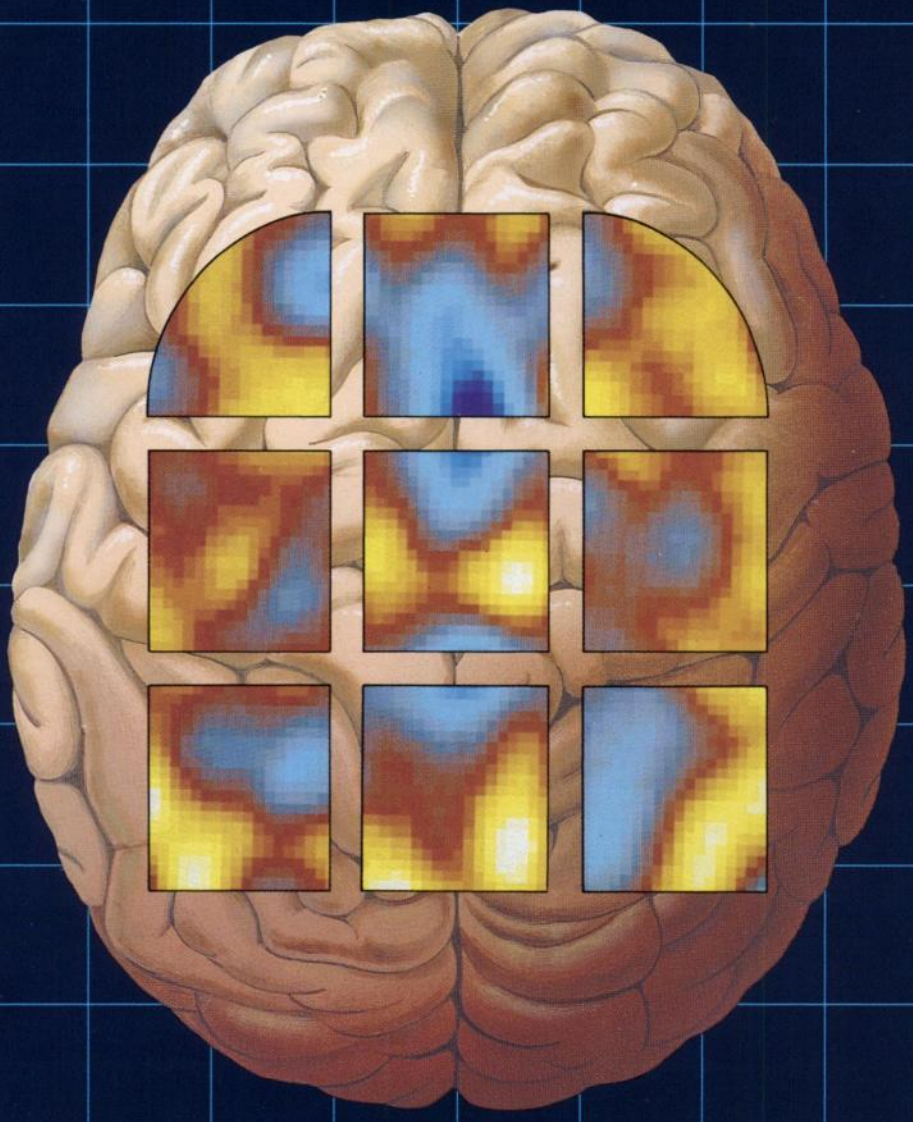
In the evaluation of stroke

SPECTamine®

Iofetamine HCl I 123 Injection

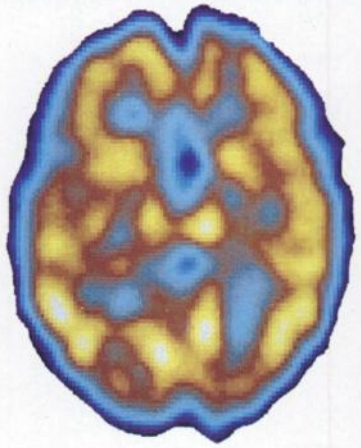
opens a window into the living brain



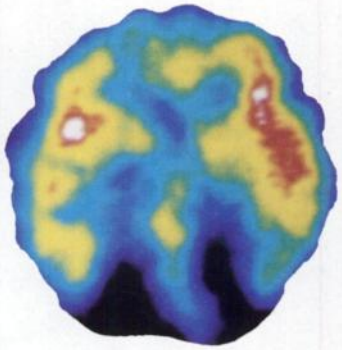
Please see adjacent page for brief summary of prescribing information.

SPECTamine®
Iofetamine HCl I 123 Injection

- A neurotransmitter analog crosses the intact blood-brain barrier
- Concentrates in metabolically active brain cells—predominantly in the gray matter
- Provides PET-like functional brain images at a fraction of the cost



Normal brain (top left) displays relatively symmetric SPECTamine uptake by metabolically active neurons.



SPECTamine study (bottom left) demonstrates bilaterally posterior cerebral artery infarction, confirming diagnosis.

Images courtesy of New England Deaconess Hospital, Boston, Mass. Images acquired with SME 810 dedicated head unit, Strichman Medical, Equipment, Inc., Medfield, Mass.

For more information contact your Medi-Physics Territory Manager, Roche Professional Service Center or call 1-800-451-7732.

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140 East Ridgewood Avenue
Paramus, NJ 07652

SPECTamine®
Iofetamine HCl I 123 Injection

For complete product information, consult package insert, a brief summary of which follows:

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 and is packaged in single dose vials. The radionuclidic composition at calibration time is not less than 98.0 percent I 123, not more than 1.9 percent I 125, and not more than 0.1 percent all others (I 126 and Te 121). The radionuclidic composition at the 12-hour expiration time is not less than 96.3 percent I 123, not more than 3.5 percent I 125, and not more than 0.2 percent all others.

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 (12 hours after calibration time) stated on the label.

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

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

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

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

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

Drug Interactions

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

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

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

Carcinogenesis, Mutagenesis, Impairment of Fertility

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

Pregnancy Category C

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

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

Nursing Mothers

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

Pediatric Use

Safety and effectiveness in children have not been established.

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

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

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

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.

Single use vials are packaged in individual lead shields with plastic outer container.

THIS PRODUCT INFORMATION ISSUED AUGUST 1988

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

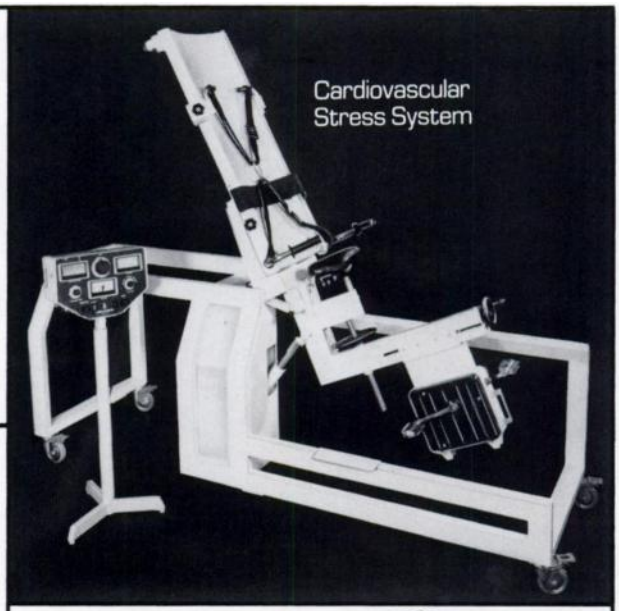
Circle Reader Service No. 1

NUCLEAR MEDICINE
Instruments and Accessories

■ FOR QUALITY ASSURANCE ■ PATIENT PROCEDURES
■ RADIATION MONITORING AND PROTECTION

New! COMP-U-CAL II ™
Computerized Radioisotope Calibrator
with Built-In Moly-Shield

TM, Victoreen, Inc.



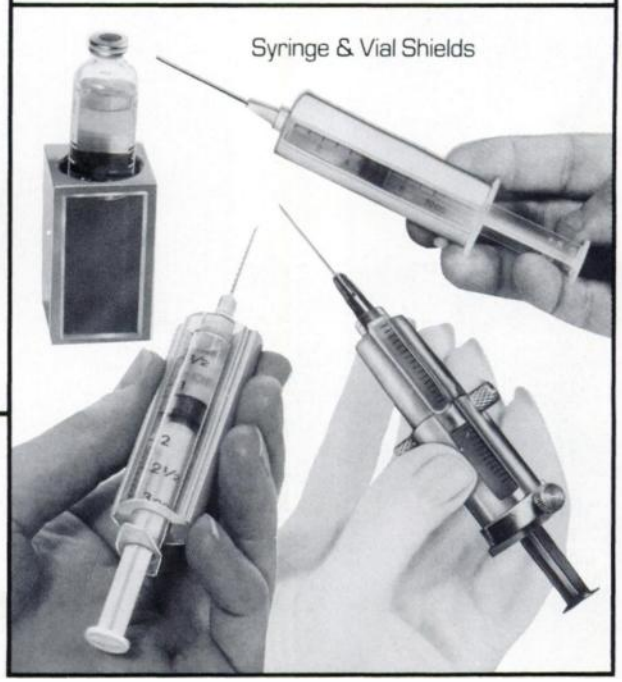
Cardiovascular
Stress System

Dynamic Cardiac Phantom

PET/SPECT
Phantom

Deluxe Wipe Test Counter

Multi-Purpose GM
Survey Meter



Syringe & Vial Shields

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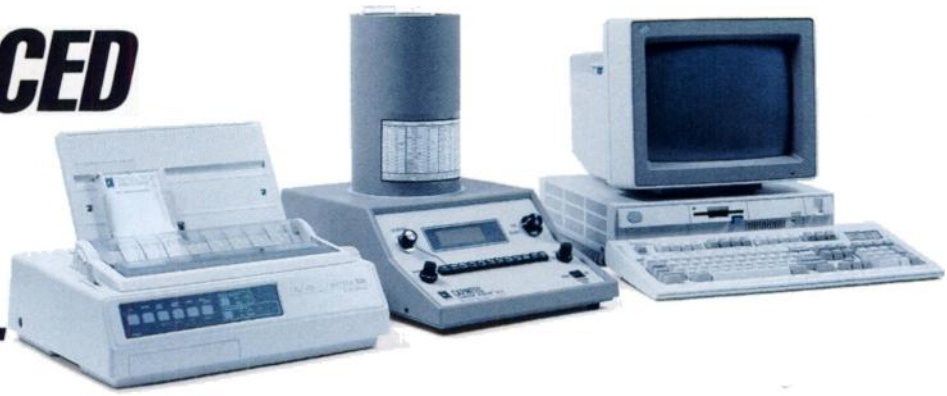
WITH TOMORROW'S TECHNOLOGY.

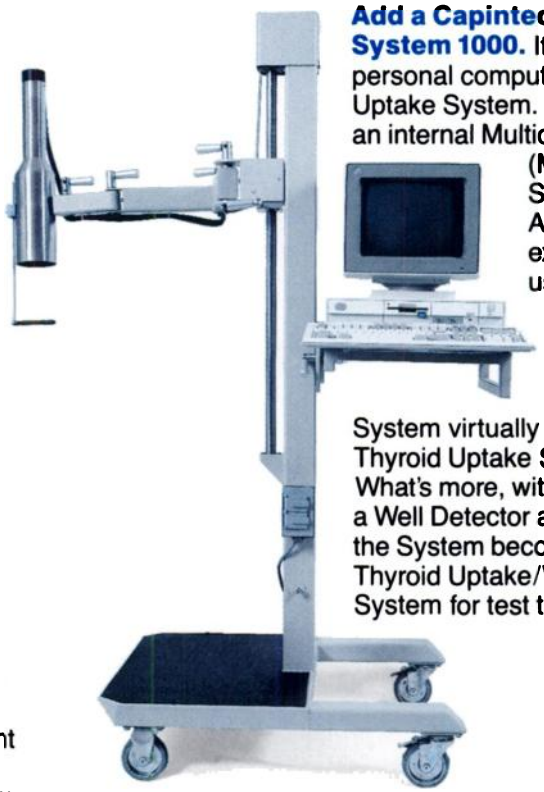
Start with CRC®-PC System. Everything from dose preparation to data analysis to patient scheduling is computerized in this dedicated system of dose calibration and patient management. Key to the CRC-PC System's outstanding performance capability is your choice of Capintec's most advanced family



of radioisotope calibrators. No matter which one you choose, the CRC-PC System will support you from the placement of the purchase order, all the way through to waste disposal.

Our unique Quick-On-Call capability allows you to bypass normal daily routines, and quickly access functions necessary to dose a patient even "after hours" or for emergency procedures.

Add new Capintec equipment as your needs dictate. Look for Capintec innovations in portable monitors for radiation exposure profiling and for contamination studies. In the area of wipe testing, look for a counter that is truly capable of generating statistically meaningful data.



Add a Capintec Thyroid Uptake System 1000. It's the world's first personal computer-based Thyroid Uptake System. The System has an internal Multichannel Analyzer (MCA)* and the Excel Software Package®. And together with the exceptionally easy-to-use application software, written under the Microsoft Windows Multiprogram Environment, the System virtually obsoletes all other Thyroid Uptake Systems. What's more, with the addition of a Well Detector and lead shield, the System becomes a combination Thyroid Uptake/Well Counting System for test tube and bulk samples.

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A totally integrated, modular system of outstanding product innovations and comprehensive department management capabilities.

Designed to do the job today...with an eye on tomorrow. The new Capintec CAPTURA System won't become obsolete the moment your department needs change...or expand, whether you purchase them separately, or integrate them as part of our new System. At the core of our System is the host IBM Personal System/2 Computer® with the latest 286 technology, and enough storage and flexibility to meet all of your nuclear medicine department needs.

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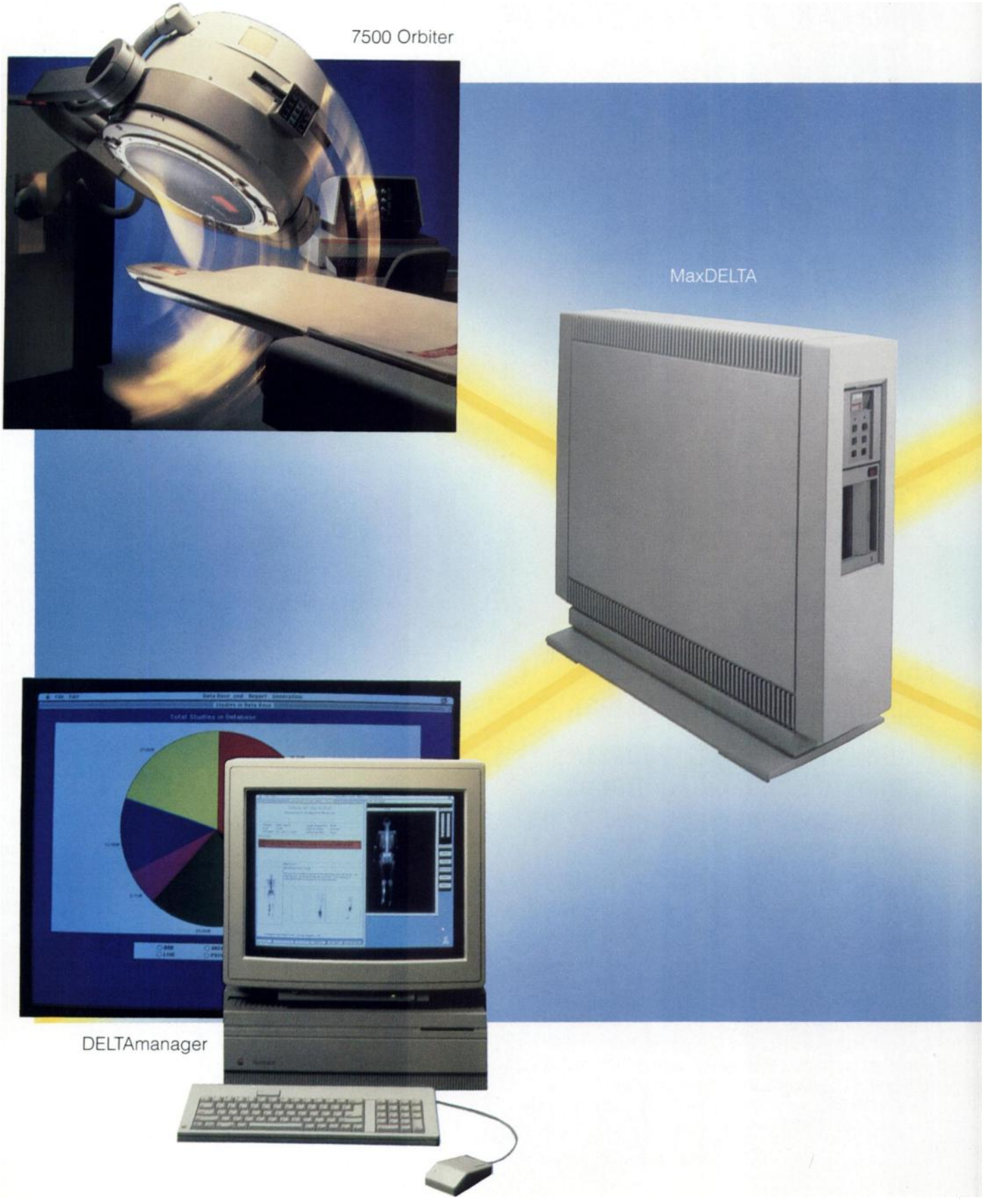
Circle Reader Service No. 11

SIEMENS



MicroDELTA

Introducing the Heart of the Nuclear Network!

MaxDELTA 1000

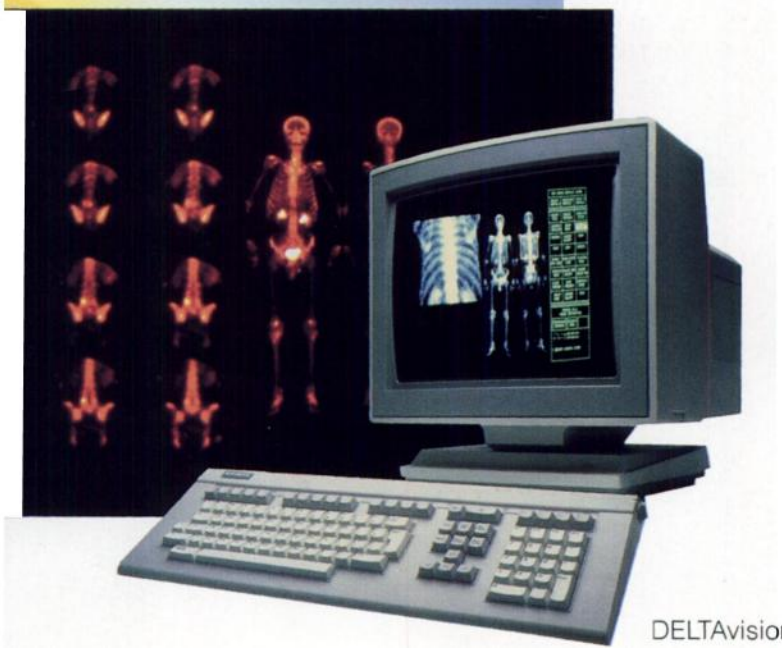
MaxDELTA 1000® is the latest high-speed, **32-bit** computer from Siemens. Configured with a stand-alone camera, or as an add-on to any existing system, MaxDELTA 1000 gives you powerful turnkey capability, and flexible expansion with instant connectivity to additional DELTA family computer products, such as MicroDELTA, DELTAvision, and DELTAmanager.

The pulse of the MaxDELTA 1000 is controlled by a new Operating program that sharpens your technical edge, assuring the highest staff productivity and best patient management, while providing you with the diagnostic confidence you expect from Siemens...world leader in nuclear medicine!

MaxDELTA 1000 Systems feature:

- High-speed, multi-task 32-bit MicroVAX II.®
- Simultaneous acquisition and processing, including SPECT.
- Ethernet expandability.
- Large storage capacity with 159 Mbyte Winchester Disk.
- System Manager display terminal.
- CLINIC, SPECT and Systems Manager software.

MaxDELTA 1000...the beat gets stronger!



DELTAvision

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Des Plaines, IL 60018
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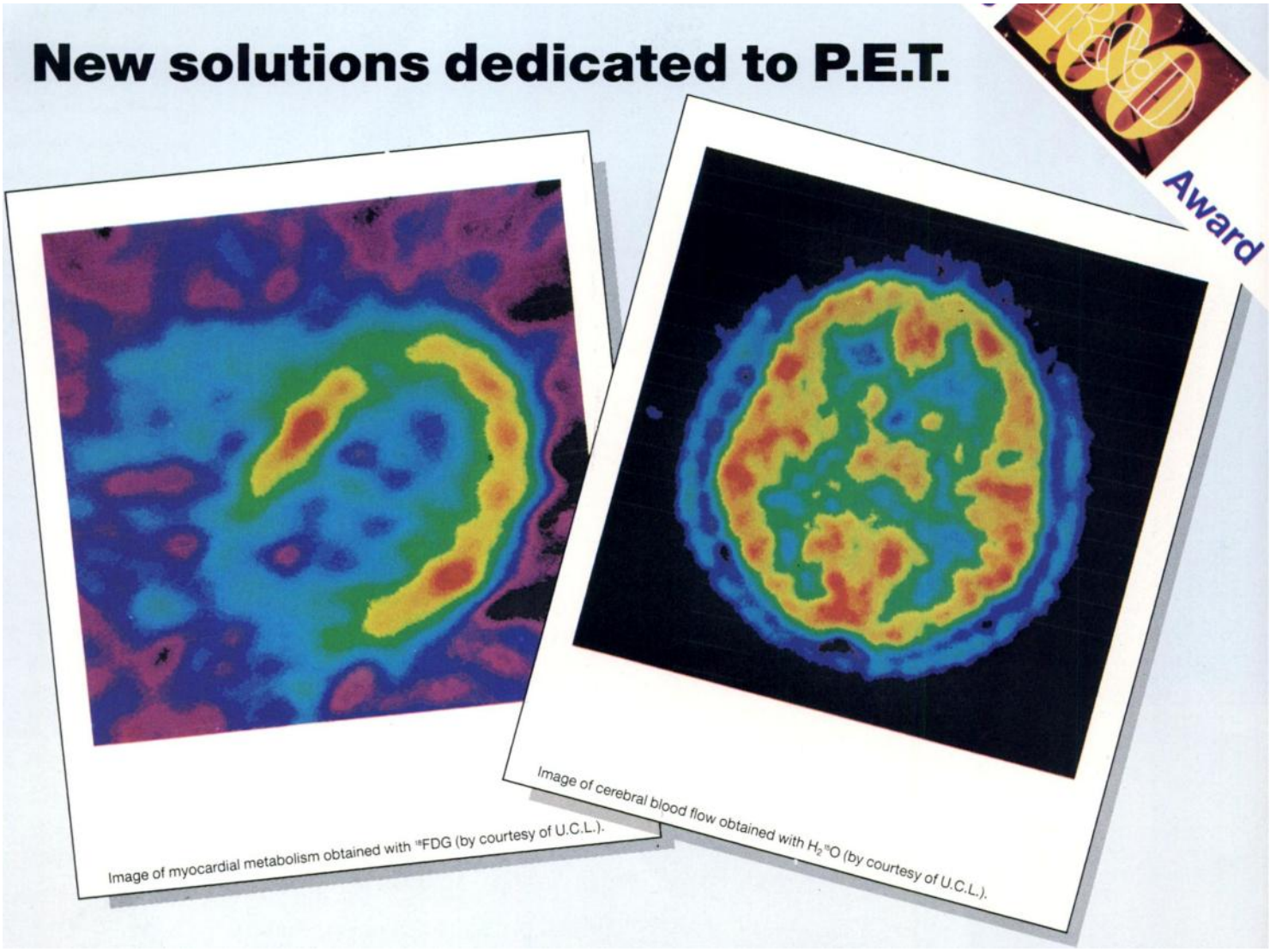
New solutions dedicated to P.E.T.



I.B.A.'s radioisotope production systems

☐ A must for your P.E.T. Center

I.B.A. is proud to introduce "CYCLONE 10/5" and "CYCLONE 3-D" for the production of your P.E.T. compounds.

I.B.A. systems are budget friendly, compact, self-shielded and so easy to use that you will quickly forget that a cyclotron is working for you somewhere in the building.

☐ A logical evolution

In 1988, I.B.A.'s "CYCLONE 30" monopolized the cyclotron market for single photon isotope production. Its innovative design and inherent simplicity gained unanimous acclaim from most world experts.

Our customers are prominent radiopharmaceutical companies in the U.S.A. and Japan, as well as leading hospitals and major national centers throughout the world.

Now your P.E.T. center also can benefit from I.B.A.'s "CYCLONE" revolutionary design.

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For the newest ideas in nuclear medicine, look to the oldest national nuclear pharmacy.

ou may be under-estimating the cost of your radiopharmaceuticals. By 100 percent.

If you estimate that it costs $10.00 to prepare a dose, think again. According to a recent independent study, it's more likely to be $20.00 when you add in the associated costs of compounding, quality control, record keeping, storage, waste disposal and ordering.

Cost is just one of the components of Syncor *value.* When you rely on Syncor, you also receive reliable delivery, QC documentation, 24-hour availability, regulatory support, management software, and much more.

Syncor value means providing our customers with the best service package we possibly can. And that is a benefit too valuable to ignore.

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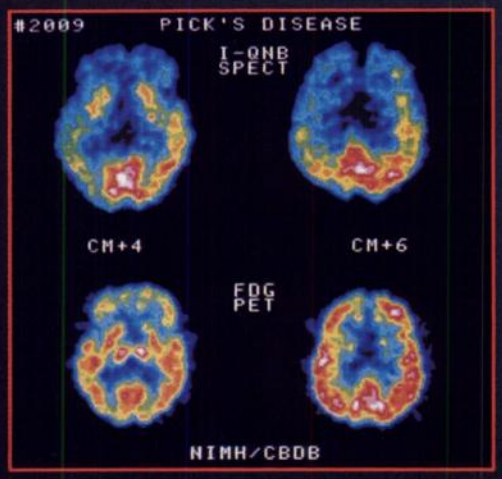
TOMOMATIC – the most sensitive brain-imager ever.

TOMOMATIC - the SPECT system that produced the "Image of the Year".



This is the "Image of the Year" selected by Dr. Henry N. Wagner, Jr. in the closing Scientific Meeting Highlights at the SNM's 36th Annual Meeting, St. Louis. The image was chosen from a paper by Dr. Daniel Weinberger and his colleagues from the National Institutes of Mental Health at the St. Elizabeths Hospital, Washington, D.C., bringing together all of the significant advances that have taken place this past year.

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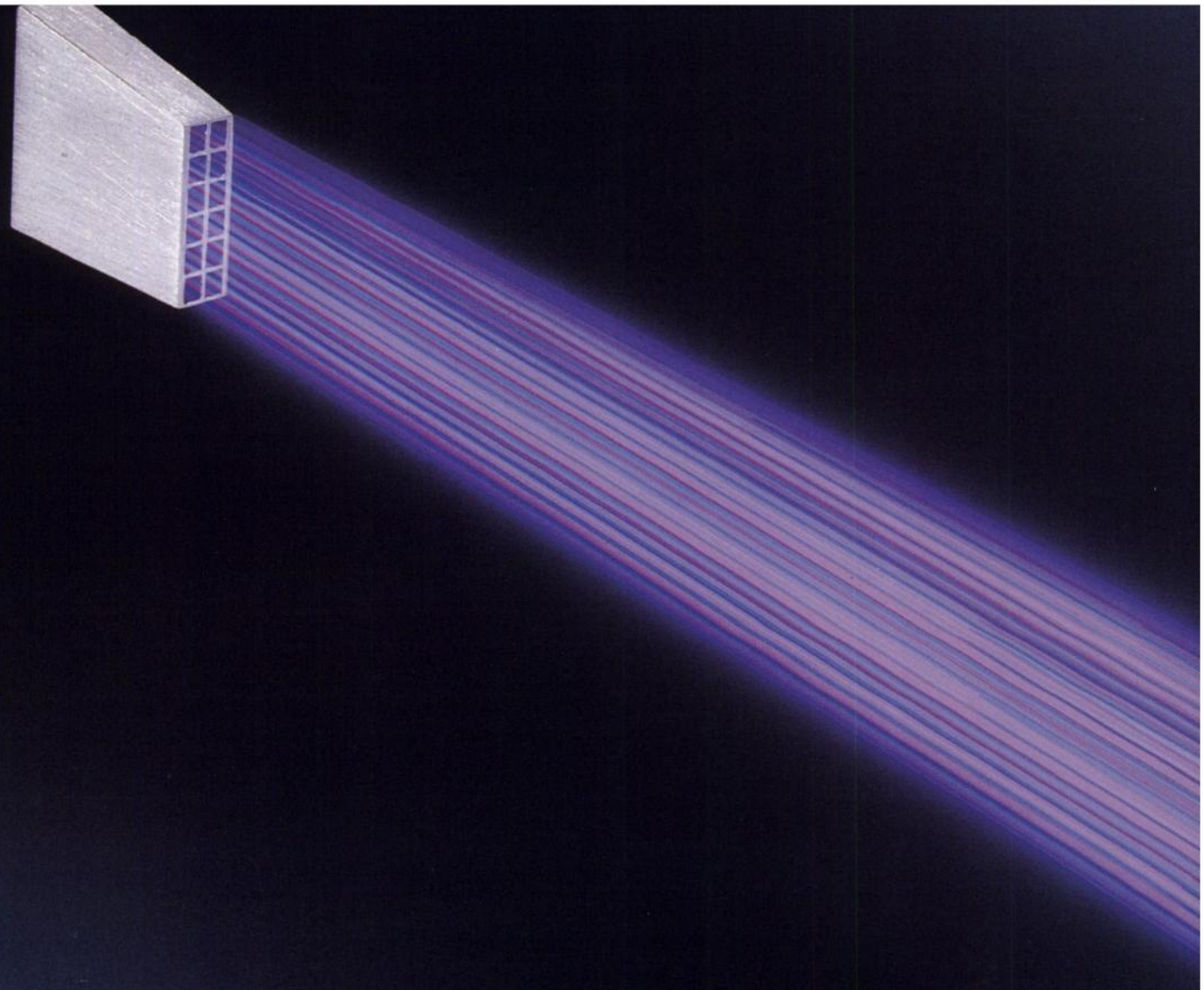
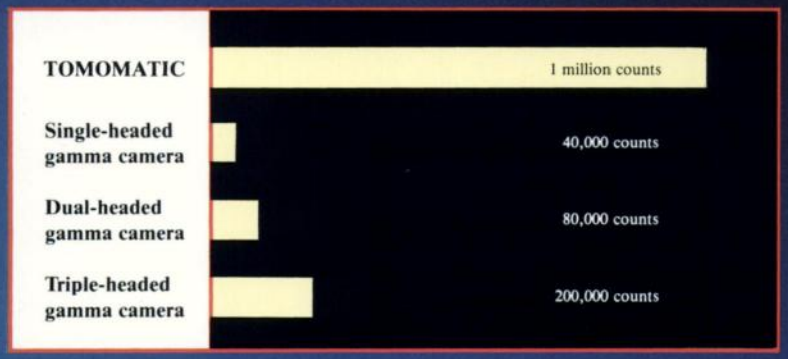
Leader in Brain SPECT



All TOMOMATIC multiple-slice brain-dedicated SPECT systems offer more sensitivity than any other multiple-head camera.

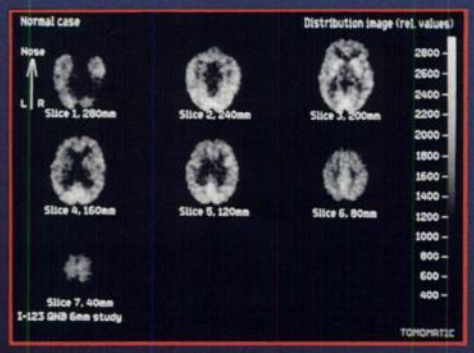
Brain-slice sensitivity where spatial resolution and thickness are equal in all systems



Even a triad of gamma cameras can't compete with the sensitivity of a TOMOMATIC!

TOMOMATIC – the ultimate in brain-dedicated SPECT.

"... last year, for the first time, I could not tell by looking at the images whether they were PET images or SPECT images and that is certainly even more true today" said Dr. Henry N. Wagner, Jr. at the closing Scientific Meeting Highlights of the SNM's Annual Meeting, St. Louis, 1989.



This image shows an I-123 QNB receptor study performed on a TOMOMATIC 564 using a collimator with a nominal 6 mm resolution, reflecting the high quality images obtainable with a TOMOMATIC brain-dedicated SPECT system.
Courtesy of NIMH, Washington, D.C.

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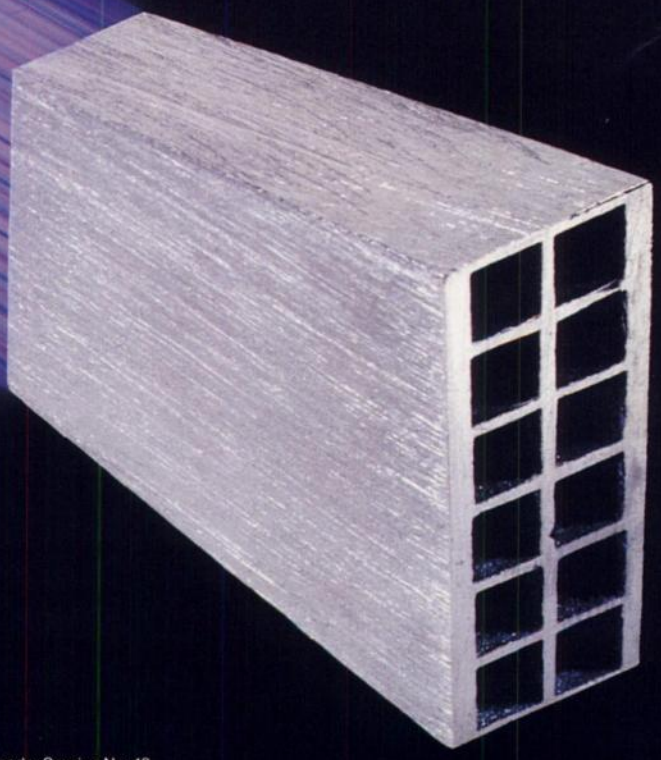
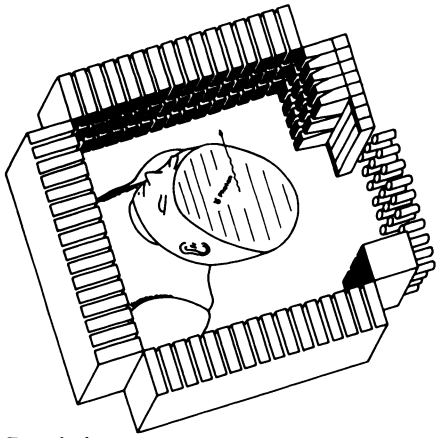
Leader in Brain SPECT

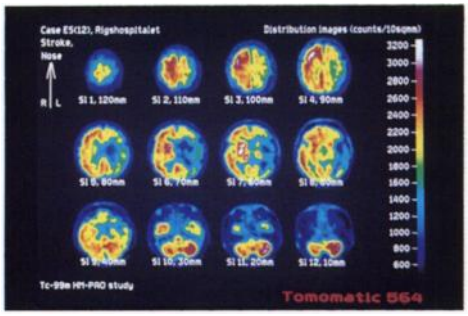


The narrow, double-focussing collimators used in the brain-dedicated TOMOMATIC systems ensure constant line spread function throughout the field of view by using super-positioning of opposite collimator signals. The result is very high sensitivity and *uniform* resolution of the reconstructed object, which is unique to the TOMOMATIC systems.

Circle Reader Service No. 48

Tremendous sensitivity gives TOMOMATIC outstanding performance





Description:

The state-of-the-art TOMOMATIC dynamic SPECT (DSPECT) systems are optimized for high sensitivity and, consequently, high resolution. The multi-slice detector system consists of four (4) cameras located in a square close to the object with 64 sodium iodide crystals in each slice. It also has a variety of collimators, which are all built as narrow, double focussing arrangements to ensure uniform spatial resolution and high sensitivity. DSPECT requires high sensitivity in a short imaging time. The TOMOMATIC SPECT systems use continuous rotation and can acquire a 360° image with an acquisition time of only five seconds. No other commercial SPECT system has been able to show higher resolution in clinical use. The TOMOMATIC is superior as a result of its fast rotation and high sensitivity. In fact, because it has continuous rotation speed and has no lateral movable detector parts during data acquisition, the TOMOMATIC gantry is very simple and reliable. Plus, it requires no adjustment or performance checks. Light positioning makes patient repositioning easy and very reliable.

Performance

The ultimate goal of the TOMOMATIC brain SPECT is to provide the highest resolution picture necessary for diagnosis.

Without high sensitivity, high resolution is not possible in clinical use. The narrow double focussing collimators provide nearly uniform spatial resolution throughout the field of view, which is necessary if subcortical regions are of interest. The easily exchangeable collimators of the TOMOMATIC SPECT systems are designed so that the trade-off between sensitivity and resolution is optimized for all commercially available radiopharmaceuticals for brain SPECT studies.

Each of the camera heads can be moved radially so that the spatial sampling distance can be reduced by a factor of up to four. As a result a better spatial resolution can be achieved.

Spatial resolution with different collimators:

	Spatial resolution (FWHM, mm)	Slice thickness (FWHM, mm)	Distance between slices (mm)
High sensitivity collimator:	17	19	0
Medium-high sensitivity collimator:	12	19	0
High resolution collimator:	9	10	10
Ultra-high resolution collimator:	6	10	10

Performance characteristics

Maximum resolution	6 mm FWHM
Maximum sensitivity	190 kcps/mCi/l
Count rate	900,000 count/sec, loss · 20%
Minimum scan time	5 seconds
Number of slices	Up to 5 simultaneously
Field of view	21.8 cm
Number of NaI crystals	64
Crystal size	160 × 13 × 25 mm

Computer System

At the heart of every SPECT system is the computer and its software system capabilities. TOMOMATIC's state-of-the-art DEC MicroVax computer is easy to use, simple to upgrade and adaptable to network use. It is designed to keep pace with the latest developments in nuclear medicine. The software system consists of (1) a multi-user operating system (VMS) that controls the peripheral devices and (2) a collection of basic functions. The comprehensive set of basic functions is necessary for calibration, data collection, sorting and sensitivity correction, filtering and reconstruction, quantitative rCBF flow calculation, and display functions.

In addition to the basic functions, there are statistical functions: patient data base, region of interest (ROI) capabilities, and special macro capabilities, where unexperienced users can operate the system and write their own application programs.

TOMOMATIC Software

- VAX/VMS multiuser operating system
- Filtered back-projection (FBP) and Maximum Entropy (ME) reconstruction
- Parameterized back-projection filters
- Patient data base
- Regions of interest
- Mean value and standard deviation in regions of interest
- Image filtering
- Camera controller and camera diagnostics
- MCL (Medimatic Command Language) macro-language for easy user applications.

Applications:

Neuropsychological stimulated repetitive Xenon flow (quantitative)

Xenon 133 and Xenon 127 enter and leave the brain within a few seconds. Therefore, a high sensitivity SPECT system allowing for rapid imaging should be used. This type of study is non-invasive, fast and convenient for the patient who is connected to a respiratory system. During a four-minute period, four consecutive one-minute acquisitions are performed and the quantitative (ml/100 g/min) data is calculated according to the algorithm developed by Kanno and Lassen.

Multiple quantitative flow studies can be performed with intervals of only 10 minutes, which makes performance activation tests (i.e. Wisconsin cart sort) very easy and convenient for both the hospital staff and the patient.

TOMOMATIC is using the commercially available SPECT system proven to be capable of using every single photon emitter available for brain imaging (i.e. Xe-133, Xe-127, Tc-99, I-123, In-111).

With the TOMOMATIC SPECT, various diseases can be diagnosed at a time when treatment is still helpful, not when the tissue has changed irreversibly.

A few clinical cases where TOMOMATIC SPECT studies can prove invaluable to be performed:

- Stroke patients requiring scans in order to interpret the extent of the damage and luxury perfusion of infarct.
- Head trauma patients requiring scan from a prognostic standpoint in order to assess more accurately rehabilitative potential.
- Dementia patients imaged in an effort to interpret the cause of dementia, i.e. multi-infarct dementia versus Alzheimer's disease.
- Epileptic patients with focal recurring seizures imaged for therapeutic purposes including neurological surgery.
- Miscellaneous neurological patients such as migraine patients or other cerebrovascular diseases.

Selected TOMOMATIC users

Daniel Weinberger, M.D., National Institutes of Health, Washington. D.C., USA. TOMOMATIC 564. Uses TOMOMATIC with high resolution quantitative Xe-127 and high resolution I-123 QNB on patients with psychiatric disorders.

David Ingvar, M.D. University og Lund, Lund, Sweden. TOMOMATIC 564. Uses the quantitative TOMOMATIC rCBF procedure for research in the area of specific brain activation (multiple activation studies) and clinical evaluation of neurological diseases.

Niels A. Lassen, M.D., Bispebjerg Hospital, and Olaf Paulson, M.D., University Hospital, Copenhagen, Denmark. TOMOMATIC 232 and TOMOMATIC 64. Developed the quantitative flow algorithm. Using TOMOMATIC for clinical evaluation before surgery and for cerebrovascular diseases in general.

H. Kanaya, M.D., Iwate Medical University, Morioka, Japan. TOMOMATIC 64. Uses TOMOMATIC SPECT for evaluating quantitative rCBF in connection with hypertension and flow before surgery.

Claude Raynaud, M.D., Hôpital d'Orsay, Paris, France. TOMOMATIC 564. Determined that the similarity between quantitative TOMOMATIC rCBF and quantitative PET is excellent. Uses TOMOMATIC for quantitative rCBF evaluation in infants.

C.M. Kirsch, M.D., Ludwig-Maximilians University, Munich, W. Germany. TOMOMATIC 64. Uses the quantitative procedure for evaluation before surgery. Compares regions of interest using special isolevel areas.

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Leader in Brain SPECT

Denmark:
Medimatic A/S, Gersonsvej 7
DK-2900 Hellerup
Copenhagen
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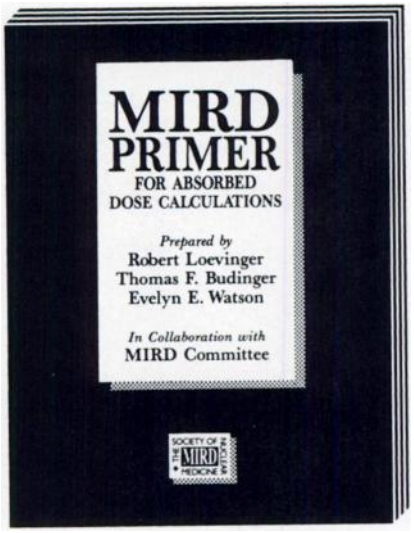

MIRD PRIMER

For Absorbed Dose Calculations

Prepared by

Robert Loevinger
Thomas F. Budinger
Evelyn E. Watson

In Collaboration with the MIRD Committee

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

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Part 1 offers a detailed explanation of the MIRD method.

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

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

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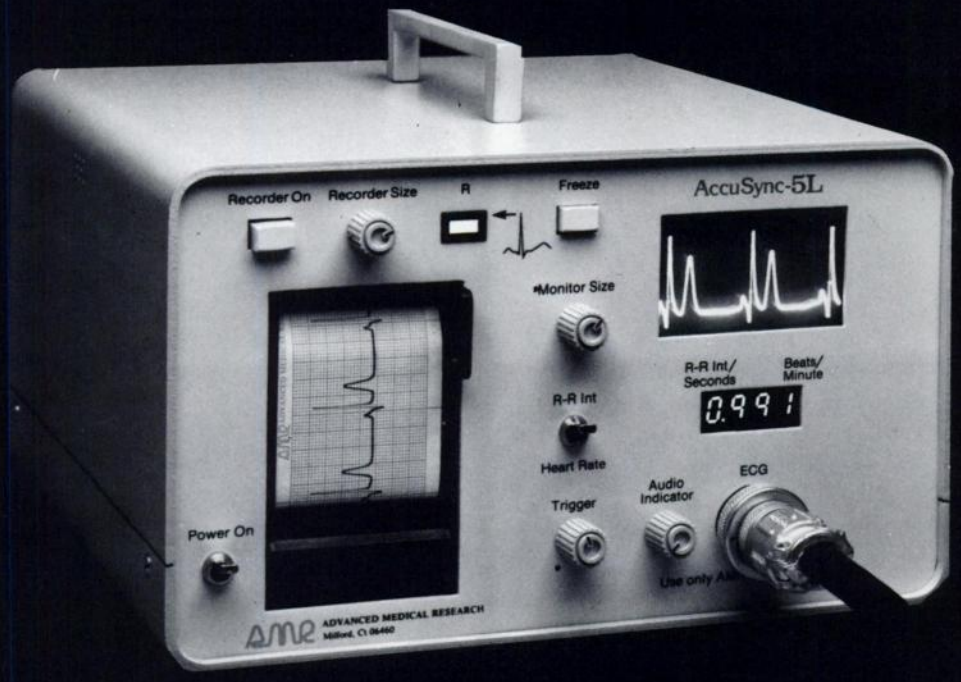

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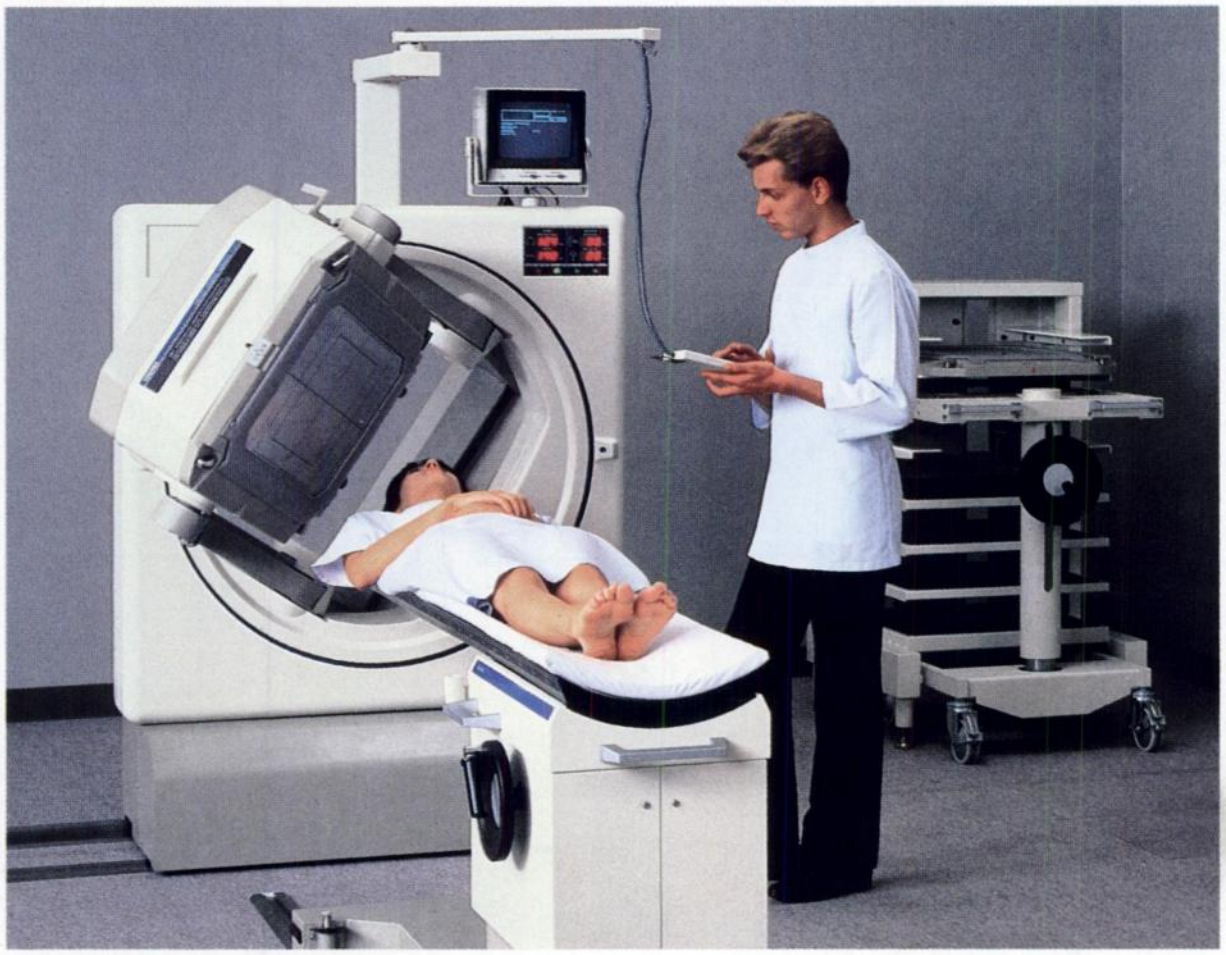

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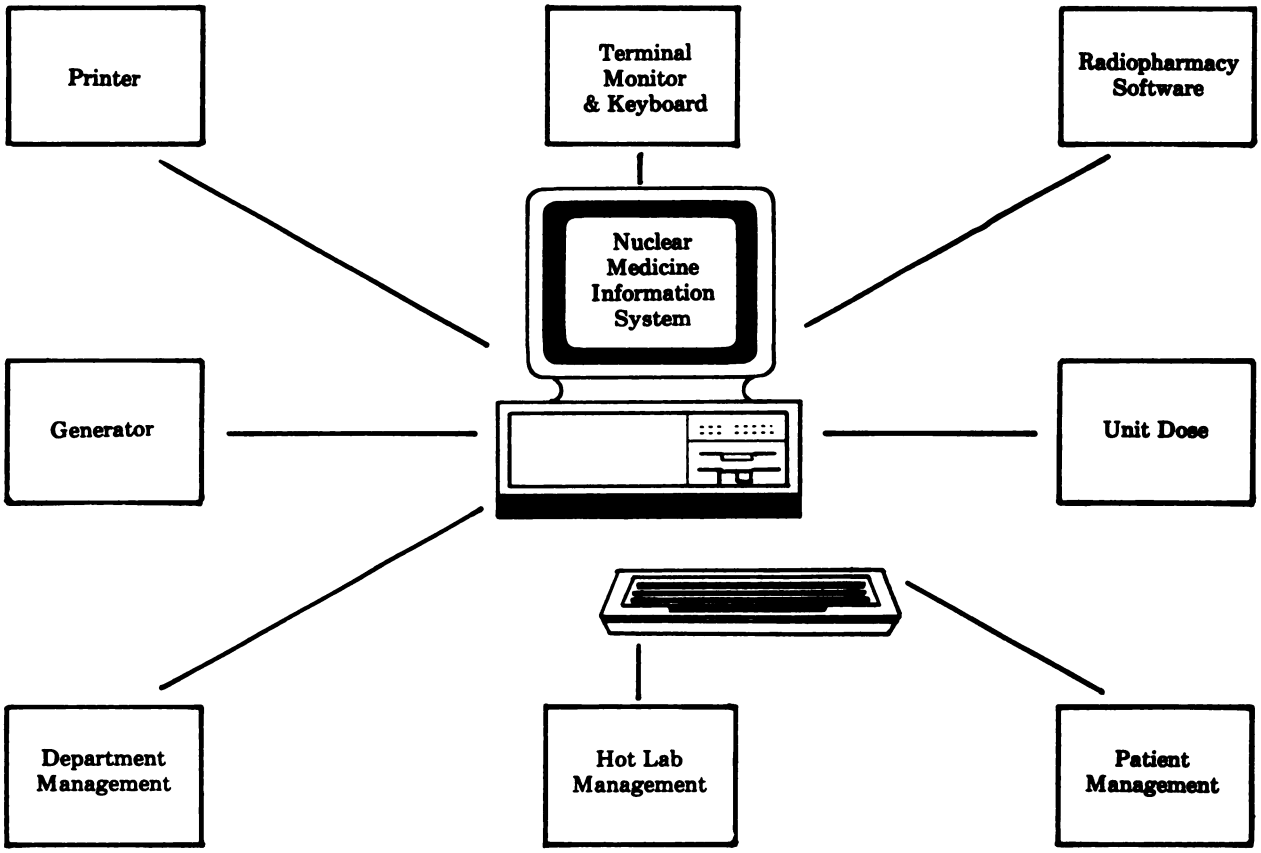

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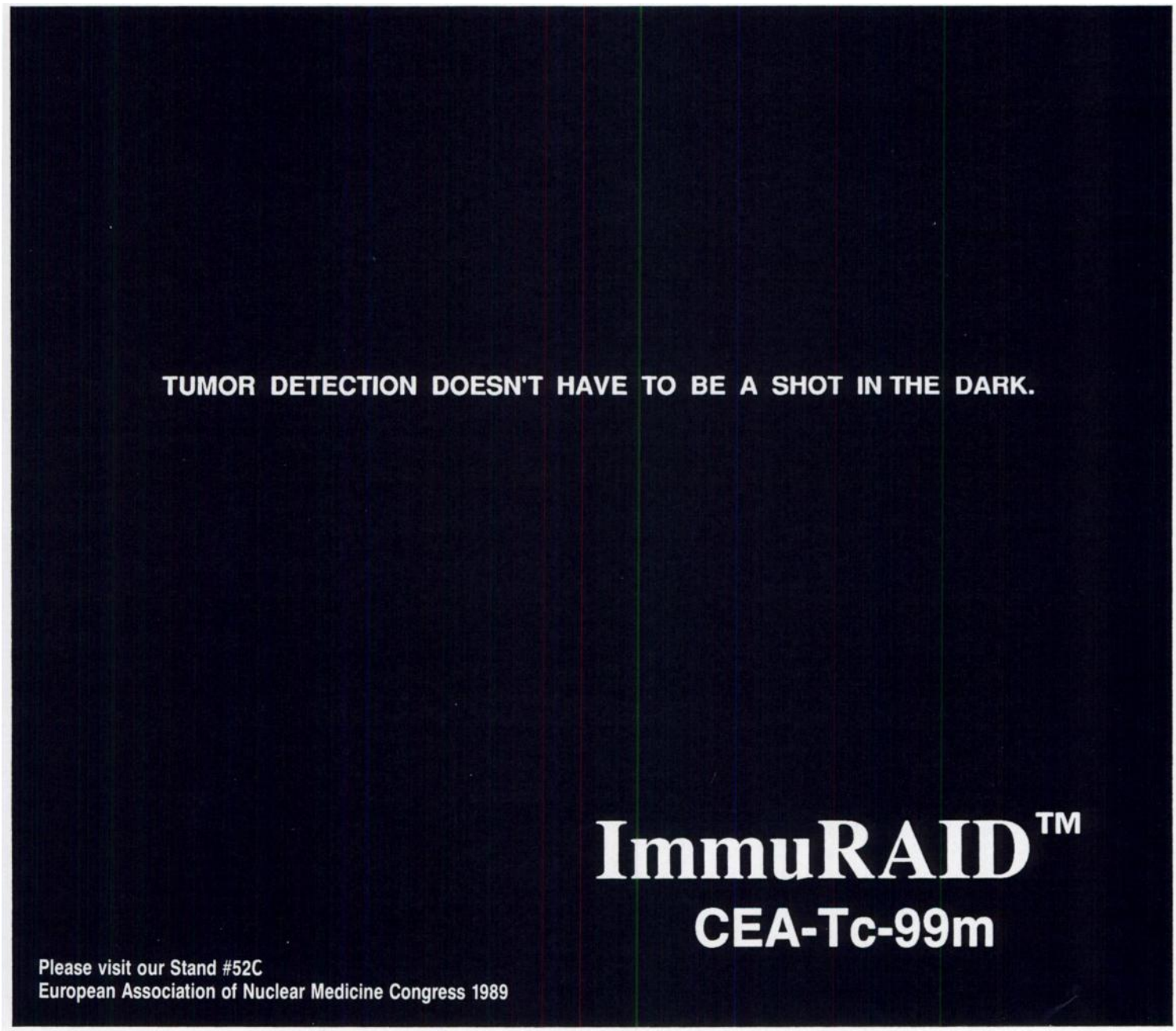

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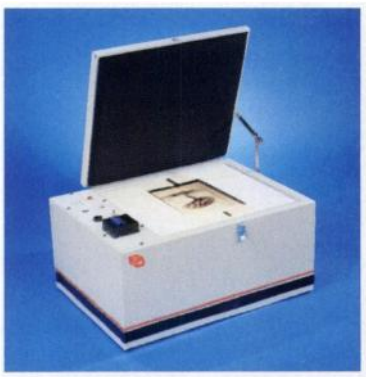

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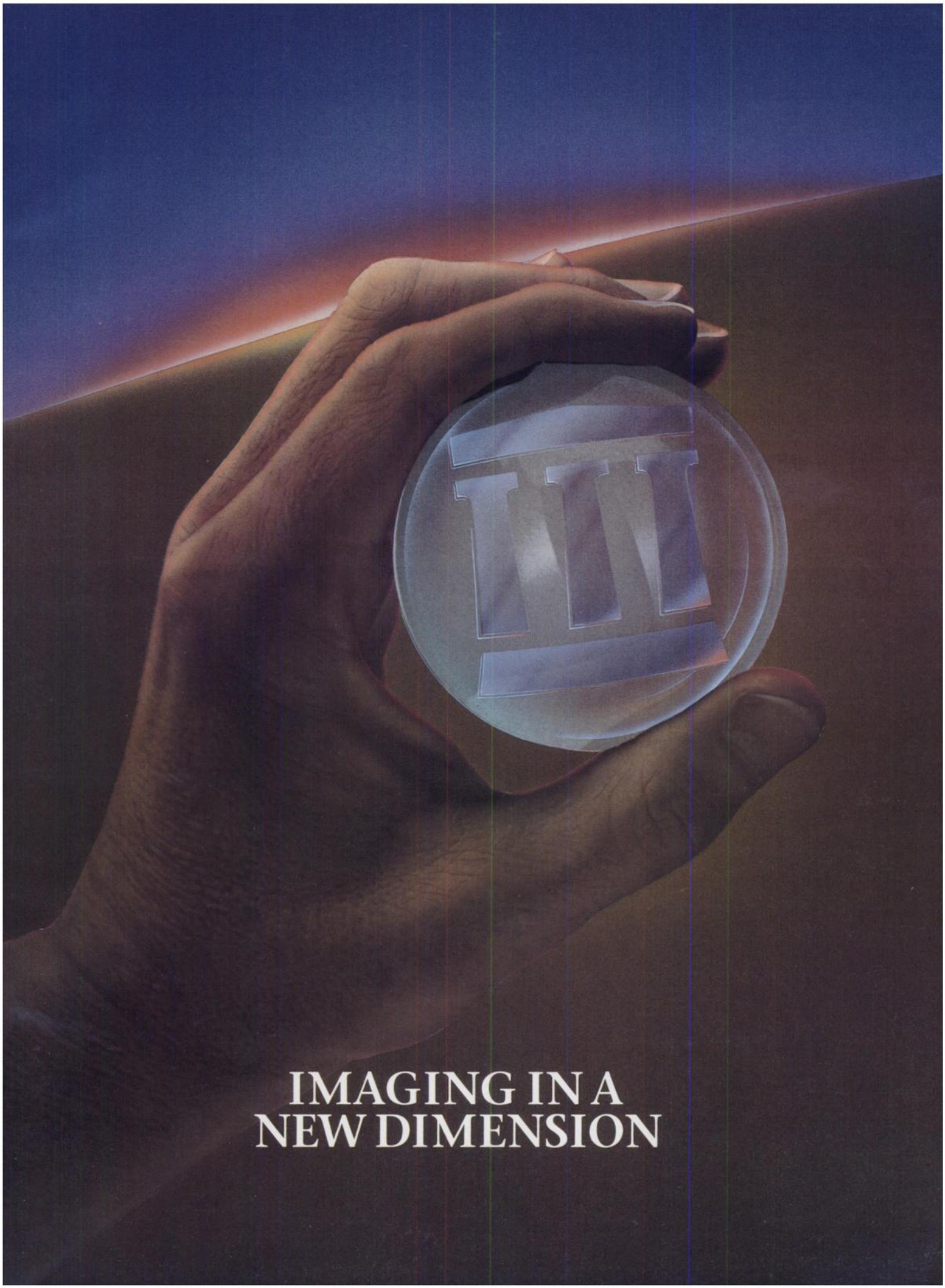
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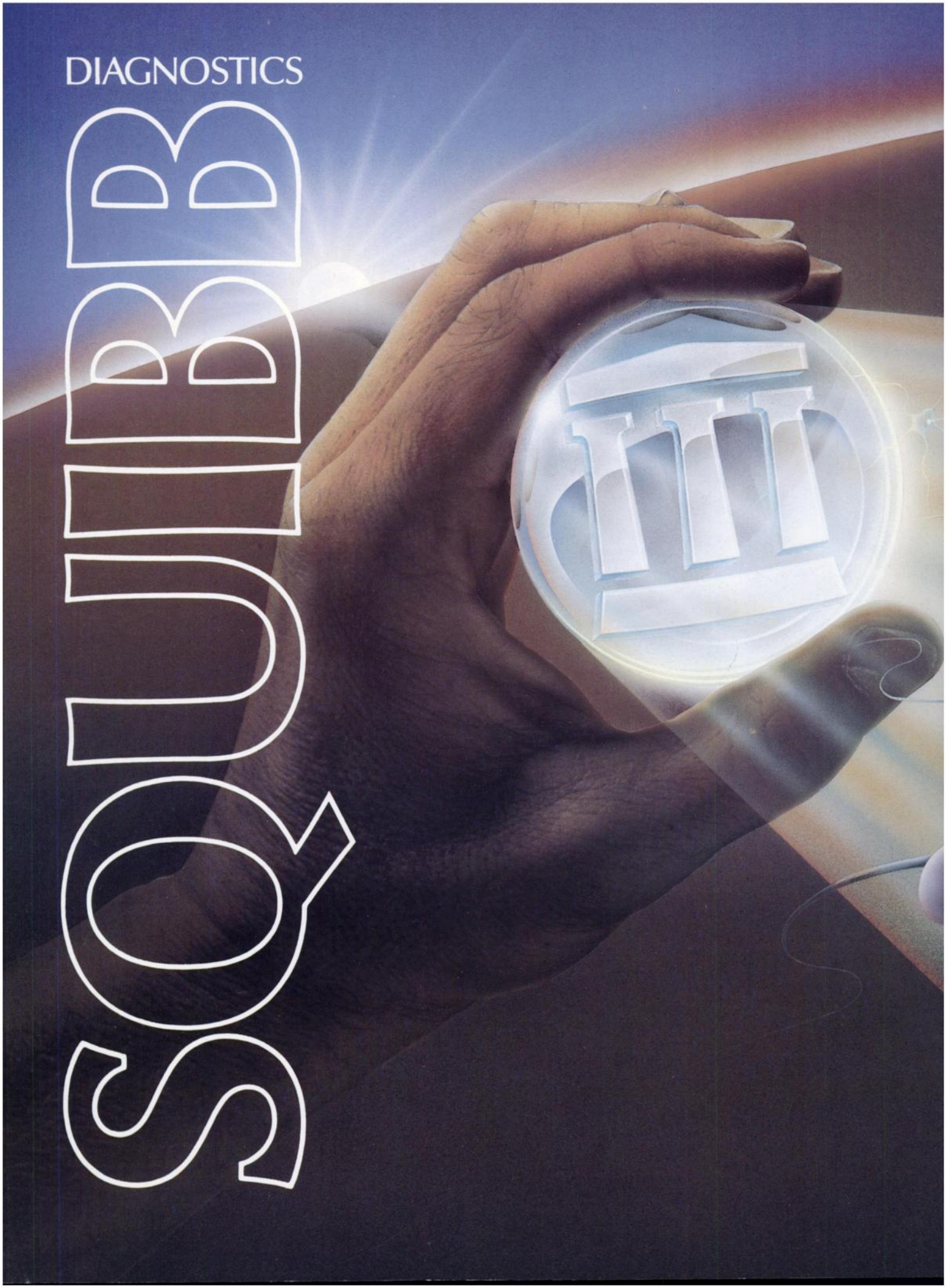

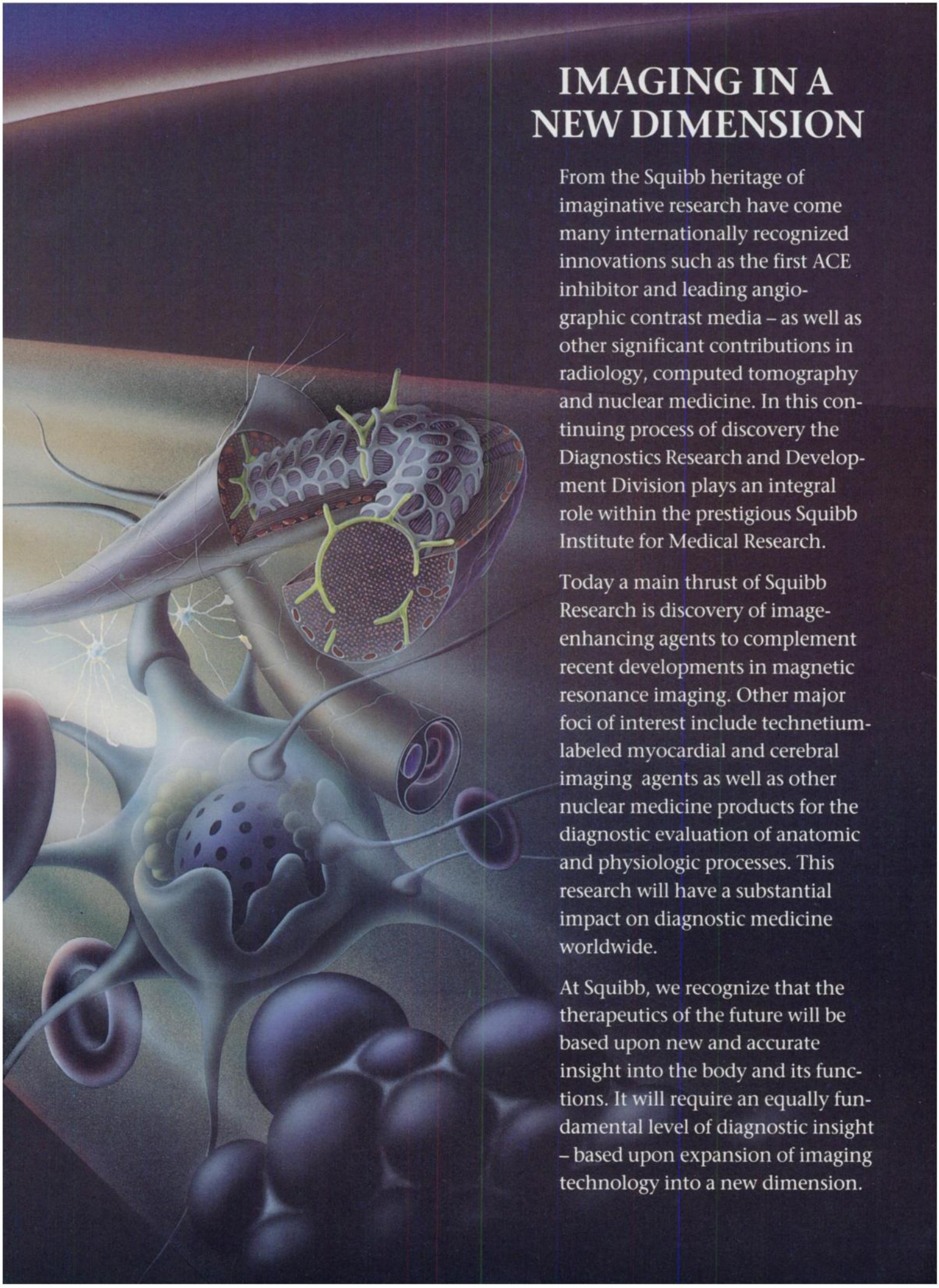

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Catastrophe Major Medical Insurance Still Makes Sense for Those on Medicare

If you're a Medicare recipient and you have a supplemental Catastrophe Major Medical Insurance Plan to go hand-in-hand with Medicare—you're probably wondering just how important your additional coverage is in light of the new Medicare Catastrophic Coverage Act that went into effect January 1, 1989.

The answer? It really depends on your financial status—if you're extremely well off and can afford to pay what Medicare doesn't, you have an opportunity to decide if this supplemental insurance is something you should have. Yet for the majority of people this option doesn't exist, so they're keeping their additional coverage, because it still pays to have a Catastrophe Major Medical Insurance Plan on their side.

Just how important is it? Place yourself in this scenario...

You've been involved in a serious auto accident that has hospitalized you for several weeks and lead to surgery that will leave you bed-ridden for several more.

Expenses are growing by leaps and bounds—you notify Medicare of your claim. Months later you open your mailbox to find an envelope from Medicare. You eagerly open it, anticipating confirmation that your doctor and hospital have been paid in full. Sounds too good to be true? It is.

In reality, that letter from Medicare will provide you with two kinds of information. First of all, it will list all of the *Medicare-approved* expenses that Medicare will pay a percentage of... leaving you with the balance. Second, it will detail any *non-Medicare-approved* costs that YOU are expected to pay—costs that could easily run into thousands of dollars—costs most people also expect Medicare to pay.

Unfortunately, the most recent studies show that physician and hospital billed charges are estimated to be 30% to 35% *higher* than Medicare-approved charges. And any expenses over Medicare-approved charges are the insured's responsibility to pay.

Yet for those insured with the additional coverage of a Catastrophe Major Medical Insurance Plan, the non-medicare-approved expenses could be paid by the Catastrophe Plan once the deductible has been met. Catastrophe Major Medical Plans were designed by the insurance industry to take over when the basic health insurance carrier—and that includes Medicare—stops paying. In contrast, an insurance plan labeled as a Medicare Supplement Plan would only pick up any unpaid Medicare-*approved* costs such as deductibles and co-payments. There isn't such a restriction on a Catastrophe Major Medical Plan.

Catastrophe Major Medical Insurance is also important if you're under 65 and carry an individual or group health insurance policy—regardless of age, catastrophe coverage is important for today's consumer.

Health care providers are not required to limit the cost of their services to fit "Medicare Approved" pricing. On the contrary, the cost of Health care continues to increase not only for those who receive it—but also for the doctors that provide it. To pay the price of technological advancement, much needed liability insurance and essential continuing education, physicians and hospitals are forced to raise their price on health care—regardless of who pays the bill.

Not only are Catastrophe Major Medical Plans beneficial for paying the high price of non-Medicare-approved medical and physician costs, many also provide partial benefits for nursing home care. Once again, the Catastrophe Plan nursing home benefits usually begin when all of Medicare's benefits are depleted and the Catastrophe dedcutible is satisfied.

However, since the new Medicare only provides 150 days of coverage in a SKILLED nursing home facility, any additional nursing home coverage is welcome. As a plus, your Catastrophe Plan provides additional benefits not only for skilled nursing home care, but also for intermediate and custodial care—making it much more valuable than Medicare alone. With an estimated 90% of nursing home paients requiring custodial care—one of the types not covered by Medicare—insurance to pay at least some of the cost is important.

Even with all of the changes brought on by the Medicare Catastrophic Coverage Act, some experts believe the average Medicare recipient won't see any benefit from the new law until 1991 when the prescription drug program begins.

According to the Congressional Budget Office, it's estimated that less than 4% of those on Medicare will ever receive benefits available under Part A of the new Medicare Catastrophic Coverage Act... less than 2% will receive the extra skilled nursing home benefits. Meanwhile, everyone will be paying more—basically for the same benefits as they had before.

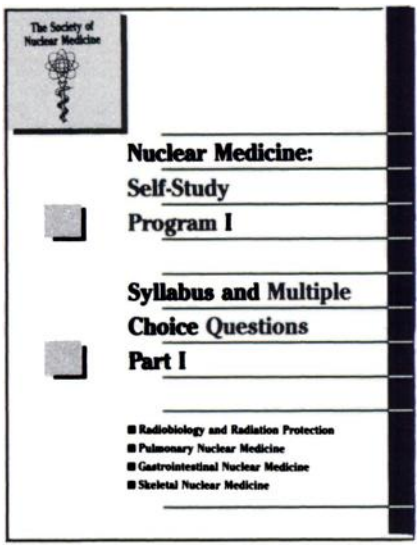
SNM members can rest assured that the Catastrophe Major Medical Insurance Plan available to them is still a good investment. Any member not already enrolled in the Plan can apply for coverage by contacting the SNM Insurance Administrator: Albert H. Wohlers & Co., Administrator, SNM GROUP INSURANCE PLANS, 1440 N. Northwest Highway, Park Ridge, Illinois 60068-1400. Toll-free: 1-800-323-2106. In Illinois: 1-312-803-3100.

Fortunately, this additional coverage is affordable. Since Catastrophe Major Medical Insurance is considered supplemental coverage, its' costs are kept to a minimum. In addition, SNM members purchasing coverage through the association are eligible for group prices. And it's obvious that even with all the changes made to Medicare, Catastrophe Major Medical Insurance is still very necessary.

When the Medicare Catastrophic Coverage Act was signed into law, it became the largest expansion of Medicare since the program began in 1965. During the first few months of its existence, it has met with much controversy.

For this reason, some government officials hint that the new Medicare could go through further changes soon. This is all the more reason to maintain your SNM Catastrophe Major Medical Insurance. There's a possibility that if you should decide to drop your supplemental coverage, Congress may vote to change Medicare once again—leaving you without Catastrophe Major Medical Insurance and without a guarantee that if you re-apply for this coverage, your application would be accepted. Until the dust settles for good, its wise to hold on to what you have.

Nuclear Medicine: Self-Study Program I



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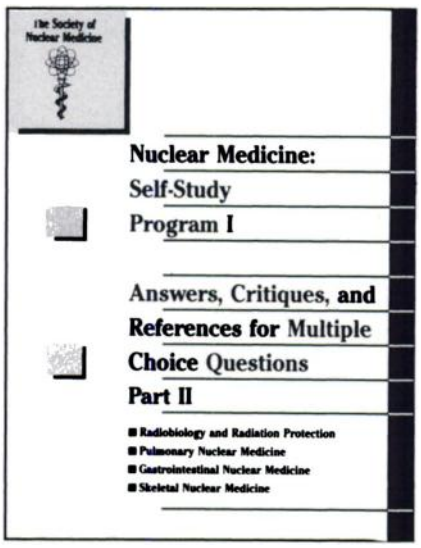

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Nuclear Medicine: Self-Study Program I covers the advances in nuclear medicine since the publication of the *Nuclear Medicine Review Syllabus*, and features many of the same contributors.

You will find that *Nuclear Medicine: Self-Study Program I* is unsurpassed in helping you keep abreast of the lastest advances and is an excellent resource for your teaching responsibilities. It is, of course, invaluable as preparation for board and recertification exams.

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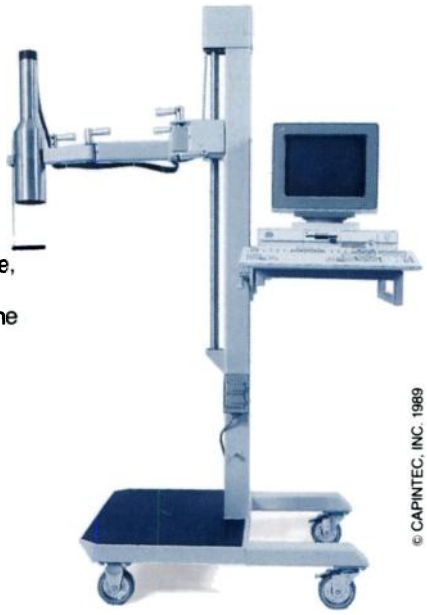

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Fundamentals of Nuclear Medicine

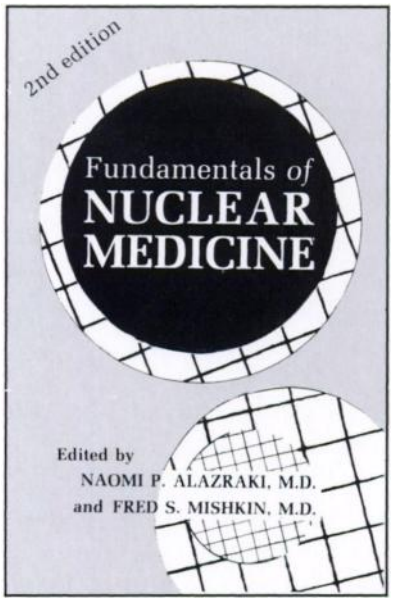
2nd Edition

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

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

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

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



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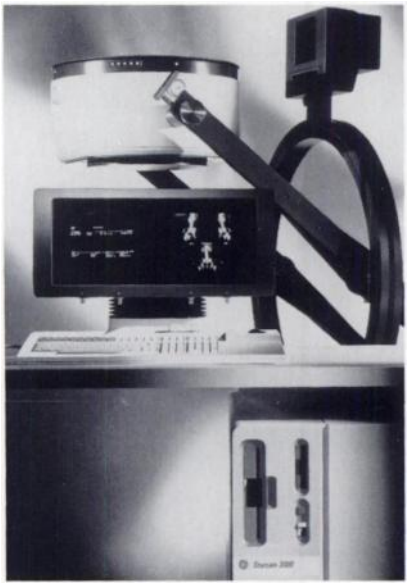
Each description of the products below was condensed from information supplied by the manufacturer. The reviews are published as a service to the professionals working in the field of nuclear medicine and their inclusion herein does not in any way imply an endorsement by the Editorial Board of The Journal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

Hardware and Software for Nuclear Cardiac System



GE Medical Systems offers a new high performance detector along with a wide range of hardware and software designed for nuclear cardiac procedures. The new XC/T camera features a specially designed, contoured detector head mounted on a ring gantry, allowing for close proximity imaging across a broad range of cardiac applications. The detector's high performance gamma technology also provides high count rate capabilities for improved First Pass studies. GE also offers a comprehensive selection of pre-defined Cardiac Clinical Software Packages for enhanced myocardial perfusion and cardiac function studies. These include quantitation programs, a three-dimensional surface display, gated acquisition programs, a First Pass program, and shunt calculation program. **GE Medical Systems, PO Box 414, Mailcode W-412, Milwaukee, WI 53201. Attn. Tim Riesterer. (414)544-3721.**

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Nuclear Imaging Computer

Picker International introduces the Picker Computer System Plus II nuclear imaging computer. The PCS Plus II, with its multistation environment software package, provides exceptionally fast hardware with unique software solutions improving efficiency and capabilities in nuclear medicine procedures. Up to ten simultaneous independent functions can be performed in PCS Plus II's multi-task and multi-user environment with a bottom line of higher patient throughput, increased productivity , and improved cost effectiveness. The multi-task software feature allows a single operator to execute several operations concurrently from one keyboard. With the multi-user capability, both dual acquisition and dual processing stations can be added, enhancing the cost effectiveness of a single computer system. PCS Plus II continues Picker's tradition of expandable hardware architecture which permits future peripherals and software flexiblity, making the system always open to the latest advancements in the computer industry. All peripherals include an optical disc, 60 MByte cartridge tape drive, and up to 220 MByte of Winchester disk storage. The PCS Plus II can be networked by the new PCSNet Communications Package for throughput and versatility. In addition, new high speed modem is available which utilizes standard phone lines to link affiliated departments hundreds of miles away. **Picker International, 595 Miner Rd., Highland Heights, OH 44143. (216) 473-3695.**

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SPECT Unit

Shimadzu Medical Systems introduces the Headtome SET-031, a single photon emission computed tomograph. The Headtome is the only SPECT unit with a ring-detector scanning system that replaces the rotating gamma camera found in other units. This ring-detector system has a set of cylindrical turbo-fan collimators, which deliver dynamic or static images of uniform resolution and slice thickness. This system is used for early diagnosis and prognosis of brain infarct, tumors, and psychiatric diseases such as Alzheimer's and Huntington's diseases. With a high sensitivity collimator, the Headtome can perform Xe-133 rCBF studies, while HM-PAO or IMP studies are accomplished with its high resolution collimator. The changeover between collimators is easy and both types of imaging can be performed without moving the patient from the table. The Headtome detector array consists of three rings, with 64 detectors in each ring. This produces three slice images simultaneously. A special 6-slice collimator is available as an option. A turbo fan collimator is designed to provide images with very high and uniform spatial resolution without the use of any ring artifacts. The software allows manipulation of the acquired data. **Shimadzu Medical Systems, 101 W. Walnut St., Gardena, CA 90248-3130. Attn. Andrea Menke. (714)755-0400.**

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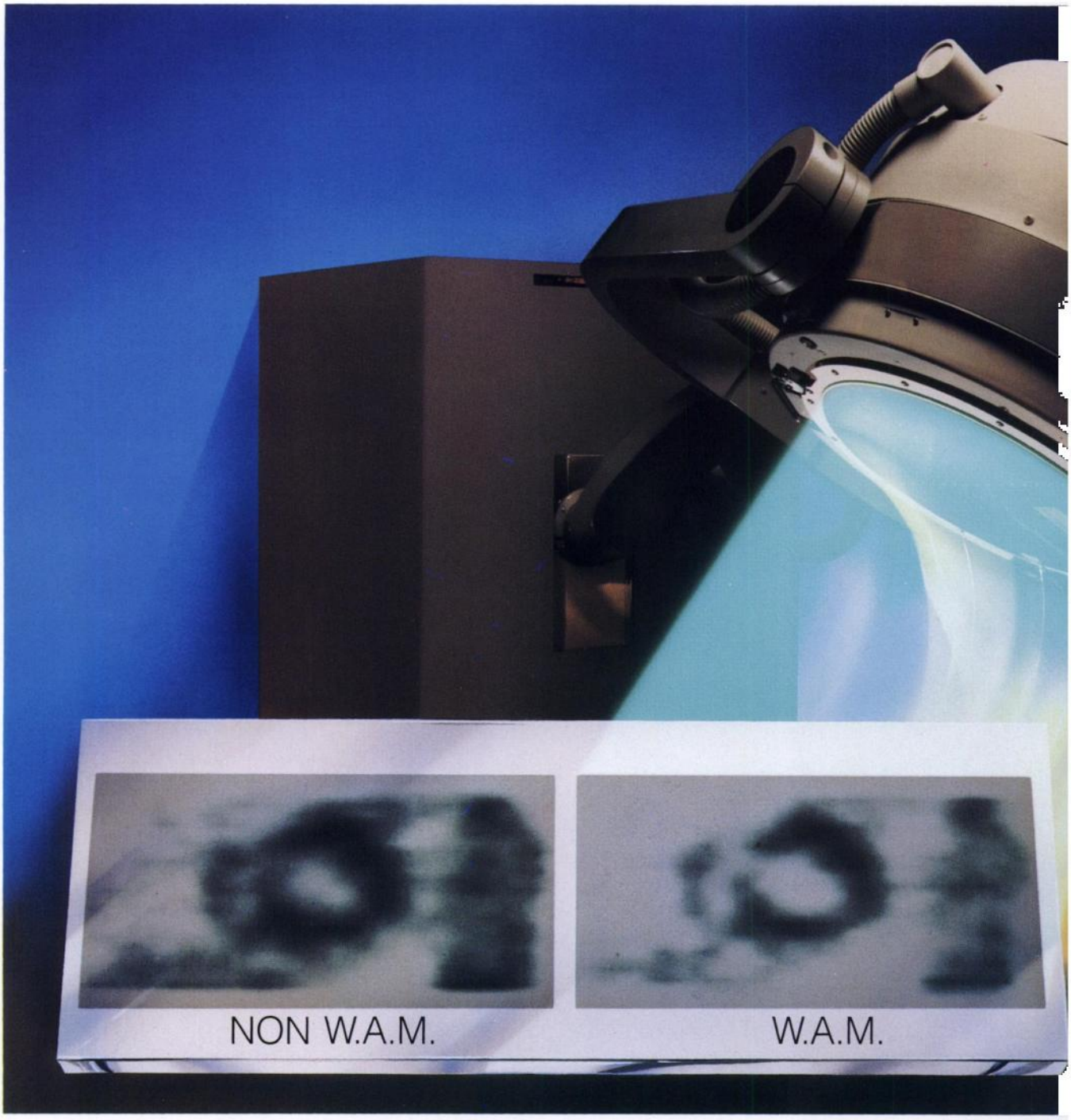

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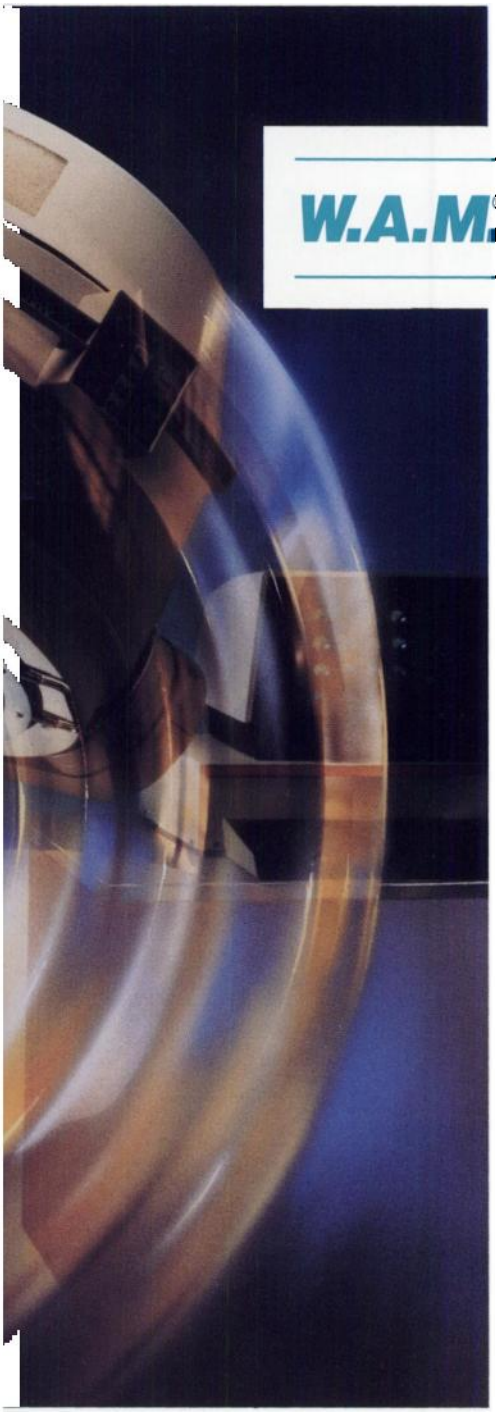

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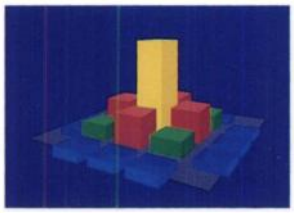

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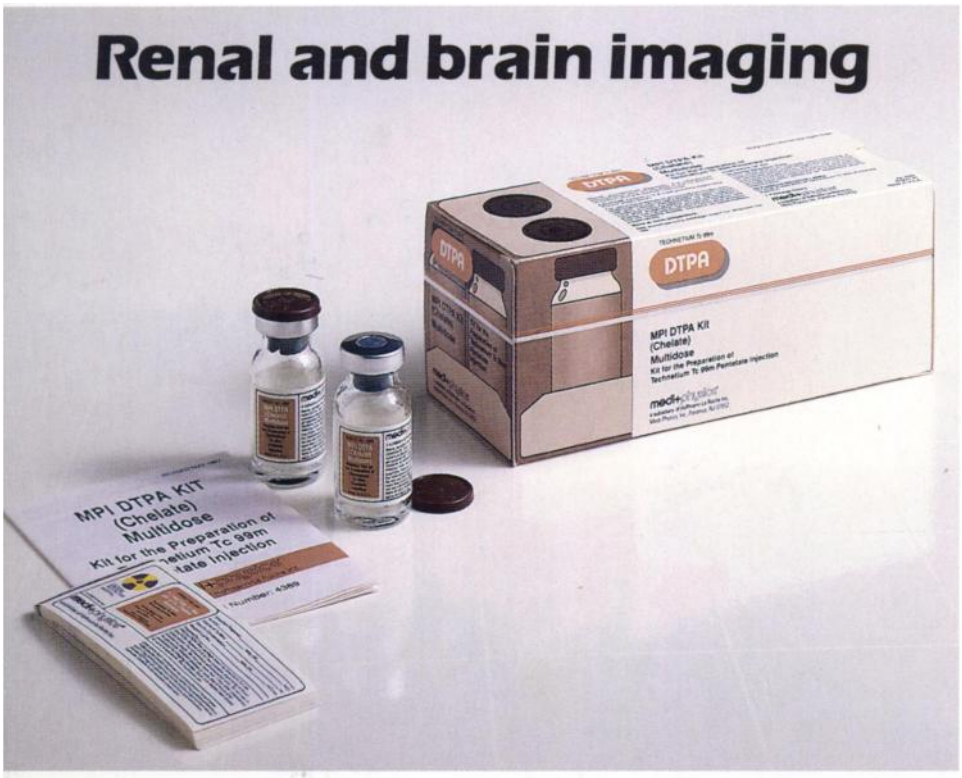

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Please see brief summary of prescribing information at right.

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DIAGNOSTIC – FOR INTRAVENOUS USE

DESCRIPTION: Each kit contains sterile, pyrogen-free, nonradioactive ingredients necessary to produce Technetium Tc 99m Pentetate Injection for diagnostic use by intravenous injection.

Each 10 ml reaction vial contains, in lyophilized form and under nitrogen atmosphere, 5 mg of Pentetate Pentasodium, and 0.17 mg (minimum) stannous chloride (maximum stannous and stannic chloride 0.275 mg). The pH is adjusted to 4.0 to 7.5 with hydrochloric acid and sodium hydroxide prior to lyophilization. The addition of sterile, pyrogen-free and oxidant-free Sodium Pertechnetate Tc 99m Injection produces Technetium Tc 99m Pentetate Injection, which contains no bacteriostatic preservative.

The chemical names for Technetium Tc 99m Pentetate Injection are: 1. Technetate (1-) ^{99m}Tc, [N, N-bis [2-[bis (carboxymethyl) amino] ethyl] glycinato (5-)]-, sodium; and 2. Sodium [N, N-bis [2-[bis (carboxymethyl) amino] ethyl] glycinato (5-)] - technetate (1-)- ^{99m}Tc.

INDICATIONS AND USAGE: Technetium Tc 99m Pentetate Injection may be used to perform kidney imaging, brain imaging, to assess renal perfusion, and to estimate glomerular filtration rate.

CONTRAINDICATIONS: None known.

WARNINGS: None

PRECAUTIONS:

General

The contents of this kit are not radioactive. However, after Sodium Pertechnetate Tc 99m Injection is added, adequate shielding of the final preparation must be maintained.

The contents of the reaction vial are intended only for use in the preparation of Technetium Tc 99m Pentetate Injection and are NOT to be directly administered to the patient.

The image quality may be adversely affected by impaired renal function.

Literature reports indicate that the target to non-target ratio for intracranial lesions may take several hours to develop fully, and the possibility of missing certain lesions when imaging is restricted to the early period after injection should be borne in mind.

To minimize radiation dose to the bladder, the patient should be encouraged to increase his fluid intake, and to void when the examination is completed and as often thereafter as possible for the next 4-6 hours.

Technetium Tc 99m Pentetate Injection should be formulated within six (6) hours prior to clinical use for brain and kidney imaging, and for assessing renal perfusion. For optimal results this time should be minimized. Intervals longer than one hour should be the exception.

Technetium Tc 99m Pentetate Injection for use in estimating glomerular filtration rate should be formulated within one (1) hour prior to clinical use.

The components of the kit are supplied sterile and pyrogen-free. Aseptic procedures normally employed in making additions and withdrawals from sterile, pyrogen-free containers should be used during the addition of the pertechnetate solution and the withdrawal of doses for patient administration.

The Technetium Tc 99m labeling reactions involved in preparing the agent depend on maintaining the stannous ion in the reduced state. Any oxidant present in the sodium pertechnetate Tc 99m supply may thus adversely affect the quality of the radiopharmaceutical. Hence, sodium pertechnetate Tc 99m containing oxidants should not be employed.

Technetium Tc 99m Pentetate Injection as well as other radioactive drugs must be handled with care and appropriate safety measures should be used to minimize external radiation exposure to clinical personnel. Also, care should be taken to minimize radiation exposure to patients 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.

High background counts, poor images and erroneous clearance results have been observed with the use of vials exceeding expiration time, owing to inadequate labeling. The vials should not be used after the expiration date shown on the label.

Carcinogenesis, Mutagenesis, Impairment of Fertility

No long-term animal studies have been performed to evaluate carcinogenic potential, mutagenic potential, or whether Technetium Tc 99m Pentetate Injection affects fertility in males or females.

Pregnancy Category C

Animal reproduction and teratogenecity studies have not been conducted with Technetium Tc 99m Pentetate Injection. It is also not known whether Technetium Tc 99m Pentetate Injection can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. There have been no studies in pregnant women. Technetium Tc 99m Pentetate Injection should be given to a preganant 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 Tc 99m is excreted in human milk during lactation. Therefore, formula feedings should be substituted for breast feedings.

Pediatric Use

Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: Pyrogenic and allergic reactions to preparations of Technetium Tc 99m Pentetate Injection have been reported in the literature.

HOW SUPPLIED:

Kit Contents

10 STERILE REACTION VIALS (10 cc. silver aluminum overseal), each containing, in lyophilized form and under nitrogen atmosphere, 5 mg of Pentetate Pentasodium, and 0.17 mg (minimum) stannous chloride (maximum stannous and stannic chloride 0.275 mg). Hydrochloric acid and sodium hydroxide have been added for pH adjustment prior to lyophilization.

20 PRESSURE-SENSITIVE LABELS for final preparation of Technetium Tc 99m Pentetate Injection.

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