

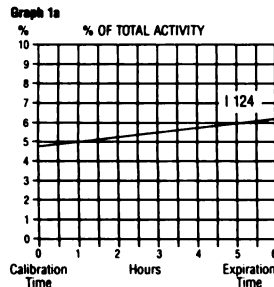
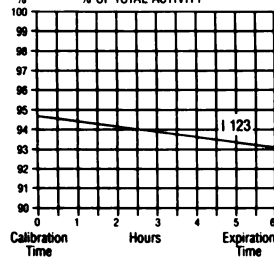
SPECTAMINE®

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 radio-nuclidic 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 radio-nuclidic 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.

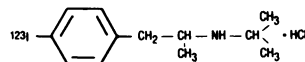
The ratio of the concentration of I 123 to I 124 decreases with time. Graph 1 shows the minimum concentration of I 123 and the maximum concentration of I 124 as a function of time.

Graph 1. Radio-nuclidic Concentration of I 123 and I 124
% OF TOTAL ACTIVITY



The chemical names are 123I-d,l-N-isopropyl-p-iodoamphetamine hydrochloride, (±)-1-(4-(iodo-123I)-α-methyl-N-(1-methylethyl)benzene)ethanamine hydrochloride, and (±)-p-iodo-123I-N-isopropyl-α-methylphenethylamine hydrochloride.

Molecular formula: C₁₂H₁₉N₂I₂Cl
Molecular weight: 335.74
Structural formula:



PHYSICAL CHARACTERISTICS: Iodine I 123 decays by electron capture with a physical half-life of 13.2 hours¹. 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 high-energy collimator may be advantageous.

Table 1. Principal Radiation Emission Data¹

Radiation	Mean %/Disintegration	Mean Energy (keV)
Gamma-2	63.4	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) Shielding²

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 plateau 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

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 radio-nuclidic 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 Dose¹

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	4.4	4.4	4.7	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	2.02	0.202	2.32	0.232
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.

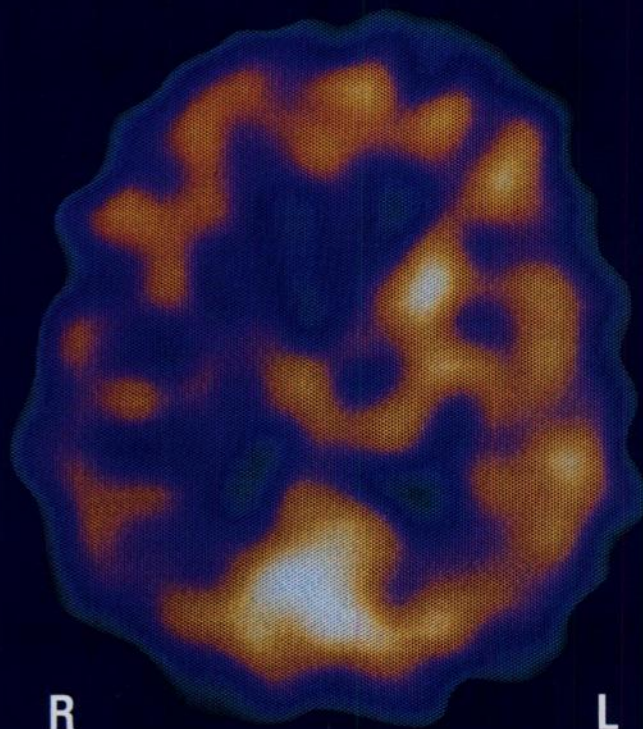
Disposal Users should monitor the amount of radioactivity present prior to disposal of this product. Storage and disposal of SPECTAMINE should be in accordance with the conditions of Agreement State or Licensing State licenses and regulations, or other regulatory agency authorized to license the use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

Issued December 1987



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

Reason for admission:

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CT interpretation:

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

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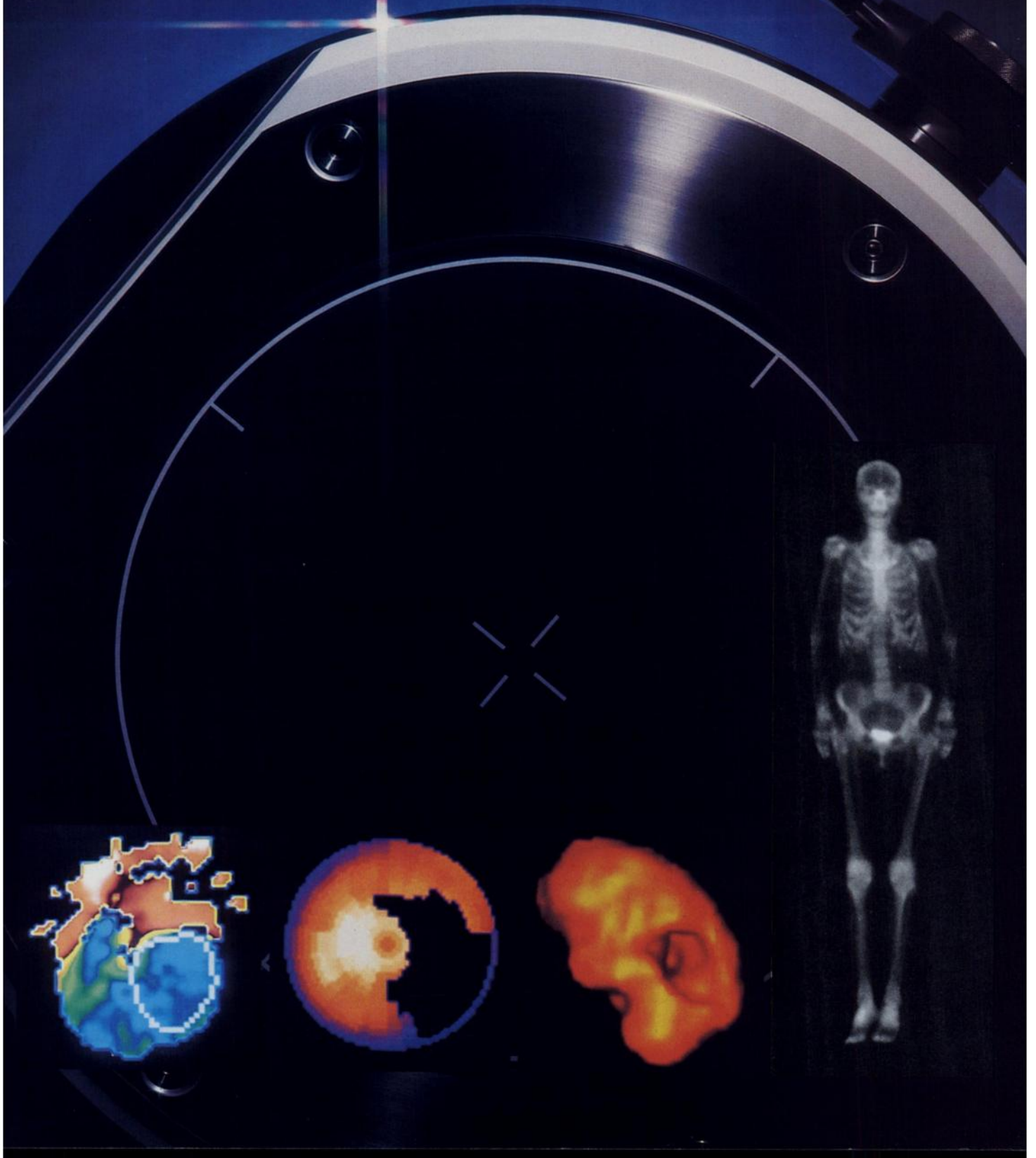
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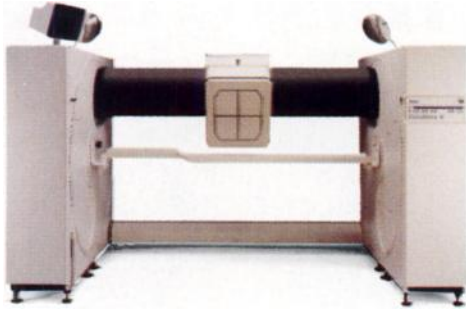
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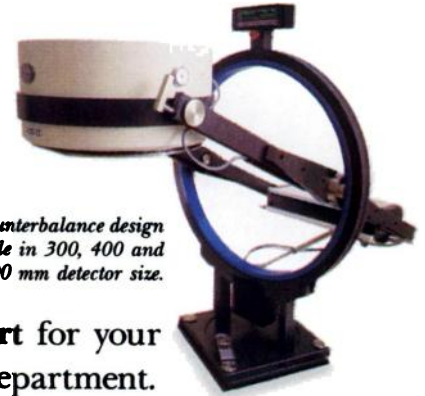
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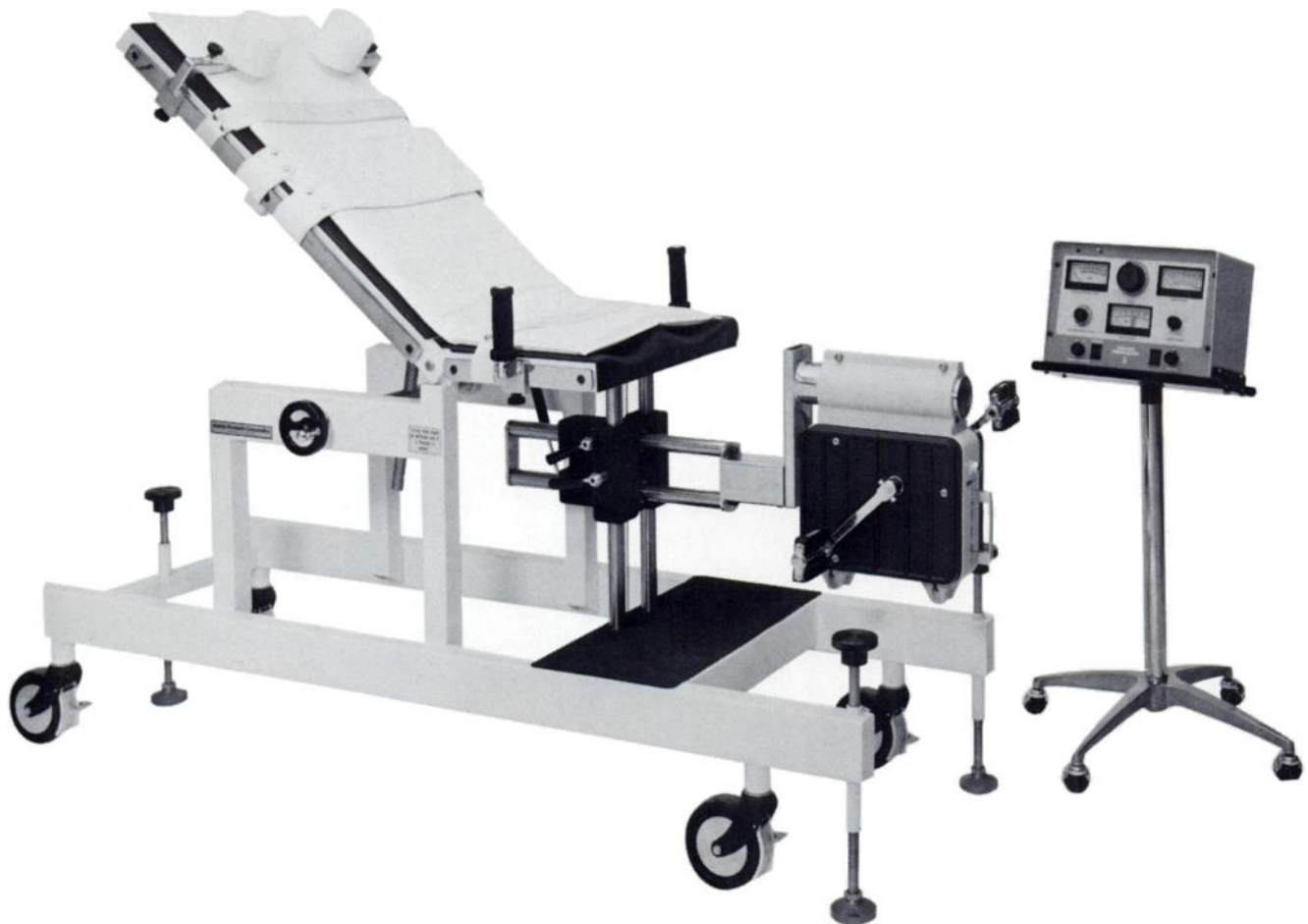
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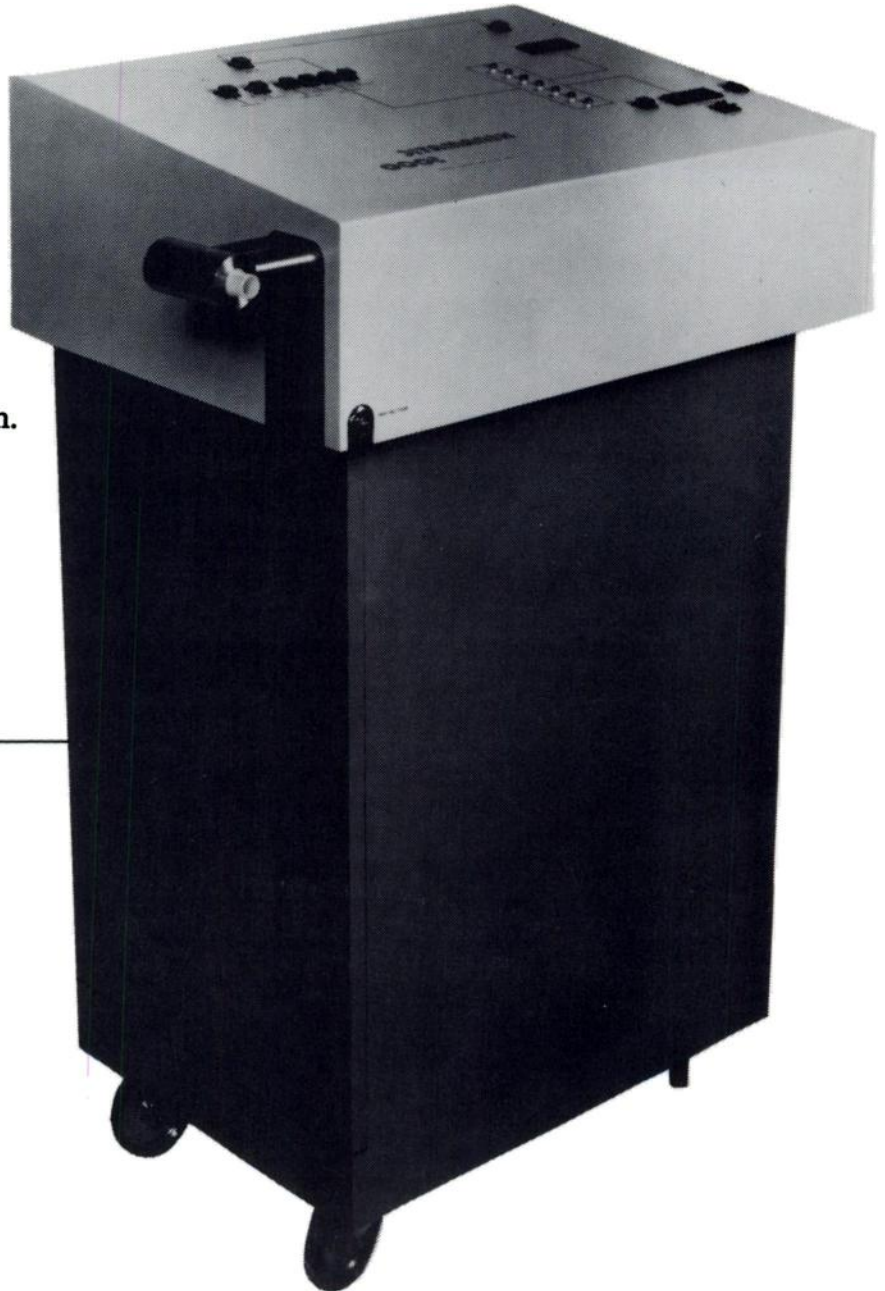
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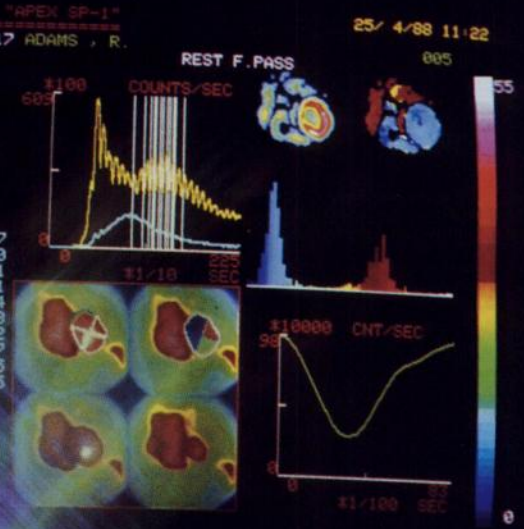
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71: /* $GRCR         intes  rau rep cycle group no. */
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76: /*                */
77: /* $GS           intes  residual subtraction */

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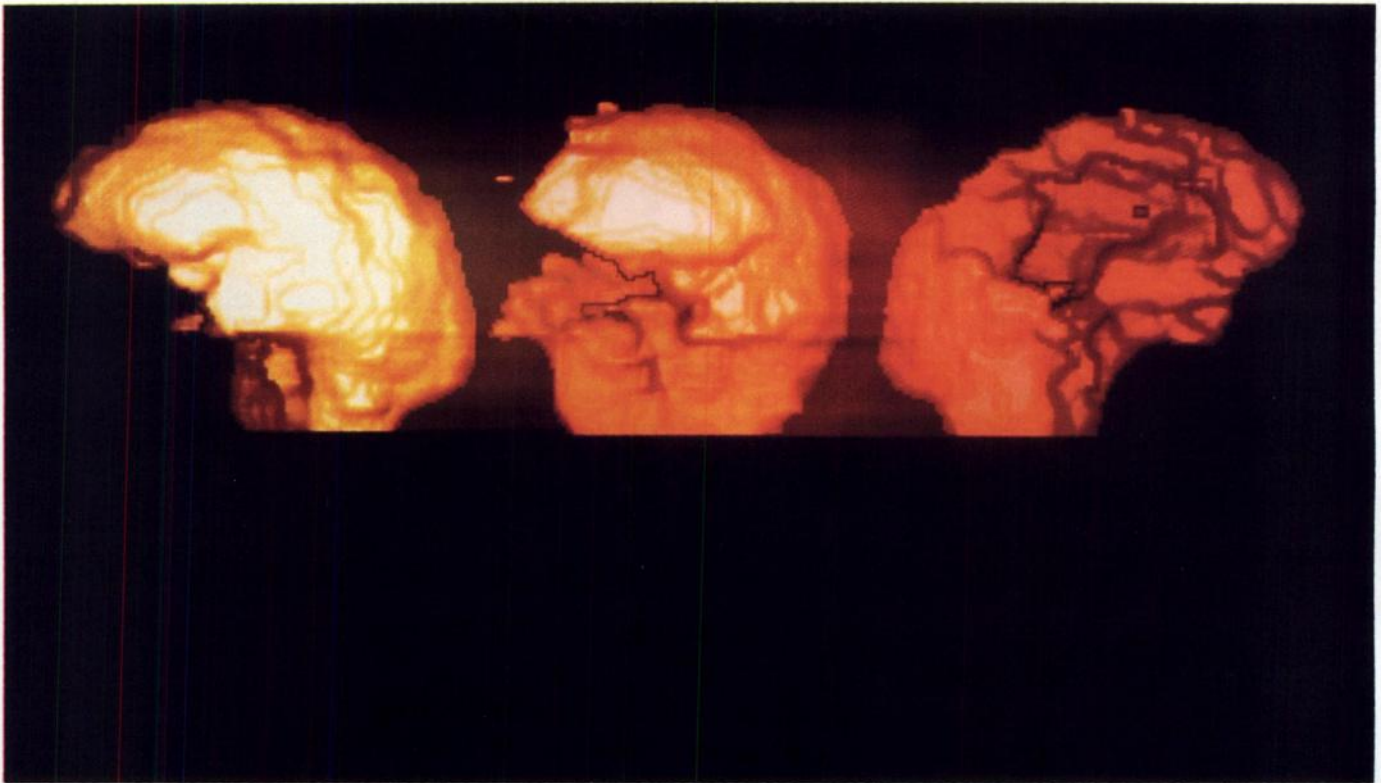
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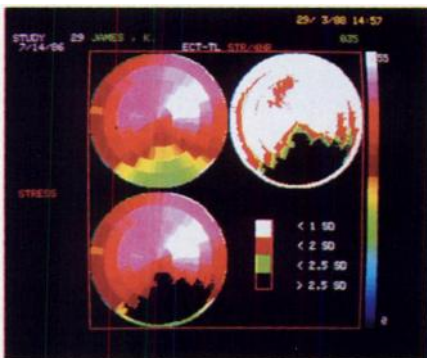


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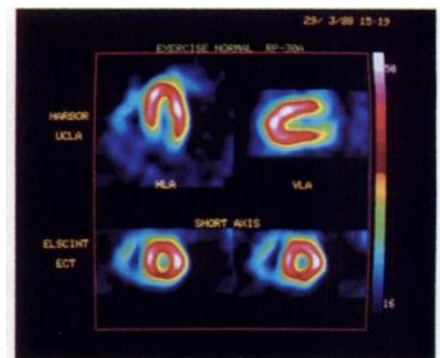
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Available to SNM Members

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The Society of Nuclear Medicine is offering its members the opportunity to combine attendance at the International Symposium on Nuclear Medicine (October 10-14, 1988, Beijing) and/or the Fourth Asia & Oceania Congress on Nuclear Medicine (November 1-4, 1988, Taipei) with a first-hand look at the fascinating culture of the Far East.

Each tour, completely escorted, will take you to areas that until recently have been inaccessible to the average American. You may choose from three basic tours:

1. **Beijing Symposium Tour**—Leaves the West Coast October 6. Includes a day in Hong Kong to get the flavor of the Orient before proceeding to Beijing. Departs Beijing October 15 for the U.S.
2. **China Extension Tour**—Begins on October 15, after the Symposium. From Beijing you travel through the once-closed cities of Xian and Bulin, seeing both a rural land unchanged for centuries and the exciting results of China's tentative steps towards capitalism. Two days are devoted to a stay in Hong Kong, where East meets West in an exotic blend of sampans and skyscrapers. Departure is October 22 for the West Coast.
3. **Taipei Congress Tour**—Leave the West Coast October 22, return November 5. Included is a five-day visit to Hong Kong, enabling you to experience the excitement of the frenetic pace that consumes this last outpost of the Empire as it counts the days remaining until it once again becomes part of China.

You may also opt to combine the **China Extension Tour** with the **Taipei Congress Tour**.

This opportunity to combine prestigious scientific conferences with a look at part of the world so different to our own is truly unique. Of necessity, the number of attendees who may take advantage of these China tours is limited. We suggest you immediately contact:

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EUROPEAN NUCLEAR MEDICINE CONGRESS 1988

**AUGUST 26-SEPTEMBER 2
MILANO, ITALY**

SCIENTIFIC PROGRAM

Plenary sessions, with lectures given by invited speakers, will concern the following main topics: Oncology, Emission Tomography, Cardiology, Pediatrics, Neurology. Scientific Papers, "Works-in-Progress," Technicians' Program, Scientific and Commercial Exhibition, Pre- and Post-Congress Meetings are also included.

Topics related to nuclear medicine will be considered for inclusion in the scientific program as follows:

Instrumentation: Instrumentation and New Technologies, Emission Computed Tomography (SPECT and PET), NMR, Computers, Image Processing, Artificial Intelligence, Quality Control of Instrumentations.

Radiopharmaceuticals: Radiopharmaceutical Chemistry, New Radiopharmaceuticals, Radiolabeled Monoclonal Antibodies for Cancer Diagnosis and Therapy, Studies on Cell and Animal Models, Kinetics of Tracers, Quality Control of Radiopharmaceuticals, Dosimetry.

In Vitro Applications: Tumor Markers, Radioimmunoassays, Cell Labeling Quality Control, Genetic Engineering.

Clinical Applications: Cardiology and Circulation, Gastroenterology, Nephrology, Neurology, Hematology, Endocrinology, Pediatrics, Bone/Joint Diseases, Pulmonary Diseases, Thyroid Diseases, Metabolic Therapy, Radiation Risks.

EXHIBITION

A comprehensive exhibition of equipment and radiopharmaceutical manufactures will be on display.

GENERAL INFORMATION

Call for Abstracts: Official Abstract Sheets may be obtained by writing to the Official Organizing Offices, O.I.C. Incentive -Viale Majno, 21-1 20122 Milano. The deadline for the receipt of abstracts is March 1, 1988.

Registrations and Fees: Members of the European Association of Nuclear Medicine (EANM), regularly registered, will have free admission to the Congress, provided that they present their 1988 Membership card at the Registration Desk, or send a copy to the Official Organizing Offices. EANM Members must pay their fees by April 15, 1988. New EANM membership applications will be accepted only until April 15, 1988.

The registration fees for non-members will be Lit. 220.000 + VAT by June 15, 1988 and Lit. 300.000 + VAT after June 15, 1988.

Social Program: A comprehensive social program has been planned, including the Opening Ceremony with a concert and welcome cocktail (inclusive in the registration fee); an organ concert in one of the most beautiful churches of Milano; a dancing dinner in an old villa near Milano; the Farewell Party.

PRESIDENT OF THE CONGRESS: Prof. Dott. Gian Luigi Buraggi

Scientific Secretariat:
Division of Nuclear Medicine
Istituto Nazionale dei Tumori
Via Venezian, 1
I-20133 Milano

**Official
Organizing Offices:**
O.I.C. Incentive
Viale Majno, 21
I-20122 Milano
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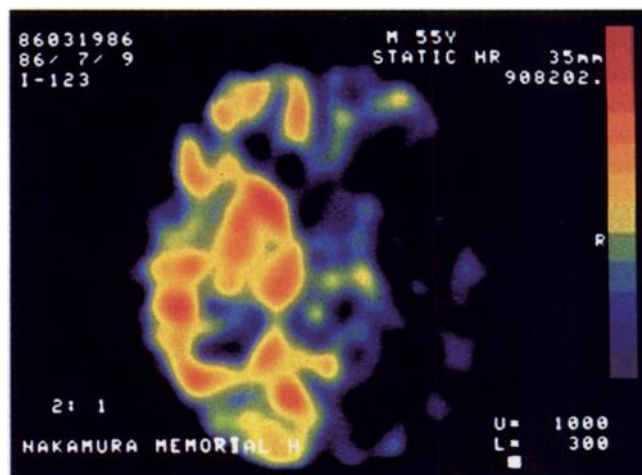
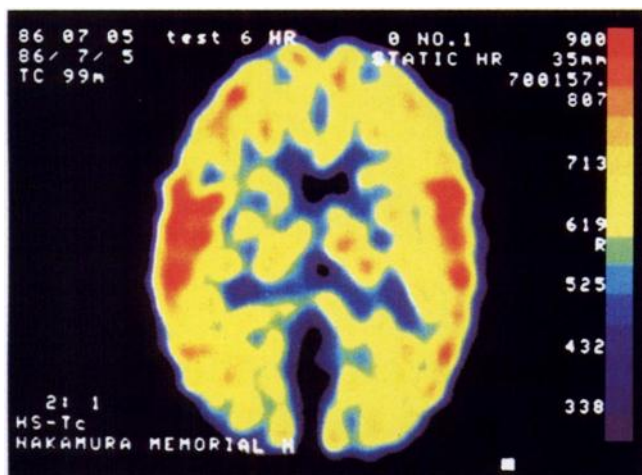
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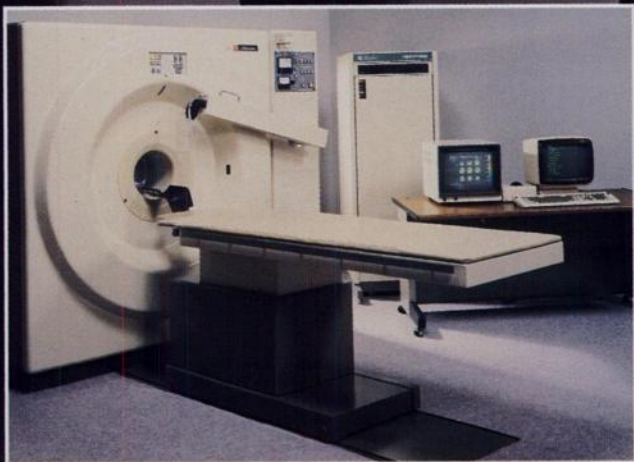
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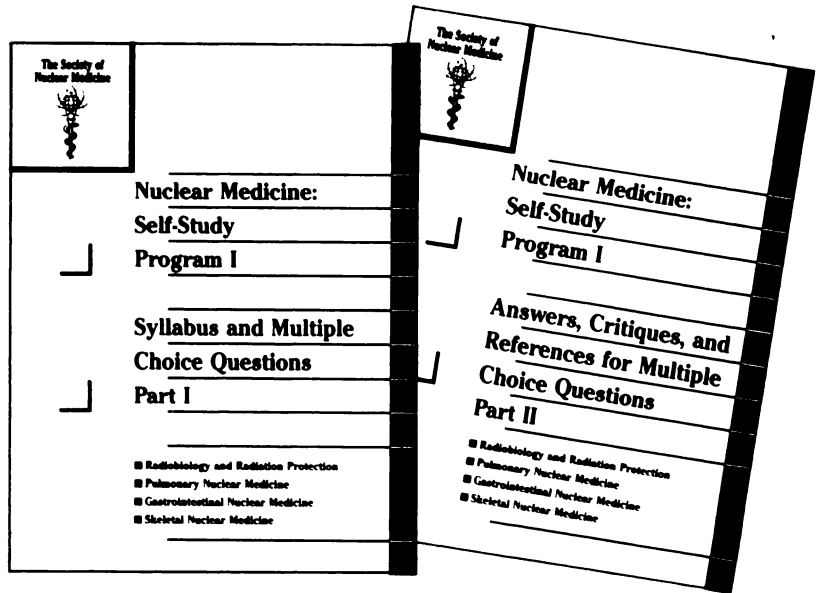
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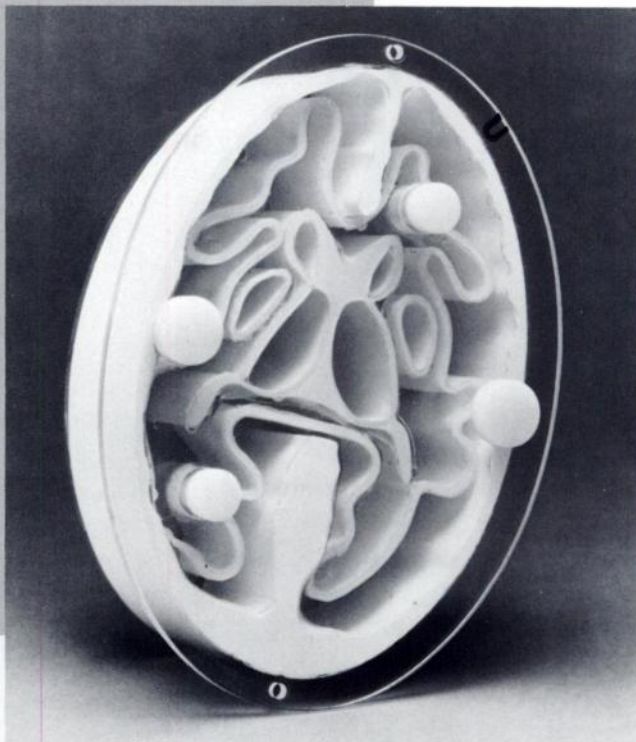
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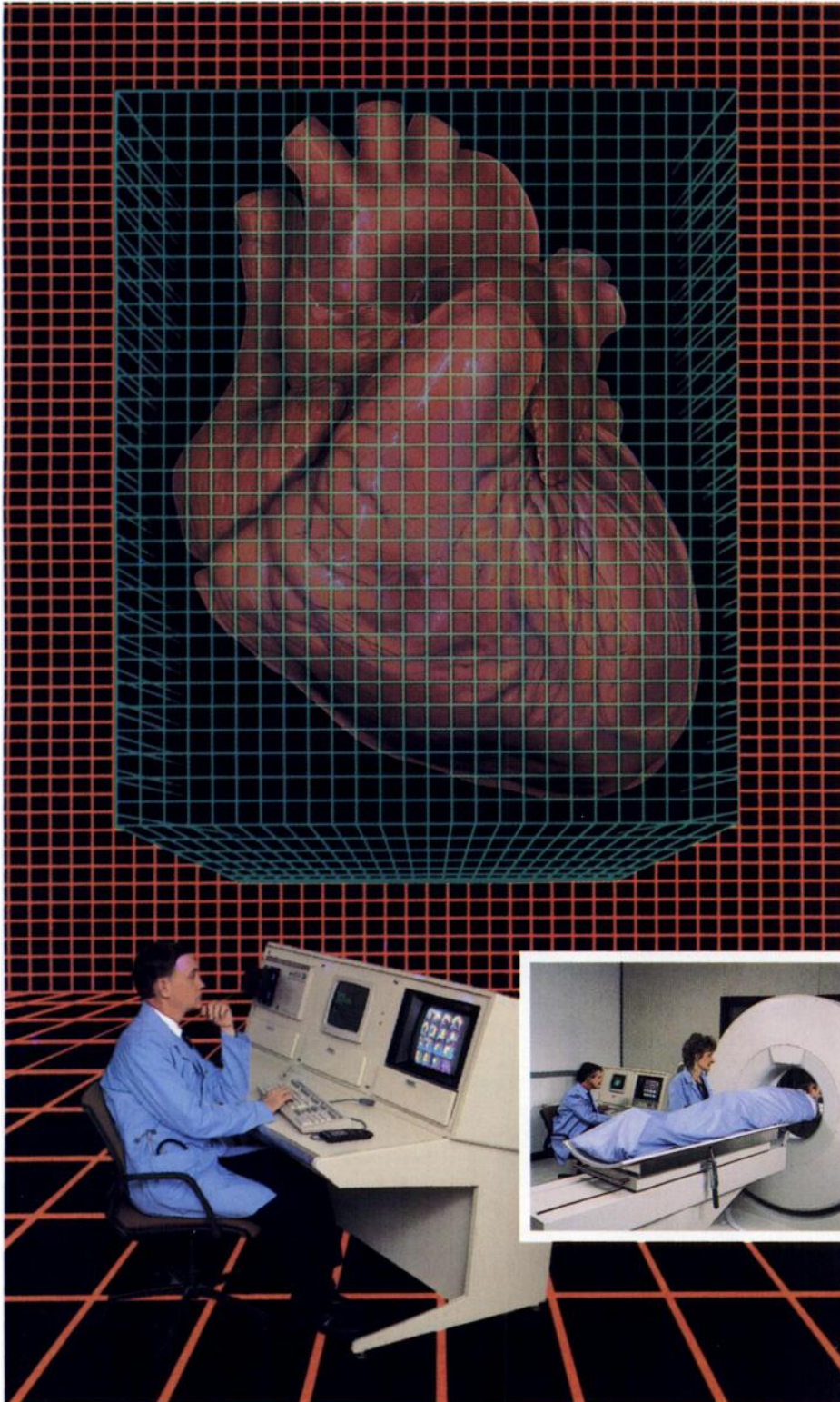
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Contact: Peter S.H. Yeh, MD
President, Asia & Oceania CNM
Department of Nuclear Medicine
VA General Hospital, Peitou
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(02)871-5849 (telex: 28514)

or: Wilfrido M. Sy, MD
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Department of Nuclear Medicine
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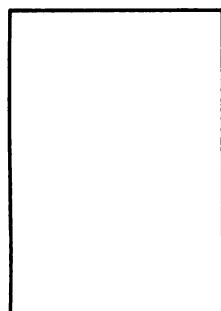
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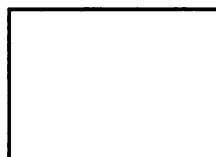
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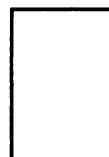
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Residency

NUCLEAR MEDICINE RESIDENCY/INCLUDING NMR & PET. Position in approved AMA program available at the VA Medical Center, Long Beach, CA, July 1988/1989. English language proficiency required (PL 95-201). Program Directors: Kenneth P. Lyons, MD, Nuclear Medicine, VA Medical Center, Philip Braunstein, MD, Nuclear Medicine, UC Irvine. Contact: Norah Milne, MD, Director of Training, Nuclear Medicine Service, (213)494-5566, VA Medical Center, 5901 E. 7th St., Long Beach, CA 90822. The VA is an Equal Opportunity Employer. U.S. citizenship required.

NUCLEAR MEDICINE RESIDENCY. July 1989 699-bed VA general hospital offers accredited comprehensive 2-year program. Located in the San Fernando Valley area of Los Angeles. 15 minutes from affiliated hospitals (UCLA and West Los Angeles V.A.). Program covers isotope imaging, in vivo and in vitro procedures, including RIA, isotope therapy and all recent SPECT, computer, and cardiology procedures, plus PET affiliation. Prerequisites: Two (2) years postgraduate training. Minimum stipend: \$31,200. Contact: Marvin B. Cohen, MD, Chief, Nuclear Medicine Service, VA Medical Center, 1611 Plummer St., Sepulveda, CA 91343. Equal Opportunity Employer.

Technologist

NUCLEAR MEDICINE TECHNOLOGIST. Immediate position available for a registered Nuclear Medicine Technologist at the AMI/Coastal Bend Hospital, a 75-bed JCAH accredited, acute-care Hospital located on the coast, 30 miles north of Corpus Christi, TX. Excellent salary and benefits package available. Please contact: Personnel Office, AMI/Coastal Bend Hospital, 1711 W. Wheeler Ave., Aransas Pass, TX 78336; (512) 758-8585, ext. 430. EOE

NUCLEAR MEDICINE TECHNOLOGIST. Registered or registry eligible technologist wanted to work in a private nuclear cardiology office in Annapolis, Maryland. Excellent salary and benefits. Send resume to: Cardiology Associates, P.C., 100 Cathedral St., Suite 2, Annapolis, Maryland 21401 or call (301)263-0788.

NUCLEAR MEDICINE TECHNOLOGIST. The Hospital of Saint Raphael, a 500-bed community teaching hospital, is seeking a full-time staff technologist for our progressive, state-of-the-art nuclear medicine department. Must be Registered (RTNM), certified (CNMT) or Board eligible. The city of New Haven is located along Long Island Sound, in close proximity to New York. Community has diverse cultural offerings, skiing and sailing. We offer an outstanding benefits package. Salary commensurate with experience. Please send resume, or contact: The Dept. of Personnel, Hospital of Saint Raphael, 1450 Chapel St., New Haven, CT 06511. EOE.

NUCLEAR MEDICINE TECHNOLOGIST. Full-time position available for an assertive self-motivated person to assume staff position. Requirements: Registry or registry eligible and must have Florida licensure. We offer an excellent benefits package and relocation allowance. For further information please call our Personnel Department, collect at

(305)735-6000, or send us your resume. Florida Medical Center, 5000 W. Oakland Park Blvd., Ft. Lauderdale, FL 33313. EOE.

NUCLEAR MEDICINE TECHNOLOGISTS. Pitt County Memorial Hospital, a 550+ bed regional medical center affiliated with East Carolina University School of Medicine, is currently recruiting Nuclear Medicine Technologists. Qualified candidates must possess an associate's degree in nuclear medicine with ARRT or NMTCB certification. PCMH offers excellent salary and benefits. For immediate consideration, call or send resume to: Employment Office, Pitt County Memorial Hospital, P.O. Box 6028, Greenville, NC, 27834. 1-800-346-4307 or 919-551-4556. EOE/AA.

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rapid growth of nuclear cardiology & SPECT. Requires exp. in these areas. Multi-cameras and computers. Full-time position. Excellent benefit package provided. Please send resume to: The Dept. of Human Resources at: Inter-Community Medical Center, 303 N. Third Avenue, Covina, CA 91723. EOE.

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DUAL PHOTON BONE DENSITOMETER. Lunar DP3 with IBM PC-AT, 30 MEG Hard Disk, 10 MEG removable hard disk, enhanced color monitor, color ink jet printer. One year old. Direct inquiries to: Don Gouger, Nuclear Medicine, Lee Memorial Hospital, Fort Myers, FL 33902; (813)336-6794.

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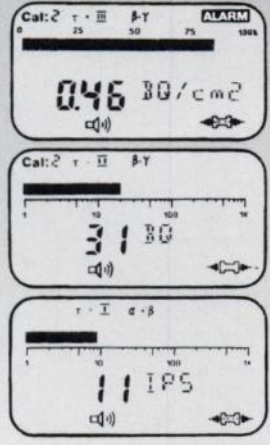
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NUCLEAR MEDICINE REVIEW—1988

AUGUST 1st–4th, 1988

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Course Director: Stanley J. Goldsmith, MD

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The Radiation Research Program, DCT, NCI, is seeking a Radiologist at the GS-15 level. We are recruiting an individual with an M.D. and Board Certification in Radiology. This individual should be experienced in all aspects of oncologic imaging including those related to conventional radiology, nuclear medicine, ultrasound, and magnetic resonance imaging. There is a heavy program involvement in the developing field of radioimmunodiagnosis, the related fields of nuclear medicine, including positron emission tomography and single photon emission computerized tomography. This individual will have extensive interaction with the extramural scientific community and be responsible for the planning, administration, evaluation, and coordination of extramural diagnostic imaging research. Scientific interaction and scientific involvement with researchers in the intramural community at the Clinical Center is encouraged.

The Diagnostic Imaging Research Branch is responsible for contracts, grants, and cooperative agreements related to the multiple areas of diagnostic imaging. The newly-formed Radiologic Diagnostic Oncology Group designed for the prospective evaluation of diagnostic imaging modalities is a high priority research program of DIRB.

We are seeking a radiologist with a minimum of two-years research experience who desires the experience and responsibility of influencing the field of diagnostic imaging as it relates to the diagnosis, staging, treatment, and post-treatment evaluation of the cancer patient.

Salary range from \$58,135 - \$72,500 depending on qualifications. Plus the potential of up to \$20,000 additional for Physician's Comp Allowance. Candidates must have U.S. citizenship.

Applicants should contact:

John E. Antoine, M.D.
Associate Director, Radiation
Research Program
Division of Cancer Treatment
National Cancer Institute, NIH
Executive Plaza North, Room 800
9000 Rockville Pike
Bethesda, MD. 20892
Telephone (301) 496-3080



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Progressive 584-bed teaching hospital is seeking a full-time staff technologist in nuclear medicine. Applicants must be registered, certified or registry eligible. ARRT (N) or NMTCB preferred. Our state-of-the-art department is equipped with four gamma cameras, computer systems and SPECT imaging capabilities. In addition to offering competitive salary and benefit packages Spartanburg Regional Medical Center is located in the Piedmont section of South Carolina, convenient to mountains and beaches. Contact:

Cynthia Wharton
Director, Nuclear Medicine
Spartanburg Regional Medical Center
101 E. Wood St.
Spartanburg, SC 29303
(803) 591-6166



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**DIRECTOR OF
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The Department of Radiology of St. Luke's/Roosevelt Hospital Center in New York City is seeking a radiologist to head its section on Nuclear Medicine at the rank of professor or associate professor depending on qualifications. A strong interest in patient care, clinical teaching and in research is required. The hospital is a 1315 bed voluntary university hospital of Columbia University College of Physicians and Surgeons. Excellent facilities, academic opportunities and remuneration. Please send inquiries with a CV to Ronald C. Ablow, M.D., Dept. of Radiology, St. Luke's/Roosevelt Hospital Center, Amsterdam Ave. & 114th St., New York, NY 10025. An Equal Opportunity/Affirmative Action Employer.

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Wilkes-Barre General Hospital, a 444-bed acute care hospital, located in the scenic Pocono Northeast, is seeking a full-time Nuclear Medicine Technologist. Our progressive, state-of-the-art Nuclear Medicine Department requires that the interested candidate be either registered or registry eligible.

We offer a competitive starting salary and an extensive fringe benefit package including BC/BS, vision and dental (family coverage provided by hospital); life insurance, hospital paid pension plan, tuition reimbursement, 4 personal days, 12 sick days, 7 holidays, 2 weeks vacation, sick child infirmary, and numerous additional benefits.

For a prompt response please send vitae or call:

**Human Resources Department
Wilkes-Barre General Hospital
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Wilkes-Barre, PA 18764
(717) 829-8111, ext. 2133**

m/f/h/v

NUCLEAR MEDICINE TECHNOLOGIST

JFK Medical Center, a 370+ bed acute care, comprehensive regional referral center located on Florida's Gold Coast in the beautiful Palm Beaches currently seeks a full-time Nuclear Medicine Technologist.

Qualified candidate must have an Associate of Science or Bachelor's degree in Nuclear Medicine Technology from an institution approved by the American Medical Association. A degree in another scientific field may be acceptable. Approval by the Examination Board of the American Registry of Radiologic Technologists (ARRT) is also required, as is licensure by all government agencies when appropriate.

Join our team of qualified professionals and enjoy the amenities of South Florida living. We offer comprehensive benefits and excellent salaries. Respond by calling Lenore Meehan at (407) 433-3729 or send your resume to JFK Medical Center, Human Resources Dept., P.O. Box 1489, Lake Worth, FL 33460.

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NUCLEAR MEDICINE TECHNOLOGIST

South Miami Hospital, a 500-bed not-for-profit community hospital is currently seeking a Technologist to work full-time, variable hours in our busy Radiology Department.

Applicants must be either ARRT or NMCTB certified. Current Florida license in Nuclear Medicine or eligibility is required. Nuclear Cardiology experience preferred.

South Miami Hospital is located in a friendly suburban community 20 minutes South of downtown Miami. We offer a competitive salary and a full range of benefits. For further information, call collect, (305) 662-8122, or send resume to: Jill Sreenan, Personnel Department, South Miami Hospital, 7400 S.W. 62nd Avenue, Miami, FL 33143. An Equal Opportunity Employer.

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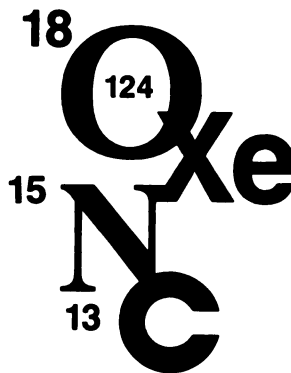
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**1st International Symposium on
Computer Applications in Nuclear Medicine
October 20-21, 1988**

ERASMUS UNIVERSITY, ROTTERDAM, THE NETHERLANDS

Anticipated participants: all physicists, physicians, programmers, technicians, etc., active in the field.

In the mornings tutorials will be given by American and European experts; the afternoons are scheduled for communications selected on the basis of submitted abstracts. Deadline for receipt of abstracts: **June 15, 1988.**

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- SPECT
- Quantitative analysis of radionuclide studies
- Quality Control
- Workstations
- Networking
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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.

Automated Blood Measurement System

Scanditronix, Inc. has introduced the first commercial automated blood measurement system for PET imaging. The system increases accuracy and saves time compared with manual blood measurement techniques. Used with Scanditronix PC4096 whole body PET imager and PC2048 brain PET imager, the system is automatically started at the same time as the came-

ra; however, measurement can be run independently. The user specifies the blood measurement and other parameters for a study in a central file associated with the camera data. Blood and camera data are synchronized, except for the transition time for the blood in the catheter. **Scanditronix, Inc., 106 Western Ave., P.O. Box 987, Essex, MA 01929 (617)768-6994.**

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Dual Photon Bone Densitometer

Philips Medical Systems has entered into an agreement with Medical & Scientific Enterprises, Inc., to market their range of Dual Photon Bone Densitometers (Osteo-Tech Systems). The OsteoTech software has been designed and engineered to provide the user with a state-of-the-art automated system, which allows bone densitometry to now be classed a "true" radiology/nuclear medicine study, according to the company. The systems provide an inexpensive means of diag-

nosis. Advantages include elimination of the need for operator designation of the intervertebral spaces and bone edge determination prior to scan analysis; scanning of both the lateral and anterior/posterior views without patient repositioning; a double-balanced scanner rotational mechanism to assure proper patient positioning, stability, and comfort. **Philips Medical Systems, P.O. Box 523, 5600 AM Eindhoven, The Netherlands. Tel.: +3140 757189.**

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Radioaerosol System

CIS-US, Inc. announced the availability of its VENTICIS II radioaerosol system. The system allows for the evaluation of lung ventilation and pulmonary epithelial permeability using DTPA labeled with technetium-99m. The system is highly maneuverable and well shielded, allowing for the freedom of administering an aerosol at bedside, in the same position which is used for the ventilation procedure. VENTICIS II's combined nebulizer efficiency and unique particle sizer allows for the delivery of large volumes of particles, 60% to 70% between 0.25 and 0.5 microns. **CIS-US, Inc., 10 De Angelo Dr., Bedford, MA 07130-2267 (800)221-7554.**

Circle Reader Service No. 103

New Upgrade

An upgrade is available for the Matrix Instruments Multi-Imager-10 medical film recorder, the MI-10 PLUS. The key to the MI-10 PLUS upgrade is a newly developed super high resolution (1900-line) monitor. The monitor features precise linearity, uniform light output and switch-selectable automatic interlacing that virtually eliminates video raster lines. The result, according to the company, is sharp images free of distortion, phosphor mottle and film artifacts. Visualization is further enhanced by a feature which places black borders between images. This reduces extraneous light and makes images easier to examine and enhances the contrast resolution of clinical studies. **Matrix Instruments Service, One Ramland Rd., Orangeburg, NY 10962 (914)365-0202.**

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