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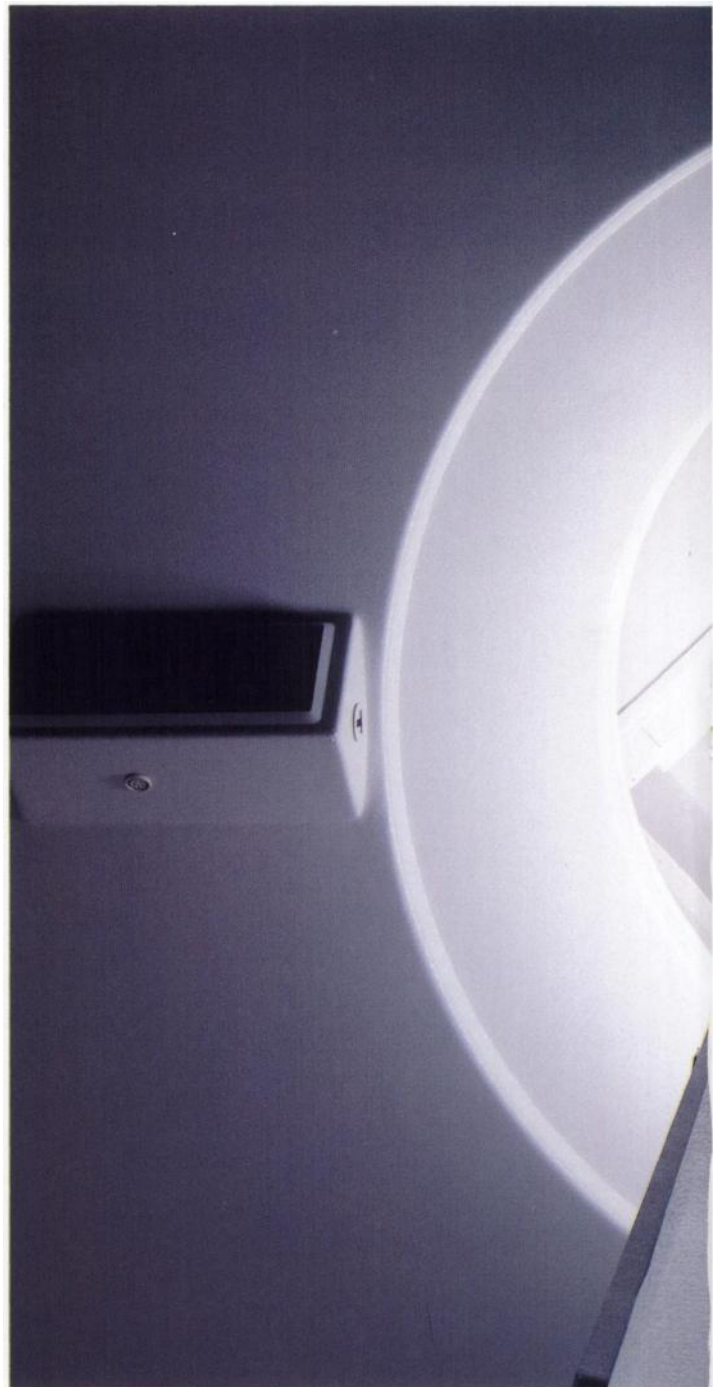
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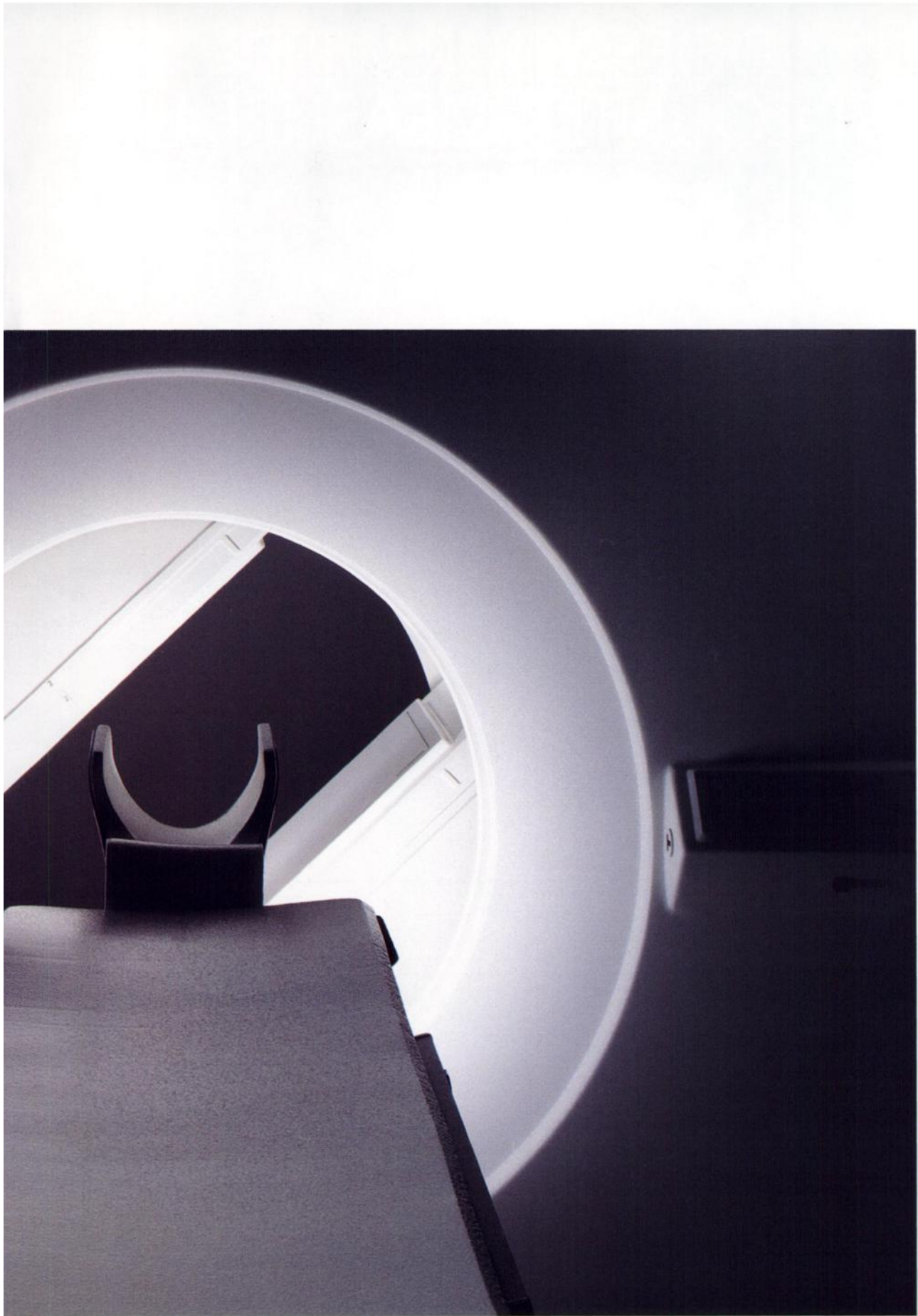
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# DOES YOUR WIPE TEST COUNTER MEASURE UP?



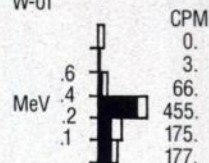
The CAPRACT<sup>™</sup> Wipe Test Counter from Capintec measures up from the outset because it gets right down to basics - it saves time and improves your results.

The NaI drilled well crystal lets you perform your wipe tests using short counting times while detecting very low levels of activity (seconds for 1 nCi). All this with the accuracy to meet NRC and state regulations.

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CAPRAC SN:000123  
May 16, 1991 15:53

W-01



CF: 2.50	875. ± 42.	cpm
I 131	2.19 ± .10	kdpm
TC99m	2.42 ± .14	kdpm
GA67	222. ± 24.	dpm
IN111	1375. ± 61.	dpm
TL201	1440. ± 64.	dpm
	439. ± 32.	dpm

lem with CAPRAC because of its energy discrimination and isotope identification through gamma spectroscopy, specific isotopes can be identified at the touch of a button.

The final measure? Permanence! CAPRAC excels here, too, with its optional printer that allows permanent printed records of all data and gamma energy histograms.

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Network with referring physicians, academia,  
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Medicine via the:

- ACNP Membership Directory  
– *with names, addresses, phone numbers and  
fax numbers of all College members*
- Professional and Public Information Program  
– *promoting the awareness and utilization of  
Nuclear Medicine*
- Speakers Bureau

## Stay Informed

Keep on top of the latest legislation and regulations  
affecting Nuclear Medicine through the:

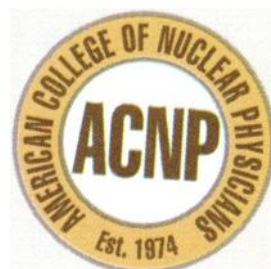
- ACNP Annual Meeting
- ACNP Interim Meeting
- Scanner – *our monthly newsletter*

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imaging company  
grew a record 192-fold  
over the past 21 years ? ...**

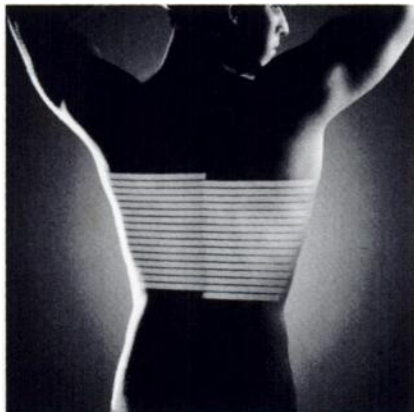
**... and has MRI, CT, Nuclear Medicine  
and Ultrasound installations  
in 54 countries worldwide ?**

- ☐ **Toshiba**
- ☐ **General Electric**
- ☐ **Elscint**
- ☐ **Picker**
- ☐ **Siemens**
- ☐ **Hitachi**
- ☐ **Philips**

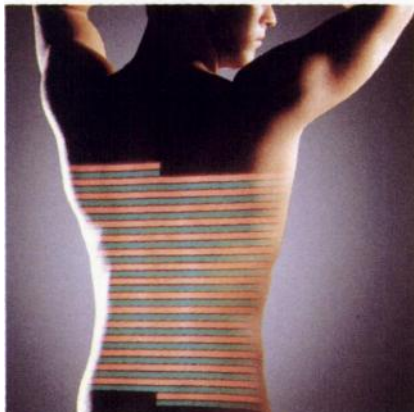
# The answer Here are some

## A long list of imaging firsts: CT-Twin™ is our latest.

For more than two decades the name Elscint has been synonymous with innovation ... from our introduction of the industry's first medical imaging workstation to our most recent breakthrough, unique Twin-Beam™ technology. At the heart of the CT-Twin imager, Twin-Beam delivers simultaneous dual-slice imaging in CT, opening a new era of Double-Helix™ spiral scanning.



Spiral scanning

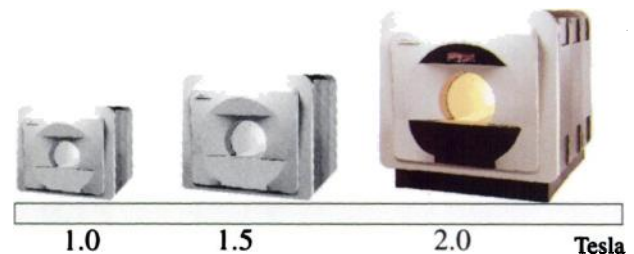


Double-Helix spiral scanning

*Spiral volume scanning (top picture) has greatly advanced CT. But CT-Twin's Double-Helix spiral scanning (lower picture) goes even further, **doubling** spiral performance. For the **same** scan time, scan volume is **doubled**.*

## Daring design solutions: highest field MRI and more.

Never a follower, Elscint is bold in expanding medical-imaging frontiers ... from the highest count rate in nuclear medicine to our uncompromising solutions in high-field MRI. With our GYREX® 2-Tesla, we went all the way, offering the highest field-strength authorized by federal health agencies for routine clinical use.



*Elscint's GYREX 2-Tesla features an uncompromised 2-tesla magnet field strength.*

## Focused business philosophy: 100% medical imaging.

Elscint has a single purpose. Totally dedicated to medical imaging, our philosophy is to master all facets of this complex business, from clinical needs to service technology. This enables rapid response to the evolving needs of the radiology community.



*Medical imaging is only 6-8% of the total business for most multi-modality companies; for Elscint it is 100%.*



# is Elscint.



# reasons why.

2200

## Global strategy from day one.

Medical imaging knows no national boundaries, and Elscint has been an international company from its very inception. With a dozen wholly-owned subsidiaries and scores of

representative offices worldwide, we have installed thousands of imaging systems in 54 countries.



*From Warsaw to Beijing, L.A. to Brussels, many of the thousands of APEX users around the world regularly convene to exchange information and learn about new developments.*

83 86 89 92

*Today, more than 2000 nuclear medicine systems bear the "APEX" nameplate.*

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<b>Low-Level Radiation Effects: A Fact Book</b> (with update), 1982 <i>Brill</i> Update only.	1-057	\$20.00	\$ 20.00	_____	_____
<b>MIRD Primer for Absorbed Dose Calculations</b> , Revised Ed., 1991 <i>Loevinger et al.</i>	1-045	\$10.00	\$ 10.00	_____	_____
<b>MIRD: Radionuclide Data and Decay Schemes</b> , 1989 <i>Weber et al.</i>	1-076	\$35.00	\$ 50.00	_____	_____
<b>Nuclear Medicine: Self-Study Program I</b> , 1988 <i>Siegel &amp; Kirchner, eds</i> Residents and Technologists	1-079	\$45.00	\$ 60.00	_____	_____
<b>Proceedings</b> Brain SPECT Perfusion Imaging: Image Acquisition, Processing, Display and Interpretation—Proceedings of Workshop held at Brookhaven National Labs, 8–9 October, 1991, <i>Weber et al.</i>	1-069	\$90.00	\$115.00	_____	_____
<b>Pamphlets</b> <b>Guidelines for Patients Receiving Radiolodine Treatment</b> (minimum order 25 copies) plus \$2.50 postage and shipping	1-084	.30¢/copy		_____	_____
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<b>Clinical Computers in Nuclear Medicine</b> , 1992, <i>Rowell, ed.</i>	3-150	\$35.00	\$ 50.00	_____	_____
<b>Computers in Nuclear Medicine</b> , 1992, <i>Lee</i>	3-146	\$30.00	\$ 45.00	_____	_____
<b>Quality Assurance Resource Manual for Nuclear Medicine</b> , 1990 <i>Gilbert et al.</i>	3-148	\$18.00	\$ 25.00	_____	_____
<b>Review of Nuclear Medicine Technology</b> , 1992, <i>Stevens</i>	3-074	\$30.00	\$ 45.00	_____	_____
<b>SPECT: A Primer</b> , 2nd ed, 1990, <i>English &amp; Brown</i>	3-046	\$20.00	\$ 25.00	_____	_____
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Item		Due Date
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Scientific Exhibits	Contact SNM, Dept. of Meetings	1/6/93
Registration Form	Contact SNM, Dept. of Meetings	5/7/93
Housing Form	Contact SNM, Dept. of Meetings	5/14/93

## DON'T FORGET THE MID-WINTER MEETING IN ATLANTA, GEORGIA

**TITLE:**  
Desktop Computing in Nuclear Medicine

**DATE:**  
February 8-9, 1993

**LOCATION:**  
Atlanta Airport Hilton, Atlanta, GA

**SPONSOR:**  
The Computer and Instrumentation Council

## THE SOCIETY OF NUCLEAR MEDICINE MID-WINTER MEETING

**Title:** Desktop Computing in Nuclear Medicine

**Location:** Atlanta Airport Hilton, Atlanta, GA

**Date:** Monday-Tuesday, February 8-9, 1993

**Sponsor:** The Computer and Instrumentation Council of  
The Society of Nuclear Medicine

**Seminar Notes:** Registration includes a luncheon on Monday,  
February 8th, with a guest speaker. There are a limited amount of  
lunches available so please register early.

THE FEE	Before 12/18	On/After 12/18
<b>Physicians/Scientists</b>		
Members	\$175.00	\$220.00
Nonmembers	205.00	250.00
<b>Technologists</b>		
Members	80.00	110.00
Nonmembers	110.00	140.00
<b>Students</b>	70.00	70.00

ALL PRE-REGISTRATIONS MUST BE RECEIVED BY JANUARY 15, 1993

### COMPUTER AND INSTRUMENTATION: DESKTOP COMPUTING IN NUCLEAR MEDICINE

Atlanta Airport Hilton, Atlanta, GA • Monday, February 8 — Tuesday, February 9, 1993

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Our service personnel respond to most repairs within 24 hours to meet the urgent needs of all our customers.

### ***AccuSync Products***

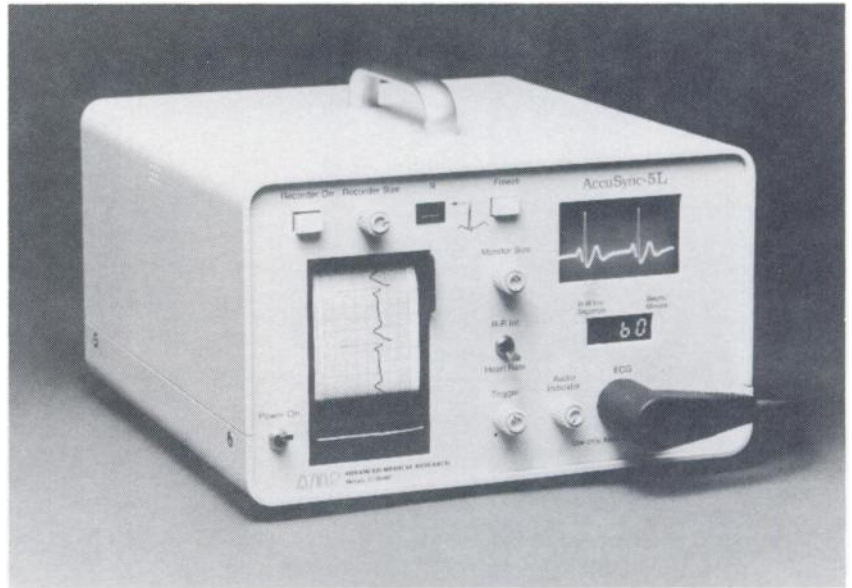
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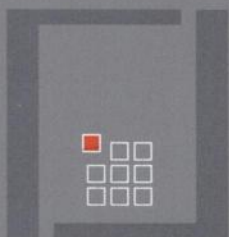
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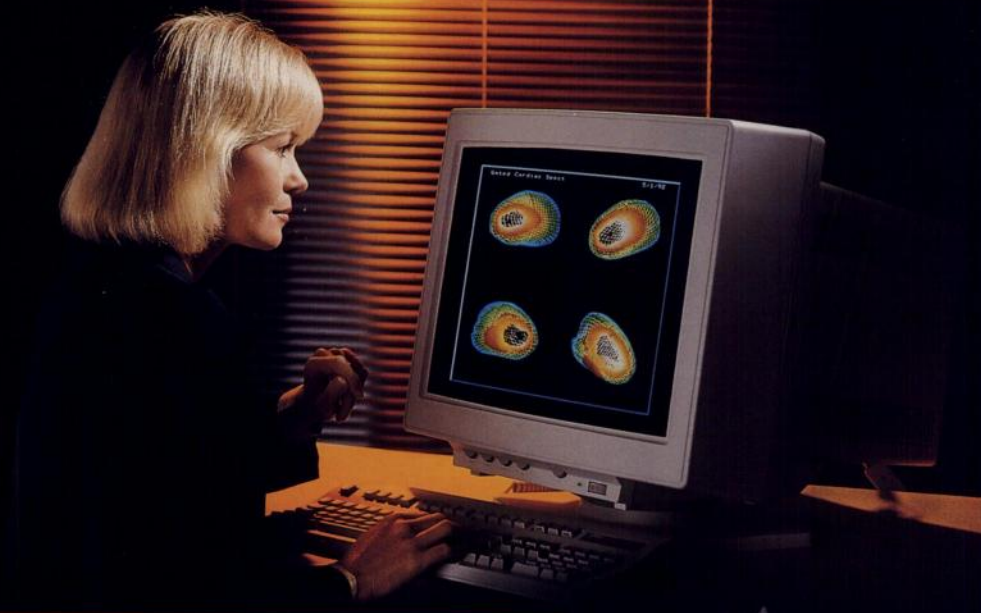
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# Computers in Nuclear Medicine: A Practical Approach

Kai Lee, PhD

Computers have become an indispensable tool in nuclear medicine. This is the book for those who wish to acquire a basic understanding of how computers work and the processing techniques used to obtain diagnostic information from radionuclide images. The text gives a thorough description of the hardware components of a nuclear medicine computer system and explains the principles behind many common image processing techniques. The following topics are discussed in detail:

- Functions and components of a computer system
- Mass storage devices
- Input and output devices
- Computer software
- Nuclear medicine image acquisition methods
- Methods of qualitative image analysis
- Quantitative image analysis
- Nuclear cardiology
- Quantitative data analysis
- Single-photon emission computed tomography
- Selecting a computer for nuclear medicine

The book is illustrated throughout to help the reader conceptualize the topics as they are discussed.

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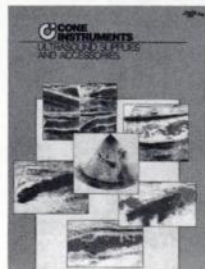
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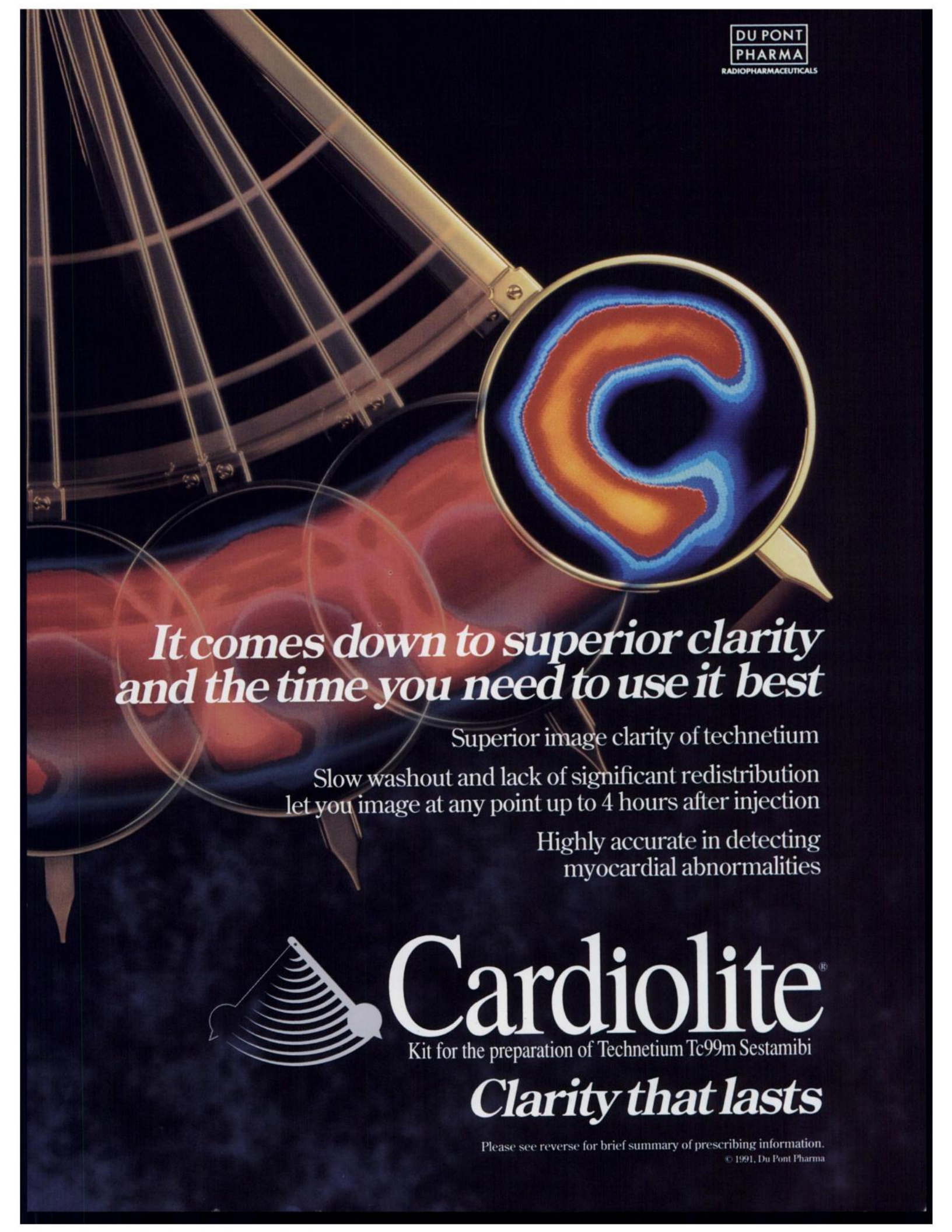
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**Cardiolite<sup>®</sup>**

Kit for the preparation of Technetium Tc99m Sestamibi

*Clarity that lasts*

Please see reverse for brief summary of prescribing information.

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CARDIOLITE scans (SPECT) from a 62-year-old male with three prior myocardial infarctions (LFOV camera equipped with a high-resolution collimator, 64 x 64 matrix, 180° arc RAO to LPO, 64 projections, 25 s/projection).



# Cardiolite®

Kit for the preparation of Technetium Tc99m Sestamibi

## Clarity that lasts

Please see reverse for feature and benefit highlights.

### Brief Summary

## Cardiolite® Kit for the preparation of Technetium Tc99m Sestamibi

### F O R D I A G N O S T I C U S E

**DESCRIPTION:** Each 5 mL vial contains a sterile, non-pyrogenic, lyophilized mixture of:

Tetrakis (2-methoxy isobutyl isonitrile) Copper (I) tetrafluoroborate - 1.0 mg  
Sodium Citrate Dihydrate - 2.6 mg  
L-Cysteine Hydrochloride Monohydrate - 1.0 mg  
Mannitol - 20 mg  
Stannous Chloride, Dihydrate, minimum (SnCl<sub>2</sub>•2H<sub>2</sub>O) - 0.025 mg  
Stannous Chloride, Dihydrate, (SnCl<sub>2</sub>•2H<sub>2</sub>O) - 0.075 mg  
Tin Chloride (Stannous and Stannic) Dihydrate, maximum (as SnCl<sub>2</sub>•2H<sub>2</sub>O) - 0.086 mg

Prior to lyophilization the pH is 5.3 to 5.9. The contents of the vial are lyophilized and stored under nitrogen.

This drug is administered by intravenous injection for diagnostic use after reconstitution with sterile, non-pyrogenic, oxidant-free Sodium Pertechnetate Tc99m Injection. The pH of the reconstituted product is 5.5 (5.0-6.0). No bacteriostatic preservative is present.

The precise structure of the technetium complex is Tc99m[MIBI]<sub>3</sub><sup>+</sup> where MIBI is 2-methoxy isobutyl isonitrile.

**INDICATIONS AND USAGE:** CARDIOLITE®, Kit for the preparation of Technetium Tc99m Sestamibi, is a myocardial perfusion agent that is useful in distinguishing normal from abnormal myocardium, and in the localization of the abnormality, in patients with suspected myocardial infarction. It is also useful in the evaluation of myocardial function using the first-pass technique.

**CONTRAINDICATIONS:** None known.

**WARNINGS:** In studying patients in whom cardiac disease is known or suspected, take care to assure continuous monitoring and treatment in accordance with safe, accepted clinical procedure.

### PRECAUTIONS:

#### GENERAL

The contents of the vial are intended only for use in the preparation of Technetium Tc99m Sestamibi and are not to be administered directly to the patient without first undergoing the preparative procedure (as outlined in the full prescribing information).

Radioactive drugs must be handled with care and appropriate safety measures should be used to minimize radiation exposure to clinical personnel. Also, care should be taken to minimize radiation exposure to the patients consistent with proper patient management.

Contents of the kit before preparation are not radioactive. However, after the Sodium Pertechnetate Tc99m Injection is added, adequate shielding of the final preparation must be maintained.

The components of the kit are sterile and non-pyrogenic. It is essential to follow directions carefully and to adhere to strict aseptic procedures during preparation.

Technetium Tc99m labeling reactions involved depend on maintaining the stannous ion in the reduced state. Hence, Sodium Pertechnetate Tc99m Injection containing oxidants should not be used.

Technetium Tc99m Sestamibi should not be used more than six hours after preparation.

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.

#### Carcinogenesis, Mutagenesis, Impairment of Fertility

In comparison with most other diagnostic technetium-labeled radiopharmaceuticals, the radiation dose to the ovaries (1.5 rads/30 mCi) is high. Minimal exposure (ALARA) is necessary in women of childbearing capability. (See Dosimetry subsection in DOSAGE AND ADMINISTRATION section.)

The active intermediate, Cu(MIBI)<sub>2</sub>BF<sub>4</sub>, was evaluated for genotoxic potential in a battery of five tests. No genotoxic activity was observed in the Ames, CHO/HPRT and sister chromatid exchange tests (all *in vitro*). At cytotoxic concentrations (≥ 20 µg/mL), an increase in cells with chromosome aberrations was observed in the *in vitro* human lymphocyte assay. Cu(MIBI)<sub>2</sub>BF<sub>4</sub> did not show genotoxic effects in the *in vivo* mouse micronucleus test at a dose which caused systemic and bone marrow toxicity (9 mg/kg, > 600 × maximal human dose).

#### Pregnancy Category C

Animal reproduction and teratogenicity studies have not been conducted with Technetium Tc99m Sestamibi. It is also not known whether Technetium Tc99m Sestamibi can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. There have been no studies in pregnant women. Technetium Tc99m Sestamibi should be given to a pregnant woman only if clearly needed.

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

#### Nursing Mothers

Technetium Tc99m Pertechnetate is excreted in human milk during lactation. It is not known whether Technetium Tc99m Sestamibi is excreted in human milk. Therefore, formula feedings should be substituted for breast feedings.

### Pediatric Use

Safety and effectiveness in children below the age of 18 have not been established.

**ADVERSE REACTIONS:** During clinical trials, approximately 8% of patients experienced a transient metallic or bitter taste immediately after the injection of Technetium Tc99m Sestamibi. A few cases of transient headache, flushing and non-itching rash have also been attributed to administration of the agent. One patient demonstrated signs and symptoms consistent with seizure, 8 to 10 minutes after administration of the drug. No other adverse reactions specifically attributable to the use of Technetium Tc99m Sestamibi have been reported.

**DOSAGE AND ADMINISTRATION:** The suggested dose range for I.V. administration to be employed in the average patient (70 kg) is:

370 to 1110 MBq (10 to 30 mCi)

The dose administered should be the lowest required to provide an adequate study consistent with ALARA principles (See also PRECAUTIONS).

When used in the diagnosis of myocardial infarction, imaging should be completed within four hours after administration (see also CLINICAL PHARMACOLOGY section in full prescribing information).

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

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

Store at room temperature (15 to 30°) before and after reconstitution.

**RADIATION DOSIMETRY:** Table 4 shows the radiation doses to organs and tissues of an average patient (70 kg) per 1110 MBq (30 mCi) of Technetium Tc99m Sestamibi injected intravenously.

Table 4. Radiation Absorbed Doses from Tc99m Sestamibi

Organ	Estimated Radiation Absorbed Dose			
	REST			
	2.0 hour void		4.8 hour void	
	rads/ 30 mCi	mGy/ 1110 MBq	rads/ 30 mCi	mGy/ 1110 MBq
Breasts	0.2	2.0	0.2	1.9
Gallbladder Wall	2.0	20.0	2.0	20.0
Small Intestine	3.0	30.0	3.0	30.0
Upper Large Intestine Wall	5.4	55.5	5.4	55.5
Lower Large Intestine Wall	3.9	40.0	4.2	41.1
Stomach Wall	0.6	6.1	0.6	5.8
Heart Wall	0.5	5.1	0.5	4.9
Kidneys	2.0	20.0	2.0	20.0
Liver	0.6	5.8	0.6	5.7
Lungs	0.3	2.8	0.3	2.7
Bone Surfaces	0.7	6.8	0.7	6.4
Thyroid	0.7	7.0	0.7	6.8
Ovaries	1.5	15.5	1.6	15.5
Testes	0.3	3.4	0.4	3.9
Red Marrow	0.5	5.1	0.5	5.0
Urinary Bladder Wall	2.0	20.0	4.2	41.1
Total Body	0.5	4.8	0.5	4.8

Stabin, M., July, 1990, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831, (615) 576-3449.

**HOW SUPPLIED:** Du Pont's CARDIOLITE®, Kit for the preparation of Technetium Tc99m Sestamibi is supplied as a 5 mL vial in kits of two (2), five (5) and thirty (30) vials, sterile and non-pyrogenic.

Prior to lyophilization the pH is between 5.3 and 5.9. The contents of the vials are lyophilized and stored under nitrogen. Store at room temperature (15 to 30°C) before and after reconstitution. Technetium Tc99m Sestamibi contains no preservatives. Included in each two (2) vial kit is one (1) package insert, five (5) vial shield labels and five (5) radiation warning labels. Included in each five (5) vial kit is one (1) package insert, five (5) vial shield labels and five (5) radiation warning labels. Included in each thirty (30) vial kit is one (1) package insert, thirty (30) vial shield labels and thirty (30) radiation warning labels.

The US Nuclear Regulatory Commission has approved this reagent kit for distribution to persons licensed to use byproduct material identified in 35.100 and 35.200 of 10 CFR Part 35, to persons who hold an equivalent license issued by an Agreement State, and, outside the United States, to persons authorized by the appropriate authority.

### Marketed by

The Du Pont Merck Pharmaceutical Company  
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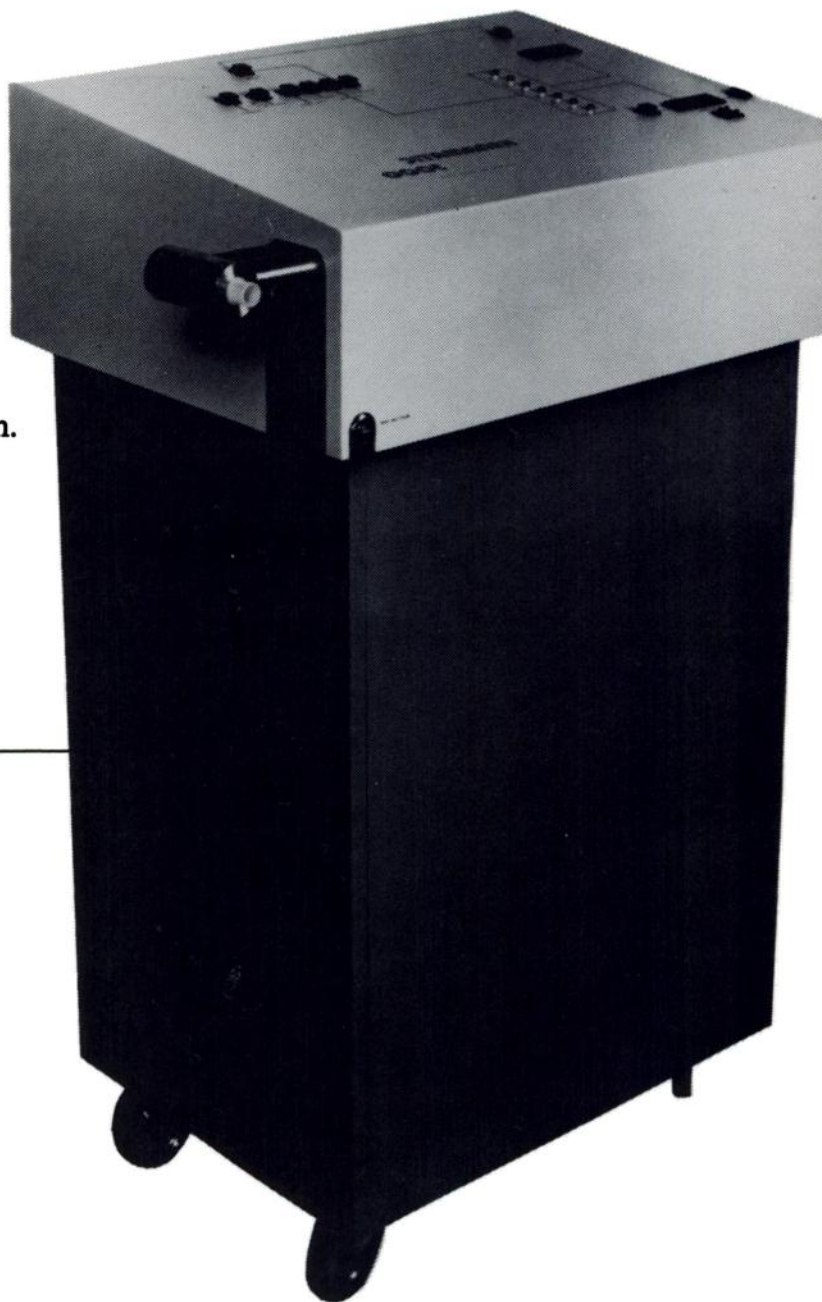
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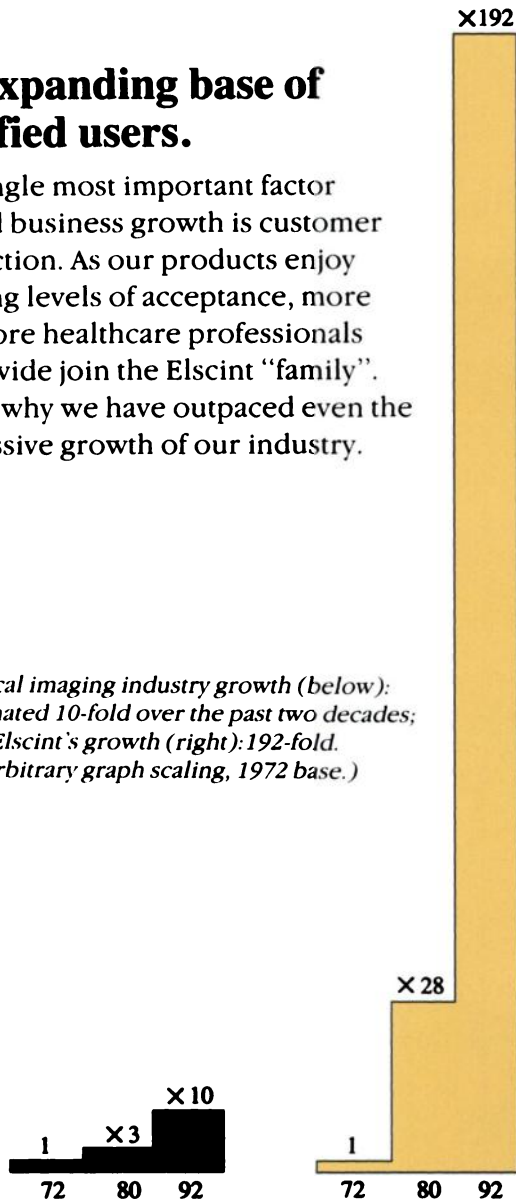
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# The answer Here are some

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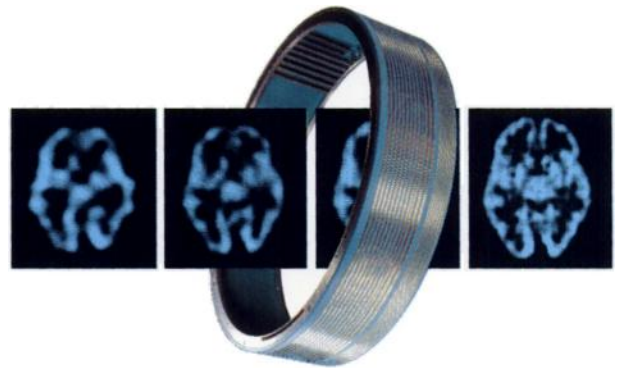
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(Arbitrary graph scaling, 1972 base.)*



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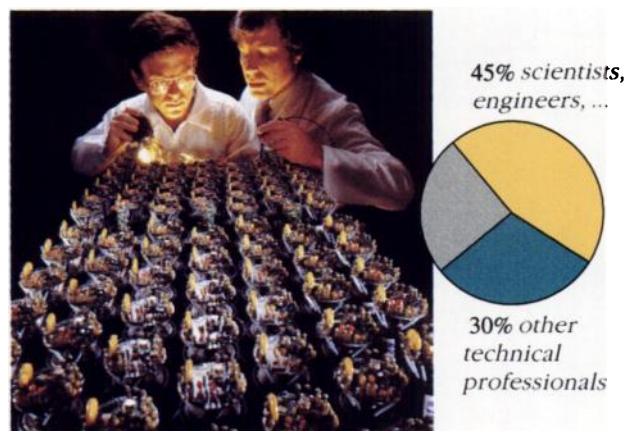
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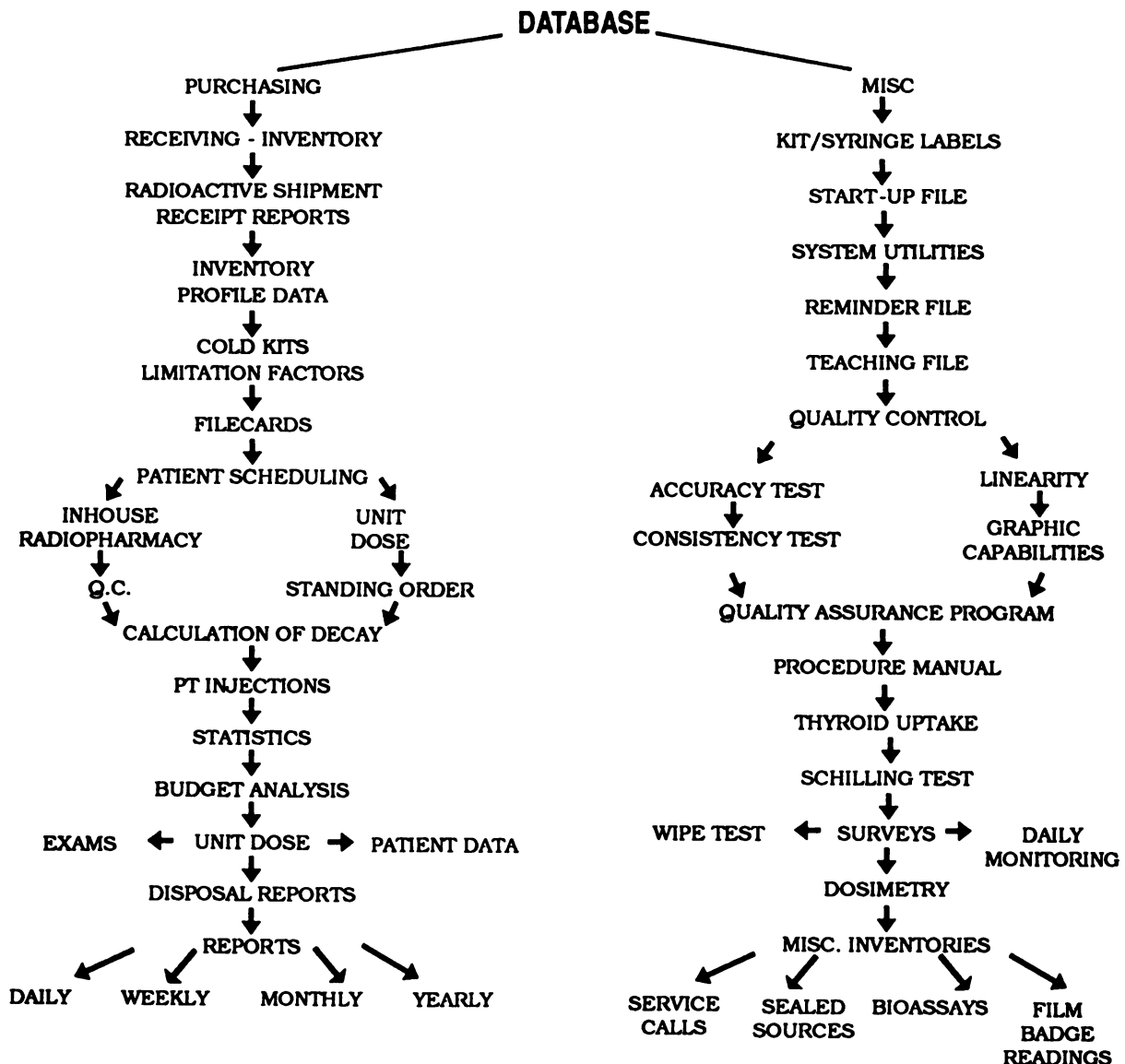
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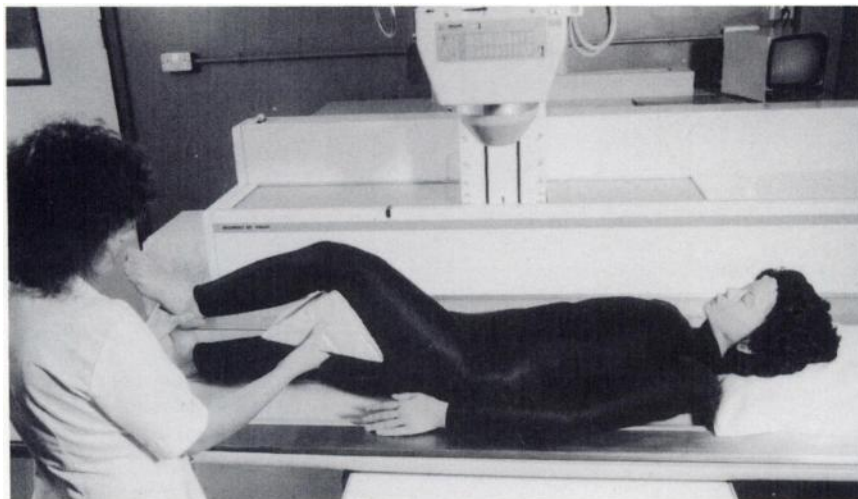
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## Training Manikin for Radiologists

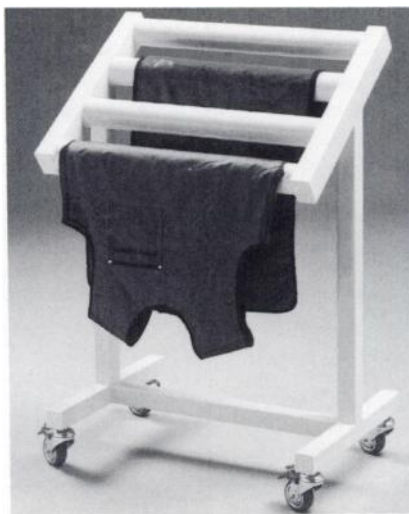


Armstrong Medical Industries introduces the x-ray Positioning Manikin, a life-size human figure containing a skeleton produced from a specially selected plastic. No metal parts have been used in the articulation of the skeleton, insuring "clear" x-rays. Although life-size, this manikin weighs only 20 pounds. The model provides diagnostic radiology students the opportunity to practice taking standard projections without discomfort or self-consciousness for themselves or others. Techniques are perfected without endangering any patients with repeated x-rays. The

realistic skin covering simulates the human surface while remaining totally radiolucent. Internal organs such as the heart, lungs, larynx, and kidneys are also constructed of radiolucent material. The x-ray Positioning Manikin is designed for use with positioning aids, an excellent feature which encourages students to follow all proper procedures and to avoid short cuts. **Armstrong Medical Industries Inc., 575 Knightsbridge Parkway, Lincolnshire, IL 60069. (708) 913-0101 or (800) 323-4220.**

## Mobile Apron Rack

Biodex Medical Systems, Inc. has developed a mobile apron rack that accommodates everyone's needs. It is strong and stable when wheels are locked, yet extremely easy to move when locks are released. The rack can be used either "free standing" anywhere in the room or be placed against a wall; it protrudes only 22". Heavy duty, locking 3" ball bearing casters make maneuvering or securing the unit very easy. The "H" frame base makes aprons easily accessible from the front or back of unit. The rack has four horizontal 2 1/2" diameter bars with an eight apron capacity with two aprons per bar. This design allows aprons to hang loosely, eliminating the creasing and cracking of aprons that damages lead rubber. **Biodex Medical Systems, P.O. Box 702, Shirley, NY 11967. (516) 924-9000.**



## High-Resolution Collimator

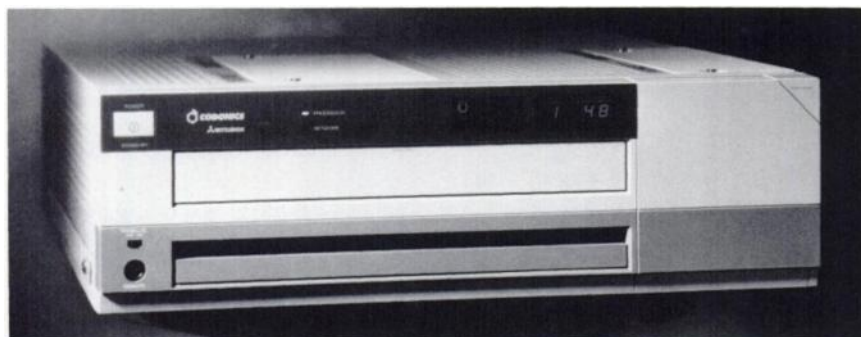
Siemens Medical Systems, Inc. introduces Cardiofocal Imaging System, a high-sensitivity, high-resolution collimator, reconstruction software, and calibration kit—all designed to decrease scan time, reduce patient stress and increase the amount of clinically viable diagnostic information obtained during cardiac SPECT studies. The collimator's focusing geometry allows magnification of the heart and viewing of the entire torso to prevent truncation artifacts. The system increases volume sensitivity over two times that obtained with the high-resolution parallel-hole collimator and has equivalent reconstruction resolution. Dedicated software includes acquisition, on-the-fly or post-acquisition reconstruction, and quality control programs. A full selection of filters and oblique cardiac view displays are used from the MicroDELTA software. With the use of an array processor, a 128x128 image reconstruction can be completed in just 12.5 minutes. Both 180° and 360° supine or prone acquisitions are available. The calibration kit includes an indicator for obtaining the distance from the collimator surface to the center of rotation (COR), called the radius of rotation (ROR); and a point source holder for pixel size and COR calibration. Cardiac imaging constitutes 26% of all nuclear procedures currently performed. Improved cardiac imaging through high-resolution gamma cameras will increase the number of patients who will be able to benefit from cardiac testing. **Siemens Medical Systems, Inc., Nuclear Division, 2501 North Barrington Road, Hoffman Estates, IL 60195. (708) 304-7252.**

## Student Bibliographic Software

The new Student Edition of Reference Manager from Research Information Systems, Inc., makes bibliographic management software affordable for students or other academics with limited funds. Available for MS-DOS and Macintosh computers, the Student Edition incorporates the full complement of Professional Edition features, including the management of reference databases and the automatic generation of bibliographies from manuscripts prepared with most leading word processors. The Student Edition is limited only in that each database can contain a maximum of 400 references. The Student Edition is available at college and university bookstores, and can be upgraded to the Professional Edition when the owner needs more database capacity. **Research Information Systems, Inc., 2355 Camino Vida Roble, Carlsbad, CA 92009. (619) 438-5526 or (800) 722-1227.**



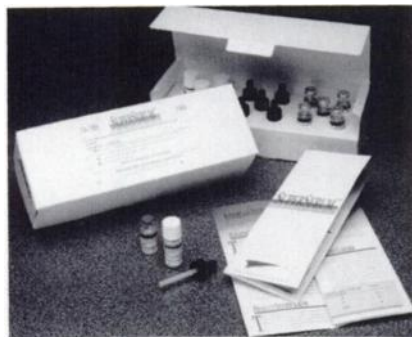
## Color Network Printer



Codonics, Inc. announces a new color network printer specifically designed to work with any homogeneous or heterogeneous TCP/IP based network. The Codonics NP-600 networks with virtually any computer and produces photographic quality images. Utilizing dye-sublimation technology with 16.7 million simultaneously printable colors, the NP-600 is capable of producing continuous tone format prints. The unit has a unique innovative network approach. It connects to existing Ethernet or Token Ring networks and uses the industry standard TCP/IP protocol to print files originating from DOS, UNIX, and DEC VMS systems. The unit recognizes the most popular image file formats such as TIFF, GIF, PCX, Macintosh PICT, SUN raster, Portable Pixmap (PPM), X11 Bitmap, and many more. No special software drivers are required on the host com-

puters. There is no need to specify the file format type. The unit automatically identifies the transmitted image's file format by recognizing header information embedded in every file. The printer performs all the necessary translations required to drive the print engine. It has two output formats (8.5" x 11" and 8.5" x 8") in both color and monochrome. The Photographic Network Printer can also produce transparencies for overhead projection. The built-in print spooler simplifies the printing process by accepting images simultaneously from multiple systems on the network. Throughput is improved by concurrently printing one file while performing the image processing on another. **Codonics, Inc., 17991 Englewood Drive, Middleburg Heights, OH 44130. (216) 243-1198 or (800) 444-1198.**

## Rapid Clotting Reagent



International Technidyne Corporation announces SuperSerum Reagent, which delivers high-quality serum samples from either native or heparinized blood samples. In two to five minutes, samples treated with SuperSerum are completely clotted and can be spun down to obtain serum for testing. The unique formulation promotes blood clotting without altering chemistry analyses. The ability to obtain serum samples quickly facilitates STAT test turnaround. Chemistry departments frequently receive heparinized blood samples from the operating rooms, dialysis, and critical care areas that require rapid turnaround of results. SuperSerum completely clots samples containing up to 5 units/ml of heparin in under five minutes. This eliminates delays and reduces downtime of automated instrumentation due to fibrin

strands. SuperSerum is packaged as five 0.5 ml vials per box. Two 40 microliter drops of reagent are required to clot a 7 ml whole blood sample. Calibrated droppers are provided in each kit. **International Technidyne Corporation, 23 Nevsky Street, Edison, NJ 08820. (908) 548-5700 or (800) 631-5945.**

## Multichannel Scaler

Turbo-MCS from EG&G ORTEC transforms your personal computer into a fast multichannel scaler, acquiring data at input rates up to 150 MHz with dwell times as short as 5 nsec. Turbo-MCS is more than a match for the toughest multichannel scaling applications and multiple-stop time-of-flight measurements. Applications include time-of-flight ion mass spectrometry, time-correlated single-photon counting, laser-induced chemical reactions, fluorescence lifetime measurements, Mössbauer experiments, neutron time-of-flight, and scanning x-ray diffraction. All instrument controls and spectra are viewed on the PC display for quick, point-and-click manipulation via a mouse. The Turbo-MCS hardware offers a wide range of channel dwell times, with no deadtime between channels. Scan lengths can be from 4 to 16,384 channels. A single-channel analyzer input permits selection of a narrow band of pulse amplitudes for counting. A separate input discriminator accepts signals of either

polarity for counting, with a threshold adjustable from -2.5 V to +2.5 V. Turbo-MCS also offers an optional ramp output with adjustable modes and voltages. **EG&G ORTEC, 100 Midland Road, Oak Ridge, TN 37831. (615) 482-4411.**

## MRI Seminar on Videotape

The Medical College of Wisconsin has made available the videotape version of "Seminars in MRI," presented by leading physicians in the field. This 24-hour home study course, which is approved for 24 hours CME Category 1 credits, examines the role of MRI in proven clinical applications for the diagnosis of injury or disease to the body and neurologic system. The entire conference, videotaped in Vail, CO is covered in this broadcast-quality videotape set. Lectures and demonstrations, as well as question and answer periods for the meeting are included. Topics covered during the study course include: MRI of the male and female pelvis; contrast agents and artifacts; orthopaedic MRI; and MRI techniques for the abdomen, spine, brain cranial nerves, prostate, scrotum, hip, shoulder, liver, as well as neck and chest. In all, more than 36 MRI-related topics are presented by faculty chaired by Thomas L. Lawson, MD. The tapes, which are produced by CME Conference Video, Inc., are time-coded and indexed for fast, easy reference to topics of particular interest. CME credit is obtained after successful completion of a self-examination which accompanies the course. **CME Conference Video, Inc., 1916 Old Cuthbert Road, B-13, Cherry Hill, NJ 08034. (609) 427-0838 or (800) 284-8433.**

## Slides by Mail

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## Positions Available

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**CHIEF, NUCLEAR MEDICINE SERVICE.** The Dayton Veterans Affairs Medical Center and Wright State University School of Medicine, Dayton, Ohio, seek a board-certified nuclear medicine physician for the position of chief, nuclear medicine service. The appointee must qualify for a faculty appointment that will be proposed at a level commensurate with training and experience. Candidates must have a record of administrative and leadership accomplishments, an M.D. or equivalent degree and be licensable to practice medicine in Ohio. Certification or eligibility for certification by American Board of Nuclear Medicine is required. Strong interest in related medical education and research is preferred. Salary is competitive and special pay enhancement is available.

Candidates should submit curriculum vitae and the names of three references to: Steven Cohen, MD, Chief of Staff, VA Medical Center, 4100 West Third Street, Dayton, OH 45428. All applicants received by October 31, 1992 will be considered; if the position is not filled therefrom, applications will be considered as received until the position is filled. The Dayton VA and Wright State University are equal opportunity and affirmative action employers.

**CHIEF, NUCLEAR MEDICINE SERVICE—VA Medical Center, Danville, IL.** Board Certified in Nuclear Medicine physician wanted for active nuclear medicine, radioassays, and ultrasound. Medical Center is affiliated with University of Illinois College of Medicine at Urbana/Champaign. Danville is located within driving distance to Chicago, IL; Indianapolis, IN; and St. Louis, MO and has excellent education facilities. Excellent federal benefits package. Please send curriculum vitae and/or contact Vishwas J. Apte, MD, Chief of Staff, 1900 East Main Street, Danville, IL 61832, (217) 442-8000, ext. 5077.

**NUCLEAR MEDICINE PHYSICIAN:** board certified, needed for active, sophisticated, community hospital, LA area, full or part time. Immediate opening. Send CV to Box 1002, The Society of Nuclear Medicine, 136 Madison Ave., NYC, NY 10016.

### Clinical Researcher

Position available in Nuclear Medicine for clinical researcher in brain SPECT imaging. Duties include supervision and analysis of SPECT brain images acquired through the use of radiopharmaceuticals, and the registration of functional and structural images. Interested candidates must be medical doctors with a minimum of two

years experience in Nuclear Medicine with research emphasis on brain SPECT imaging and quantitative methods. The position is located in Boston, Massachusetts and carries an annual salary of \$44,000. Please send duplicate resumes to: Job Order #21049, P.O. Box 8968, Boston, MA 02114.

### Radiologist

**NW Rocky Mountains: RADIOLOGIST-NUCLEAR MEDICINE.** Highly respected eight person group with strong subspecialty interests seeks highly qualified individual. Fellowship or academic experience preferred. Nuclear Medicine boarded or ABR special competency strongly desired. Position includes all aspects of nuclear medicine in a comprehensive advanced department. Practice is located in Boise, Idaho, which has many recreational and cultural amenities. Reply to Paul Traugber, MF or J. Tim Hall, MD, Department of Radiology, St. Alphonsus Regional Medical Center, 1055 No. Curtis Rd., Boise, ID 83706, (208) 378-2161.

**NUCLEAR RADIOLOGIST:** Radiologist with Nuclear Medicine/Nuclear Radiology Boards or eligibility, to join 14 member private practice radiology group in Seattle suburb. Send curriculum vitae to A. Azose, MD, Nuclear Medicine Department, 400 South 43rd Street, Renton, WA 98055.

### Pharmacist

**STAFF NUCLEAR PHARMACIST,** Temple, Texas. Scott and White, a major clinic and 353-bed teaching hospital located in central Texas is seeking a trained pharmacist to provide expanded nuclear pharmacy services. Candidates must be licensed or eligible for Texas licensure with one year of advanced radiopharmacy studies or two years of experience in a Nuclear Pharmacy. Position is responsible for the procurement, preparation, distribution and disposal of radioactive and related non-radioactive pharmaceuticals. Scott and White offer an excellent benefits package, highly competitive salaries, and relocation assistance. Qualified candidates send resume and salary history for position #2857 to: Grace Cole, Employment Manager, 2401 S. 31st. St., Temple, Texas 76708. EOE.

**NUCLEAR PHARMACIST/MANAGER:** The University of Oklahoma Health Sciences Center, College of Pharmacy has an immediate opening for a Manager of its Nuclear Pharmacy Services. Candidates must hold an advanced degree in Nuclear Pharmacy, have at least two years of management experience and must be eligible for licensure in the State of Oklahoma. Interested candidates should send a resume and names of three references to: Personnel Services, OUHSC, 1100 N. Lindsay, Okc, OK 73104. OUHSC is an EOE.

### Technologist

**NUCLEAR MEDICINE CHIEF TECHNOLOGIST.** The Division of Nuclear Medicine of the Department of Radiology at the Hospital of the University of Pennsylvania in Philadelphia is seeking a Chief Nuclear Medicine Technologist interested in clinical nuclear medicine, teaching, administration and research.

The Hospital of the University of Pennsylvania is a 700-bed major referral center. The Division of Nuclear Medicine is equipped with the state-of-the-art equipment, including dual head and triple head SPECT instruments. More than 11,000 procedures are performed annually which cover the entire spectrum, including some complicated and unusual studies. There is an accredited School of Nuclear Medicine Technology with eight students accepted annually. Ongoing research includes studies of

various central nervous systems disorders, coronary artery disease, pulmonary embolism, G.I. tract and cancer.

The applicant must be a Certified Technologist. The Hospital of the University of Pennsylvania is an Equal Opportunity Employer. Please contact Ann Rufo, Director of Personnel and Technical Services, Department of Radiology, Hospital of the University of Pennsylvania, (215) 662-6954.

**NUCLEAR MEDICINE TECHNOLOGIST.** The Mal-linckrodt Institute of Radiology at Washington University Medical Center, St. Louis, MO, has an immediate opening for a F/T registered or registry eligible technologist. Progressive department with excellent benefit package. Interested applicants call Kathleen Johnson-Brundsen at (314) 362-2808. Affirmative Action/Equal Opportunity Employer. M/F/H/V.

**NUCLEAR MEDICINE TECHNOLOGIST.** The University of Alabama Hospital, an 830-bed teaching hospital has an opening for a full-time technologist with CNMT or ARRT certification. The Division of Nuclear Medicine performs a full range of procedures including nuclear cardiology, SPECT, and digital image processing. Qualified applicant must be hard working, able to work independently, and have good communication skills. Competitive salary and benefits. Contact: Hospital Personnel, University of Alabama Hospital, UAB, Birmingham, AL 35233 (205) 934-4681. An Equal Opportunity Employer.

**NUCLEAR MEDICINE TECHNOLOGIST.** Hospital department currently doing 3,000 procedures per year is seeking qualified applicants. Qualified candidates must be registered (ARRT, NMTCB) or a registry eligible Nuclear Medicine Technologist. Competitive salary and benefits. Hospital is located in scenic Western Maryland, offering clean suburban living and numerous outdoor recreational activities. Apply to or call, Human Resource Dept., Sacred Heart Hospital, 900 Seton Drive, Cumberland, MD 21502. (301) 759-5065. Equal Opportunity Employer

**NUCLEAR MEDICINE TECHNOLOGIST.** Certified Technologist for evolving cardiology nuclear medicine department. The department is part of a private, 23 physician multi-specialty group located in Greensboro, North Carolina. Responsibilities would include the administration of isotopes, performing imaging functions, ensuring adherence to QA and NRC guidelines, and performing treadmill protocols. Preferred candidate would have experience using the latest in SPECT technology. The position will work closely with two nuclear cardiologists as part of a 10 cardiologists division. No call schedule due to office based practice. Working hours coincide with physicians's office schedule. Unique opportunity for an exceptional individual to help develop a nuclear cardiology laboratory. Competitive salary and excellent benefits package. If interested, please send confidential resume to: Robert Rosso, Administrator, Drs. LeBauer, Weintraub, Brodie, Patterson & Associates, P.A., 520 N. Elam Avenue, Greensboro, North Carolina 27403

**NUCLEAR MEDICINE TECHNOLOGIST** positions available nationwide. Confidential searches. All fees employer-paid. Dunhill of Bel Air, P.O. Box 267, Bel Air, MD 21014; (800) 753-6693; Fax: (410) 836-0953; EOE.

## Positions Wanted

ABNM certified university trained physician with radiological background seeks full/part time position. Reply to Box 1001. The Society of Nuclear Medicine, 136 Madison Ave., New York, NY 10016

The Education and Research Foundation will fund free subscriptions to *The Journal of Nuclear Medicine* for a limited number of institutions around the world that meet the following criteria:

1. They are located in an underdeveloped country.
2. They provide active training and research in nuclear medicine.
3. They are unable to subscribe to the *Journal* for financial reasons.

Letters of inquiry should be addressed to: Abass Alavi, MD, Division of Nuclear Medicine, Dept. of Radiology, Hospital of the University of Pennsylvania, 3400 Spruce Street, 118 Donner Building, Philadelphia, Pennsylvania 19104-4283

# UNIVERSITY OF KUWAIT

## Health Sciences Centre Faculty of Allied Health Sciences and Nursing DEPARTMENT OF RADIOLOGIC SCIENCES ACADEMIC STAFF POSITIONS

The Department conducts a 4-year degree program in Radiologic Science and requires staff with qualifications in **radiography or medical physics**. Previous teaching experience is desirable. The Department has been extensively re-equipped and there are excellent opportunities for research and continuing clinical involvement.

### Salary

Monthly salary within the following scales

#### Professor

KD 1070-1230 (8 annual increments)

#### Associate Professor

KD 875-1035 (8 annual increments)

#### Assistant Professor

KD 680-840 (8 annual increments)

#### Senior Lecturer

KD 670-820 (10 annual increments)

#### Lecturer

KD 545-695 (10 annual increments)

KD 1 = US \$3.60 and UK £2 approx.

There is no income tax in Kuwait, and currency is transferable without restriction.

### Other benefits

1. In addition, for teaching staff who have an active part in the Ministry of Public Health Program, there is a monthly supplement (Lecturer KD 100; Senior Lecturer KD 125; Assistant Professor KD 200; Associate Professor KD 250; Professor KD 300) for 10 months a year paid by the Ministry.
2. An attractive package of additional benefits includes free furnished accommodation, 60 days paid summer leave and 10 days mid-year break for teaching staff, round-trip air tickets, end-of-service gratuity, and free medical care in Kuwait government hospitals.
3. Professors, Associate Professors and Assistant Professors also receive a generous baggage and freight allowance and education allowances for up to three children, and may attend one approved conference per year. A social allowance of KD 65-87 after deductions is also payable.
4. Senior Lecturers and Lecturers may attend an approved conference every 2 years, with presentation.

### Applications

Applications in duplicate, including full curriculum vitae, personal details, comprehensive publication list, two recent passport photographs, and the names and addresses of three referees, should be sent to:

**The Dean, Faculty of Allied Health Sciences and Nursing  
Kuwait University Health Science Centre  
P.O. Box 31470  
90805 Sulaibikhat, Kuwait**

***Closing date for applications 15th December, 1992. Late applications may be considered***



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Amid these surprising surroundings, you'll also find Munroe Regional Medical Center. Our 323-bed facility is currently undergoing a \$26 million expansion that includes the Radiology Department. We are seeking a Florida licensed or eligible **Nuclear Med Tech** to perform nuclear medicine procedures and computer processing of heart studies. Candidates must be ARRT, CNMTB or eligible. This excellent opportunity offers full-time scheduling Monday-Friday from 11:00am to 7:30pm.

If you are searching for a far-from-typical setting, come to Munroe Regional Medical Center. We offer an attractive salary/benefits package, relocation and free housing, and more. For details, call JoAnn Bien, Allied Health Recruiter, (904) 351-7273 COLLECT or direct your resume to: **MUNROE REGIONAL MEDICAL CENTER, P.O. Box 6000, Ocala, FL 34478-6000.** Equal Opportunity Employer. A Smoke-Free & Drug-Free Workplace.



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By bringing together the intellect of a diverse workforce, The DuPont Merck Radiopharmaceutical Division has created an environment rich with the energy of varied talents, ideas and imagination - where innovative and intelligent thinking flourishes. We are continuing our efforts to improve patient diagnosis through quality products and services that expand the advantages of radiopharmaceuticals

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We are seeking several

motivated self-starters to sell radiopharmaceuticals to hospitals, clinics and radiopharmacies at locations throughout the U.S. Primary responsibility will be to serve and maintain existing accounts and cultivate new business as well as develop an overall sales plan. BA/BS degree required. Candidates must be strongly self-motivated, innovative and able to work independently with minimal guidance. Effective verbal and written communication skills and strong organizational abilities are musts. Experience in Nuclear Medicine technology is required, with a special focus toward Nuclear Cardiology. Prior sales experience helpful but not necessary.

## Nuclear Cardiology Specialists

We have several

challenging technical positions for qualified individuals to work in close support of our outstanding Sales organization, providing a high level of educational and technical support to customers for our Nuclear Cardiology product line. A strong and extensive background in state-of-the-art Nuclear Cardiology is essential. Excellent written and verbal communication skills are required. Experience with I.V. Persantine® and CARDIOLITE® preferred.

We offer a competitive compensation package and a full range of benefits. Qualified applicants should send or fax a letter/resume, with salary history, to: Human Resources Dept.-JNM., The DuPont Merck Pharmaceutical Company, 331 Treble Cove Rd., N. Billerica, MA 01862. Fax# (508) 671-0012. An Equal Opportunity Employer, M/F/DV.



I.V. Persantine and CARDIOLITE are registered trademarks of DuPont Radiopharmaceuticals.

# OPPORTUNITIES IN NUCLEAR MEDICINE

In the challenging and stimulating environment of our 623-bed teaching hospital in a university setting, you can demonstrate your skills and reach your career goals in one of the following positions:

## TECHNICAL MANAGER

In this position you will assist in planning, organizing and evaluating the activities and services of the department; oversee employee's management, technical, quality assurance and educational programs; investigate technical and patient service problems; and assist in preparation of annual budget. Qualified candidate will be a graduate of an A.M.A. approved program in Nuclear Medicine Technology, certified and registered; have an active license with the Illinois Dept. of Nuclear Safety; and possess a minimum of 3-5 years supervisory experience in the field. Preferred are experience in both general nuclear medicine and nuclear cardiology and a BS degree.

## CLINICAL PHYSICIST

In this position you will apply physical principles and theories to nuclear instrumentation and provide computer programming support, direction and functional support for the division's instrumentation Quality Assurance Program. Additionally, you will participate in the academic educational programs for the Division. Qualified candidate will possess a Ph.D. in Physics; two years experience in the application of physical principles and computer programming in a specific high level language (e.g. Fortran) or a Masters Degree in Physics, plus four years experience in the application of physical principles and computer programming in a specific high level language.

Both positions require individuals with good communication skills and the willingness to update knowledge and skills through memberships, associations, meetings, seminars and journals. Please FAX or forward resume indicating position desired to:



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## NUCLEAR PHYSICIAN



The Department of Medicine,  
McMaster University, and the  
Hamilton Civic Hospitals invite

inquiries and applications for a position of Nuclear Physician in a 846-bed teaching hospital and full-time university appointment.

The Service of Nuclear Medicine is fully integrated into the Hamilton-wide Regional Program in nuclear Medicine with a complement of nuclear physicians at both the Hamilton General Division and the Henderson General Division—the two hospital divisions of the Hamilton Civic Hospitals.

Candidates should be eligible for certification in Nuclear Medicine of the Royal College of Physicians and Surgeons of Canada. Experience in internal medicine or cardiology is an asset. The successful candidate will have a full-time academic appointment and be expected to participate in teaching at both the undergraduate and postgraduate levels. Research is strongly encouraged especially in Oncology and Thromboembolism.

Duties will be primarily at the Henderson General Division, the site of the Hamilton Centre of the Ontario Cancer Treatment & Research Foundation. This announcement is directed to Canadian citizens and permanent residents.

Enquiries or applications, with curriculum vitae, should be submitted to: **Dr. C.N. Best, Head, Service of Nuclear Medicine, Hamilton Civic Hospitals, 237 Barton Street East, Hamilton, Ontario, Canada L8L 2X2.**

## NUCLEAR MEDICINE APPLICATION SPECIALIST

Trionix, a leading manufacturer of advanced nuclear medicine systems, has excellent career opportunities for

Regional Applications Specialists nationwide. The ideal candidate will be an experienced Nuclear Medicine Technologist willing to travel (50-70%). Duties include performing field applications, customer phone support, sales demonstrations.

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## **DU PONT PHARMA CARDIOVASCULAR NUCLEAR MEDICINE RESEARCH GRANTS**

### **CALL FOR PROPOSALS**

The Society of Nuclear Medicine Awards Committee announces that two grants for \$25,000 each are available for July 1, 1993.

The objectives of these grants are to: (1) Encourage physicians to enter the field of Cardiovascular Nuclear Medicine, and (2) Support high quality nuclear cardiology clinical research.

Funds can be used to support the research and/or salary of the investigator. Preference will be given to young physicians, or those new to the field of Cardiovascular Nuclear Medicine. Awards will be announced at the Annual SNM Business Meeting, June, 1993.

Please send for more information and an application to:

The Society of Nuclear Medicine  
SNM Awards Committee  
136 Madison Avenue  
New York, NY 10016

**Deadline: January 8, 1993**

### **Research and Development Fellowship**

## **MALLINCKRODT FELLOWSHIP**

Mallinckrodt, Inc. has announced an Annual Fellowship of \$30,000 for a physician fellow active in nuclear medicine research and/or development. The award is to further a research or development project, and applicants are asked to submit their curriculum vitae, a detailed account of their research project including prior accomplishments on the project, and future plans. Deadline for this year's award is January 8, 1993. Requested information, along with at least two letters supporting the application, should be forwarded to: William J. MacIntyre, PhD, The Society of Nuclear Medicine, 136 Madison Ave., New York, NY 10016-6760. The recipient will be announced at the Annual Meeting of The Society of Nuclear Medicine.

### **THE SNM/MEDI-PHYSICS AWARD FOR INNOVATION IN THERAPY WITH UNSEALED SOURCES**

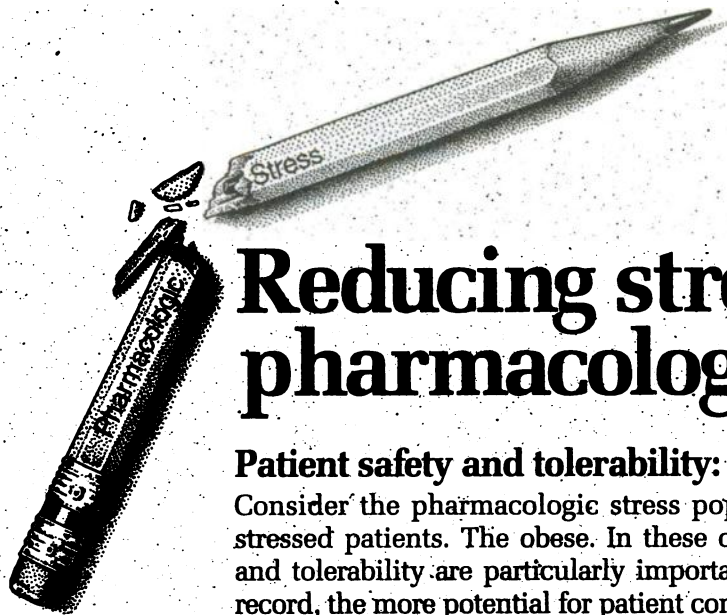
The Society of Nuclear Medicine Awards Committee announces that a grant for \$30,000 is available.

The funds will be used to support research for therapy by the investigator chosen.

To request more information and an application please contact:

The Society of Nuclear Medicine  
SNM Awards Committee  
136 Madison Avenue  
New York, NY 10016

**Deadline date: January 15, 1993**



# Reducing stress in pharmacologic stress testing

## Patient safety and tolerability: the stress factors

Consider the pharmacologic stress population. Old patients. Frail patients. Submaximally stressed patients. The obese. In these often vulnerable or compromised patient types, safety and tolerability are particularly important. The more certain an agent's safety and tolerability record, the more potential for patient comfort and physician confidence. Use of a pharmacologic stress agent with a proven record can help reduce physician anxiety...or emotional "stress."

## A safety record that spans more than a decade

I.V. Persantine® (dipyridamole USP) has a safety profile established in over a decade of clinical testing.<sup>1,2\*</sup> Just as in exercise stress testing, there is always some risk of serious adverse events.<sup>†</sup> However, based on information from over 400,000 patient studies, I.V. Persantine is generally well tolerated.<sup>2†</sup> Such an established record in pharmacologic stress creates a standard by which to compare other agents.

## Generally well-tolerated stress begins with smooth, gradual onset of effect

Pharmacologic stress with I.V. Persantine takes effect with a 4-minute infusion, followed within 5 minutes with the appropriate thallium dose. This allows most patients to become accustomed to the "stressing" process gradually. Additionally, the time is short enough to allow an expedient, relatively uncomplicated imaging procedure.

## Convenient, easy-to-follow protocol minimizes procedural frustrations

The procedural logistics of pharmacologic stress can be another source of emotional stress to the physician or staff. With I.V. Persantine, there's a flexible, easy-to-follow protocol. No infusion pump needed. No need for site-specific injection. And no extra I.V. line for the imaging agent.

## When you stress more assured, you can rest more assured

Based on its proven safety profile and generally well-tolerated effect, I.V. Persantine sets a solid foundation to help reduce the emotional stress that can sometimes be associated with administering pharmacologic stress.

*Stress the facts in pharmacologic stress...call the Du Pont Pharma Nuclear Cardiology Hotline at 1-800-343-7851 for further information and discussion about the proven safety profile of I.V. Persantine.*

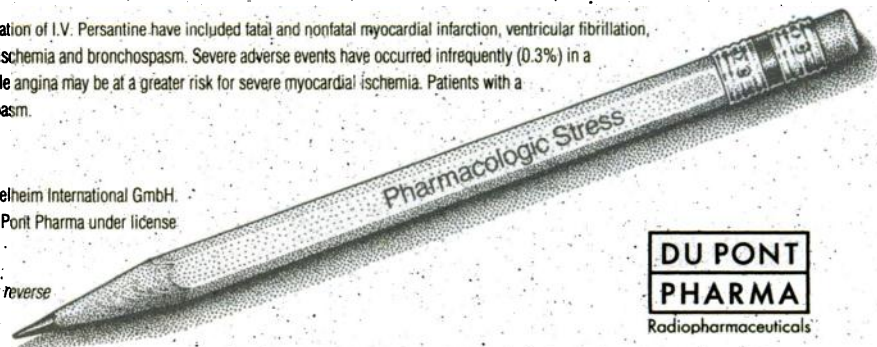
\*Serious adverse reactions associated with the administration of I.V. Persantine have included fatal and nonfatal myocardial infarction, ventricular fibrillation, symptomatic ventricular tachycardia, transient cerebral ischemia and bronchospasm. Severe adverse events have occurred infrequently (0.3%) in a study of 3911 patients. Patients with a history of unstable angina may be at a greater risk for severe myocardial ischemia. Patients with a history of asthma may be at a greater risk for bronchospasm.

† Du Pont Merck Post-Marketing Safety Surveillance.

Persantine® is a registered trademark of Boehringer Ingelheim International GmbH.  
I.V. Persantine® is manufactured and distributed by Du Pont Pharma under license from Boehringer Ingelheim Pharmaceuticals, Inc.

Please see brief summary of prescribing information on reverse for contraindications, warnings, and adverse reactions.

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PHARMA**  
Radiopharmaceuticals



# I.V. PERSANTINE® (dipyridamole USP) Injection 5mg/ml

**References:** 1. Ranhosky A, Kempthorne-Rawson J, et al. *Circulation*. 1990;81:1205-1209. 2. Data on file, Boehringer Ingelheim Pharmaceuticals, Inc., Ridgefield, Conn.

## I.V. PERSANTINE® (dipyridamole USP) Injection 5mg/ml

### Brief Summary of Prescribing Information

#### CONTRAINDICATIONS

Hypersensitivity to dipyridamole.

**WARNINGS** Serious adverse reactions associated with the administration of intravenous Persantine® (dipyridamole USP) have included fatal and non-fatal myocardial infarction, ventricular fibrillation, symptomatic ventricular tachycardia, transient cerebral ischemia, and bronchospasm.

In a study of 3911 patients given intravenous Persantine as an adjunct to thallium myocardial perfusion imaging, two types of serious adverse events were reported: 1) four cases of myocardial infarction (0.1%), two fatal (0.05%); and two non-fatal (0.05%); and 2) six cases of severe bronchospasm (0.2%). Although the incidence of these serious adverse events was small (0.3%, 10 of 3911), the potential clinical information to be gained through use of intravenous Persantine thallium imaging must be weighed against the risk to the patient. Patients with a history of unstable angina may be at a greater risk for severe myocardial ischemia. Patients with a history of asthma may be at a greater risk for bronchospasm during IV Persantine use.

When thallium myocardial perfusion imaging is performed with intravenous Persantine, parenteral aminophylline should be readily available for relieving adverse events such as bronchospasm or chest pain. Vital signs should be monitored during, and for 10-15 minutes following, the intravenous infusion of Persantine and an electrocardiographic tracing should be obtained using at least one chest lead. Should severe chest pain or bronchospasm occur, parenteral aminophylline may be administered by slow intravenous injection (50-100 mg over 30-60 seconds) in doses ranging from 50 to 250 mg. In the case of severe hypotension, the patient should be placed in a supine position with the head tilted down if necessary, before administration of parenteral aminophylline. If 250 mg of aminophylline does not relieve chest pain symptoms within a few minutes, sublingual nitroglycerin may be administered. If chest pain continues despite use of aminophylline and nitroglycerin, the possibility of myocardial infarction should be considered. If the clinical condition of a patient with an adverse event permits a one minute delay in the administration of parenteral aminophylline, thallium-201 may be injected and allowed to circulate for one minute before the injection of aminophylline. This will allow initial thallium perfusion imaging to be performed before reversal of the pharmacologic effects of Persantine on the coronary circulation.

#### PRECAUTIONS

See WARNINGS.

**Drug Interactions** Oral maintenance theophylline may abolish the coronary vasodilatation induced by intravenous Persantine® (dipyridamole USP) administration. This could lead to a false negative thallium imaging result.

**Carcinogenesis, Mutagenesis, Impairment of Fertility** In studies in which dipyridamole was administered in the feed at doses of up to 75 mg/kg/day (9.4 times\* the maximum recommended daily human oral dose) in mice (up to 128 weeks in males and up to 142 weeks in females) and rats (up to 111 weeks in males and females), there was no evidence of drug related carcinogenesis. Mutagenicity tests of dipyridamole with bacterial and mammalian cell systems were negative. There was no evidence of impaired fertility when dipyridamole was administered to male and female rats at oral doses up to 500 mg/kg/day (63 times\* the maximum recommended daily human oral dose). A significant reduction in number of corpora lutea with consequent reduction in implantations and live fetuses was, however, observed at 1250 mg/kg/day.

\*Calculation based on assumed body weight of 50 kg.

**Pregnancy Category B** Reproduction studies performed in mice and rats at daily oral doses of up to 125 mg/kg (15.6 times\* the maximum recommended daily human oral dose) and in rabbits at daily oral doses of up to 20 mg/kg (2.5 times\* the maximum recommended daily human oral dose) have revealed no evidence of impaired embryonic development due to dipyridamole. There are, however, no adequate and well controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human responses, this drug should be used during pregnancy only if clearly needed.

\*Calculation based on assumed body weight of 50 kg.

**Nursing Mothers** Dipyridamole is excreted in human milk.

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

**ADVERSE REACTIONS** Adverse reaction information concerning intravenous Persantine® (dipyridamole USP) is derived from a study of 3911 patients in which intravenous Persantine was used as an adjunct to thallium myocardial perfusion imaging and from spontaneous reports of adverse reactions and the published literature.

Serious adverse events (fatal and non-fatal myocardial infarction, severe ventricular arrhythmias, and serious CNS abnormalities) are described previously (see WARNINGS).

In the study of 3911 patients, the most frequent adverse reactions were: chest pain/angina pectoris (19.7%), electrocardiographic changes (most commonly ST-T changes) (15.9%), headache (12.2%), and dizziness (11.8%).

Adverse reactions occurring in greater than 1% of the patients in the study are shown in the following table:

	Incidence (%) of Drug-Related Adverse Events
Chest Pain/Angina Pectoris	19.7
Headache	12.2
Dizziness	11.8
Electrocardiographic Abnormalities/ST-T changes	15.9
Electrocardiographic Abnormalities/Extrasystoles	5.2
Hypotension	4.6
Nausea	4.6
Flushing	3.4
Electrocardiographic Abnormalities/Tachycardia	3.2
Dyspnea	2.6
Pain Unspecified	2.6
Blood Pressure Lability	1.6
Hypertension	1.5
Paresthesia	1.3
Fatigue	1.2

Less common adverse reactions occurring in 1% or less of the patients within the study included:

**Cardiovascular System:** Electrocardiographic abnormalities unspecified (0.8%), arrhythmia unspecified (0.6%), palpitation (0.3%), ventricular tachycardia (0.2% see WARNINGS); bradycardia (0.2%), myocardial infarction (0.1% see WARNINGS), AV block (0.1%), syncope (0.1%), orthostatic hypotension (0.1%), atrial fibrillation (0.1%), supraventricular tachycardia (0.1%), ventricular arrhythmia unspecified (0.03% see WARNINGS); heart block unspecified (0.03%), cardiomyopathy (0.03%), edema (0.03%).

**Central and Peripheral Nervous System:** Hypoesthesia (0.5%), hypertonia (0.3%), nervousness/anxiety (0.2%), tremor (0.1%), abnormal coordination (0.03%), somnolence (0.03%), dysphonia (0.03%), migraine (0.03%), vertigo (0.03%).

**Gastrointestinal System:** Dyspepsia (1.0%), dry mouth (0.8%), abdominal pain (0.7%), flatulence (0.6%), vomiting (0.4%), eructation (0.1%), dysphagia (0.03%), tenesmus (0.03%), appetite increased (0.03%).

**Respiratory System:** Pharyngitis (0.3%), bronchospasm (0.2% see WARNINGS), hyperventilation (0.1%), rhinitis (0.1%), coughing (0.03%), pleural pain (0.03%).

**Other:** Myalgia (0.9%), back pain (0.6%), injection site reaction unspecified (0.4%), diaphoresis (0.4%), asthenia (0.3%), malaise (0.3%), arthralgia (0.3%), injection site pain (0.1%), rigor (0.1%), earache (0.1%), tinnitus (0.1%), vision abnormalities unspecified (0.1%), dysgeusia (0.1%), thirst (0.03%), depersonalization (0.03%), eye pain (0.03%), renal pain (0.03%), perineal pain (0.03%), breast pain (0.03%), intermittent claudication (0.03%), leg cramping (0.03%).

**OVERDOSAGE** No cases of overdosage in humans have been reported. It is unlikely that overdosage will occur because of the nature of use (i.e., single intravenous administration in controlled settings). See WARNINGS.

**Caution** Federal law prohibits dispensing without prescription.



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# CALL FOR ABSTRACTS FOR SCIENTIFIC PAPERS AND SCIENTIFIC EXHIBITS

# 40

**The Society of  
Nuclear Medicine  
40th  
Annual Meeting  
Tuesday June 8-  
Friday, June 11,  
1993**

**Toronto  
Convention  
Center  
Toronto, Ontario,  
Canada**

The 1993 Scientific Program Committee, Scientific Exhibits Subcommittee, and the Scientific & Teaching Sessions Committee solicit the submission of abstracts from members and non-members of The Society of Nuclear Medicine for the 40th Annual Meeting in Toronto, Ontario, Canada. Accepted Scientific Paper and Scientific Exhibit abstracts be published in a special supplement to the May issue of *The Journal of Nuclear Medicine* and accepted Technologist Section abstracts will be published in the June issue of the *Journal of Nuclear Medicine Technology*. Original contributions on a variety of topics related to nuclear medicine will be considered, including:

- **Instrumentation and Data Analysis**
- **Radioassay**
- **Radiopharmaceutical Chemistry**
- **Dosimetry/Radiobiology**
- **Nuclear Magnetic Resonance Chemistry**
- **Clinical Science Applications:**
  - Bone/Joint
  - Cardiovascular (clinical and basic)
  - Endocrine
  - Gastroenterology
  - Neurology (clinical and basic)
  - Immunology (antibody)
  - Pediatrics
  - Pulmonary
  - Renal/Electrolyte/Hypertension
  - Hematology/Infectious Disease
  - Oncology (non-antibody)

Authors seeking publication for the full text of their papers are strongly encouraged to submit their work for immediate review to the *JNM*, and for the technologist section, to the *JNMT*.

**Deadline for receipt of abstracts for  
SCIENTIFIC PAPERS  
is Wednesday, January 6, 1993.**

**Deadline for receipt of abstracts for  
SCIENTIFIC EXHIBITS  
is Wednesday, January 6, 1993.**

There are two abstract forms for the annual meeting. The Scientific Paper abstract form can be obtained in the October 1992 *JNM*. The Scientific Exhibits abstract form is only available by calling or writing:

**The Society of Nuclear Medicine  
Att: Abstracts  
136 Madison Avenue  
New York, NY 10016-6760  
Tel: (212) 889-0717 • FAX: (212) 545-0221**

1S

# SPECT BRAIN IMAGING CLINICAL FELLOWSHIP

**Department of Radiology  
Section of Nuclear Medicine**



## BENEFIT:

This program is designed for nuclear medicine physicians, radiologists, technologists and referring physicians. It is intended to educate participants about the clinical utility of SPECT brain imaging with agents such as SPECTamine® and Ceretec®. Objectives include:

- Development of interpretation skills for brain images.
- Appreciation of clinical applications of SPECT brain imaging.
- Knowledge of image acquisition and reconstruction.
- Appreciation of factors that influence image quality.
- Knowledge of quality control techniques for SPECT.

## SPONSORSHIP:

This program is sponsored by the Medical College of Wisconsin.

## TUITION:

The tuition fee of \$650 includes the course syllabus, handouts, breaks, breakfasts, lunches, and other amenities involved in making this a pleasant learning experience. Maximum enrollments have been established. Cancellations prior to the course will be refunded, less a \$30 administrative fee.

## CREDIT:

The Medical College of Wisconsin is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians.

Accordingly, the Medical College of Wisconsin designates this continuing medical education activity as meeting the criteria for 13.00 hours in Category I toward the Physician's Recognition Award of the American Medical Association.

Nuclear Medicine Technologists who attend the SPECT Brain Imaging Clinical Fellowship are eligible for 1.0 VOICE credit.

Register me for the following dates: (Please indicate a second choice)

☐ September 14-15, 1992      ☐ November 9-10, 1992

I will need hotel reservations for \_\_\_\_\_ Sunday and Monday night/  
\_\_\_\_\_ only Monday night.

I will need a \_\_\_\_\_ single/ \_\_\_\_\_ double room.

A check in the amount of \$650 should accompany this registration form and be made payable to the Medical College of Wisconsin. Telephone registrations must be confirmed by check within 10 days.

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City/State/Zip \_\_\_\_\_

Office Phone (\_\_\_\_\_) \_\_\_\_\_

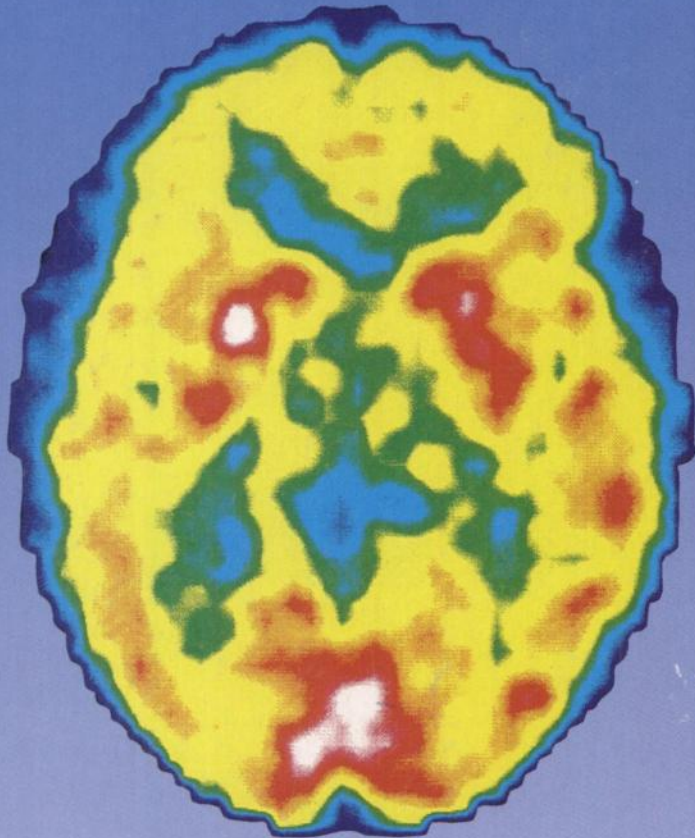
\_\_\_\_\_ work address      \_\_\_\_\_ home address

Registrations and payment should be sent to:

**LisaAnn Trembath  
SPECT Brain Imaging Fellowship Coordinator  
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# TOMOMATIC - dedicated brain SPECT manufactured by MEDIMATIC



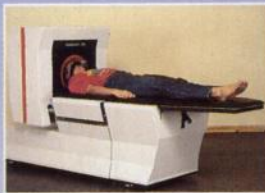
- \* Ability to visualize even a thought
- \* Dynamic repetitive four-min. quantitative flow recordings
- \* Ultra high sensitivity, allowing collimation to an accuracy of five mm

**TOMOMATIC - extremely competitive when compared to any other SPECT device in terms of price per unit of sensitivity. Call us for a quotation!**

Selection of 3 different models from the more than 40 current Tomomatic installations:



Tomomatic 564  
Dynamic SPECT



Tomomatic 232  
Mobile dynamic SPECT



Tomomatic 248  
Neonatal SPECT

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**medimatic**

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