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Technetium Tc 99m Generator

Secondary shield to further reduce radiation

5cc and 10cc elution vials

Elution vial

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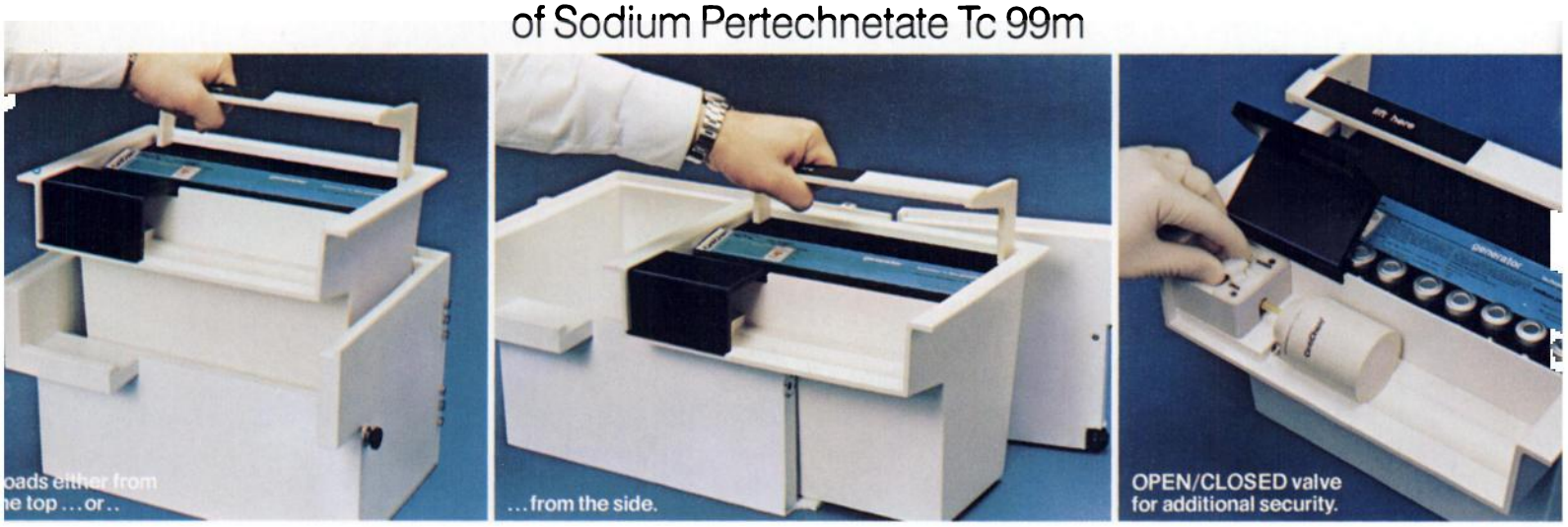
TECHNETIUM 99m

GENERATORS

Technetium Tc 99m Generators for the Production of Sodium Pertechnetate Tc 99m



Featuring:

- Indicated for use in adults and children for urinary bladder imaging (direct isotopic cystography).
- The only Generator with an "open/closed" valve to eliminate possible leakage, both during shipment and in your hot lab.
- Unique horizontal elution procedure increases ease of use and eliminates needle-vial alignment problems.
- A new sterile needle is utilized for each elution, reducing the chances of a septic or pyrogenic situation occurring in routine clinical usage. This method is superior to competitive dry column systems where the same needle assembly is used for the life of the product.
- Fission product molybdenum 99 is used in the Technetium 99m Generator to provide Sodium Pertechnetate Tc99m activity concentrations sufficient for bolus injections.
- Internal saline reservoir eliminates the need to stock saline vials.
- Evacuated elution vials are available in 5cc, 10cc, and 20cc volumes, allowing you to optimize the elution concentration to meet your needs.
- Optimum shielding design minimizes radiation to personnel in work areas, providing maximum protection.
- Generator is compact, providing for optimum maneuverability. Generator handle and shipping carton provide for ease in handling and lifting.

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TECHNETIUM Tc 99m GENERATOR for the Production of Sodium Pertechnetate Tc 99m

DESCRIPTION: The Technetium Tc 99m Generator is prepared with fission produced Molybdenum Mo 99 absorbed on alumina in a lead-shielded column and provides a means for obtaining sterile pyrogen-free solutions of Sodium Pertechnetate Tc 99m in sodium chloride injection. The eluate should be crystal clear. With a pH of 4.5–7.5, hydrochloric acid and/or sodium hydroxide may have been used for pH adjustment. Over the life of the generator, an elution will contain a yield of 80% to 100% of the theoretical amount of Technetium Tc 99m available from the Molybdenum Mo 99 on the generator column.

Each eluate of the generator should not contain more than 0.15 microcurie of the Molybdenum Mo 99 per millicurie Technetium Tc 99m per administered dose at the time of administration, and not more than 10 micrograms of aluminum per milliliter of the generator eluate, both of which must be determined by the user before administration.

INDICATIONS AND USAGE: Sodium Pertechnetate Tc 99m is used IN ADULTS as an agent for: brain imaging including cerebral radionuclide angiography; thyroid imaging; salivary gland imaging; placenta localization; blood pool imaging including radionuclide angiography; and urinary bladder imaging (direct isotopic cystography) for detection of vesico-ureteral reflux.

Sodium Pertechnetate Tc 99m is used IN CHILDREN as an agent for: brain imaging including cerebral radionuclide angiography; thyroid imaging; blood pool imaging including radionuclide angiography; and urinary bladder imaging (direct isotopic cystography) for the detection of vesico-ureteral reflux.

CONTRAINDICATIONS: None known.

WARNINGS: Radiation risks associated with the use of Sodium Pertechnetate Tc 99m are greater in children than in adults. In general, the younger the child the greater the risk owing to greater absorbed radiation doses and longer life expectancy. These greater risks should be taken firmly into account in all benefit-risk assessments involving children.

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

Carcinogenesis, Mutagenesis, Impairment of Fertility

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

Pregnancy Category C

Animal reproductive studies have not been conducted with Technetium Tc 99m. It is also not known whether Technetium Tc 99m can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. Technetium Tc 99m should be given to a pregnant woman only if the expected benefits to be gained clearly outweigh the potential hazards.

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, and therefore formula feedings should be substituted for breast feedings.

Pediatric Use

See **Indications and Usage, dosage** and administration. See also description of additional risk under **warnings.**

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.

The generator should not be used after 16 days from the date and time of calibration.

At time of administration, the solution should be crystal clear.

ADVERSE REACTIONS: Allergic reactions including anaphylaxis have been reported infrequently following the administration of Sodium Pertechnetate Tc 99m.

HOW SUPPLIED: Sodium Pertechnetate Tc 99m is supplied as a Molybdenum Mo 99/Technetium Tc 99m generator in sizes from 830 millicuries up to 16,600 millicuries (in approximately 830 millicurie increments) of Molybdenum Mo 99 as of 10:00 P.M. Eastern Time of the day of calibration. The TECHNETIUM Tc 99m GENERATOR consists of:

1) sterile generator, 2) Sodium Chloride Injection source, 3) 10 cc sterile evacuated vials, 4) sterile needles, 5) elution vial shield* 6) finished drug labels. Elution vials in 5 cc and 20 cc sizes are available upon request.

*initial order only

The TECHNETIUM Tc 99m GENERATOR should not be used after sixteen (16) days from the date and time of calibration.

Jointly manufactured by:
CINTICHEM, INC.
Tuxedo, N.Y. 10987

and

June, 1983
UNION CARBIDE CORPORATION
Tuxedo, N.Y. 10987

From the Leaders in Computerized Nuclear Medicine

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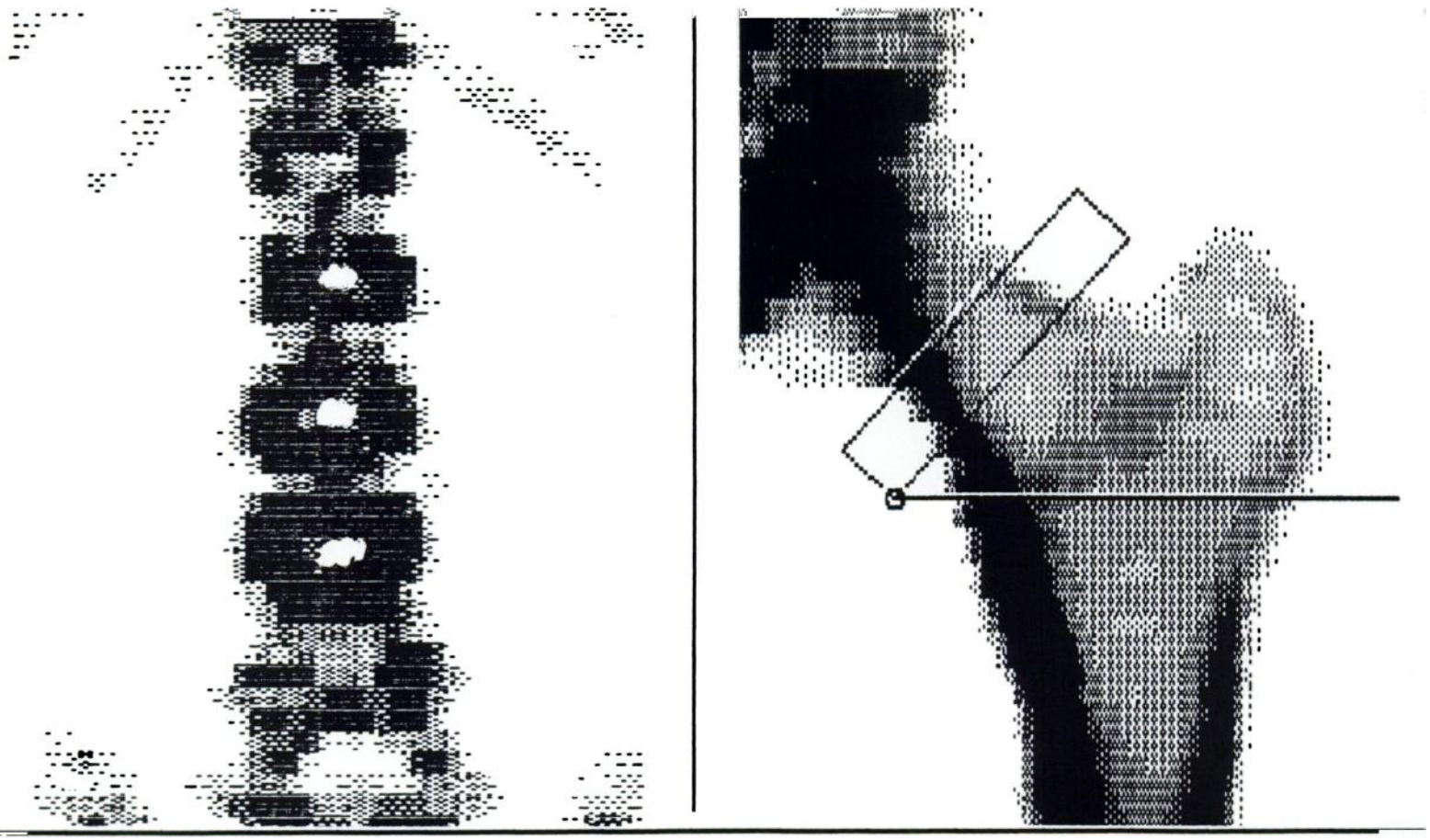

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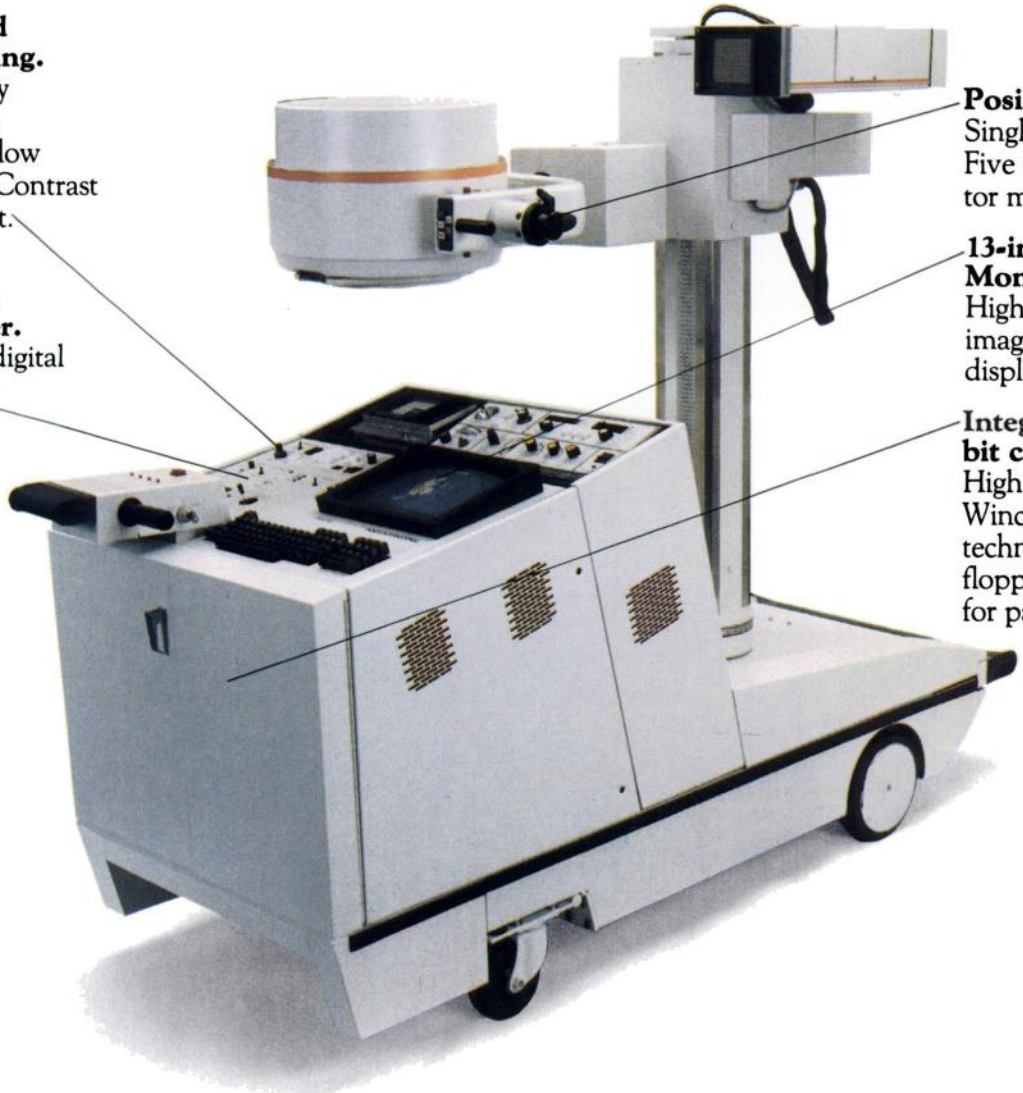

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The mobile computer console incorporates five microprocessors for distributed data processing.

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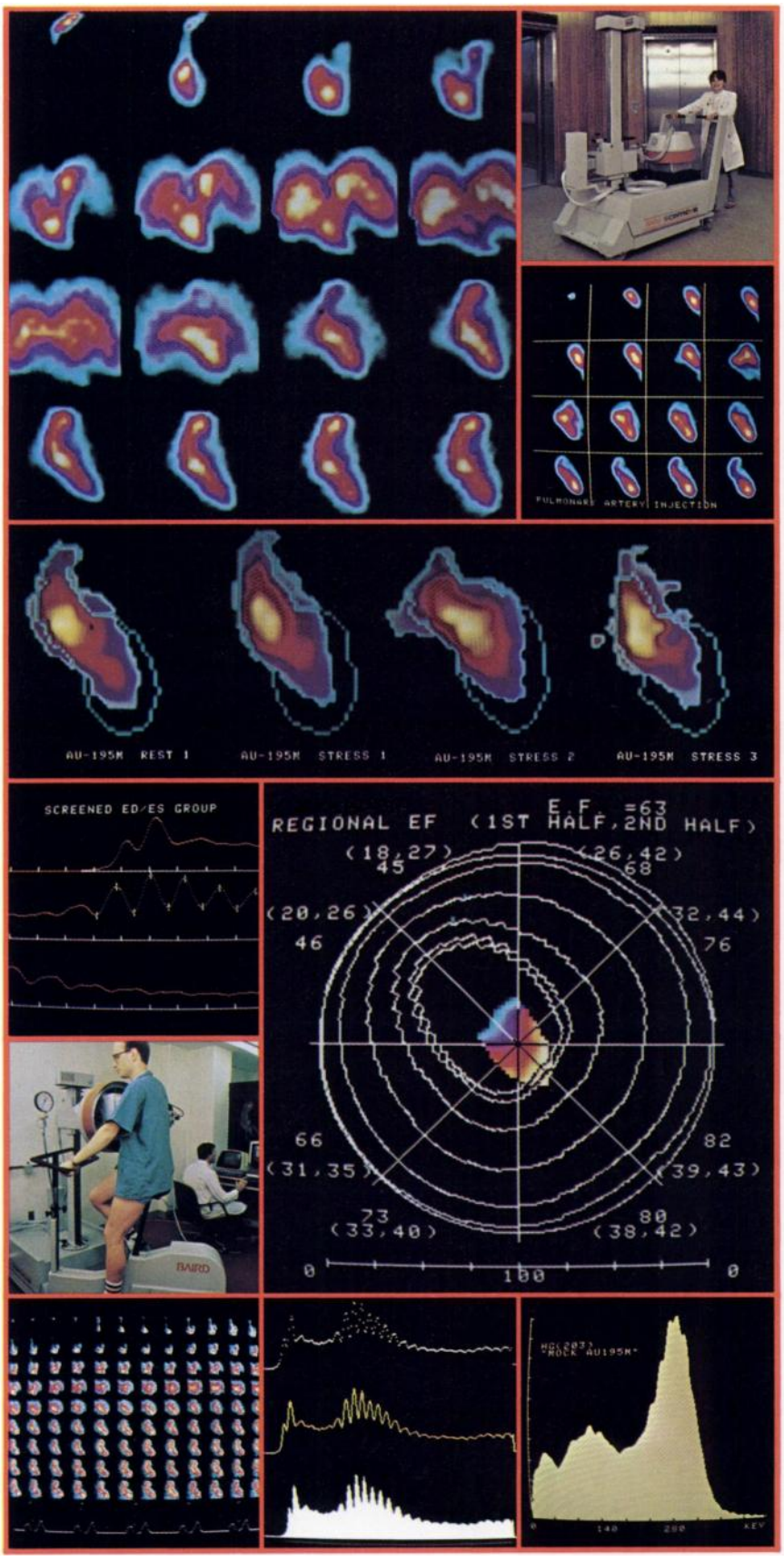
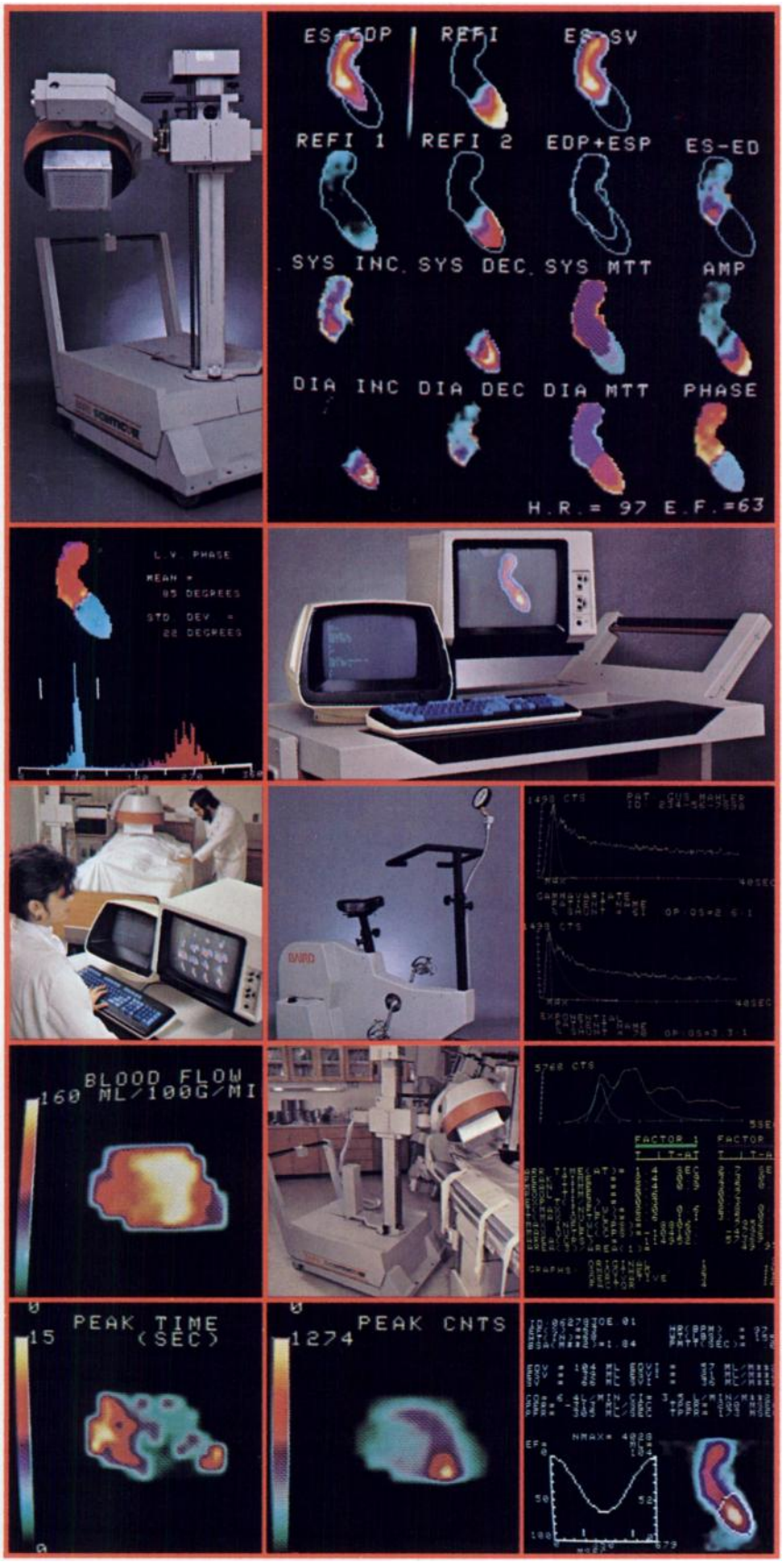


It's not just another pretty image.



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The mobile camera and computer consoles are connected by a high speed fibre optic cable, and may be operated up to 100 meters apart. Measure cardiac function with equal ease at the patient's bedside, in the stress lab, cath lab, ICU, CCU, emergency room or in the nuclear medicine department.

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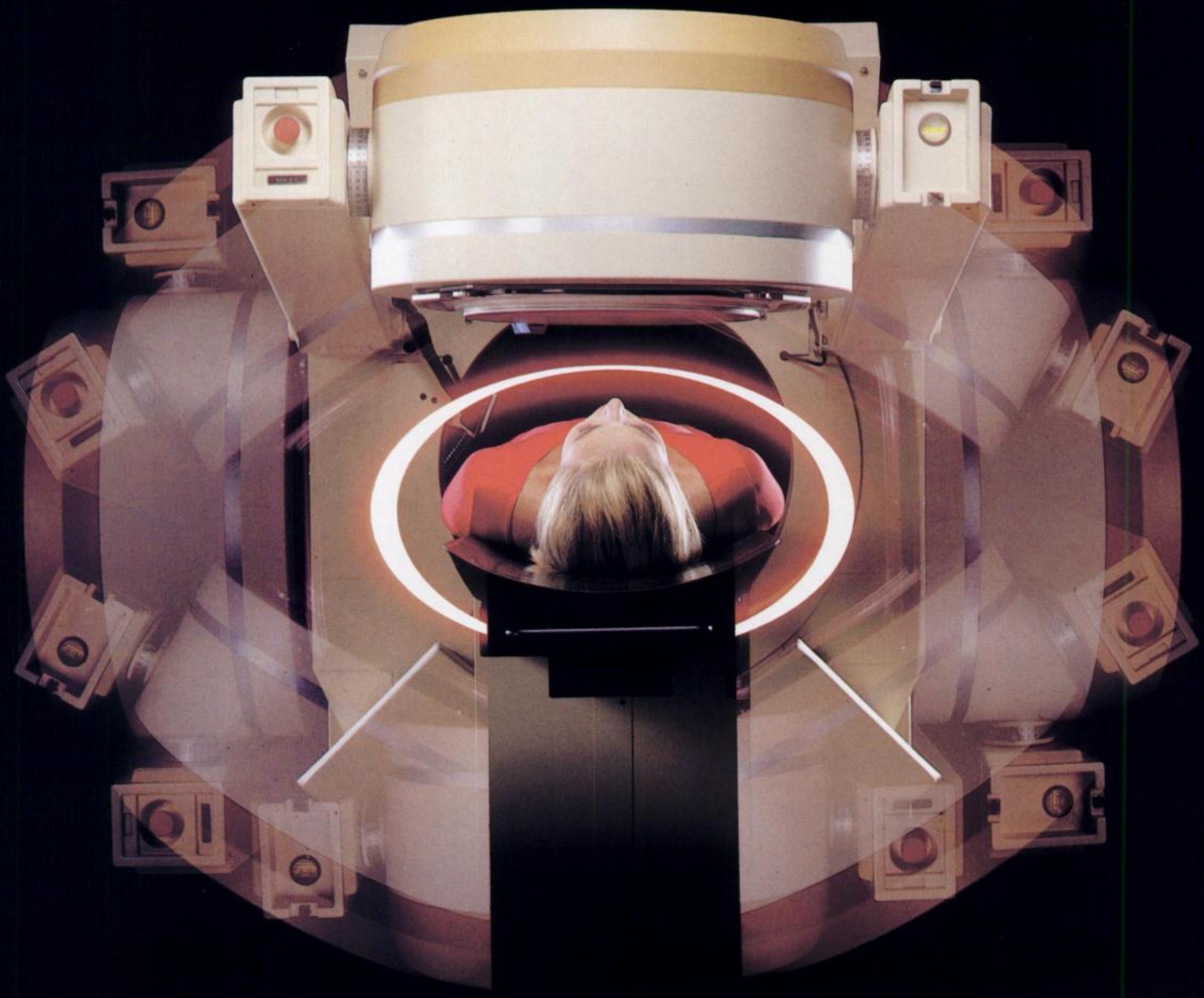

Elscint: leader in Nuclear Medicine with the world's first digital systems. Today, still in the lead — with the world's best system for Single Photon Emission Computerized Tomography: *Apex 415 ECT.*
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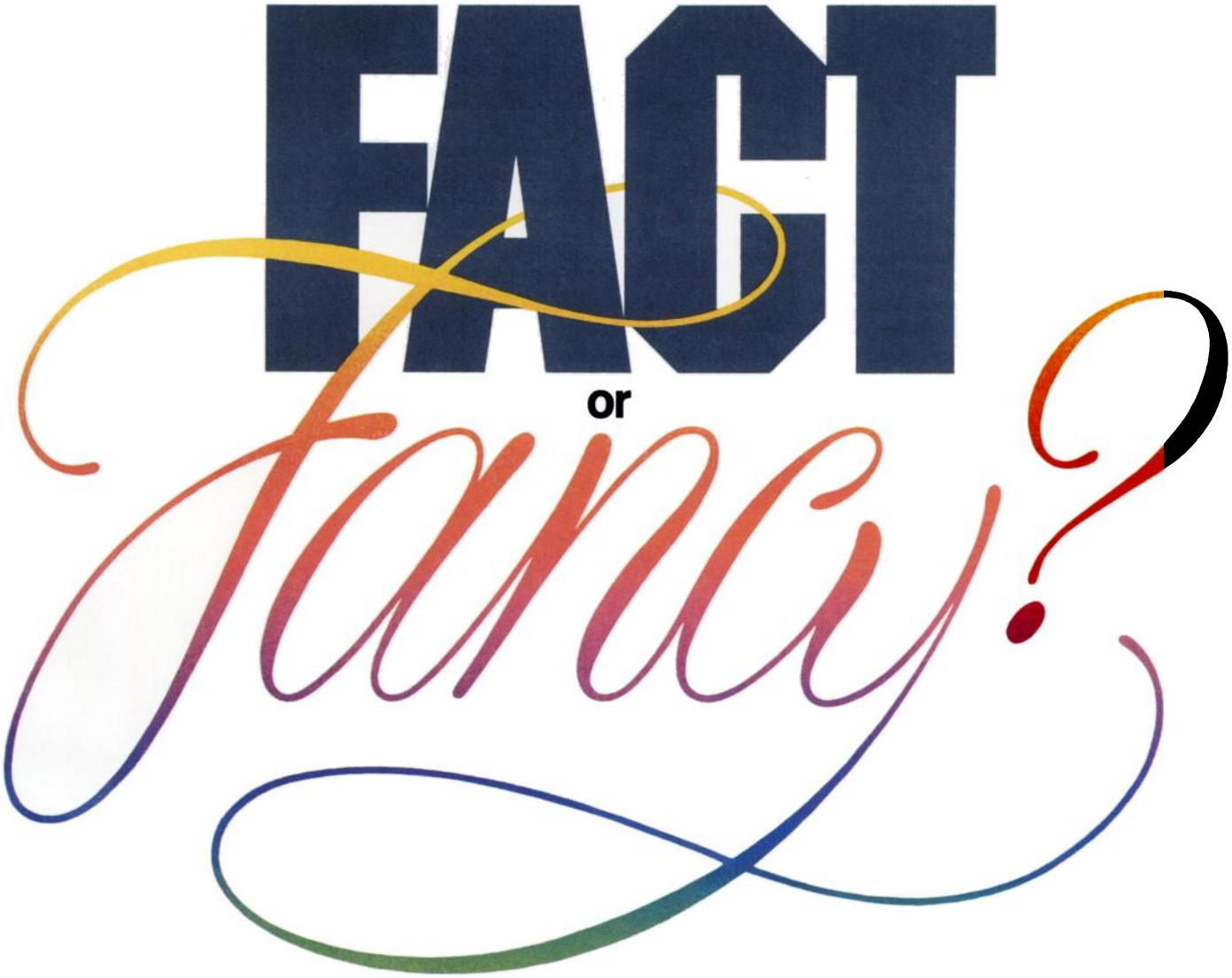
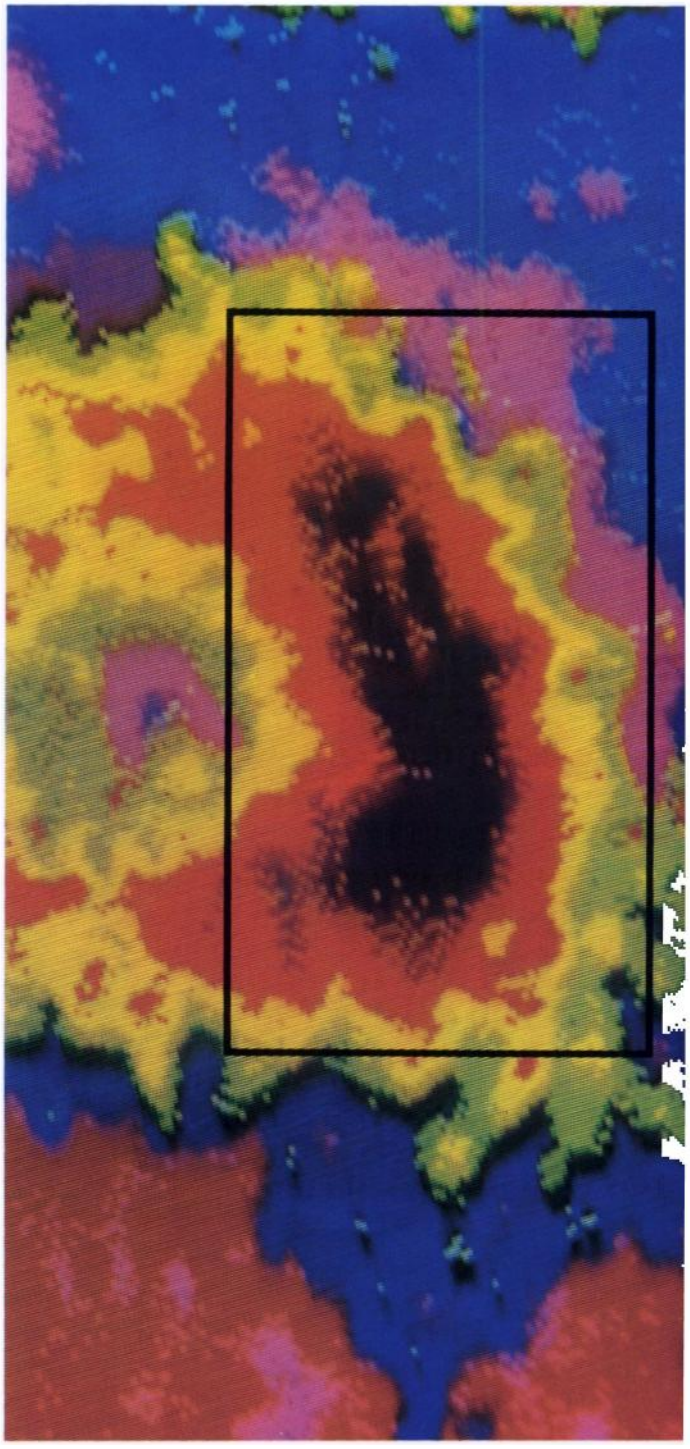
SIEMENS

Are your diagnostic images



SIEMENS

Why accept "cosmetically" manipulated images?

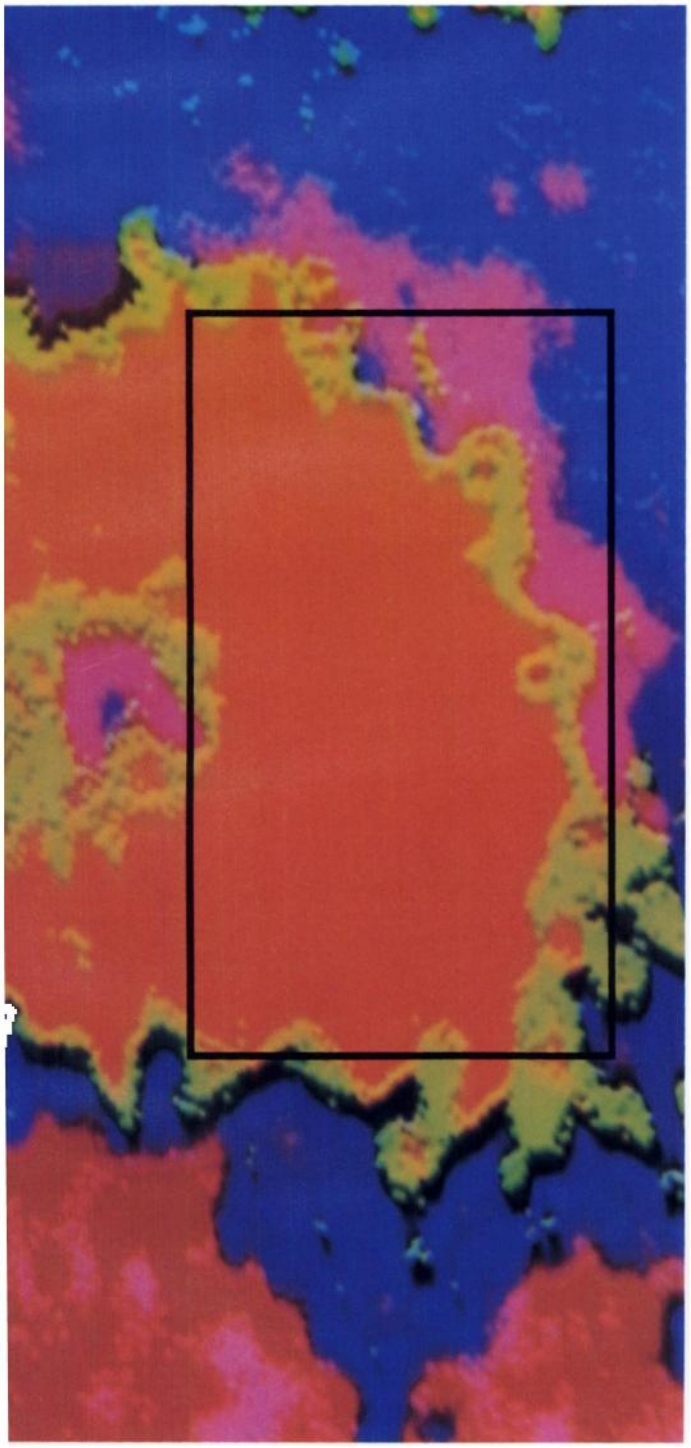


A diagnostic image should tell you the truth.
Next time you're reading the specifications on a nuclear imaging system, watch for words like "compensated," "selected," or "operator calibrated."

These words may be telling you that what you get may *not* be what you're looking for.

Siemens Nuclear Imaging Systems tell you the truth...
Some years ago, Siemens introduced ZLC,™ the innovative energy and linearity distortion removal system. ZLC corrects intrinsic energy variations and spatial non-linearities–the major causes of non-uniformities in gamma cameras.

...the whole truth...
DIGITRAC,™ the newest innovation in Siemens Camera Systems, is a microprocessor controlled PMT gain adjustment circuit incorporated in the detector. DIGITRAC automatically adjusts individual PMT gain (or drift) so that gamma ray photopeaks are precisely aligned throughout the camera field of view. Using nuclear radiation as the primary standard, the camera is recursively calibrated for the isotope being imaged.



...and nothing but the truth.

Siemens cameras with ZLC™ and DIGITRAC offer energy correction, linearity correction and recursive calibration without count skimming, count adding, or other "cosmetic" manipulations of the display.

DIGITRAC™
New technology that makes everything else something less than "state of the art"

ZLC with DIGITRAC is the step forward that makes all previous camera technology obsolete. Here's what ZLC with DIGITRAC offers:

- Improved image quality by precise photopeak "windowing"–allowing increased target to background ratio
- Exclusive system diagnostics to increase patient throughput and to allow maintenance of maximum system performance
- The ability to schedule service when it's convenient...because you always know the status of your PMT's
- Minimal system downtime
- Reliable quality control information
- Consistent system performance–month after month, year after year

Note: Images shown are enhanced for graphic presentation only.

ZLC™ with DIGITRAC™ is available in your choice of imaging systems: planar, whole body, cardiac or SPECT.

Siemens Counterbalance Systems
These systems offer all the flexibility you need for SPECT, whole body and planar imaging... without the need for additional space.

ZLC 7500S SPECT System with DIGITRAC
- ZLC 7500S offers ¼" or ⅜" crystal for optimum sensitivity or resolution
- Convenient push-button setup– reduces scatter and improves image quality
- Patented counterbalance stand with simplified controls and unique pivoting base for easier patient setup
- New powered SPECT table facilitates body contour tracking
- SPECT processor with dual isotope imaging capability allows automatic body contour mapping for attenuation correction
- ECT color monitor available as an option

Siemens ZLC 3700 System with whole body table
- ZLC 3700 camera with ⅜" crystal and DIGITRAC
- New sophisticated electronics substantially increases throughput in whole body scanning
- Digital Operator's Terminal allows push-button setup of study parameters
- Compatible with your computer

Siemens Mobile Systems
Low-cost, efficient mobile systems to meet the imaging needs of your referring specialists... including pediatricians, cardiologists, endocrinologists, joint disease specialists and others.

New ZLC Low Energy Small Area Camera
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- Expanded count rate capability

Improved LEM® ZLC Low Energy Mobile Camera
- New rotational column swivels for critical patient positioning with lightweight design
- Unique power drive for easier maneuverability
- ZLC with DIGITRAC for image integrity

Siemens ROTA System
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- Higher sensitivity and better image resolution in SPECT
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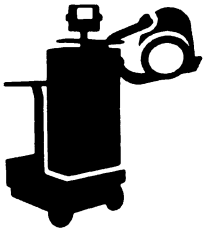


Siemens Nuclear Imaging Systems are quality systems... designed and manufactured to provide you with the most accurate diagnostic information obtainable.

Siemens is committed to advancing the state of the art of nuclear imaging through responsible innovation, user-oriented design and dedicated, knowledgeable service.

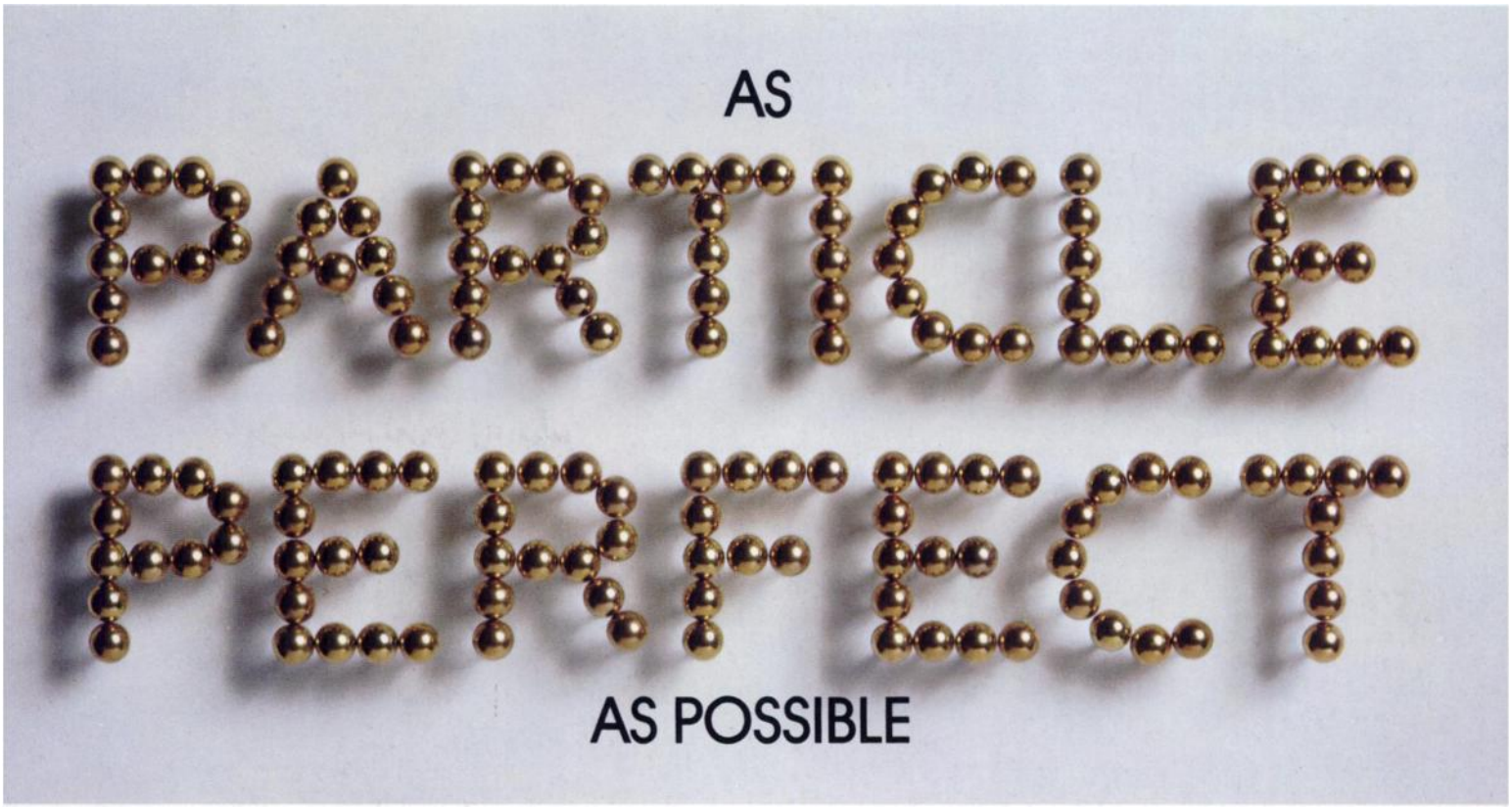
Siemens... technology with integrity

NOW AVAILABLE

In the evaluation of pulmonary perfusion

MACROTEC™

Technetium Tc 99m Albumin Aggregated Kit



More than 90% of particles in optimal 10 to 90 micron range

The average size is 20 to 40 microns... and no particles are greater than 150 microns. You'll get excellent images throughout a full 6 hours after reconstitution. Meets all your lung perfusion evaluation needs... scheduled or stat. Reconstitution time ... only 6 minutes.

More than 80% lung uptake for reliable biological efficacy

Low supernatant activity (SA) and very high radiochemical purity (RCP) help assure biological efficacy you can depend on time after time.

Please see adjacent page for brief summary.

The only MAA product indicated for use in isotopic venography

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SQUIBB™ Diagnostics

MACROTEC™

Technetium Tc 99m Albumin Aggregated Kit

Diagnostic — For Intravenous Use

DESCRIPTION

Macrotec is a sterile, nonpyrogenic, lyophilized preparation of albumin aggregated. Each 5 mL vial of Macrotec contains 1.5 mg of Albumin Aggregated, 10.0 mg Albumin Human, 0.06 mg (minimum) stannous chloride (maximum stannic and stannous chloride 0.16 mg), 1.8 mg of sodium chloride with trace amounts of sodium acetate, acetic acid and hydrochloric acid. Macrotec contains no preservatives. The pH of the reconstituted product is between 3.8 and 8.0.

The aggregated particles are formed by denaturation of Albumin Human in a heating and precipitation process. Each vial contains 1-8 million particles, 90% of which are between 10 and 90 microns in size. The average size is 20 to 40 microns; no particles are greater than 150 microns.

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

INDICATIONS AND USAGE

Lung Imaging

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

Isotopic Venography

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

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

CONTRAINDICATIONS

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

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

WARNINGS

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

PRECAUTIONS

General

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

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

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

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

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

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

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

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

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

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

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

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

Carcinogenesis, Mutagenesis, Impairment of Fertility

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

Pregnancy Category C

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

Ideally, examinations using radiopharmaceuticals, especially those elective in nature, 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

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

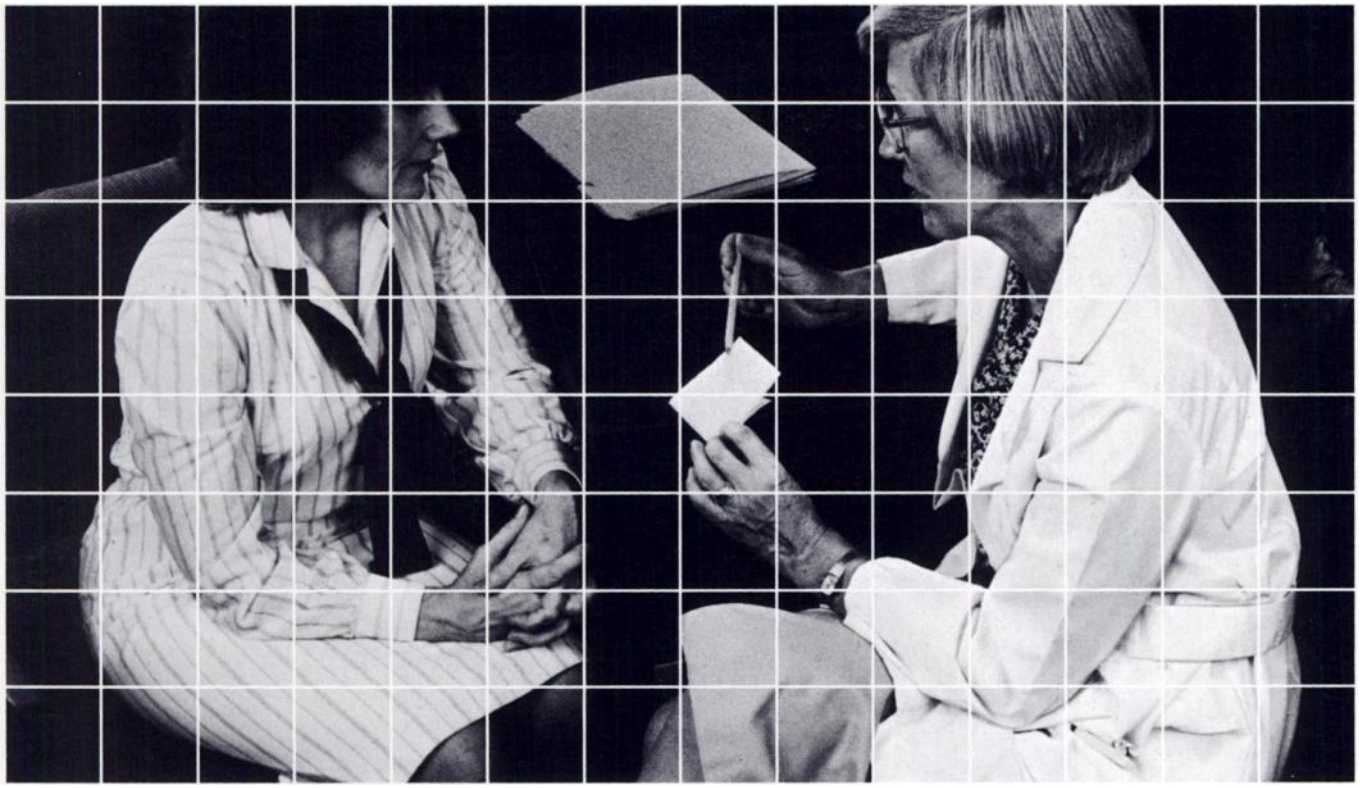
ADVERSE REACTIONS

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

HOW SUPPLIED

Macrotec (Technetium Tc 99m Albumin Aggregated) is supplied as a kit containing 10 reaction vials (5 mL size).

the problem...OSTEOPOROSIS



Precise, Repeatable Measurement Through Single-Photon Rectilinear Forearm Scanning Of Both Cortical and Trabecular Bone

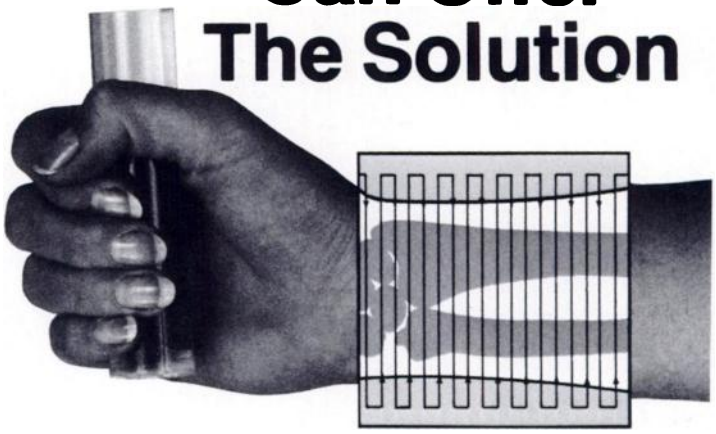
Now, for the first time, an easy-to-use, high precision osteoporosis screening procedure is available for clinical use for patient monitoring and management. With the ND1100 Bone Density Scanner, bone mineral content (mass), can be measured quickly and inexpensively, providing valuable early detection of the onset or development of osteoporosis or other metabolic bone diseases and disorders.

Utilizing an improved single-photon bone densitometry system with rectilinear scanning of both trabecular and cortical bone of the forearm, the ND1100 is the high-precision, low-radiation instrument you've been looking for. Best of all, once baseline data is established for a patient, minute changes in bone mineral content which may occur in a relatively short period of time can be monitored.

Useful for: Non-invasive screening for patient monitoring and management
- Osteoporosis
- Renal Osteodystrophy
- and other metabolic bone disorders and diseases

Gives You:
1% accuracy of measurement
1% precision (Repeatablity)
Computer friendly easy operation
Patient files stored on tape
Hard copies of pertinent data
Economy

Now You Can Offer The Solution



Used successfully in research for 15 years, the single-photon absorptiometry technique is now available for clinical osteoporosis screening. The ND1100 gives you a new dimension for osteoporosis measurement and monitoring. This in vivo procedure is reimburseable by Medicare.

For full details, send for our new brochure: "Bone Densitometry Comes of Age – ND1100 Bone Density Scanner."

Nuclear Data Inc
ND Medical Products

Golf and Meacham Roads
Schaumburg, Illinois 60196
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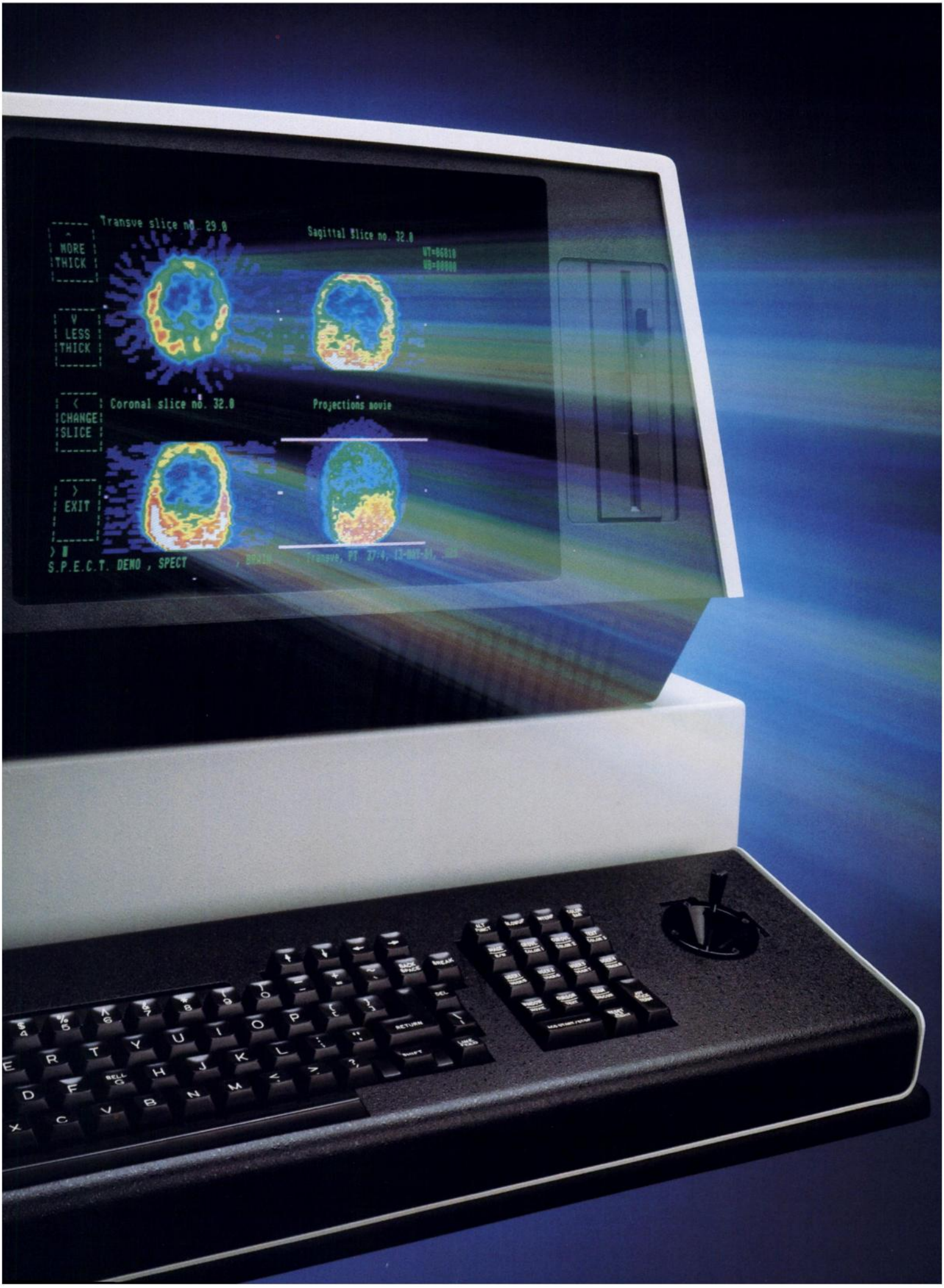
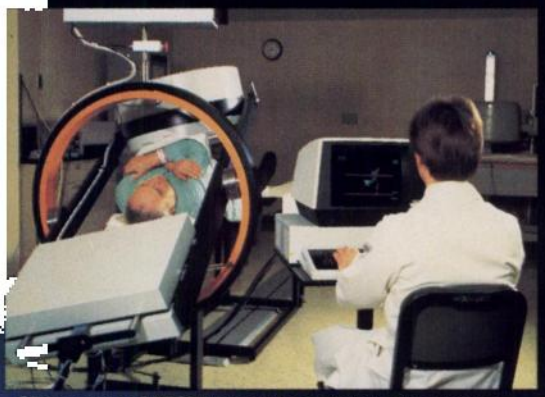
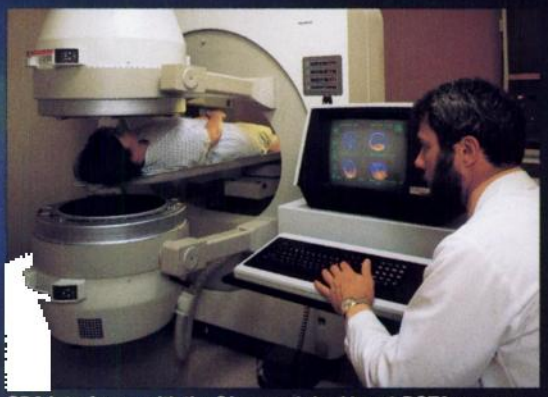

Transve slice no. 29.0
Sagittal Slice no. 32.0
MORE THICK
LESS THICK
Coronal slice no. 32.0
Projections movie
CHANGE SLICE
EXIT
S.P.E.C.T. DEMO , SPECT

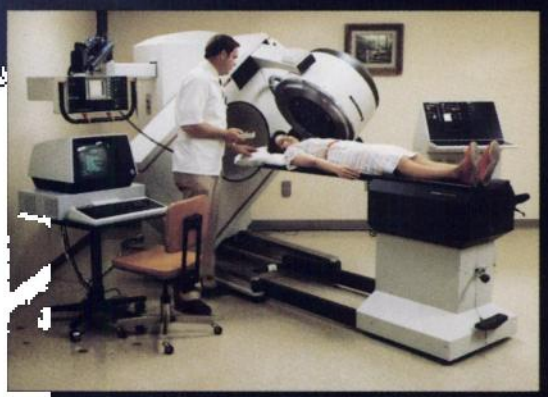


CDA acquires SPECT images from all popular cameras such as this GE 400T.

CDA performs 128 x 128 on-the-fly SPECT reconstruction, shown here on the Picker digital camera.



CDA interfaces with the Siemens' dual head ROTA camera to cut imaging time in half.



CDA operates with the advanced Raytheon SPECTRUM 91 SECT body contouring camera for better clarity in reconstruction.

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For a demonstration call Susan Williams at 617/647-1900 or write Computer Design & Applications Inc., 411 Waverley Oaks Road, Waltham, MA 02154. Telex: 92-2521. In Europe: CDA International, Osdorfer Weg 147, Postfach 52 05 37, 2000 Hamburg 52, West Germany. Telefone: 040/89 30 58. Telex: 2165 642.

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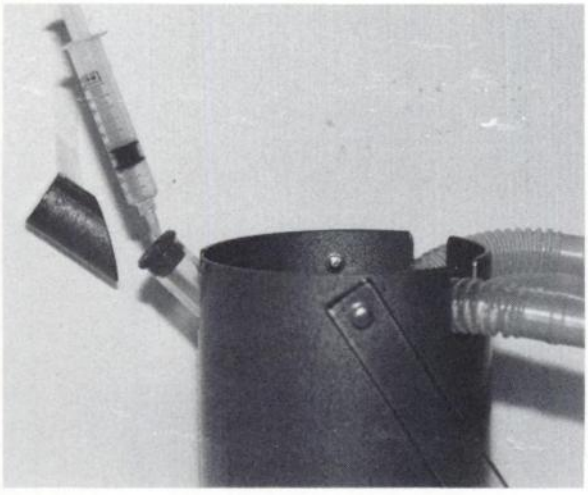

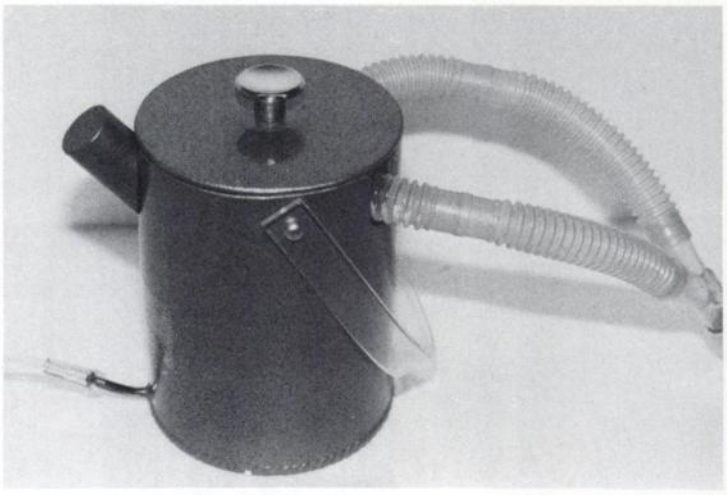

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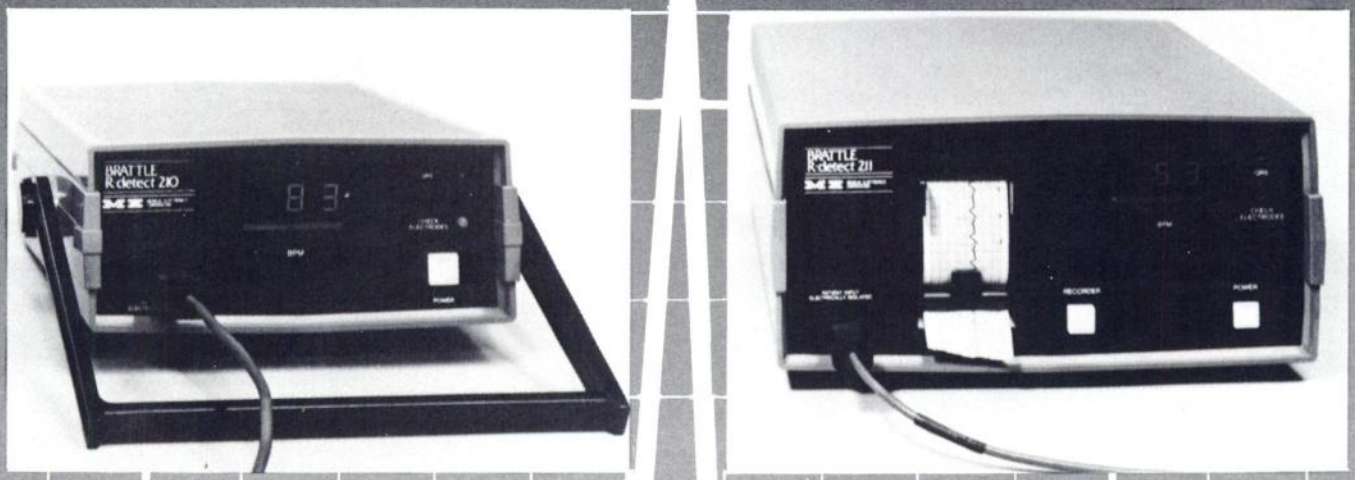

MODEL 210 **MODEL 211**

The BRATTLE R-DETECT offers you fully automatic R-wave triggering and is compatible with all nuclear medicine computers. In addition, the model 211 has a strip chart with EKG and event marker indicating the exact location of the R-DETECT signal.

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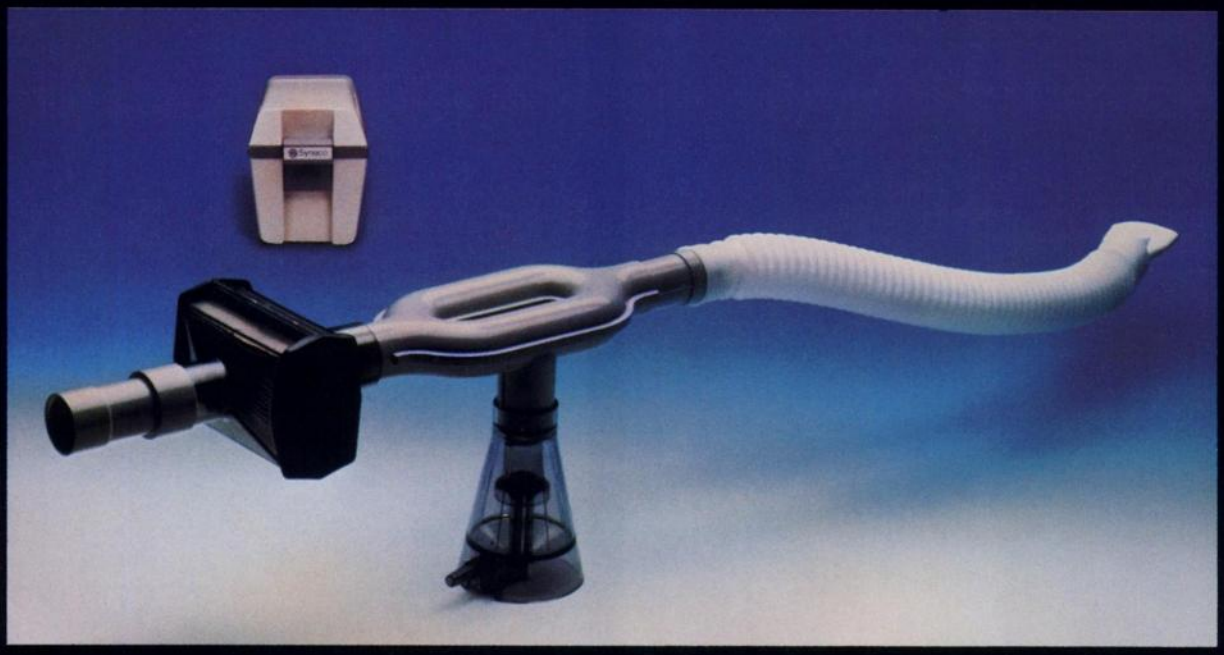

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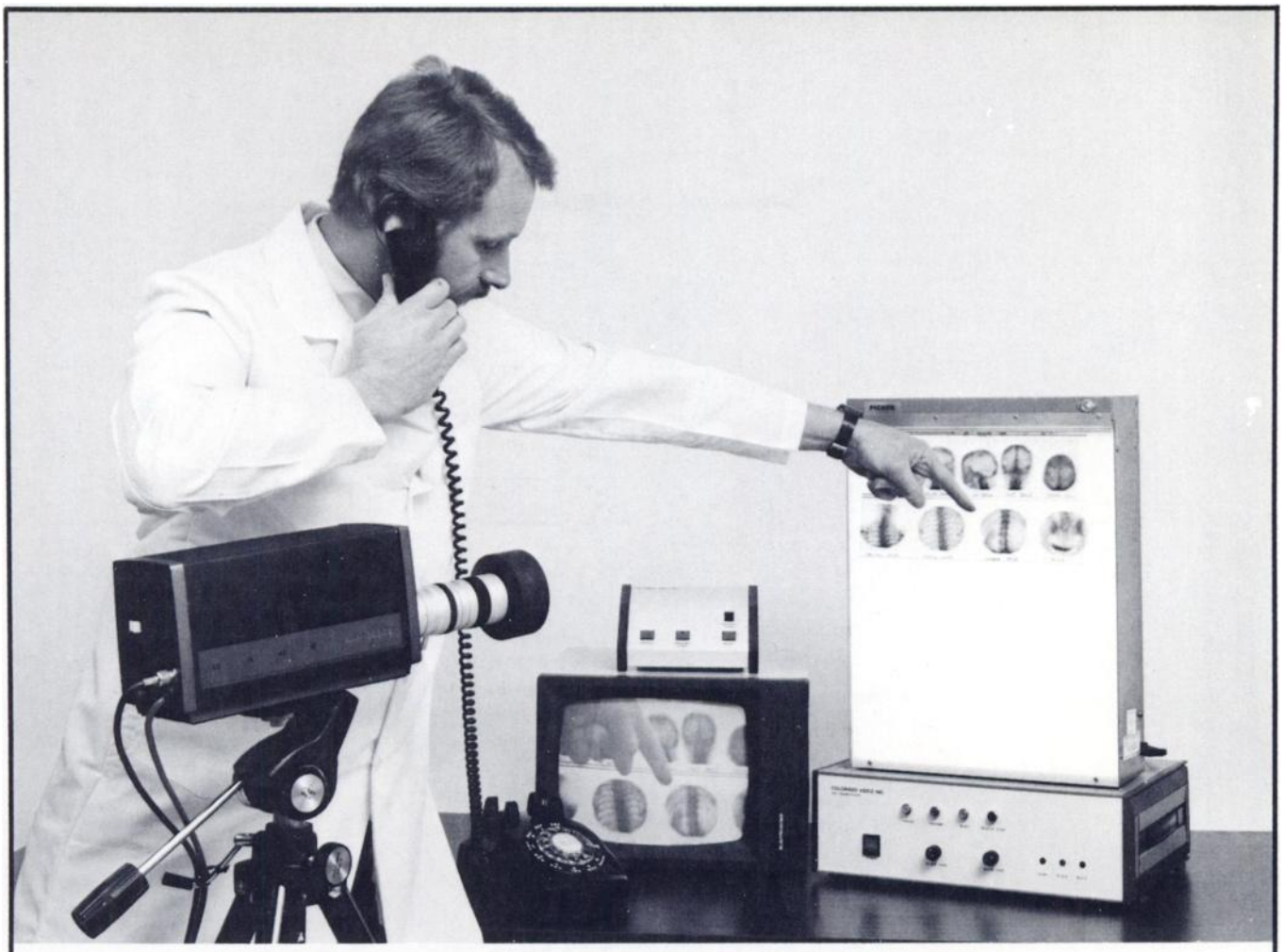

TELERADIOLOGY

Some nuclear medical scans may require on-the-spot diagnoses. Because Slow-Scan Television (SSTV) transmits images by ordinary telephone, you can review scans and make preliminary diagnoses even when you are not at your primary location. With the visual assistance of SSTV, imaging specialists can order additional tests if necessary or recommend that treatment proceed. There is little delay, regardless of your location.

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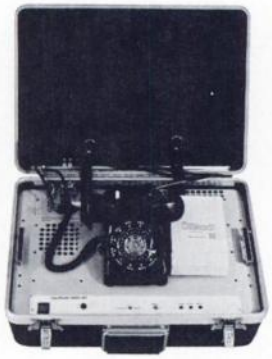

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Making The Case For Nuclear Medicine

The most important instrument in your department may be the telephone. Unless it rings–unless clinicians refer patients for studies–there is no nuclear medicine practice.

Under today's DRG-based payment systems, obtaining and maintaining referrals has become even more important. Hospitals are encouraging their clinicians to minimize the number of tests they order, selecting those that are most definitive, that answer the diagnostic question in the shortest time, at the lowest cost.

How can clinicians know which tests meet these criteria?

Supporting Nuclear Medicine

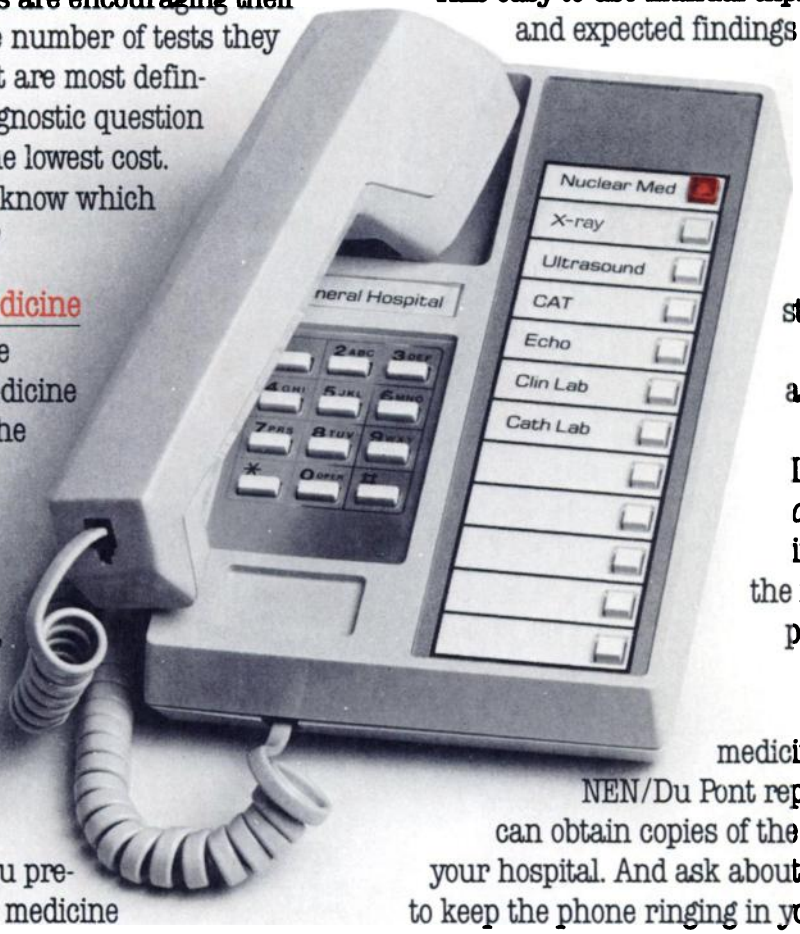
At NEN/Du Pont we share your belief in nuclear medicine studies. We understand the contributions these non-invasive studies make to quality medical care. We know which studies can serve as low-cost screens, which can be performed easily on an outpatient basis, which offer physicians the procedure of choice they seek.

And we can help you present the case for nuclear medicine to your administrators and referring clinicians.

For many years, NEN/Du Pont has supported nuclear medicine with teaching programs and exhibits directed to the clinicians who order your studies. Now, we've developed a *Clinician's Guide to Nuclear Medicine Procedures*...to help you build referrals with key clinicians at your institution.

Helping Clinicians Choose

This easy-to-use manual explains the indications and expected findings of nuclear medicine studies, compares them to other diagnostic modalities, and helps referring clinicians select the most appropriate studies. Unnecessary tests are reduced and the patient's stay can be shortened. In addition, the *Clinician's Guide* contains information useful to the nursing staff in preparing and managing patients before and after their nuclear medicine studies. Ask your NEN/Du Pont representative how you can obtain copies of the *Clinician's Guide* for your hospital. And ask about our other programs to keep the phone ringing in your department. Our goal is Imaging Excellence: enhancing the image of your department while improving the images in your department.



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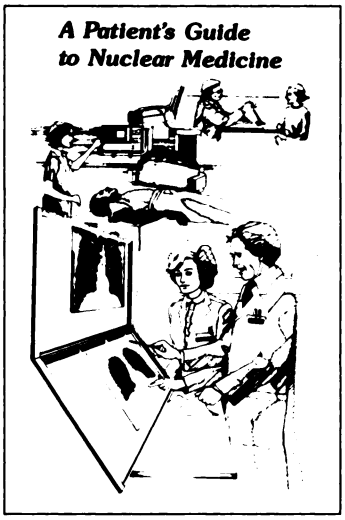
2 Patient Information Pamphlets

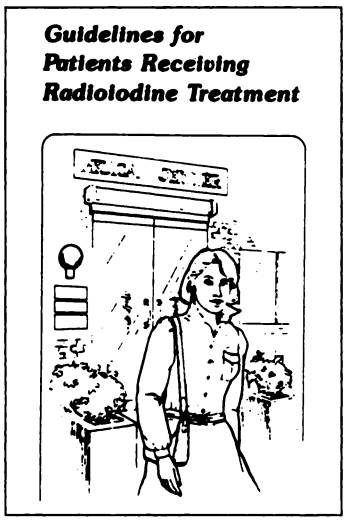
A Patient's Guide to Nuclear Medicine



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

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

16 pp; 5½ x 8½; in 2 colors;
20¢ per pamphlet; minimum order: 100 copies



Guidelines for Patients Receiving Radioiodine Treatment

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

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

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

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

ORDERING INFORMATION

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

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Fundamentals of Nuclear Medicine

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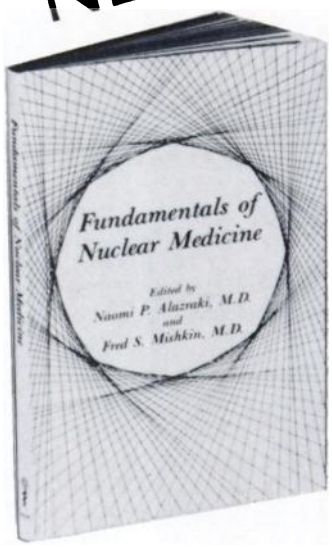

Edited by
Naomi P. Alazraki, MD, and Fred S. Mishkin, MD

Other Contributors: Manuel L. Brown, MD, Frederick L. Datz, MD, Leon S. Malmud, MD, Isaac C. Reese, PhD, Barry A. Siegel, MD, James A. Sorenson, PhD, Leroy A. Sugarman, MD, Andrew T. Taylor, Jr., MD, Heidi S. Weissmann, MD, Henry N. Wellman, MD

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. . . a basic introductory guide to acquaint medical students and physicians with the most useful nuclear medicine techniques for detecting and evaluating common disorders.

Abbreviated Contents

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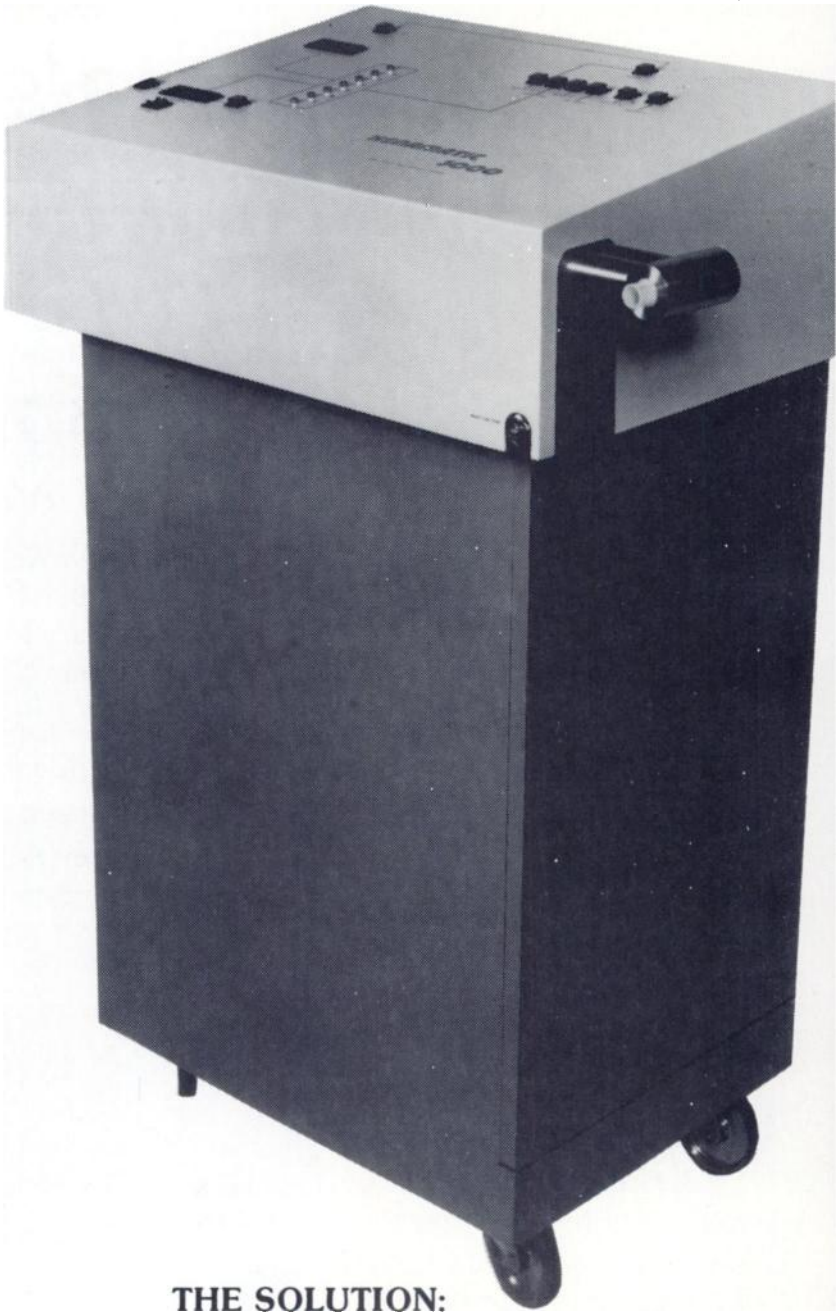

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You would like to do the lung perfusion images first, look at the images and decide if a ventilation study is called for.

THE SOLUTION:
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THE PROBLEM:
The short half-life of Xenon 133 makes availability a problem, increases shipping costs, and we lose much of it through decay.

THE SOLUTION:
Xenon 127. Its 36 day half-life eliminates the inherent problems of short lived Xenon 133.

THE PROBLEM:
Xenon delivery systems currently being offered are not sufficiently shielded for Xenon 127.

THE SOLUTION:
The XENAMATIC Xenon Gas Delivery System with the optional Xenon 127 lead shielding. Additional lead is provided throughout the unit. In strategic locations we provide up to 1/2 inch of lead. Our goal: to achieve a radiation level of less than 2 mr/hr at the surface under normal use conditions.

THE PROBLEM:
Xenon Traps are really delay systems. If it delays the Xenon long enough for it to decay, then it approaches a trap in function. With Xenon 127, activated charcoal traps either must be significantly larger than previously available traps or they must be refrigerated.

THE SOLUTION:
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For more information, call or write today:

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Managing Departmental Costs In A Cost Conscious Environment

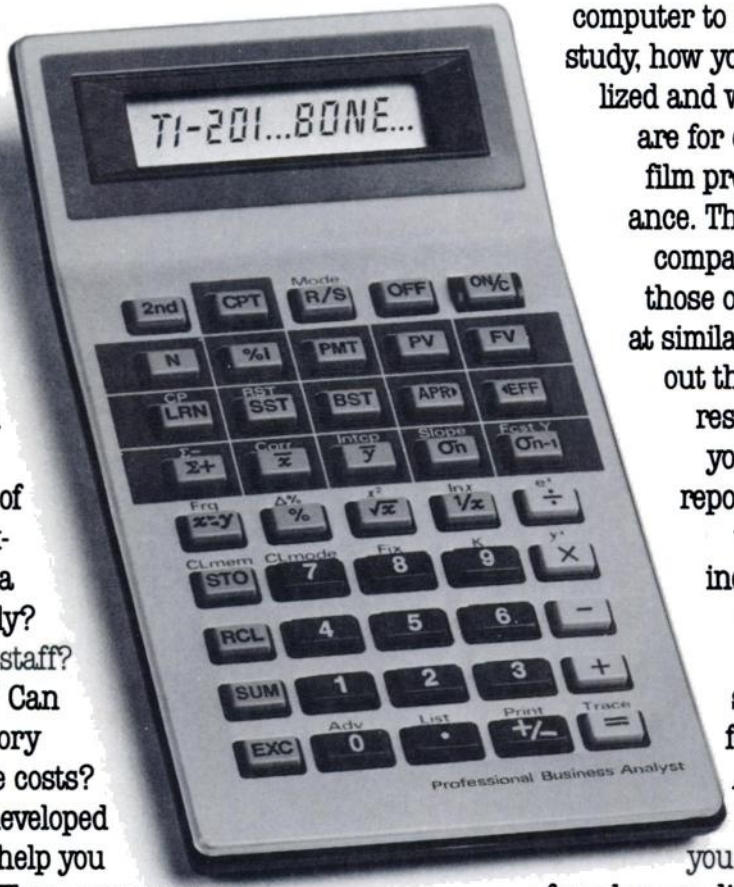
Efficient departmental management is no longer an elective procedure for nuclear medicine.

In the cost-conscious environment of today's hospital, administrators are looking more carefully at departmental budgets. At the same time, attending physicians are ordering tests more selectively, basing their decisions both on the diagnostic information they need and the cost-effectiveness of the study.

Understanding Your Costs

This means that you are being asked to become more of a businessman, adding terms like "efficiency" and "productivity" to your medical vocabulary. Now you have to know the real operating costs of your department. What, for example, does it cost to perform a bone scan? Or a thallium study? Are most costs attributable to staff? To equipment? Or to supplies? Can changes in scheduling, inventory or procedure mix reduce these costs?

At NEN/Du Pont we've developed a computer-based program to help you determine and analyze costs. Then, you can use the results to increase productivity in your department. It's called Financial Management Analysis (FMA) and it's available to all our customers.



FMA—A Management Program For You

Here's how it works. Your NEN/Du Pont representative will help you collect such data as costs for personnel, supplies and instrumentation, the number and kind of studies you perform and the time the studies take. Then, this input will be analyzed by the computer to show your costs per study, how your staff is being utilized and what your total costs are for every category, from film processing to maintenance. The program can even compare your figures with those of other departments at similar hospitals throughout the country. Your representative will present your FMA in a written report, and will review it with you to help you increase the efficiency of your department.

Ask your representative about FMA for your department. And about our other programs to help you meet the challenges of nuclear medicine in the '80s. Our goal is Imaging Excellence: enhancing the image of your department while improving the images in your department.

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DISTRIBUTOR. Major U.S. manufacturer of radiopharmaceuticals and reagents for diagnostic imaging seeks qualified distributors in selected countries. Contact: International Sales Department, Box 6950, Richmond, CA 94806.

FELLOWSHIP IN NUCLEAR MEDICINE. One year program available to Board admissable or BC internists, pathologists or radiologists with emphasis on any or all aspects of nuclear cardiology, nuclear oncologic imaging or general diagnostic nuclear imaging. Full details available upon request. Available July 1, 1985. Contact: J.A. Prezio, MD, Program Director and Acting Chairman, Dept. of Nuclear Medicine, SUNY/Buffalo, 3495 Bailey Avenue, Building 5, Buffalo, NY 14215.

NUCLEAR MEDICINE PHYSICIAN WANTED. Well trained and experienced Board Certified Nuclear Medicine Physician with Board Certification or Board Eligible in internal medicine who has been in solo practice of nuclear medicine (non-subsidized) for 5–10 years who would be interested in becoming a partner in a successful privately owned outpatient Nuclear Medicine Clinic and lab, fully equipped for in vivo and in vitro studies. Includes private office with Technical and Administrative Staff. Must be willing and capable of assuming adminstrative and technical responsibility. Medical School affiliation possible if desired. Please send resume to: Box 1001, Society of Nuclear Medicine, 475 Park Ave. So., New York, NY 10016.

NUCLEAR MEDICINE TECHNOLOGIST. Position now available for an experienced Nuclear Medicine Technologist certified by SNM or registered technologist in a private progressive outpatient nuclear medicine laboratory in a large city in a large medical center in the Sun Belt. Knowledge of radioimmunoassay, imaging, computer, and nuclear cardiology in addition to supervisory, administrative, and teaching experience required. Please send resume to: Box 1000, Society of Nuclear Medicine, 475 Park Ave. So., New York, NY 10016.

WANTED: PHYSICAL SCIENCE TECHNICAL ASSISTANT. 40 hours per week, 7 a.m. to 3:30 p.m., $8.87 per hour. Duties: Radiopharmaceutical preparation; quality control of radiopharmaceuticals; calibration of detection equipment; implementation of daily and period safety procedures in the Section of Nuclear Medicine; performance of measurements for in vitro tests; data processing of results. Minimum requirements: 4 years college with BS degree or equivalent in physics and 3 months training in nuclear medicine technology. Near west side Chicago location. Send resume to: Illinois Job Service, 910 South Michigan Avenue, 3rd floor, Chicago, IL 60605; Attention: Shirley Chalem. Reference #3718-S. An Employer Paid Ad.

CLINICAL EDUCATION COORDINATOR. Challenging part-time position in a university-based NMT Program. Applicants must be graduates from an accredited BS degree NMT program and be certified, with 2 yr experience. The position involves periodic travel to clinical affiliation sites within Upstate New York and occasional instruction. Candidates must possess excellent communication skills and a demonstrated commitment to the field. To apply, please send resume and transcripts to: Laurie Fuller, Clinical Sciences Academic Coordinator, Rochester Institute of Technology, P.O. Box 9887, Rochester, NY 14623.

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SIEMENS PHO/CON-192 EMISSION TOMOGRAPHIC IMAGING SYSTEM, 140 keV low energy, all purpose collimators, 300 keV medium energy collimators and Mirco Dot Imager. Excellent working condition. Contact: Nuclear Medicine Department, William Beaumont Hospital, Royal Oak, MI 48072 or call: (313)288-8040

University of Kuwait Health Science Center

Faculty of Allied Health Sciences and Nursing

Appointments in Radiologic Sciences

Applications are invited for teaching posts in the Radiologic Sciences Program. This is a University-based degree program with specialty tracks in diagnostic radiography, nuclear medicine and radiation therapy. Practical training is carried out in the hospitals of the Ministry of Public Health. The language of instruction is English. All appointees will take part in theoretical and practical teaching, and development and management of the program.

1. *Academic Director in Diagnostic Radiography*
   Candidates must have extensive experience of teaching and clinical education competence evaluation in an American-style curriculum
2. *Academic Director in Nuclear Medicine*
   Candidates' teaching and clinical experience must be in Nuclear Medicine, and they must be able to make a significant contribution to the management of the Nuclear Medicine Department in the University Teaching Hospital.
3. *Assistant Director in Basic Radiography*
   Candidates must have clinical expertise and teaching experience in Quality Assurance testing and equipment.

General Requirements for Appointment:

1. Candidates must have a B.Sc. or higher professional qualification from an approved Radiologic Sciences program. Academic Director candidates must also have a higher degree in a related field.
2. License to practice the profession.
3. Assistant Director candidates must have 5 years' professional experience following qualification, including at least 2 years' full-time equivalent teaching in this field. Academic Director candidates must have 10 years' professional experience following qualification, including at least 3 years administrative experience, and at least 5 years full-time equivalent teaching experience in this field.
4. Assistant Director candidates must demonstrate ability to conduct research in Radiology or related fields. Academic Director candidates must have published original work in their field.
5. Candidates must have continuing education experience.

Conditions of Appointment:

1. Total monthly salary will be within the following scales, according to qualifications and experience:
   Academic Director: KD 570–720
   Assistant Director: KD 470–620
   (KD 1= £2.3, U.S. $3.4 approximately.) In addition there will be a monthly supplement of KD 100 for 10 months a year, paid by Ministry of Public Health. There is no income tax in Kuwait and currency is transferrable without restriction.
2. Free, furnished, air-conditioned accommodation is provided, and electricity and water supplied free of charge.
3. Sixty days paid summer leave for each completed year of employment, plus various national holidays.
4. Annual economy class return air tickets to the country of citizenship or permanent residence are provided for the appointee, spouse, and three dependent children under 24.
5. End-of-service gratuity of half-month's salary for each completed year of employment up to 5 years, and one month's salary per year thereafter.

Applicants should send applications in duplicate, including full curriculum vitae, 2 recent passport photographs and the names and addresses of three referees, to:

The Dean, Department 17
Faculty of Allied Health Sciences and Nursing
P.O. Box 31470
Sulaibikhat
Kuwait

To arrive not later than November 15, 1984.

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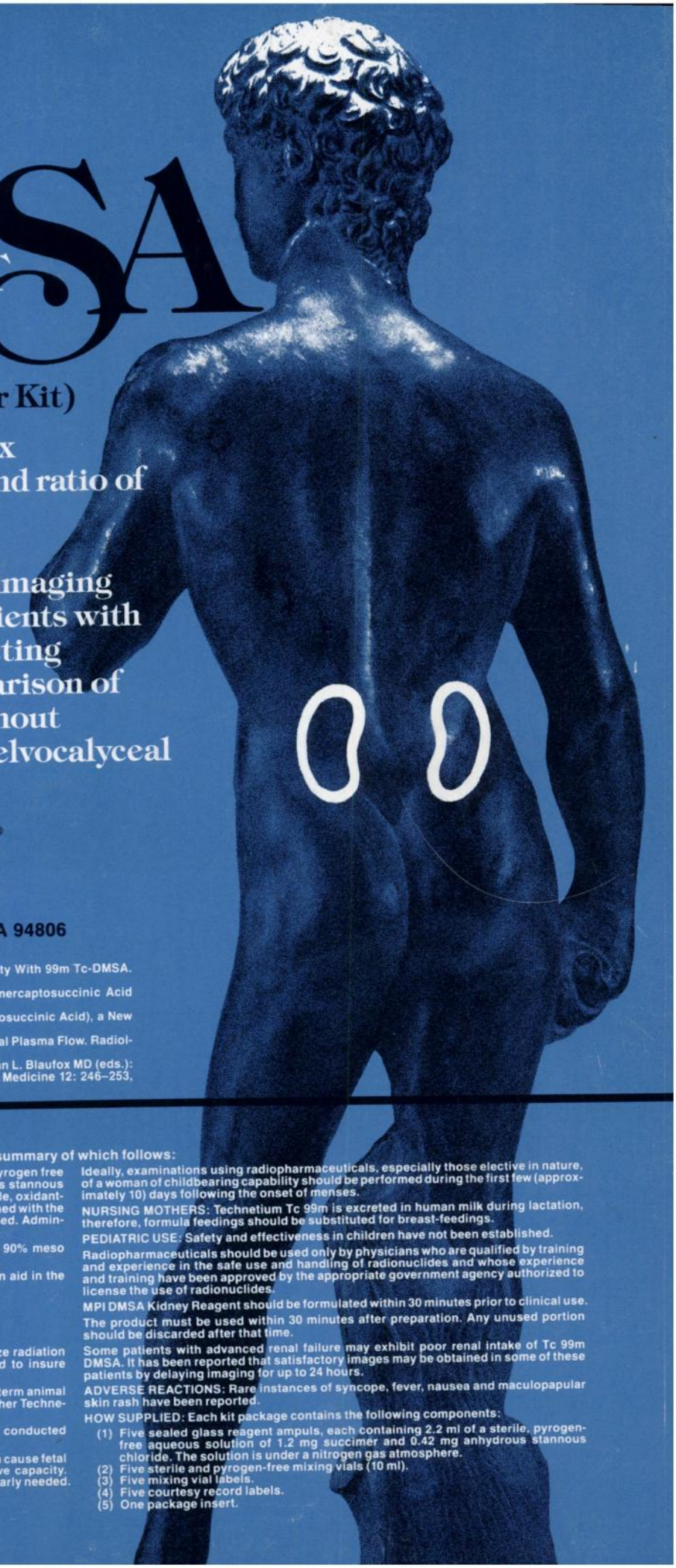
MPI DMSA KIDNEY REAGENT

(Technetium Tc 99m Succimer Kit)



- Localizes in the renal cortex
- Highest target to background ratio of Tc 99m agents[1,2]
- Low excretion rate[2,3]
- DMSA is the renal cortical imaging agent of choice. Even in patients with obstructed or dilated collecting systems, an accurate comparison of relative cortical uptake without interfering activity in the pelvocalyceal structures can be made.[4,5]

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1. Enlander D. et al: Renal Cortical Imaging in 35 Patients: Superior Quality With 99m Tc-DMSA. J. Nuc. Med. 15: 743–749, 1974.
2. Daly M.J. et al: Differential Renal Function Using Technetium-99m Dimercaptosuccinic Acid (DMSA): In Vitro Correlation. J. Nuc. Med. 20: 63–66, 1979.
3. Handmaker H. et al: Clinical Experience With 99m Tc-DMSA (Dimercaptosuccinic Acid), a New Renal-imaging Agent. J. Nuc. Med. 16: 28–32, 1975.
4. Taylor A.: Delayed Scanning With DMSA: A Simple Index of Relative Renal Plasma Flow. Radiology 136: 449-453, 1980.
5. Handmaker H: Nuclear Renal Imaging in Acute Pyelonephritis. in Freeman L. Blaufox MD (eds.): Update on Radionuclide Assessment of the Kidney (I): Semin. Nuclear Medicine 12: 246–253, 1982.

MPI DMSA Kidney Reagent (Technetium Tc 99m Succimer Kit)

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

DESCRIPTION: Each reagent ampul of the kit contains 2.2 ml of a sterile, pyrogen free aqueous solution containing 1.2 mg of succimer and 0.42 mg of anhydrous stannous chloride in aqueous solution under a nitrogen gas atmosphere. When sterile, oxidant-free, pyrogen-free sodium pertechnetate Tc 99m in isotonic saline is combined with the reagent, following the instructions provided with the kit, a complex is formed. Administration is by intravenous injection for diagnostic use.

The succimer component of MPI Kidney Reagent consists of more than 90% meso isomer and less than 10% d,l isomer.

INDICATIONS AND USAGE: MPI DMSA Kidney Reagent is to be used as an aid in the scintigraphic evaluation of renal parenchymal disorders.

CONTRAINDICATIONS: None known.

WARNINGS: None.

PRECAUTIONS: General

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

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY: No long-term animal studies have been performed to evaluate carcinogenesis potential or whether Technetium Tc 99m Succimer affects fertility in males or females.

PREGNANCY CATEGORY C: Animal reproduction studies have not been conducted with the MPI DMSA Kidney Reagent either with or without Tc 99m.

It is also not known whether Technetium Tc 99m alone or with Succimer can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. Technetium Tc 99m should be administered 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 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.

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.

MPI DMSA Kidney Reagent should be formulated within 30 minutes prior to clinical use.

The product must be used within 30 minutes after preparation. Any unused portion should be discarded after that time.

Some patients with advanced renal failure may exhibit poor renal intake of Tc 99m DMSA. It has been reported that satisfactory images may be obtained in some of these patients by delaying imaging for up to 24 hours.

ADVERSE REACTIONS: Rare instances of syncope, fever, nausea and maculopapular skin rash have been reported.

HOW SUPPLIED: Each kit package contains the following components:

(1) Five sealed glass reagent ampuls, each containing 2.2 ml of a sterile, pyrogen-free aqueous solution of 1.2 mg succimer and 0.42 mg anhydrous stannous chloride. The solution is under a nitrogen gas atmosphere.
(2) Five sterile and pyrogen-free mixing vials (10 ml).
(3) Five mixing vial labels.
(4) Five courtesy record labels.
(5) One package insert.