severe pulmonary hypertension.

The use of Technetium Tc 99m Albumin Aggregated injection is contraindicated in persons with a history of hypersensitivity reactions to products containing human serum albumin.

WARNINGS

The literature contains reports of deaths occurring after the administration of Albumin Aggregated to patients with pre-existing severe pulmonary hypertension. Instances of hemodynamic or idiosyncratic reactions to preparations of Technetium Tc 99m Albumin Aggregated have been reported.

PRECAUTIONS

General

In patients with right to left heart shunts, additional risk may exist due to the rapid entry of Albumin Aggregated into the systemic circulation. The safety of this agent in such patients has not been established.

Hypersensitivity reactions are possible whenever protein-containing materials such as pertechnetate labeled Albumin Aggregated are used in man. Epinephrine, antihistamines and corticosteroids should be kept available for immediate use.

The intravenous administration of any particulate material such as Albumin Aggregated imposes a temporary, small mechanical impediment to blood flow. While this effect is probably physiologically insignificant in most patients, the administration of Albumin Aggregated is possibly hazardous in acute cor pulmonale and other states of severely impaired pulmonary blood flow.

The components of the Macrotec (Kit for the Preparation of Technetium Tc 99m Albumin Aggregated) are sterile and nonpyrogenic. It is essential to follow directions carefully and adhere to strict aseptic procedures during preparation.

Contents of the vial are intended only for use in the preparation of Technetium Tc 99m Albumin Aggregated injection and are **NOT** to be administered directly to the patient.

The contents of the kit before preparation are not radioactive. However, after the sodium pertechnetate Tc 99m is added, adequate shielding of the final preparation must be maintained.

The technetium Tc 99m labeling reactions involved depend on maintaining the stannous ion in the reduced state. Hence, sodium pertechnetate Tc 99m containing oxidants should not be employed.

The preparation contains no bacteriostatic preservative. Technetium Tc 99m Albumin Aggregated injection should be stored at 2-8°C and discarded 6 hours after formulation.

Technetium Tc 99m Albumin Aggregated injection is a physically unstable suspension and consequently the particles settle with time. Failure to agitate the vial adequately before use may result in non-uniform distribution of radioactive particles.

If blood is drawn into the syringe, unnecessary delay prior to injection may result in clot formation.

Radiopharmaceuticals should be used only by physicians who are qualified by training and experience in the safe use and handling of radionuclides and whose experience and training have been approved by the appropriate government agency authorized to license the use of radionuclides.

As in the use of any other radioactive material, care should be taken to minimize radiation exposure to patients consistent with proper patient management, and to minimize radiation exposure to clinical personnel.

Carcinogenesis, Mutagenesis, Impairment of Fertility

No long-term animal studies have been performed to evaluate carcinogenic potential or whether Technetium Tc 99m Albumin Aggregated injection affects fertility in males or females.

Pregnancy Category C

Animal reproduction and teratogenicity studies have not been conducted with Technetium Tc 99m Albumin Aggregated injection. It is also not known whether Technetium Tc 99m Albumin Aggregated injection can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. There have been no studies in pregnant women. Technetium Tc 99m Albumin Aggregated injection should be given to a pregnant woman only if clearly needed.

Ideally, examinations using radiopharmaceuticals, especially those elective in nature, in women of childbearing capability, should be performed during the first few (approximately 10) days following the onset of menses.

Nursing Mothers

Technetium Tc 99m is excreted in human milk during lactation. Therefore, formula-feedings should be substituted for breast-feedings.

Pediatric Use

The lowest possible number of particles should be used in the right-to-left shunting, in neonates and in severe pulmonary disease.

ADVERSE REACTIONS

Although adverse reactions specifically attributable to the Technetium Tc 99m Albumin Aggregated injection have not been noted, the literature contains reports of deaths occurring after the administration of Albumin Aggregated to patients with pre-existing severe pulmonary hypertension. Instances of hemodynamic or idiosyncratic reactions to preparations of Technetium Tc 99m Albumin Aggregated have been reported.

HOW SUPPLIED

Macrotec (Kit for the Preparation of Technetium Tc 99m Albumin Aggregated) is supplied as a kit containing 10 reaction vials (5 mL size), 10 pressure sensitive labels and 1 package insert. (J3-436L)

CIRCLE 67 ON READER SERVICE CARD

SQUIBB™ Diagnostics

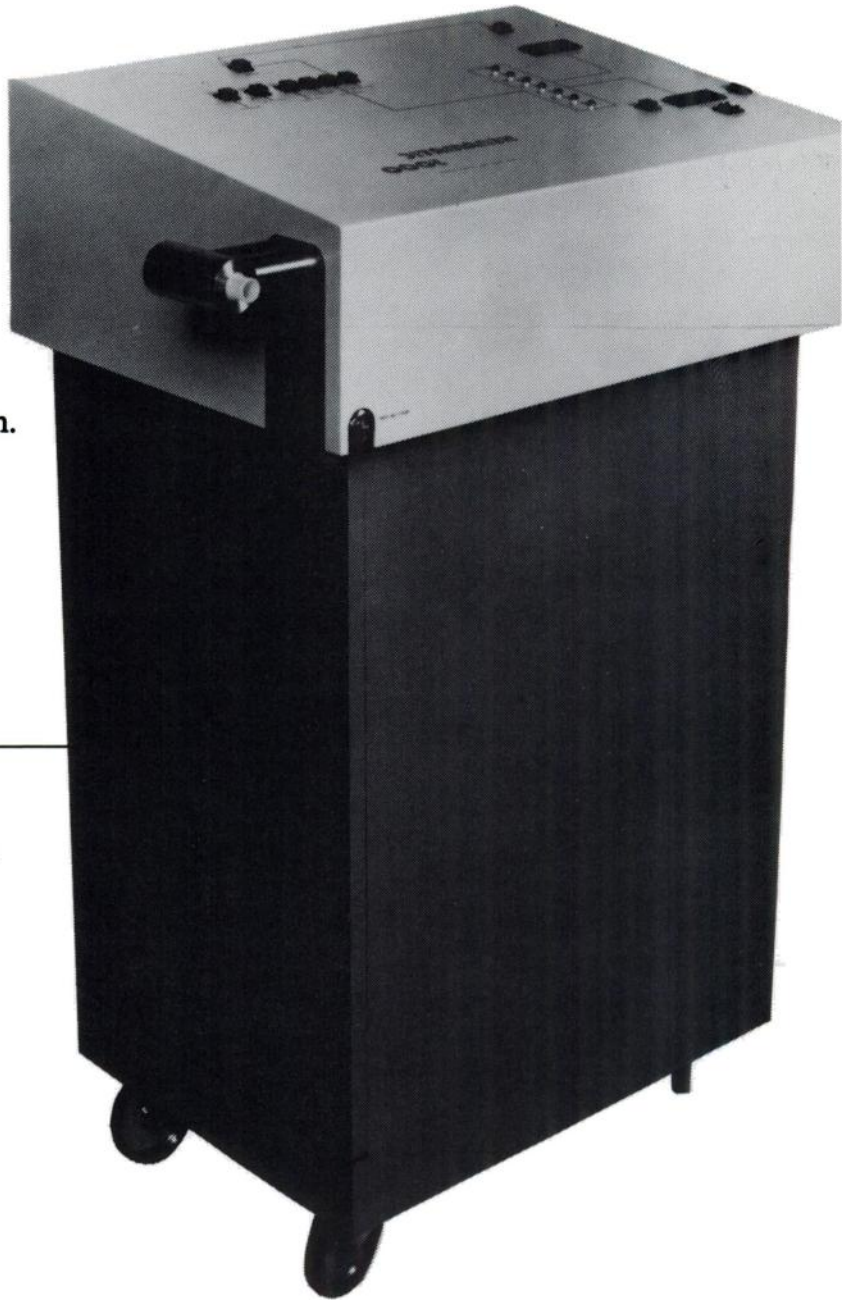
608-504

Issued July 1988

IN A FOG??

using aerosols to determine the patency of the pulmonary airway system? Use a gas (that's what the airway system is for), and Xenon (127 or 133) are gases which are safe, economical and easy to administer with the XENAMATIC™ 3000.

- Shielded for Xe 127 and Xe 133 (radiation profile available on request).
- World's only system that allows you to study patients on Ventilators.
- Largest and most efficient Xenon trap with a built-in monitor alarm system.
- Built-in O_2 monitor with digital display and control.
- A rebreathing system that saves Xenon.
- Low breathing resistance so you can study sick patients.
- Semi-automatic operation.
- Remote Control Capability.



Get out of the FOG-making business, and call today for more information on putting gases where gases belong, with the XENAMATIC.

Also available, Model 2000.

For more information, please call or write,

DIVERSIFIED DIAGNOSTIC PRODUCTS, INC.
11603 Windfern
Houston, TX 77064
713-955-5323

Circle Reader Service No. 33

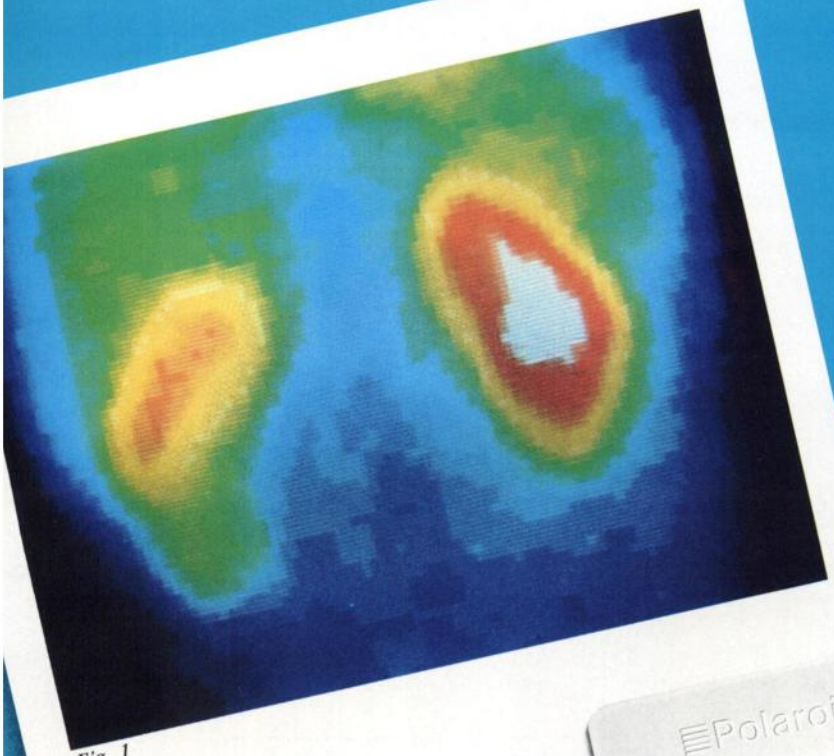


Fig. 1

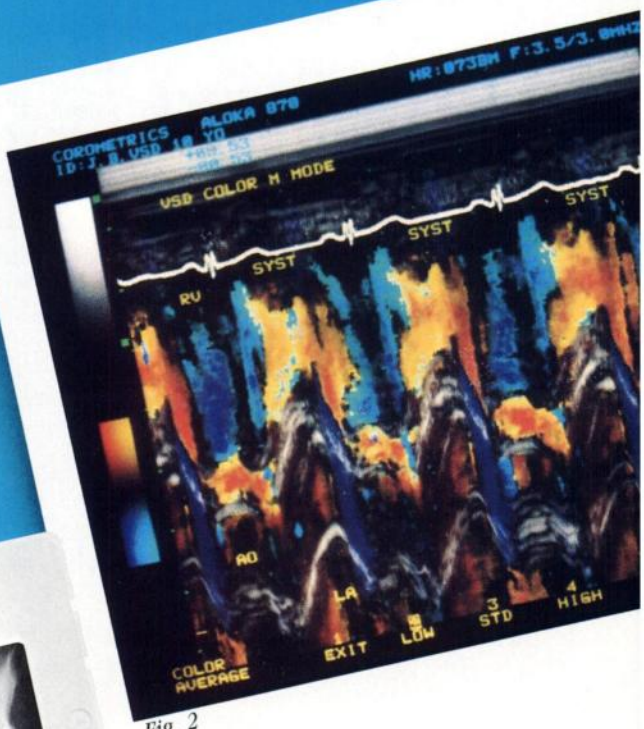


Fig. 2

Fig. 5

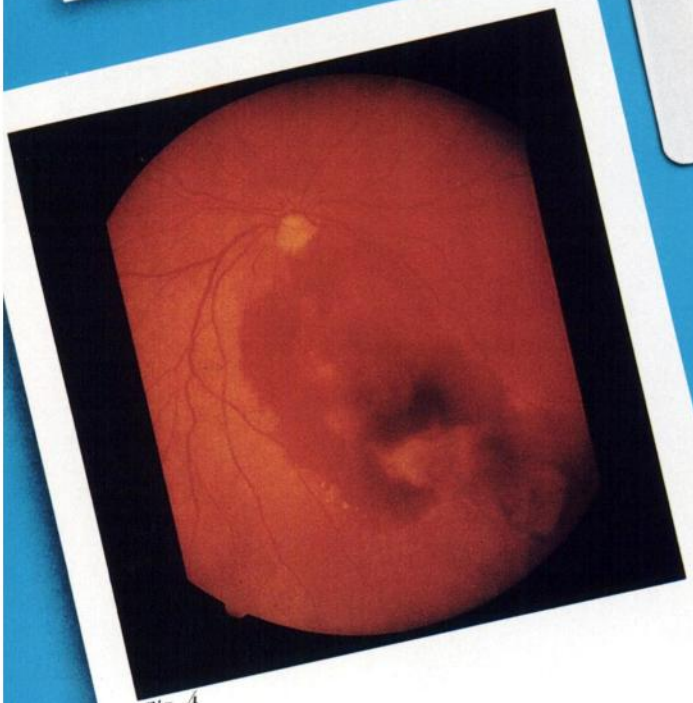


Fig. 4

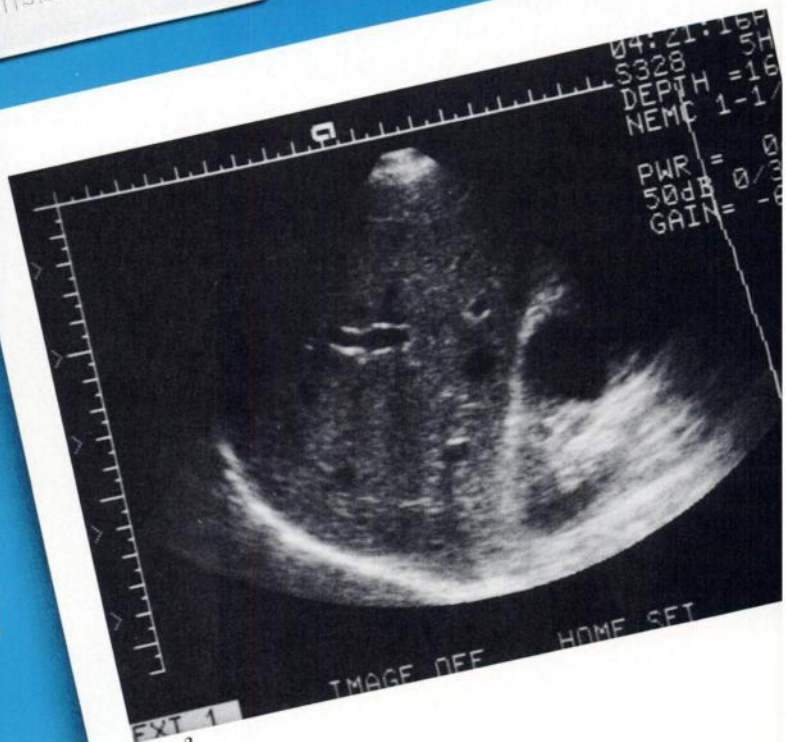


Fig. 3

How to make a lasting impression.

How long does it take you to get sharp, detailed images of your diagnostic procedures? A few days? Maybe a few hours? The images on the left were ready in seconds with Polaroid instant films. They show just some of the many diagnostic imaging applications that Polaroid has developed specifically for the medical field.

This Scintigram of a kidney study (Fig. 1) was captured on Type 339 AutoFilm using the FreezeFrame Medical Video Image Recorder. This imaging device is certified for use in operating rooms and allows prints or slides to be made instantly in color or black and white from nearly any video source.

For cardiology (Fig. 2), this color M-Mode of a ventricular septal defect was taken on Type 339 AutoFilm. This film is used with most new color flow mapping systems and displays consistent, accurate color and requires no pulling, timing or peeling.

The abdominal ultrasound image (Fig. 3) taken with the Aspect video image recorder, shows the liver and right kidney on Type 331 AutoFilm. The AutoFilm image ejects and develops automatically and delivers excellent gray scale reproduction and long-term stability unmatched by thermal images.

The fundus image (Fig. 4) was taken on Type 779 instant color film. This is a positive color emulsion that requires no timing or peeling, and offers repeatable, accurate color documentation.

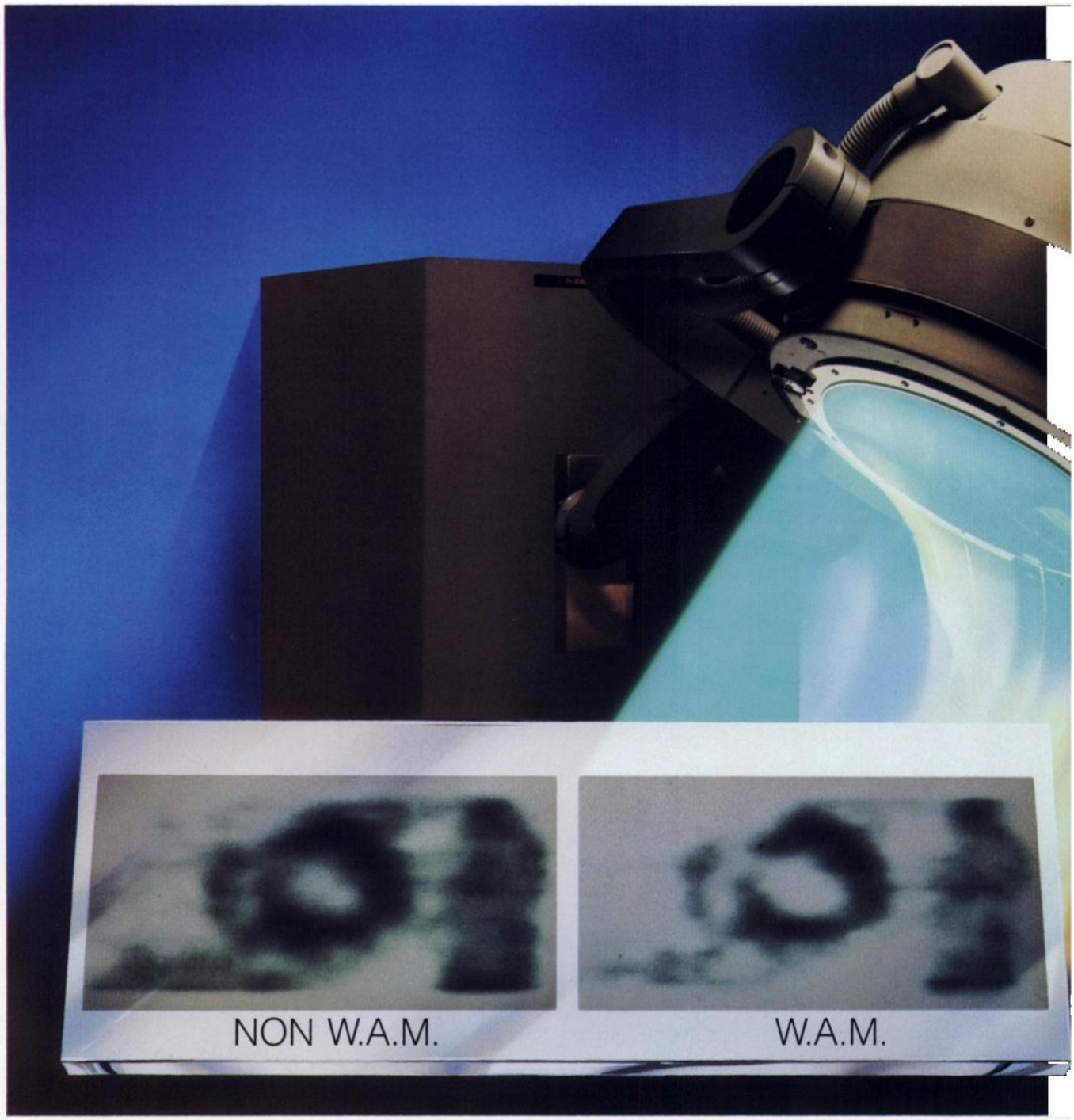
For presentations, your subjects can be easily reproduced on any of Polaroid's five instant 35mm slide films. This copy of a pelvic X-ray (Fig. 5) was exposed on PolaPan instant 35mm film, and developed in minutes using the 35mm PowerProcessor.

In color or black and white. In prints, 35mm slides or overhead transparencies. In seconds. If you have a diagnostic imaging requirement, Polaroid has an instant imaging solution. For patient files, referrals, publication, presentation or patient education. And you get it all A.S.A.P.—As Soon As Polaroid instant images. For a complete brochure on Polaroid instant imaging solutions for medical professionals, or to find out about our exclusive medical image guarantee program call us toll free: **1-800-343-5000.**

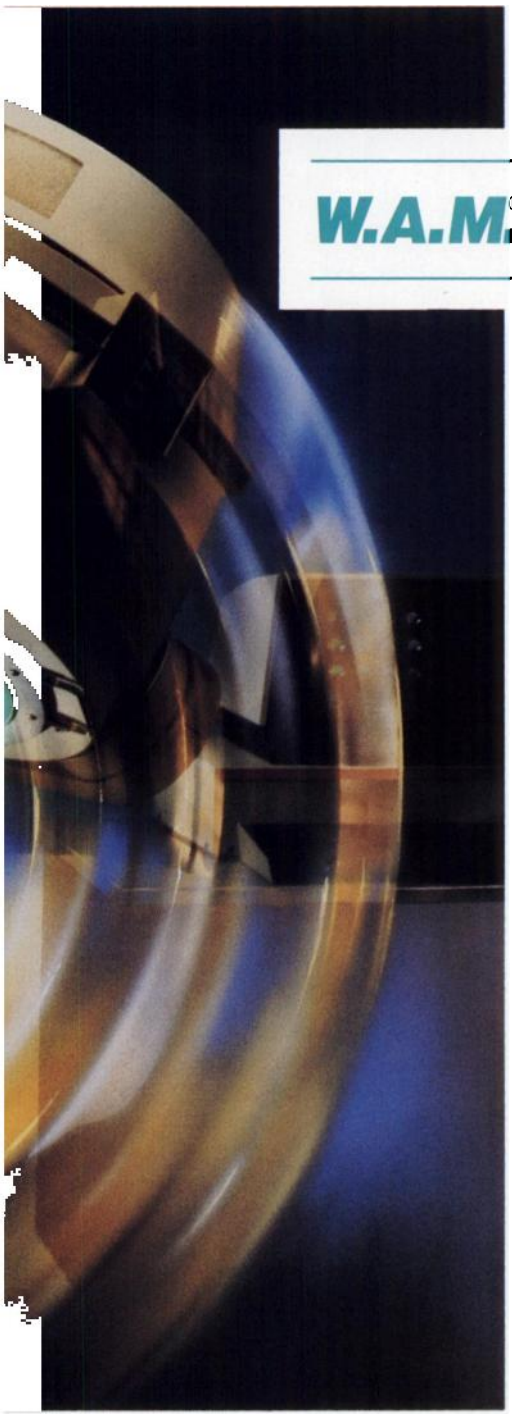
A.S.A.P.
As Soon As Polaroid

Polaroid

SIEMENS



Unretouched Thallium 201 SPECT Reconstruction Images. Clinical Impression: W.A.M. Invaluable for Thallium SPECT Imaging.



A to Z... our technical edge gets sharper! From Anger, to DIGITRAC™ to ZLC™ we've never stopped improving the Gamma Camera!

And now...

W.A.M.® The Cutting Edge in SPECT!

Up Front Technology!

The Weighted Acquisition Module is NOT a software package. It is an exclusive accessory for all Siemens Rotational cameras that interfaces directly to the DIGITRAC detector system.

Where the WHOLE Image Counts!

W.A.M. improves upon less efficient, conventional pre-selected energy windowing. The proprietary W.A.M., "realtime spatial filtering signal processor," uses *each* event weighted value, from *every* detected photon, to produce a *complete* image.

For Improved Image Contrast! By obviating scatter corruption, W.A.M. increases diagnostic confidence with superior image contrast and acquisition throughput by providing 2 simultaneous data sets.

W.A.M. When your image counts!

DELTAVISION, DELTASTORE, MicroDELTA, MaxDELTA, BASICAM, LEM+, ORBITER, BODYSCAN, the PET system and W.A.M.

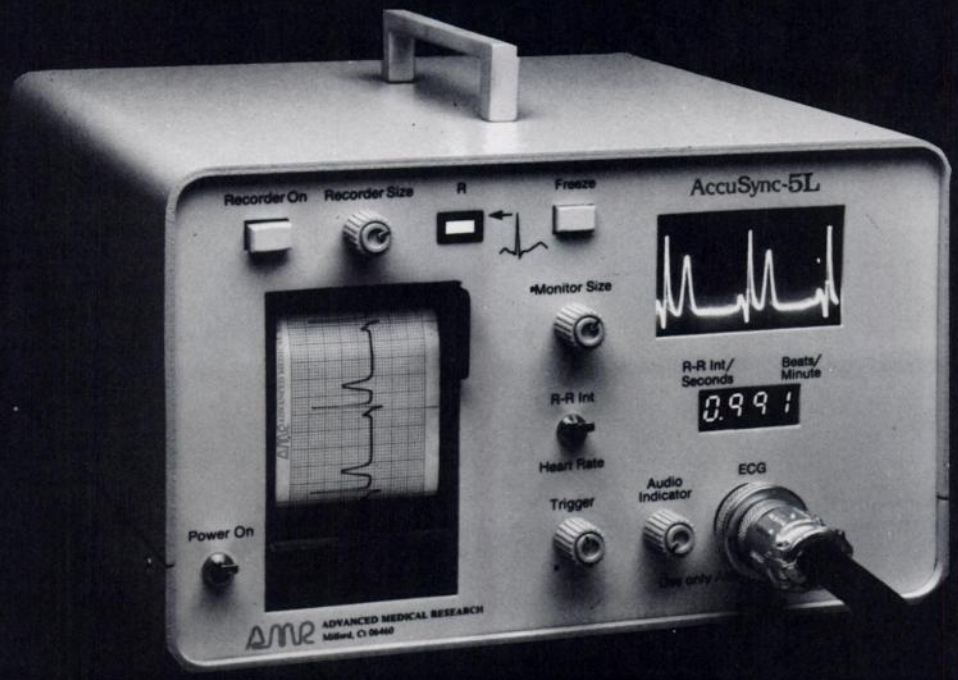
Siemens Medical Systems, Inc.
2000 Nuclear Drive Des Plaines, IL 60018 312-635-3259

Siemens ... technology with integrity.

Circle Reader Service No. 114

AMR's AccuSync provides R-wave detection with precision and reliability.

The finest R-wave Triggering device available for computerized gated cardiac studies.



AccuSync-5L Features

- Isolation Amplifier for Patient Safety.
- Digital CRT Monitor.
- ECG Strip Chart Recorder.
- Heart Rate/R-R int.
- Trigger Pulse LED.
- Trigger Control for Ease of Lead Placement and Precise Location of Trigger Pulse.
- R-Trigger Output, Compatible with all Computers.
- No Delay.
- ECG Output
- Playback Mode. (optional)
- Event Marker. (optional)
- Audio Indicator.

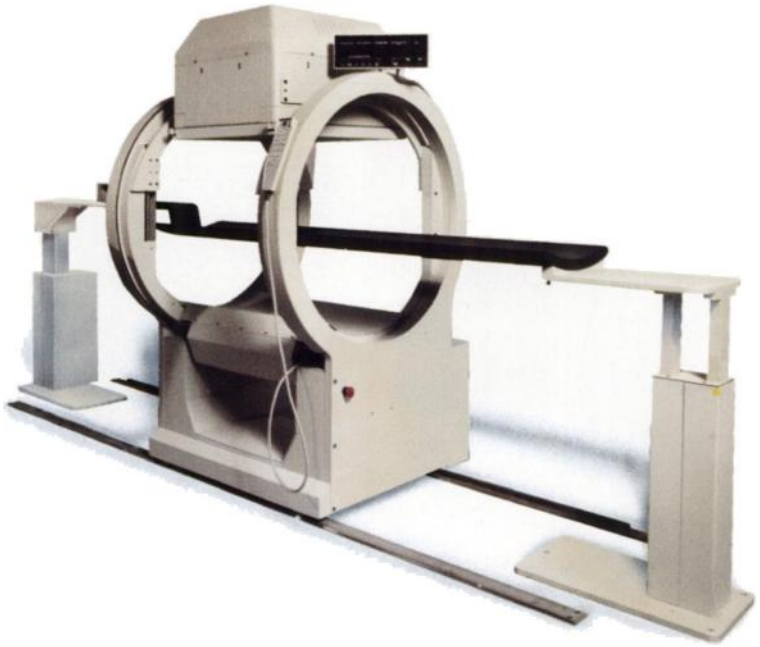
MODEL		FEATURES
AccuSync-6L		All **AccuSync-5L** features with the exception of the Strip Chart Recorder.
AccuSync-IL		All **AccuSync-5L** features with the exception of Digital CRT Monitor.
AccuSync-3R		All **AccuSync-IL** features with the exception of the Strip Chart Recorder and Playback Mode.
AccuSync-4R		All **Accu Sync-3R** features with the exception of the Heart Rate/R-R int. display.

ADVANCED MEDICAL RESEARCH CORP.

148 Research Drive/P.O. Box 3094
Milford, CT 06460/Telephone: (203) 877-1610

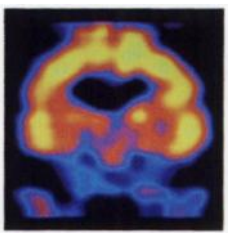
Circle Reader Service No. 14

Introducing GENESYS, a significant advance in design and performance.



GENESYS combines state-of-the-art advancements in gantry and detector design with enhanced robotics to deliver an overall system performance that assures exceptional diagnostic results in brain, whole body and SPECT imaging.

GENESYS features the industry's most compact gantry design, providing easy access to patients while significantly reducing floor space requirements. The stability of the GENESYS gantry is unsurpassed in reducing artifacts, especially during SPECT and whole body imaging.



The GENESYS system's five robotically controlled automated imaging positions, combined with an innovative collimator exchange and locking mechanism, minimize study set-up time and reduce operator errors. The GENESYS bi-level motorized table maximizes patient comfort and safety enabling improved brain SPECT imaging. For a closer look at GENESYS and a color brochure, call Nancy Hendrix at 1 (800) 538-8531 or (408) 945-2990 within California. Write to: 540 Alder Drive, Milpitas, CA 95035

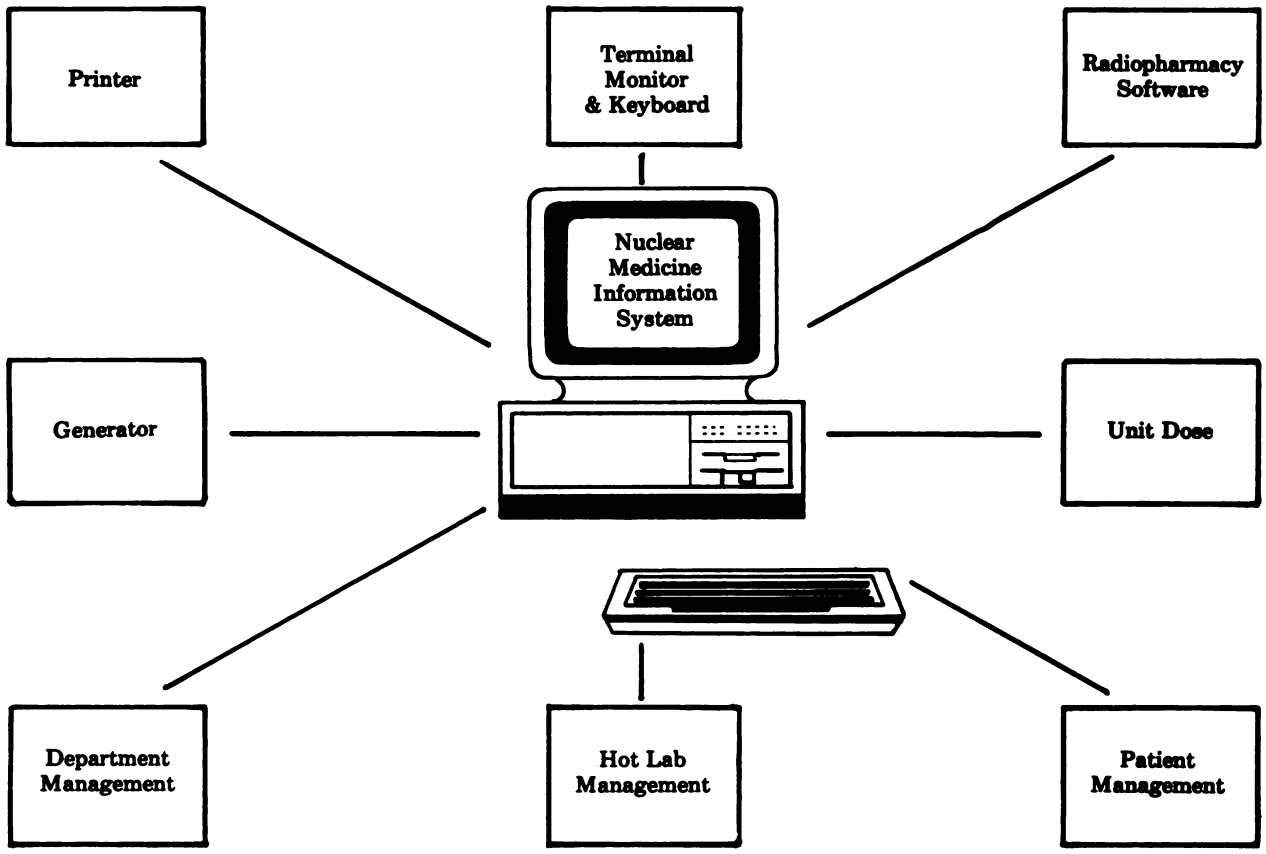
Circle Reader Service No. 13

ADAC

You'll See the Difference

NUCLEAR MEDICINE INFORMATION SYSTEMS©

(Software Package)



IT'S TIME TO TAKE THE NEXT STEP . . . . .

This Program and a Personal Computer is the answer to meeting your management needs . . . and much more.

NUCLEAR MEDICINE CONSULTING FIRM
P. O. Box 824
Greenville, PA 16125
(412) 932-5840

Circle Reader Service No. 54

HOT LAB MANAGEMENT:

- —Syringe Labels
- —Disposal Records
- —Inventory Control
- —Unit Dose Database
- —Generates Daily Reports
- —Generator and Kit Preparation
- —Ordering & Receiving Unit Doses
- —Decays All Radiopharmaceuticals and Doses
- —Performs Thin Layer Chromotography
- —Calculates Linearity & Constancy Tests
- —Radioactive Shipment Receiving Reports

DEPARTMENT MANAGEMENT:

- —Teaching File
- —Reminder File
- —Stores Department Data
- —Health Physics Program
- —Calculates Budgetary Information
- —Calculates Department Statistics
- —Productivity & Efficiency Programs
- —Stores Department's Procedure Manual
- —Quality Assurance & Quality Control Programs

PATIENT MANAGEMENT:

- —Patient Scheduling
- —Monthly and Yearly Statistics
- —Networking System Availability
- —Adaptable to Department's Needs
- —Creates Hard Copy of Patient Doses
- —Inhouse, Unit Doses, and Central Pharmacy
- —Displays Data Numerically &/or Graphically
- —Generates Teaching File of Interesting Cases
- —Analyzes Quality Assurance for JCAH Documentation

INTRODUCING VIEWPOINT.
THE NUCLEAR MEDICINE DISPLAY STATION.

The VIEWPOINT remote display station provides powerful interactive display of patient data with image enhancement capabilities for onscreen review and editing in any setting. VIEWPOINT features a mouse-driven pull-down menus screen environment with high resolution color display for high quality diagnostic evaluations. Innovative image manipulation capabilities gives the user complete control of the image presentation.

Linked to the 3300 MICRO or DPS 33000, VIEWPOINT provides the physician with immediate access to patient studies for review and reporting. In addition, the VIEWPOINT display station may be connected to CENTOR™, ADAC's local PACS network, thereby providing the physician with display of images and access to the entire patient database.

For more information, about VIEWPOINT, call Nancy Hendrix at (800) 538-8531.

Circle Reader Service No. 94

ADAC

You'll See the Difference

Join Us On the Edge of Discovery

We're looking for Nuclear Medicine Technologists—certified, highly qualified and excited about the vision that characterizes Nuclear Medicine. In return, we offer a special kind of challenge: to work with the team that is the leading force in Nuclear Medicine today. The team at the Clinical Center of NIH.

The Clinical Center is a 540-bed hospital near Washington, D.C. It's part of the National Institutes of Health, established by Congress. We serve patients from all over the world, and our laboratories perform Nobel prize-winning research. It's the only hospital of its kind. Here, you can participate in the kind of ground-breaking work that drew you into this field in the first place. And you can gain professional experience that's unmatched anywhere else in the world.

You may choose to focus on clinical nuclear medicine, positron emission tomography, or monoclonal antibody imaging. Using three SPECT cameras, three PET systems, two whole-body scanners and four gamma cameras backed by a state-of-the-art computer system, you'll provide diagnostic information for physicians from the thirteen institutes of the NIH. You'll use traditional imaging agents and also help test experimental radiolabled monoclonal antibodies for clinical efficacy. Employing very short-lived radioactive isotopes (C11, N13, O15 and F18) produced in NIH's two medical cyclotrons, you'll use state-of-the-art PET scanners to pioneer new methods of diagnosing a variety of neurological diseases, cardiac abnormalities and somatic cancers.

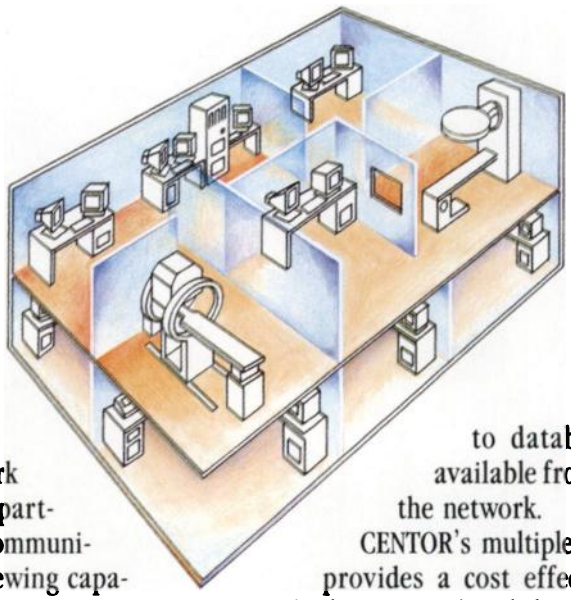
Here is a place where you can join a group of professionals who share your pioneering spirit, your dedication to discovery and your commitment to the future of human health. Join us, and help shape that future. Call Barbara Damske, RN, CNMT, collect at 301-496-6455.

National Institutes Of Health Clinical Center Nuclear Medicine Department

Room 1C401
9000 Rockville Pike
Bethesda, Maryland 20892
Call Collect (301) 496-6455

U.S. Citizenship Required.
An Equal Opportunity Employer

INTRODUCING CENTOR, THE NETWORK SYSTEM SOLUTION FOR YOUR NUCLEAR MEDICINE DEPARTMENT.



The ADAC CENTOR Nuclear Medicine network system provides your department with integrated communications, archival and viewing capabilities.

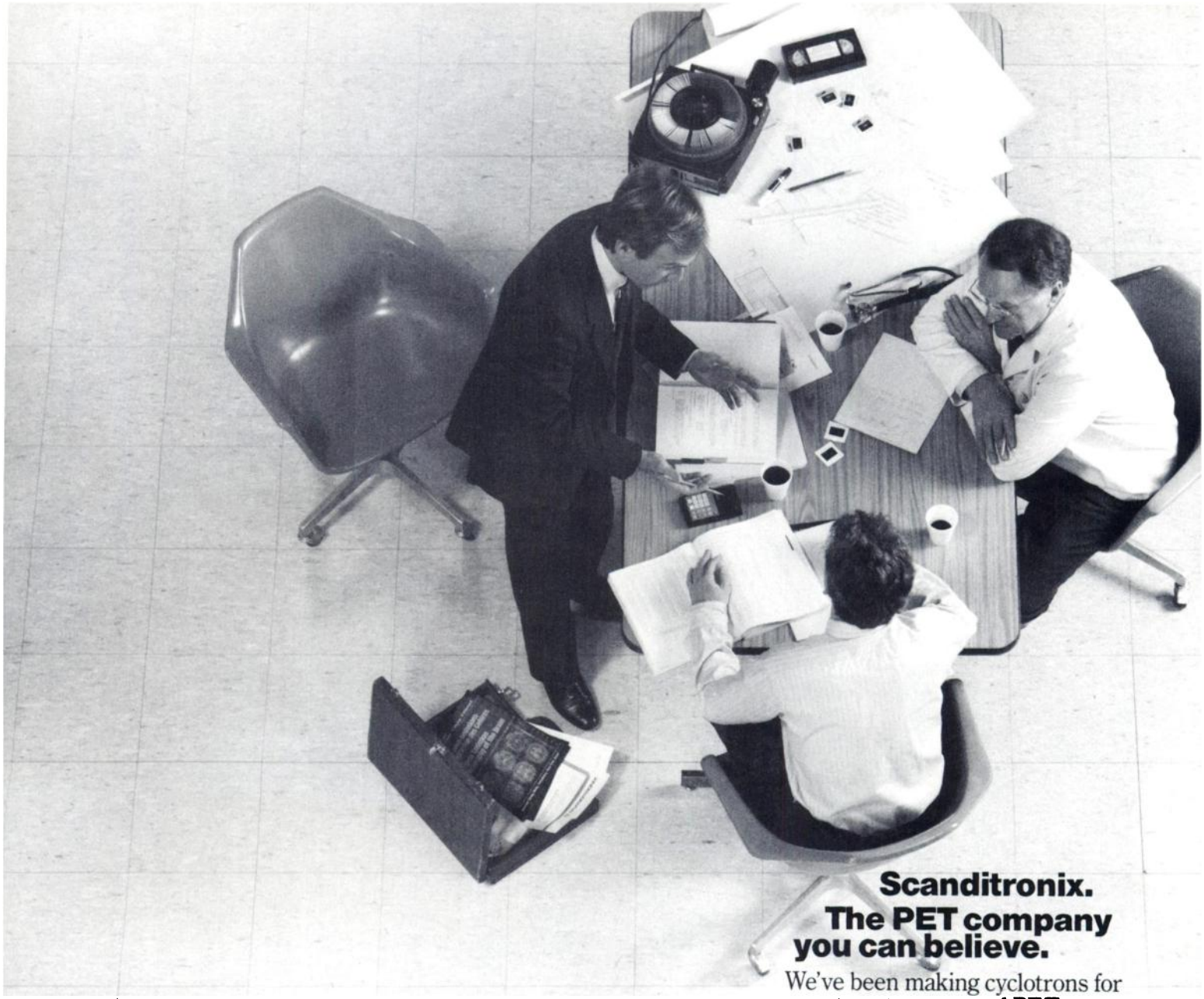
CENTOR increases the department's productivity with one central host system that integrates the department via Ethernet link. Enhancements such as remote data entry, automated data transfer, remote image access, efficient archival and on-line access to database images are available from any location in the network.

CENTOR's multiple user capabilities provides a cost effective solution to duplicate peripherals by sharing resources such as laser printers and archival media. For more information about CENTOR, call Nancy Hendrix at 1 (800) 538-8531 or (408) 945-2990 within California. Or write to: ADAC Laboratories, 540 Alder Drive, Milpitas, CA 95035.

ADAC

You'll See the Difference

Circle Reader Service No. 108



Scanditronix. The PET company you can believe.

We've been making cyclotrons for over twenty years and PET cameras since 1978. All of these systems are still performing at or above their original specifications.

That's why, when we announce a PET camera with 4.9mm resolution and a medical cyclotron you can easily program, you know it's true.

If you want to bring that kind of credibility into your PET planning, you need only make one phone call: 617-768-6994.

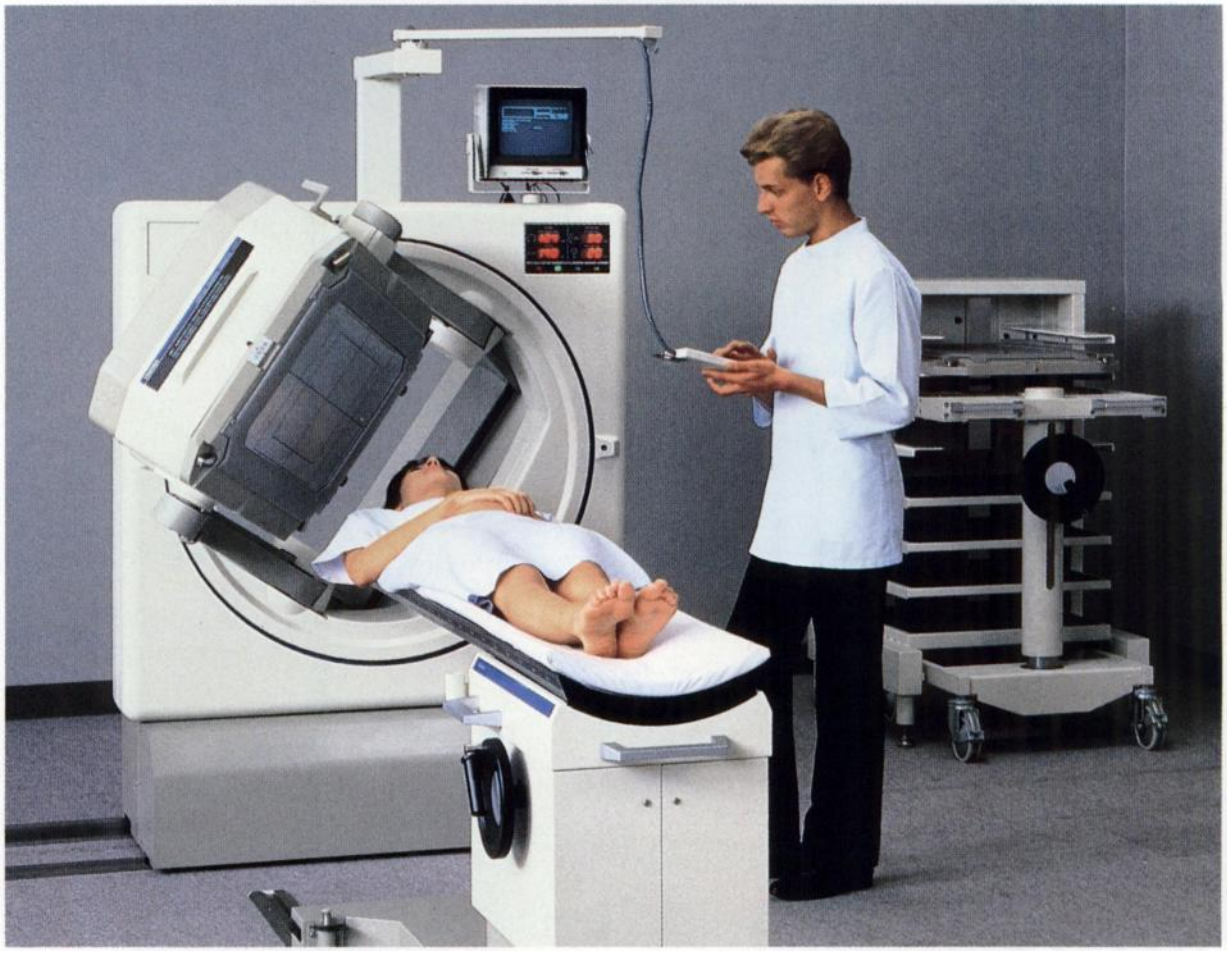
Circle Reader Service No. 76

SCANDITRONIX, INC.

The future of PET is here

106 Western Avenue, P.O. Box 987, Essex, Massachusetts 01929, U.S.A., Telephone: (617)-768-6994. Telex: 499-3087 NUCLEX.
Scanditronix AB, Husbyborg, S-755 90 Uppsala, Sweden. Telephone: (0)18-15 24 40. Telex: 2401-8195057 SCXUPP.

Covering the range in Nuclear Medicine Diagnosis



Toshiba introduces the New Digital Gammacamera, based on its remarkable history in computer technology and nuclear imaging.

The GCA-901A's functions are highly streamlined, allowing for imaging, data acquisition, processing, storage, and transferring to be simultaneously performed. Image reconstruction and data processing are performed quickly with its high-speed array processor. Data can be simultaneously acquired from a conventional analog gammacamera with an optional interface. Possible configurations include 1024×1024 matrix images displayed on the screen or on film; four 512×512 matrix images shown together with an independent gray scale adjustment and whole body imaging on a 1024×1024 matrix. The $50cm \times 35cm$ detector allows easy whole body scanning in a single pass mode. Macroprograms can be executed to perform automatic acquisition and processing.

Great emphasis has also been placed on safety. Toshiba's Gammacamera GCA-901A brings you diversity, accuracy and reliability in performance.

TOSHIBA

TOSHIBA CORPORATION
International Operations Department
Medical Systems Division
1-1, Shibaura, 1-Chome, Minato-ku, Tokyo 105, Japan
Tel: Tokyo 457-3273 Telex: J22587 Toshiba Cable: Toshiba Tokyo

CIRCLE 69 ON READER SERVICE CARD

Toshiba Medical Systems, Division of Toshiba America, Inc. 2441 Michelle Drive, Tustin, California 92680, U.S.A. Tel: (714) 730-5000 Telex: 183812
Toshiba Medical Systems Europe B.V. Schieweg 1, 2627 AN, Delft, Holland Tel: (015) 610121 Telex: 38188
Toshiba Medical do Brasil Ltda. Rua Helena 166, CEP 04552 Vila Olimpia, São Paulo-SP, Brasil Tel: (011) 814-5799 Telex: 1124818 THOS BR
Toshiba of Canada, Limited 3680 Victoria Park Ave., Willowdale, Ontario, Canada M2H 3K1 Tel: (416) 499-5555 Telex: 065-25339
Toshiba (Australia) Pty. Limited, Toshiba Medical Australia 6-8 Byfield Street (P.O. Box 315), North Ryde, N.S.W. 2113, Australia Tel: (02) 888-3411 Telex: AA 70010

DOUBLE BREATHING CAPACITY IS ONLY THE BEGINNING.

The New Pulmonex.

The New Pulmonex Xenon Delivery System makes your ventilation studies easier than ever. For your patient's breathing comfort, The New Pulmonex has double the air capacity. For the technologist's convenience, a simple control allows you to administer the procedure and observe the gamma camera at the same time.

Quite simply, the New Pulmonex is the easiest Xenon Delivery System you can use to administer and diagnose regional ventilation studies. Call or write today for more information about the New Pulmonex, and a Free catalog of all our nuclear medicine supplies and accessories.

Atomic Products Corporation

ATOMLAB DIVISION • ESTABLISHED 1949

P.O. DRAWER R, SHIRLEY, NEW YORK 11967-0917 U.S.A.
TEL: (516) 924-9000 • FAX: (516) 924-9241
TELEX NO: 797566 • TWX: 51022-80449 ATOMLAB CTCH

From The Technologist Section...

CLINICAL EVALUATION METHODS GUIDE

This publication is designed to aid allied health and nuclear medicine technology educators in developing appropriate assessment instruments for evaluating student performance.

The 6 assessment tools described are: checklists, rating scales, anecdotal records, critical incident technique, questionnaires, and data forms.

While indispensable to professionals in nuclear medicine and related technology programs, the information contained herein will also be useful to those involved in personnel evaluation.

Softcover Format; 8½ × 11; 72 pp.; 1982

ORDER YOUR COPY NOW!

$15.00 for members, $18.00 for non-members; plus $2.50 postage and handling for each book ordered. Prepayment required in *US funds drawn on US banks only.* No foreign funds accepted. For payments made in US dollars, but drawn on a foreign bank, add $4.50 bank processing fee for Canadian bank drafts or $40.00 for all other foreign. Make checks payable to: The Society of Nuclear Medicine. Order from: Book Order Department, **Society of Nuclear Medicine, 136 Madison Avenue, New York, NY 10016-6760.** *Prices are in US dollars and subject to change without notice.*

FOURTH ASIA & OCEANIA CONGRESS OF NUCLEAR MEDICINE

Taipei, Taiwan
November 1–4, 1988

LOWEST Round Trip AIR FARES from Your Hometown on China Airlines. Plus, Post Congress Tours to South East Asia at your discretion

Call Today Immediately:

THE OFFICIAL AGENT

SINO-AMERICAN TOURS, INC.
221 Canal Street, Suite 501,
New York, NY 10013
212-925-3388
800-221-7982
Attn: Margaret Ng

Circle Reader Service No. 115

S.D. Medico Sales A/S

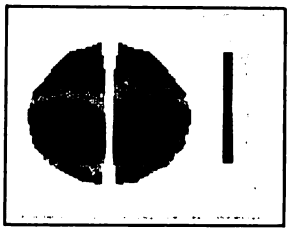
A New Powerful Tool For High-Resolution Imaging Of Cortical Blood Flow

Scan Detectronic
CEREBROGRAPH
CORTEXPLORER 256 HR

The newly-developed CORTEXPLORER 256 HR is a High-Resolution system for bilateral measurement of regional Cerebral Blood Flow.

CLINICAL APPLICATIONS

A wide range of pathological conditions can be studied within the fields of Neurology, Neurosurgery and Psychiatry.



A case of Alzheimer's disease with CBF measurement during rest. The illustration shows Parietal and Temporal areas with subnormal blood flow.
CBF-lab, Dept of Psychiatry III, University Hospital Lund, Sweden.

For further information please contact:
S.D. Medico Sales
Smedevaenget 8,
9560 Hadsund, Denmark
Phone: +45 8 57 24 33

Circle Reader Service No. 119

BRIEF SUMMARY

THALLOUS CHLORIDE Tl 201 INJECTION

Diagnostic – For Intravenous Use

DESCRIPTION–Thallous Chloride Tl 201 Injection is supplied in an isotonic solution as a sterile, non-pyrogenic diagnostic radiopharmaceutical for intravenous administration. Each milliliter contains 37 megabecquerels (1 millicurie) Thallous Chloride Tl 201 at calibration time, made isotonic with 9 milligrams sodium chloride and preserved with 0.9% (v/v) benzyl alcohol. The pH is adjusted to between 4.5 to 7.0 with hydrochloric acid and/or sodium hydroxide. Thallium Tl 201 is cyclotron produced. At the time of calibration it contains no more than 1.0% Thallium Tl 200, no more than 1.0% Thallium Tl 202, no more than 0.25% radionuclidic Leads and no less than 98% Thallium Tl 201 as a percentage of total activity. No carrier has been added.

INDICATIONS AND USAGE–Thallous Chloride Tl 201 may be useful in myocardial perfusion imaging and for the diagnosis and localization of myocardial infarction.

It may also be useful in conjunction with exercise stress testing as an adjunct in the diagnosis of ischemic heart disease (atherosclerotic coronary artery disease).

It is usually not possible to differentiate recent from old myocardial infarction, or to differentiate exactly between recent myocardial infarction and ischemia.

CONTRAINDICATIONS–None known.

WARNINGS–When studying patients suspected or known to have myocardial infarction or ischemia, care should be taken to assure continuous clinical monitoring and treatment in accordance with safe, accepted procedures. Exercise stress testing should be performed only under the supervision of a qualified physician and in a laboratory equipped with appropriate resuscitation and support apparatus.

PRECAUTIONS–Data are not available concerning the effect on the quality of Thallous Chloride Tl 201 images of marked alterations in blood glucose, insulin or pH (such as is found in diabetes mellitus). Attention is directed to the fact that thallium is a potassium analog, and since the transport of potassium is affected by these factors, the possibility exists that the Thallous Chloride Tl 201 may likewise be affected.

General–This drug should not be used after six (6) days from the calibration date, or nine (9) days from date of manufacture, whichever comes first.

As in the use of any radioactive material, care should be taken to minimize radiation exposure to the patient consistent with proper management and to insure minimum radiation exposure to occupational workers.

Radiopharmaceuticals should be used only by physicians who are qualified by training and experience in the safe handling of radionuclides and whose experience and training have been approved by the appropriate governmental agency authorized to license the use of radionuclides.

Carcinogenesis, Mutagenesis, Impairment of Fertility–No long-term animal studies have been performed to evaluate carcinogenic potential, mutagenic potential or whether this drug affects fertility in males or females.

Pregnancy Category C–Animal reproductive studies have not been conducted with Thallous Chloride Tl 201. It is also not known whether Thallous Chloride Tl 201 can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Thallous Chloride Tl 201 should be given to a pregnant woman only if clearly needed.

Ideally, examination using radiopharmaceutical drug products – especially those elective in nature – of women of childbearing capability should be performed during the first ten days following the onset of menses.

Nursing Mothers–It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, as a general rule nursing should not be undertaken when a patient is administered radioactive material.

Pediatric Use–Safety and effectiveness in children below age 18 have not been established.

ADVERSE REACTIONS–A single adverse reaction to the administration of Thallous Chloride Tl 201 has been reported consisting of hypotension accompanied by pruritus and a diffuse rash which responded to antihistamines and steroids within one hour.

DOSAGE AND ADMINISTRATION–The recommended adult (70 kg) dose of Thallous Chloride Tl 201 is 37 to 74 MBq (1 to 2 mCi). Thallous Chloride Tl 201 is intended for intravenous administration.

Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration, whenever solution and container permit. Do not use if contents are turbid.

Waterproof gloves should be worn during the handling procedures.

The patient dose should be measured by a suitable radioactivity calibration system immediately prior to administration.

With a shielded sterile syringe, aseptically withdraw the material for use.

For resting Thallous Chloride Tl 201 studies, imaging should begin 10 to 20 minutes after injection. Myocardial-to-background ratios are improved when patients are injected upright and in the fasting state; the upright position reduces the hepatic and gastric Thallium Tl 201 concentration.

When utilized in conjunction with exercise stress testing, Thallous Chloride Tl 201 should be administered at the inception of a period of maximum stress which is sustained for approximately 30 seconds after injection. Imaging should begin within ten minutes after administration to obtain maximum target-to-background ratios. Several investigators have reported that within two hours after the completion of stress testing the target-to-background ratios may decrease significantly in lesions that are attributable to transient ischemia.

HOW SUPPLIED–Thallous Chloride Tl 201 is supplied in a sterile, non-pyrogenic solution for intravenous administration. Each ml contains 37 MBq (1 mCi) Thallous Chloride Tl 201 at calibration time, 9 mg sodium chloride and 0.9 percent (v/v) benzyl alcohol. The pH is adjusted to between 4.5 to 7.0 with hydrochloric acid and/or sodium hydroxide solution. Vials are available in the following quantities of radioactivity: 74, 111, 148, 296, and 333 megabecquerels (2, 3, 4, 8, and 9 millicuries) of Thallium Tl 201.

Diagnostic Products Division
Post Office Box 5840
St. Louis, MO 63134
1-800-325-3688

FROM MALLINCKRODT

Introducing two new sizes to meet your changing needs

3.3 mCi unit-dose vial

3.3 mCi Source* will provide 3.8 mCi of activity on day of receipt at 8:00 A.M. (Central Time) in a single-dose vial.

9.9 mCi multidose vial

9.9 mCi Source* will provide 14.5 mCi of activity on day of receipt at 8:00 A.M. (Central Time) in a convenient and economical multiple-dose form.

High Purity

Thallous Chloride Tl 201 Injection

*Includes 10% overfill. Please see next page for brief summary.

CIRCLE 121 ON READER SERVICE CARD

Fundamentals of Nuclear Medicine

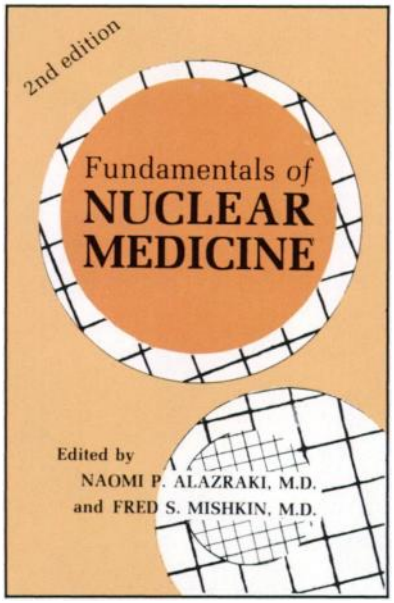
2nd Edition

Edited by Naomi P. Alazraki, MD and Fred S. Mishkin, MD

Fundamentals of Nuclear Medicine, *2nd Edition, provides physicians, physicians-in-training, scientists, and technologists with a comprehensive introduction to the basic principles of nuclear medicine, including the most recent advances in this fast-changing field.*

Following the format of the acclaimed first edition, the editors have revised and expanded each chapter, adding major new sections on PET imaging, diagnostic decision making, parathyroid and adrenal imaging, and bone density measurement. In addition, several new scan images and graphs serve to illustrate the text.

Fundamentals of Nuclear Medicine *fills the need for a current basic text to acquaint practitioners and students with the possibilities and limitations of nuclear medicine in detecting and evaluating common disorders. It is essential to all those who want an understanding of this rapidly evolving technology as it emerges from the investigative to the clinical stage.*



Completely Revised and Updated

Table of Contents

To Order:

Single copies of *Fundamentals of Nuclear Medicine*, 2nd Edition, are available for $15.00 plus $2.50 postage and handling for each book ordered. Payment must be made in U.S. funds drawn on U.S. banks only. For payment made in U.S. funds, but drawn on a foreign bank, add a bank processing fee of $4.50 for Canadian bank drafts or $40.00 for all other foreign bank drafts. Check or purchase order must accompany all orders. Make checks payable to: The Society of Nuclear Medicine.

SPECIAL STUDENT OFFER: Bulk quantities of Fundamentals of Nuclear Medicine, 2nd Edition, are available for instructors to introduce medical and technologist students to nuclear medicine. Accredited instructors may purchase a minimum of 10 copies at $4.00 each (includes shipping).

The Society of Nuclear Medicine
136 Madison Avenue
New York City, NY 10016-6760

Call For Applicants

EDITOR

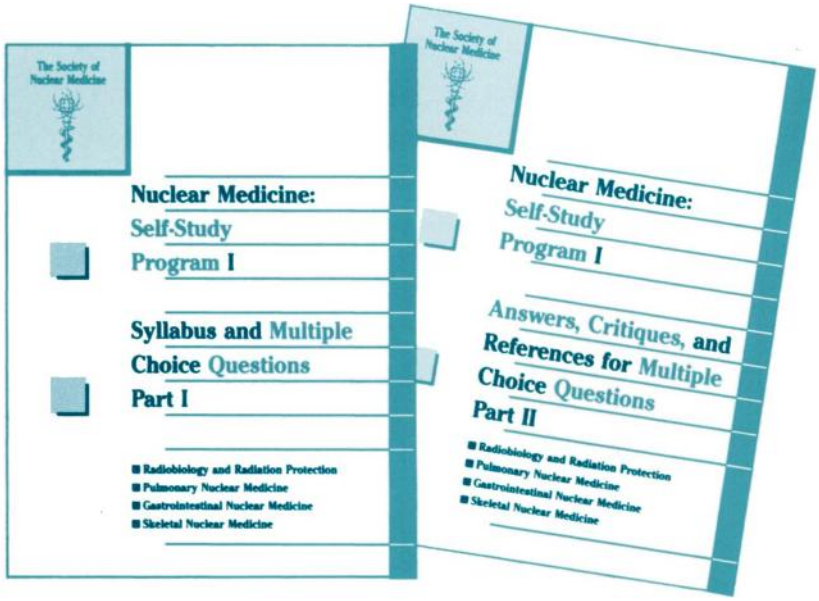
The Journal of Nuclear Medicine

For a Five-year Term Beginning September 1989

Members who wish to be considered for the position should send a letter of interest and curriculum vitae to:

Richard L. Witcofski, PhD
Chair, Publications Committee
Department of Radiology
Bowman Gray School of Medicine
Winston-Salem, NC 27103

Test Your Knowledge of Nuclear Medicine



At last, the effective and convenient self-study method is available in nuclear medicine.

***The Society of Nuclear Medicine presents* Nuclear Medicine: Self-Study Program I,** *the first volume of a comprehensive series that will cover all areas of nuclear medicine. It has been designed to help physicians, scientists, pharmacists, and technologists expand their knowledge of the clinical, basic science and technical aspects of nuclear medicine.*

The study and self-evaluation method is an effective means of acquiring medical knowledge, and an objective way to assess your strengths and identify your weaknesses. You will also find that **Nuclear Medicine: Self-Study Program I** *is unsurpassed in helping you keep abreast of the lastest advances, as well as being an excellent tool for preparing for board and recertification exams. In addition, participants are eligible for CEU, CME or ACPE credits.*

Nuclear Medicine: Self-Study Program I *will cover four areas: Radiobiology and Radiation Protection; Gastrointestinal Nuclear Medicine; Skeletal Nuclear Medicine; and Pulmonary Nuclear Medicine.*

Nuclear Medicine: Self-Study Program I is divided into three parts:

1. **Syllabus and Questions**–Emphasize essential, clinically related topics, with annotated references to more detailed information on each subject. Questions are formulated to approximate the level of difficulty of those found in specialty exams;

2. **Answers and Critique**–Correct answer for each question, along with an analysis of the rationale for each, provides you with an in-depth understanding of each topic;

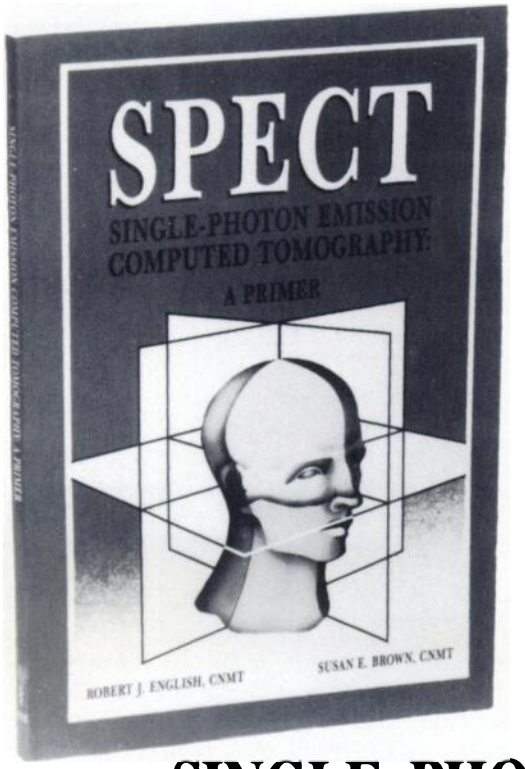
3. **Personal Psychometric Evaluation**–Availabile to those who return the answer form before December 15, 1988. Included here is a norms table that indicates your percentile ranking in each subject area by comparison with your peers.

ACT NOW!

To be eligible for a Personal Psychometric Evaluation, and to earn CEU, CME or ACPE credits, you must complete and return your answer sheets before December 15, 1988.

Nuclear Medicine: Self-Study Program I is available to members for $90, to non-members for $115, and to residents and technologists (enclose documentation) for $75. Send check or money order to:

The Society of Nuclear Medicine
Book Order Department
136 Madison Avenue
New York, NY 10016-6760



Learn all about:

- **Image Reconstruction**
- **Quality Control Requirements**
- **Acquisition Parameters**
- **Processing Techniques**
- **Clinical Applications**

SINGLE-PHOTON EMISSION COMPUTED TOMOGRAPHY: A PRIMER

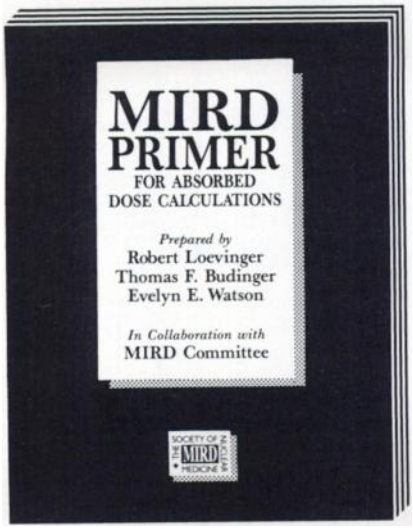
Robert J. English, CNMT
and Susan E. Brown, CNMT

The Primer answers the nuclear medicine technologist's fundamental questions about SPECT, as both a textbook and as an extension of any manufacturer's operating manual. Designed as a study guide for SPECT technology and SPECT applications, this 1986 book also includes study questions, a glossary, and recommended reading lists at the end of each chapter. 168 pp, 6 × 9 softcover.

SPECIAL OFFER: Bulk order rates make this sought-after information available to everyone. By ordering in bulk, these copies can be distributed to an entire sales force, nuclear medicine departments, residents, and students. Single-copy rate: $15.00, non-members: $17.00; quantities of 10 or more: $13.00, 50 or more: $12.00, 100 or more: $10.00.

ORDERING INFORMATION: Quantities under 10, add $2.50 postage and handling for each book ordered. Bulk orders, please call for postage and handling charges. Prepayment required in U.S. funds drawn on U.S. banks only. For payments made in U.S. dollars, but drawn on a foreign bank, add a bank processing fee of $4.50 for Canadian bank drafts, $40.00 for all other foreign bank drafts. Check or purchase order must accompany all orders. Make checks payable to: The Society of Nuclear Medicine. *Prices are in U.S. dollars and are subject to change without notice.*

The Society of Nuclear Medicine
Book Order Dept.
136 Madison Avenue
New York, NY 10016-6760
(212)889-0717



MIRD PRIMER

For Absorbed Dose Calculations

Prepared by

Robert Loevinger
Thomas F. Budinger
Evelyn E. Watson

In Collaboration with the MIRD Committee

The MIRD Primer for Absorbed Dose Calculations was prepared by the MIRD Committee to provide a fresh explanation of the MIRD schema with examples designed to illustrate applications.

The text is divided into four parts: the Primer, Examples of the Use of the MIRD Schema, The Collected Absorbed Dose Estimate Reports, and Appendices.

Part 1 offers a detailed explanation of the MIRD method.

Part 2 amplifies this explanation with examples designed to illustrate applications beginning with relatively simple problems and working up to more complex ones.

Part 3 contains previously published MIRD absorbed dose estimates, now readily assembled in one book, that have been revised and edited for this publication.

Part 4 contains three appendices: List of MIRD Pamphlets, A Revised Schema for Calculating the Absorbed Dose from Biologically Distributed Radionuclides, and Kinetic Models for Absorbed Dose Calculations.

The MIRD Primer also contains a substantive index, a detailed glossary and list of symbols, and for your handy reference calculation tables on the inside front and back covers; 128 pp.

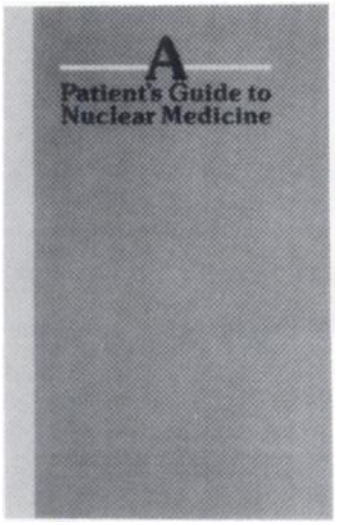
This text is an invaluable reference tool for everyone who is involved in nuclear medicine research and practice!

ORDER NOW!
$35.00 per copy for members; $50.00 for non-members. Add $2.50 postage and handling for each book ordered. If ordering in bulk quantities, contact the Order Dept. for postage fees. Prepayment is required in US funds drawn on US banks only. No foreign funds are accepted. For payments made in US dollars but drawn on a foreign bank, add a bank processing fee of $4.50 for Canadian bank drafts or $40.00 for all other foreign bank drafts. Check or purchase oreder must accompany all orders. Make checks payable to:

The Society of Nuclear Medicine, Book Order Dept.
136 Madison Avenue, New York, NY 10016-6760
(212)889-0717

Educate your patients with SNM's Patient Information Pamphlets

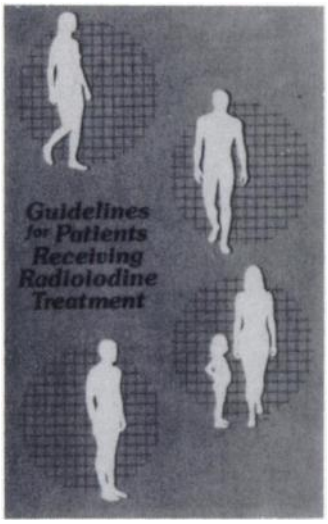
A Patient's Guide to Nuclear Medicine



Well illustrated, this 16-page pamphlet explains what nuclear medicine is, how the procedures are performed, and how they can help in the early detection of disease.

Divided into 3 sections, the guide opens with a general overview of nuclear medicine. A question-and-answer section follows, addressing such topics as safety, the benefits of nuclear medicine procedures, pre- and post-instructions, and testing of pregnant women and children. The third section explains some of the more commonly performed procedures such as bone, liver, lung, heart, and thyroid uptake scans.

16 pp; 5½ × 8½; in 2 colors;
25¢ per pamphlet; minimum order: 100 copies



Guidelines for Patients Receiving Radioiodine Treatment

Prepared in collaboration with the U.S. Nuclear Regulatory Commission, this 8-page pamphlet answers patients' questions about home care after receiving radioiodine treatment for thyroid conditions.

Easy-to-read language outlines important precautions patients can follow to help reduce radiation exposure to others. It also contains a checklist that physicians can review with their patients to determine which guidelines are appropriate for them and how they should be followed.

8 pp; 5½ × 8½; in 2 colors;
30¢ per pamphlet; minimum order: 25 copies

Healthcare professionals in private practice, hospitals, and clinics will find that these pamphlets provide a brief, attractive, and inexpensive way to educate patients and their families about the importance and safety of nuclear medicine procedures.

TO ORDER: Single copies are available for review at $1.50 each. All prices include postage and handling. Prepayment required in U.S. funds drawn on U.S. banks only. Make checks payable to: The Society of Nuclear Medicine. *Prices are in U.S. dollars and subject to change without notice.*

THE SOCIETY OF NUCLEAR MEDICINE
Book Order Dept., 136 Madison Avenue, New York, NY 10016-6760

Information for Classified Advertisers—1988

POLICY: *The Journal of Nuclear Medicine* and the *Journal of Nuclear Medicine Technology* accept classified advertisements from medical institutions, groups, suppliers, and qualified specialists in nuclear medicine. Acceptance is limited to Positions Open, Positions Wanted, Equipment Available, Equipment Wanted and Seminars. We reserve the right to decline, withdraw, or modify advertisements that are not relevant to our readership.

LINE-ADS: $13.50 (JNM) or $13.00 (JNMT) per line or fraction of line (approx. 50 characters per line, including spaces). Please allow 28 characters for the first line which will appear in capital letters. Special rates for SNM members on **Positions Wanted:** $10.00 per line. *Note:* Box numbers are available for the cost of the two lines required.

EXAMPLES

NUCLEAR MEDICINE TECHNOLOGIST. Registered or registry eligible technologist to work in private office. Special emphasis on nuclear cardiology. Salary negotiable. Send resume to: Box 1203, The Society of Nuclear Medicine, 136 Madison Ave., 8th fl., New York, NY 10016-6760. EOE.

Estimate 28 characters First Line

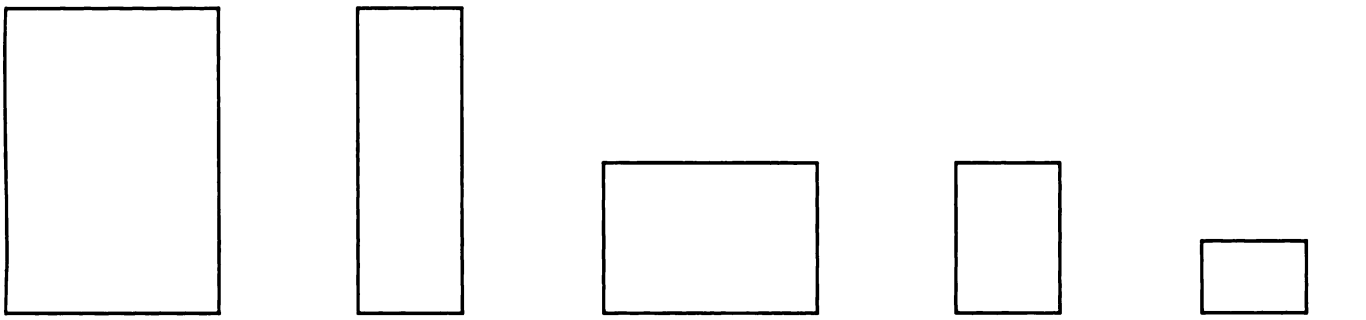
Estimate 50 characters Per Line

NUCLEAR MEDICINE PHYSICIAN with board certification in internal medicine or radiology needed for expanding out patient imaging practice. Qualified applicants should send CV to: I.M.C. Inc., 2040 W. Wisconsin Ave., Suite 378, Milwaukee, WI 53233; (414)933-8739. EOE.

WITH BOX NUMBER
COST: 6 lines x $13.50 = $81.00 (JNM)
6 lines x $13.00 = $78.00 (JNMT)

WITHOUT BOX NUMBER
COST: 6 lines x $13.50 = $81.00 (JNM)
6 lines x $13.00 = $78.00 (JNMT)

DISPLAY ADS DIMENSIONS:



FULL PAGE
6⅞" wide x 9⅝" high

½ PAGE VERTICAL
3⅜" wide x 9⅝" high

½ PAGE HORIZONTAL
6⅞" wide x 4¾" high

¼ PAGE
3⅜" wide x 4¾" high

⅛ PAGE
3⅜" wide x 2⅜" high

RATES:

JNM		*JNMT*	
Full page	$1025	Full page	$585
Half page	600	Half page	355
Quarter	400	Quarter	235
Eighth	340	Eighth	205

*Publisher-set charges: page $100; half page $75; quarter page $40; eighth page $25.

TERMS: Payment or an authorized Purchase Order must accompany order. Make check payable, in U.S. dollars on U.S. banks only, to: The Society of Nuclear Medicine. Note: 15% agency commission is offered on display ads only.

FREQUENCY: *The Journal of Nuclear Medicine* is a monthly and the *Journal of Nuclear Medicine Technology* is a quarterly, published in March, June, September, and December.

DEADLINE: First of the month preceding the publication date (for example, January 1 for February issue). Please submit classified advertisements typed double spaced. **No telephone orders are accepted.**

SEND COPY TO: Classified Advertising Department
The Society of Nuclear Medicine
136 Madison Avenue, 8th Floor
New York, NY 10016-6760
FAX: (212)545-0221

For further information please contact Laura Fasano at (212) 889-0717.

Policy—*The Journal of Nuclear Medicine* accepts classified advertisements from medical institutions, groups, suppliers, and qualified specialists in nuclear medicine. Acceptance is limited to Positions Open, Positions Wanted, Equipment Available, and Seminars. We reserve the right to decline, withdraw, or modify advertisements that are not relevant to our readership.

Rates for Classified Listings—$13.50 per line or fraction of line (approx. 50 characters per line, including spaces). Please allow 28 characters for the first line which will appear in capital letters. Special rates for *SNM members* on Positions Wanted: $10.00 per line. *Note: Box numbers are available for the cost of the 2 lines required.*

Rates for Display Ads—Agency commissions are offered on display ads only.

Full page	$1025	Quarter page	$400
Half page	600	Eighth page	340

Publisher-set charges: page $100; half page $75; quarter page $40; eighth page $25.

Terms—Payment must accompany order. Make checks payable, in U.S. dollars on U.S. banks only, to: The Society of Nuclear Medicine.

Deadline—first of the month preceding the publication date (January 1 for February issue). Please submit classifed listings typed double spaced. No telephone orders are accepted.

Send copy to:
Classified Advertising Department
The Society of Nuclear Medicine
136 Madison Avenue
New York, NY 10016-6760
(212)889-0717

Positions Available

Faculty Position

TENURE TRACK ASSOCIATE PROFESSOR. Individual must be Board certified in nuclear medicine and have a scholarly teaching and research record. Individual should have experience and a proven track record in positron emission tomography, with emphasis on the basic principles of tracer techniques and tomography, as well as an interest in the clinical use of this technology. It is preferred that the individual not only have an MD degree, but also a PhD in the basic physical or biological sciences. Please apply to: Dr. Michael E. Phelps, Chief of the Division of Nuclear Medicine and Biophysics, Department of Radiological Sciences, UCLA School of Medicine, Los Angeles, CA 90024. UCLA is an Equal Opportunity/Affirmative Action Employer.

Fellowship

BRAIN IMAGING FELLOWSHIP. One year fellowship in brain imaging with strong emphasis on PET, SPECT and MR imaging, and spectroscopy. This fellowship allows active participation in funded and ongoing research projects on aging and dementia, head injury, schizophrenia, cerebrovascular disorders, Parkinson's Disease, brain tumors, and image analysis. For further information contact: Abass Alavi, MD, Chief, Division of Nuclear Medicine, Hospital of the University of Pennsylvania, 3400 Spruce St., Philadelphia, PA 19104. EOE.

Scientist

RADIOPHARMACEUTICAL SCIENTIST. St. Paul's Hospital, Vancouver, is seeking a radiopharmaceutical scientist for the Division of Nuclear Medicine. The successful candidate will be appointed to the Faculty of Pharmaceutical Sciences of the University of British Columbia at the appropriate level. The Division of Nuclear Medicine is an active, well equipped unit situated in a 575-bed university affiliated hospital. Duties include supervision of the radiopharmacy, undergraduate and postgraduate teaching, and active involvement in independent and joint research. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents of Canada. Applications should be sent to: Dr. D. Lyster, c/o Nuclear Medicine Department, St. Paul's Hospital, 1081 Burrard St., Vancouver, B.C., Canada. V6Z 1Y6. EOE.

Physician

NUCLEAR MEDICINE PHYSICIAN Board certified or Board eligible. Position in large multispecialty clinic and regional clinic systems in Central Texas. Affiliated with Texas A&M University College of Medicine. Salary plus good fringe benefit package. Contact: Dr. John L. Montgomery, Chairman, Department of Radiology, Scott and White, 2401 South 31st St., Temple, TX 76508; (817)774-2415. EOE.

Staff Position

NUCLEAR MEDICINE STAFF POSITION. Candidate with strong interest in research and academic career to join an active and well-equipped nuclear medicine laboratory. Excellent research and clinical facilities are available and include PET, SPECT, cyclotron and chemistry, and instrumentation labs. Candidates must be board eligible as certified in nuclear medicine. For further information, please contact: Abass Alavi, MD, Chief, Division of Nuclear Medicine, Hospital of the University of Pennsylvania, 3400 Spruce St., Philadelphia, PA 19104. EOE.

Radiochemist

University of Minnesota Department of Radiology has an annual-renewable position available for a radiochemist at the rank of ASSISTANT PROFESSOR beginning September 16, 1988. The individual must have a PhD in chemistry with specialization in synthetic organic chemistry. The individual must have documented research and experience in synthesis and radiolabeling of analogs of MPTP. The individual must also have experience in safe handling of neurotoxins; synthesis of non-classical nucleotides as potential antiviral agents; animal handling to determine the biodistribution of these compounds and potential adverse effects; ability to perform autoradiographic analysis of animal specimens; and should be comfortable with quantum mechanical modeling to determine structure activity relationships of potential radiopharmaceuticals. An interest in the application of super-computer based algorithms to this modeling is desirable. Responsibilities include the areas mentioned above and graduate and undergraduate teaching in radiochemistry and medicinal chemistry. Salary is negotiable and competitive, and is dependent upon past scholarly activity and post-PhD experience. Applications for this position will be accepted through August 31, 1988. Send letter to: Dr. Robert Boudreau, Director of Nuclear Medicine, Department of Radiology, University of Minnesota Medical School, Box 382 UMHC, 420 Delaware St., SE, Minneapolis, MN 55455. The University of Minnesota is an Equal Opportunity and Affirmative Action Educator and Employer and specifically encourages applications from women and minorities.

Residency

NUCLEAR MEDICINE RESIDENCY. There is an opening for July 1, 1989 in the Division of Nuclear Medicine, Dept. of Radiology. The New York Hospital-Cornell Medical Center, New York, NY. The Division has a completely new, 25,000-square-ft. facility with state-of-the-art equipment. It is staffed by four full-time physicians, two basic scientists and a computer programmer. The residency will include all aspects of nuclear medicine including thyroidology, as well as clinical research. Please call: Dr. Salil Sarkar or Dr. David Becker collect at (212)472-4758.

Technologist

SUPERVISOR, NUCLEAR MEDICINE TECHNOLOGIST. Full-time position, + on-call every 4–5 weeks, at the University of Washington Hospital in Seattle, a 360-bed teaching hospital with an active nuclear medicine residency program. Positron requires Bachelor's Degree, certification, and three yr experience as NMT. G.E. Starcam experience useful. Supervisor's position includes protocol design and implementation and daily clinical operation. Send resume to: Ray Thomas, Manager, Nuclear Medicine, Univerisity Hospital RC-70, 1959 NE Pacific, Seattle, WA 98195; (206)548-4240. EOE.

NUCLEAR MEDICINE TECHNOLOGIST. Challenging opportunity to join growing nuclear medicine department in progressive 500-bed medical center. Requires NMTCB certification. BS degree in nuclear medicine preferred. We offer full-time day hours, generous benefits, and salary commensurate with experience. Submit resume to: Personnel Dept., Mercy Hospital Medical Center, 6th and University, Des Moines, IA 50314. EO/AA Employer.

NUCLEAR MEDICINE TECHNOLOGIST. Central Plains Clinic, a 70+ physician multi-specialty clinic, has an immediate full-time position available. Located in the upper Midwest, it has immediate access for the outdoor enthusiast. Registered/registry eligible individual needed to join an expanding department. Challenging position offers growth potential. Monday through Friday, no evenings, weekends, holidays, or on-call required. Excellent salary and benefits. Send resume to: Personnel Dept., Central Plains Clinic, 2727 S. Kiwanis, Sioux Falls, SD 57105; (605)335-2727. EOE, M/F.

NUCLEAR MEDICINE TECHNOLOGIST. Position available for a registered or registry eligible technologist in a busy 350-bed community hospital in scenic eastern Tennessee. Chattanooga is about 90 min from Atlanta, Birmingham, Knoxville, and Nashville, and has a population of approximately 450,000 people who enjoy excellent weather, low taxes, and cost-of-living. The nuclear medicine department has three GE 400T cameras, a mobile Technicare camera and two MDS A³ computers. A full-time Harvard trained nuclear physician is the medical director of the department. Heavy cardiac load, including SPECT. Send resume to: Personnel Office, Memorial Hospital, 2500 Citico Avenue, Chattanooga, TN 37404; (615)629-8576. EOE.

NUCLEAR MEDICINE TECHNOLOGIST. We're Maine Medical Center, a 600-bed multi-specialty teaching and referral hospital located in Portland, ME. Currently, we're seeking Registered Nuclear Medicine Technologists to join our team of caring professionals. Our nuclear medicine department has four gamma cameras and computers. As a member of our nine member team, you'll perform a full-range of diagnostic and therapeutic procedures including much nuclear cardiology imaging. Just two hr north of Boston, Portland offers a "big city" lifestyle without the "big city" hassles. With an art museum, symphony orchestra, theatres, parks and shopping. Portland is just minutes away from the ocean and beaches yet only a short trip away from the mountains. If you're a Registered Nuclear Medicine Technologist looking for a challenging position in a department with a future, join Maine Medical Center. Please send your resume to: Personnel Department, Maine Medical Center, 22 Bramhall St., Portland, ME 04102. An Equal Opportunity Employer.

NUCLEAR MEDICINE TECHNOLOGIST. Hamot Medical Center is seeking a certified or certifiable Nuclear Medicine Technologist to participate with a dynamic staff of five Technologists performing 4,000 studies per year. Hamot is an innovative 540-bed teaching hospital and regional referral center located in Erie, PA on Presque Isle Bay. The area provides Great Lakes beauty, year round recreational activities, several colleges and universities, and many cultural events. We offer excellent salary and benefits, opportunities and assistance for learning and professional development. Call or send resume to: Al Richards, Employment Manager, Hamot Medical Center, 201 State St., Erie, PA 16550; (814)870-6081. An Equal Opportunity Employer.

NUCLEAR MEDICINE TECHNOLOGIST. The Cancer Foundation of Santa Barbara, CA is seeking a dynamic individual with a thorough knowledge of modern nuclear medicine, including SPECT. Responsibilities go beyond routine scanning and include teaching, research, and the introduction of new nuclear medicine techniques to the community. Please send resume to: David Babbott, Cancer Foundation of Santa Barbara, 300 W. Pueblo St., Santa Barbara, CA 93102. EOE.

NUCLEAR MEDICINE TECHNOLOGIST. Regional Medical Center seeks a highly motivated registered or registry eligible technologist in our progressive nuclear medicine department. We offer a competitive benefits package and salary commensurate with experience. Please send resumes to: Shannon Medical Center, 120 E. Harris, PO Box 1879, San Angelo, TX 76902. EOE M/F/V/H.

NUCLEAR MEDICINE TECHNOLOGIST. A challenging and rewarding career opportunity awaits you in the heart of the beautiful Montana Rocky Mountains. St. James Community Hospital is a 270-bed, JCAH accredited acute care hospital located halfway between Glacier and Yellowstone National Parks. Immediate access to hunting, fishing, skiing, hiking, and other outdoor recreation is available for the sports enthusiast. Qualified candidates for the position must be ARRT (N) registered and also be registered or certified (CNMT) in nuclear medicine. Excellent salary and benefits accompany this position. Qualified applicants send resume to: Patrick Dudley, Employment Supervisor, St. James Community Hospital, 400 S. Clark St., Butte, Montana 59701. EOE.

NUCLEAR MEDICINE TECHNOLOGIST. Seeking a full-time nuclear medicine staff technologist. Must be a registered nuclear medicine technologist. Excellent starting salary and benefits. Henry General Hospital, 1133 Hudson Bridge Rd., Stockbridge, GA 30281; (404)389-2285. EOE M/F.

NUCLEAR MEDICINE TECHNOLOGIST. Immediate opening for a registered-certified technologist in 150-bed community hospital, north side of Chicago. Routine imaging and cardiac imaging are performed. Phone or mail resume to: Martha Washington Hospital, 4055 N. Western, Chicago, IL 60618, attn. Personnel Department; (312)583-9000. EOE.

Equipment For Sale

Lunar DP3-AT Bone densitometer for osteoporosis testing. Best offer. (804)293-9121.

KRAMEX MAMMOGRAPHY MACHINE. Best Offer (804)293-9121.

Placement

Nationwide. Considering a change? Let our ten years of placement experience help you locate the best opportunity. Supervisory and staff positions available for NUCLEAR MEDICINE TECHNOLOGISTS throughout the U.S. Attractive salaries, interview, and relocation assistance included. Fee paid by employer. Ask about our new Short Term Travel Assignments. Call or send resume to: Department DRB, Starmed Staffing Corporation, 2701 Rocky Point Dr., Suite 100, Tampa, FL 33607; 1(800)StarMed. EOE.

At Baptist Hospital of Miami, career opportunities are hot.

The fever is heating up in healthcare in South Florida for top-notch professionals, and the red line can be drawn here.

From our totally sophisticated Nuclear Medicine Department, complete with 7 cameras and 3 SPECT's, to our treatment mileau, offering Cardiac Tomography studies ... Baptist has it all. We have a very unified department, with excellent systems and practices in place. Registered, certified or Florida licensed **NUCLEAR MEDICINE TECHNOLOGISTS** will enjoy our generous compensation package, plenty of available overtime, as well as our magnificent and spacious facility.

To practice your profession in the hottest spot in town, with sizzling opportunities, send your resume or phone our Professional Recruiter, Lela Sampson, at (305) 596-6585. Out of state, call 1-800-327-2491. Baptist Hospital, 8900 North Kendall Drive, Miami, FL 33176.

BAPTIST HOSPITAL
Listen to what Baptist has to offer.

NUCLEAR MEDICINE TECHNOLOGIST

PANAMA CITY, FLORIDA

Bay Medical Center, a 284-bed growing regional medical center on northwest Florida's beautiful gulfcoast, has an opening for a Nuclear Medicine Tech. Modern state-of-the-art department offering an excellent work environment and a commitment to quality health care.

We are located in the heart of Florida's finest recreational and educational opportunities. Excellent salary and benefits. For more information, contact **Phillip Wright, Human Resources Department, BAY MEDICAL CENTER, 615 N. Bonita Ave., Panama City, FL 32401. (904) 769-4688.**

BAY MEDICAL CENTER

Equal Opportunity Employer

Nuclear Medical Technologists (CNMT)

The diagnostic lab at OUR LADY OF THE LAKE Regional Medical Center in Baton Rouge, LA is currently seeking Nuclear Medical Technologists who are CNMT registered or registry eligible. We offer assistance with interviewing and moving expenses, an excellent salary structure, and a comprehensive benefit package.

We are located one hours drive from historic New Orleans and three hours drive from the sandy beaches of Florida.

Interested candidates call or send confidential resume to:

Dawn Abbott
Human Resources Dept.
Our Lady of the Lake Regional Medical Center
5000 Hennessy Blvd.
Baton Rouge, LA 70809
(504)765-8803

NUCLEAR MEDICINE TECHNOLOGIST

Registered or registry eligible position available in our 615-bed teaching hospital located in Dearborn, Michigan.

Equipment in our progressive Nuclear Medicine Department includes 2 SPECT Cameras, a Single Pass Dual Head Whole Body Camera, Portable Camera with Computer, and 2 LFOV Cameras.

We offer a competitive salary and benefits package including paid vacation and sick benefits, tuition assistance program and an on-site day care facility. For immediate consideration, send resume or call: **Personnel Employment Office, Oakwood Hospital, 18101 Oakwood Blvd., Box 2500, Dearborn, MI 48123-2500, (313) 593-7145.**

Oakwood Hospital

Equal Opportunity Employer

Chief Technologist

Nuclear Medicine

Challenging opportunity exists for individual to work as a Chief Technologist in the Department of Nuclear Medicine. The department is a very active and progressive one which includes clinical care, education and research. Instrumentation includes ten scintillation cameras, four of which are SPECT units. Seven are interfaced with Micro-Delta cameras, which are in turn linked to a VAX/750 and VAX/780 network. The installation of a Posicam PET unit with dual PDAS computer systems and a Trionix Triad SPECT scanner with a Sun Computer will be clinically operational within 2-3 months.

Successful candidate must be a registered Nuclear Medicine Technologist with a BS, BA or AA degree with Certification by ARRT and CNMT. A minimum of 5 years' experience as a Nuclear Medicine Technologist in an active and progressive department with 1-2 years' supervisory experience. Experience in SPECT is required with a strong interest or experience in PET and research preferred. Excellent salary and benefits program.

Please send resume to **Patricia Portaro, Staffing Manager, The Cleveland Clinic Foundation, One Clinic Center, 9500 Euclid Avenue, Cleveland, Ohio 44195.**

THE CLEVELAND CLINIC FOUNDATION

An Equal Opportunity Employer M/F/H/V

Staff Physician

Nuclear Medicine Department, Division of Radiology. The Cleveland Clinic Foundation, has a position available for a full-time staff physician, board certified/eligible, ABR with special competency in Nuclear Radiology or ABNM with experience in Nuclear Cardiology and experience or training in SPECT.

Active and progressive department that includes clinical care, education and research. Large, busy department performs 14,000 procedures/year with state-of-the-art equipment including 4 SPECT units, 7 computers interfaced with Vax 750,780. PET and Triad SPECT units will be clinically operational within 2-3 months. Salary and benefits are competitive and commensurate with training and experience.

Send inquiry and CV to **R.T. Go, M.D., Chairman, Department of Nuclear Medicine, The Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, Ohio 44106. (216) 444-2665.**

THE CLEVELAND CLINIC FOUNDATION

An Equal Opportunity Employer M/F/H/V

Nuclear Medicine Physician

Marshfield Clinic Section of Nuclear Medicine is seeking a BE/BC Nuclear Medicine physician to join its expanding out-patient/in-patient practice. State of the art equipment and facilities. 270 physician multispecialty private group practice physically adjacent to a 524 bed acute care teaching hospital. Major secondary and tertiary level referral center in unique rural setting. Please send curriculum vitae to:

Richard W. Miller, M.D.
Nuclear Medicine

1000 North Oak Avenue
Marshfield, WI 54449
or call collect at
(715) 387-5394

An Equal Opportunity Employer M/F

Marshfield Clinic

NUCLEAR MEDICINE TECHNOLOGIST

In our three decades, Holy Cross Hospital, located in sunny Fort Lauderdale, has grown to become a 597-bed center for health care that embraces virtually every medical specialty. We attribute our success to a teamwork of caring, dedicated professionals like you.

At present, we need a Nuclear Medicine Technologist, registered or registry eligible, with a Florida license. You must have experience with SPECT and cardiovascular experience is preferred. This is a full-time, day shift position with on-call rotation.

For more information on excellent salary and exceptional benefits including on-site wellness facility, a child care center, and temporary housing and/or relocation, call (305) 492-5792 collect, or send resume to: Personnel Services, Holy Cross Hospital, 4725 N. Federal Highway, Ft. Lauderdale, FL 33308. An Equal Opportunity Employer.

Holy Cross Hospital

Under the Direction of the Sisters of Mercy

Nuclear Medicine Technologist

Full Time Days

Our 450-bed teaching medical center located in beautiful Western Connecticut offers an immediate opportunity for a Nuclear Medicine Technologist.

Our Nuclear Medicine Department seeks a candidate who is Certified (or eligible) in Nuclear Medicine and although prior experience is preferred, it is not essential.

Danbury Hospital offers an excellent salary and benefit package and an outstanding working environment.

Interested candidates should contact our Personnel Department at (203) 797-7330 or send a resume to:

Danbury hospital

Hospital Ave., Danbury, CT 06810

an equal opportunity employer m/f

NUCLEAR MEDICINE TECHNOLOGIST

Maryview Medical Center, located 30 miles from Virginia Beach and within an hours drive of Colonial Williamsburg, has an opening for a full-time Nuclear Medicine Tech. Our department has some of the latest technologies while providing quality patient care to a broad patient population. Our department serves two cardiology groups along with the needs of many other general and specialty physicians. Maryview has a complete list of benefits including medical insurance, long term disability, dental coverage, paid sick leave, vacation, and much more. We offer a competitive salary plus call pay. Maryview Medical Center values you as a professional as reflected in our Bon Secours mission "Good Help To Those In Need". Interested and qualified candidates should send resume to:

Maryview Medical Center
Human Resources Department
3636 High St.
Portsmouth, VA 23707.

An Equal Opportunity Employer

NUCLEAR MEDICINE TECHNOLOGIST Clinical research and teaching position available for an experienced certified nuclear medicine technologist to participate in project to transfer the technologies for utilizing monoclonal antibodies for imaging and therapy of cancer into community practice. Knowledge of SPECT and computer, knowledge of New Jersey hospitals; interest in education of other professionals. Send resume and list of references to:

Director of Technology Transfer Center
Center for Molecular Medicine and Immunology
I Bruce St.
Newark, NJ 07103.

An Equal Opportunity Employer

NUCLEAR MEDICINE PROFESSIONALS

Parkland Memorial Hospital, an expanding 940-bed acute care facility and teaching hospital serving Dallas County, is seeking a registered or registry eligible Nuclear Medicine Technologist.

For the new graduate, we offer excellent experience and an opportunity to refine your newly developed skill; for the experienced technologist we offer continued career growth in a state-of-the-art environment.

The nuclear medicine division will be installing a Diasonics ultra low field magnetic resonance imaging (MRI) unit for clinical and research use. Our Nuclear Medicine Technologists will be cross trained to have responsibility in MRI as well as nuclear medicine. The nuclear cardiology division has just received the first Prism Ohio Imaging Three Detector Tomographic Camera to be used for heart and brain research.

Parkland offers a comprehensive salary and benefit package. Our affiliation with the University of Texas Southwestern Medical Center offers excellent educational opportunities. For more information, please call (214)590-8064 or send resume to: Parkland Memorial Hospital, Professional Placement Office, 5201 Harry Hines Blvd., Dallas, TX 75235.

An Equal Opportunity Affirmative Action Employer

NUCLEAR MEDICINE TECHNOLOGIST

Winchester Medical Center, a 340-bed acute care general hospital, is currently accepting applications for a Nuclear Medicine Technologist. Our Nuclear Medicine Department, which is staffed by a supervisor and two technicians, features three Siemens cameras (one with SPECT capability) and a rapidly expanding nuclear cardiology section. Applicants must be registered or registry eligible. Previous experience is strongly preferred. For consideration, forward resume to:

Employment Coordinator
Winchester Medical Center, Inc.
P.O. Box 3340
Winchester, VA 22601
An Equal Opportunity Employer

Nuclear Medicine Technologist

Gessler Clinic, PA, a 33 physician multi-specialty clinic, has an opening for a technologist in nuclear medicine.

Gessler Clinic is located in Winter Haven, FL, home of Cypress Gardens and is 50 miles from Orlando and Tampa. Our work week is Monday–Friday, 8:00 AM–5:00 PM with good working conditions and benefits.

For more information contact:
Ms. Deborah Kerr, CNMT, RT(N)
635 1st St., North
Winter Haven, FL 33881
(813)294-0670.

THE SOCIETY OF NUCLEAR MEDICINE

Application for Membership

(see reverse side for instructions)

Last Name Dr, Mr, Mrs, Ms, Miss (CIRCLE ONE) **First Name** **Middle Initial**

Check Degree(s) Earned:

MD ___ PhD ___ MA ___ MS ___ BA ___ BS ___ AA ___ AS ___ Other _____

Indicate Board Certification(s): ☐ ABNM ☐ ABR ☐ ABP ☐ ABIM ☐ ABSNM ☐ ABHP ☐ NMTCB

☐ ASCP ☐ ARRT(N) ☐ ARRT(T) ☐ ARRT(R) ☐ Other _____

Please check ONE box for preferred mailing address, but complete both columns for our files:

☐ Institutional

DIVISION

DEPARTMENT

INSTITUTION OR COMPANY

STREET ADDRESS

CITY STATE/PROVINCE/COUNTRY ZIP CODE

AREA CODE BUSINESS TELEPHONE NO. EXT.

☐ Home Address

STREET ADDRESS APT. NO.

CITY STATE/PROVINCE/COUNTRY ZIP CODE

AREA CODE TELEPHONE NO.

PRESENT POSITION (TITLE)

DATE OF BIRTH

IN-TRAINING STATUS

☐ YES ☐ NO

Projected Completion Date: _____ month/year

Program Director _____

PROGRAM DIRECTOR'S TELEPHONE NO.

Would you like to join the TECHNOLOGIST SECTION? ☐ Yes ☐ No

COUNCIL MEMBERSHIP (OPTIONAL) ☐ Academic Council ☐ Correlative Imaging Council ☐ Radioassay Council ☐ Cardiovascular Council ☐ Instrumentation Council ☐ Radiopharmaceutical Council ☐ Computer Council

NAME OF SNM MEMBER WHO SUGGESTED THAT YOU JOIN _____ (optional)

APPLICANT'S SIGNATURE _____ DATE _____

FOR OFFICE USE ONLY

APPLICATION FEE _____ ☐ Full ☐ TS _____ ☐ AM ☐ R _____

CHAPTER _____ ☐ TM ☐ IT _____

ACCOUNT # _____ ☐ AF

CHAIRMAN, MEMBERSHIP COMMITTEE (sign)

TECHNOLOGIST SECTION DESIGNEE (sign)

THE SOCIETY OF NUCLEAR MEDICINE

Instructions to Application for Membership

1. Please complete and sign the enclosed application form, either printing or typing the information. Make sure you have completed all information requested in order to avoid unnecessary delays in processing.
2. A membership category will be assigned to you in accordance with the Society's Bylaws based on the information supplied on your application form.
3. To be eligible for "**In-Training**" status, at least 90 days must be remaining in your formal training program. No application processing fee is required.
4. Upon acceptance by the Society, you will automatically become a member of the regional chapter that covers your area of residence. If you wish membership in some other chapter, you should submit your request with your application. If no regional chapter exists for the area of your residence, you will be assigned "Membership-at-Large."
5. **A $10.00 non-refundable processing fee must accompany the completed application form. Otherwise applications will not be processed.**
6. Receipt of your application will be acknowledged. Allow 4–6 weeks for processing and for receipt of the appropriate journals. DO NOT prepay your dues. An invoice will be sent to you upon approval of your application.

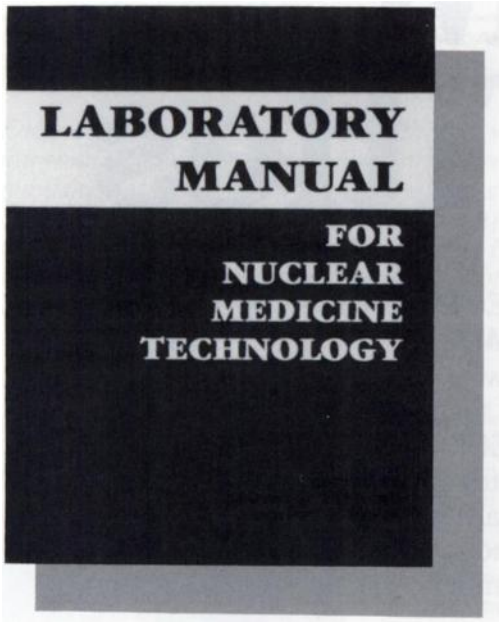
Guide to Membership Dues—1988

Membership Categories	Society	Technologist Section	Total
Full	$100.00	—	$100.00
Full-in-training	50.00	—	50.00
With Tech Section membership			
Doctoral degrees (MD, DO, PhD)	80.00	$33.00	113.00
Doctoral degrees-in-training	40.00	16.50	56.50
All other degrees	75.00	33.00	108.00
All other degrees-in-training	37.50	16.50	54.00
Associate	75.00	—	75.00
Associate-in-training	37.50	—	37.50
With Tech Section membership			
Doctoral degrees	50.00	33.00	83.00
Doctoral degrees-in-training	25.00	16.50	41.50
All other degrees	50.00	33.00	83.00
All other degrees-in-training	25.00	16.50	41.50
Technologist (must be Tech Section member)	35.00	33.00	68.00
Technologist-in-training	17.50	16.50	34.00
Doctoral degrees	80.00	33.00	113.00
Doctoral degrees-in-training	40.00	16.50	56.50
Affiliate	100.00	—	100.00
With Tech Section membership	50.00	33.00	83.00
Doctoral degrees	100.00	33.00	133.00

- Society and Technologist Section chapter dues are additional and vary by chapter. A chapter dues table is available upon request.
- Council dues are an additional $5.00 per Council.
- Dues for those applicants joining during the year are prorated to January 1st.

PLACE STAMP HERE

The Society of Nuclear Medicine
Membership Department
136 Madison Avenue
New York, NY 10016-6760



LABORATORY MANUAL for Nuclear Medicine Technology

Edited by Wanda M. Hibbard, CNMT, and Sue P. Lance, CNMT

In response to a need for standardizing the learning experiences of student technologists, the *Laboratory Manual for Nuclear Medicine Technology* has been prepared for nuclear medicine technology training programs. The exercises were written by educators with years of experience in their respective areas of expertise and were field tested by technologists in nuclear medicine schools—both instructors and students.

Individual exercises have been grouped into major subject areas. The purpose of each exercise is clearly defined in the rationale; and the objectives, materials to be used, step-by-step procedures, study questions, and selected references are included. Instructors may rearrange the format according to the facilities and requirements of their particular programs.

This manual will serve to enhance the student's knowledge of a standard curriculum and develop competency in clinical practice. It provides the most comprehensive training resource available to be used in a laboratory setting. In addition, this manual will aid residents in fulfilling the NRC requirements for licensure.

ABBREVIATED CONTENTS

CONTRIBUTORS

Charles T. Adams, Robert T. Anger, Nancy A. Clifton, Robert J. English, Casimir Eubig, Michael Freeman, Wanda M. Hibbard, Kenneth A. Holmes, Ronnie D. Jeffcoat, Judith E. Kosegi, Rebecca W. Lam, Sue P. Lance, Joan A. McKeown, Evelyn R. Merritt, Maria Nagel, James A. Ponto, John H. Powell, Raymond Wilemzick, James J. Wirrell

Softcover format, 8½ x 11", 163 pp. Publication date: July 1984

ORDER NOW!

$14.00 per copy for members; $16.00 for non-members. Add $2.50 postage and handling for each book ordered. If ordering in bulk quantities, contact the Order Dept. for postage fees. Prepayment is required in US funds drawn on US banks only. No foreign funds are accepted. For payments made in US dollars but drawn on a foreign bank, add a bank processing fee of $4.50 for Canadian bank drafts or $40.00 for all other foreign bank drafts. Check or purchase order must accompany all orders. Make checks payable to:

The Society of Nuclear Medicine, Book Order Dept.
136 Madison Avenue, New York, NY 10016-6760
(212)889-0717

Prices are in US dollars and subject to change without notice.

SNM New Titles

MIRD Primer for Absorbed Dose Calculations, *edited by Robert Loevinger, Thomas F. Budinger, and Evelyn E. Watson.*
Provides a fresh explanation of the MIRD schema with examples designed to illustrate applications. The Primer contains revised and updated MIRD dose estimate reports, along with a detailed explanation of the MIRD method. The MIRD Primer also contains a substantive index, a detailed glossary and list of symbols. 1988. 128 pp. Hardcover. $35 for members; $50 for non-members.

Fundamentals of Nuclear Medicine, 2nd Edition, *edited by Naomi P. Alzaraki, MD, and Fred S. Mishkin, MD.*
Designed as a basic text to acquaint practitioners and students with the possibilities and limitations of nuclear medicine in detecting and evaluating common disorders, this completely revised and updated edition is essential to all those who want an understanding of this rapidly evolving technology. 1988. 256 pp. Paper. $15; accredited instructors may purchase a minimum of 10 copies at $4 each.

The Scintillation Camera, *edited by Guy Simmons, PhD.*
Targeted to advanced technologists, physicians, and other scientists, this book provides, in a single volume, easily accessible state-of-the-art information on all aspects of the scintillation camera, from instrument selection and performance evaluation to operation monitoring in the clinical environment. The Scintillation Camera should be especially helpful to those teaching the principles of scintillation cameras. 1988. 160 pp. Paper. $30 members; $35 non-members.

SPECT: A Primer, *by Robert J. English, CNMT, and Susan E. Brown, CNMT.*
Now in its fourth printing, the Primer answers the technologists' fundamental questions about SPECT, as both a textbook and as an extension of any manufacturers operating manual. It is regarded by many as one of the *the* two handbooks on SPECT. 1986. 148 pp. Paper. $15 members; $17 non-members.

Nuclear Medicine: Self-Study Program I, *edited by Barry A. Siegel, MD, and Peter T. Kirchner, MD*
Nuclear Medicine: Self-Study Program I is divided into a syllabus, with questions, and answer sheets; a separate book, with answers and detailed critiques; and a personal psychometric evaluation, complete with a norms booklet.

Self-Study Program I is designed to strengthen your knowledge of nuclear medicine, sharpen your clinical skills, and keep you abreast of recent developments. The self-assessment test, with its answers and critiques, should provide additional help in identifying strengths and gaps in your knowledge.

It can be used to obtain CME or CEU credits, to prepare for board and/or recertification exams, or as a reference and teaching aid. The first volume covers Radiobiology and Radiation Protection, including regulatory matters; Gastrointestinal Nuclear Medicine; Skeletal Nuclear Medicine; and Pulmonary Nuclear Medicine. Publication date for *Nuclear Medicine: Self-Study Program I* is July 15 1988. It will be available to members for $90; to nonmembers for $115; and to residents and technologists for $75. Answer sheets will be accepted for psychometric evaluation, for CME and CEU credit, and for inclusion in the norms tables through December 15, 1988.

Each description of the products below was condensed from information supplied by the manufacturer. The reviews are published as a service to the professionals working in the field of nuclear medicine, and their inclusion herein does not in any way imply an endorsement by the Editorial Board of The Journal of Nuclear Medicine *or by The Society of Nuclear Medicine.*

Portable Video Recording System

The Du Pont Company has developed a compact digital recording, playback, and storage system for medical imaging. The medical image recording system captures video signals from any electronic imaging modality (ultra-sound, nuclear medicine, CT, or MRI), digitizes them, and records the information on magnetic tapes or optical disk. The diagnostic-quality images can be played back at any time and stored for future reference. The lightweight unit is small enough to rest atop most portable imaging equipment. Up to 4000 images can be recorded on a single digital tape cassette. Two thousand images can be saved on an optical disk. The technology was developed primarily to assist hospitals doing portable ultrasound scans at a patient's bedside. With the system, a sonographer can now quickly and accurately record images for numerous patients in one trip, eliminating the time and effort required to expose traditional multiformat films and travel time back and forth to a darkroom to process them. In smaller and medium sized hospitals, an entire morning's portable ultrasound scans can now be recorded in one trip through the hospital. The unit captures black and white images with resolution up to 1024 × 523, and can be modified to accept higher resolution images. Images can be retrieved in analog format through a video monitor or camera. Hard film copies can be obtained using Du Pont's medical hardcopy system. Control information includes border type, greyscale level, and reverse position video. Medical information recording systems can be configured to drive other output devices. **Du Pont Company, External Affairs Dept., Wilmington, Delaware 19898.**

Circle Reader Service No. 101

RTAS Can Now Call the Physician

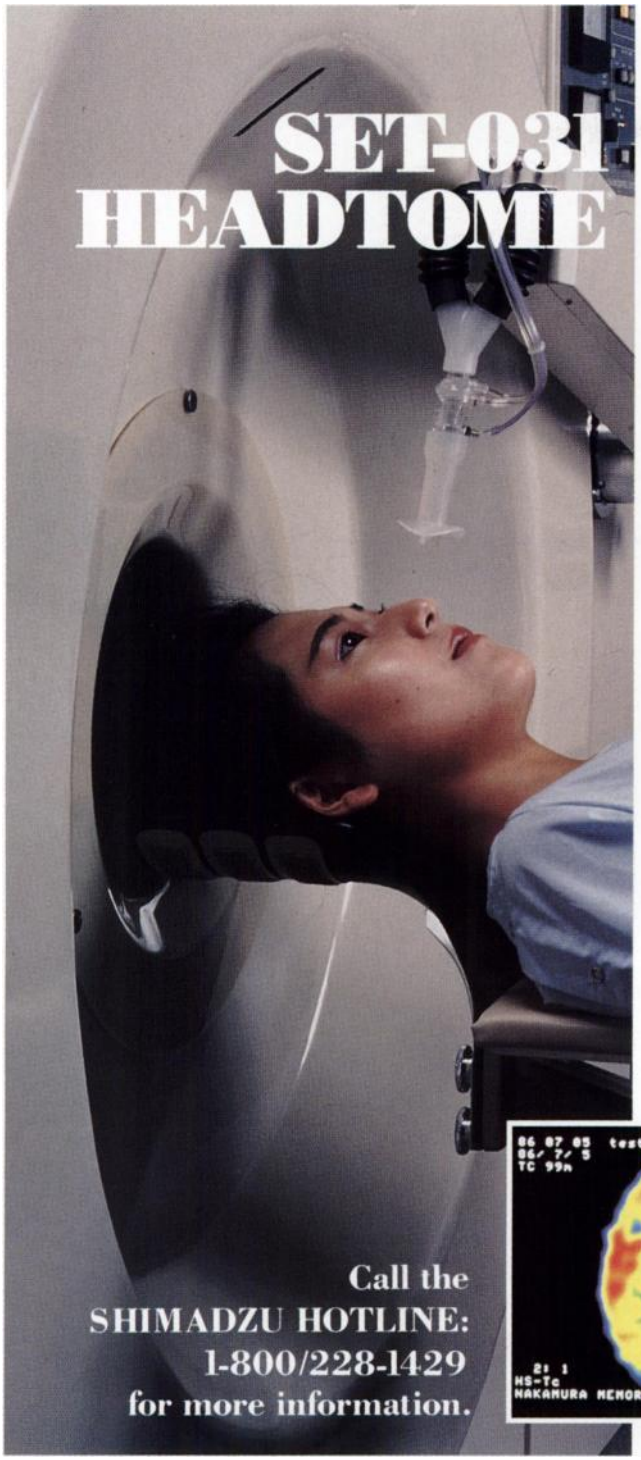
The RTAS Voice Management System, offering telephone access to dictated reports, has now incorporated a new capability: STATcall. Radiology reports can be automatically outcalled to the referring physician as soon as they are dictated. If requested by the referring physician or the radiologist, the physician's phone number and the patient's ID are entered into the system at X-ray reception. The instant the report is dictated, STATcall dials the phone number. If the phone is busy or not answered, STATcall will redial at pre-programmed intervals. When the phone is answered, an introductory message instructs the individual to enter a security code on the telephone keypad when the physician is ready to listen to the report. Alternatively, the physician's assistant can enter the security code, write down the patient's name and number, and then press a key to jump to the impression in order to write it down. That may be all the doctor needs, or he/she can call RTAS back to hear the entire report—now armed with the patient ID number and the knowledge that the report has been dictated. **Sudbury Systems, Inc., 490 Boston Post Road, Sudbury, MA 01776 (800) 876-8888 (inside the US), (508)443-1100 (outside the US).**

Circle Reader Service No. 102

A New Microprocessor-Based Linear Ratemeter

Victoreen announces the model 425A Frisker—a new microprocessor-based linear ratemeter for field and laboratory applications. Features previously associated with fixed monitoring equipment are now available in a portable, microprocessor-based instrument. The Model 425A can measure alpha, beta or x-ray radiation depending on the detector probe attached. A wide variety of Geiger-Mueller (GM) tube, scintillation, and solid-state detector probes are available. It also features automatic zeroing and ranging, preset or variable deadtime correction factor, and variable setpoint scale alarm. Count rate or total accumulated count is displayed on a 3.5-inch edgewise meter. The instrument can be used as a linear ratemeter or counter. In the ratemeter mode, the count rate is displayed in counts per minute. Maximum full-scale range is 500 to 500,000 cpm in four ranges with manual or automatic ranging. Additional features include preset or variable dead-time correction factor for probe correction, percent-of-scale alarm with variable setpoint, choice of response time, and capability to freeze the highest reading. In the counter mode, counts are accumulated until manually reset. Maximum full-scale range is 50 to 500,000 counts full-scale in five ranges with automatic ranging. Variable dead-time, percent of scale, and freeze features are also available in this mode. The product is housed in a plastic instrument case which measures 9.25 × 8.5 × 3.75 in and weighs 5 lb. Environmental specifications are − 20° to +50°C operating temperature range and 0 to 95% non-condensing relative humidity. A 12-V Gel-Cell battery provides 15 hr of continuous operation between charges. Power requirements are 115/250 ac, 50/60 Hz. **Victoreen, Inc., 6000 Cochran Road, Cleveland, OH 44139-3395 (216) 248-9300.**

Circle Reader Service No. 103



Back To Neuroimaging

HEADTOME SET-031, together with newly developed radiopharmaceuticals for functional brain imaging, opens the way for nuclear medicine clinicians to specialize once more in neuroimaging. An in-house cyclotron is not even needed.

SPECT...

Dedicated to Studies of the Brain

For the same reasons you spent years refining your special skills, Shimadzu has devoted as many years perfecting HEADTOME® SET-031 Single Photon Emission Computed Tomograph (SPECT). This specialized equipment provides the *best* means of measuring brain functions, such as blood flow, with *both* high sensitivity and high spatial resolution.

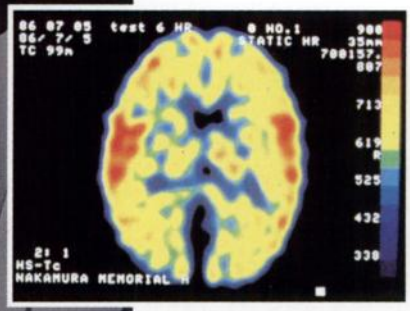
Using newly developed radiopharmaceuticals, HEADTOME presents SPECT images having outstanding spatial resolution. Within one minute, it can be switched to absolute measurement of regional cerebral blood flow studies using ^{133}Xe. No other imaging equipment has such versatility.

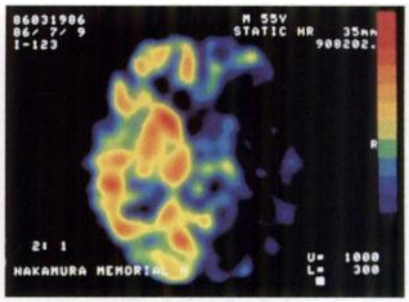
HEADTOME helps identify abnormal brain characteristics which X-ray, CT, and even MRI, cannot detect, giving you exceptional biological information for better patient management.

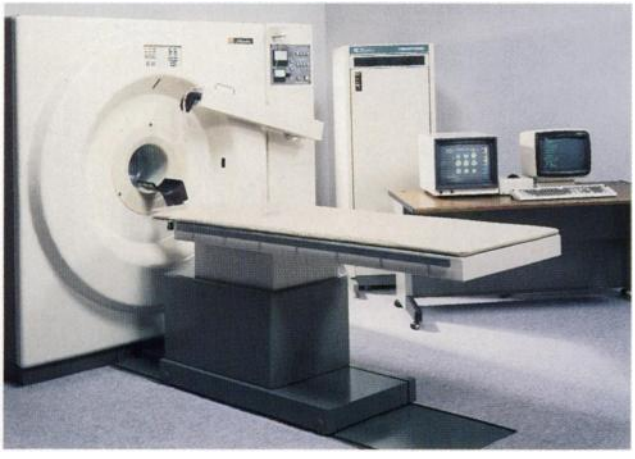
Special Attention for Special Problems

HEADTOME SET-031 is dedicated to studies of the brain. Hundreds of clinical applications in dozens of medical facilities have proved the clinical efficacy of this modality plus its speed, accuracy, and reliability.

Call the
SHIMADZU HOTLINE:
1-800/228-1429
for more information.







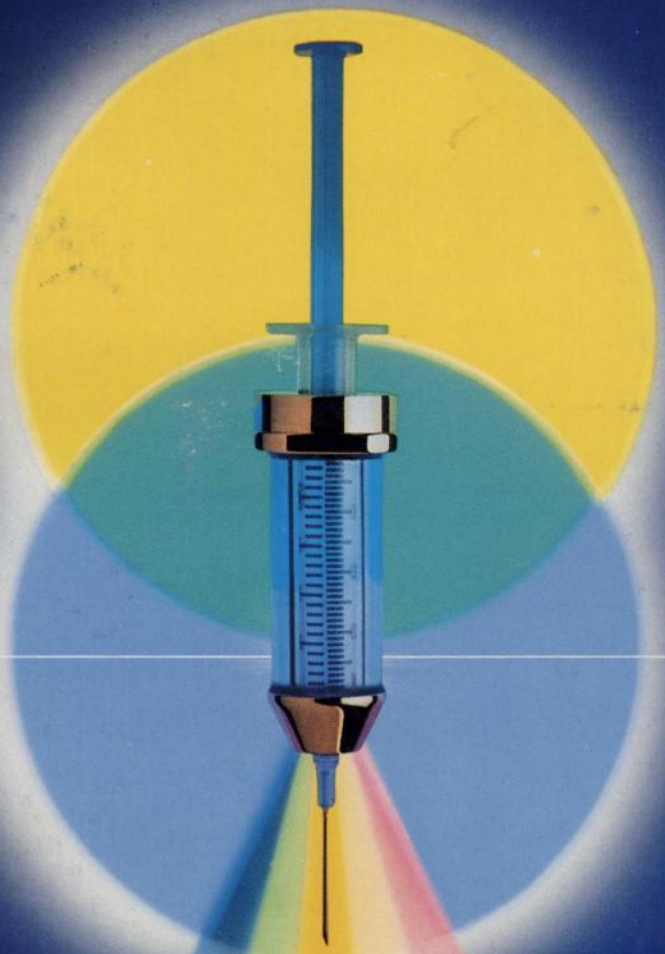
Look To Shimadzu For Innovative Engineering

Shimadzu

SHIMADZU CORPORATION

SHIMADZU PRECISION INSTRUMENTS, INC.
MEDICAL SYSTEMS DIVISION
20410 Earl Street, Torrance, California 90503, Phone: 213-214-0314

INTERNATIONAL MARKETING DIV.
3, Kanda-Nishikicho 1-chome, Chiyoda-ku, Tokyo 101, Japan
Phone: (03) 219-5646 Telex: 0232-3291 SHMDT J
Fax: (03) 219-5710



Focusing on your needs

with a unique spectrum of quality products and services

A Complete Product Line including

SPECTamine®

Iofetamine HCl I 123 Injection

Radiation Safety Service

White Blood Cell Labeling

Discover how MPI Professional Service Centers can provide your department with a full spectrum of products and services. For additional information, contact your local MPI Professional Service Center, Medi-Physics Territory Manager or call 1-800 MEDI-123.

Your partner in advancing nuclear medicine

MPI Professional Service Centers

ROCHE a subsidiary of Medi-Physics, Inc.

medi+physics®

ROCHE a subsidiary of Hoffmann-La Roche Inc.

Medi-Physics, Inc.
140 East Ridgewood Avenue
Paramus, NJ 07652