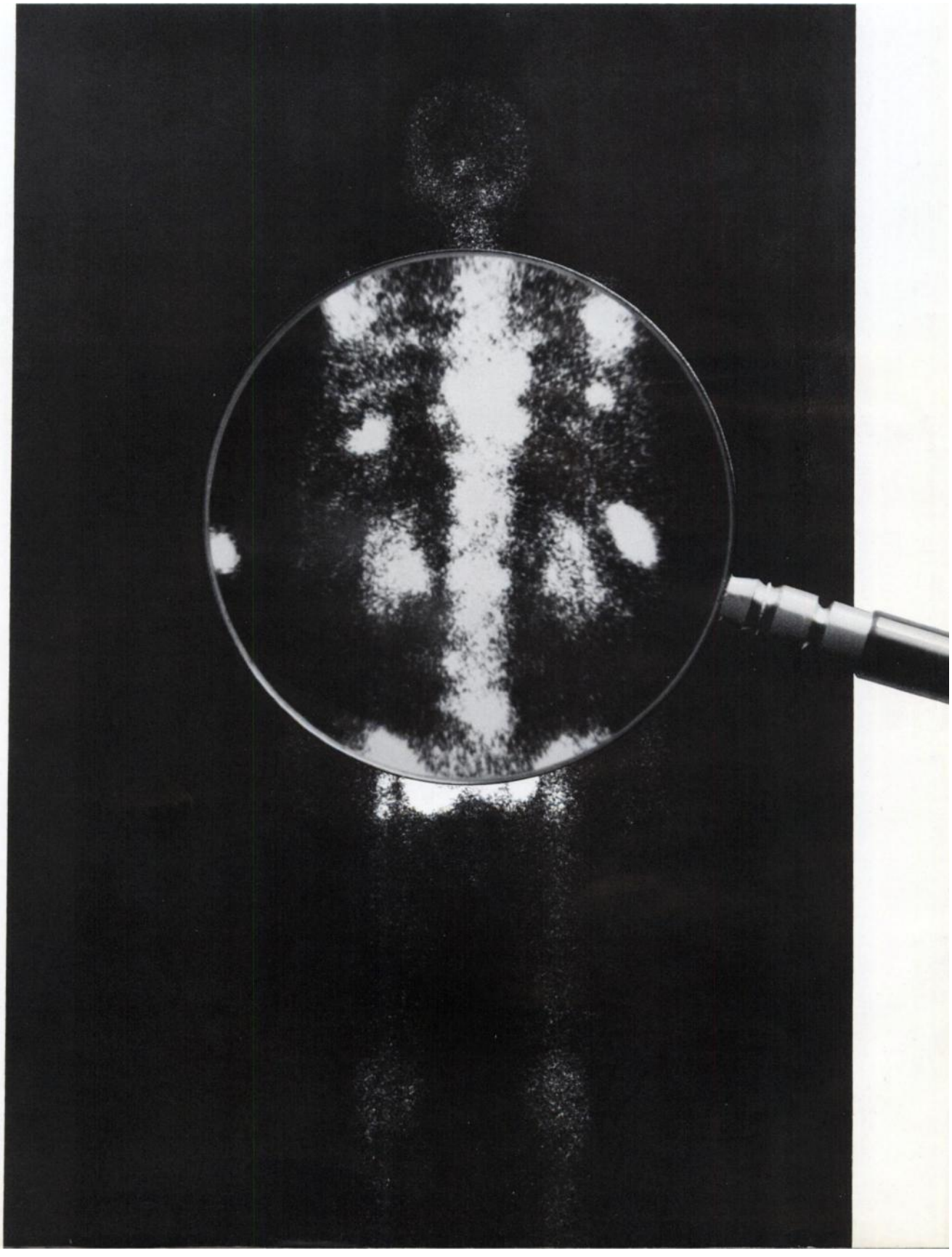
The Bone



Seeker

MPI STANNOUS DIPHOSPHONATE (TECHNETIUM Tc 99m ETIDRONATE KIT) CONSISTENTLY SEEKS BONE ... AND BONE LESIONS.

MPI Stannous Diphosphonate targets areas of diagnostic significance. Its reliability is magnified with:

Rapid Blood Clearance. The P-C-P bond of diphosphonate resists hydrolysis; clears the kidneys rapidly. Optimum imaging time is in two to four hours.

Increased Stability. Ascorbic acid within the reagent aids in maintaining tin in its reduced state. The ^{99m}Tc pertechnetate stays where it belongs...tagged to the reagent.

Optimum Tin Levels. The Sn(II) level provides high labeling efficiency, with minimum interference with subsequent brain scans.

Investigate the economy of MPI Stannous Diphosphonate

You can use up to 8 ml of 5 to 15 mCi ^{99m}Tc in each vial. The reagent is usable for six hours after labeling.

You also have no delivery charges when you order MPI Stannous Diphosphonate with any other MPI products.

Ask your Medi-Physics representative about our economical, reliable delivery procedures ....or call toll free:

(800) 227-0483—Outside California
(800) 772-2446—Inside California

medi+physics™

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

MPI Stannous Diphosphonate
Technetium Tc 99m Etidronate Kit-Diagnostic

DESCRIPTION: Each ampul contains a total of 1.54 mg of the sodium salt of etidronate, 0.42 mg stannous chloride, and 3.87 mg ascorbic acid in a 2.2-ml sterile, pyrogen-free aqueous solution. Hydrochloric acid and/or sodium hydroxide may have been added to adjust the pH to 2.5-5.0. The solution is under a nitrogen atmosphere. A complex is formed with the addition to the reagent of sterile, pyrogen-free sodium pertechnetate Tc 99m in isotonic saline.

INDICATIONS: Technetium Tc 99m etidronate is used as a bone imaging agent to delineate areas of altered osteogenesis.

CONTRAINDICATIONS: None known.

WARNINGS: This radiopharmaceutical should not be administered to children, pregnant women, or nursing mothers unless the expected benefit outweighs the potential risk. Radiopharmaceutical examinations of women of childbearing capability should be performed during the first few days following the onset of menses.

PRECAUTIONS: To minimize radiation dose to the bladder, the patient should be encouraged to drink fluids and void when the examination is completed and as often thereafter as possible for the next 4-6 hours. Where feasible, brain scans should precede bone imaging procedures. Technetium Tc 99m etidronate should be formulated, following aseptic procedures, within 6 hours prior to clinical use.

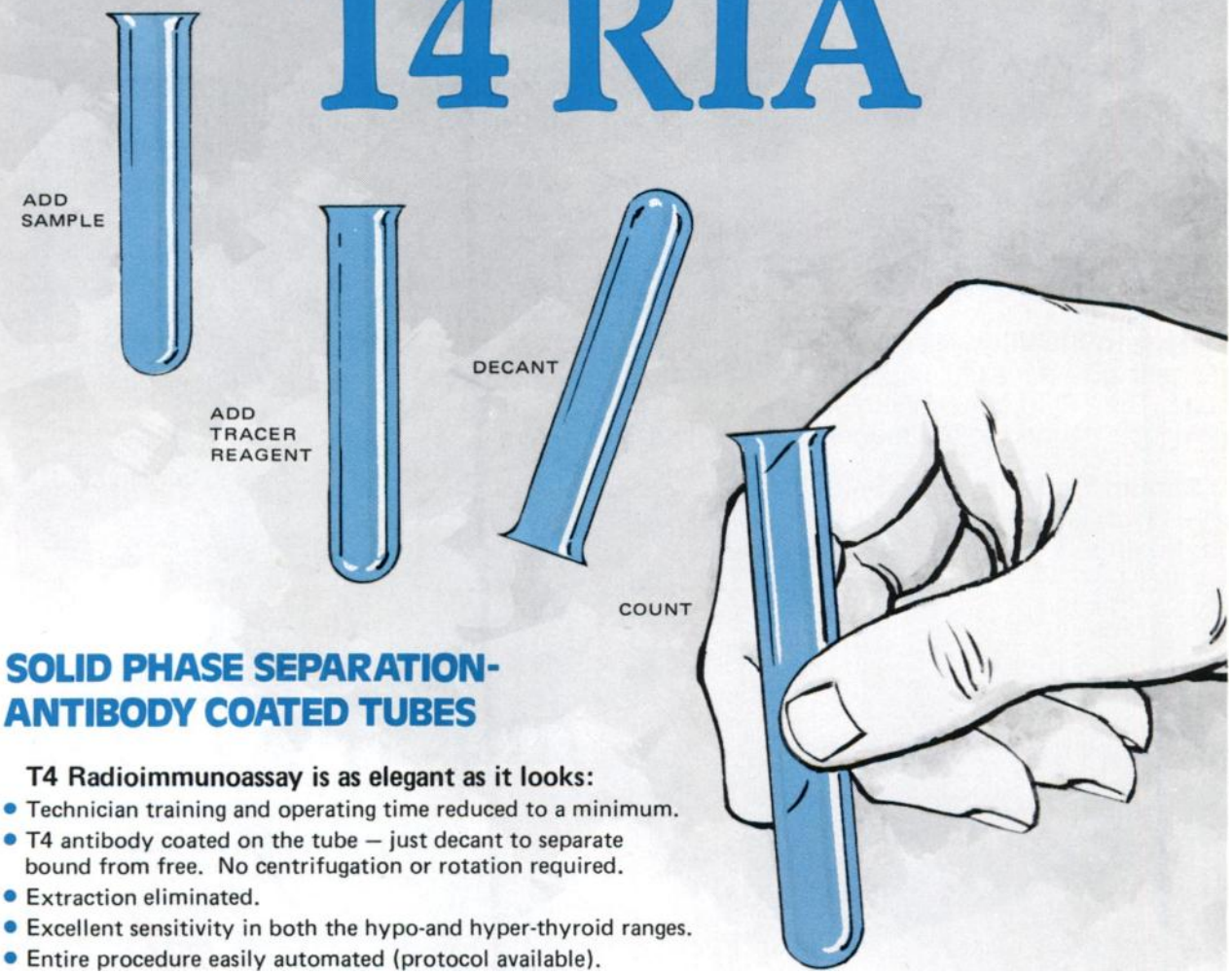
ADVERSE REACTIONS: Seven suspected reactions to technetium Tc 99m etidronate were reported in more than 22,500 clinical reports. There were two instances each of headaches and allergic reactions and one each of vomiting, rheumatoid arthritis flare-up, and skin rash.

DOSAGE AND ADMINISTRATION: The suggested adult dose is 5-15 mCi administered by slow I.V. injection. Do not administer more than 2.0 ml of unlabeled reagent per patient. Measure the patient dose with a suitable radioactivity calibration system immediately prior to administration. Scanning post-injection is optimal at 2-4 hours.

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

HOW SUPPLIED: Each kit package contains five sealed glass ampuls as described above, five sterile, pyrogen-free mixing vials, five each of mixing-vial and record labels and one package insert. Store at 5°-8°C; protect from light.

Clinical Assays GammaCoat™ T4 RIA



SOLID PHASE SEPARATION- ANTIBODY COATED TUBES

T4 Radioimmunoassay is as elegant as it looks:

- Technician training and operating time reduced to a minimum.
- T4 antibody coated on the tube – just decant to separate bound from free. No centrifugation or rotation required.
- Extraction eliminated.
- Excellent sensitivity in both the hypo-and hyper-thyroid ranges.
- Entire procedure easily automated (protocol available).

Protocol:

- **Add sample directly into GammaCoat tube.**
- **Add Tracer-Buffer Reagent.**
- **Incubate – for 45 minutes at room temperature.**
- **Decant or Aspirate.**
- **Count – the tube is counted for as little as 30 seconds.**

For further information call toll free at 1-800-225-1241 (in Massachusetts call collect 617-492-2526) or TWX (710-320-6460) or write:

Clinical Assays, Inc.

237 BINNEY STREET
CAMBRIDGE, MASS. 02142
(617) 492-2526

INTRODUCING

the only fully automated pulmonary investigatigation unit with a permanent gas trap... to insure your protection!

Here is the Medi-Ray pulmonary investigation unit . . . fully automated, completely enclosed, incorporating a built-in permanent gas trap. That's right, a permanent gas trap that needs no replacing or refilling. This unit represents the ultimate in state-of-the-art technology and insures the safety of the operator.

In addition to this unique capability, the Medi-Ray unit offers a long list of features including complete enclosure of the Xenon delivery and removal system in one unit; large air bag capacity facilitating extended equilibrium and washout time; compatible with Xenon 133 and Xenon 127; requires no oxygen.

These are only a few of the many features that make the Medi-Ray pulmonary investigation unit the most unique and advanced unit of its kind.

Call us collect at (914) 961-8484 and get the whole story, or write us at Medi-Ray, Inc., 150 Marbledale Road, Tuckahoe, N.Y. 10707.

Medi-Ray, Inc.

HOECHST

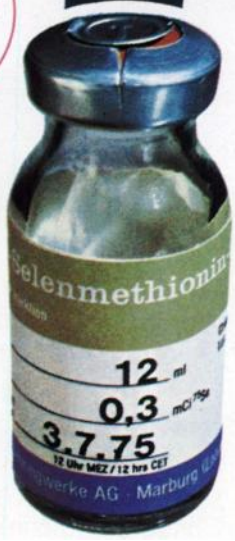
BEHRING INSTITUTE

E. v. Behring

According to our own new method

L-Seleno-methionine (Se-75)

For pancreas scintigraphy as a simple detection method for space occupying lesions like tumors or cysts and alterations of parenchyme.



Already after 10 min maximum count rate
At least 75 % of the initial activity after 60 min

Low radiation dose for 100 µCe in liver, pancreas and kidneys
Whole body dose: 0.8 rd
High radiochemical purity (98 %) at calibration date
Recommended dose: 300 µCi

Specification

L-Selenomethionine-(Se-75)
Less than 5 % D-Seleno-methionine.
Concentration of activity: 0.2 mCi Se-75/ml
Specific activity: 5-10 mCi Se-75/mg Selenomethionine

Pack

L-Selenomethionine-(Se-75) in physiological saline for injection (12 ml beaded rim vial)

Order No.: SE-515

Calibration day: 1st of the month

Dispatch: daily from the 1st of the previous month on

Shelf life: 3 months from the day of first dispatch

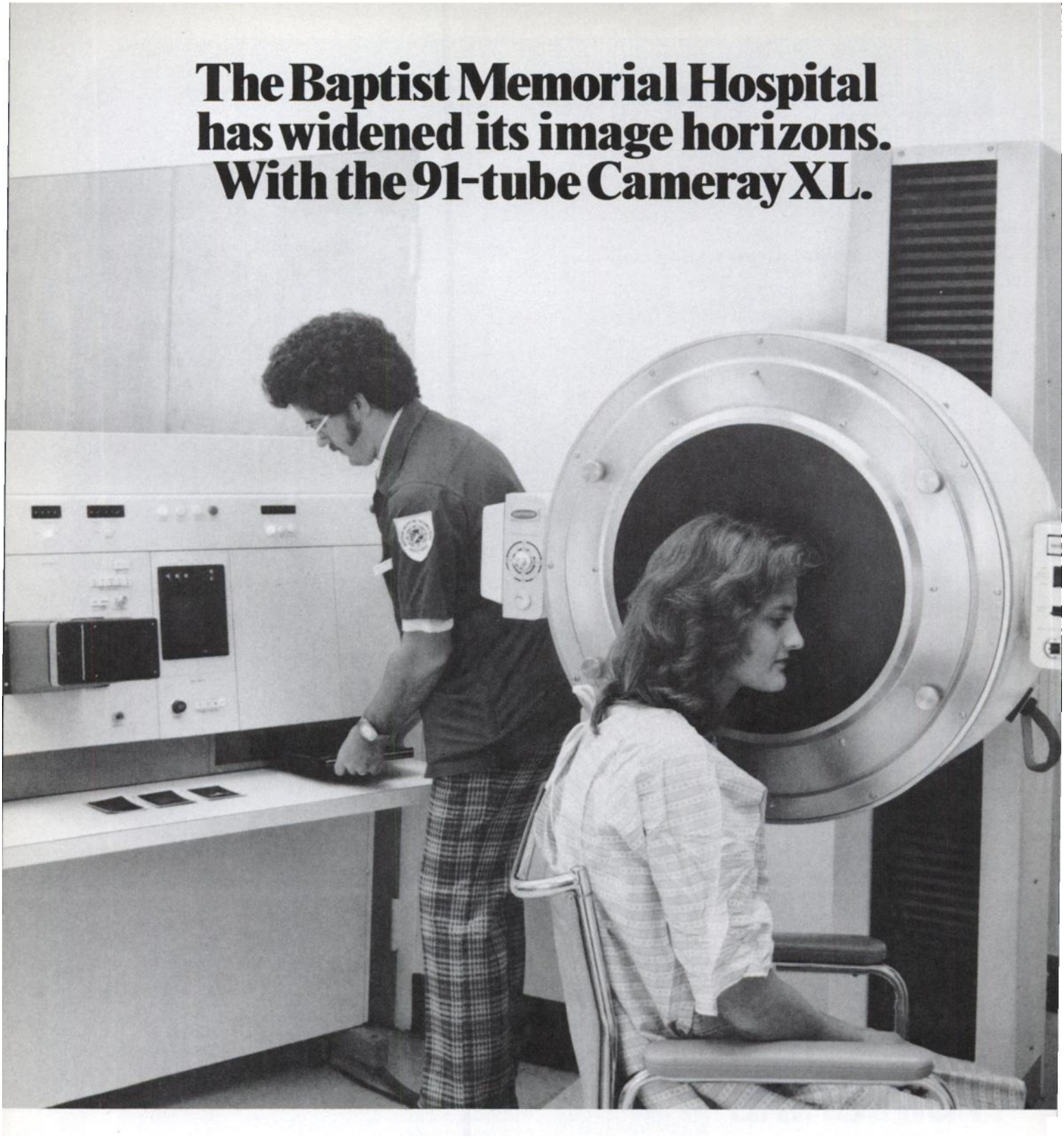
Contraindications

Radioactive material should be handled with special care to insure minimum radiation exposure to personnel and patients.
Unless strictly indicated, radiopharmaceuticals should not be administered to pregnant or nursing women or to juvenile patients.

Lh 71185

HOECHST AG · 6230 Frankfurt (Main) 80 · Behring Department

The Baptist Memorial Hospital has widened its image horizons. With the 91-tube Cameray XL.



The Baptist Memorial Hospital in Memphis, one of the nation's biggest and busiest medical institutions, is getting more patient per scan these days. At the same time, the nuclear medicine section, under Doctors John Rockett and Mohammed Moinuddin, is getting high resolution images with every reading. The Cameray XL-91 is on the scene.

Cameray XL-91 just might be the ultimate gamma camera. Because it offers you the widest undistorted field of view you can get. A big 16½ inches. And it's the first wide field gamma camera to produce high resolution images equivalent in all respects to smaller field cameras.

And Cameray XL-91 offers you a choice of console combinations. Or, if you're already a Cameray II owner, a quick conversion. So widen your image horizons. With Cameray XL-91. Contact Raytheon's Medical Electronics Operation, Fourth Avenue, Burlington, Mass. 01803. (617) 272-7270.

RAYTHEON

Advances in Low~Cost

Originally color displays were regarded by a large section of the medical physics profession as merely a pretty gimmick.

However it became apparent that the color display was of significant use in viewing successive frames in dynamic examinations.

Varian continued work on color displays and have produced such a display that provides good quality images in the following modes.

- Color scales with identification.
- Color curves with annotation.
- Color regions of interest outlines with identification
- Color contours with identification
- Color isometrics with identification
- Multiple screens at remote locations

Varian physicists feel that, if the black and white STATOS® hardcopy is to be used as a definitive clinical record, the color display is more than adequate as a volatile display.

Accordingly, any system where the modified Tektronix monochrome display is standard, it may be replaced by a color display for a price reduction.

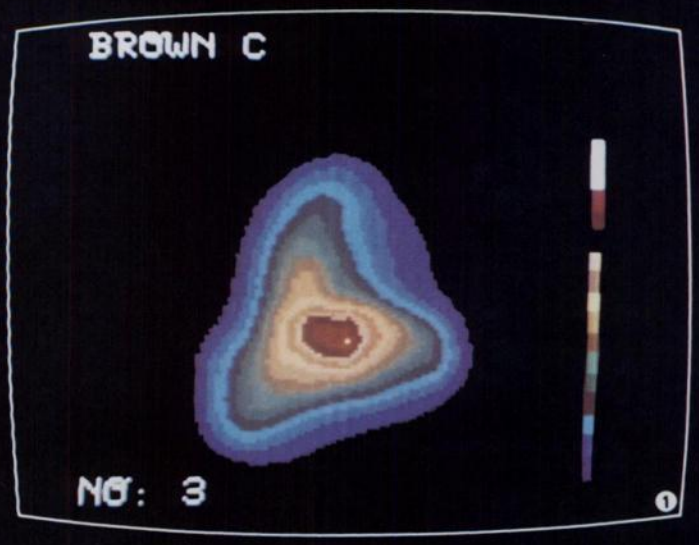
1. Color Scale of Embolized Lung in Left Lateral View
2. Contour Map of Embolized Lung in Left Lateral View
3. Dynamic Liver Examination showing Frame no 30 and Interactive Formation of Regions of Interest
4. Isometric View of Sum Matrix of Liver Dynamic Examination
5. Display of Completed Regions of Interest as shown in frame 3 (above)
6. Curves formed from Regions of Interest as shown in frame 5 (left)

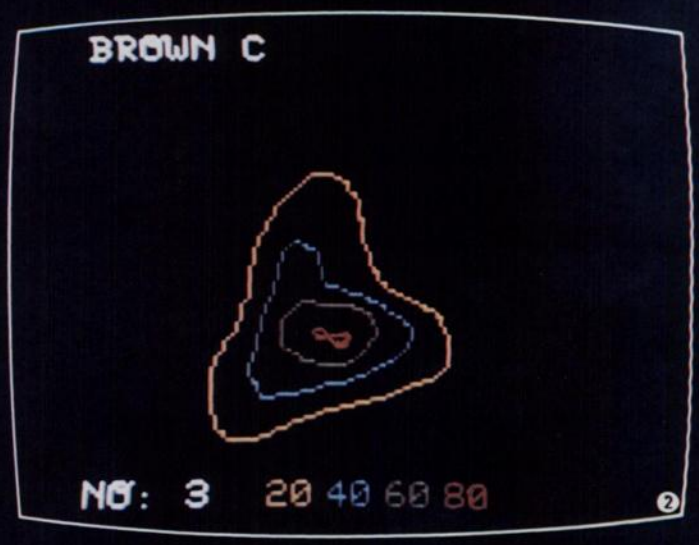
varian

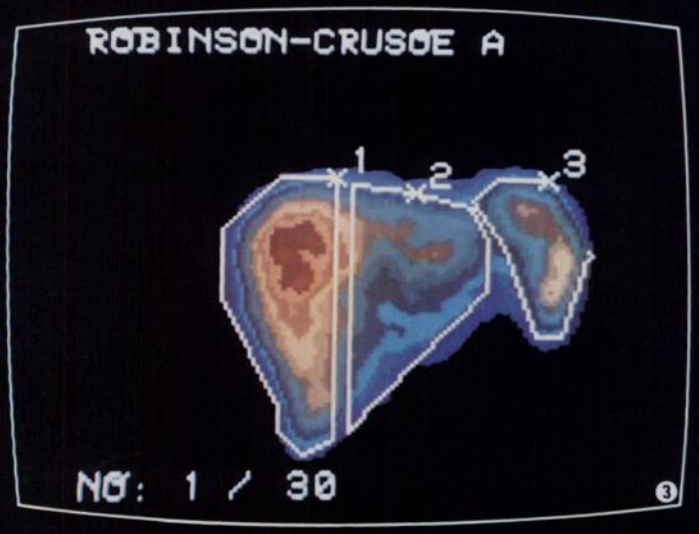
611 Hansen Way, Palo Alto, California 94303, USA.
Telephone: (415) 493-4000

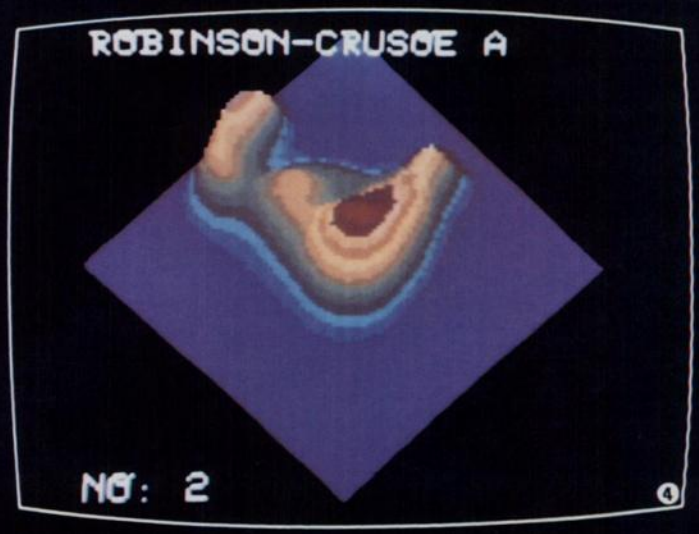
European enquiries: Molesey Road, Walton-on-Thames, Surrey, England. Telephone: (093 22) 28971 Telex: 261351

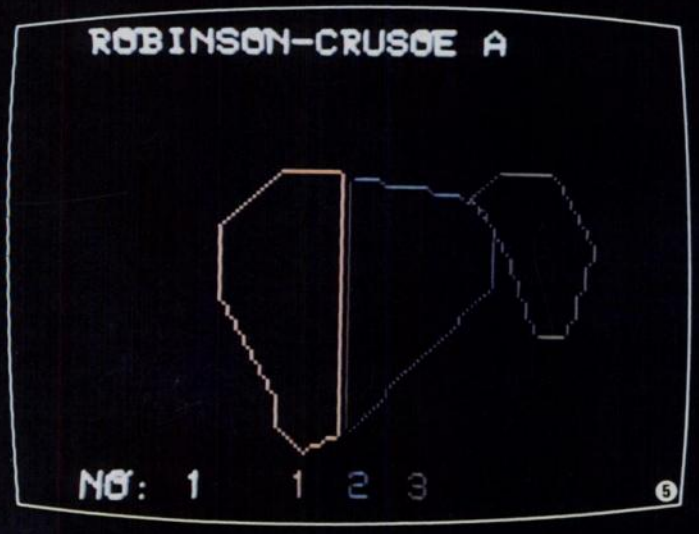
Multiple~Screen Color Displays from varicam

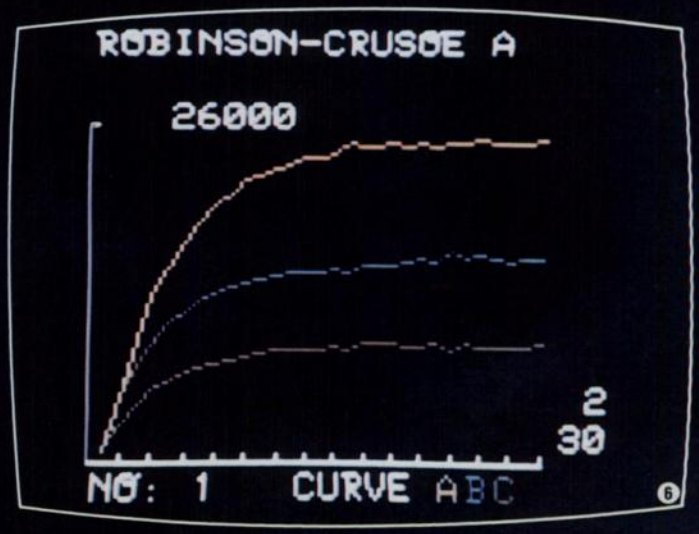




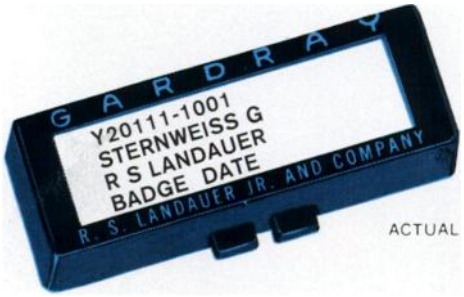








"Make the best available better!"



ACTUAL SIZE

"Work on the ultimate, but in the meantime, make the best available better."

Our people have always accepted the challenge and it's what makes us the leader.

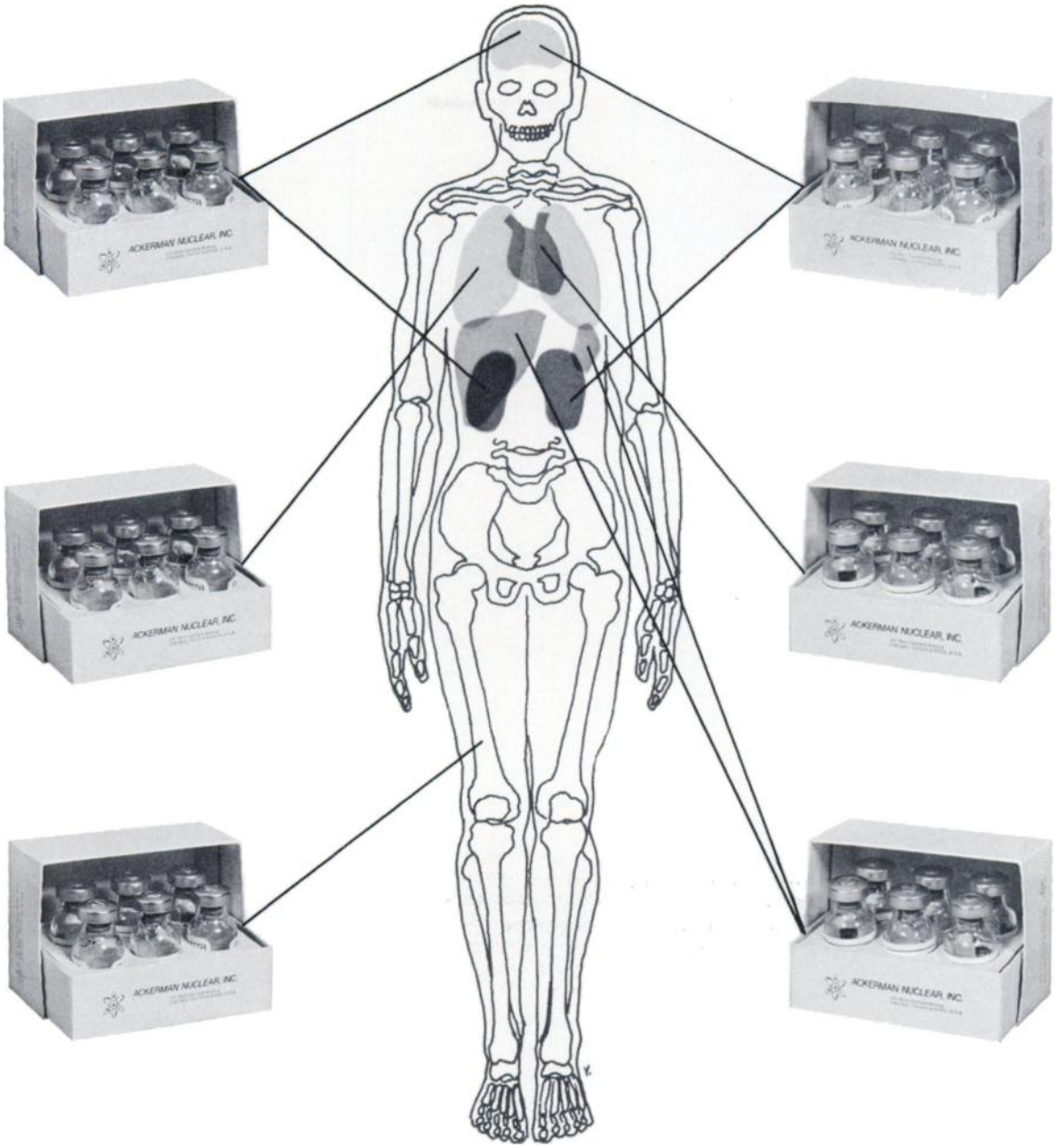
We agree that all things considered the Landauer Gardray 8 film badge system is the best available personnel dosimeter. And, although we are always looking for the ultimate, we have continued to work hard and invest money and time to make it better.

Greatly simplified ordering procedures – permanently encoded unique numbering of film, which is independent of film darkening – new improved techniques for analyzing the film for anomalies that may affect the "meaning" of the exposure and new N.R.C. annual statistical summary reports available now, are just some of the ways our people are working hard to make it better for you.

Write or call for more details.

Landauer

R.S. LANDAUER JR. & CO. A tech/ops COMPANY
Glenwood Science Park
Glenwood, Illinois 60425 . (312) 755-7000



A Well Organized System

The organ and skeletal systems of the body make up a magnificent, well organized system of highly specialized components, each of which provides efficient and dependable functions.

ACKERMAN NUCLEAR INC's only function is to specialize in the development, refinement and production of Cold Kit imaging reagents, because we believe that kind of specialization produces the most efficient and dependable results.

ACKERMAN NUCLEAR INC. is the only company in the field whose sole business is producing Cold Kit imaging reagents. The ultimate organized system will be a kit for each organ and function of the body. We are making progress toward this goal with the largest variety of Cold Kits in the nuclear medicine industry.

For more detailed information, call or write:

ACKERMAN NUCLEAR, INC.
Pharmaceuticals for Nuclear Medicine
445 West Garfield Avenue
Glendale, California 91204, U.S.A.
[213] 246-2555

The GE commitment to nuclear medicine: complete equipment, software and service.

GE: new ideas solve nuclear needs.

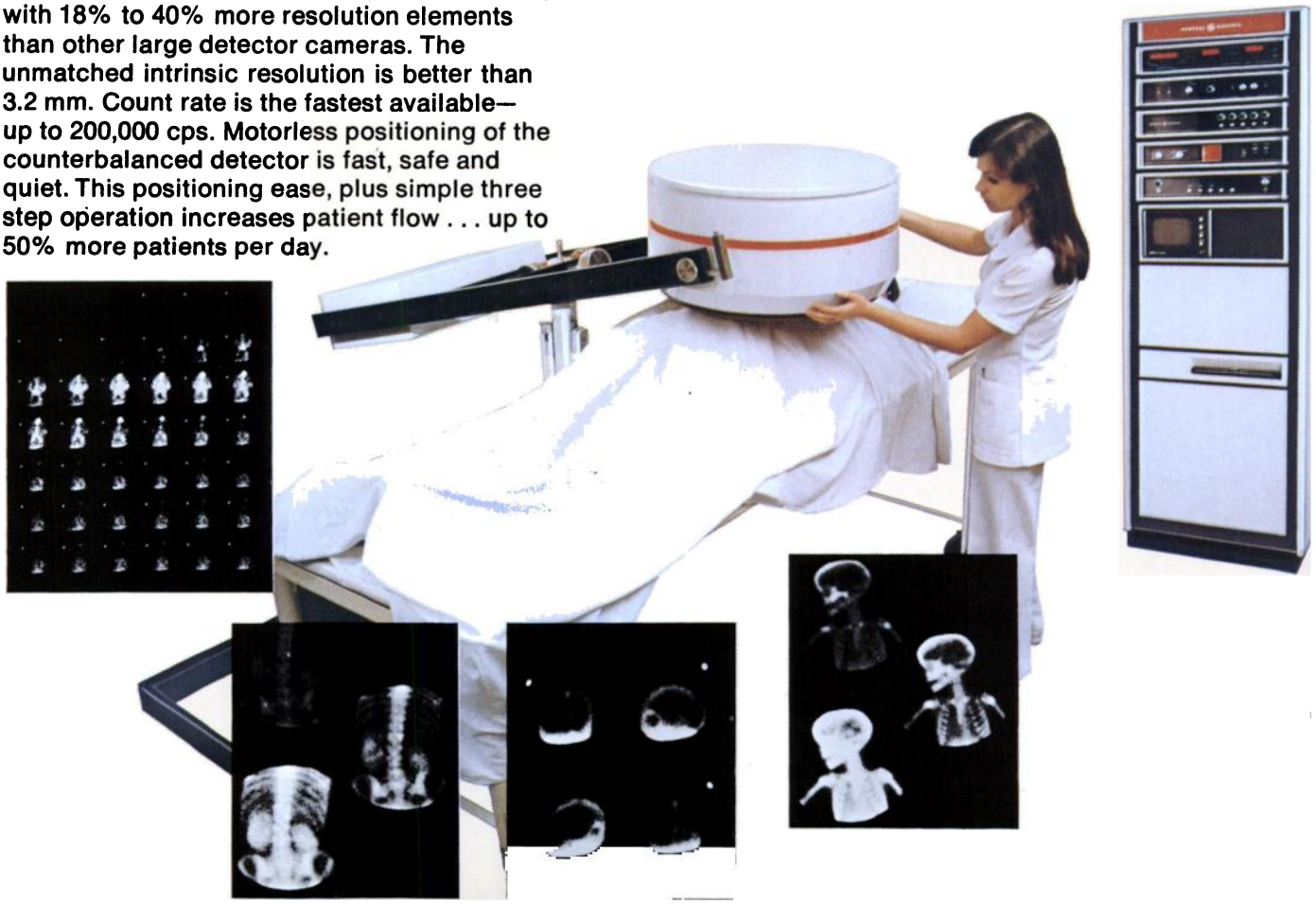
Innovative systems are needed to meet the many needs of today's nuclear departments. That's why GE has combined new product ideas with proven concepts to provide the latest in nuclear capability.

MaxiCamera system: largest field of view delivers unprecedented image quality.

MaxiCamera™ system's 400 mm field of view—the largest of any scintillation unit—offers nuclear departments important new advantages. The big field allows imaging of both lungs at the same time—reducing lung study time by more than 30%. Large livers can also be imaged rapidly and easily. MaxiCamera system handles whole body scanning, yet the unit requires only a 6 x 12 foot area. Image quality is outstanding, with 18% to 40% more resolution elements than other large detector cameras. The unmatched intrinsic resolution is better than 3.2 mm. Count rate is the fastest available—up to 200,000 cps. Motorless positioning of the counterbalanced detector is fast, safe and quiet. This positioning ease, plus simple three step operation increases patient flow . . . up to 50% more patients per day.

GE Formatter system: records much faster with no data loss.

During dynamic studies, valuable diagnostic information may be lost if the formatter cannot keep pace with the camera. Now General Electric offers a formatter that records data as fast as the camera detects it, with no data loss. GE Formatter system records up to 10 frames per second . . . many times faster than any other unit. This makes the GE Formatter the system of choice for dynamic studies. You can record up to 42 dynamic images on one 8 x 10 film, using economical, standard photographic cassettes. Standard multiple formats are available: 35, 70 and 105 mm. Valuable floor space is conserved because all formatter and camera controls are combined in one compact cabinet, occupying just 4½ square feet.



PortaCamera system: nuclear department on wheels.

This compact, mobile scintillation unit is easily wheeled throughout the hospital to facilitate studies on immobile patients. The PortaCamera™ system weighs less than 1,000 lbs., about half the weight of most other portable cameras. The counterbalanced detector allows fast, precise positioning at a touch. A conveniently located, integral console includes all controls and oscilloscope. Easy two-step operation increases patient throughput potential. PortaCamera system also serves as an excellent, low-cost backup unit for ICU, CCU, surgery and emergency rooms.

GE computer capability improves diagnostic data.

Med II™ is a complete image processing and data analysis system. It allows the physician to use the latest GE computer capability to maximize diagnostic information. The Med II system is a second-generation, push-button operated unit with a comprehensive library of nuclear medicine programs: left ventricular ejection fraction, left to right shunt, cardiac output, renal function, gated blood pool studies, ventricular volume, and many more. Combined, the Med II, MaxiCamera and GE Formatter provide the most powerful nuclear diagnostic system available today.

MedStor™ is a moderately priced image storage and processing system which can be used with any scintillation camera, including the PortaCamera. The MedStor system provides computer-controlled playback of static and dynamic data, allows selection of up to four regions of interest, and simultaneously generates up to 4 time/activity histograms. The system is pre-programmed, with easy-to-operate push-button control. Image information can be accessed as rapidly as 6 images per second.

Nuclear parts and service in 8 hours or less.

When your nuclear equipment needs service, GE will provide parts and professionals . . . fast. Our highly trained nuclear service specialists are strategically located throughout the country. One is located near you, for fast response. And General Electric has developed a new computerized parts inventory system. This new service links over 30 GE parts depots nationwide, and keeps them fully stocked at all times. You receive parts from the nearest depot, usually within 8 hours. Transportation costs are minimized, and your nuclear equipment is back serving patients sooner.

Unmatched equipment; the latest diagnostic software; and prompt, reliable service: that's the GE commitment to nuclear medicine. Find out how that commitment can benefit your department. See our product listings in the "PDR for Radiology and Nuclear Medicine." Then talk to your GE representative about our full line of nuclear equipment.

General Electric Medical Systems,
Milwaukee, Toronto, Madrid.

GE: leading the way in diagnostic imaging.

GENERAL ELECTRIC

TECHNETIUM-99M DTPA(TIN)

Brief summary of package insert. Before using, please consult the full package insert included in every kit.

DESCRIPTION

The kit contains 10 vials, each vial containing 5 mg sterile, pyrogen-free Sodium salt of Diethylenetriamine-pentaacetic Acid (DTPA) and 0.25 mg Stannous Chloride.

Administration is by intravenous injection for diagnostic use. The product as supplied is sterile and pyrogen-free.

When sterile, pyrogen-free Sodium Pertechnetate Tc 99m is added to the vial, a chelate, Technetium Tc 99m DTPA is formed.

HOW SUPPLIED

Diagnostic Isotopes' Technetium Tc 99m DTPA Kit (Chelate) is supplied as a sterile, pyrogen-free kit containing 10 vials. Each vial contains 5 mg of Sodium salt of DTPA and 0.25 mg of $SnCl_2$. The pH is adjusted with HCl or NaOH prior to lyophilization. Following lyophilization the vials are sealed under a nitrogen atmosphere.

CLINICAL PHARMACOLOGY

Following its intravenous administration, Technetium Tc 99m DTPA rapidly distributes itself throughout the extracellular fluid space from where it is (promptly) cleared from the body by glomerular filtration. There should be little or no binding of the chelate by the renal parenchyma. A variable percentage of the Technetium Tc 99m DTPA binds to serum proteins; this ranges from 3.7% following the single injection to approximately 10% if the material is continuously infused. Although the chelate gives useful information on the glomerular filtration rate, the variable percent which is protein bound leads to a measured glomerular filtration rate which is lower than the glomerular filtration rate as determined by inulin clearances.

Technetium Tc 99m DTPA tends to accumulate in intracranial lesions with excessive neovascularity or an altered blood-brain barrier. The chelate does not accumulate in the choroid plexus.

Since Technetium Tc 99m DTPA is excreted by glomerular filtration, the images of the kidneys obtained in the first few minutes after injection represent the vascular pool within the kidney. Subsequent images of the kidneys represent radioactivity which is in the urine of both the collecting system and the renal pelvis.

INDICATIONS AND USAGE

Technetium Tc 99m DTPA may be used to perform kidney imaging, brain imaging, to assess renal perfusion, and to estimate glomerular filtration rate.

CONTRAINDICATIONS

None known.

WARNINGS

Technetium Tc 99m DTPA should not be administered to children or to patients who are pregnant, or to nursing mothers unless the benefits to be gained outweigh the potential hazards.

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

PRECAUTIONS

Technetium Tc 99m DTPA 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.

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

Pregnancy Category C: Adequate reproductive studies have not been performed in animals to determine whether this drug affects fertility in males or females, has teratogenic potential, or has other adverse effects on the fetus. Technetium Tc 99m DTPA should be used in pregnant women only when clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. As a general rule nursing should not be undertaken while a patient is on the drug since many drugs are excreted in human milk.

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

ADVERSE REACTIONS

No adverse reactions specifically attributable to the use of Technetium Tc 99m DTPA have been reported.

DOSAGE AND ADMINISTRATION

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

Kidney imaging and glomerular filtration rate estimation: 3 to 5 mCi.

Brain imaging or renal perfusion: 10 to 20 mCi.

diagnostic isotopes incorporated

123 Pleasant Ave., Upper Saddle River, New Jersey 07458

By the time some people can say:

"DIETHYLENETRIAMINEPENTA-ACETIC ACID AND STANNOUS CHLORIDE IN A LYOPHILIZED STATE UNDER NITROGEN"

You've got it mixed and ready to use!

Unless you're in the business, this tongue-twister may tie you up for some time. However, it only takes one minute of mixing time to prepare Diagnostic Isotopes' one-step Technetium-99m DTPA agent for injection.

DTPA becomes Technetium-99m DTPA (Tin) after adding sodium pertechnetate Tc-99m. Technetium-99m DTPA may be used to perform kidney imaging, brain imaging, to assess renal perfusion and to estimate glomerular filtration rate.

Each DTPA kit contains 10 vials. The product is sterile, pyrogen-free, has a labeling efficiency of over 95% and a shelf life of one year . . . all good reasons for ordering now.

See opposite page for a brief summary of the package insert.

diagnostic isotopes incorporated
123 Pleasant Avenue, Upper Saddle River, New Jersey 07458
Telex 134408 • Phone: (201) 825-2310 (Call toll free — 800-631-7020)
"OUR QUALITY HELPS YOUR IMAGE"

Kits Available: *DTPA, Polyphosphate, Diphosphonate.*
Prepared Radiopharmaceuticals Available: *Selenium-75, Xenon-133 (solution or gas)*


For dependable
imaging...

Dependable imaging of skeletal lesions —that's what bone scanning is all about. And that's what the unique, dry-mix formulation and stable PCP bond of Osteoscan assure. Osteoscan's diphosphonate formulation, when labeled with ^{99m}Tc, provides:

- ☐ dependably high tagging efficiency
- ☐ rapid blood and soft tissue clearance to assure high target-to-nontarget ratio
- ☐ excellent in vivo stability
- ☐ low tin level—to minimize the potential for liver uptake and interference with subsequent brain scans

For further information about Osteoscan, please contact: Arnold Austin, Technical Manager, Professional Services Division, Procter & Gamble (513) 977-8547.

the dependable diphosphonate

PROCTER & GAMBLE

OSTEOSCAN®

(5.9 MG DISODIUM ETIDRONATE, 0.16 MG STANNOUS CHLORIDE)

SKELETAL IMAGING AGENT

In Europe, contact: Philips-Duphar B.V., Cyclotron and Isotope Laboratories, Petten, Holland.

See following page for a brief summary of package insert.

PROCTER & GAMBLE

OSTEOSCAN®

(5.9 MG DISODIUM ETIDRONATE, 0.16 MG STANNOUS CHLORIDE)

SKELETAL IMAGING AGENT

Brief summary of Package Insert. Before using, please consult the full Package Insert included in each kit.

DESCRIPTION

Each vial of OSTEOSCAN contains 5.9 mg disodium etidronate and 0.16 mg stannous chloride as active ingredients. Upon addition of ADDITIVE-FREE ^{99m}Tc-pertechnetate, these ingredients combine with ^{99m}Tc to form a stable soluble complex.

ACTIONS (CLINICAL PHARMACOLOGY)

When injected intravenously, ^{99m}Tc-labeled OSTEOSCAN has a specific affinity for areas of altered osteogenesis. Areas of bone which are undergoing neoplastic invasion often have an unusually high turnover rate which may be imaged with ^{99m}Tc-labeled OSTEOSCAN.

Three hours after intravenous injection of 1 ml ^{99m}Tc-labeled OSTEOSCAN, an estimated 40-50% of the injected dose has been taken up by the skeleton. At this time approximately 50% has been excreted in the urine and 6% remains in the blood. A small amount is retained by the soft tissue. The level of ^{99m}Tc-labeled OSTEOSCAN excreted in the feces is below the level detectable by routine laboratory techniques.

INDICATIONS

OSTEOSCAN is a skeletal imaging agent used to demonstrate areas of altered osteogenesis.

CONTRAINDICATIONS

None.

WARNINGS

This radiopharmaceutical should not be administered to patients who are pregnant or lactating unless the information to be gained outweighs 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.

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

The ^{99m}Tc-generator should be tested routinely for molybdenum breakthrough and aluminum. If either is detected, the eluate should not be used.

PRECAUTIONS

Both prior to and following ^{99m}Tc-labeled OSTEOSCAN administration, patients should be encouraged to drink fluids. Patients should void as often as possible after the ^{99m}Tc-labeled OSTEOSCAN injection to minimize background interference from accumulation in the bladder and unnecessary exposure to radiation.

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

ADVERSE REACTIONS

None.

DOSAGE AND ADMINISTRATION

The recommended adult dose of ^{99m}Tc-labeled OSTEOSCAN is 1 ml with a total activity range of 10-15 mCi. ^{99m}Tc-labeled OSTEOSCAN should be given intravenously by slow injection over a period of 30 seconds within eight (8) hours after its preparation. Optimum scanning time is 3-4 hours postinjection.

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

Aggregated Albumin (Human) Kit

DESCRIPTION - The kit contains 6 sterile vials containing 9-11 mg. of pyrogen-free aggregated albumin (human), 0.67 - 0.83 mg. stannous chloride, and 18 mg. sodium chloride. When sterile, pyrogen-free sodium pertechnetate Tc99m is added to the vial, technetium-labelled macroaggregated human serum albumin (Technetium MAA Tc 99m Technetium Macroaggregates) is formed. The particles of aggregated albumin in the kit are formed by the denaturation of Normal Serum Albumin (Human) USP through heat and pH adjustment. Sodium hydroxide of hydrochloric acid may be present in variable amounts. At least 95% of the macroaggregated particles are between 10 and 100 microns in size, the great bulk, (as seen on a microscope slide) being an average of 10 to 70 microns. None are larger than 150 microns. Vial counts indicate that each vial contains 6.8 ± 0.8 million particles per mg. The labelling efficiency is essentially quantitative and the bound Tc-MAA remains stable *in vitro* throughout the useful period after preparation.

Application has been filed with the U. S. Nuclear Regulatory Commission for distribution of this reagent kit to persons licensed pursuant to §35.14 and §35.100, Group III of CFR Part 35, or under equivalent licenses of agreement states; and is still pending.

ACTIONS - Following intravenous injection, Technetium MAA Tc 99m is rapidly transported by the blood stream to the lungs. The aggregates do not enter the tissues of the lungs, but remain in the pulmonary vasculature. When pulmonary blood flow is normal, the material is carried throughout the entire lung field; when pulmonary blood flow is diminished or obstructed by a disease process, the particles are correspondingly prevented in part of in whole from passage through the affected portion of the pulmonary vasculature.

Technetium Macroaggregates remain in the lungs for variable amounts of time depending on particle size. The particles disappear from the lungs in exponential fashion with the larger-sized aggregates having the longer half-life; particles ranging from 10 to 90 microns in diameter usually have a half-life of 2 to 8 hours. Apparently, the aggregates are temporarily trapped by the narrow pulmonary capillaries where the particles are broken down until they are small enough to pass. In rats 4.3% of the Tc 99m remains in the lungs after 24 hours.

Although the particles of macroaggregates remain for a time in the pulmonary capillaries, they do not appear to interfere even temporarily with pulmonary blood flow or ventilation in the dosage required for lung scanning. This is evidenced by the fact that these doses do not produce any respiratory distress nor any tachycardia, even in patients severely ill with pulmonary and/or cardiac disorders.

Once the albumin particles leave the lungs, they are carried to the liver, where they are removed from the blood stream primarily by the Kupffer cells. There, the particles are phagocytized and rapidly metabolized.

INDICATIONS - Scintillation scanning of the lungs with Technetium Macroaggregates is indicated as an adjunct to other diagnostic procedures whenever information about pulmonary vasculature is desired. The most useful clinical applications of lung scanning have been outlined by one investigator: 1) The diagnosis of pulmonary embolism; 2) differentiation of focal conditions such as bullae or cysts from diffuse pulmonary disorders; 3) determination of the degree of pulmonary vascular obliteration in parenchymal disease; and 4) evaluation of the patient's ability to withstand pulmonary surgery.

Perhaps the most frequently useful indication for the lung scan has been the early detection of pulmonary emboli. The lung scan is uniquely able to demonstrate the existence of an embolism before radiological signs become apparent. Although an area of increased radiolucency on the chest film may suggest an embolism, X-ray findings do not usually become apparent until the embolism has produced signs of ischemia or infarction. Once an embolism has been diagnosed, information obtained from the scan is of value in determining the desirability of surgical embolectomy, while subsequent scans provide information on the effectiveness of surgical or anticoagulant therapy.

Lung scanning is similarly helpful in the diagnosis of various types of malignancies affecting the lungs. Again, scanning is of value in locating the affected areas, in determining the need for and probable effectiveness of surgery or of radiation therapy, and in following up the benefits of treatment.

Useful information is also provided by the scan in the diagnosis or evaluation of other pulmonary problems, such as pneumonia, atelectasis pleural effusion, pulmonary tuberculosis, parenchymal disease, emphysema and chronic asthmatic bronchitis.

CONTRAINDICATIONS - The presence of right to left shunts which would allow Technetium MAA Tc 99m injected in a systemic vein to reach a systemic artery is contraindication to the use of this material. Particulate material such as Technetium MAA Tc99m should not be administered to patients with evidence of severe restriction to pulmonary blood flow such as may be present in pulmonary hypertension.

WARNINGS - Technetium MAA Tc99m should not be administered to patients who are pregnant, or during lactation unless the benefits to be gained 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.

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

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

To insure the integrity of this product use needles in gauge sizes 18 to 21.

ADVERSE REACTIONS - No adverse reactions have been observed with this product. However Vincent et al (3) have recorded the only immediate and fatal reaction following infusion of Tc 99m macroaggregates (technetium labelled macroaggregates). This was in a seven-year-old child who had severe pulmonary vascular disease. The exact size of the particles used was not disclosed, and in the summary of the publication "it is suggested that this type of reaction will continue to be rare and that it will probably be somewhat predictable on the basis of clinical and laboratory evidence of severe pulmonary hypertension. Such a patient might be scanned safely by strict control of macroaggregates dose, size range and mean particle size".

The literature has recorded two adverse reactions to lung scanning with I-131 labelled macroaggregates. Wagner et al (4) observed that urticaria developed in a young girl several hours after lung-scanning procedure with iodine-131 macroaggregates where Lugol's solution was administered to block the thyroid gland. The subject had a history of angio-edema. The reaction may have been caused by either material. Dworkin et al (5, 6) reported "I-131-labelled macroaggregated albumin highly suspect as the causative agent" in the death of a woman who was scanned for the possibility of demonstrating pulmonary embolism. With a 2½-year history of adenocarcinoma of the breast she had severe and rapidly progressive edema. Prior to scanning, the nasal administration of oxygen was interrupted. "Within 1 or 2 minutes after injection of 300 uCi of I-131 labelled macroaggregates albumin (11 mg. of albumin or 0.219 mg. per kilogram of body weight) she complained of faintness and became cyanotic, diaphoretic, and agitated with distended neck veins. The initial pulse rate of 50 rose to 140 with a fall in blood pressure to 100/30. Oxygen therapy relieved the profound dyspnea and cyanosis. An electrocardiogram 40 minutes later was compatible with acute cor pulmonale. Within several hours she had returned to her pre-scan status, but on the next day the temperature rose, dyspnea increased and she died 26 hours after the lung scan. We have continued lung scanning but limit the albumin to 0.020 mg. per kilogram, reject lots with more than 15 percent of particles over 40 microns and require two minutes for injection".

More recently, Williams (7) has reported a severe reaction immediately after injection of macroaggregated albumin (MAA) particles followed by death six hours later (while the patient was undergoing right-heart catheterization). Like those previously reported, it occurred in a patient with severe chronic pulmonary hypertension due to disease of the pulmonary vascular bed. The patient died in right heart failure. Post-mortem examination revealed "severe atheroma and thickening of all the pulmonary arteries but no macroscopic evidence of emboli. The right heart was hypertrouphied and dilated".

Transient neurological complications following intra-arterial injection of I-131 labelled macroaggregates have been reported (3).

REFERENCES

1. Surprenant E. L., Webber M.M., Bennett L. R., *International Journal of Applied Radiation and Isotopes, 20,* 77-79 (1969).
2. De Paoli T., Hager A., Micolini J., *International Journal of Applied Radiation and Isotopes, 17,* 551-556 (1966).
3. Vincent, W. R., Goldberg, S. J. and Disilets, D., *Radiology 91,* 1181-1184 (1968).
4. Wagner, H. N., Jr., et al., *N. Engl. J. Med.* 271, 377-384 (1964).
5. Dworkin, J. J., Smith, J. R. and Bull, F. E., *N. Engl. J. Med.* 275, 376 (1966).
6. Dworkin, J. J., Smith, J. R. and Bull, F. E., *Am. J. Roetgenol. Ther. Nucl. Med.* 98, 427-433 (1966).
7. Williams, J. O., *Brit. J. Radiol.* 47, 61-63 (1974).

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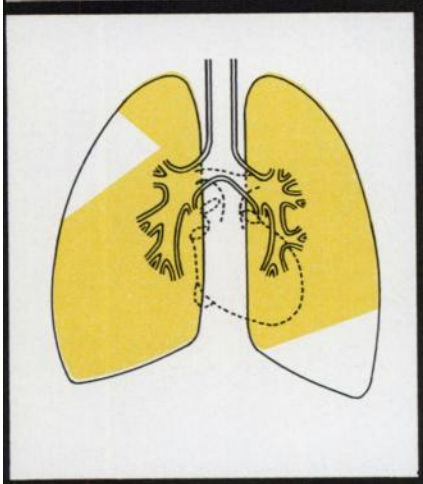

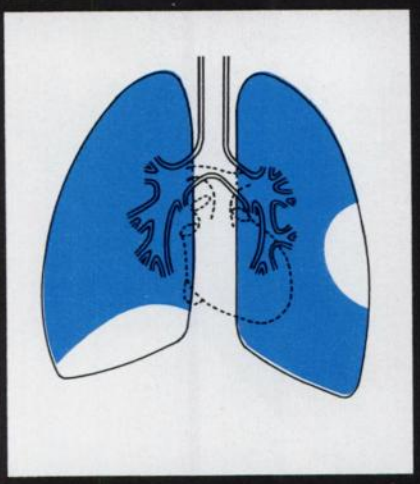

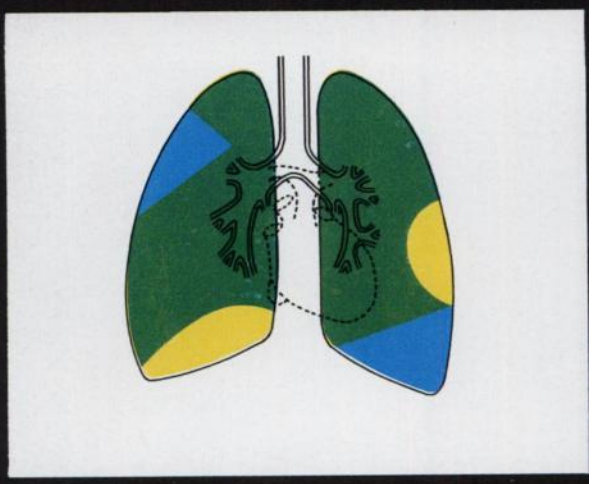

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The ventilation-perfusion ratio $\left(\frac{V}{Q}\right)$ is the crucial factor determining the regional oxygen partial pressure. This can be evaluated by assessing the gas exchange occurring in any part of the lung. The single most *sensitive* non-invasive test for diagnosing Pulmonary Embolus is the perfusion lung image.[1] However, pulmonary diseases, such as chronic obstructive lung disease, infectious diseases, and neoplasms are all characterized by altered arterial blood flow. Therefore the most reliable way to increase the *specificity* of perfusion lung imaging is to add a Xenon 133 ventilation study.[2]

[1]Urokinase Pulmonary Embolism Trial. A National Cooperative Study. Circulation (Suppl 11) 47:11-61. 1973 (April)

[2]Wagner, Henry N. Jr., Strauss, H. William. *Radioactive Tracers In The Differential Diagnosis of Pulmonary Embolism.* Progress in Cardiovascular Diseases, Vol. XVII, No. 4 (January/February), 1975.

PULMOLITE™—Aggregated Albumin (Human) Agent.

FOR DIAGNOSTIC USE

Indications and Usage: Tc 99m Aggregated Albumin (Human) is indicated as a lung imaging agent to be used as an adjunct in the evaluation of pulmonary perfusion.

Specifically, the distribution of the agent reflects regional pulmonary perfusion and may be helpful in the evaluation of such clinical conditions as pulmonary embolus, chronic obstructive lung disease, congenital anatomic abnormalities, and pulmonary abscess. It can also be used in conjunction with a suitable liver imaging agent for the performance of lung-liver scans to detect subphrenic abscesses.

Contraindications: The safety of Aggregated Albumin in patients with right-to-left cardiac shunts has not been demonstrated, and its use in such patients is contraindicated. The use of Tc 99m Aggregated Albumin is contraindicated in persons with a history of hypersensitivity reactions to products containing human serum albumin.

Warnings: Although not reported to date, the possibility of allergic reactions should be considered in patients who receive multiple doses. This radiopharmaceutical preparation should not be administered to pregnant or lactating women, or persons under 18 years of age unless the benefits to be gained 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 the menses.

Theoretically, the intravenous administration of any aggregated material such as Aggregated Albumin imposes a temporary small mechanical impediment to blood flow. While this effect is probably physiologically insignificant in most patients, the administration of Aggregated Albumin is possibly hazardous in acute cor pulmonale and other states of severely impaired pulmonary blood flow. Although not reported with NEN's Tc 99m Aggregated Albumin (Human) the literature contains four reports of deaths occurring after the administration of Aggregated Albumin to patients with pre-existing severe pulmonary hypertension.

Precautions:

GENERAL

Tc 99m Aggregated Albumin (Human) as well as any radioactive agent, must be handled with care. Once Pertechnetate Sodium Tc 99m is added to the vial, appropriate safety measures should be used to minimize external radiation exposure to clinical personnel. Care should also be taken to minimize radiation exposure to patients in a manner consistent with proper patient management.

The Tc 99m labeling reaction involved in preparing Tc 99m Aggregated Albumin (Human) depends on the maintenance of tin in the divalent state. Any oxidant present in the Pertechnetate Sodium Tc 99m employed may adversely affect the quality of the prepared agent. Thus, Pertechnetate Sodium Tc 99m containing oxidants should not be used without first demonstrating that it is without adverse effect on the properties of the resulting agent.

The use of Bacteriostatic Sodium Chloride Injection as a diluent for Pertechnetate Sodium Tc 99m may adversely affect the biologic distribution of the prepared agent, and its use is not recommended.

CARCINOGENESIS

No long term animal studies have been performed to evaluate carcinogenic potential.

PREGNANCY CATEGORY C

Adequate reproduction studies have not been performed in animals to determine whether this drug affects fertility in males or females, has teratogenic potential, or has other adverse effects on the fetus. PULMOLITE Aggregated Albumin (Human) Agent should be used in pregnant women only when clearly needed.

NURSING MOTHERS

It is not known whether this drug is excreted in human milk. As a general rule nursing should not be undertaken when a patient is administered radioactive material.

PEDIATRIC USE

Safety and effectiveness in children have not been established.

Adverse Reactions: Although no adverse reactions have been reported using NEN Technetium Tc 99m Aggregated Albumin (Human), rare instances of hemodynamic or idiosyncratic reactions to other preparations of Aggregated Albumin have been recorded.

Dosage and Administration: The recommended intravenous dose range for the average patient (70kg) is 2 to 4 millicuries.

The patient dose should be measured by a suitable radioactivity calibration system immediately prior to patient administration. Re-suspend particles in syringe immediately prior to injection by repeated inversion of the the syringe. (If blood is drawn into syringe, any unnecessary delay prior to injection may lead to clot formation in situ.) Slow injection is recommended, and for optimum results, imaging should begin as soon as possible after injection.

PULMOLITE should be used within eight hours after aseptic reconstitution with Pertechnetate Sodium Tc 99m. For optimum results the time should be minimized. After reconstitution, the vial should be stored at 2°C to 8°C.

The vial contains no bacteriostat.

Radiopharmaceuticals should be used by persons who are qualified by specific training in the safe use and handling of radionuclides produced by nuclear reactor or particle accelerator and whose experience and training have been approved by the appropriate government agencies authorized to license the use of radioactive isotopes.

How Supplied: PULMOLITE Aggregated Albumin (Human) Agent, is supplied in kits of five (5) or thirty (30) vials, sterile and non-pyrogenic, each vial containing in lyophilized form:

Aggregated Albumin (Human) - 1.5mg
Normal Human Serum Albumin - 10mg
Sodium Chloride - 10mg
Stannous Chloride - 0.012-0.070mg

PULMOLITE contains no preservative; after reconstitution the shielded vial should be stored at 2°C to 8°C.

Included in each five (5) vial kit is one (1) package insert and six (6) radiation labels. Included in each thirty (30) vial kit is one (1) package insert and thirty-six (36) radiation labels.

Xenon Xe 133 Gas (CALIDOSE™) Dispensing System.

Indications: Inhalation of Xenon Xe 133 gas has proved valuable for the evaluation of pulmonary function and for imaging the lungs. It may also be applied to assessment of cerebral flow.

Contraindications: To date, no known contraindications to the use of Xenon Xe 133 gas have been reported.

Warnings: This radiopharmaceutical should not be administered to pregnant or lactating women unless the benefits to be gained 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 the menses.

Radiopharmaceuticals should be used only by physicians who are qualified by specific training in the safe use and handling of radionuclides produced by nuclear reactor or particle accelerator, and whose experience and training have been approved by the appropriate governmental agency authorized to license the use of radionuclides.

Precautions: As in the use of any other radioactive material care should be taken to insure minimum radiation exposure to the patient, consistent with proper patient management, and to insure minimum radiation exposure to occupational workers. Expired Xenon Xe 133 gas should be controlled in a manner that is in compliance with the appropriate governmental regulations. Xenon Xe 133 adheres to some plastics and rubber and should not be allowed to stand in tubing or respirator containers. Such unrecognized loss of radioactivity from the dose for administration may render the study non-diagnostic. Xenon Xe 133 gas delivery systems, i.e., respirators or spirometers, and associated tubing assemblies must be leakproof to avoid loss of radioactivity to the laboratory environs not specifically protected by exhaust systems.

Adverse Reactions: To date, no adverse reactions based on the use of Xenon Xe 133 gas have been reported.

Dosage and Administration: Xenon Xe 133 gas is administered by inhalation from closed respirator systems or spirometers. The suggested activity range employed for inhalation by the average adult patient (70 kg) is:

Pulmonary function including imaging: 2-30 mCi in 3 liters of air.
Cerebral blood flow: 10-30 mCi in 3 liters of air.

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

How Supplied: The Xenon Xe 133 gas is supplied as part of the CALIDOSE™ system, consisting of 2 ml unit dose vials and the CALIDOSE dispenser* for shielded dispensing.

Normally vials containing either 10 or 20 mCi/vial, packed up to 5 vials per shield tube, are supplied. Vial sets containing up to 100 mCi/vial are available.

*Patent Pending

New England Nuclear
Radiopharmaceutical Division
Atomlight Place, North Billerica, Mass. 01862
Telephone 617-667-9531
Los Angeles: 213-321-3311 Miami: 305-592-0702

Canada: NEN Canada Ltd., 2453 46th Avenue, Lachine, Quebec, H7T 3C9, Tel: 514-636-4971, Telex: 05-821808
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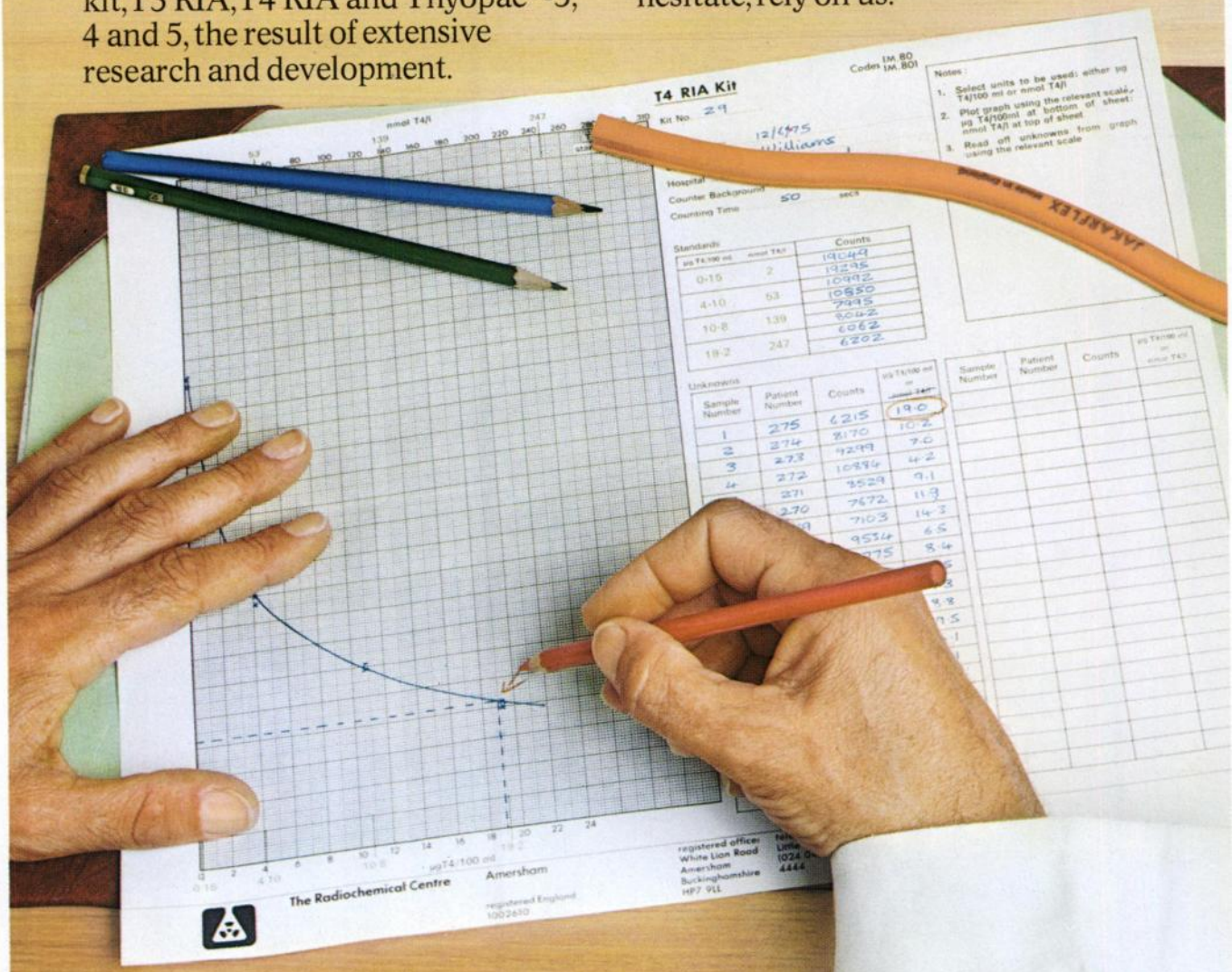

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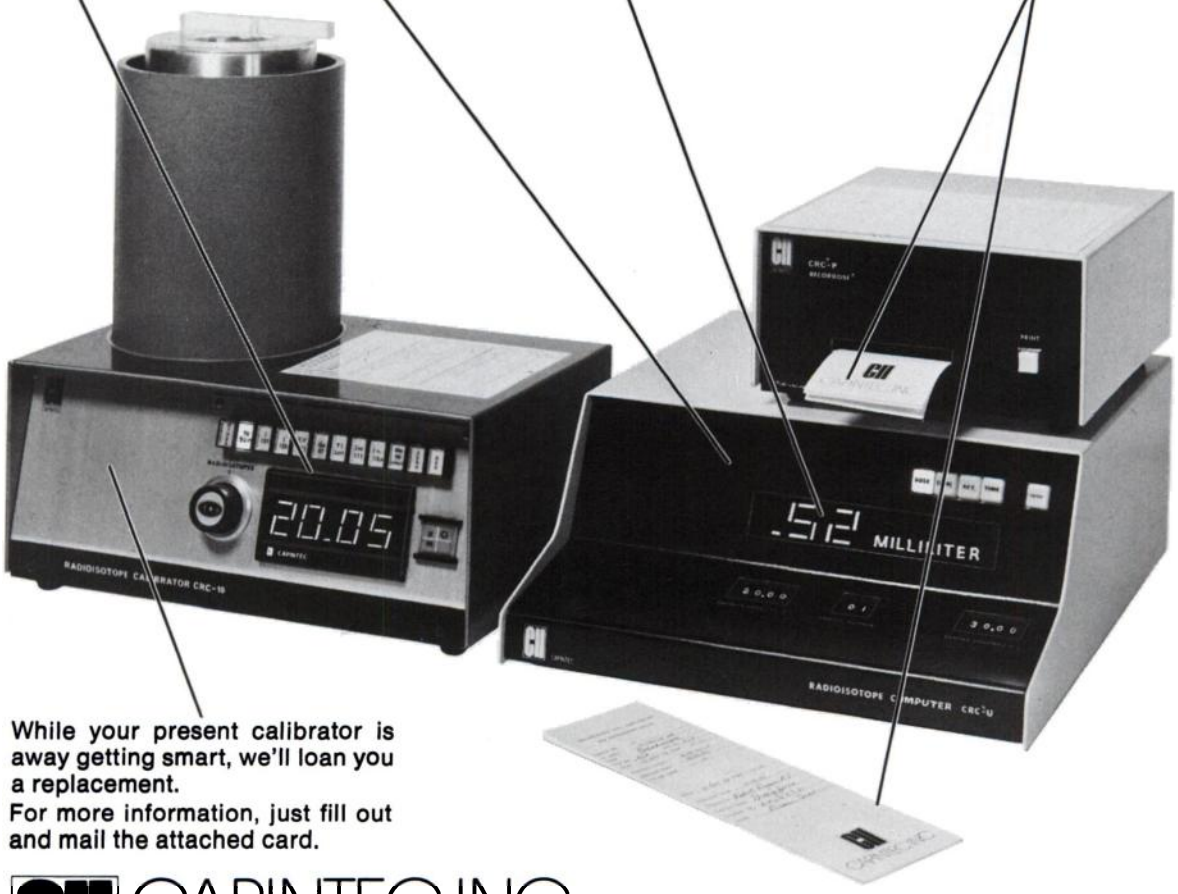

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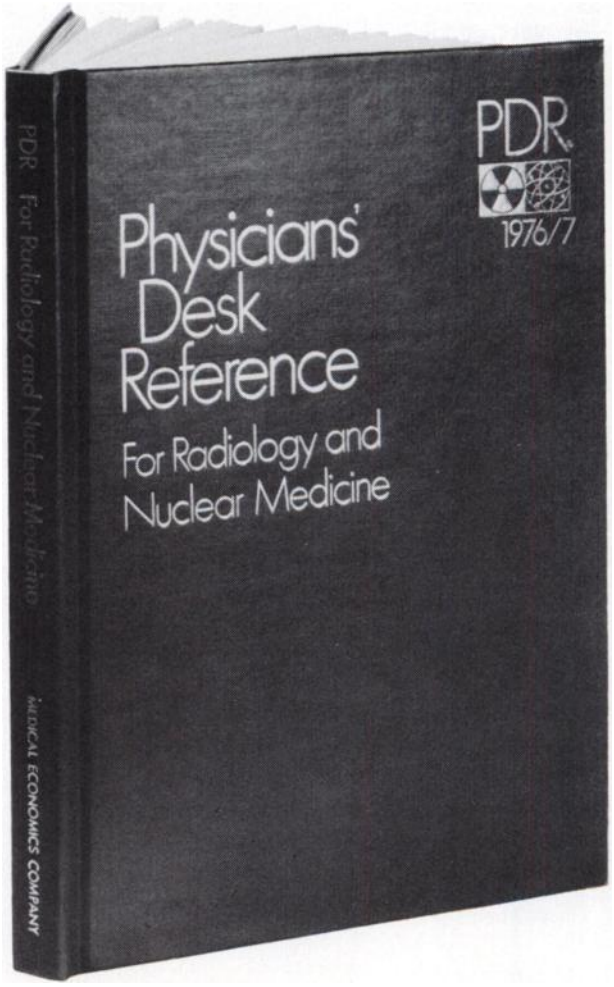

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Photo insert: Wall motion of the left ventricle, a typical example of the kind of selective imaging possible with System Seventy Seven's unique data processing capabilities. Zones of interest and histograms of selectively specific target areas can be routinely obtained, and as many as four can be simultaneously manipulated. The operator has total control in determining the shape and size of the region examined, as well as the time/count scale of the histogram. From 10 to 20 cycles of systole and diastole, recorded during the first passage of the radionuclide, may be reformatted into a single representative cardiac cycle of maximum retrievable depth, detail, and accuracy. Study courtesy of Dr. Robert H. Jones, Duke University.

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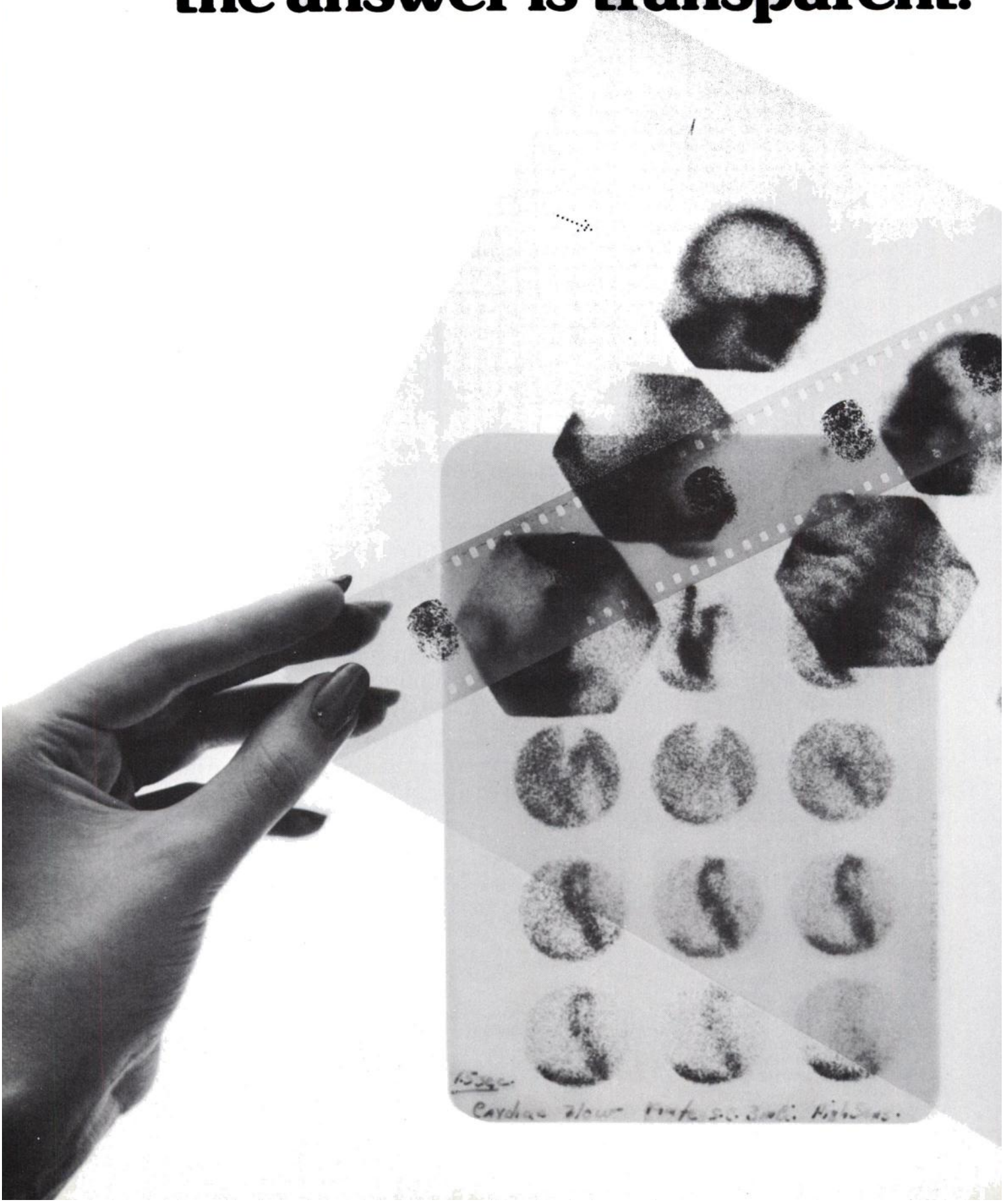

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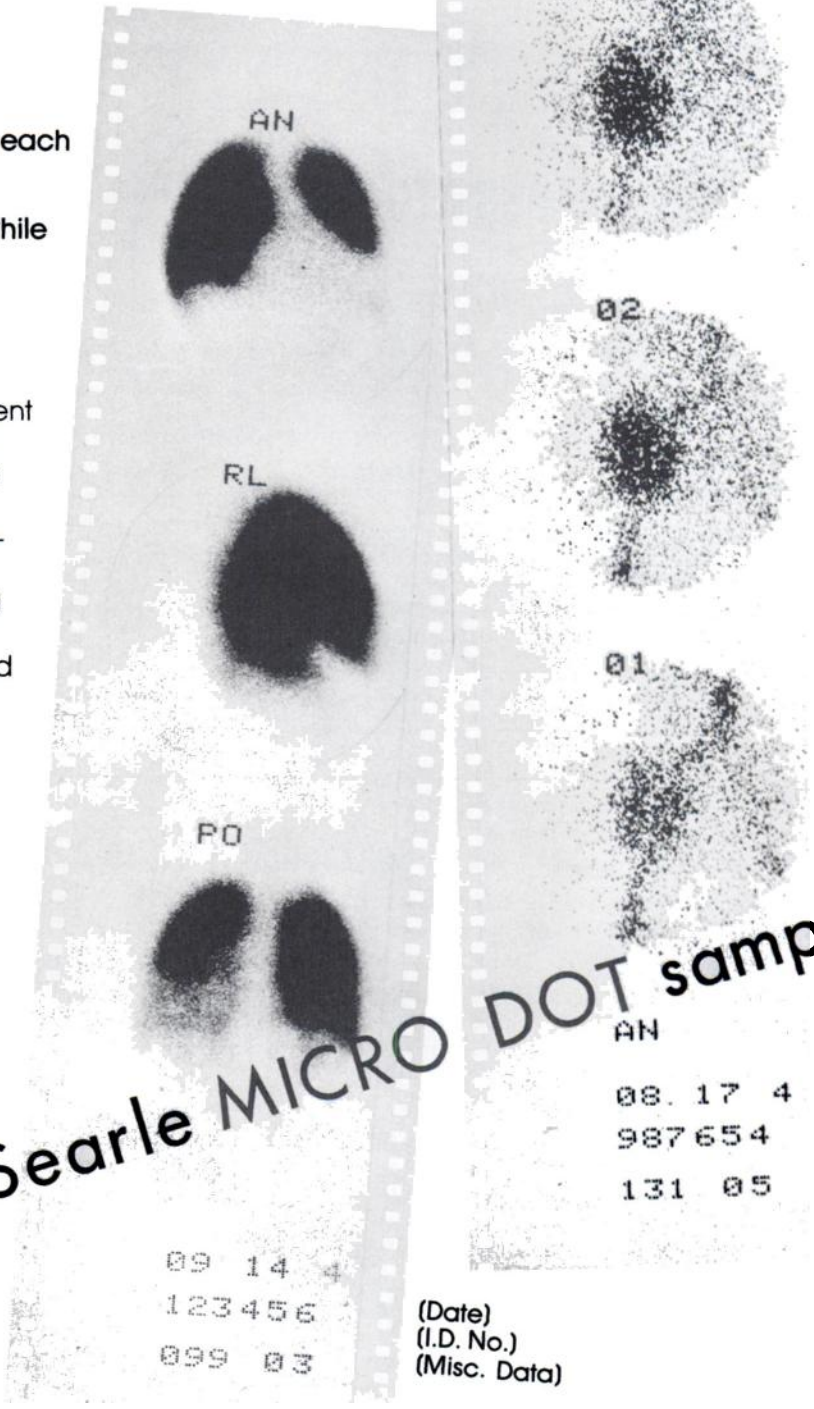

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1. Obrist, W. D. et al, "Determination of Regional Cerebral Blood Flow by Inhalation of Xenon-133", Circulation Research, XX,124-134, January 1967.

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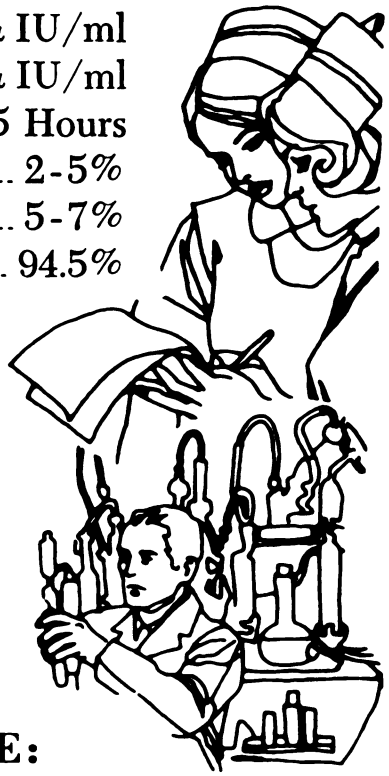

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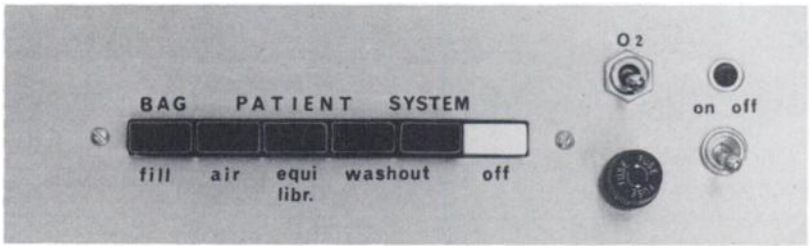

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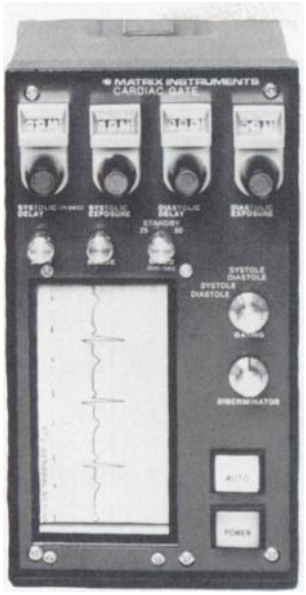

Cardiac Gate is designed to synchronize the cardiac image exposure with predetermined phases of the cardiac cycle.

The Cardiac Gate has two modes of operation: manual and automatic. In the manual mode, delay and exposure time parameters are set manually, using the R wave of the electrocardiogram as a reference. In the automatic mode, microprocessor circuitry automatically tracks the cardiac cycle and computes the position of end-systole and end-diastole. In the automatic mode, end-systole and end-diastole exposures are made without any calibration settings.

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The Cardiac Gate includes a complete electrocardiograph module. The built in heated stylus strip chart recorder records both the ECG trace and the gating intervals.

The Cardiac Gate provides both ECG and gating outputs for computer interface.

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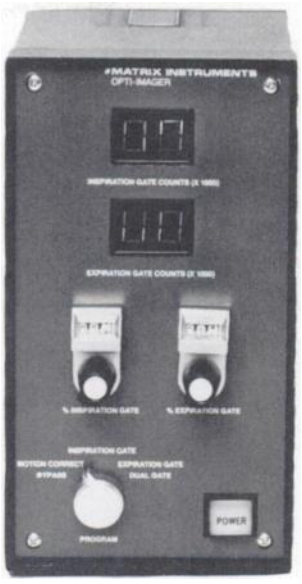

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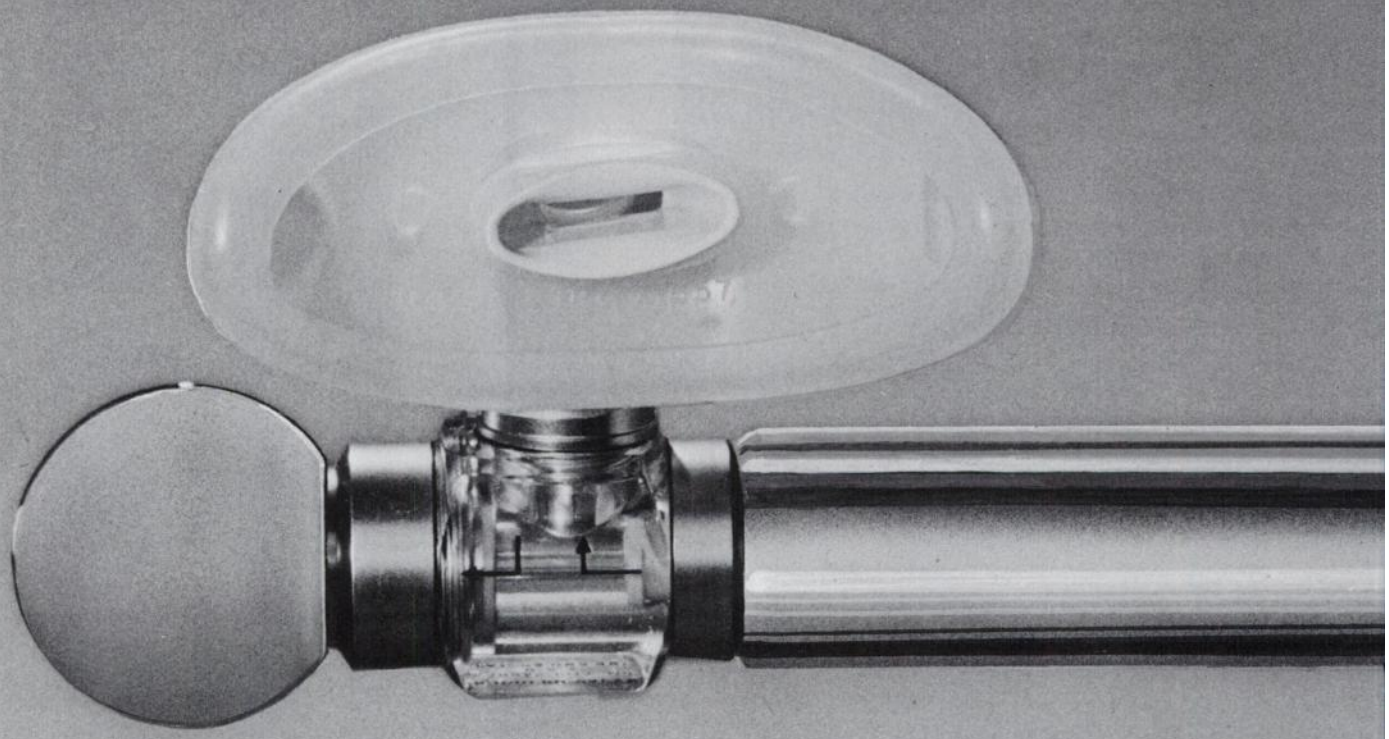

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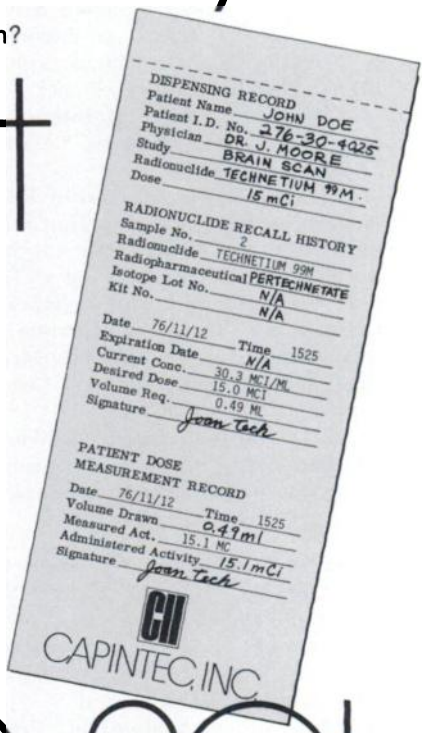

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A faculty position is immediately available in the area of nuclear medicine. PhD required; DVM desirable but not essential. Applicants should: have research interests involving the use of radionuclides for the measurement of physiological parameters or the detection and/or treatment of medical pathology; be willing to contribute to a group effort involving new radiopharmaceutical investigations and/or new radiation detection technology including image processing. The appointee will devote 50% of his/her time to teaching portions of radionuclide methodology and physiology courses and the remainder to research/service efforts. Rank and salary commensurate with qualifications. Send *curriculum vitae* and names of three referees by December 30, 1976 to: R. H. Bubar, Department of Veterinary Anatomy Physiology and Pharmacology, College of Veterinary Medicine, University of Illinois, Urbana, Il. 61801, Telephone 217-333-1109, The University of Illinois is an Affirmative Action-Equal Opportunity employer and encourages applications from minorities and women.

ULTRASOUND TECHNOLOGISTS

Position available for Diagnostic Ultrasound Technologist with proficiency in all areas of diagnostic ultrasound (excluding ophthalmology). Very active clinically orientated teaching hospital associated with the University of Miami School of Medicine. Qualified applicants contact: Stuart Gottlieb, M.D., Jackson Memorial Hospital, Division of Nuclear Medicine and Diagnostic Ultrasound, 1611 N.W. 12th Avenue, Miami, Florida. (305) 325-6345, An Equal Opportunity Employer.

Trained Technician of Nuclear Medicine

Royal Prince Alfred Hospital is a major Australian teaching hospital, has two positions for qualified Nuclear Medicine Technicians. The hospital deals with a range of organ imaging on the Department's four gamma cameras, including a rapidly expanding cardiac load. There is a computer in the department and a range of research and development programs is underway.

Duties. Supervision and instruction of student technicians, routine organ imaging and roster periods at other hospitals associated with Royal Prince Alfred Hospital and some on-call weekend work. Salary and conditions will be in line with Local Award rates. Short term single accommodation can be arranged at the hospital if required. Applications in writing to: D. S. Child, General Superintendent, Royal Prince Alfred Hospital, Missenden Road, N.S.W. 2050, Australia.

MID-EASTERN CHAPTER
SOCIETY OF NUCLEAR MEDICINE
7th ANNUAL MEETING

April 21–23, 1977 **Stouffer's Hotel** **Arlington, Virginia**

ANNOUNCEMENT AND CALL FOR ABSTRACTS

The 7th Annual meeting of the SNM Mid-Eastern Chapter will include two full days of scientific contributions, including both teaching sessions and selected papers. Prizes will be awarded for the three best individual presentations. Category 1 credit is applicable.

The program Committee invites the submission of abstracts relevant to all fields of nuclear medicine for consideration by the Committee. Please send abstract (and three copies) containing less than 300 words with suitable supporting data to:

Gerald S. Johnston, M.D.
Director of Nuclear Medicine
National Institutes of Health
Room 1B37, Building 10
9000 Rockville Pike
Bethesda, Maryland 20014

Co-directors, Scientific Program Committee: Peter T. Kirchner, M.D., and Gerald S. Johnston, M.D.

Deadline for abstracts: February 15th, 1977.

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Introducing the next generation of cortisol determinations — GammaCoat by Clinical Assays — the first solid phase Cortisol RIA. The greatly simplified extraction procedure, a test tube coated with cortisol — specific antibody and a ^{125}I cortisol derivative tracer brings accurate RIA cortisol determinations within reach of every clinical laboratory. A special additive is used to minimize the effects of variable serum proteins on the assay.

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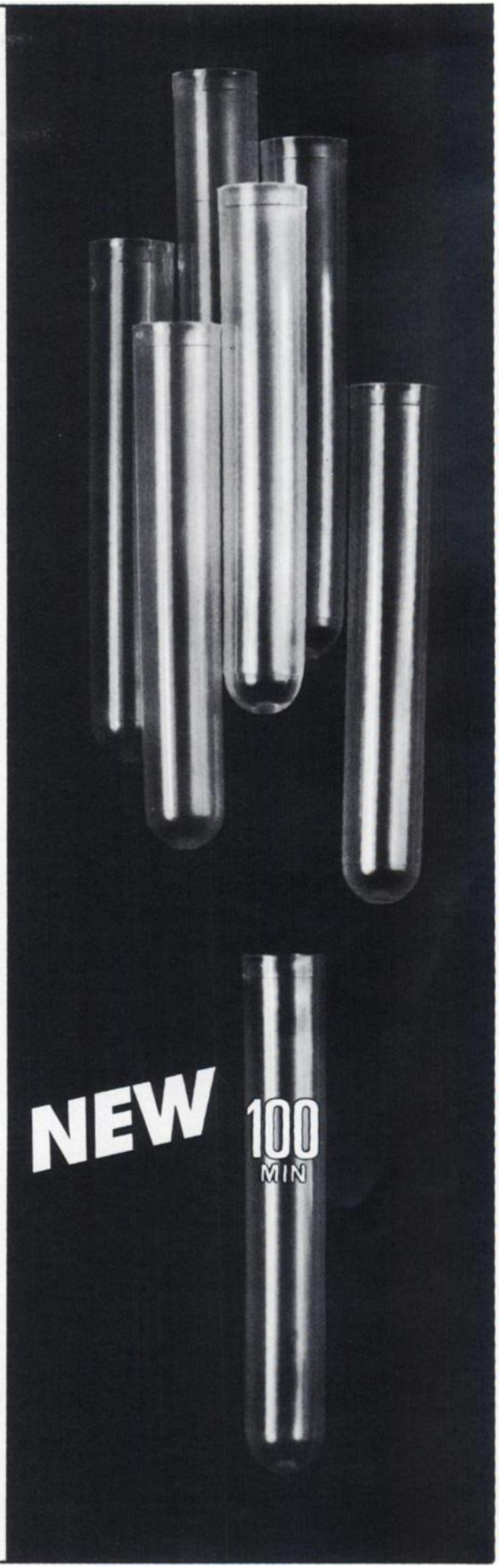

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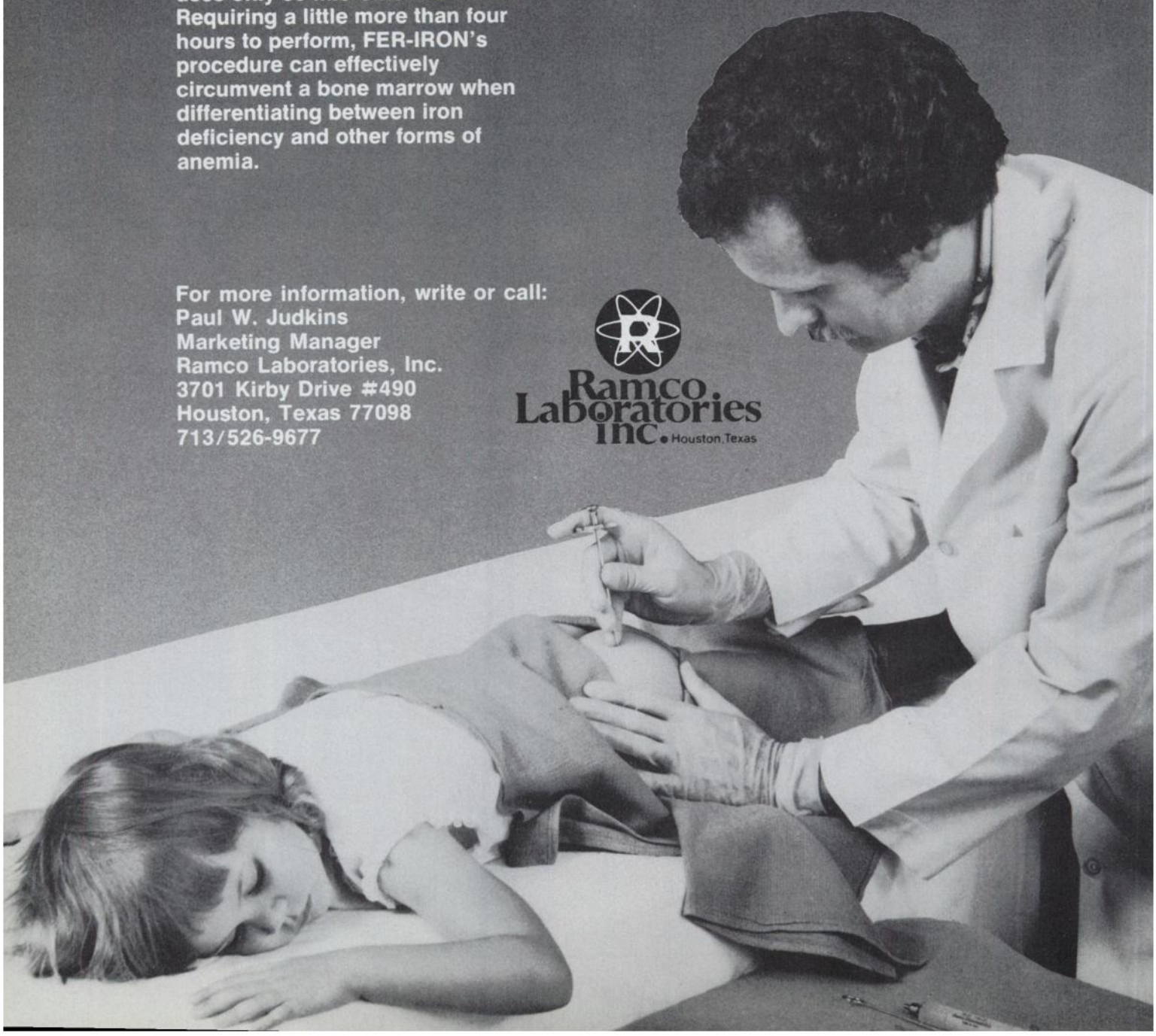

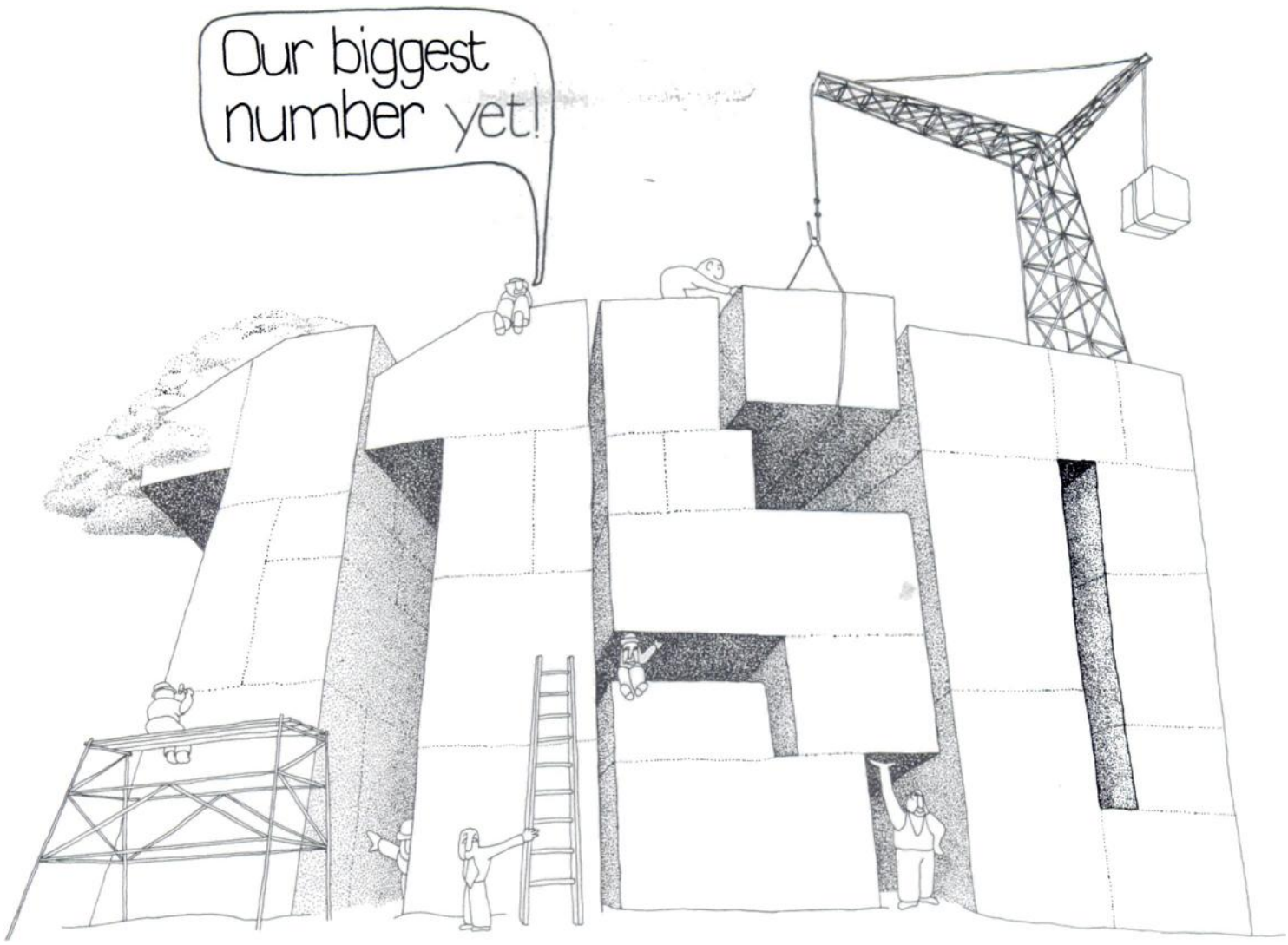

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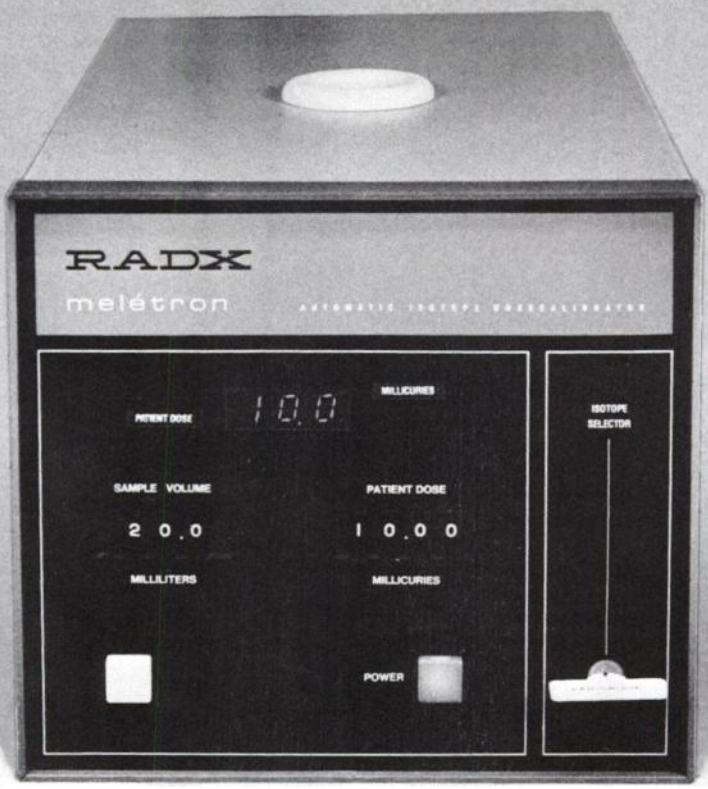
Meletron



The dosecalibrator that calibrates itself (almost)

Radx has now programmed its new Meletron to read its own calibration factors. The Meletron programmable microprocessor allows you to check each of the Isotope Selector Keys for proper multiplication factors.

Radx employs direct mathematical manipulation for the various radionuclides (other dosecalibrators vary the resistance to alter the signal from the ionization chamber to the digital meter) and these factors can now be recalled from memory and displayed on the digital readout. Since each radionuclide has a finite and discrete mathematical factor, the ability to recall and display this factor (as triggered by the Isotope Selector Key) will remove any doubt concerning this aspect of dosecalibration.

Hard copy data of your radionuclide calibrations is another RADX first. The Melecord prints; time, date, volume, calibration, patient dose, radionuclide — plus it calculates and then prints the volume to administer. Easy compliance with NRC requirements is also assured by Melefile, the RADX record keeping system which provides data cards, tab cards and a compact file to keep them in.

Obsolescence is eliminated. The Meletron employs the latest in microprocessor technology. The highly reliable microprocessor is readily programmable to perform a wide variety of functions. Further program modifications may be added to your unit in the field, as they are developed.

Area radiation can also be monitored by the new Meletron. With the key out, "Background – Error" will flash when the radiation level exceeds approximately 2.0 mr/hr (with an unshielded unit).

Area monitoring is standard on Meletron; an extra cost option on other dosecalibrators.

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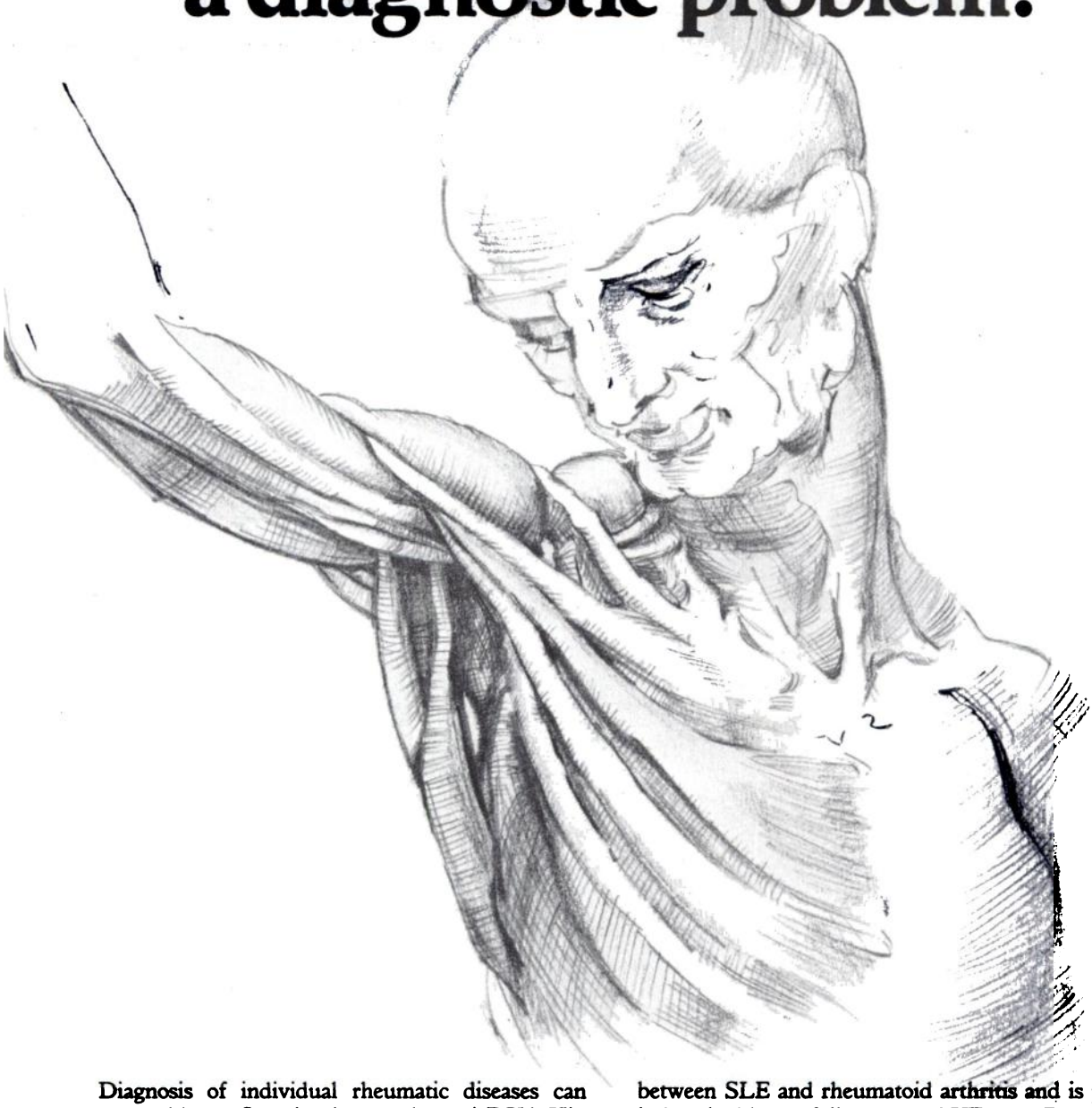
Rheumatic diseases: a diagnostic problem?



Diagnosis of individual rheumatic diseases can present problems. Our simple test, the anti-DNA Kit, can give vital information to aid that diagnosis.

The kit provides the first standardized assay to consistently and reliably measure anti-DNA antibodies. High circulating levels of these antibodies are closely linked with systemic lupus erythematosus (SLE). In doubtful cases, the kit offers excellent discrimination between SLE and rheumatoid arthritis and is particularly valuable as a follow-up to ANF tests. Results show that the kit is also useful as a means of monitoring disease activity, providing the physician with guidance on drug therapy.

The kit is a simple radioassay – a matter of routine for any clinical laboratory with a gamma counter. Please write or 'phone for further information.

Anti-DNA kit

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The Radiochemical Centre Limited, Amersham, England. Tel: 024-04 444.
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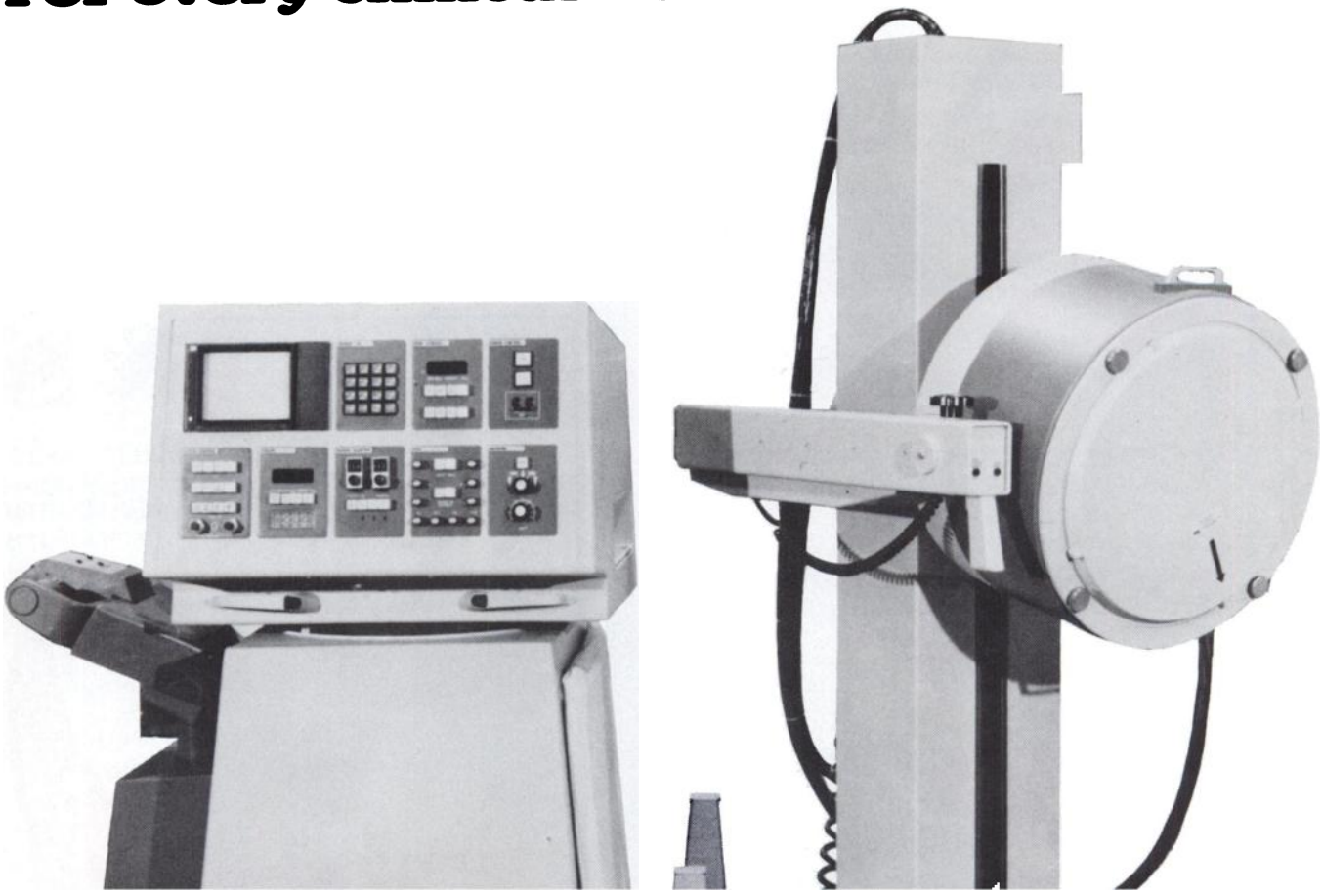

State of the art in gamma camera hard copy recording.

Multi-Imager 1

Multi-Imager 1 employs the CRT of the gamma camera to record static, dynamic, and whole body imaging procedures on transparency format. The highly versatile Multi-Imager 1 offers film size formats of 5x7 and 8x10, yielding superior quality transparency scintiphotos recorded on a wide range of x-ray film processor compatible films. Up to 30 images can be recorded on a single sheet of film in ten different formats. In addition to the usual 1, 4, and 16 image formats, Multi-Imager 1 offers seven further choices to yield the exact diagnostic format required. For example, Multi-Imager 1 offers a 6 image format to allow recording of static studies that require a fifth and sixth view, and a 30 image format for dynamic studies that require more than sixteen frames. For whole body imaging, the 2 image format records side by side AP and PA views on the same sheet of film. Static, dynamic, and different size images can be mixed on the same sheet of film.

Multi-Imager 4

Multi-Imager 4 yields unmatched performance in gamma camera hard copy recording. A built in high resolution CRT, state of the art microprocessor technology, and electronically synchronized multiple lens optics provide a very small dot size on 8x10 format without increasing the pulse pair resolution dead time of the gamma camera system. The fast lens system of Multi-Imager 4 is compatible with both conventional x-ray film and the slower single emulsion radiographic films that provide the best image quality. Up to 64 images can be recorded in ten different formats. The dual intensity recording mode allows simultaneous acquisition of whole body or static views at two different intensity levels. Positive patient indentification is achieved through a nine digit keyboard LED system.

Both Multi-Imager 1 and Multi-Imager 4 can provide thousands of dollars in annual film cost savings and are compatible with all gamma cameras. Mail coupon to receive detailed information and sample clinical studies.

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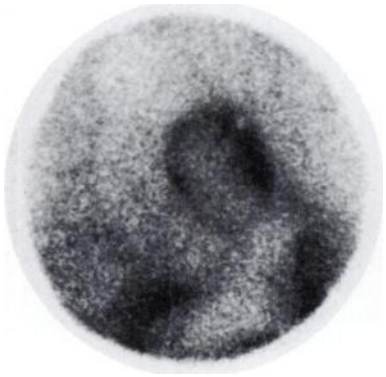
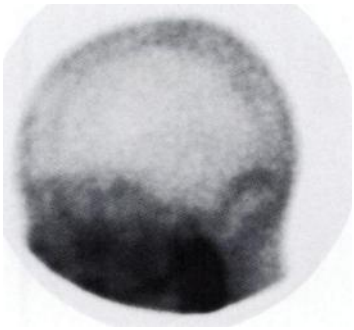
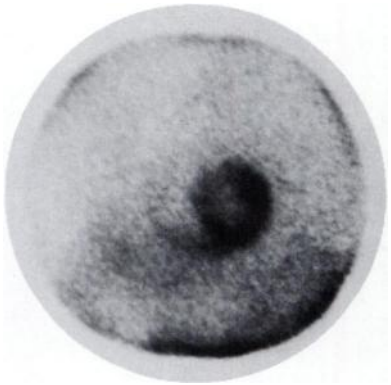


Adult heart LAO view ^{201}Thallium



Adult brain left lateral view ^{99m}Tc DTPA



Adult heart LAO view ^{201}Thallium

Dyna®Mo is the mobile DynaCamera that extends the scope of nuclear diagnosis throughout your hospital.

The Dyna Mo mobile scintillation camera is fully powered with continuously variable speeds up to 2 mph. Dyna Mo is compact, maneuvers easily around corners, through cramped quarters, up inclines and between beds.

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Dyna Mo performance is unexcelled: 2.1mm (1/12") resolution, ±10% uniformity, ±3% linearity, 100,000 CPS (in a 20% window).

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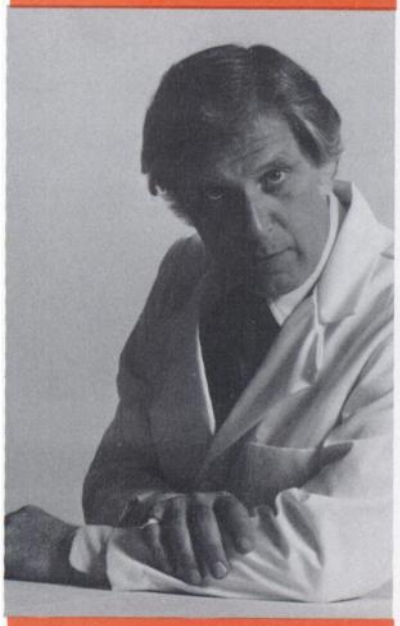
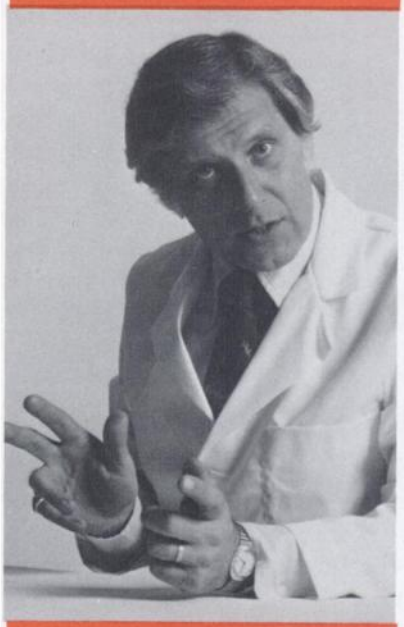
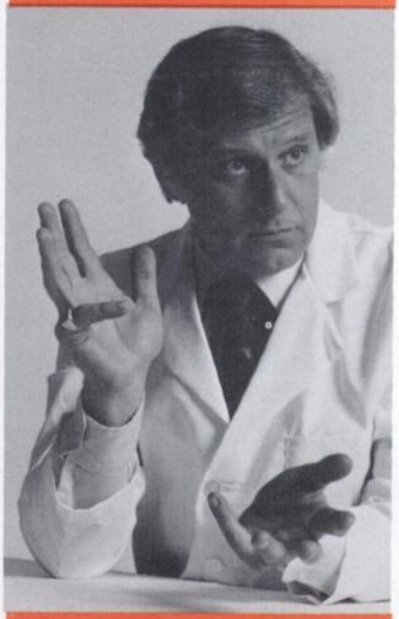
"Some of my patients just can't tolerate 90 minutes on a scanning table."



"For them, I prefer a Cleon scan."



"But then, Cleon does a better, faster job on all my patients."



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Spot sources are available as a 1mm bead of ^{57}Co or ^{133}Ba (10 and 100μCi). Features include a welded plastic capsule, point source geometry with a visible active bead, and colour coding for quick identification of nuclide and activity. They are packed in sets of three in shielded boxes; replacements are available separately.

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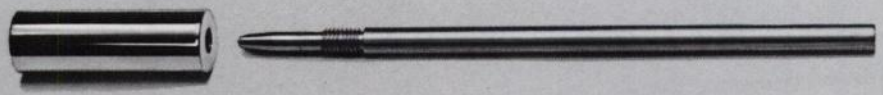
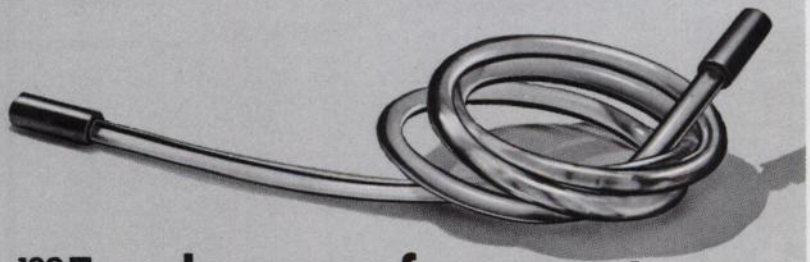


Flexible sources are 50cm x 4mm diameter; ^{57}Co (100μCi) is dispersed in an inner core of active plastic, sealed in an inactive PVC tube, and closed by aluminium caps.



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^{129}I (0.1μCi) gamma/X-ray spectrum is virtually identical to ^{125}I, and has a half-life of 1.57×10^7 years. Calibration in terms of ^{125}I is available. The length is 100mm, maximum diameter 15mm—suitable for most manual and automatic counters. Active material is sealed in a plastic capsule attached to a handling rod. Other nuclides ^{241}Am, ^{133}Ba, ^{57}Co, ^{60}Co, ^{137}Cs, ^{54}Mn, ^{22}Na, ^{75}Se, ^{123m}Te, ^{88}Y and mock ^{131}I.

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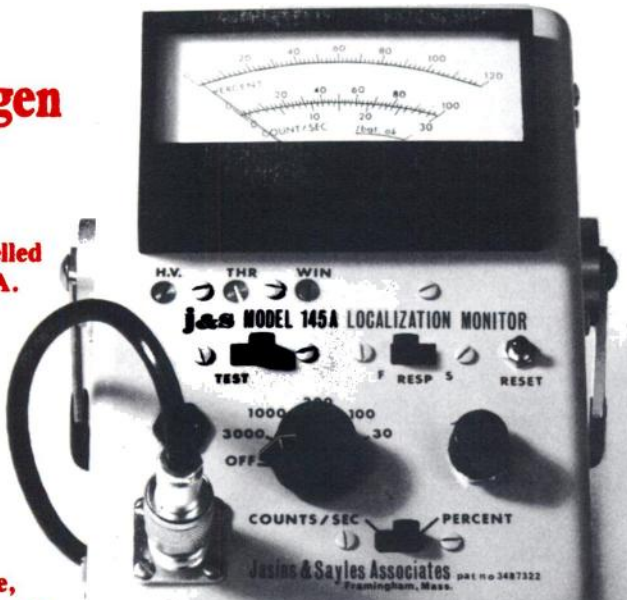
J&S Model 145A Portable Localization Monitor for I-125 Labeled Fibrinogen Scanning.

Early detection of deep vein thrombosis of the legs can be accomplished using I-125 labelled fibrinogen and the Model 145A. The leg is scanned after intravenous injection of the labelled fibrinogen. As a thrombosis develops, the radio-active fibrinogen is detected at predetermined points and measured directly as a percentage of the pre-cordial count.

Handily compact and portable, with standard D cell battery operation providing at least 100 hours of uncycled use, the 145A Localization Monitor offers unlimited isotope selection, stainless steel collimator, and solid state design.



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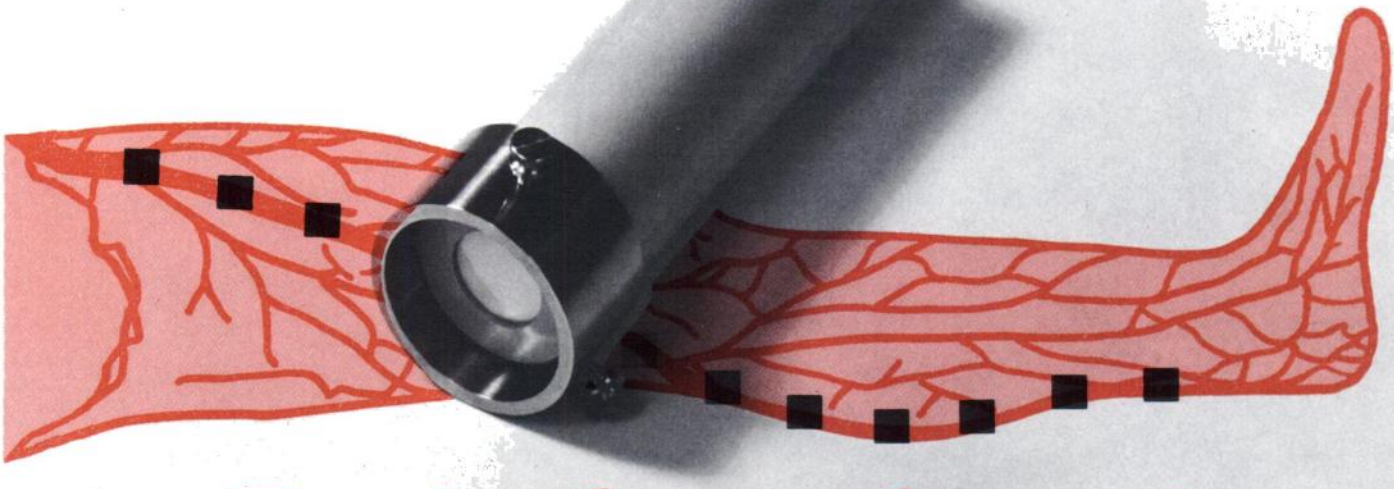
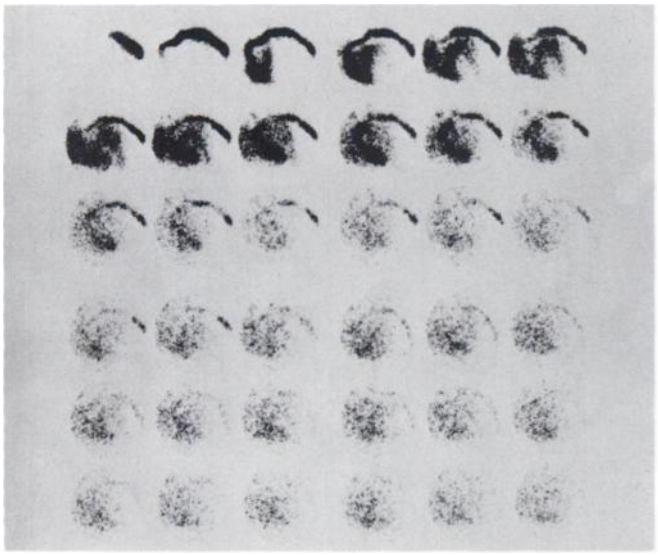


Early detection of Deep Vein Thrombosis

Elscint's new MOBILE 1 gamma camera offers you the quality and performance of a stationary camera with the fluid mobility of a cat. It moves rapidly yet safely wherever needed. The detector head raises smoothly into position with fully automated two speed controls. Over *or under* the patient. Swings to either side or in front. The new MOBILE 1 camera is quiet and efficient to give you high quality results with maximum flexibility.

Mobile 1: Exceptional performance in a mobile camera

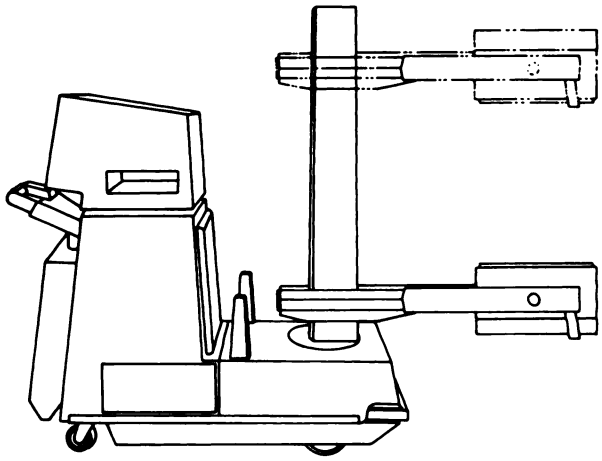
Results, of course, must be the ultimate measure of any diagnostic system. Here, Elscint is second to none. The MOBILE 1 provides a full 12″ FOV with bar resolution better than 3.2 mm. It images at rates



to 200,000 cps. (less than 1.5 μs deadtime) and its usable energy range extends beyond 200 KeV for use with 81^m Kr (190 KeV), 99^m TC (140 KeV) or 201 Tl (70 KeV), or other usable radionuclides within this range. It thus performs as a regular stationary camera for both static and dynamic studies as well as a mobile patient bedside unit. An optional data storage/replay system acquires and records at up to 150,000 cps for later replay or processing, adding time marks for reframing as fast as 100 frames/sec.

Mobile 1: Maximum maneuverability

Extreme ease and convenience of movement are major features of the MOBILE 1. Its under-30″ width and compact overall size enable passage through any doorway or narrow hall. Its low profile facilitates excellent forward visibility while in motion and its low center of gravity produces high stability even with full detector extension. Three speed forward and reverse drive and short-turning-radius power steering permit rapid long distance travel as well as precise



Designed for over *and under* patient imaging

positioning at bedside with safety interlocks provided to prevent accidental bumping into objects or people. The MOBILE 1 can pass over a 20 mm obstacle and climb a 10% slope rapidly yet will not run away on downslopes. Positive-locking brakes assure firm positioning and are automatically applied upon release of the control handle.

Mobile 1: Convenient controls for easy operation

All of the operating features employed in our latest stationary cameras are provided in the Mobile 1 with the added convenience of a swivel-mounted operating console. Pushbuttons ease input of patient information, data recording, display control, scaler operation, and isotope selection. Patient rotation selection and region of interest are conveniently controlled as well. The camera's persistence scope faces the detector and moves with it for easy patient setup. Dual isotope operation is available as is a selection of up to 3 single-channel analyzers.

When it's safer, faster and easier to move the camera to the patient, you'll get maximum performance with the Elscint MOBILE 1 Gamma Camera.

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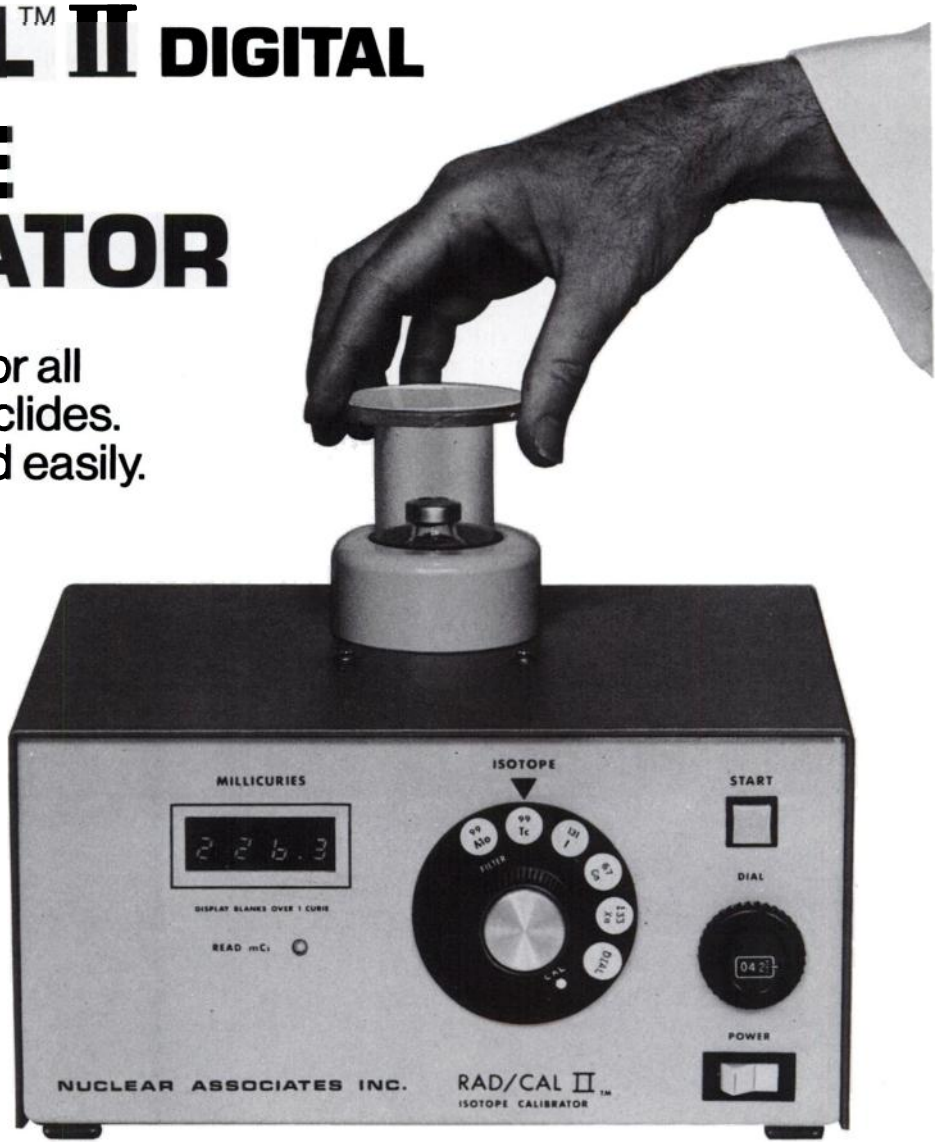

- Automatic ranging from 1 μc to 1 Ci.
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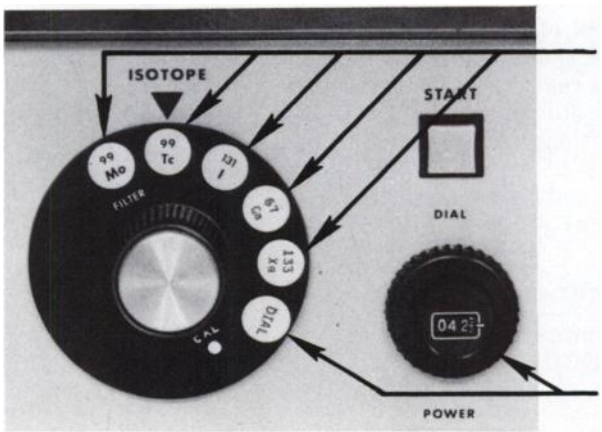
- Molybdenum breakthrough shield.

Also performs as a computing dose calibrator (when used with an optional Hewlett Packard HP-25 Pre-Programmed Calculator).



Has 5 pre-calibrated switch positions for selecting the most commonly used radionuclides.

In "Dial" position, the 10-turn potentiometer permits ANY radionuclide to be measured.

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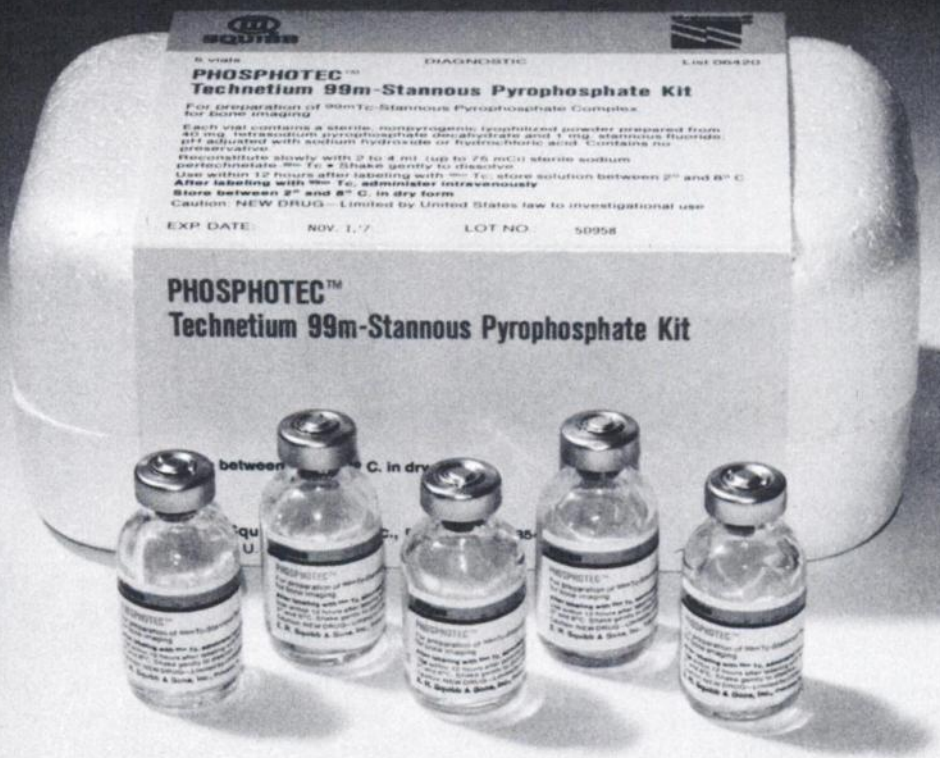

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(ratio of Pyrophosphate to Stannous Tin)

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Unlike many companies involved in nuclear medicine, Squibb is also a broad line pharmaceutical house . . . and has been for over a century. So when it comes to formulation and quality control procedures, we wrote the book. Consider that before you purchase any radiopharmaceutical. At Squibb, quality is a way of life.

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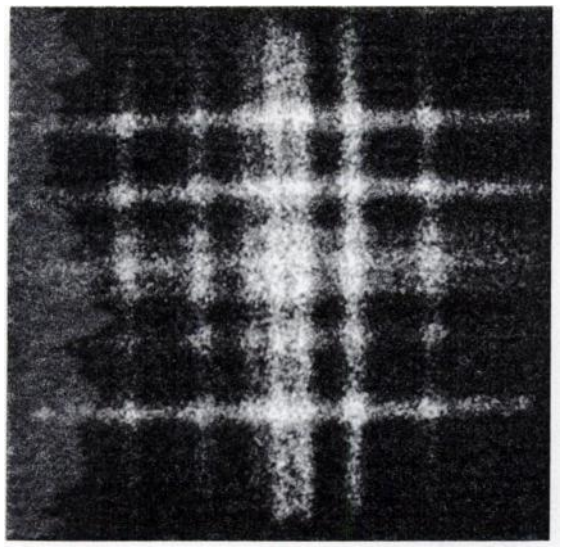

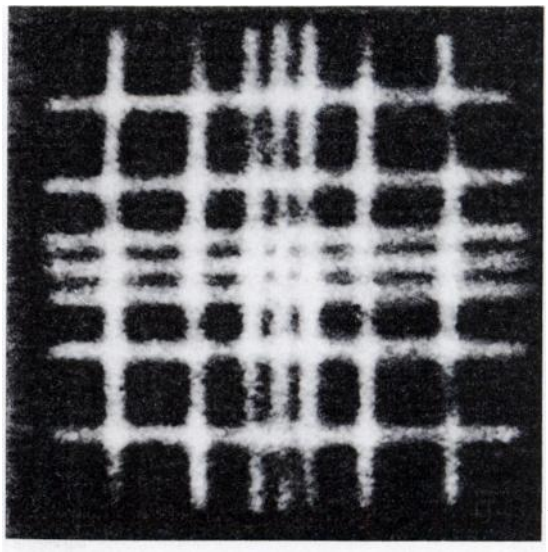

Resolved.

Simulated thallium-201 sources from NEN provide a simple, effective means of checking your scintillation camera's intrinsic resolution, collimator spatial resolution, field size, and linearity. Use one daily. It's the only way to be sure of your studies.

No liquids to mix, spill, or dispose of. The gold-195 lines, simulating thallium-201, are neatly sealed in a lucite holder to prevent contamination of the camera or its surroundings. The source has a useful life of 12 to 18 months.

NEN makes lots of other sources and accessories for nuclear medicine too, including cobalt-57 flood sources for technetium-99m studies, ion chamber sources and marker sources.

For details on all of NEN's sources and accessories for nuclear medicine, send for our catalog today.

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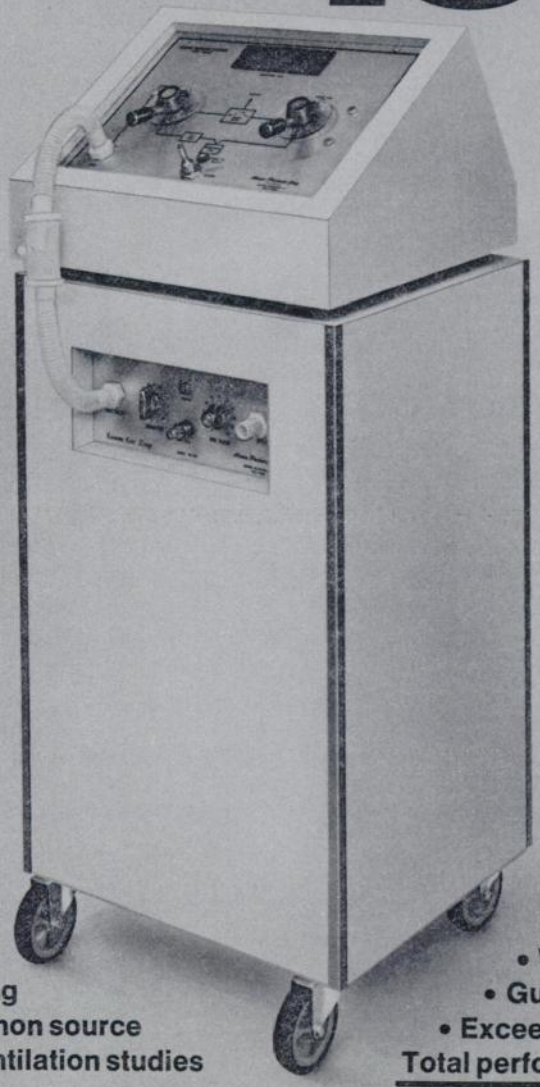
FULL FUNCTION

XENON SYSTEM FOR LESS THAN $1800.



Fills the void between disposable bag units and automated gas handling equipment.

- Completely shielded
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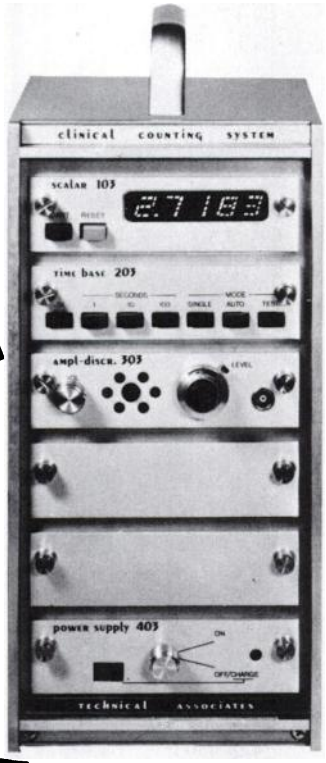

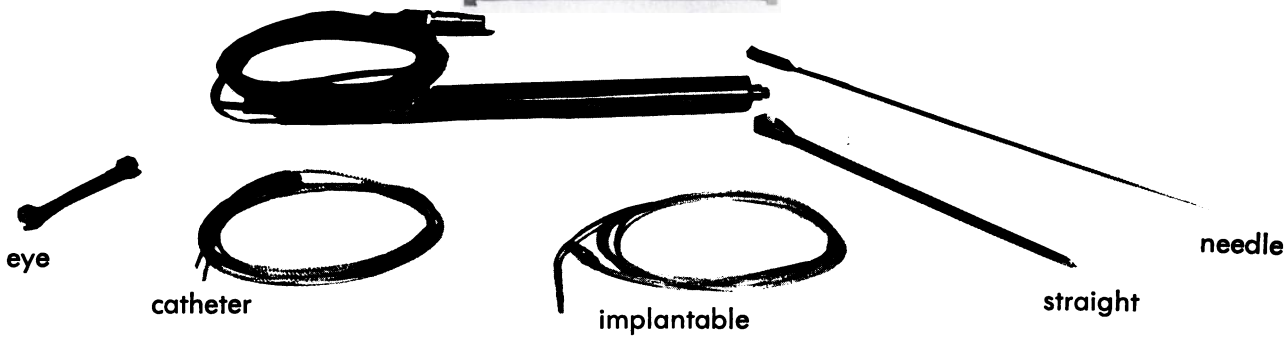

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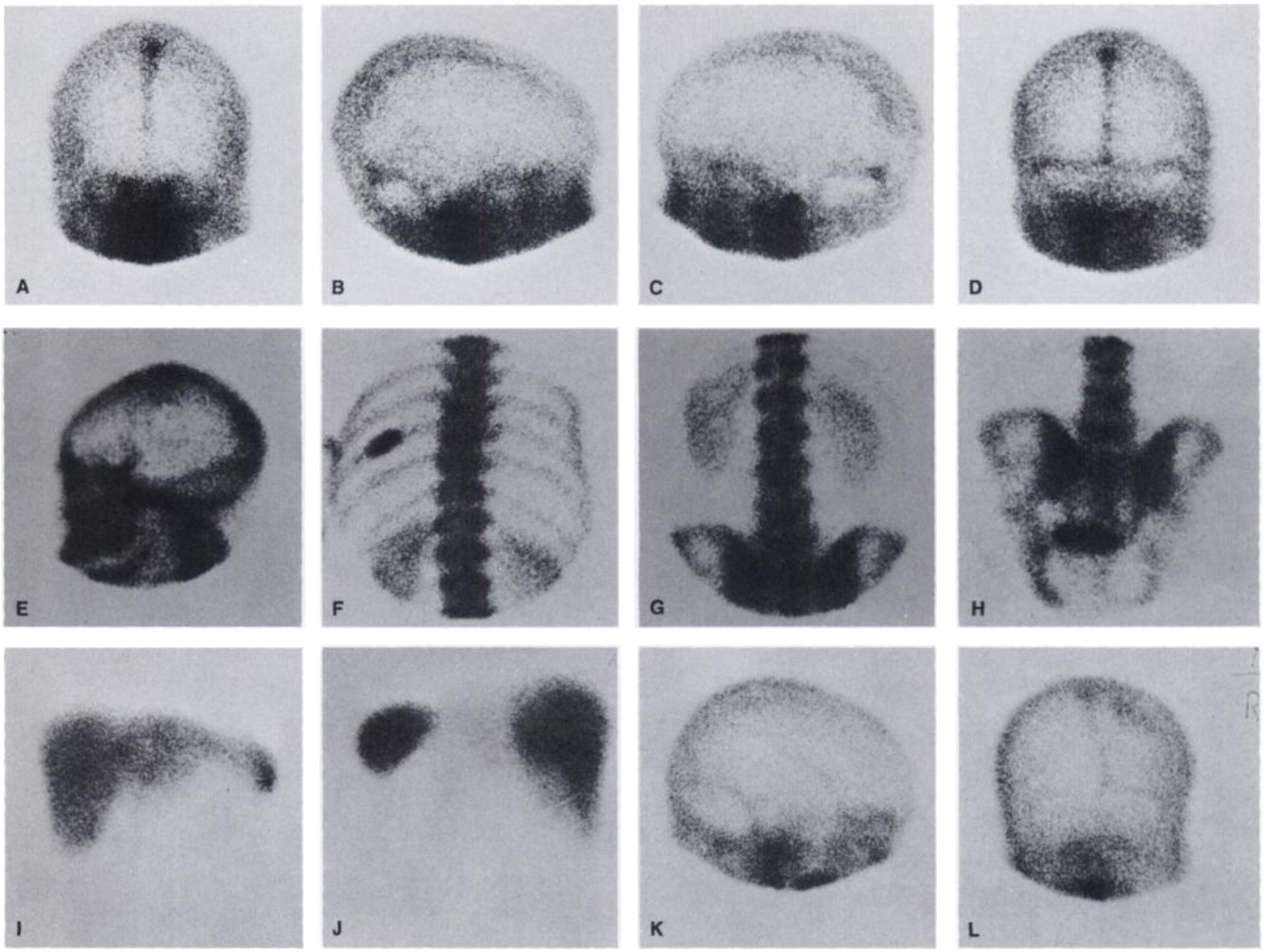
In less time, Elscint Gamma Cameras give you high resolution images like these...



A, B, C, D. Normal brain scan multi-image display with CE-1-7 (37 p.m.t.) camera.

E, F, G, H. Positive bone scan patient: CCL-4 Ultrafine — resolution collimator; 400,000 counts accumulated in 90-220 seconds per view; 15 mCi ^{99m}Tc pyp; 5 hours post injection.

I, J. Anterior and posterior liver scans: CCL-4 Ultrafine — resolution collimator; 400,000 counts; 3 mCi ^{99m}Tc sulfur colloid; ½ hour post injection. 56 sec. for anterior; 66 sec. for posterior.

K, L. Right lateral and posterior brain scans with Elscint CE-1-7 (37 p.m.t.) camera: CCL-4 Ultrafine — resolution collimator; 400,000 counts; 15 mCi ^{99m}Tc; 2 hours post injection. 172 sec. for posterior; 169 sec. for right lateral. History: head trauma 2 months prior to brain scan.

elscint inc. ***Where quality counts . . . count on Elscint***

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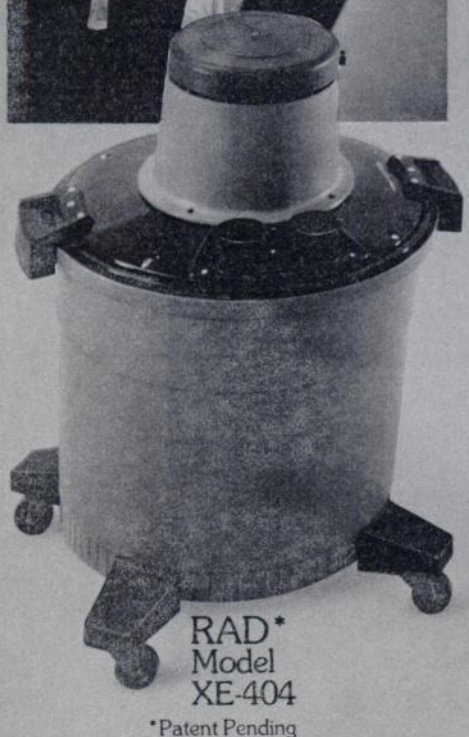
In United Kingdom: Elscint GB, 5 Priestley Way, Crawley Sussex RH102DW. Telephone: Crawley (0293) 21285/6/7. In France: Elscint S.A.R.L., 11 Rue Edouard-Lefebvre 78000 Versailles, Telephone: 950-2767. In Germany: Elscint GMBH, Freudenbergstrasse 27, 62 Wiesbaden-Schierstein, Telephone: (06121) 2786. In other countries: Write to Elscint Ltd., P.O. Box 5258, Haifa, Israel for the office in your country.

How Much Protection?

The RAD (emergency room air radiodecontaminator), *Model XE-404* was specially developed to remove radioactive Xenon-133 from the air in the event of accidental spills from Xenon delivery systems or patients. It is ideal for the facility that is locked in and has no windows or emergency exhaust systems.

Specifications

Made from a tough and durable extra heavy gauge vinyl plastic mounted on four swivel ball bearing casters. Overall dimensions: 24" diameter by 28" overall height. Approximate Shipping Weight: 95 lbs.



RAD* Model XE-404

*Patent Pending

Atomic Development Corp. has been designing and manufacturing a complete line of products for the nuclear, radiographic, and radiation specialist for over 17 years. We are constantly involved in the development of new products to meet the exacting demands of the hospital, university, and industrial environment.

ADC takes pride in its accomplishments in the development of personnel protection for the nuclear medical field.

The *Xenon Bag Shield* and the *Emergency Room Air Radiodecontaminator* are two further examples of our commitment to safety in nuclear medicine.

Why Not Be Safe!

For additional product information call or write to

ADC

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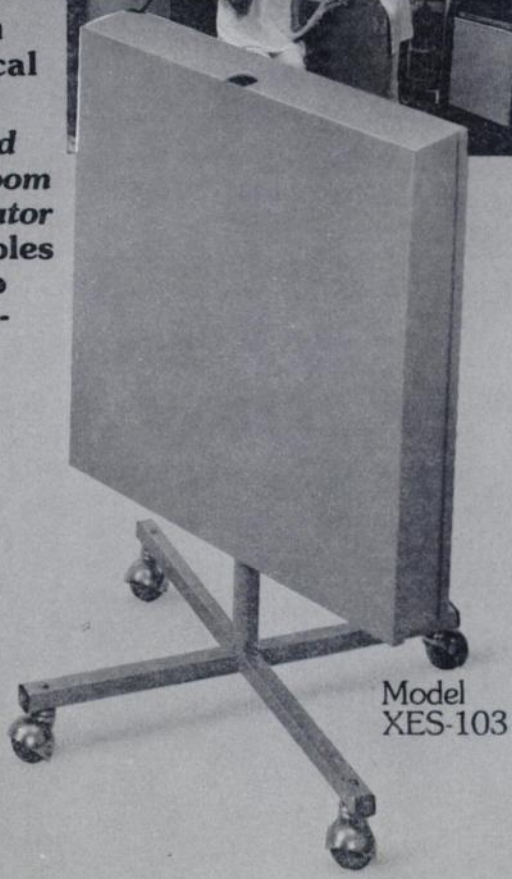
XENON BAG SHIELD

The Xenon Bag Shield *Model XES-103* was designed to protect the technician from unnecessary radiation exposure from the Xenon collection bag. In addition, it could improve the gamma camera images by reducing the background in the immediate vicinity.

ADC's Xenon Bag Shield is fabricated of a heavy gauge sheet steel and is internally lined with 1/16 inch thick lead.

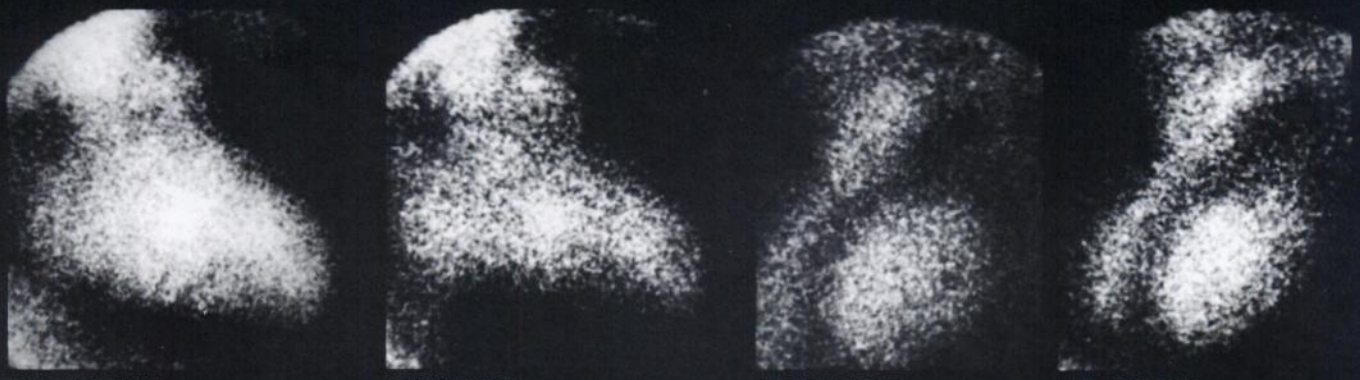
Specifications

Dimensions: 4' x 20½" x 24¼" Overall Height: 34-3/8". Finish: Durable baked paint. Shipping Weight: 75 lbs.



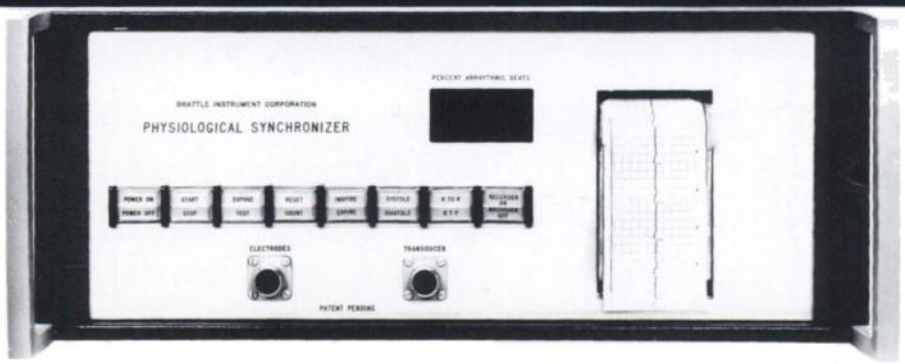
Model XES-103

Help your cardiologist study heart kinetics non-invasively with Brattle-gated scintiphotos.



RAO, DIASTOLE | RAO, SYSTOLE | LAO, DIASTOLE | LAO, SYSTOLE

The RAO view shows akinesis of the lower antero-lateral wall and apex; and contraction of the inferior wall and high up the antero-lateral wall. The LAO view shows good contraction posteriorly and akinesis of the septal aspect of the chamber. Patient was injected IV with 20mCi of ^{99m}Tc-labelled Human Serum Albumin. The agent was prepared using the New England Nuclear Electrolysis Kit for labelling HSA. Write or call for a portfolio of Brattle-gated lung, liver and heart studies.



No knobs, no meters, no errors
The spartan panel above tells the second-best part of our story. If you want to photograph peak systole, press the SYSTOLE button. If, say, you want systole only at full expiration, press the EXPIRATION button as well. If only breathing is relevant, don't press the heart button.

The Brattle is connected to the patient and to your gamma (or x-ray or ultrasonic) camera. Whenever the patient is in the selected phase, both the scope and the scaler on your gamma camera are gated ON, and film is exposed. Otherwise, they are OFF.

Brattles lock onto patients—and stay locked on
It doesn't matter if the patient's heart rate and breathing depth change while he's under the collimator because we stay right with him. Brattles contain an ECG to track heart, a plethysmograph to track respiration, and a tiny computer to deduce systole and diastole times from the heart signal. And because it's all built in, your operator need not be a physiologist.

We don't cover our tracks—we print them
The panel lights flash whenever the patient reaches the selected phases; and pushing the RECORDER-ON button gets you an ECG tracing marked with breathing and camera-on times. You can verify function before, during and after exposure.

A single pair of axillary electrodes captures both heart and breath
It's easy. And we supply disposable, pre-filled electrodes.

Some Brattles have been in clinical use for over three years—in community and major hospitals
More than half of our instruments are in community hospitals and the list is growing rapidly. Upon request, we'll supply names of happy users in your area.

What's the next step? Get in touch
Ask your NEN man about Brattles and HSA Kits. He can show you a portfolio of clinical pictures and arrange to have one of our people give you a demo. Or write or call us direct. We'll send you brochures on this and other models, and will give you your own set of clinical pictures and a bibliography on gated scintigraphy. If you wish, we'll even make you a Brattle owner. (This is the best part of our story.)

Brattle Instrument Corporation

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