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Xenon Xe 133
(10 mCi vials)

MPI DTPA Kit
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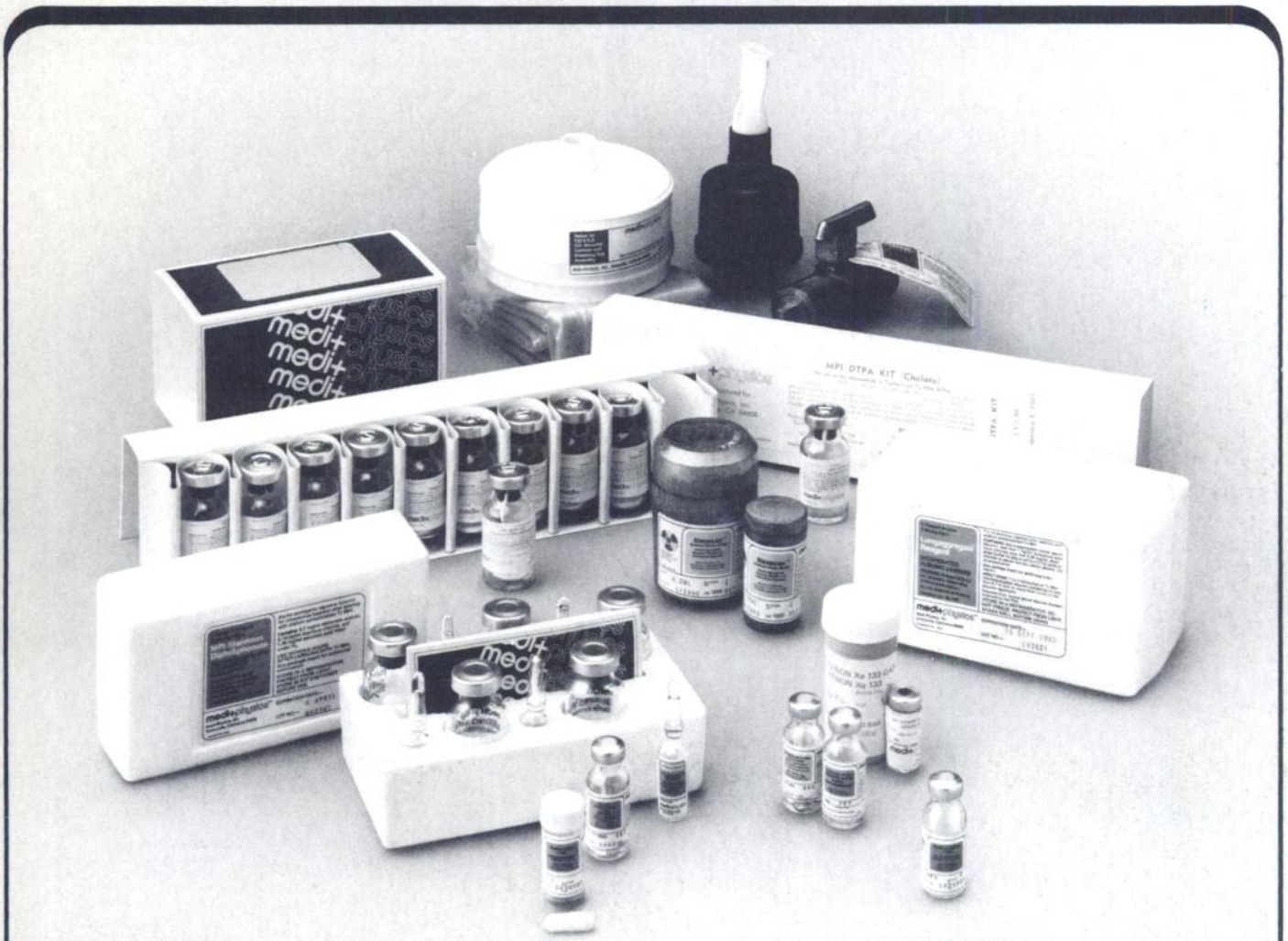

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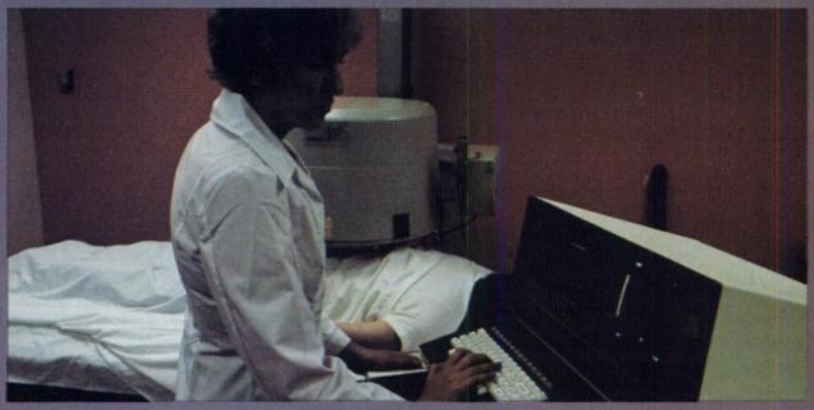

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Yesterday

1970

Today

1980

Tomorrow

Brought to you in part by NEN

For the past decade, nuclear medicine has enjoyed a continuing stream of new radiopharmaceuticals, new isotopes, new diagnostic procedures — and new patients. Many of these new diagnostic procedures resulted directly or indirectly from the investments in product research and development, testing, production, and promotion by a single company: New England Nuclear.

We supported investigators with grants to develop their ideas into agents suitable for animal and human testing... we invested in the production facilities to manufacture sufficient quantities of radio-pharmaceuticals and isotopes to perform the studies necessary to bring new products to you.

And then, we underwrote an effort unique in nuclear medicine — we began spending hundreds of thousands of dollars each year to inform primary-care physicians and specialists why they should send their patients to nuclear departments for these new studies.

Such investments in new product development and physician education are common among traditional pharmaceutical companies producing proprietary products that can be patented. However, all NEN's investments were made on products for which no exclusivity of patent protection was available. Some of NEN's investments were not successful. A few were, however — and they profoundly changed nuclear medicine.

Of course, NEN could have waited for other companies to develop new procedures and products... to carry the risk and investment of pioneering trial and error. We could have waited until someone else created a demand for new isotopes, and then capitalized on their efforts.

Instead, we built *four* of our own cyclotrons, and are currently building a multimillion-dollar linear accelerator — further evidence of NEN's unique commitment to research and development innovation in isotope and radiopharmaceutical production.

If NEN had not been so committed to advancing nuclear diagnostics, perhaps bone scans might still be done with strontium... and techniques such as tumor, abscess, and myocardial perfusion imaging might still be subjects for academic — not clinical — consideration.

NEN has maintained a high level of customer acceptance of its isotopes and radiopharmaceuticals, thanks to physicians and technologists who understand that when they trust their business to NEN they are sharing our investment in future nuclear diagnostics... in the profession's future ability to diagnose diseases for which medicine has no agents today ...and in the effort to communicate the benefits of nuclear diagnostics to the medical community.

We're committed to you. We're NEN New England Nuclear®

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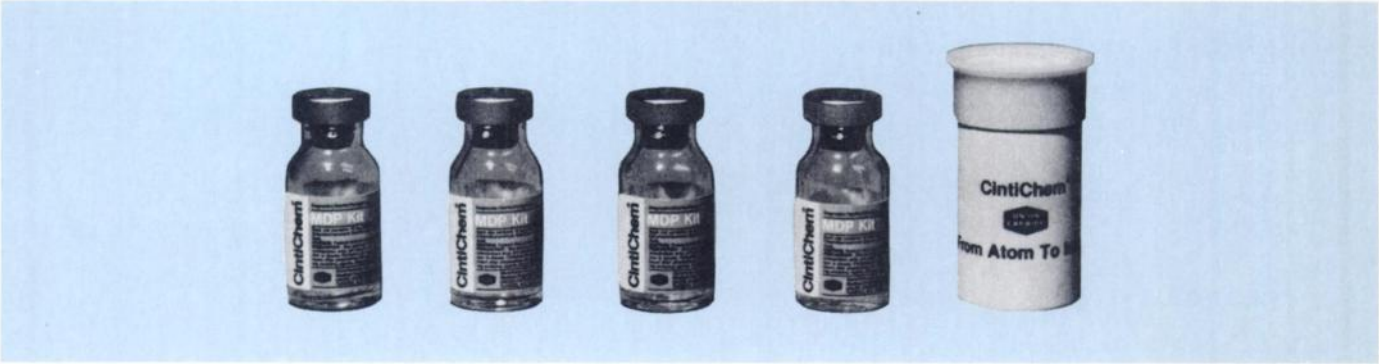

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CintiChem® MDP KIT

Technetium Tc 99m Medronate Kit

BRIEF SUMMARY OF PRESCRIBING INFORMATION

indications and usage

Technetium Tc 99m Medronate may be used as a bone imaging agent to delineate areas of altered osteogenesis.

contraindications

None known.

warnings

This class of compound is known to complex cations such as calcium. Particular caution should be used with patients who have, or who may be predisposed to, hypocalcemia (i.e., alkalosis).

This radiopharmaceutical drug product should not be administered to children, to pregnant women, or to nursing mothers, unless the expected benefit to be gained outweighs the potential risk.

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.

precautions

general

Technetium Tc 99m Medronate as well as other radioactive drugs, must be handled with care and appropriate safety measures should be used to minimize radiation exposure to clinical personnel. Also, care should be taken to minimize radiation exposure to the patients consistent with proper patient management.

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.

This preparation contains no bacteriostatic preservative.

Technetium Tc 99m Medronate should be formulated within six (6) hours prior to clinical use.

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 Medronate 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 Medronate have been reported.

how supplied

Union Carbide's Technetium Tc 99m Medronate Kit is supplied as a sterile, pyrogen-free kit containing 5 vials.

Each 10 ml vial contains 10 mg medronic acid, 0.17 mg (minimum) stannous chloride (maximum stannous and stannic chloride 0.29 mg), and 2 mg ascorbic acid. The pH has been adjusted to 4-8 with either HCl or NaOH prior to lyophilization. Following lyophilization, the vials are sealed under a nitrogen atmosphere.

Product #17500502 Multidose vial shield with cap and retainer ring available separately.

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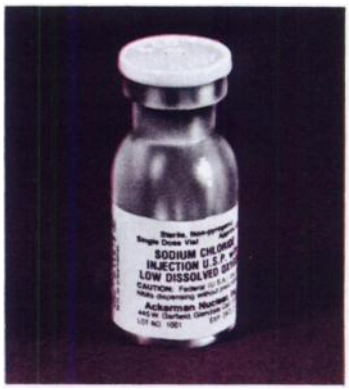
Low* Dissolved Oxygen Non-preservative normal saline U.S.P.

Designed with Nuclear Medicine in mind, Low Dissolved Oxygen, non-preservative, normal saline for routine use is now available from Ackerman Nuclear, Inc.



- ELUTION:
  Use for eluting Technetium-99m generators.
- DILUTION:
  Use for diluting high specific concentrations of Technetium-99m.

SODIUM CHLORIDE INJECTION U.S.P.
with LOW DISSOLVED OXYGEN
pH 4.5 to 7.0

DESCRIPTION:
SODIUM CHLORIDE INJECTION U.S.P. with LOW DISSOLVED OXYGEN is a sterile isotonic solution of sodium chloride in water for injection. It contains no antimicrobial agent. It contains 0.9% sodium chloride and is packaged in single dose vials. The osmolarity is 300 mOsm/1, the dissolved oxygen content is less than 5 ppm.

INDICATIONS:
SODIUM CHLORIDE INJECTION U.S.P. with LOW DISSOLVED OXYGEN is indicated for eluting, preparing and/or diluting pharmaceuticals that specify oxidants may cause adverse effects on the final product. SODIUM CHLORIDE INJECTION U.S.P. with LOW DISSOLVED OXYGEN is also used as a fluid and electrolyte replenisher or as an irrigating solution.

WARNING:
Excessive amounts of sodium chloride by any route may cause hypopotassemia and acidosis. Excessive amounts by the parental route may precipitate congestive heart failure and acute pulmonary edema, especially in patients with cardiovasular disease, and in patients receiving corticosteroids or corticotropin drugs that may give rise to sodium retention. No antimicrobial agent has been added.

PRECAUTIONS:
Unused amounts should be discarded immediately following withdrawal of any portion of the contents.

HOW SUPPLIED:

Catalog No.	Product	Packaging
S-25	SODIUM CHLORIDE INJECTION U.S.P. with LOW DISSOLVED OXYGEN	25/10 ml vials

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1/78

Decrease the amount of oxygen you add daily and reduce the effect of one more variable from your radiopharmacy. Use Low Dissolved Oxygen saline when preparing kits containing any stannous tin products.

*less than 5 ppm

For additional information call or write to:

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Tomovision is a New Dimension in Nuclear Imaging.

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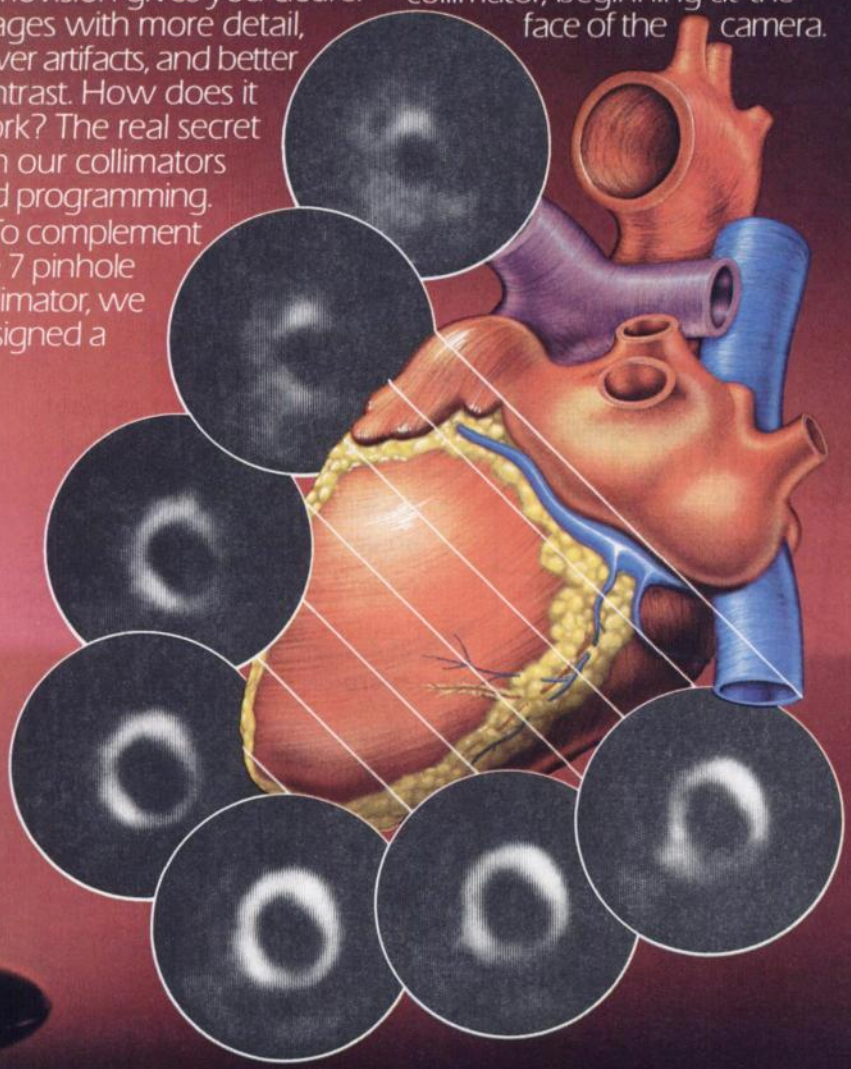
To complement the 7 pinhole collimator, we designed a revolutionary Rotating Slant Hole Collimator. It works on Technicare's small field and large field gamma cameras. And gives you a field of view equal to the diameter of the collimator, beginning at the face of the camera.



So you can see more than ever before. And more clearly than ever before.

So the role of nuclear medicine in research and diagnosis has suddenly expanded. Because tomography is ready to augment the classic diagnostic procedures. Ready to become a routine diagnostic tool.

All Tomovision equipment is manufactured by the Technicare Corporation. So we take care of it all. And we're building our one source reputation with a commitment to excellence. Excellence in training of our field service engineers. Excellence in providing prompt, local service throughout the nation. Tomovision is your assurance that nuclear tomography will deliver consistent, reliable performance for improved clinical confidence.

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The CT Co

The importance of CT in treatment planning is growing fast.

And with ADAC, it's growing better. Faster. Easier. Far more accurate.

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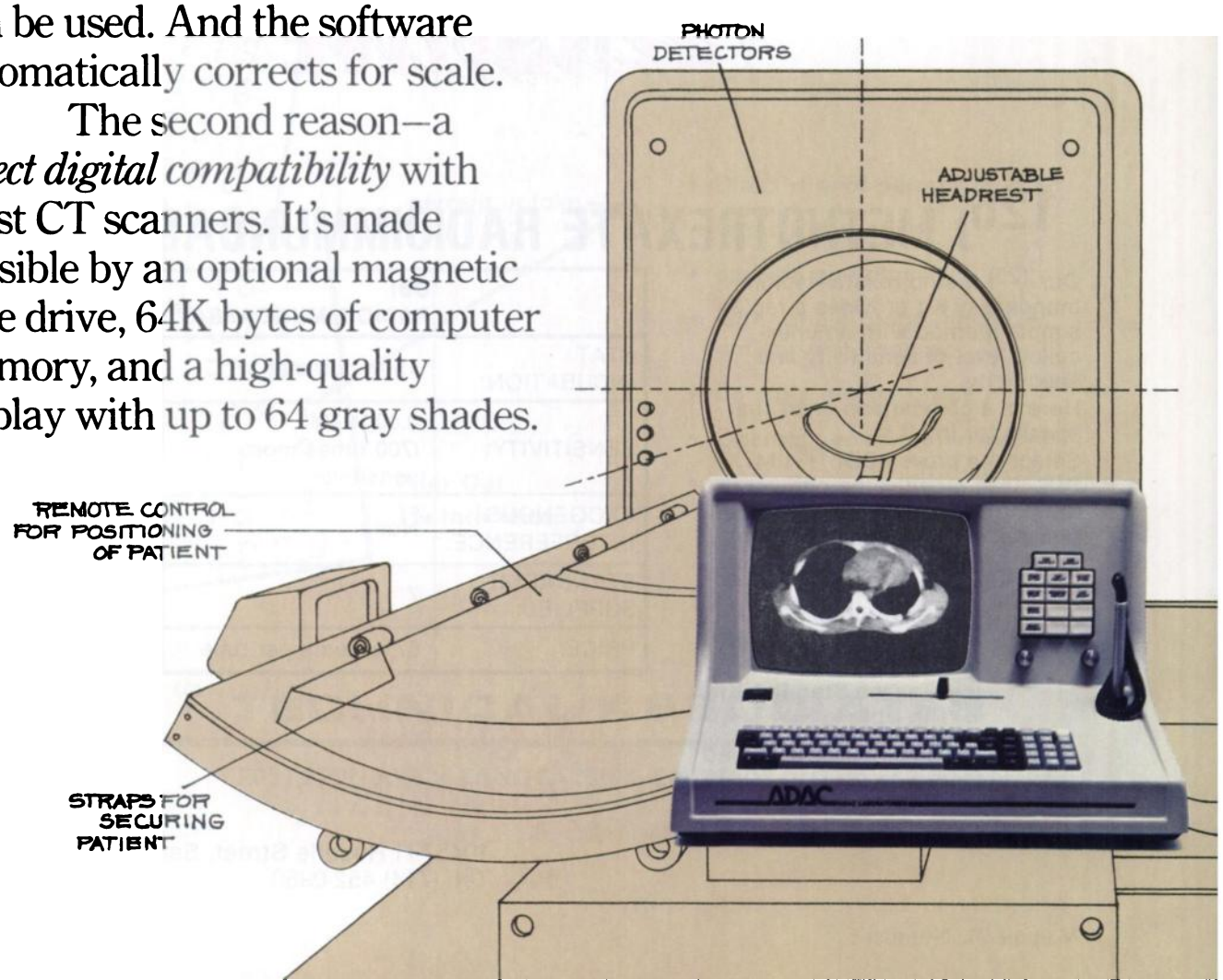
The magnified image allows the direct input of patient contours with a high degree of accuracy.

Images from any CT scanner, or any other 70–105mm film, can be used. And the software automatically corrects for scale.

The second reason—a *direct digital compatibility* with most CT scanners. It's made possible by an optional magnetic tape drive, 64K bytes of computer memory, and a high-quality display with up to 64 gray shades.



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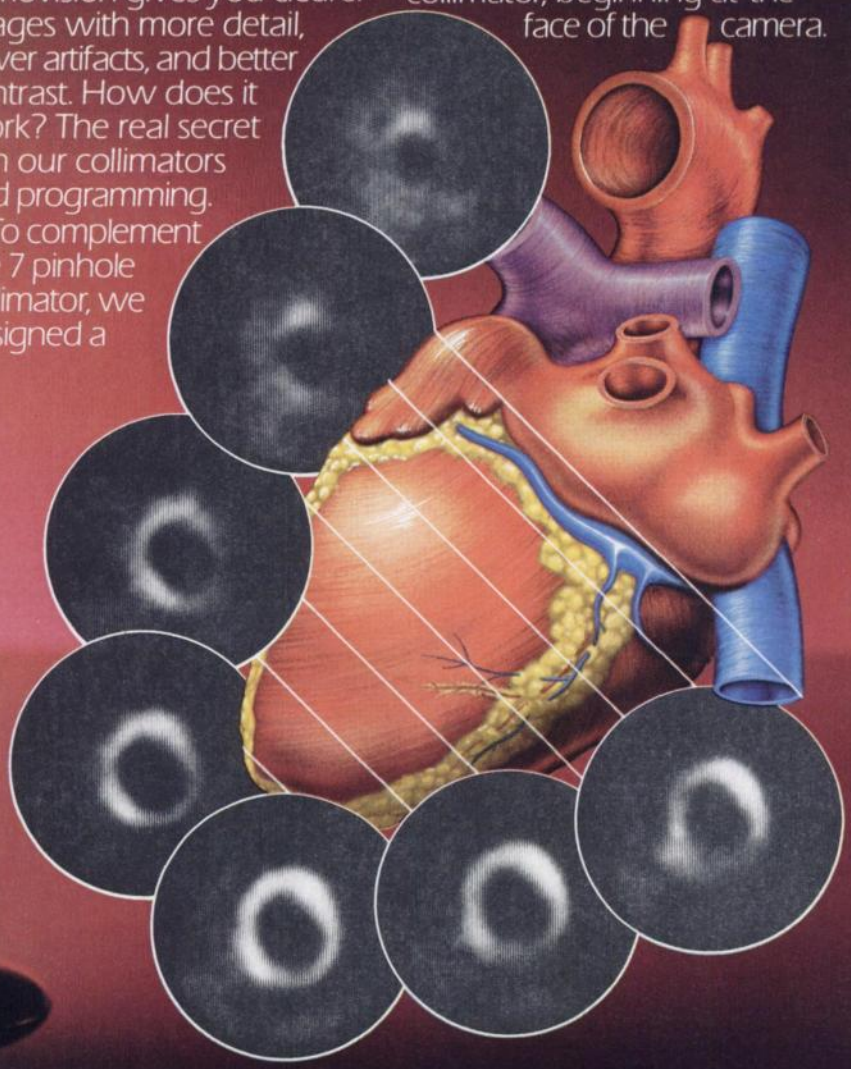

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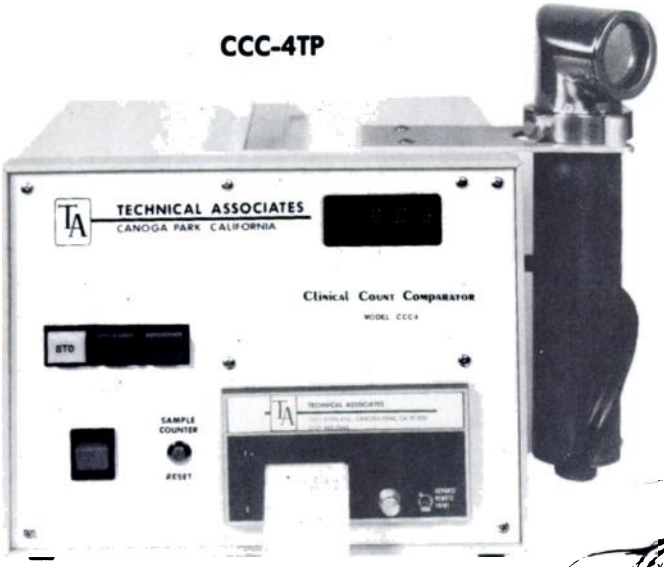
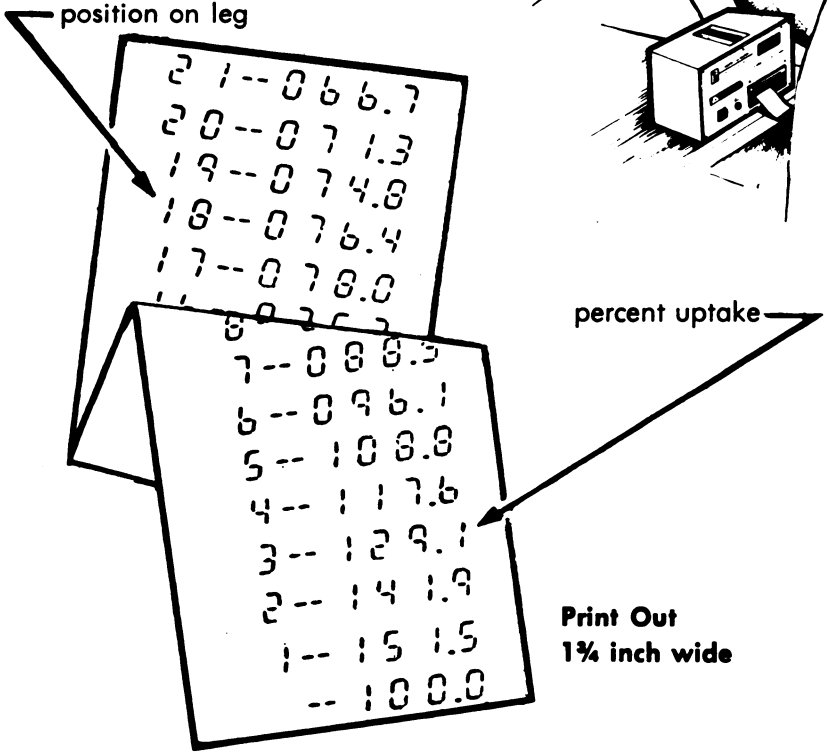
thrombosis

detection of DVT using I-125 fibrinogen

CCC-4TP





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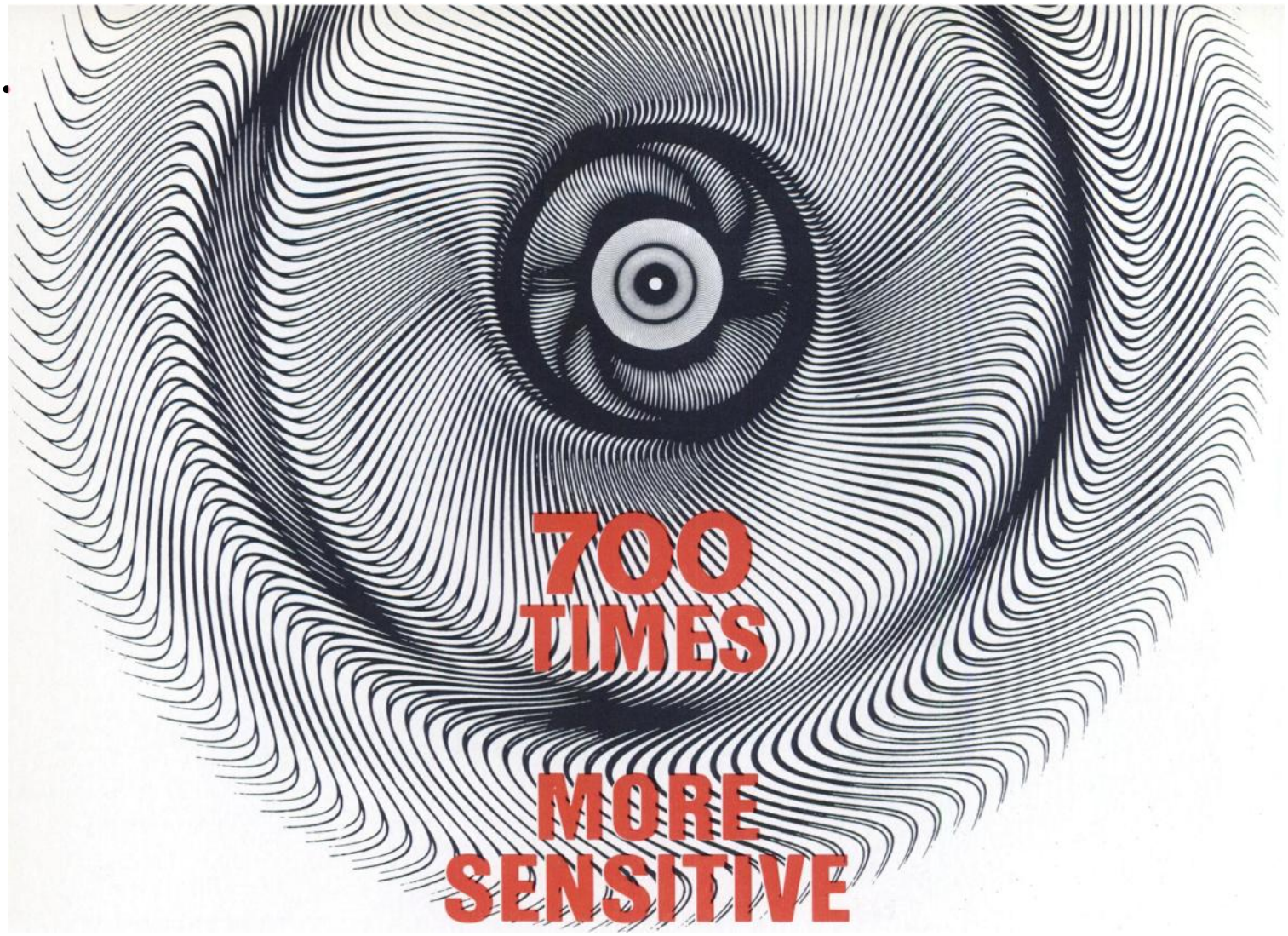

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*In units of 200

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The importance of CT in treatment planning is growing fast.

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First, the *exclusive built-in projection system* that projects a magnified CT image onto the digitizer tablet.

The magnified image allows the direct input of patient contours with a high degree of accuracy.

Images from any CT scanner, or any other 70–105mm film, can be used. And the software automatically corrects for scale.

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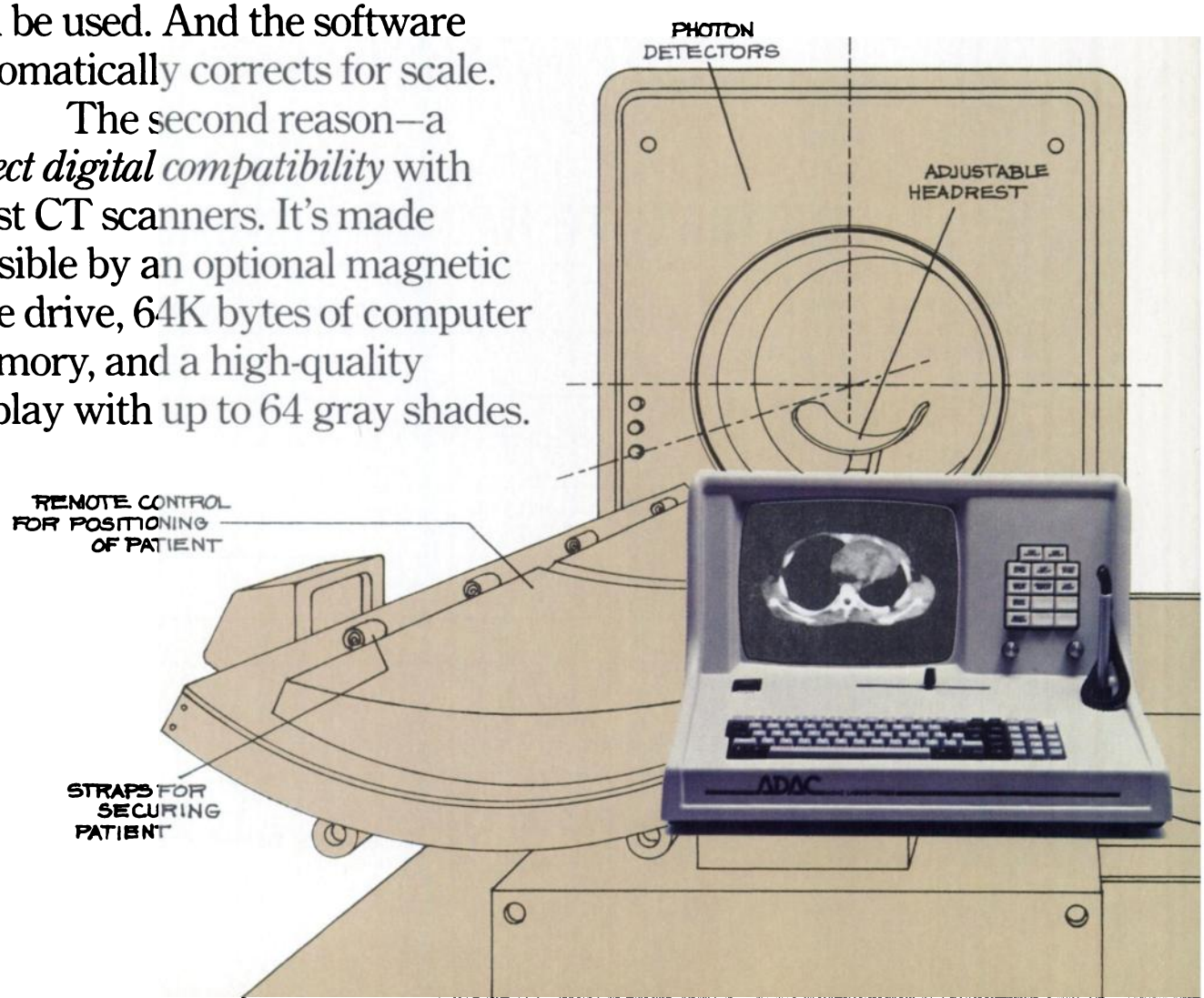

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The CT Connection is only one of the many important features of the ADAC Radiation Therapy Planning System. Others include software by the Northwest Medical Physics Center, unique time-saving program features, menu instructions in plain English, easy-to-read dose distribution plots in four colors, and full programming capability.

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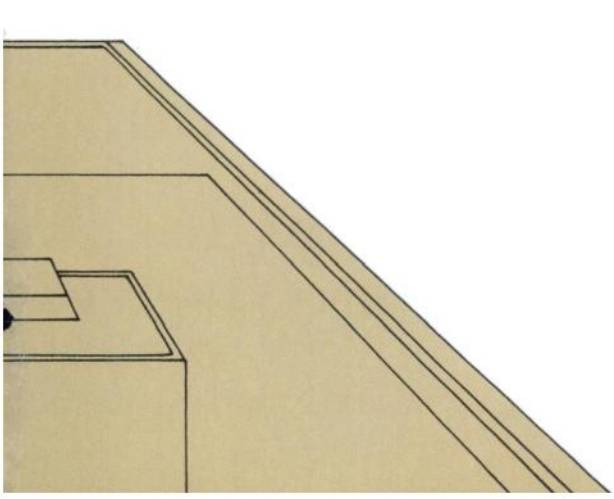
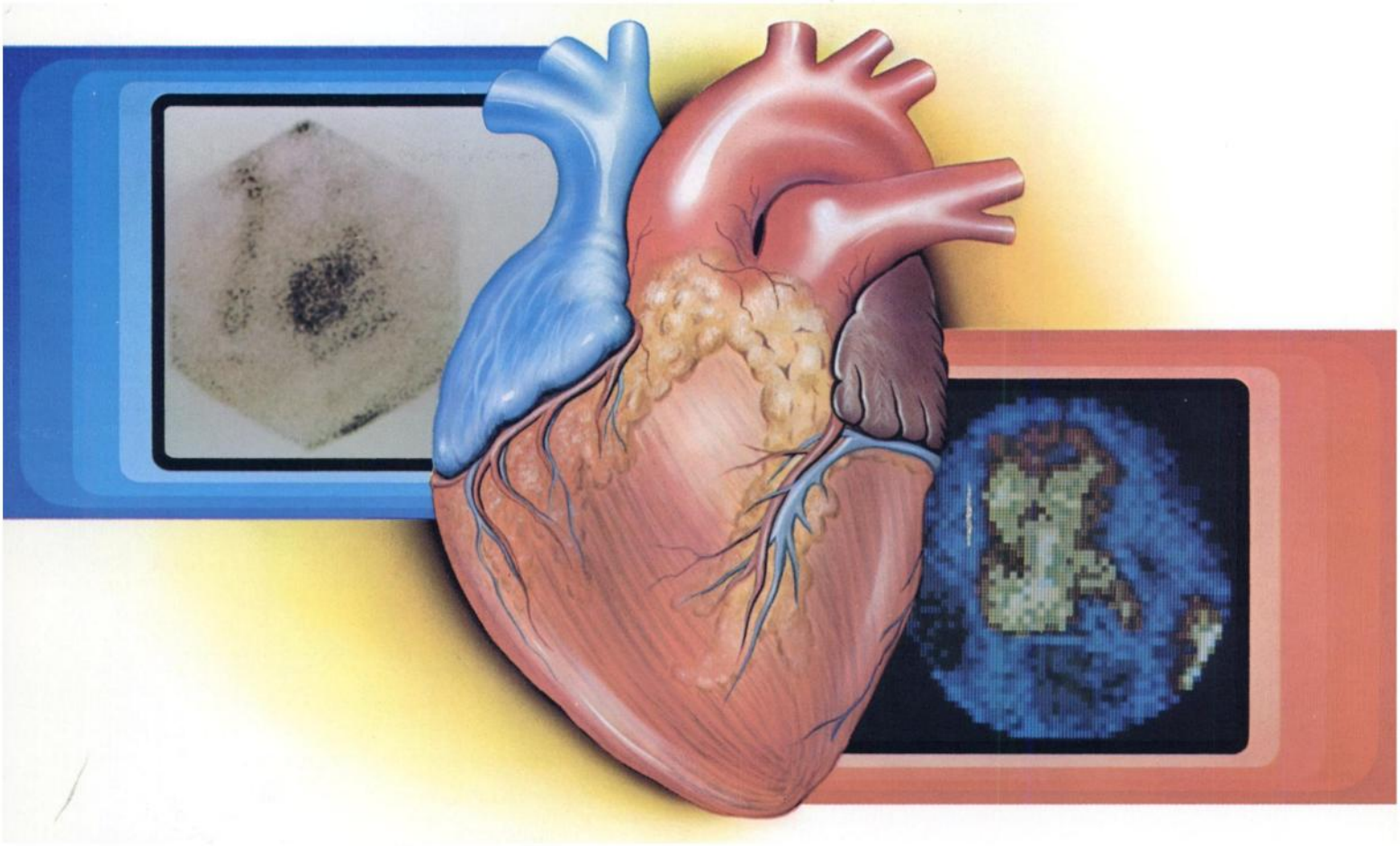
ADAC

Radiation Therapy Planning System



The Heart—

An advance from Mallinckrodt provides an excellent adjunct in the detection of myocardial infarction and the dynamic assessment of cardiac function.



TechneScan® PYP™ Kit (Stannous Pyrophosphate) for preparation of Technetium Tc-99m Stannous Pyrophosphate.

A consistent agent for skeletal imaging, *TechneScan PYP* is now available for use as an adjunct in the diagnosis of acute myocardial infarction, and for gated cardiac blood-pool imaging.

Investigators have found the technetium-99m pyrophosphate scintigraphic study to be a highly useful diagnostic technique for evaluating chest pain of uncertain origin.[1]

"The gated cardiac blood pool scan permits the calculation of both ejection and regional wall motion from a single examination."[2]

Mallinckrodt's *TechneScan PYP*...a preferred way to detect acute myocardial infarction...an advanced method to dynamically assess cardiac function.

References:

1. Berman, DS, et al: New Approach to Interpretation of Technetium-99m Pyrophosphate Scintigraphy in Detection of Acute Myocardial Infarction: Clinical Assessment of Diagnostic Accuracy. *Am. J. Cardiol.* 39:341-346, (March) 1977.

2. Strauss, HW, Pitt, B: Cardiovascular Nuclear Medicine: Its Role in Patients with Coronary Heart Disease. *CVP Journal:* (November/December), 1974.

Mallinckrodt® NUCLEAR **The IMAGE MAKER**

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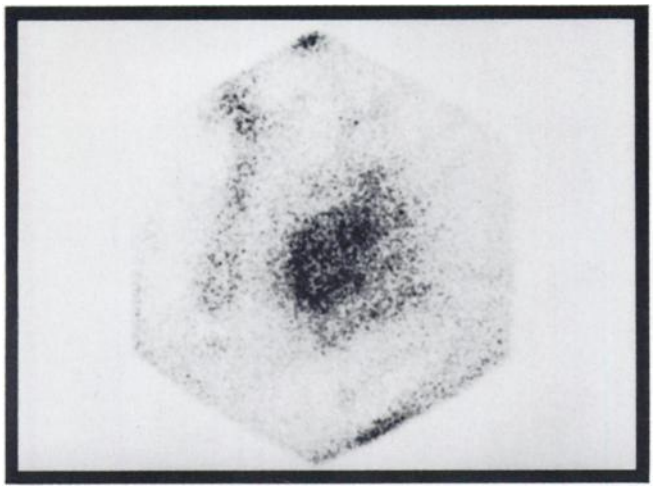
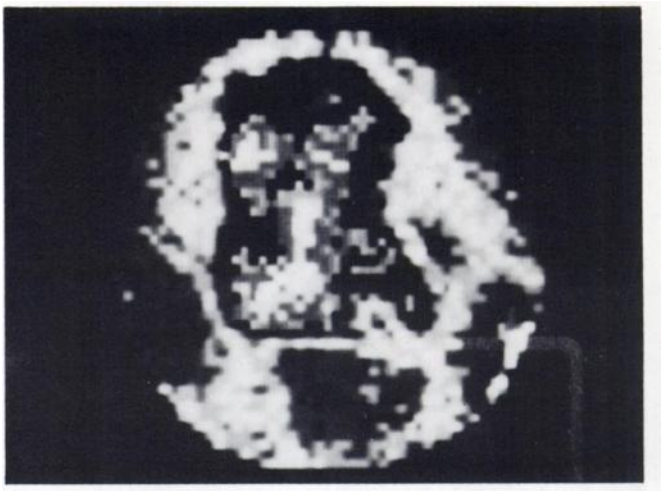
See reverse side for brief summary of complete prescribing information.

An advance from Mallinckrodt provides an excellent adjunct in the detection of myocardial infarction and the dynamic assessment of cardiac function.





TechneScan® PYP™ Kit (Stannous Pyrophosphate) for preparation of Technetium Tc-99m Stannous Pyrophosphate.

BRIEF SUMMARY

CLINICAL PHARMACOLOGY

When injected intravenously **TechneScan PYP Tc 99m** has a specific affinity for areas of altered osteogenesis. It is also concentrated in the injured myocardium, primarily in areas of irreversibly damaged myocardial cells.

One to two hours after intravenous injection of **TechneScan PYP Tc 99m**, an estimated 40 to 50 percent of the injected dose has been taken up by the skeleton and approximately 0.01 to 0.02 percent per gram of acutely infarcted myocardium. Within a period of one hour, 10 to 11 percent remains in the vascular system, declining to approximately 2 to 3 percent twenty-four hours post injection. The average urinary excretion was observed to be about 40 percent of the administered dose after 24 hours.

TechneScan PYP also has an affinity for red blood cells. When administered 30 minutes prior to the intravenous administration of sodium pertechnetate Tc-99m approximately 76 percent of the injected activity remains in the blood pool providing excellent images of the cardiac chambers.

INDICATIONS AND USAGE

TechneScan PYP Tc 99m is a skeletal imaging agent used to demonstrate areas of altered osteogenesis, and a cardiac imaging agent used as an adjunct in the diagnosis of acute myocardial infarction.

As an adjunct in the diagnosis of confirmed myocardial infarction (ECG and serum enzymes positive), the incidence of false negative images has been found to be 6 percent. False negative images can also occur if made too early in the evolutionary phase of the infarct or too late in the resolution phase. In a limited study involving 22 patients in whom the ECG was positive and serum enzymes questionable or negative, but in whom the final diagnosis of acute myocardial infarction was made, the incidence of false negative images was 23 percent. The incidence of false positive images has been found to be 7 to 9 percent. False positive images have also been reported following coronary by-pass graft surgery, in unstable angina pectoris, old myocardial infarcts and in cardiac contusions.

TechneScan PYP is a blood pool imaging agent which may be used for gated cardiac blood pool imaging. When administered intravenously 30 minutes prior to the intravenous administration of sodium pertechnetate Tc-99m approximately 76 percent of the injected activity remains in the blood pool.

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.

Warning: Preliminary reports indicate impairment of brain scans using pertechnetate Tc-99m which have been preceded by bone scan. The impairment may result in false positives or false negatives. It is recommended, where feasible, that brain scans precede bone imaging procedures.

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 **TechneScan PYP Kit** must be maintained at refrigerator temperature until use.

The contents of the **TechneScan PYP** reaction vial are intended for use in the preparation of Technetium Tc 99m Stannous Pyrophosphate. **TechneScan PYP** may also be reconstituted with sterile, pyrogen-free normal saline containing no preservatives and injected intravenously prior to the administration of sodium pertechnetate Tc-99m.

Sodium pertechnetate Tc-99m solutions containing an oxidizing agent are not suitable for use with the **TechneScan PYP Kit**.

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

TechneScan PYP Tc 99m should not be used more than six hours after preparation.

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.

Bone Imaging

Both prior to and following **TechneScan PYP Tc 99m** administration, patients should be encouraged to drink fluids. Patients should void as often as possible after the **TechneScan PYP Tc 99m** injection to minimize background interference from accumulation in the bladder and unnecessary exposure to radiation.

Cardiac Imaging

Patient's cardiac condition should be stable before beginning the cardiac imaging procedure.

If not contraindicated by the cardiac status, patients should be encouraged to ingest fluids and to void frequently in order to reduce unnecessary radiation exposure.

Interference from chest wall lesions such as breast tumors and healing rib fractures can be minimized by employing the three recommended projections.

Blood Pool Imaging

TechneScan PYP should be injected by direct venipuncture. Heparinized catheter systems should be avoided.

ADVERSE REACTIONS

None.

HOW SUPPLIED

Catalog Number—*094* **TechneScan PYP Kit**

Kit Contains:

5—Stannous Pyrophosphate Reaction Vials (lyophilized) for the preparation of Technetium Tc-99m Stannous Pyrophosphate.

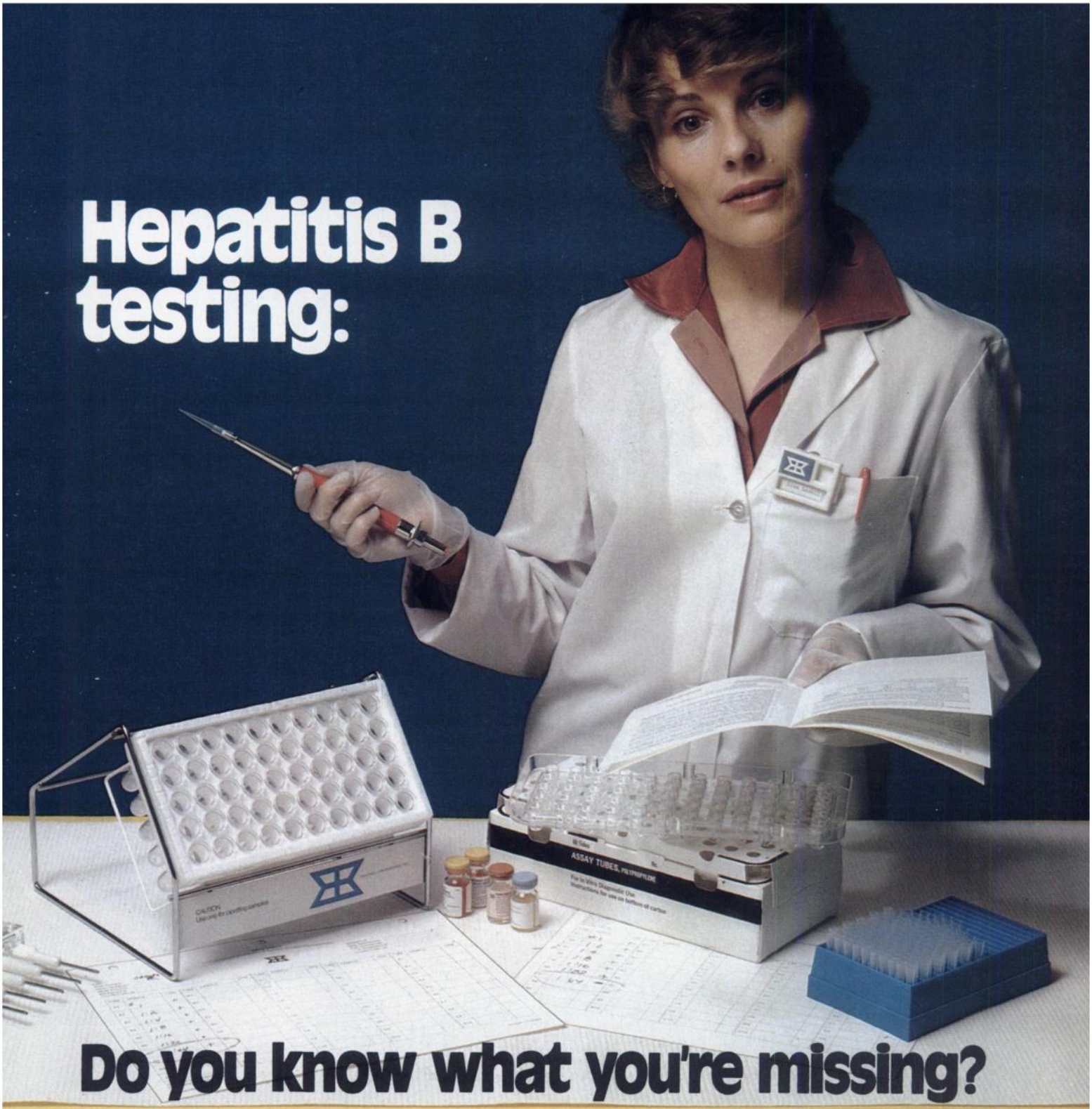
Reaction Vial Contains:

12.0 mg sodium pyrophosphate and 3.4 mg stannous chloride (lyophilized). Hydrochloric acid is added for pH adjustment prior to lyophilization.

5—Radioassay Information String Tags.

Mallinckrodt® NUCLEAR **The IMAGE MAKER**

Mallinckrodt, Inc.
P.O. Box 5840, St. Louis, Missouri 63134



Do you know what you're missing?

You may be missing positives.
Clinical Assays' Solid Phase RIA Kit for detection of Hepatitis B Surface Antigen is so sensitive it can pick up positives your present third generation test may be missing. Our three-species heterologous system also reduces the chance of false positives.

And antibody coated tube convenience.
No beads to transfer. The entire assay is performed in a single tube. Splash-free washing reduces biohazard to lab personnel and virtually eliminates nonrepeatable positives. Easy tube labeling identifies samples from start to finish.

Compare these other features.

- Two 90-minute 37° incubations allow you to run either serum or plasma samples without recalcification.
- 1-hour STAT assay includes all controls so that it can be run independently of previous testing.
- Kit configuration reduces waste, making it ideal for both high and low volume users.
- Red tinted tracer provides visual quality control.

For an evaluation kit, call our toll free number or your local Clinical Assays/Travenol representative.

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(617) 492-2526 TLX: 921461 CLASS CAM
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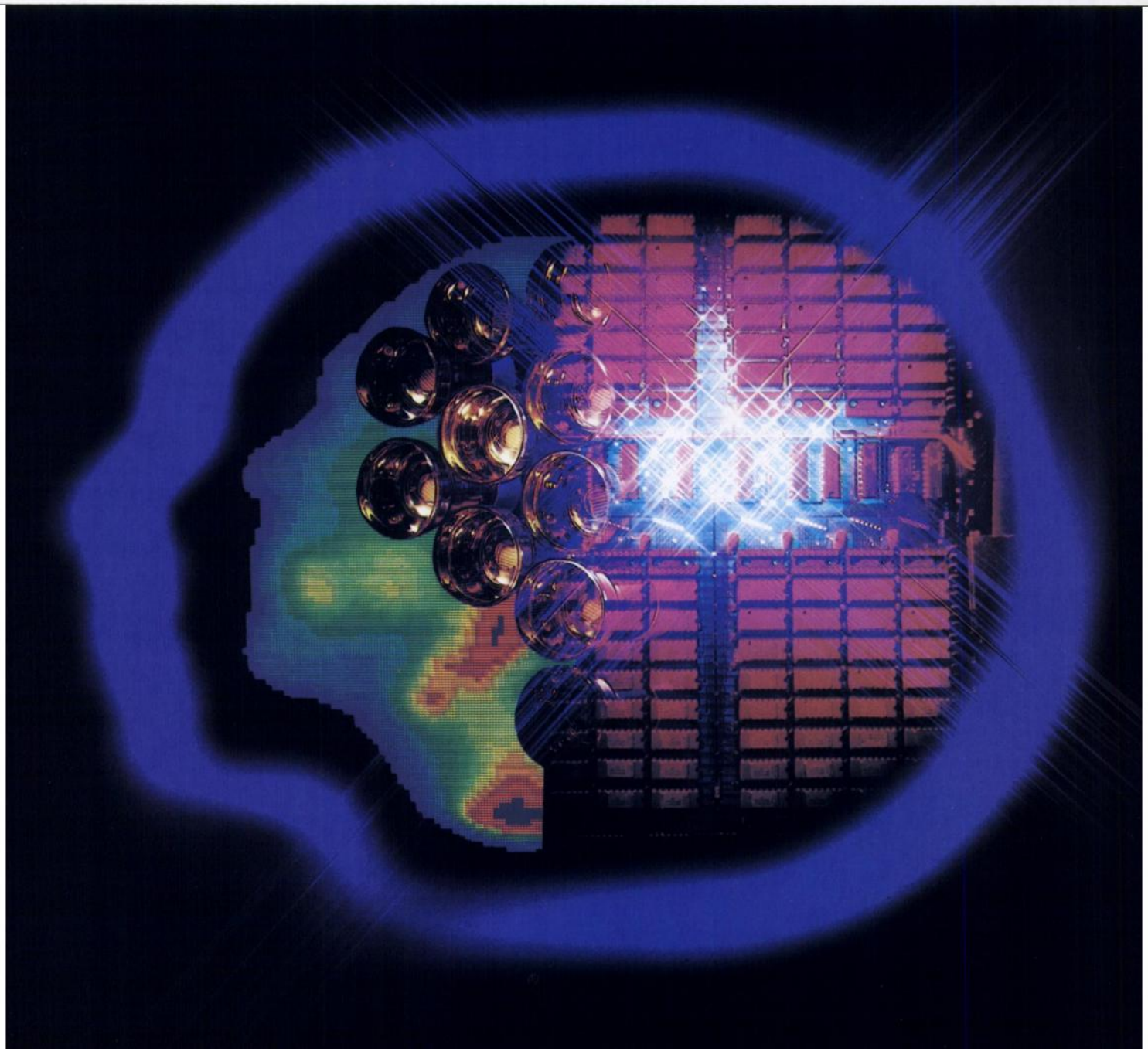
For other worldwide locations, please contact your local Clinical Assays/Travenol representative or the International Sales Department, Clinical Assays, Cambridge, MA 02139 U.S.A.

Clinical Assays' Solid Phase RIA Kit for Detection of Hepatitis B Surface Antigen

the world's first digital camera

a fully integrated clinical processing imager



Nuclear Medicine has reached a peak with the Apex line. A revolution, not merely an evolution. Apex is a family of computerized imagers where the digitally controlled detector communicates directly with an array of data acquisition and processing modules.
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- Automatic system recalibration.
- Comprehensive set of clinical processing software.
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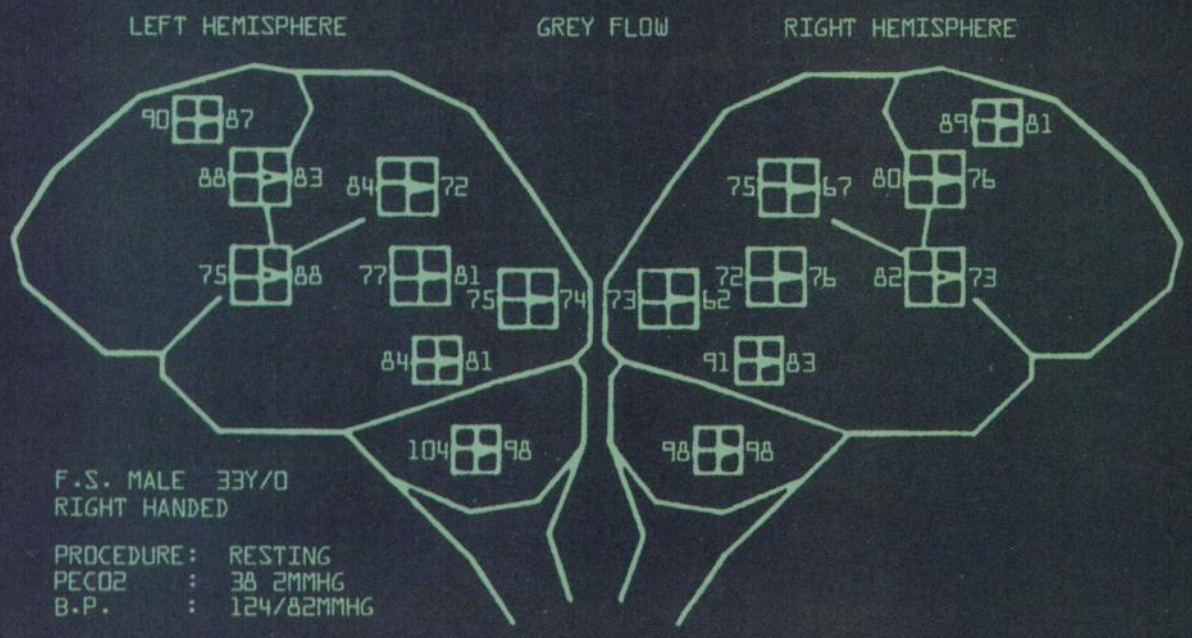
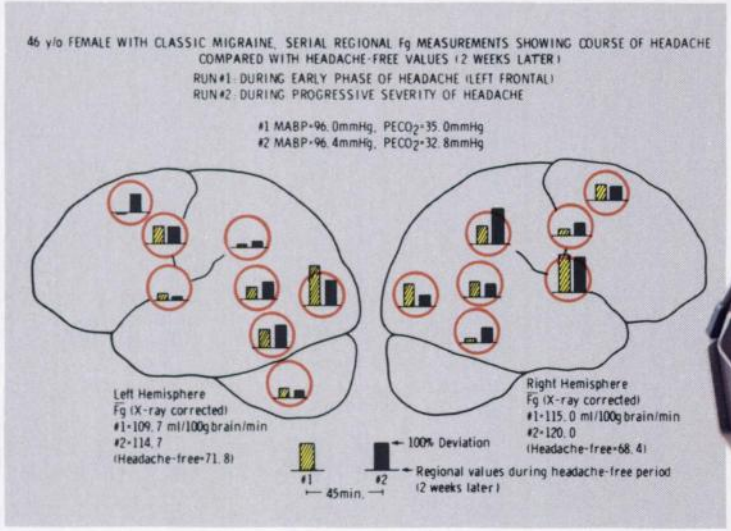
Victor Hugo

elscint's apex line

a new commitment to excellence

OUR NEW COMPARATIVE DISPLAY SYSTEM MAKES THE MOST EXPERIENCED, NON-TRAUMATIC rCBF ANALYZER EVEN BETTER.





This diagram represents a typical diagnosis of migraine headache as derived from a TASC-5 System analysis.

Reprinted from "Regional Cerebral Hemodynamics During Migraine and Cluster Headaches Measured by the ^{133}Xe Inhalation Method," published by Fumihiko Sakai, M.D. and John Sterling Meyer, M.D., published in HEADACHE, Volume 18, July 1978, Number 3, Lee Kudrow, M.D., Editor.

THE HARSHAW TASC-5 IS A COMPLETELY INTEGRATED, FULLY COMPUTERIZED SYSTEM FOR NON-INVASIVE rCBF ANALYSIS.

It has been proven under the most stringent demands of clinical applications. Using the inhalation method of ^{133}Xenon administration, Harshaw's TASC-5 System entirely eliminates patient danger and stress normally associated with invasive methods. In addition, three major improvements increase the TASC-5 System's accuracy, flexibility and ease of operation: a new software routine; a direct, onscreen comparative graphic presentation and instant hard copy capability with Harshaw's new hard copy attachment.

HARSHAW'S NEW INHALATION ANALYSIS ROUTINE—AN IMPROVEMENT IN EFFICIENCY AND ACCURACY.

Harshaw's new Scattered Radiation Artifact Routine, an updated version of our classic computer program based on the research of Dr. Walter Obrist, et al*, yields significantly increased information about flow grey.

* Walter D. Obrist, et al STROKE Vol. 6, May June 1975, PP 245-256

HARSHAW'S HARD COPY ATTACHMENT—A PERMANENT RECORD, INSTANTLY AVAILABLE.

Fast, accurate analysis is made even easier by Harshaw's hard copy attachment. It provides an instant, silent, permanent record of the tabular or comparative graphic presentation on the terminal CRT, and eliminates the need for a teletypewriter or other impact printer. The result is a significant savings in analysis time, and the elimination of "translation" errors that can reduce accuracy.

TASC-5—AN INCREASINGLY ACCEPTED CLINICAL TOOL.

Harshaw's TASC-5 System is the most advanced and experienced Regional Cerebral Blood Flow Analyzer available. And it is the commercial, non-invasive system used by more U.S. institutions presently performing rCBF studies than all other commercial systems combined. We'll be happy to demonstrate its capabilities for you.

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PHO/GAMMA® ZLC,™
A BREAKTHROUGH IN NUCLEAR CAMERA PERFORMANCE

Peak nuclear camera performance at all times under all energy outputs. That's the dramatic improvement in nuclear imaging made possible with ZLC, a unique combination of hardware and programming that optimizes detector optics while greatly improving uniformity and linearity. ZLC, an acronym for Z map and Linear Correction, corrects energy output to the correct signal level, and it restores linearity. The ZLC circuits function over the full range of count rate and energy levels.

Image uniformity and resolution improvements are immediately obvious, without loss to image integrity. ZLC offers a higher degree of confidence in the fidelity of the presented information.

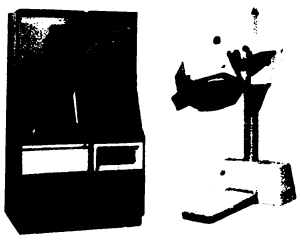
The combination of energy output correction and linear restoration without having to manipulate the information received represents a high achievement in camera performance. No information (noise) is added; no counts are subtracted. Only data received from the patient appears in the image presentation.

The Pho/Gamma ZLC Standard Camera is a complete imaging system that includes the ZLC Detector and microprocessor-based Standard Console with Micro Dot Imager™. ZLC is offered in both 37 tube and 75 tube versions, each having a full 15.25 inch field of view. If you already own a Pho/Gamma LFOV, we offer a complete ZLC package to improve the performance of your camera.

A HISTORY OF PERFORMANCE... A COMMITMENT TO THE FUTURE.

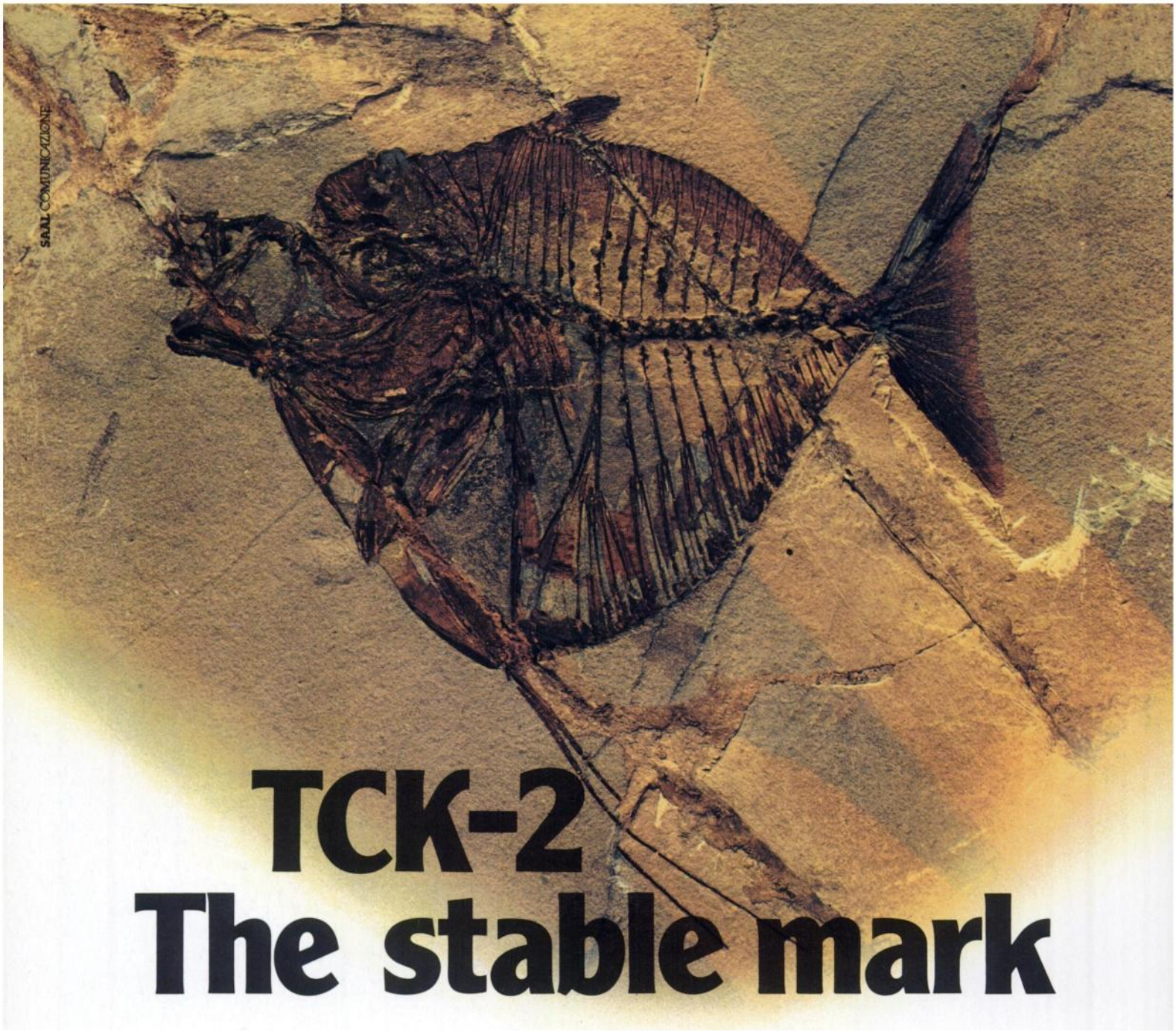
For more information on this revolutionary development in Nuclear Medicine, contact your local Radiographics Representative, or call. . . (312) 635-3100.

201



SEARLE

Searle Radiographics
Division of Searle Diagnostics, Inc.
2000 Nuclear Drive
Des Plaines, IL 60018



SORIN's TCK-2 kit gets over the difficulty of rendering ^{99m}Tc-labelled human albumin stable "in vivo".

This kit is designed for examination of the vascular pool and can be recommended as the instrument of choice for the measurement of several cardiovascular parameters.

When determination of ventricular volume curves is required, in fact, the ideal tracer whould remain within the intravascular pool and not disperse to any significant extent during the recording.

This is ensured by the TCK-2, a kit with a high labelling efficiency, slow blood clearance and long stability in vitro.

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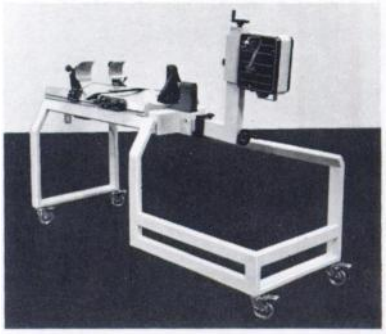
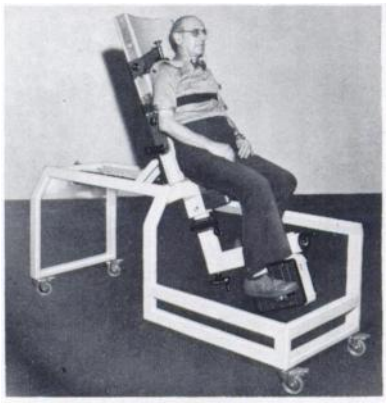
NEW... FOR NUCLEAR CARDIOLOGY

Cardiac Stress Table and Ergometer System



VERSATILE

- Permits all patient positions, from supine through upright.
- Adjustable seat, pedal unit, hand grips and shoulder braces.
- Table does "double duty" for standard imaging procedures.



PRACTICAL

- Full clearance for gamma camera base.
- Swing-away pedal unit for patient access.
- O.R.-type casters assure complete mobility.

COST EFFECTIVE

- High-quality Warren Collins pedal unit and control console can be used for standard stress testing.
- Exceptional performance, designed expressly to meet the requirements of nuclear cardiology.

For more information, request Bulletin 289-B

VICTOREEN

NUCLEAR ASSOCIATES

Division of VICTOREEN, INC.

100 Voice Road • Carle Place, N.Y. 11514 • (516) 741-6360

ISOTRON

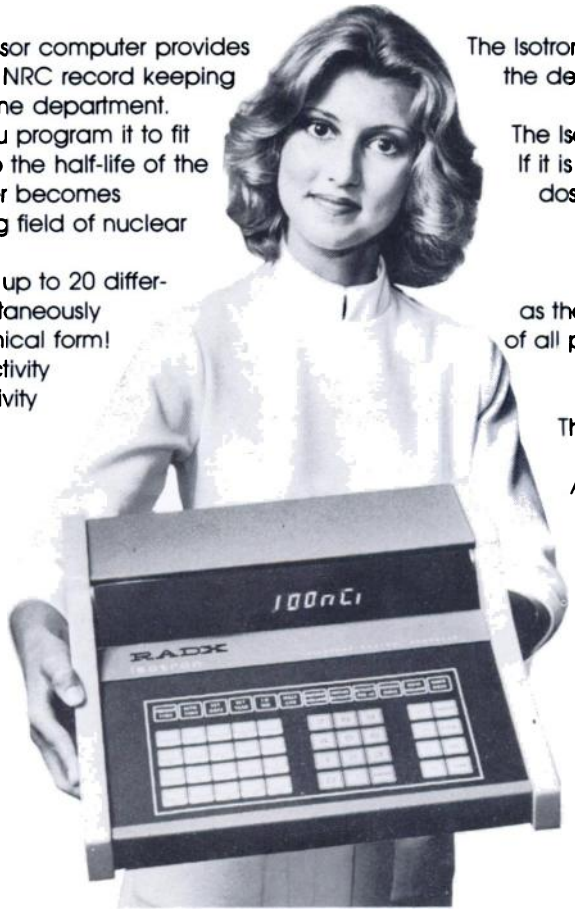
INVENTORY CONTROL COMPUTER

This small desk top microprocessor computer provides complete inventory control and NRC record keeping functions for the nuclear medicine department.

It is user programmable – you program it to fit your requirements even down to the half-life of the radionuclide so the Isotron never becomes obsolete in the rapidly changing field of nuclear medicine.

The Isotron can keep track of up to 20 different radiopharmaceuticals simultaneously by both radionuclide and chemical form! Updates the quantity of radioactivity every minute to reflect radioactivity decay.

The Isotron performs patient dose/volume calculations.



The Isotron subtracts the administered dose from the decayed activity and provides a running total of remaining activity.

The Isotron performs future time calculations. If it is 8:00 A.M. and you want to draw up a dose for 1:00 P.M. the calculation is simply and rapidly performed.

An optional hard copy data printer is available with the Isotron, known as the Isocord, which provides three copies of all pertinent data for your record keeping.

The Isotron may be used with any manufacturers dosecalibrator.

The Cost? Very reasonable. When combined with the Isocord and our Assayer 1 Dosecalibrator the total price is less than competitive systems with 50% of the capabilities.

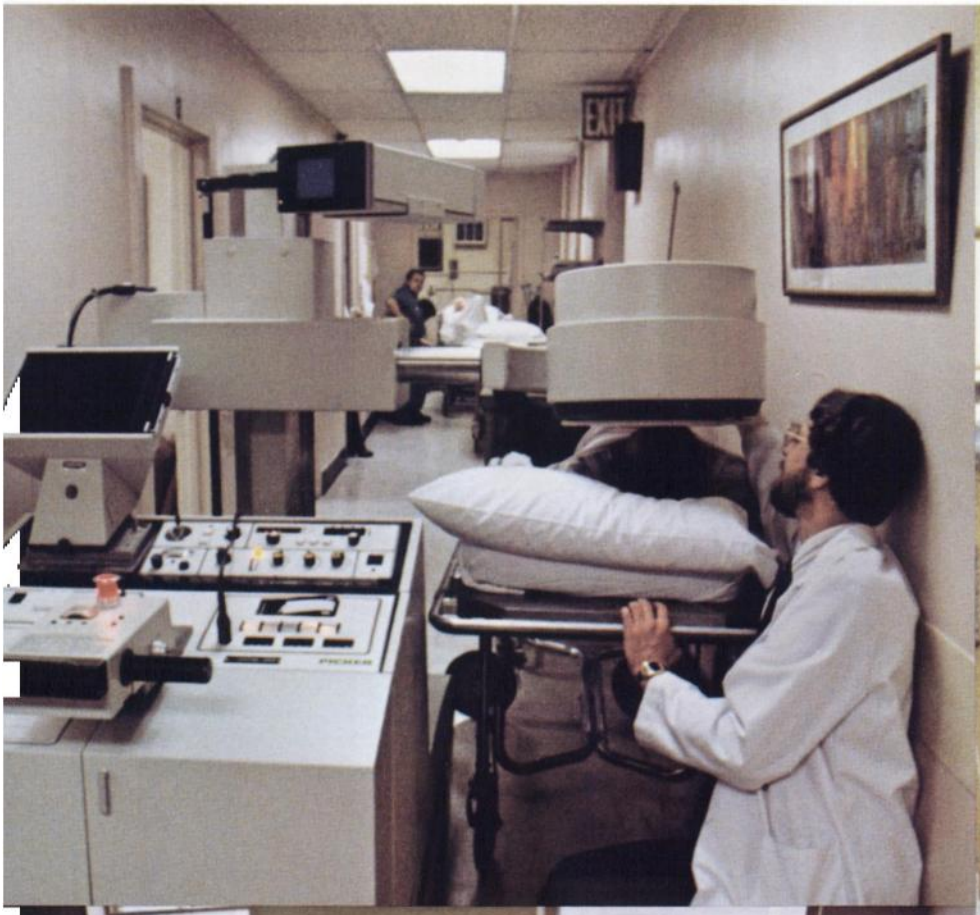
RADX gave you the first calculating dosecalibrator, the first printing dosecalibrator, and now the first desk top inventory control computer, the ISOTRON.

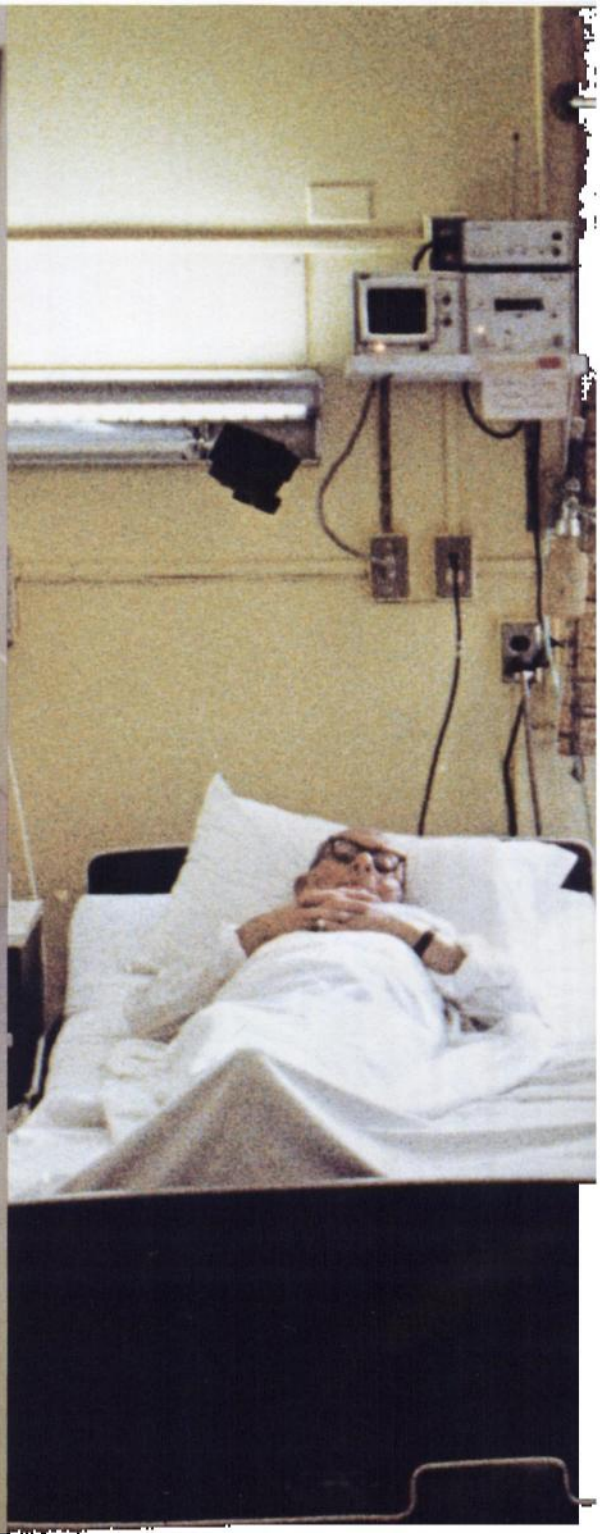
For more information or to arrange a demonstration call our toll free number 800-231-1747 (Texas customers call 713-468-9628.)

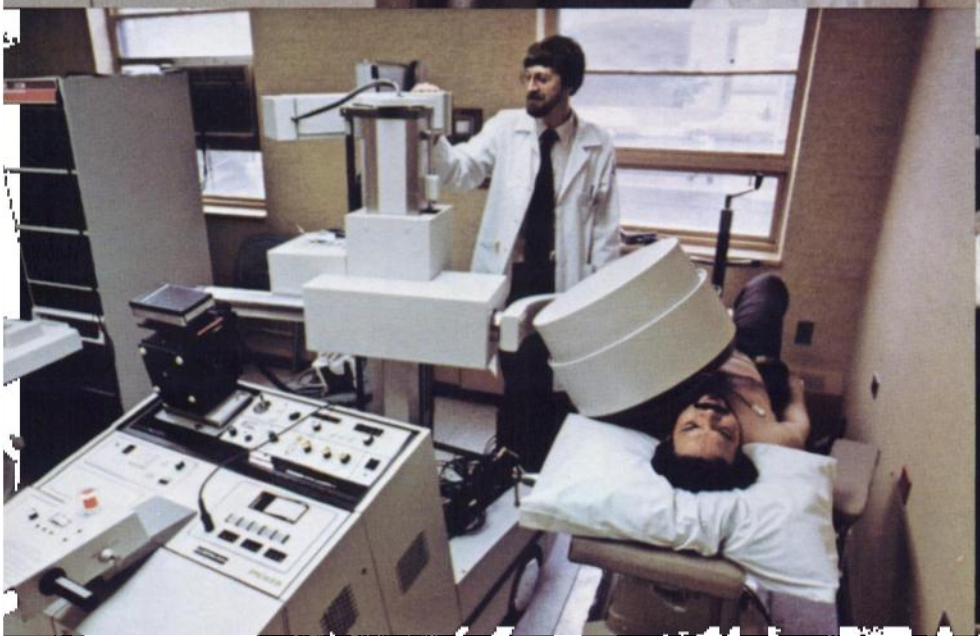
RADX

P. O. Box 19164 Houston, TX 77024

DYNA MO– ALL AROUND PERFORMANCE.







When we first introduced Dyna®Mo, many chose it for its excellent mobility. At 1.5 mph (2.4 km/hr), it brought a complete diagnostic capability to the CCU, or to the most remote parts of the hospital.

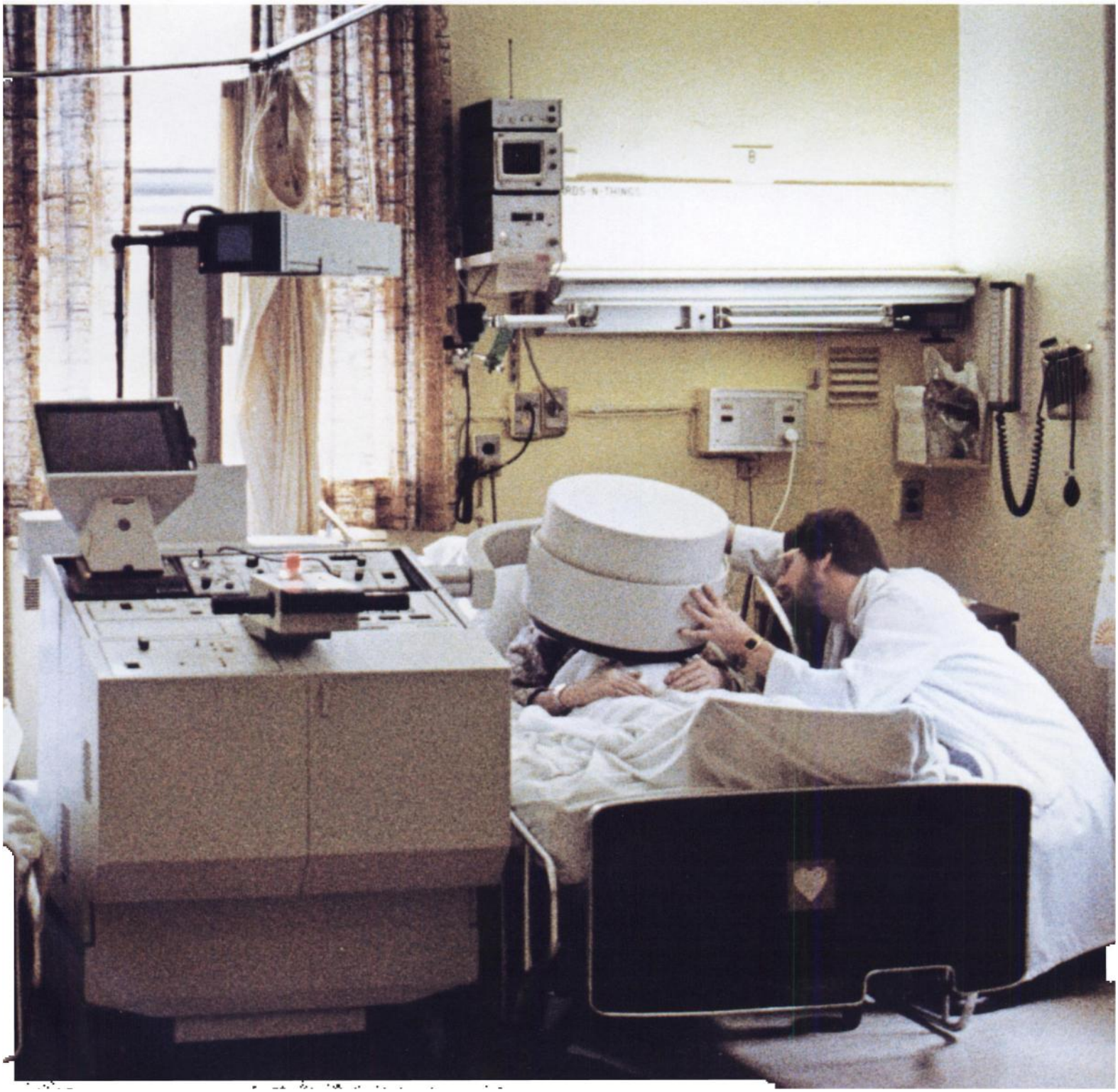
Today, DynaMo is succeeding because of its performance in any situation. DynaMo delivers incomparable resolution in the nuclear medicine department or out of it. Our integral Micro Z™ Processor gives it automatic image correction and up to 15% improvement in resolution. With its own lightweight collimators and its unique five-motion detector, it's easy to operate, even in crowded situations. And DynaMo interfaces with any nuclear medicine computer.

Whether you choose it as a prime unit, an all-around second camera, or as a complete department unto itself, you'll find DynaMo stands alone.

For more information, call your Picker representative or write Picker Corporation, 12 Clintonville Road, Northford, CT 06472, or Picker International, 595 Miner Road, Highland Hts., OH 44143.

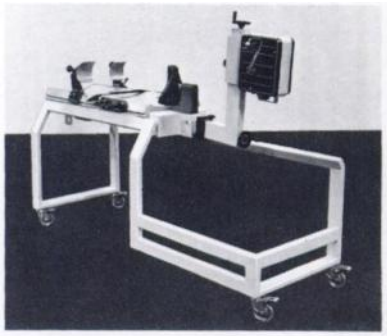
THE IMAGE OF VALUE.

PICKER®



NEW... FOR NUCLEAR CARDIOLOGY

Cardiac Stress Table and Ergometer System



VERSATILE

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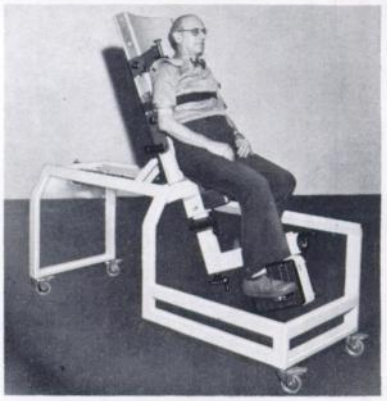

PRACTICAL

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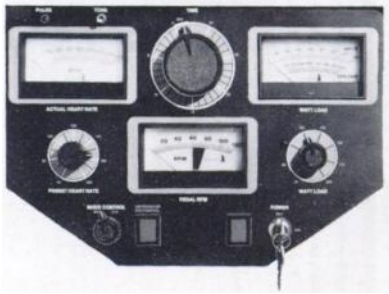

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For more information, request Bulletin 289-B

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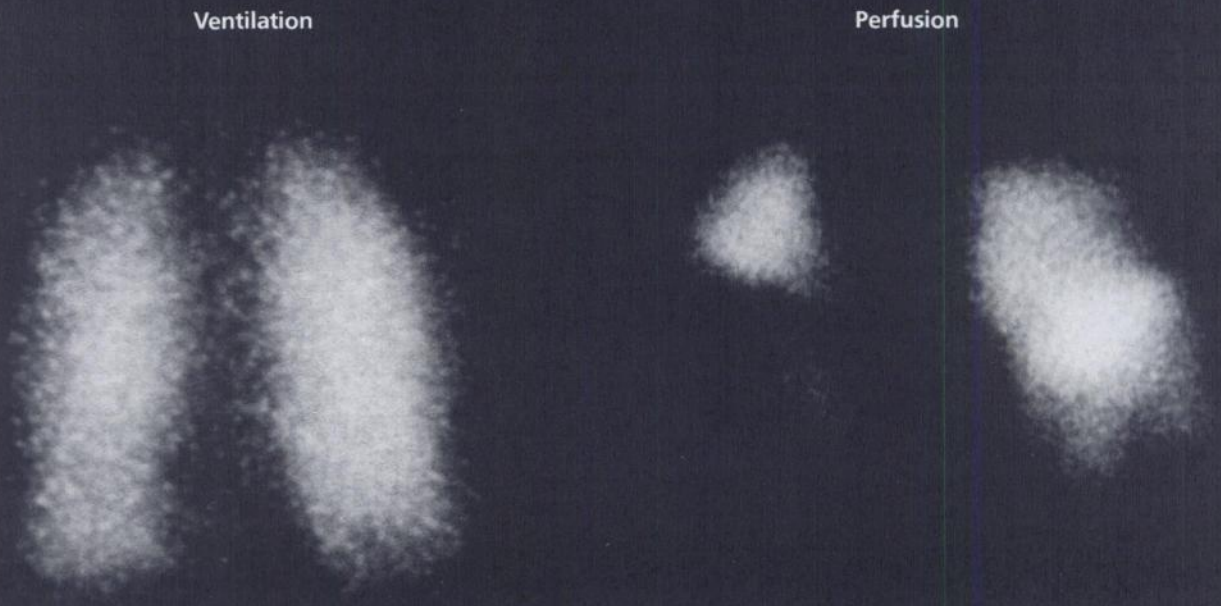
Lung



Diagnosis: normal ventilation, abnormal perfusion — pulmonary embolism

Imaging information: *Instrument:* Picker Model 4/15 Gamma Camera *Dose:* 15 mCi Xenon 133; 3 mCi PULMOLITE *Information density:* 1,000 counts/cm²; 2,000 counts /cm²

Xenon Xe 133 Gas
(CALIDOSE™) Dispensing System

PULMOLITE™
Technetium Tc 99m Aggregated Albumin Kit

NEN New England Nuclear®

Please see following page for brief prescribing information.

See us at the SNM show in Detroit—Booths #615, 617, 619, 621, 623

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 agency 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 nondiagnostic. Xenon Xe 133 gas delivery systems, ie, respirators or spirometers, and associated tubing assemblies must be leakproof to avoid loss of radioactivity into 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 (70kg) 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.

Catalog Number NRP-127 *Patent Pending †JO 127 July 1975, Rev 1

PULMOLITE™

Technetium Tc 99m Aggregated Albumin Kit

INDICATIONS AND USAGE: Technetium Tc 99m aggregated albumin is indicated as a lung imaging agent to be used as an adjunct in the evaluation of pulmonary perfusion.

CONTRAINDICATIONS: Technetium Tc 99m aggregated albumin should not be administered to patients with severe pulmonary hypertension.

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

WARNINGS: The possibility of allergic reactions should be considered in patients who receive multiple doses.

Theoretically, the intravenous administration of particulate 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 possibily hazardous in acute cor pulmonale and other states of severely impaired pulmonary blood flow.

This radiopharmaceutical preparation should not be administered to children or to pregnant or lactating women unless the expected benefits to be gained outweigh the potential risks.

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.

PRECAUTIONS: In cases of right-to-left cardiac shunt, additional risk may exist due to the rapid entry of aggregated albumin into the systemic circulation.

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

The labeling reactions involved in preparing the agent depend on maintaining tin in the reduced state. Any oxidant present in the sodium pertechnetate Tc 99m supply may thus adversely affect the quality of the prepared agent. Hence, sodium pertechnetate Tc 99m containing oxidants, or other additives, should not be employed without first demonstrating that it is without adverse effect on the properties of the resulting agent.

The contents of the vial are sterile and non-pyrogenic. It is essential that the user follow the directions carefully and adhere to strict aseptic procedures during preparation of the radiodiagnostic.

Technetium Tc 99m aggregated albumin is physically unstable and as such the particles will settle with time. Failure to mix the vial contents adequately before use may result in non-uniform distribution of radioactivity.

It is also recommended that, because of the increasing probability of agglomeration with aging, a batch of Technetium Tc 99m aggregated albumin not be used after eight hours from the time of reconstitution. Refrigerate at 2° to 8°C after reconstitution. If blood is withdrawn into the syringe, unnecessary delay prior to injection may result in clot formation in situ.

The contents of the vial are under a nitrogen atmosphere and should be protected from air. Do not use if clumping or foaming of the contents is observed.

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. Technetium Tc 99m aggregated albumin should be used in pregnant women only when clearly needed.

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 a drug since many drugs are excreted in human milk.

Safety and effectiveness in children have not been established.

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

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 governmental agency authorized to license the use of radionuclides.

ADVERSE REACTIONS: The literature contains reports of deaths occurring after the administration of aggregated albumin to patients with pre-existing severe pulmonary hypertension. Instances of hemodynamic or idiosyncratic reactions to preparations of Tc 99m-labeled aggregated albumin have been reported.

Hypersensitivity reactions are possible whenever protein-containing materials such as Tc 99m-labeled aggregated albumin are used in man. Epinephrine, antihistamines and corticosteroid agents should be available for use.

DOSAGE AND ADMINISTRATION: The recommended intravenous dose range for the average patient (70kg) is 1 to 4 millicuries. The volume of the dose may vary from 0.2 to 1.3 ml.

The recommended number of aggregated albumin particles to be administered per dose is 200,000-700,000 with the suggested number being approximately 350,000.

For easy and accuracy in dispensing the prepared agent, it is recommended that prior to reconstitution, concentrated sodium pertechnetate Tc 99m be further diluted to a volume of 8ml with fresh, preservative-free sodium chloride injection (U.S.P.).

HOW SUPPLIED: PULMOLITE™ Technetium Tc 99m Aggregated Albumin Kit is supplied in kits of five (5) or thirty (30) vials, sterile and non-pyrogenic, each vial containing in lyophilized form:

Aggregated albumin (human)-1.0mg
Normal human serum albumin-10mg
Sodium chloride-10mg
Stannous chloride dihydrate, maximum-0.07mg

Each vial contains 3.6-6.5 x 10^6 aggregated albumin particles.

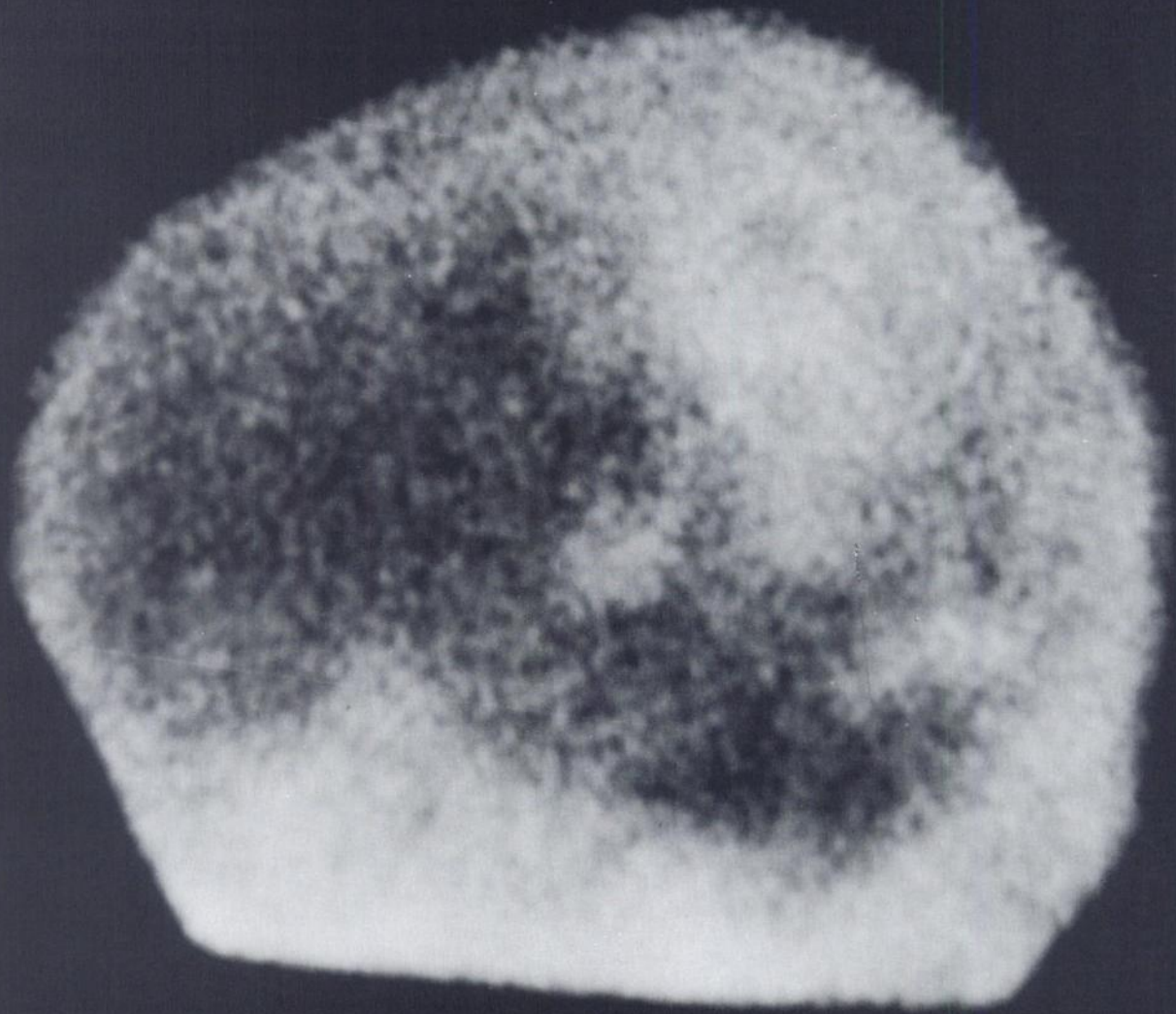
PULMOLITE contains no preservative; after reconstitution the shielded vial should be stored at 2° to 8°C.

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.

This reagent kit is approved for use by persons licensed by the U.S. Nuclear Regulatory Commission pursuant to Section 35.14 and 35.100 Group III of 10CFR 35 or under licenses of Agreement States.

Catalog Number NRP-415 **August 1976**

Brain



Diagnosis: arteriovenous malformation

Imaging information: *Instrument:* Ohio Nuclear Series 100 Gamma Camera *Dose:* 15 mCi GLUCOSCAN
Scan time: 90 minutes postinjection *Counts:* 400 K

GLUCOSCAN™

Technetium Tc 99m Gluceptate Sodium Kit

NEN New England Nuclear®

Please see following page for brief prescribing information.

See us at the SNM show in Detroit—Booths #615, 617, 619, 621, 623

GLUCOSCAN™

Technetium Tc 99m Gluceptate Sodium Kit

INDICATIONS AND USAGE: Technetium Tc 99m Gluceptate Sodium is used for brain imaging.

Technetium Tc 99m Gluceptate Sodium is indicated for renal perfusion imaging as an adjunct in the diagnosis, localization and evaluation of kidney disease. It may provide useful information about renal size, shape, and position and may delineate lesions affecting renal blood flow.

CONTRAINDICATIONS: None known.

WARNINGS: The contents of the GLUCOSCAN vial are intended only for use in the preparation of Technetium Tc 99m Gluceptate Sodium and are NOT to be directly administered to the patient.

Ideally examinations using radiopharmaceuticals – especially those elective in nature – of a woman of childbearing capability should be performed during the first ten days following the onset of the menses.

Dehydration and/or patient positioning may result in failure to visualize urinary excretory structures in the presence of normal function. Adequate patient fluid intake and repositioning may reduce the incidence of such false positive studies.

PRECAUTIONS: Technetium Tc 99m Gluceptate Sodium, as well as any radioactive agent, must be handled with care. Once sodium pertechnetate Tc 99m is added to the kit, 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 Technetium Tc 99m labeling reaction involved in preparing Technetium Tc 99m Gluceptate Sodium depends on the maintenance of tin in the divalent state. Any oxidant present in the sodium pertechnetate Tc 99m employed may adversely affect the quality of the prepared agent. Thus, sodium pertechnetate 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 as a diluent for sodium pertechnetate Tc 99m may adversely affect the biologic distribution of the prepared agent, and its use is not recommended.

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

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. Technetium Tc 99m Gluceptate Sodium should be used in pregnant women only when clearly needed.

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.

Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: Although infrequent, erythema has been reported in association with the use of Technetium Tc 99m Gluceptate Sodium.

DOSAGE AND ADMINISTRATION: The recommended dose for the average (70kg) adult patient is 10-20 millicuries for both renal and brain imaging. Technetium Tc 99m Gluceptate Sodium is intended for intravenous administration only.

Technetium Tc 99m Gluceptate Sodium should be used within six hours after aseptic reconstitution with sodium pertechnetate Tc 99m. For optimal results, this time should be minimized. The reaction vial contains no bacteriostat.

Optimal results for both renal and brain imaging are obtained one hour after administration. Studies have shown that although optimal target-to-background ratios for brain lesions are obtained at two hours post-injection, there is no improvement in diagnostic efficacy after one hour.

Radiopharmaceuticals should be used by persons with 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 agencies authorized to license the use of radionuclides.

The components of the New England Nuclear GLUCOSCAN Kit are supplied sterile and non-pyrogenic. Aseptic procedures normally employed in making additions and withdrawals from sterile, non-pyrogenic containers should be used during addition of pertechnetate solution and the withdrawal of doses for patient administration.

HOW SUPPLIED: NEN's GLUCOSCAN Technetium Tc 99m Gluceptate Sodium Kit is supplied as a set of five or thirty vials, sterile and non-pyrogenic. Each vial contains in lyophilized form:

Gluceptate Sodium – 200mg
Maximum Tin – 0.07mg
Stannous Chloride (min.) – 0.06mg

Prior to lyophilization the pH is adjusted with hydrochloric acid and/or sodium hydroxide solution. Store at room temperature (15°-30°C). Included in each five vial kit is one package insert and six radiation labels. Included in each thirty vial kit is one package insert and thirty-six radiation labels.

The contents of the kit vials are not radioactive: however, after reconstitution with sodium pertechnetate Tc 99m the contents are radioactive and adequate shielding and handling precautions must be maintained.

This reagent kit is approved for use by persons licensed by the U.S. Nuclear Regulatory Commission pursuant to Section 35.14 and 35.100 Group III of 10 CFR or under equivalent licenses of Agreement States.

Catalog Number NRP-180 (5 vial kit) August 1978
Catalog Number NRP-180C (30 vial kit)

Gallium Citrate Ga67

INDICATIONS AND USAGES: Gallium Citrate Ga-67 may be useful in demonstrating the presence and extent of the following malignancies: Hodgkins disease, lymphomas and bronchogenic carcinoma. Positive Ga-67 uptake in the absence of prior symptoms warrants follow-up as an indication of a potential disease state.

Gallium Citrate Ga 67 may be useful as an aid in detecting some acute inflammatory lesions.

CONTRAINDICATIONS: None known.

WARNINGS: Gallium Citrate Ga 67 should not be administered to children or to patients who are pregnant or to nursing mothers unless the information to be gained outweighs the potential hazards. Ideally, examinations using radiopharmaceutical drug products, especially those elective in nature of a woman of childbearing capability should be performed during the first few (approximately ten) days following the onset of menses.

PRECAUTIONS: A thorough knowledge of the normal distribution of intravenously administered Gallium Citrate Ga 67 is essential in order to accurately interpret pathologic studies.

The findings of an abnormal gallium concentration usually implies the existence of underlying pathology, but further diagnostic studies should be done to distinguish benign from malignant lesions. Gallium Citrate Ga 67 is intended for use as an adjunct in the diagnosis of certain neoplasms. Certain pathologic conditions may yield up to 40% false negative gallium studies. Therefore a negative study cannot be definitively interpreted as ruling out the presence of disease.

Lymphocytic lymphoma frequently does not accumulate Gallium Ga 67 sufficiently for unequivocal imaging; and the use of gallium with this histologic type of lymphoma is not recommended at this time.

Gallium Citrate Ga 67, 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.

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

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. Gallium Citrate Ga 67 should be used in pregnant women only when clearly needed.

Gallium Citrate Ga 67 has been found to accumulate in breast milk and should not be used in nursing mothers.

Safety and effectiveness in children have not been established.

Gallium Ga 67 localization cannot differentiate between tumor and acute inflammation; and other diagnostic studies must be added to define the underlying pathology.

The expiration date of the drug is seven days after the date of calibration.

ADVERSE REACTIONS: Severe itching, erythema and rash were observed in one patient of 300 studied.

DOSAGE AND ADMINISTRATION: The recommended adult (70kg) dose of Gallium Citrate Ga 67 is 2-5mCi. Gallium Citrate Ga 67 is intended for intravenous administration only.

Approximately 10% of the administered dose is excreted in the feces during the first week after injection. Daily laxatives and/or enemas are recommended from the day of injection until the final images are obtained in order to cleanse the bowel of radioactive material and minimize the possibility of false positive studies.

Studies indicate the optimal tumor to background concentration of ratios are often obtained about 48 hours post-injection. However, considerable biological variability may occur in individuals, and acceptable images may be obtained as early as 6 hours and as late as 120 hours after injection.

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

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 radionuclides.

HOW SUPPLIED: Gallium Citrate Ga 67 is supplied sterile and non-pyrogenic for intravenous use. Each ml contains 2mCi of Gallium Ga 67 on the calibration date, as a complex formed from 9ng gallium chloride Ga 67, 2mg of sodium citrate, 6.8mg sodium chloride, and 0.9% benzyl alcohol w/v as preservative. The pH is adjusted to between 4.5-7.5 with hydrochloric acid and/or sodium hydroxide solution.

Vials are available from 3mCi to 18mCi in increments of 3mCi on calibration date.

The contents of the vial are radioactive and adequate shielding and handling precautions must be maintained.

Catalog Number NRP-121 December 1979

New England Nuclear®
601 Treble Cove Rd., North Billerica, MA 01862

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Europe: NEN Chemicals GmbH, D-6072 Dreieich, W. Germany, Postfach 401240. Tel: (06103) 85034 Order Entry: (06103) 81011

Tumor

Diagnosis: plasmacytoma

Imaging information: *Instrument:* Cleon 760 Whole Body Imager *Dose:* 5 mCi Gallium Citrate Ga 67
Scan time: 48 hours postinjection *Speed:* 5 cm/min

Gallium Citrate Ga67

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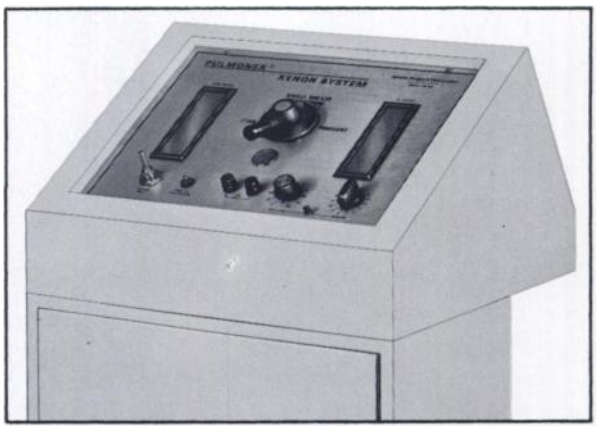

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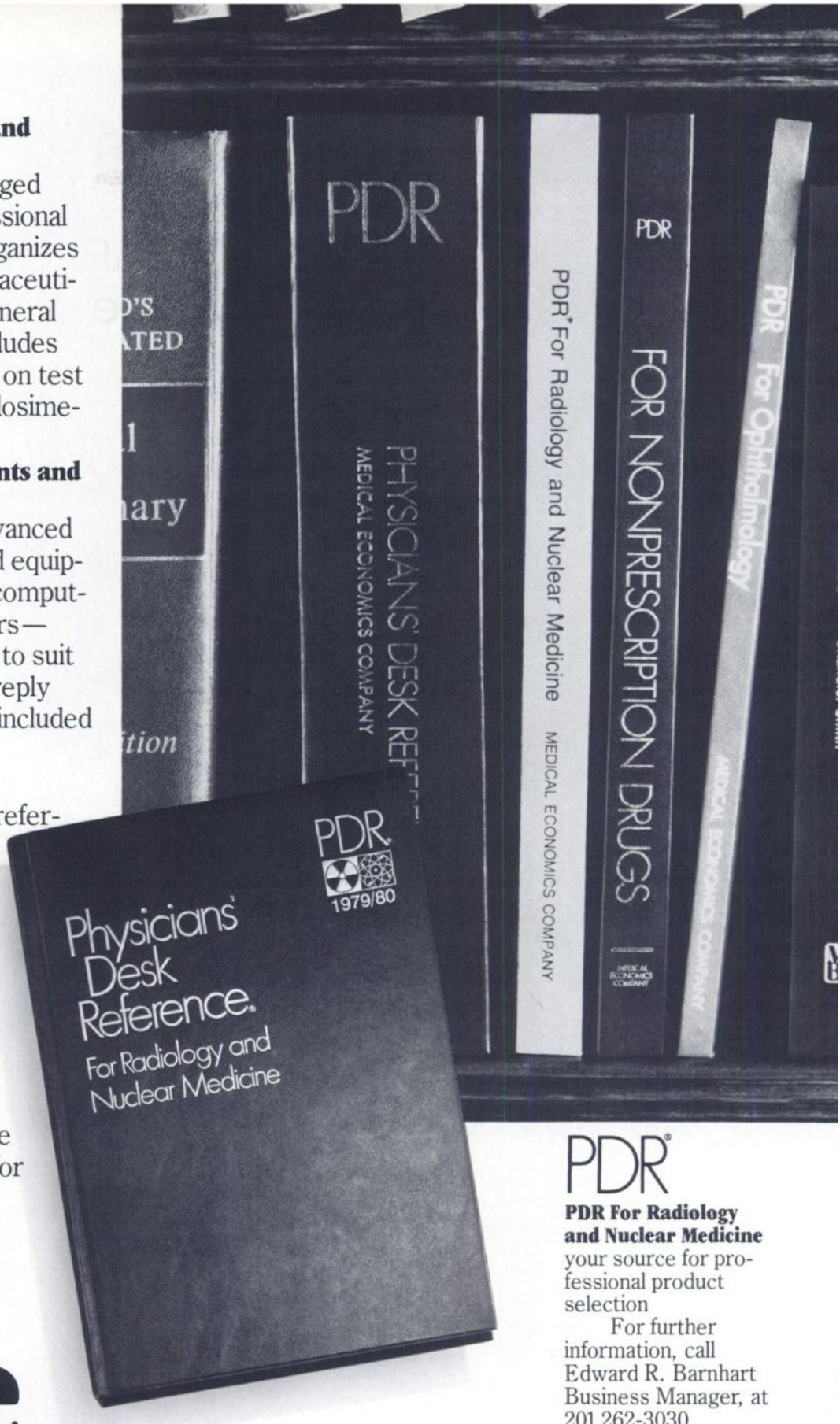

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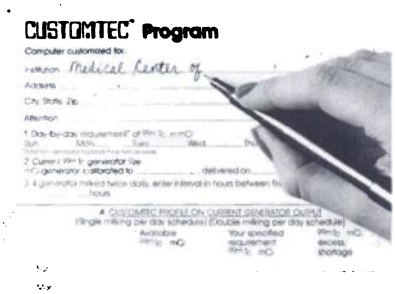

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They have had extensive training and experience in nuclear medicine, radiopharmaceuticals, RIA and instrumentation. They can aid in license procurement and renewal, laboratory design and expansion, technologist training, trouble-shooting and instrument calibration.

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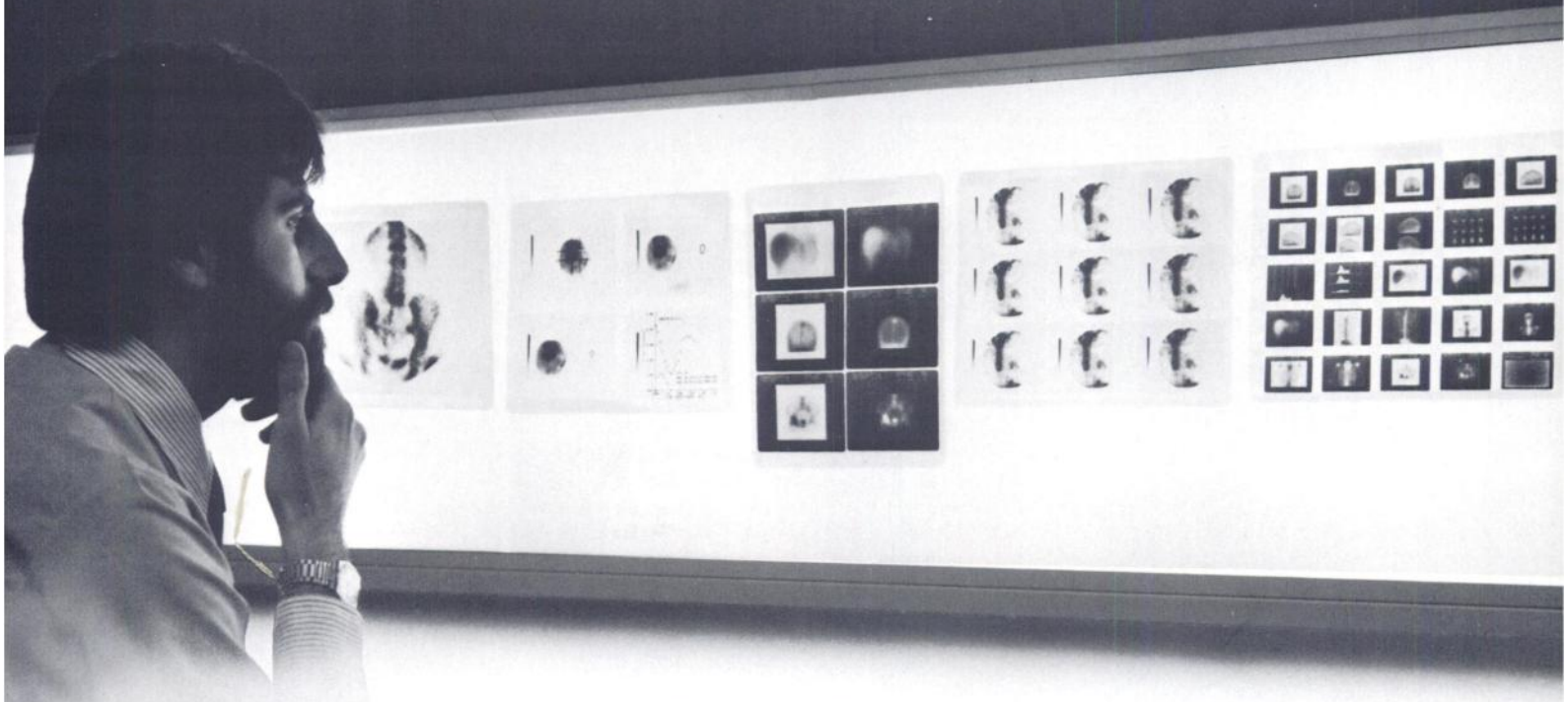
Matrix video cameras do everything but develop the film...

and that's next.



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If you've been waiting for an economical way to produce high-quality, low-background medronate (MDP) bone images, wait no more. AN-MDP™, from Ackerman Nuclear, Inc., gives you all of the advantages of medronate—and a lot of medronate for your money.

Superior images

Medronate produces high-target-to-background scans that readily demonstrate altered osteogenesis.[1]

- 90–94% blood clearance by two hours after administration
- Lowest soft-tissue uptake of all of the phosphonate bone agents in current use.[2]

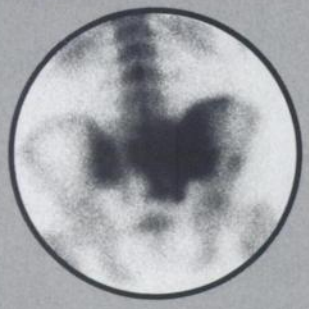
Convenience

- When necessary, imaging may begin an hour after injection (optimal imaging time is 1 to 4 hours).
- AN-MDP is stored and used at room temperature (15–30°C).

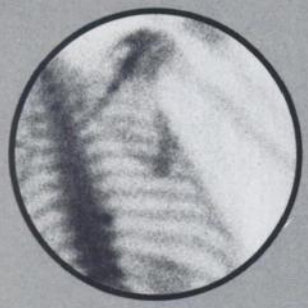
Economy

- You get 6 vials of reagent with each AN-MDP kit, instead of the usual 5.

Posterior pelvis



Posterior right side



A 54-year-old male with metastatic CA of the prostate was administered 15 mCi technetium Tc 99m-labeled AN-MDP. The images were recorded at 500K counts. Courtesy of Century City Hospital, Los Angeles.

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

AN-MDP™ Technetium Tc 99m Medronate Kit

Indications and usage. Technetium Tc 99m Medronate may be used as a bone imaging agent to delineate areas of altered osteogenesis.

Contraindications. None known.

Warnings. This class of compounds is known to complex cations such as calcium. Particular caution should be used with patients who have or who may be predisposed to hypocalcemia (i.e., alkalosis)

Precautions. Contents of the vial are intended only for use in the preparation of Technetium Tc 99m Medronate and are *NOT* to be administered directly to the patient. Technetium Tc 99m Medronate, as well as other radioactive drugs, must be handled with care and appropriate safety measures should be used to minimize radiation exposure to patients consistent with proper patient management.

To minimize radiation dose to the bladder, patients should be encouraged to drink fluids and to void immediately before the examination and as often thereafter as possible for the next 4–6 hours.

Technetium Tc 99m Medronate should be formulated within six (6) hours prior to clinical use. Optimal imaging results are obtained 1–4 hours after administration.

Carcinogenesis, mutagenesis, impairment of fertility: No long-term animal studies have been performed to evaluate carcinogenic potential or whether Technetium Tc 99m Medronate affects fertility in males or females.

Pregnancy category C: Animal reproductive studies have not been conducted with Technetium Tc 99m Medronate. It is also not known whether Technetium Tc 99m Medronate can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Technetium Tc 99m 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.

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1. Davis MA, and Jones AG: **Sem Nucl Med 6**:19, 1976
2. Subramanian G, McAfee JG, Blair RJ, Kallfelz FA, and Thomas FD: **J Nucl Med 16**:744, 1975

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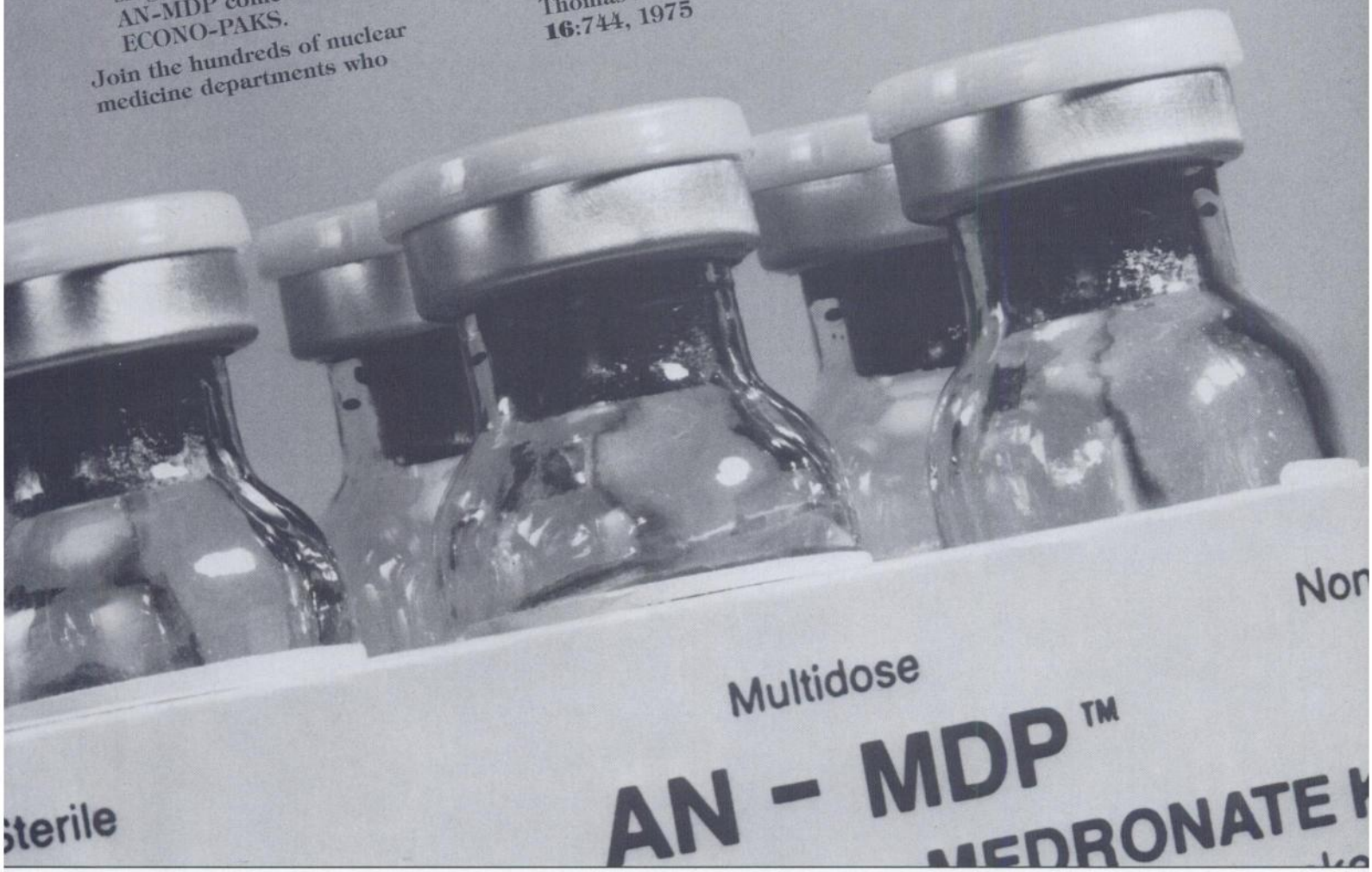

Pediatric use: Safety and effectiveness in children have not been established.

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.

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

Dosage and administration. The suggested dose range for i.v. administration, after reconstitution with oxidant-free sodium pertechnetate Tc 99m Injection, to be employed in the average patient (70 kg) is:

Bone imaging: 10–20 mCi Technetium Tc 99m Medronate

Scanning is optimal at about 1–4 hours post-injection. The patient dose should be measured by a suitable radioactivity calibration system immediately prior to administration.

How supplied. AN-MDP™ is supplied both in the single-dose and multidose form. Both are available in sets of 6 or 30 sterile and nonpyrogenic vials. Each nitrogen-flushed vial contains, in lyophilized form:

	Single dose	Multidose
Medronic acid	5.0 mg	10.0 mg
Stannous chloride (minimum)	0.25 mg	0.51 mg
Maximum total stannous and stannic chloride	0.51 mg	1.01 mg

The pH is adjusted to 5.0–5.5 with HCl and NaOH prior to lyophilization. Included in each 6-vial kit is one package insert and 12 radiation labels. In each 30-vial kit is one package insert and 60 radiation labels. Refrigeration is not necessary.

Description	Catalog Number
Single dose 6-vial kit	K-401-S
Single dose 30-vial ECONO-PAK	K-402-S
Multidose 6-vial kit	K-401
Multidose 30-vial ECONO-PAK	K-402

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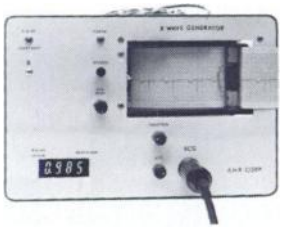

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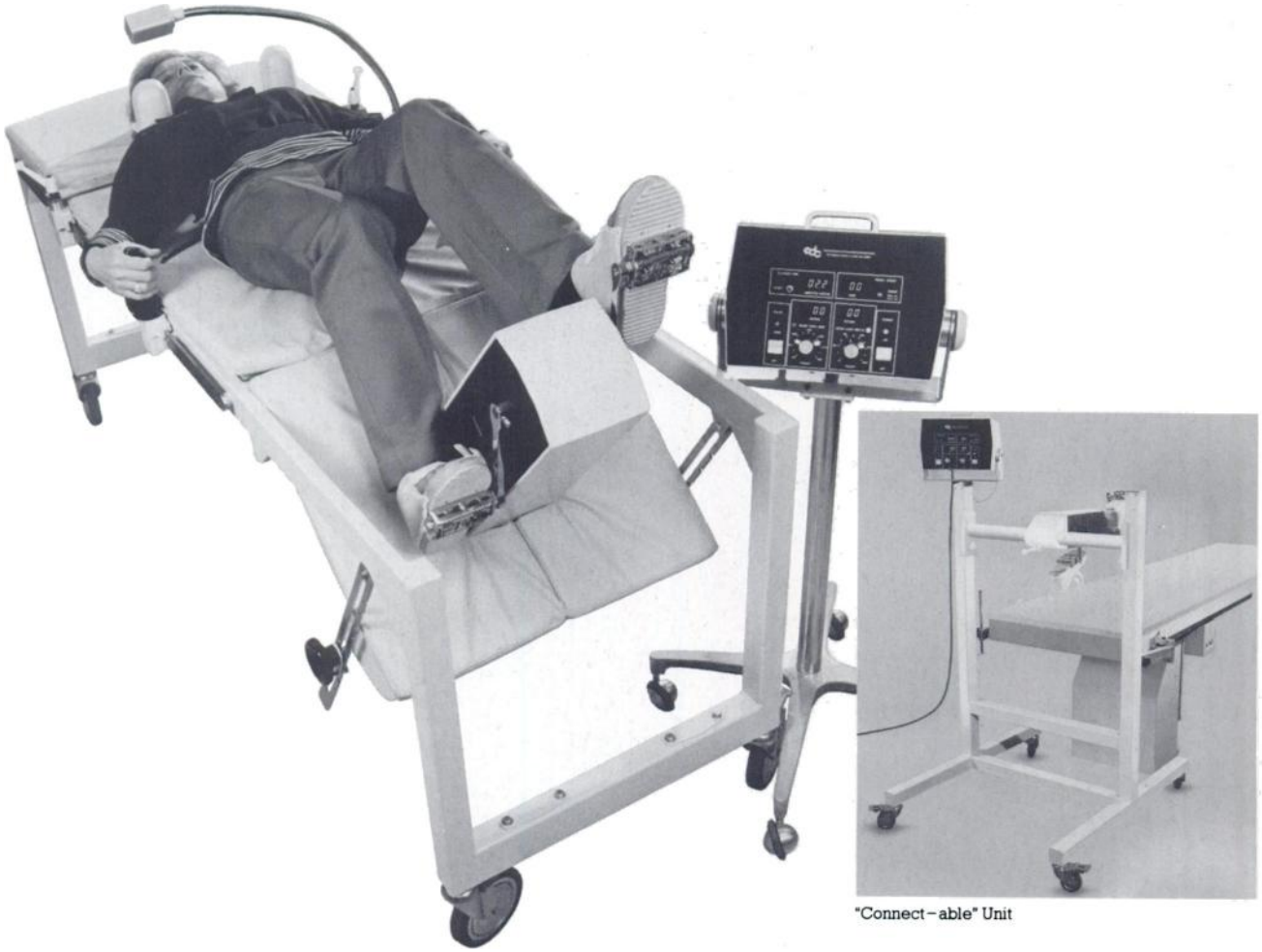

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With your patient in a supine position, you may image continuously during myocardial stress perfusion scintigraphy or radionuclide exercise ventriculography. Add patient participation and eliminate incessant directions via a color-coded meter that allows self-monitoring of pedal speed.

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The versatile table can be used for other nuclear imaging studies, radiology and ultrasound. Image from above or below table. Vary patient position – supine or sitting.

"Connect-able" Unit

To stay current and within your budget, attach the 8414 modular stress imaging unit to your present table for use in nuclear imaging or cardiac catheterization. The "Connect-able" includes multi-position ergometer and electronic control console with all options. Specially-designed casters provide easy mobility as well as rigid locking power.

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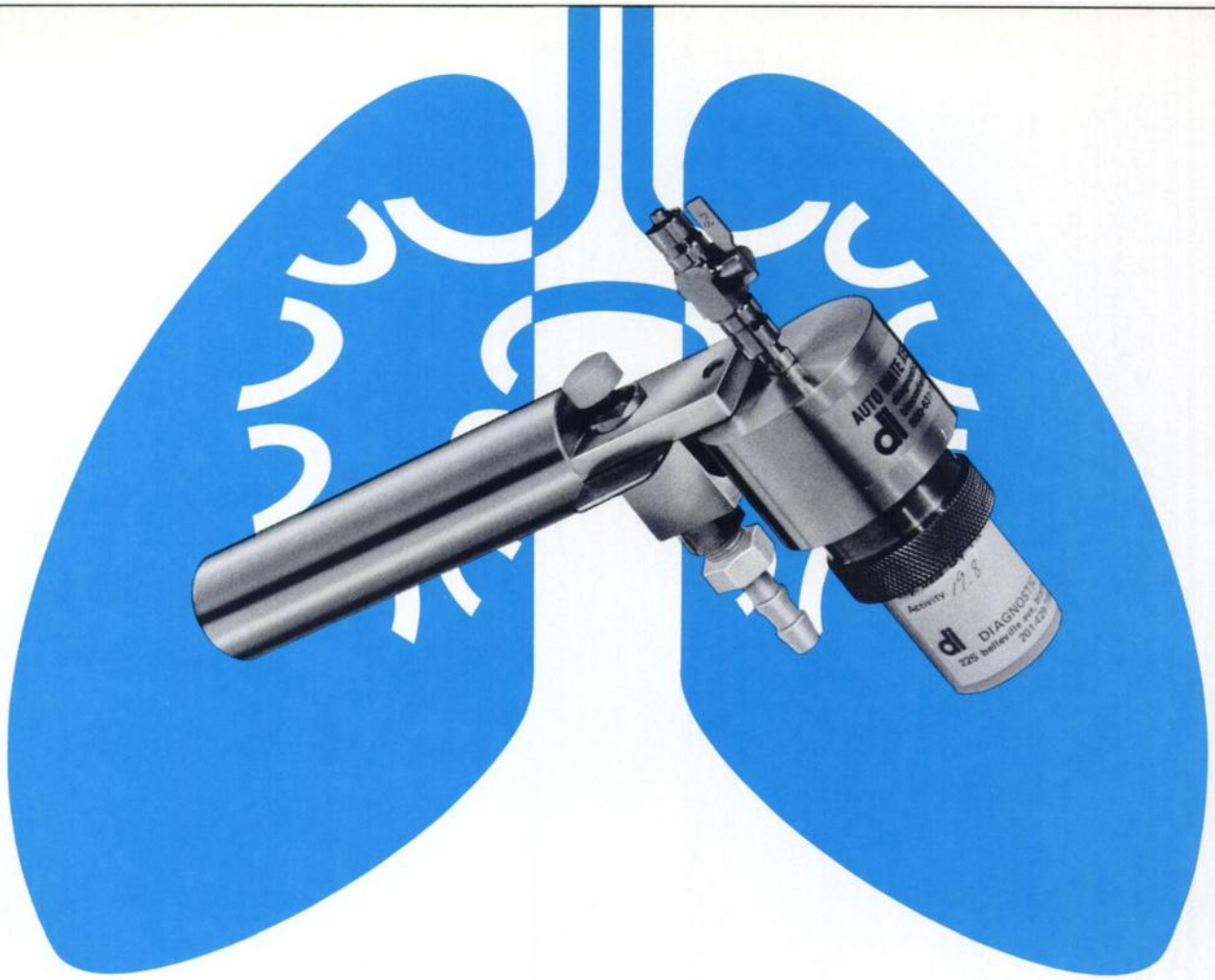
The timeless system

Quality diagnostic images and "planned evolution" make today's MaxiCamera™II the nuclear system of choice. Modular electronics allow you to individualize your system while other options, like whole body capability and data processing meet expanding application needs.

Since emission computed tomography, ECT, is the next logical step in nuclear imaging, GE has developed the MaxiCamera 400T. This simple, economical detection system replaces the gimbal stand with a rotating gantry so the detector can acquire images from numerous angles around the patient.

MaxiCamera II/400T is one-of-a-kind—timeless because you can have an outstanding camera system for routine studies and future tomographic capability. It's "planned evolution" at work for you. Ask your GE representative.

GENERAL ELECTRIC



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Yes, the Auto-Mate Xenon Gas Dispenser eliminates a lot of hassle now associated with Ventilation System studies. This new instrument from Diagnostic Isotopes offers the following advantages: simplifies loading; delivers Xenon by merely pressing a button; punctures vial automatically; delivers full dose in a one breath bolus, administers oxygen by simply reattaching dispenser to tubing and works with all delivery and trap systems. The Auto-Mate provides technician safety because the shipping container is the radiation shielding. Made of lightweight aluminum and brass for extreme durability.

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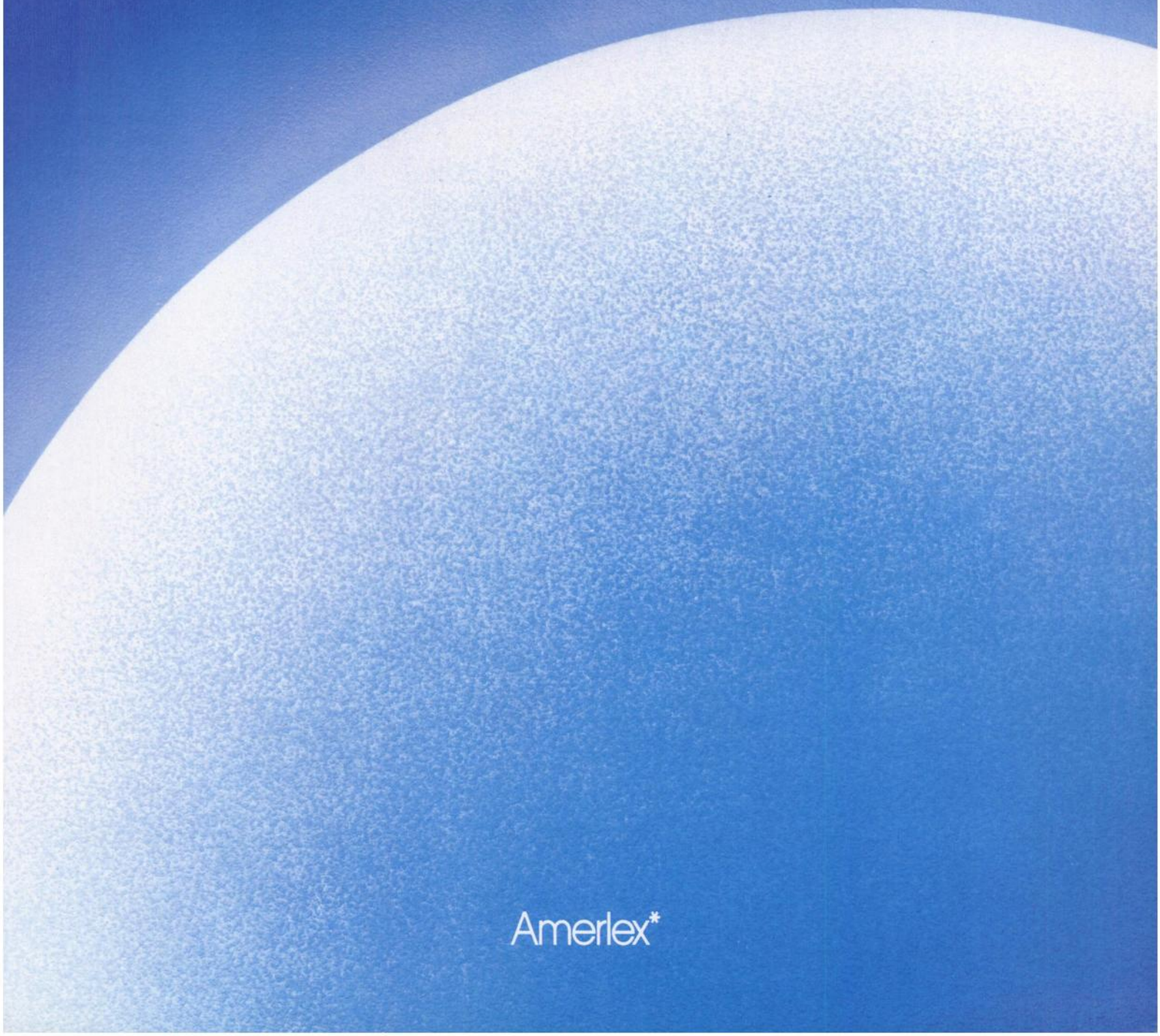

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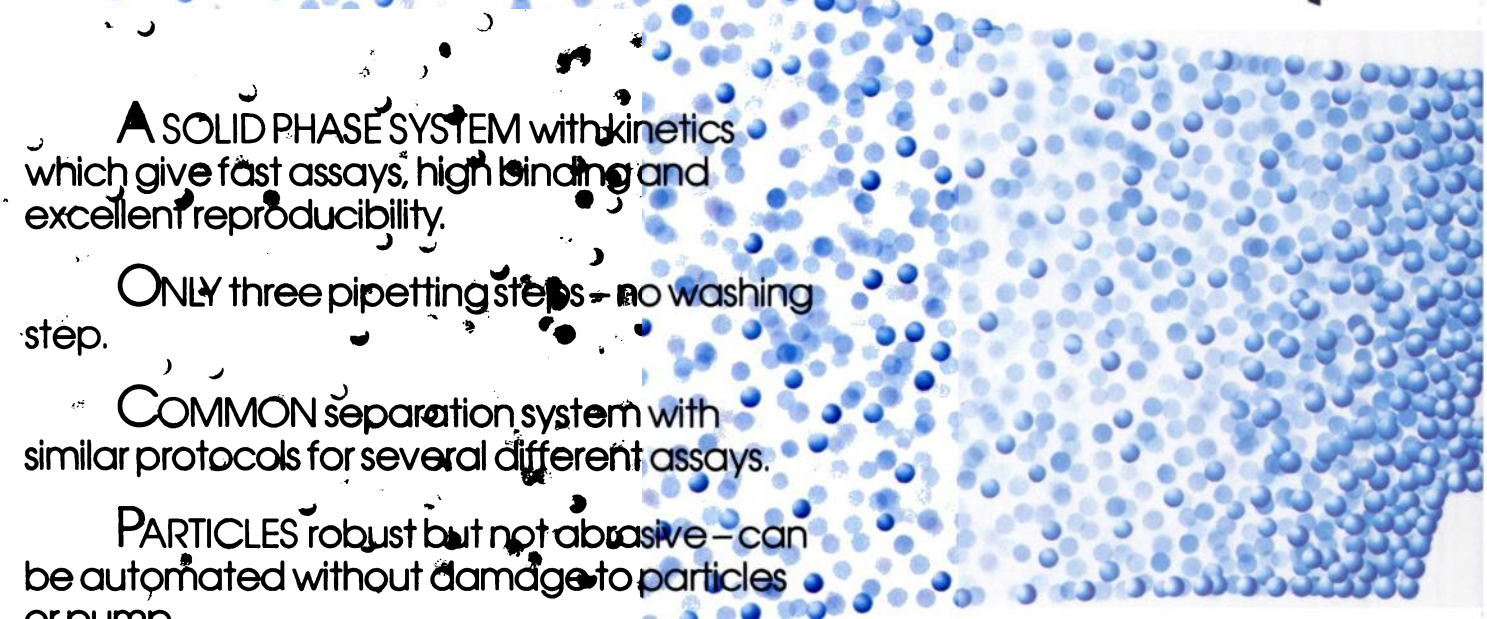

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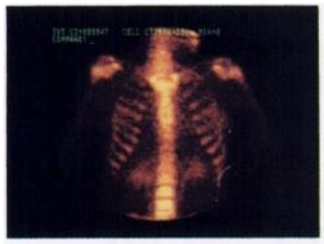

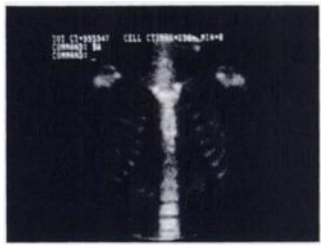

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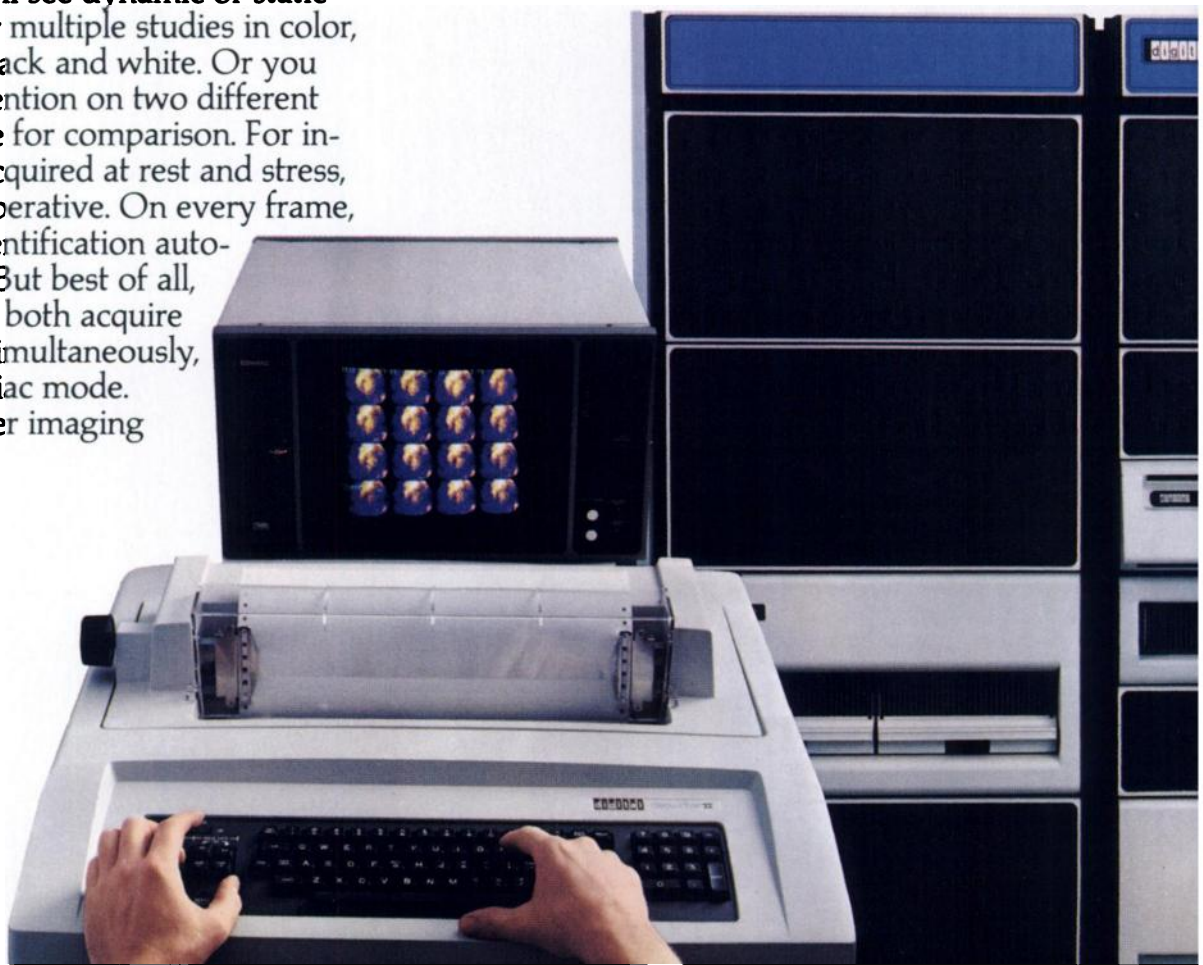

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We'll support you with the IMAGE, so you'll see new developments.
All Gamma-11 owners receive the IMAGE, a newsletter for Gamma users from the Medical Systems Group at Digital. It's a forum for communicating with your peers and with the Medical Systems Group about significant developments involving Gamma-11 systems.

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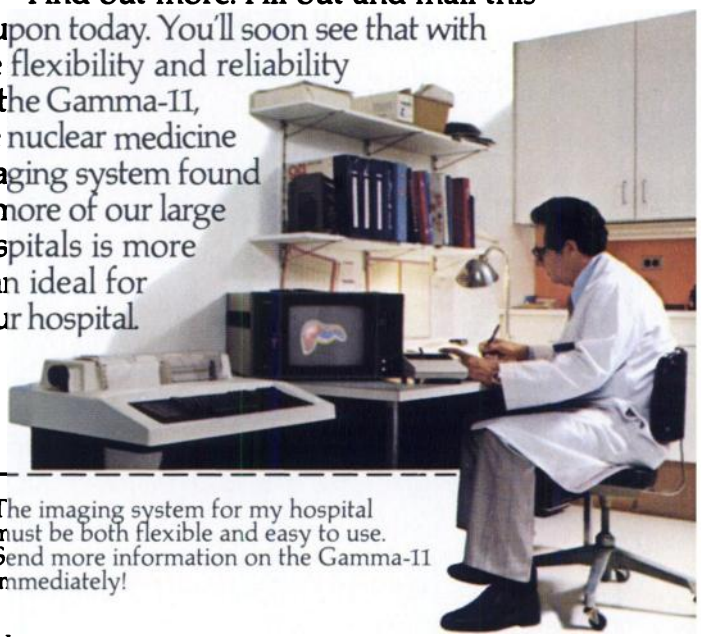
Find out more. Fill out and mail this coupon today. You'll soon see that with the flexibility and reliability of the Gamma-11, the nuclear medicine imaging system found in more of our large hospitals is more than ideal for your hospital.



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Self photograph of Union Carbide Nuclear Products' 5-megawatt nuclear reactor in operation. The blue glow emitted from the reactor is known as Cerenkov radiation. The reactor is used in research and to produce radiochemicals such as Molybdenum 99 and Xenon 133 for the manufacture of radiopharmaceuticals.
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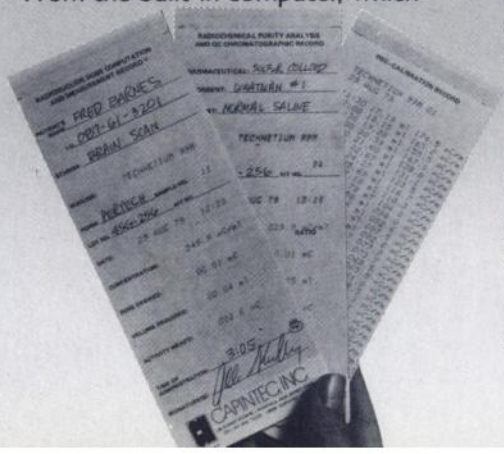

Get all the facts on our CRC-30. Write: Capintec, Inc., 136 Summit Avenue, Montvale, NJ 07645. (201) 391-3930. Call Toll Free (800) 631-2557. TELEX 642375 CAPINTEC MTLE.

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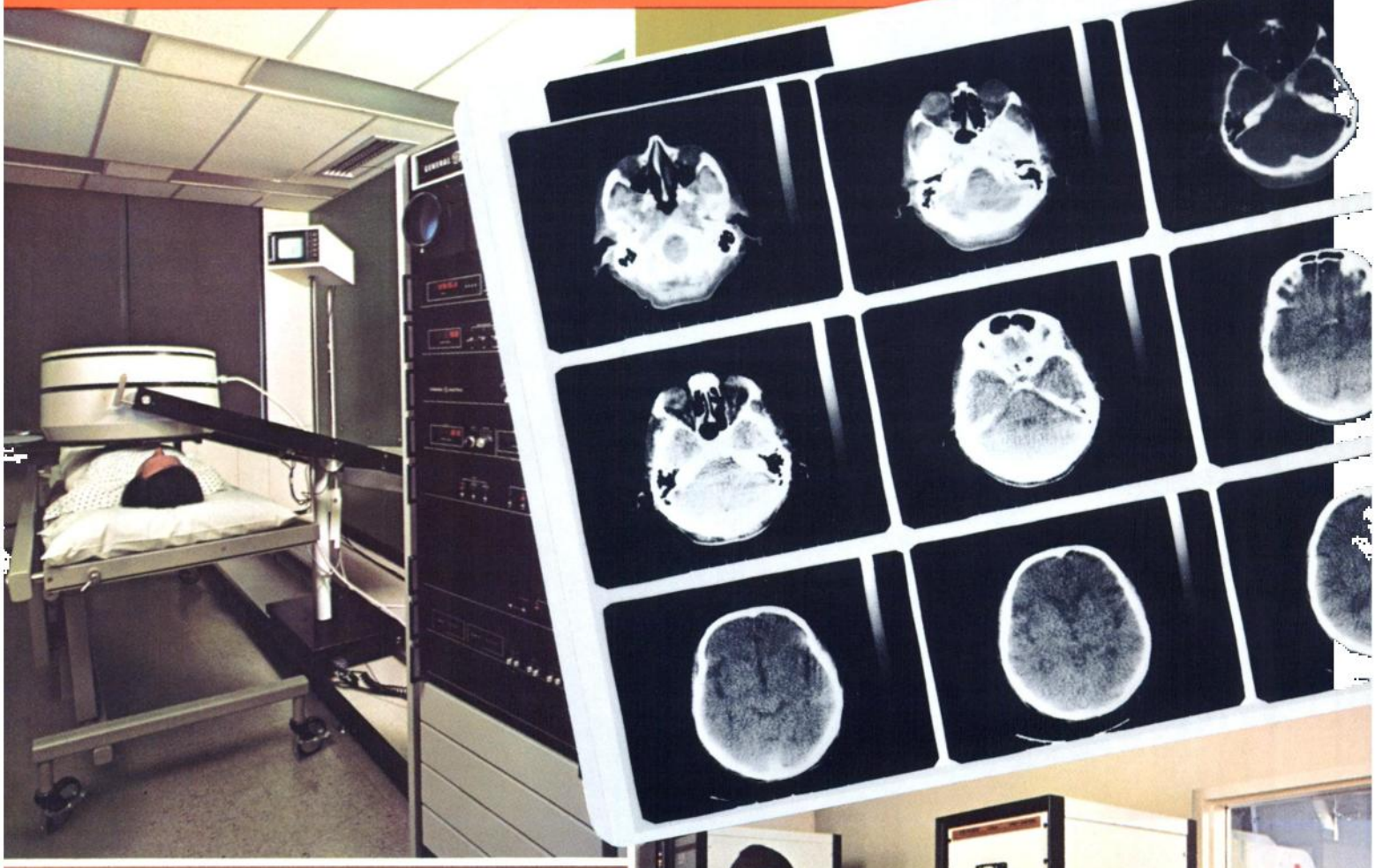
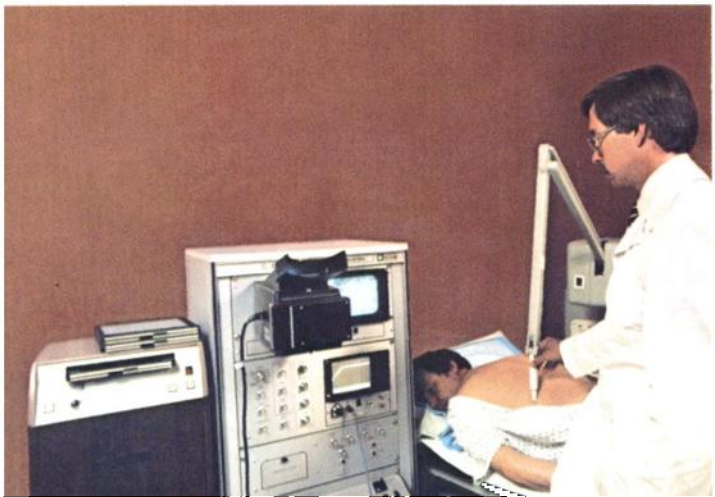
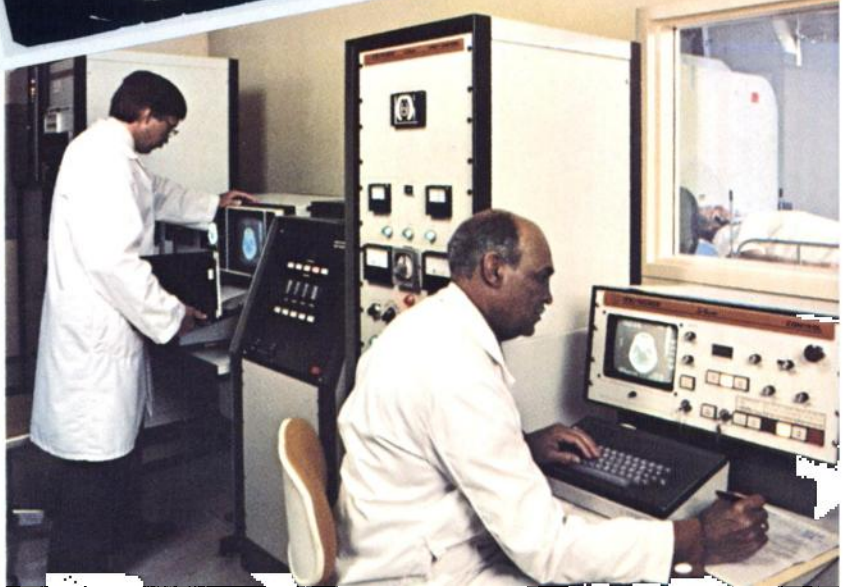
SCOPIX® CR3 Universal CRT Imaging Film







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Up to now, if you wanted good CRT image recording from computed tomography, ultra-sound and nuclear medicine equipment, you may have used several different "special purpose" imaging films.

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The broad spectral sensitivity of SCOPIX CR3 Film ensures accurate and detailed recording from greyscale CRT and video monitors which use white, blue or green phosphors in their display tubes. It is the "blindness" to green phosphors which causes other films to exhibit higher grain and less definition.

SCOPIX CR3 Film is a single-coated, orthochromatic, medium speed film of relatively high contrast, which gives outstanding recording of CT scan, ultra-sound and nuclear video images.

Sharper Image

Its higher speed allows CRT monitor intensity to be decreased, thus reducing the "halo" effect on the video screen and improving image definition.

SCOPIX CR3 Film is single-coated on GEVAR polyester base, with anti-halation layer. This combination enhances image detail and definition by preventing image parallax. It is suitable for all RP and manual film processing.

With SCOPIX CR3 film . . . you purchase *fewer* film types and *simplify* film inventory; get improved and consistent *quality* and *economy* because *one film does it all!*

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SCOPIX CR3 Film
The *one* film that does it *all*!

Photos courtesy Mt. Sinai Hospital, N.Y.

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The Mallinckrodt Ultra-TechneKow® FM (Technetium Tc 99m) Generator. Designed with people in mind.

The **Ultra-TechneKow FM** Generator was designed to bring you the best balance between safety, ease of operation and dependable yield efficiency. Over 15 years of experience and evolutionary progress is reflected in this state-of-the-art generator system.

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Significant weight reductions have been made by changing the internal column shield design. Weight is down 44% on small units and 24% on large units. A large handle is on top for easier lifting and better maneuverability.

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The auxiliary shield provides additional protection from radiation on all sides and the top. Radiation profile information is available from your Mallinckrodt representative.

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While fluctuations in yield efficiency can be expected, the **Ultra-TechneKow FM** Generator is noted for producing consistently high yields of technetium Tc 99m.

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In a recent independent survey of 400 nuclear medicine departments, Mallinckrodt ranked first in delivery and service.* Because of this record of being on time and on hand when you need special assistance, we believe you can count on Mallinckrodt having the best and most complete technetium delivery "system" in the world.

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People: the most important part of our system.

Ultra-TechneKow® FM (Technetium Tc 99m) Generator

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The Mallinckrodt Ultra-TechneKow® FM (Technetium Tc 99m) Generator. Designed with people in mind.

Ultra-TechneKow® FM

(Technetium Tc-99m Generator)

For the Production of Sodium Pertechnetate Tc 99m

DESCRIPTION

The **Ultra-TechneKow** FM Generator is prepared with fission-produced molybdenum-99. This generator provides a closed system for the production of sterile metastable technetium-99m, which is produced by the decay of molybdenum-99. Sterile, pyrogen-free isotonic solutions of Sodium Pertechnetate Tc 99m can be obtained conveniently by periodic aseptic elution of the generators. These solutions should be crystal clear.

The generator consists of a sealed glass chamber containing specially processed alumina. This treated alumina has a high absorption capacity for molybdenum-99 and a low affinity for technetium-99m. As a result, elution of the generator yields a solution of technetium-99m containing negligible amounts of molybdenum-99.

ACTIONS

The pertechnetate ion distributes in the body similarly to the iodide ion but is not organified when trapped in the thyroid gland. Pertechnetate tends to accumulate in intracranial lesions with excessive neovascularity or an altered blood-brain barrier. It also concentrates in thyroid gland, salivary glands, stomach and choroid plexus. After intravascular administration it remains in the circulatory system for sufficient time to permit blood pool, organ perfusions, and major vessel studies. It gradually equilibrates with the extracellular space. A fraction is promptly excreted via the kidneys.

INDICATIONS

Sodium pertechnetate Tc-99m is used for brain imaging, thyroid imaging, salivary gland imaging, placenta localization and blood pool imaging.

CONTRAINDICATIONS

None.

WARNINGS

This radiopharmaceutical should not be administered to patients who are pregnant or during lactation 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.

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.

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

ADVERSE REACTIONS

None.

DOSAGE AND ADMINISTRATION

Sodium pertechnetate Tc-99m is usually administered by intravascular injection but can be given orally. The dosage employed varies with each diagnostic procedure.

The suggested dose range employed for various diagnostic indications in the average patient (70 kg) is:

brain imaging:	10 to 20 mCi
thyroid gland imaging:	1 to 10 mCi
salivary gland imaging:	1 to 5 mCi
placenta localization:	1 to 3 mCi
blood pool imaging:	10 to 20 mCi

NOTE: Up to 1 gram of reagent grade potassium perchlorate in a suitable base or capsule may be given orally prior to administration of sodium pertechnetate Tc-99m injection for brain imaging, placenta localization and blood pool imaging.

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

HOW SUPPLIED

The **Ultra-TechneKow FM** (Technetium Tc 99m) Generators contain the following amount of molybdenum-99 at the time of calibration stated on the label.

Catalog Number	
100	0.25 curies
101	0.50 curies
106	0.75 curies
102	1.0 curies
103	1.5 curies
104	2.0 curies
105	2.5 curies
107	3.0 curies

Each generator is supplied with the following components for the elution of the generator.

- 6—Sterile, graduated, evacuated collecting vials
- 6—Sterile Luer-Lock needles with plastic covers
- 6—Pressure-sensitive "Caution—Radioactive Material" collecting vial labels
- 6—Pressure-sensitive radioassay data labels for lead dispensing shield

EVACUATED COLLECTING VIALS. Collecting vials are available on request in 5, 10, 20 and 30 milliliter sizes.

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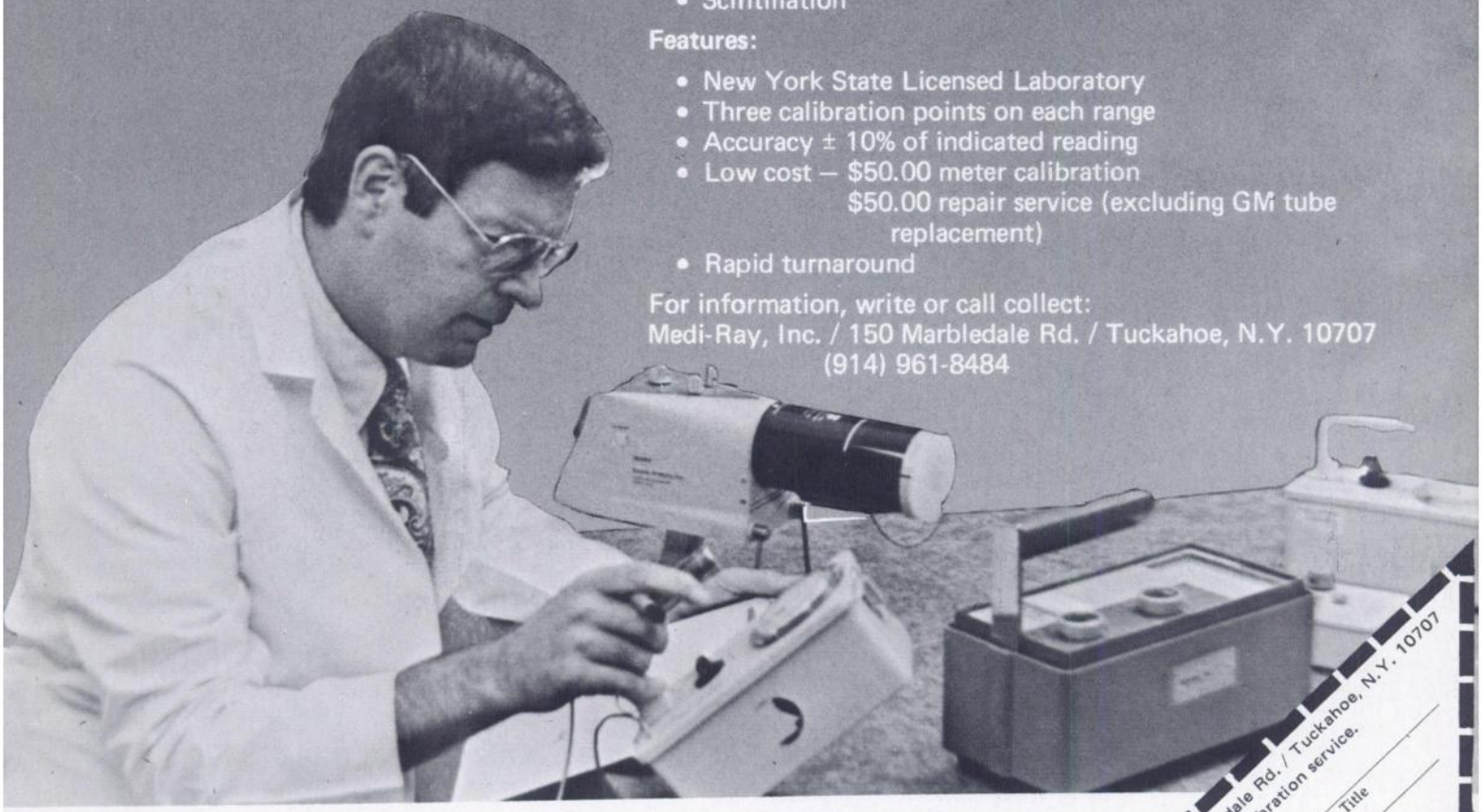

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Tomographic thallium imaging

Robert A. Vogel, MD
Associate Professor of Medicine
University of Colorado Health Sciences Center
Director, Coronary Care Unit and Medical Intensive Care Unit
Denver VA Medical Center

Dennis L. Kirch, MSEE
Assistant Professor of Radiology
University of Colorado Health Sciences Center
Research Engineer
Denver VA Medical Center

The initiative for tomographic thallium imaging arises from the segmental nature of coronary artery disease—which typically affects one portion of the myocardium more severely than others. An ischemic area of the heart that takes up less thallium may overlap or underlie another, normally perfused region. Planar imaging may resolve small deficits juxtaposed to normally perfused myocardium only with difficulty. Tomographic imaging may enable spatial separation of high- and low-uptake regions at different depths, thereby providing a better image of regional ischemia.

Thallium myocardial tomography provides advantages in addition to a series of depth-separated Z-axis images of relative isotope uptake. It ensures that the entire study is acquired as early as possible after injection, before any significant redistribution takes place, because only a single left oblique view is required to provide the data on regional thallium uptake provided in planar imaging by multiple views. And possibly of greatest importance, the technique permits objective computerized quantification of regional isotope uptake and redistribution—circumferential profile analysis—simplifying detection and interpretation of regional differences in thallium redistribution.

These three attributes together—Z-axis resolution, single-view image acquisition, and objective regional quantification—have increased the sensitivity and specificity of thallium myocardial perfusion imaging in our department to 90% or better.

Optimum utilization of this imaging/image-processing technique requires a thorough technical appreciation of several features of the tomographic collimator and software.

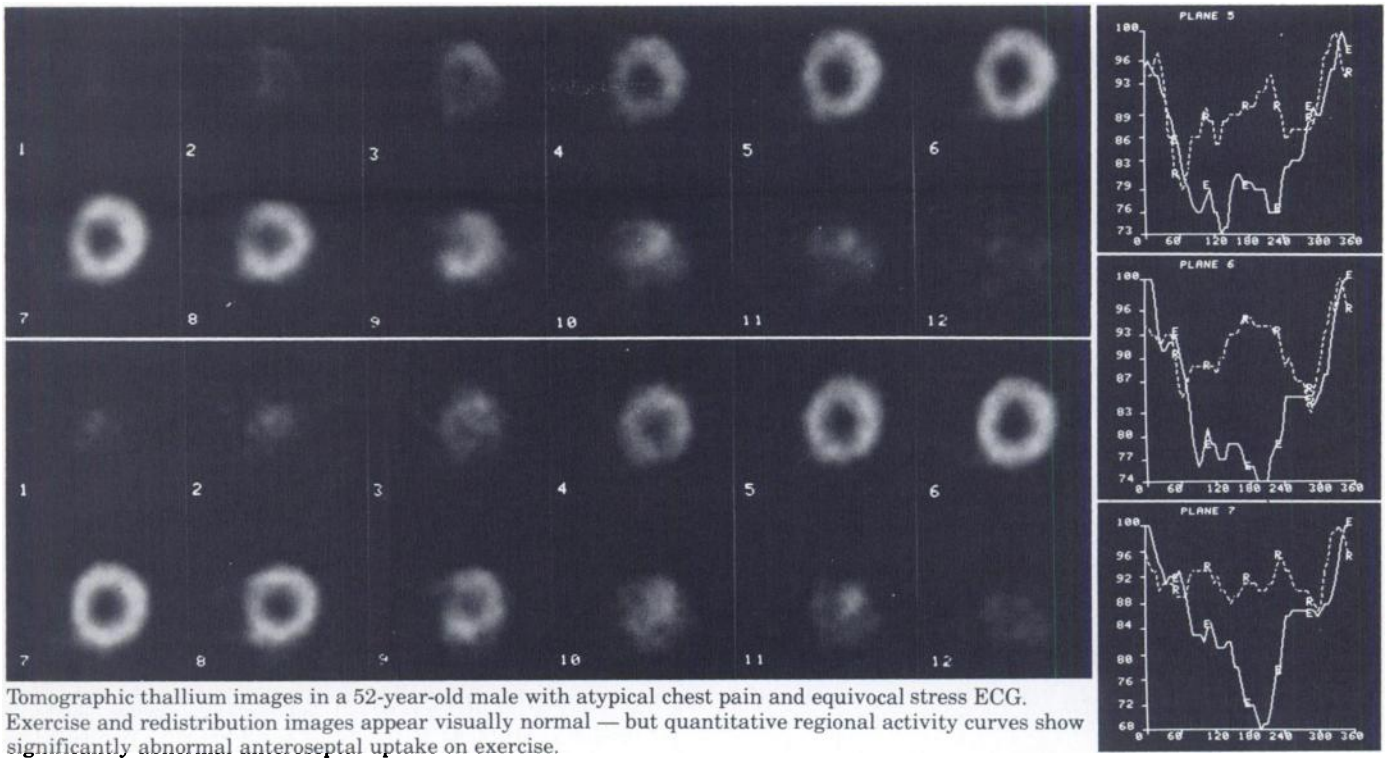
The seven-pinhole collimator

The seven-pinhole collimator is not a completely revolutionary or untried concept; rather it represents the combination of two well-accepted concepts in order to better image the thallium-perfused myocardium: single-pinhole collimation and rotating slant-hole collimation. A single-pinhole collimator can produce superior magnified myocardial images with only a minimal contribution from noncardiac background, but its low sensitivity lengthens acquisition time so much that significant redistribution may occur before a view is complete. The rotating slant-hole collimator was pioneered early in the development of the Anger camera as a technique to produce tomographic images. But it is a cumbersome device that is difficult to utilize rapidly and repeatedly, and uses a simple back-projection tomographic reconstruction technique unsatisfactory for myocardial imaging.

The seven-pinhole collimator represents a combination of these two techniques. By projecting seven pinhole images on the crystal, several advantages are gained:

- Instead of projecting a single image onto perhaps 10% of the camera crystal, and imaging background counts with the remaining 90%, the seven-pinhole collimator can project seven 1:1 myocardial images with very little noncardiac background contribution. This full utilization of the crystal for organ imaging makes the seven-pinhole collimator comparable in sensitivity to a high-sensitivity standard collimator... capable of collecting up to 750,000 myocardial counts within 10 minutes.
- Instead of developing angular perspective by taking several sequential planar views, or by rotating a slant-hole collimator, the seven-pinhole collimator uses the seven pinholes to simultaneously view the heart from slightly different angular perspectives, from which computer processing can provide tomographic reconstruction.

To these collimator-derived benefits, one must add two benefits from the quantitative analysis of seven-pinhole imaging: *enhanced subjective confidence* in the presence or absence of perfusion deficits on the displayed images and *objective quantification* of relative thallium distribution and redistribution kinetics in each of the important tomographic planes through the myocardium.



Tomographic thallium images in a 52-year-old male with atypical chest pain and equivocal stress ECG. Exercise and redistribution images appear visually normal — but quantitative regional activity curves show significantly abnormal anteroseptal uptake on exercise.

The impedance-estimation algorithm

Traditionally, tomographic nuclear images have been reconstructed by *back projection*, as in the original rotating slant-hole system, and in the Searle PhoCon. More complete, faster processing — with iterative capability for error correction — results from the use of the impedance-estimation technique of the seven-pinhole program.

The basic principle of this program is that a *voxel*, a volume element in space, has been viewed from seven points projected through pinholes onto the crystal. The program applies an *impedance-estimation algorithm* to the summing of the seven perspectives of each voxel, so that the lowest number of counts detected from any one perspective will dominate the greater counts detected from the other six—much as a single low-resistance resistor will conduct more current than numerous high-resistance elements in a parallel electrical circuit.

We believe this impedance-estimation program provides an initial estimate of real voxel value that is closer to actual isotope distribution than is possible with simple back projection. With a single 1- to 2-minute iterative pass to refine this estimate, the algorithm provides an accurate derivation of isotope distribution in a specific tomographic plane. Thus, the clinician can be confident that any perfusion defect which can be resolved by the camera/collimator is certain to be detected and displayed on the resultant "hard" image...without substantial degradation by overlying or surrounding normally perfused tissue, or by redistribution during image acquisition.

Circumferential quantification

Circumferential profile analysis of thallium-201 tomographic images may significantly increase the accuracy of evaluating regional thallium uptake and comparing uptake/redistribution kinetics. This quantification technique defines the center of the left ventricle, divides the myocardium into a predetermined number of segments, then quantitatively plots the relative thallium uptake in each segment against its angular location on the left ventricular wall. The procedure, as performed at the Denver VA Medical Center, permits objective comparison of stress/redistribution uptake curves—even in regions where ischemia cannot confidently be diagnosed solely by visual examination of the images.

In summary, the tomographic process reduces patient imaging time and, in our experience, has enabled improved visualization of segmental abnormalities in thallium-201 distribution, and has offered a means of data presentation well suited to quantitative interpretation and correlation.

Please see following page for brief summary of prescribing information.

Thallous Chloride Tl 201

November 1977

INDICATIONS AND USAGE: Thallous Chloride Tl 201 may be useful in myocardial perfusion imaging for the diagnosis and localization of myocardial infarction.

It may also be useful in conjunction with exercise stress testing as an adjunct in the diagnosis of ischemic heart disease (atherosclerotic coronary artery disease).

CONTRAINDICATIONS: None known.

WARNINGS: In studying patients in whom myocardial infarction or ischemia is known or suspected, care should be taken to assure continuous clinical monitoring and treatment in accordance with safe, accepted procedure. Exercise stress testing should be performed only under the supervision of a qualified physician and in a laboratory equipped with appropriate resuscitation and support apparatus.

Ideally, examinations using radiopharmaceutical drug products – especially those elective in nature – of women of childbearing capability should be performed during the first ten days following the onset of menses.

PRECAUTIONS: Data are not available concerning the effect of marked alterations in blood glucose, insulin, or pH (such as is found in diabetes mellitus) on the quality of thallium Tl 201 scans. Attention is directed to the fact that thallium is a potassium analog, and since the transport of potassium is affected by these factors, the possibility exists that the thallium may likewise be affected.

Thallous Chloride Tl 201, as all radioactive materials, must be handled with care and used with appropriate safety measures 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.

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

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. Thallous Chloride Tl 201 should be used in pregnant women only when clearly needed.

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.

Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: Adverse reactions related to use of this agent have not been reported to date.

DOSAGE AND ADMINISTRATION: The recommended adult (70kg) dose of Thallous Chloride Tl 201 is 1-1.5mCi. Thallous Chloride Tl 201 is intended for intravenous administration only.

For patients undergoing resting thallium studies, imaging is optimally begun within 10-20 minutes after injection. Several investigators have reported improved myocardial-to-background ratios when patients are injected in the fasting state, in an upright posture, or after briefly ambulating.

Best results with thallium imaging performed in conjunction with exercise stress testing appear to be obtained if the thallium is administered when the patient reaches maximum stress and when the stress is continued for 30 seconds to one minute after injection. Imaging should begin within ten minutes post-injection since target-to-background ratio is optimum by that time. Several investigators have reported significant decreases in the target-to-background ratios of lesions attributable to transient ischemia by two hours after the completion of stress testing.

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

Radiopharmaceuticals should be used by persons with 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 radionuclides.

HOW SUPPLIED: Thallous Chloride Tl 201 for intravenous administration is supplied as a sterile, non-pyrogenic solution containing at calibration time, 1mCi/ml of Thallous Tl 201, 9mg/ml sodium chloride, and 9mg/ml of benzyl alcohol. The pH is adjusted to between 4.5-6.5 with hydrochloric acid and/or sodium hydroxide solution. Vials are available in the following quantities of radioactivity: 1.5, 3.0, 4.5, 6.0, and 9.0 millicuries of Thallous Tl 201.

The contents of the vial are radioactive. Adequate shielding and handling precautions must be maintained.

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NUCLEAR PHARMACIST -STAFF POsition available immediately in centralized nuclear pharmacies located throughout the United States. Board certified applicants with radiopharmacy experience preferred. Also good opportunities for management oriented applicants. Excellent fringe benefits program. Salary commensurate with experience. Send resume and salary history to Personnel Department, Nuclear Pharmacy Inc., P.O. Box 25141, Albuquerque, N.M. 87125, or call (505) 292-5820. EOE.

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NUCLEAR MEDICINE, Director of division of Nuclear Medicine and Radiopharmacist required for University of British Columbia, Acute Care Hospital. The positions will carry with them the appropriate University appointments. Preference will be given to Canadian applicants. Application with accompanying curriculum vitae should be sent to: Dr. W.M. Thurlbeck, Director of Laboratories, Acute Care Hospital, University of British Columbia, Faculty of Medicine, 2075 Wesbrook Mall, Vancouver, B.C. V6T 1W5.

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ASSISTANT CHIEF, NUCLEAR MEDicine service. The Minneapolis Veterans Administration Medical Center seeks candidate for the position of Assistant Chief, Nuclear Medicine Service effective July 1, 1980. Requirements include certification by the ABNM, a strong patient orientation and expertise in all phases of clinical nuclear medicine, including imaging, radioassay, and internal radionuclide therapy. In addition, the Assistant Chief, Nuclear Medicine Service will have specific responsibilities in research and education. Applications from all qualified candidates are welcome. Inquiries, including a curriculum vitae and an autobiographical letter, should be sent to: Rex B. Shafer, M.D., Chief Nuclear Medicine Service (115), Veterans Administration Medical Center, 54th Street & 48th Ave. South, Minneapolis, MN. 55417. An Equal Opportunity Employer.

NUCLEAR MEDICINE TECHNOLOGIST Florida Medical Center a 400-bed acute care facility has positions available in its progressive nuclear medicine department. Equipment includes SEARLE, LFOU, LEM, PHOCON, PG-4 CAMERA and a TRANS AXIL SCANNER. Cardiac and computer experience recommended but not essential. Excellent salary and benefits. Inquire to Director of Personnel, Florida Medical Center Hospital, 5000 West Oakland Park Blvd., Fort Lauderdale, Florida 33313, (305) 735-6000.

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NUCLEAR MEDICINE OPPORTUNITY: Expansion of Nuclear Medicine Services has created this opportunity to join the staff of one of the nation's largest Pediatric facilities. Our progressive Nuclear Medicine Department includes a well equipped imaging section, active nuclear cardiology service and ultrasound. Position will involve Staff Technologist responsibilities, although duties may expand to include ultrasound, computer applications and additional special projects, for experienced candidates. Qualified applicants must be certification eligible, experience a plus. If you seek a position offering personal and professional growth send resume to: Employment Supervisor, Milwaukee Children's Hospital, 1700 W. Wisconsin Ave., Milwaukee, WI 53233. An Equal Opportunity Employer.

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NUCLEAR MEDICINE, FRESNO CALIfornia. The University of California (San Francisco) Medical Education Program seeks a Nuclear Medicine Physician for a rapidly growing expanding service at its affiliated Veterans Administration Medical Center in Fresno, CA. Certification (or eligibility) by ABNM is necessary. Strong existing programs in Cardiology and Pulmonary Disease make a background in Internal Medicine highly desirable. The position combines active clinical teaching and patient care in an academic setting with opportunity for private practice. Inquiries should be addressed to Malcolm Jones, M.D., Chief of Radiology, Veterans Administration Medical Center, 2615 E. Clinton Avenue, Fresno, CA. 93703. The University of California is an Equal Opportunity Employer.

NUCLEAR MEDICINE TECHNOLOGIST Opening in August 1980 for a Full Time Nuclear Medicine Technologist in an 80 bed acute care hospital. Applicant must be certified by ARRT or eligible. Perform all types of exams, daily calibrations and quality control tests on equipment. Responsible for technique charts and maintaining department reports, records and files. Located in Ventura County, Southern California, close to mountains and beaches. Contact Personnel, Pleasant Valley Hospital, 2309 Antonio Avenue, Camarillo, CA 93010.

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NUCLEAR MEDICINE TECHNOLOGIST. One (1) full time day position requires H.S. graduate that has completed an approved Nuclear Medicine program. Either registered or registry eligible & have one (1) year demonstrable clinical experience in all phases of Nuclear Medicine methodologies. We offer excellent salary & benefits package that includes free health insurance coverage with dental option for you & your immediate family. Tuition assistance & free lighted parking. For more information, & to arrange a personal interview, call Mrs. Fisher, after 9 a.m., (202) 574-6641. Greater Southeast Community Hosptial, 1310 Southern Avenue, Southeast, Washington, D.C. 20032. EOE M/F/H.

NUCLEAR MEDICINE TECHNOLOGIST or Registered X-Ray Technician, with imaging experience, for Midwestern mobile medical scanning service. Position requires daily travel to area hospitals with mobile scanning equipment. Salary commensurate with experience and education. Excellent corporate fringe benefits. Positions currently open in our Sioux Falls base office and Ankeny, Iowa, branch office. Send resume to Arlo Flanders, Personnel Director, Laboratory of Clinical Medicine, 1212 South Euclid Avenue, Sioux Falls, S. Dak., 57105. Or call 1-800-843-6811.

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RADIOPHARMACIST, UNIVERSITY OF New Mexico Residency Affiliation, seeks position. Reply Box 500, Society of Nuclear Medicine 475 Park Ave. South, N.Y., NY 10016

M.D. RECENTLY FINISHED UNIVERsity Nuclear Medicine residency; previous residency in Pathology. Seeks to relocate in West but will consider any location or type practice. Available immediately. Reply Box 502, Society of Nuclear Medicine, 475 Park Ave. So., NY, NY 10016.

REGISTERED NUCLEAR MEDICINE Technologist (ASCP and NMTCB) with BS Degree (Business Administration). Experienced in vitro/nuclear imaging/cardiovascular. Currently Nuclear Medicine Manager at community hospital. Also a registered/licensed Medical Technologist with teaching experience. Desires to relocate to San Francisco peninsula. Contact: John Early, 1737-A Olive, El Centro, CA. 92243.

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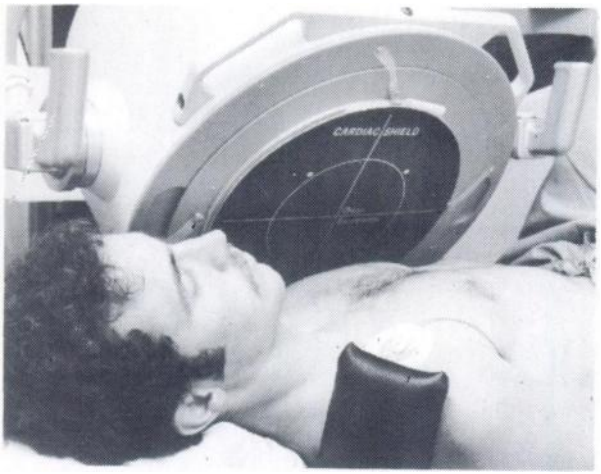

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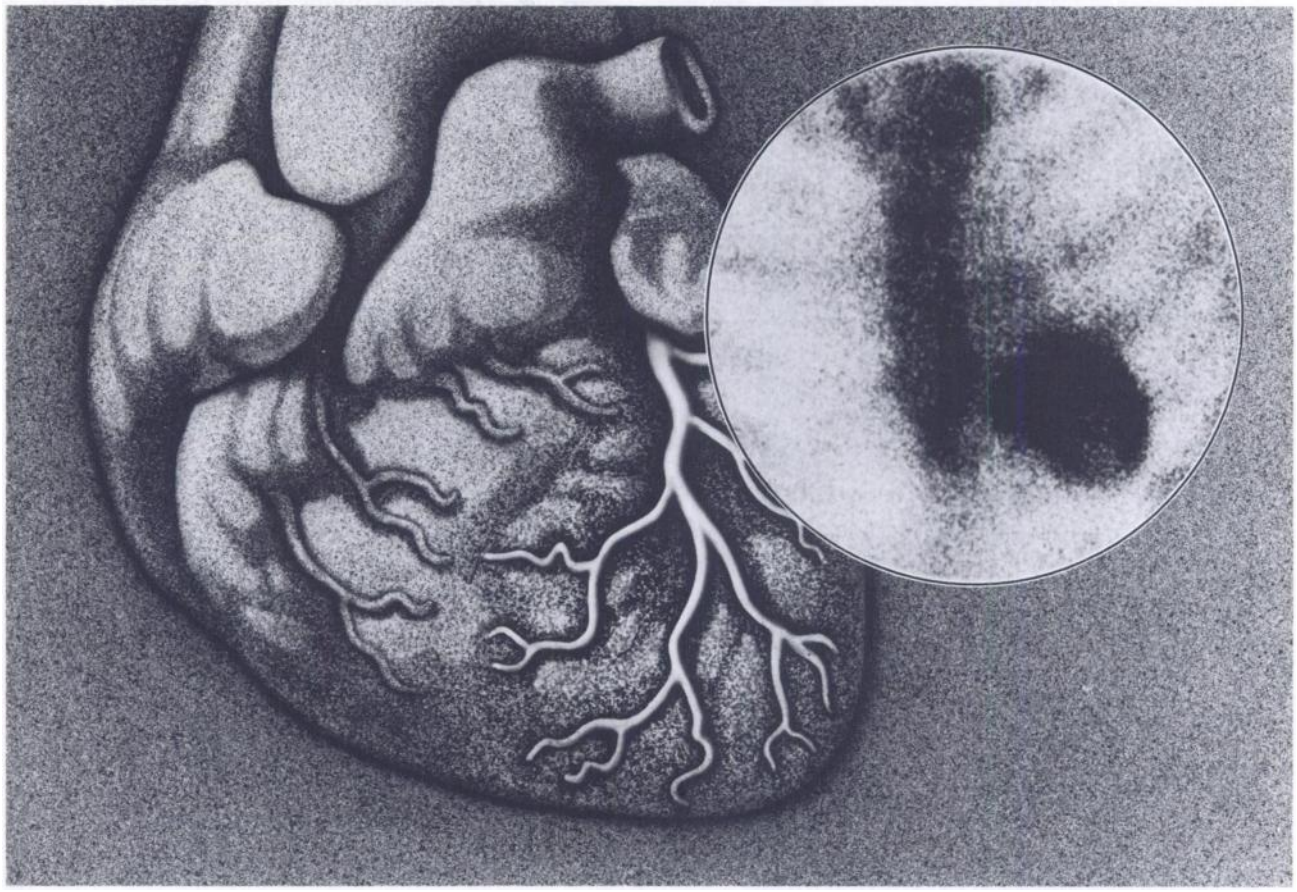

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See next page for brief summary.

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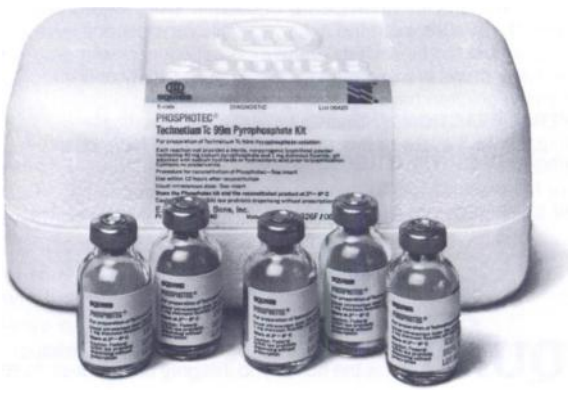

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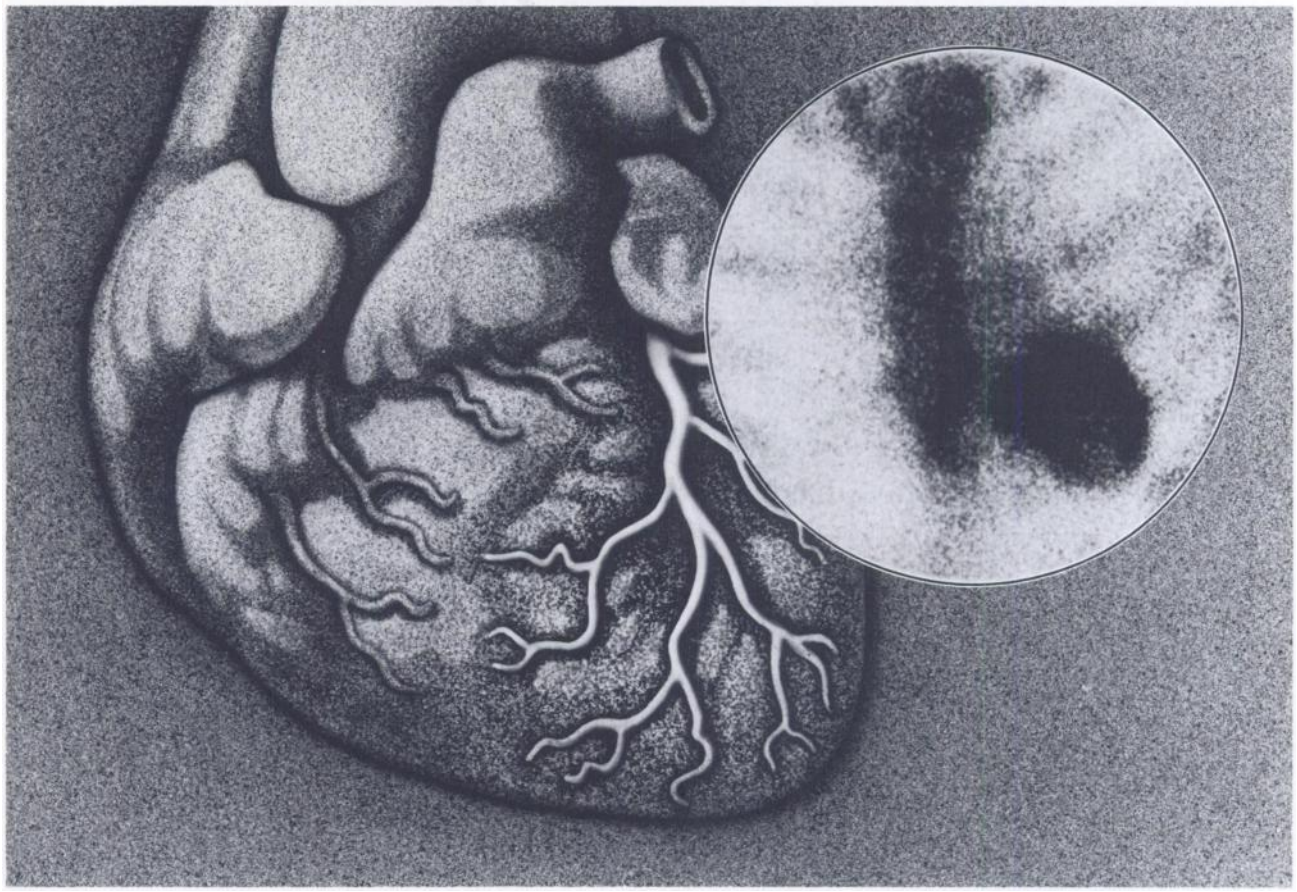

Myocardial scintigraphy with technetium Tc 99m tagged stannous pyrophosphate offers a number of significant benefits:

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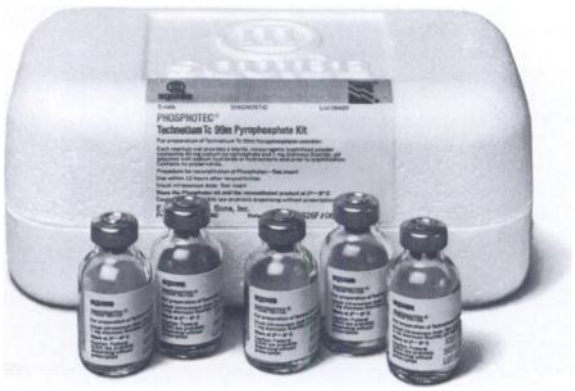

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DESCRIPTION: Phosphotec provides all the nonradioactive components required to prepare sterile, nonpyrogenic technetium Tc 99m pyrophosphate. Each reaction vial contains 40 mg sodium pyrophosphate (equivalent to 23.9 mg anhydrous sodium pyrophosphate) and 1 mg stannous fluoride; the product does not contain a preservative. When sterile, nonpyrogenic sodium pertechnetate Tc 99m solution is added to the reaction vial, technetium Tc 99m pyrophosphate is formed.

INDICATIONS AND USAGE: Phosphotec may be used as a bone imaging agent to delineate areas of altered osteogenesis. It is also a cardiac imaging agent used as an adjunct in the diagnosis of acute myocardial infarction.

CONTRAINDICATIONS: None known.

WARNINGS: This product should not be administered to patients who are pregnant or to nursing mothers unless the benefit 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 (approx. 10) days following the onset of menses.

It has been reported that false-positive or false-negative brain scans may result when brain scans using sodium pertechnetate Tc 99m solution are performed after a bone scan has been done using an agent containing stannous ions, e.g., a pyrophosphate bone agent. This is thought to be due to the interaction of technetium Tc 99m with stannous ions inside red blood cells. Therefore, in those cases where brain scans are indicated along with imaging of bone or myocardial imaging, the brain scan should be performed first, if feasible. Alternatively, another brain imaging agent, such as technetium Tc 99m pentetate, may be employed. False-positive and false-negative myocardial scans may occur; therefore, the diagnosis of acute myocardial infarction depends on the overall assessment of laboratory and clinical findings.

The contents of the Phosphotec reaction vial are to be used only for preparation of the I.V. solution and are **not** to be directly administered to the patient. Any sodium pertechnetate Tc 99m solution which contains an oxidizing agent is **not** suitable for use with Technetium Tc 99m Pyrophosphate Kit. The contents of the kit are not radioactive. However, after sodium pertechnetate Tc 99m is added, adequate shielding of the final preparation must be maintained. Phosphotec (Technetium Tc 99m Pyrophosphate Kit) must be used within 12 hours after reconstitution.

PRECAUTIONS: In the use of any radioactive material, care should be taken to minimize radiation exposure to the patient and occupational workers consistent with proper patient management. Both prior to and following administration of the technetium Tc 99m pyrophosphate, the patient should be encouraged to drink fluids and to void as often as possible thereafter to minimize radiation exposure to the bladder and background interference during imaging if not contraindicated by the patient's cardiac status. The patient's cardiac condition should be stable before beginning the cardiac imaging procedure. Interference from chest wall lesions such as breast tumors and healing rib fractures can be minimized by employing three projections (e.g., anterior, lateral, and left anterior oblique).

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; therefore, this preparation should be used in pregnant women only when clearly needed. 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. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: No adverse reactions specifically attributable to the use of this radiopharmaceutical have been reported.

For full prescribing information, see package insert.

HOW SUPPLIED: In a kit containing five reaction vials (5 ml size).

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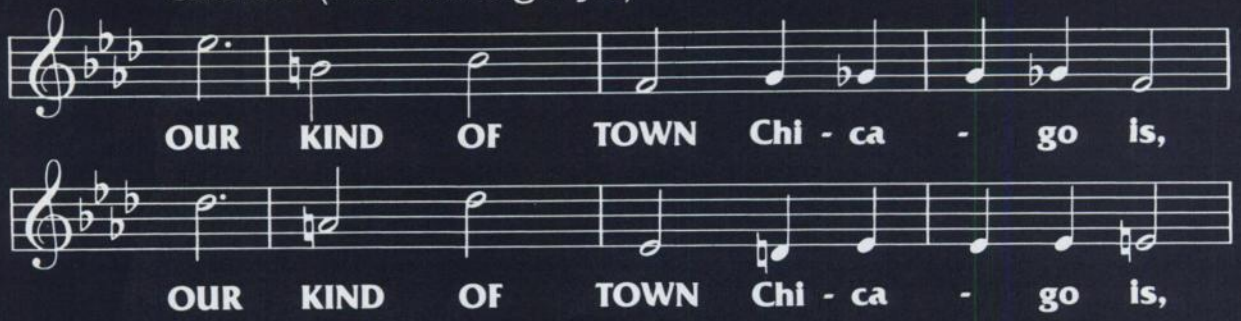

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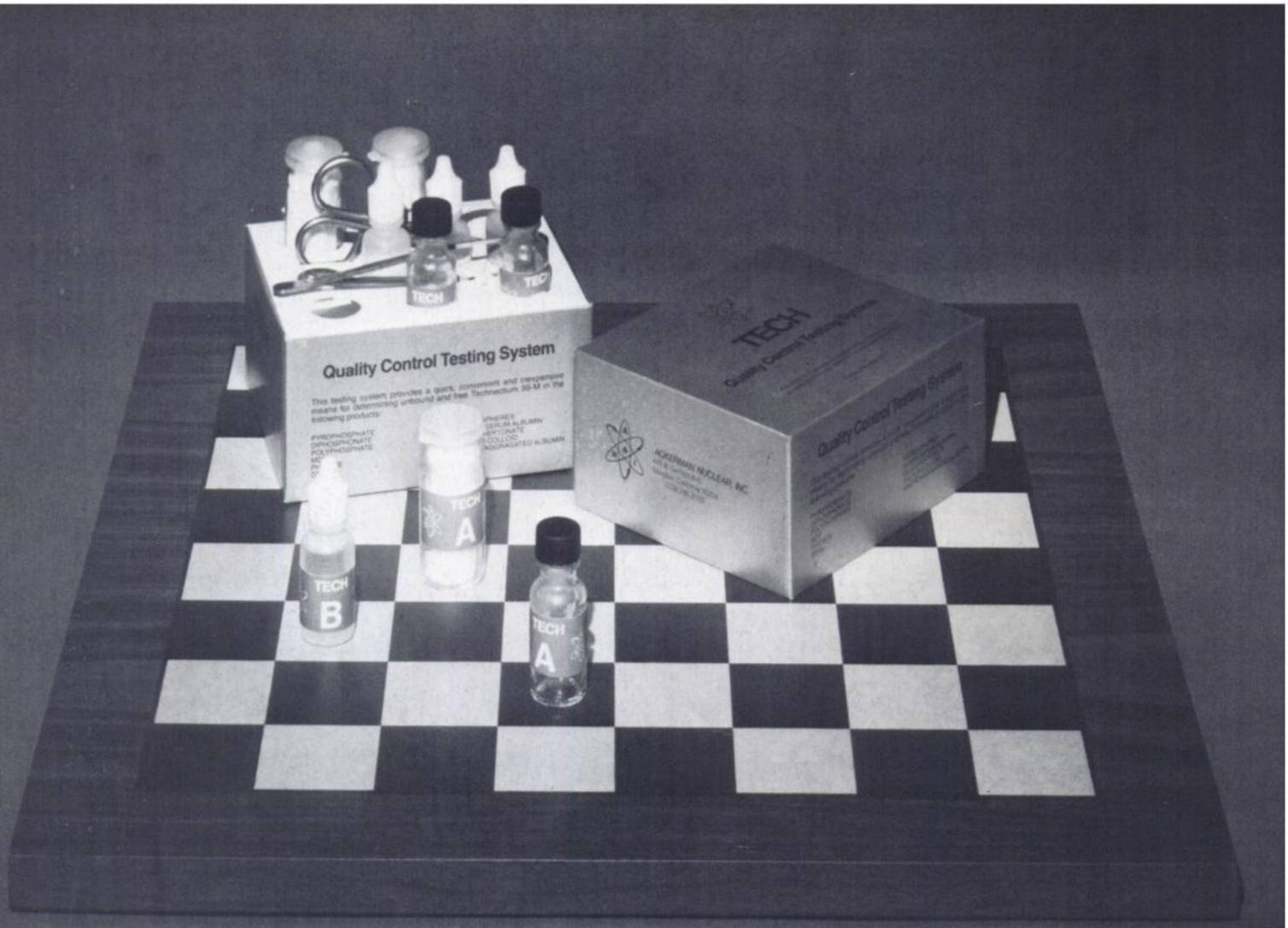

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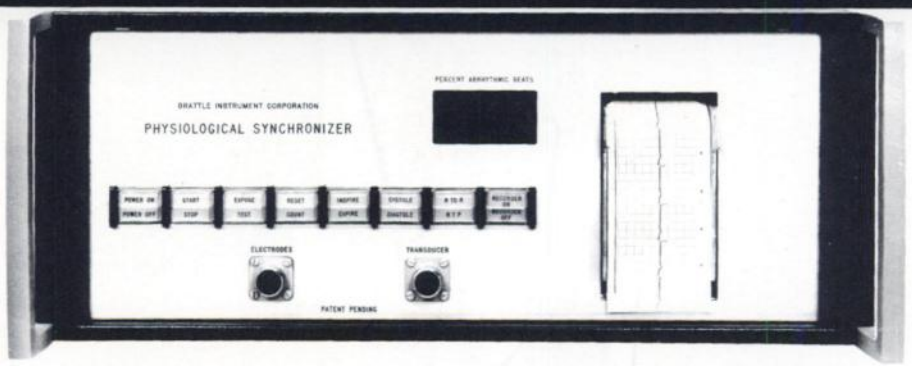
Help your cardiologist study heart kinetics non-invasively with Brattle-gated scintiphotos.

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.)

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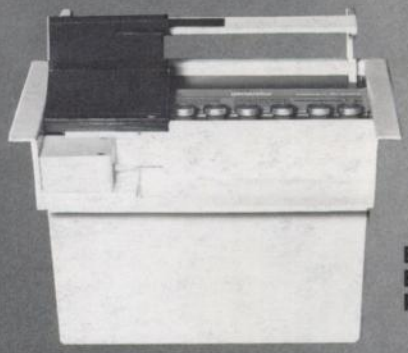
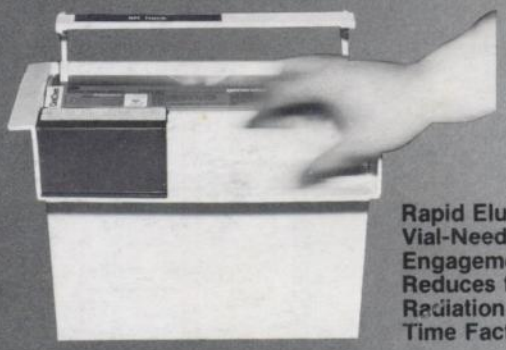
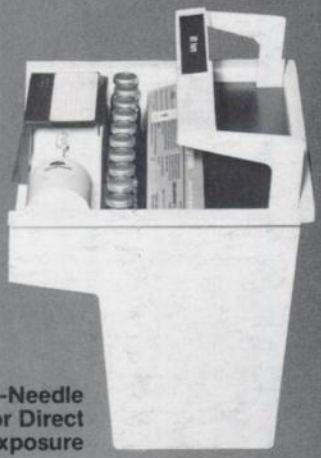
(Technetium Tc 99m Generators for the Production of Sodium Pertechnetate Tc 99m)



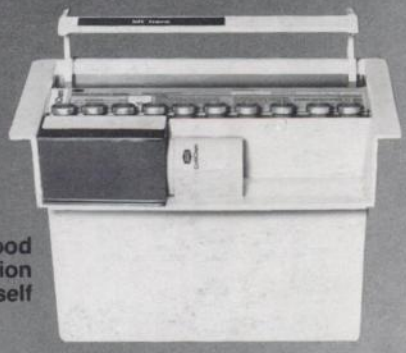
Effectively Shielded Elution Transfer Point



Rapid Elution Vial-Needle Engagement Reduces the Radiation Exposure Time Factor



"Automatic" Elution Vial-Needle Alignment Eliminates the Need for Direct Eye Exposure



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