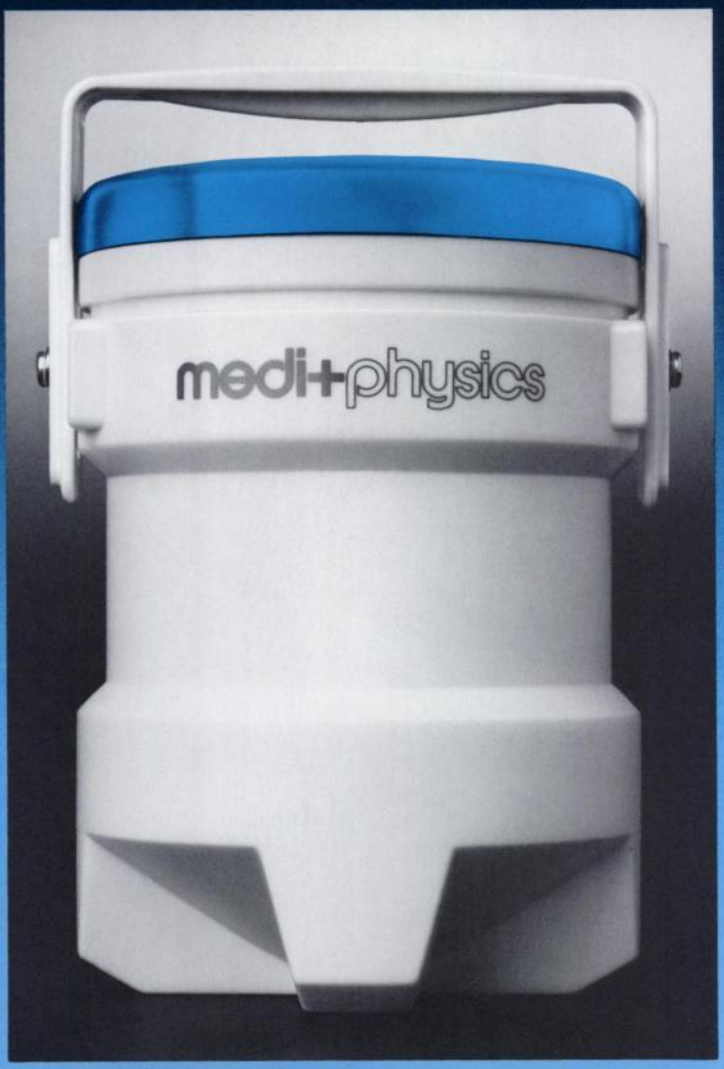
medi+physics™

Announces An Ideal Radioisotope For The Study of Pulmonary Ventilation

- A half-life of 13 seconds and decay by Isomeric Transition means low radiation exposure to patients and staff.
- The monoenergetic gamma emmission of 191 keV is well suited for the gamma camera.
- No special radioactive gas collection or disposal system required.
- Completely portable system allows studies in ICU, CCU, and Post-Surgical departments with portable camera.



MPI Krypton Kr 81m Gas Generator
Krypton Kr 81m

- Studies can be conducted on comatose, uncooperative, or mechanically vented patients.
- Distribution of radioactive gas is mainly to the lungs.
- Elaborate delivery system is not required.
- The only radioisotope that can be administered ON and OFF as needed.
- Easy to license when compared to Xenon Xe 133 gas.

Now Available in The MIDWEST*

The Pulmonary Profile

THE CONCEPT

The pulmonary profile is a series of matched perfusion and ventilation studies done consecutively on a patient using the MPI Krypton Kr 81m Gas Generator and Technetium Tc 99m Albumin Aggregated. Following administration of the two products you are able to switch the energy window on the gamma camera and scan the patient in the same position for each of the isotopes before you move the patient to the next view. Thus, a complete series of matching views may be accumulated for any number of patient positions.

THE PURPOSE

To increase the diagnostic sensitivity and specificity of lung imaging procedures by providing an easy means of obtaining matched perfusion-ventilation images in one patient visit.

THE RESULT

A *new* patient study which combines ventilation and perfusion imaging procedures into one study called the *Pulmonary Profile Study.*

For information regarding the MPI Krypton Kr 81m Gas Generator Krypton Kr 81m please call Medi-Physics at (415) 652-7650, Outside California (800) 227-0492 or Inside California at (800) 772-2477.

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

MPI KRYPTON Kr 81m GAS GENERATOR
KRYPTON Kr 81m

DESCRIPTION: The Krypton Kr 81m Gas Generator consists of Rubidium Rb 81 fixed to a solid support from which the Krypton Kr 81m is eluted by passage of humidified oxygen or air through the generator. Other rubidium radio-isotopes which do not decay to radioactive Krypton Kr 81m in their decay are present in the generator (Rubidium Rb 82m, for example, is present at a concentration of 30-40%).

INDICATIONS AND USAGE: The Krypton Kr 81m Gas Generator is indicated for use in the study of pulmonary ventilation.

CONTRAINDICATIONS: None known.

WARNINGS: None known.

PRECAUTIONS:

General

The Krypton Kr 81m Gas Generator as well as other radioactive drugs, must be handled with care to minimize radiation exposure to clinical personnel. Also care should be taken to minimize radiation exposure to the patient consistent with proper patient management.

Carcinogenesis, Mutagenesis, Impairment of Fertility

No long-term animal studies have been performed to evaluate carcinogenic potential, mutagenicity potential, or whether Krypton Kr 81m gas affects fertility in males or females.

Pregnancy-Category C

Animal reproduction studies have not been conducted with Krypton Kr 81m gas. It is also not known whether Krypton Kr 81m gas can cause fetal harm when administered to a pregnant woman, or can affect reproduction capacity. Krypton Kr 81m gas should be given to a pregnant woman only if clearly needed.

Nursing Mothers

It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when Krypton Kr 81m gas is administered to a nursing woman.
Ideally, examinations using radiopharmaceuticals, especially those elective in nature, in women of childbearing capability, should be performed during the first few (approximately ten) days following the onset of menses.

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.

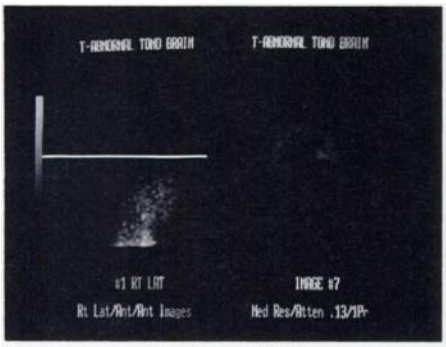
ADVERSE REACTIONS: None known.

DOSAGE AND ADMINISTRATION: The recommended dose range for Krypton Kr 81m is 1-10 millicuries and should be administered by continuous inhalation for a sufficient time to provide desired diagnostic information. The multiplication product of the radioactivity and the time of continuous inhalation of Krypton Kr 81m generally should not exceed 100 millicurie-minutes.

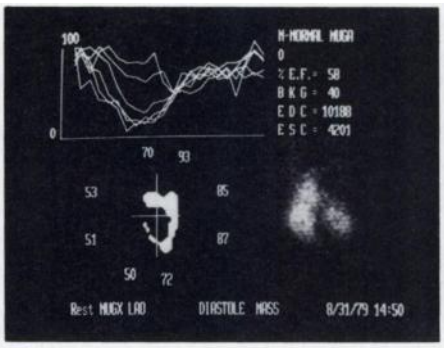
HOW SUPPLIED: The Krypton 81m Gas Generator is supplied in the form of Rubidium Rb 81, bound to a solid support, with an activity of 2-10 millicuries at calibration time. The generator is enclosed in a lead shielded filter assembly surrounded by a capped plastic canister to which a handle is affixed. The generator should be stored at room temperature. The generator expires 12 hours after date and time of calibration.

*Your state may require you to amend your license.

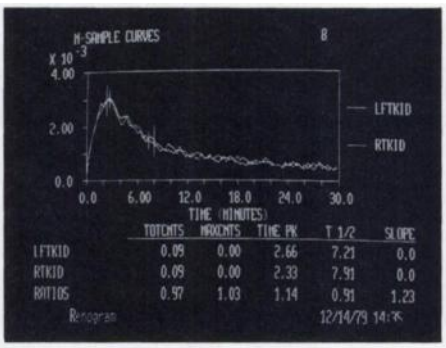
At your fingertips are these results.



These results from Emission **Computed Tomography studies.**



These results from Gated Blood **Pool studies.**



These results from Renal **studies.**

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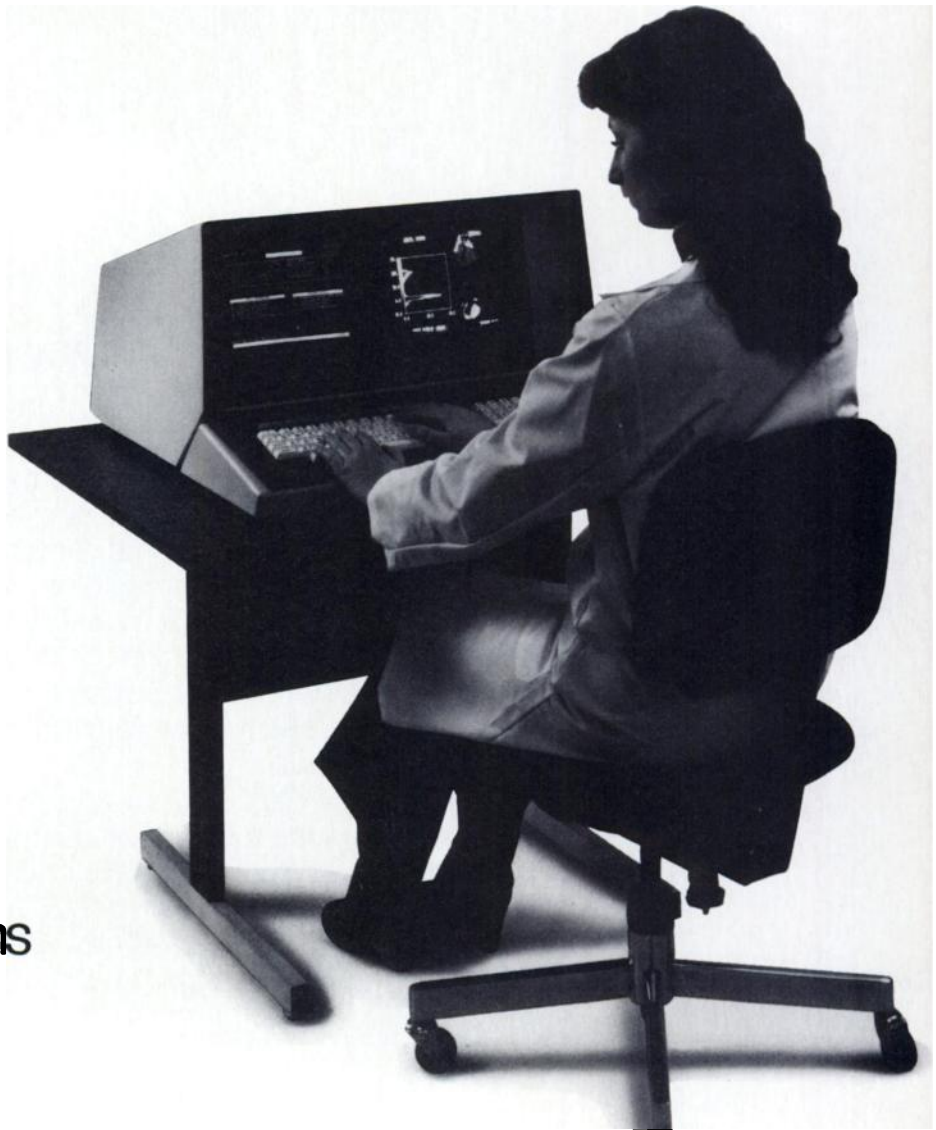

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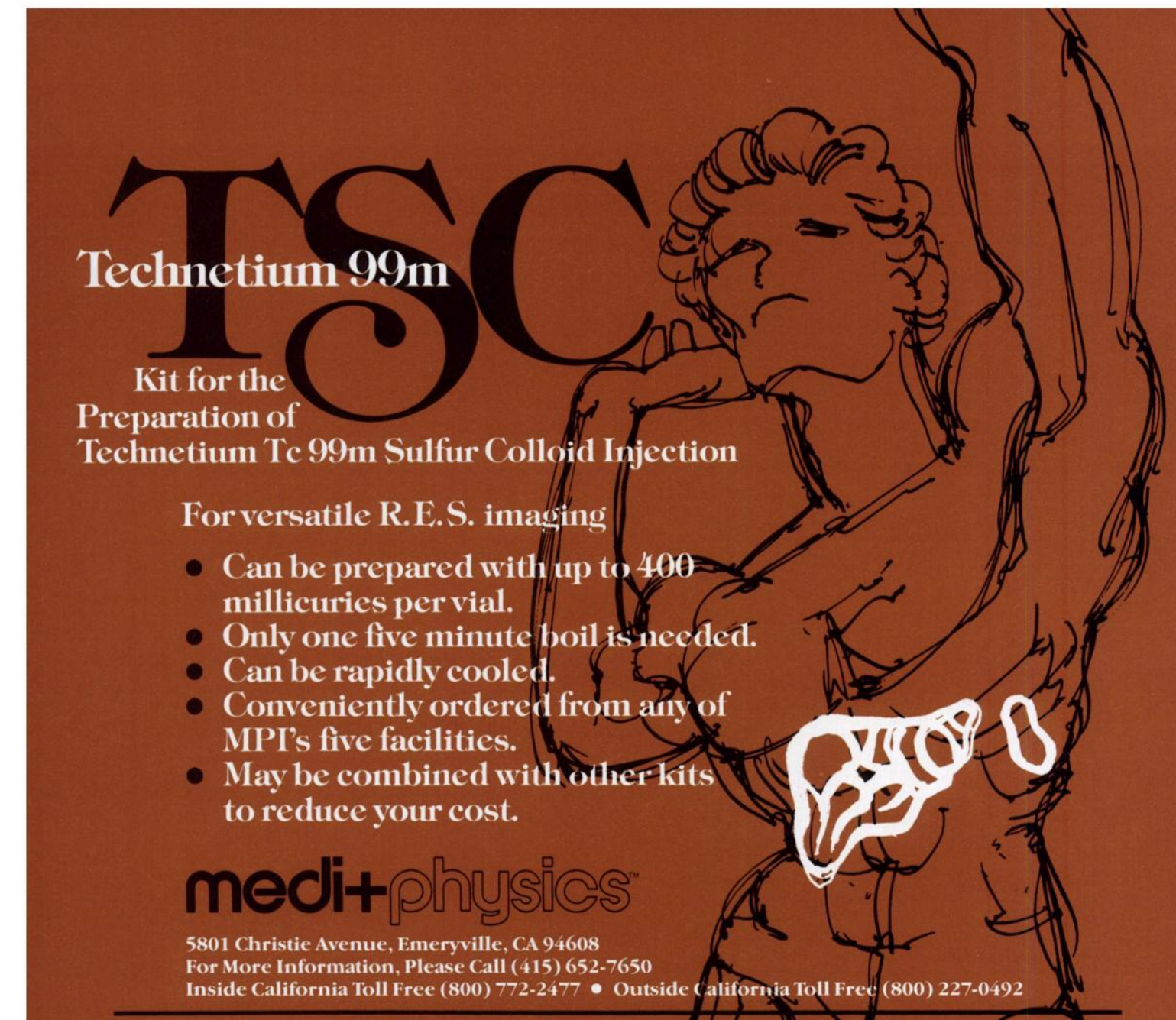
TSC

Technetium 99m

Kit for the Preparation of Technetium Tc 99m Sulfur Colloid Injection



For versatile R.E.S. imaging

- Can be prepared with up to 400 millicuries per vial.
- Only one five minute boil is needed.
- Can be rapidly cooled.
- Conveniently ordered from any of MPI's five facilities.
- May be combined with other kits to reduce your cost.

medi+physics™

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For More Information, Please Call (415) 652-7650
Inside California Toll Free (800) 772-2477 • Outside California Toll Free (800) 227-0492

TECHNETIUM 99m TSC KIT FOR THE PREPARATION OF TECHNETIUM Tc 99m SULFUR COLLOID INJECTION

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

INDICATIONS AND USAGE: Technetium Tc 99m Sulfur Colloid Injection is used as an agent for imaging areas of functioning reticuloendothelial cells in the liver, spleen, and bone marrow.

CONTRAINDICATIONS: None known.

WARNINGS: The contents of the two syringes, one syringe containing the sodium thiosulfate solution and the second syringe containing the appropriate buffer solution, are intended *only* for use in the preparation of the Technetium Tc 99m Sulfur Colloid Injection and *are not to be directly administered to the patient.*

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.

PRECAUTIONS: The components of the kit are sterile and pyrogen-free. It is essential that the user follows the directions carefully and adheres to strict aseptic procedures during preparation of the colloid.

The stability of the colloidal preparation may be decreased in the presence of polyvalent cations, thus resulting in the agglomeration of the individual colloidal particles. These larger particles are likely to be trapped by the pulmonary capillary bed following intravenous injection.

It is recommended that Sodium Pertechnetate Tc 99m solutions containing more than 10 micrograms/ml of aluminum ion not be used for formulation of the Technetium Tc 99m Sulfur Colloid Injection. The Sodium Pertechnetate Tc 99m solution must also be free of any traces of oxidizing agents such as peroxides and hypochlorites.

Technetium Tc 99m Sulfur Colloid Injection is physically unstable and as such the particles will settle with time. Failure to agitate the vial 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 Sulfur Colloid Injection not be used after *six* hours from the time of formulation.

The preparation contains no bacteriostatic preservative.

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

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.

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

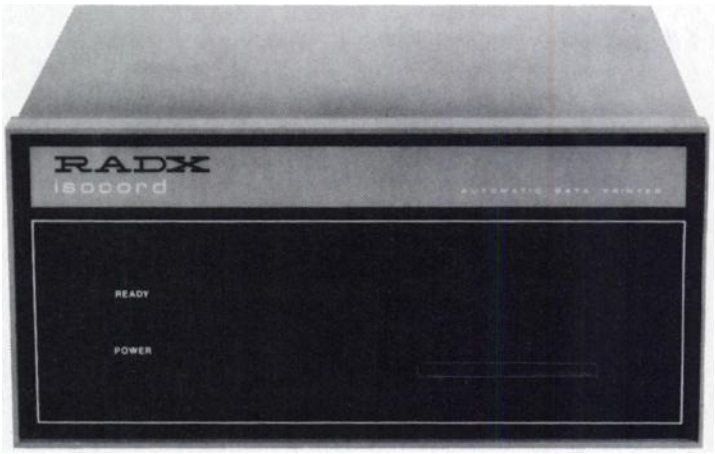
ADVERSE REACTIONS: Hypersensitivity reactions, including anaphylaxis, have been reported in patients receiving sulfur colloid preparations.

One death and several cases of lung and soft tissue uptake other than RES have been reported in the association with the use of Technetium Tc 99m Sulfur Colloid Injection.

HOW SUPPLIED: The TECHNETIUM 99m SULFUR COLLOID KIT is supplied as a sterile pyrogen-free kit consisting of: five reaction vials, each containing 0.5 ml 1.0 N hydrochloric acid in water; five sterile syringes (labeled "A"), each containing 1.9 mg sodium thiosulfate anhydrous in 1.1 ml aqueous solution; five sterile syringes (labeled "B"), each containing 5.3 mg gelatin in 2.1 ml aqueous buffer solution containing 177 mg sodium acetate anhydrous.

STORAGE: Store finished drug at room temperature.

Add Inventory Control and NRC Record Keeping to your Dosecalibrator System



ISOTRON

INVENTORY CONTROL COMPUTER

The RADX Isotron is the original unit that qualifies as a nuclear medicine inventory control computer. It keeps track of all (and will program 20 preselected) radio pharmaceuticals in different chemical forms, and provides inventory status (continuously subtracting decay) on each radio pharmaceutical. It also performs dose volume calculations in present and totally variable future time and date. Computer programming skills not required. Write, or call RADX today: 713/468-9628

ISOCORD

AUTOMATIC DATA PRINTER

The RADX Isocord produces a hard copy print out in triplicate for all record keeping needs; by patient name, and selected isotope. Addition of the Isocord will complete your dosecalibrator system for all necessary information including NRC or state record keeping requirements. RADX is the first to offer anything like it at anywhere near its price.

Both the Isotron and the Isocord are compatible with your existing dosecalibrator.

- Complete patient and institution identification – plus time and date
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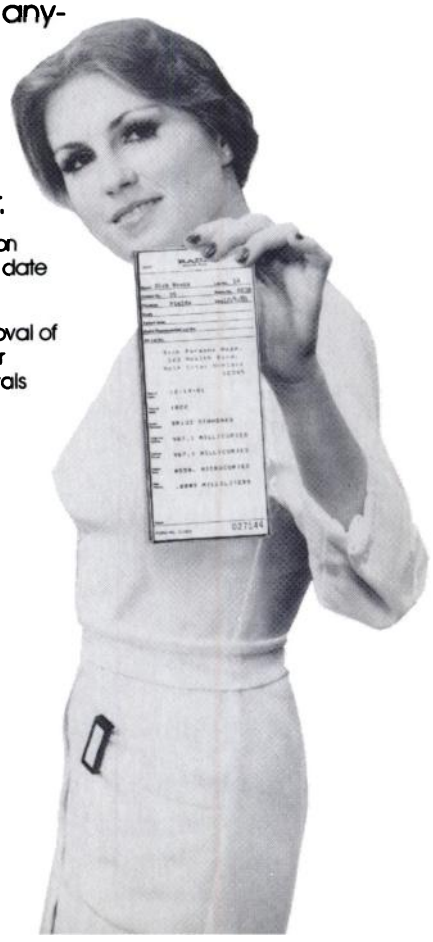
- Volume to administer – automatically calculated
- Information provided in either, Curries or Becquerels.



RADX

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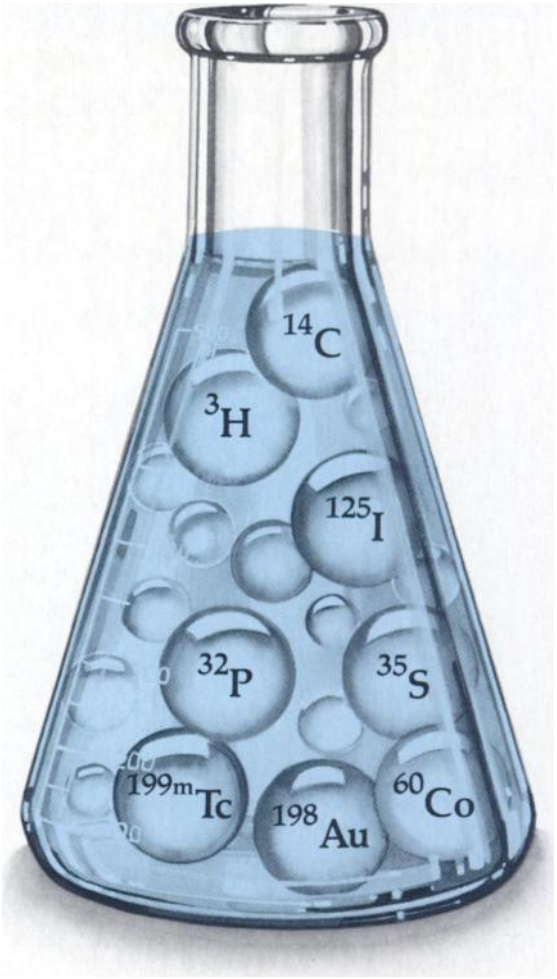
Trustworthy ISOCLEAN® CONCENTRATE

Solubilizes Residual Radioactivity



A *must* for the isotope-using or analytical lab...whenever complete decontamination or analytical cleanliness is crucial. Isoclean solubilizes isotopic activity, whether inorganic or organically-bound, and other trace contaminants from glass, plastic or metallic labware. Freed contaminants disperse into dilute Isoclean just on soaking for safe disposal. Rinsed utensils are activity- and residue-free.

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The difference between ordinary dynamic studies and those made with TOSHIBA's Gammacamera GCA-40A is the difference between guessing and diagnosing with complete assurance. This new model's high count-rate (200 kcp's), excellent resolution, and large field of view (with a window width of 40%) provide the finest quality nuclear image available today.

The GCA-40A also has three special functions which make a positive difference in operation. The Dual Peak function means that the measurement times of multi-peak nuclides are shortened, and confirmed uniformity at each peak promotes the production of high quality images. The Marking function allows any region of interest to be marked on the film and its dimensions may be measured with the scale mark. And the Zooming function allows magnified display of limited regions such as the heart, small sections of internal organs, or the viscera of children.

Simplicity in use also makes a difference, so TOSHIBA's made the GCA-40A easy to position. Changing the lightweight collimators is also easy and quick, and adjusting photomultipliers is no problem at all.

All gammacameras may look alike, but Toshiba's image makes the difference.

So if you think that there is no difference between gammacameras, check out TOSHIBA's GCA-40A and discover the critical difference, the superb image quality and resolution you expect from TOSHIBA, the pioneer in the field of nuclear medicine.

For more information on the GCA-40A or for information on any of TOSHIBA's FAMILY OF IMAGING PRODUCTS, call TOLL FREE (800) 421-1968; in California, (213) 638-5153.

Quality imaging from

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Division of Toshiba America, Inc.
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TOSHIBA MEDICAL SYSTEMS—EUROPE
Fruitweg 5-9
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DOSE CALIBRATOR

Activity Linearity Testing the easy way

Fast

Now with the newly developed Calicheck™ dose calibrator activity linearity test kit, you can meet N.R.C. Regulatory Guide 10.8, appendix D., Section 2E or your state's equivalent requirement in just 4 minutes — not days. You can complete the test in one short sitting and check for linearity virtually at a glance. Plus you eliminate the frustration of having to start the test all over simply because you forgot to take a reading on time.

Accurate and Reliable

The new Calicheck kit is designed to attenuate ^{99m}Tc by known values — accurate using a high yield generator eluant or a unit dose.

A Calicheck kit provides for seven successive measurements simulating the decay of ^{99m}Tc at approximately 0, 6, 12, 20, 30, 40 and 50 hours from the initial assay.

Complete Yet Reusable

Your Calicheck kit comes to you complete with its own storage container, a unique arrangement of seven color-coded lead-wrapped tubes, work/record keeping sheets, instructions for use and a license amendment form (if needed.)

Your Calicheck kit is completely reusable for an indefinite period of time. There is nothing to wear out or use up. If damage should cause a tube to malfunction, individual replacements are available.

Safe

Your use of a Calicheck kit eliminates the need to fractionate eluants or decay the elution for several days while periodically collecting data to determine linearity. Time of potential exposure to radiation is drastically reduced, thereby maintaining exposures ALARA.

Lowers Department Cost

When you test with a Calicheck kit, both the source activity and dose calibrator can be returned to active service in just minutes. This savings alone can pay for a Calicheck kit in just three to four linearity tests. A Calicheck kit lets you return to active service too!

Can Improve Patient Care

A Calicheck kit is so fast, efficient and easy to use, you may wish to check dose calibrator linearity more frequently. Lets you spot trouble before it becomes serious.

Low Price

A Calicheck dose calibrator activity linearity test kit is just $375.00 shipping included.

Just call (216) 663-1773 or write: Calcorp, Inc., P.O. Box 25589, Cleveland, Ohio 44125–0589.

Just four minutes

As simple as 1, 2, 3, 4, 5, 6, 7. Place central tube in the dose calibrator. Place the source in this tube and take a reading. Then sequentially place color-coded tubes over the central tube. Additional readings are taken immediately, converted with a predetermined factor and you can see the degree of linearity virtually at a glance.

May require approval of the Agency issuing your radioactive materials license.

Calicheck™

• DOSE CALIBRATOR ACTIVITY LINEARITY TEST KIT •

Patent pending

Color Monitor
Make dynamic or static images of single or multiple studies in color, monochrome or black and white.

Disk Drive
Store up to 10 megabytes of data in both matrix and list mode.

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Get up to 256 Kb—more than any other system provides without paying extra.

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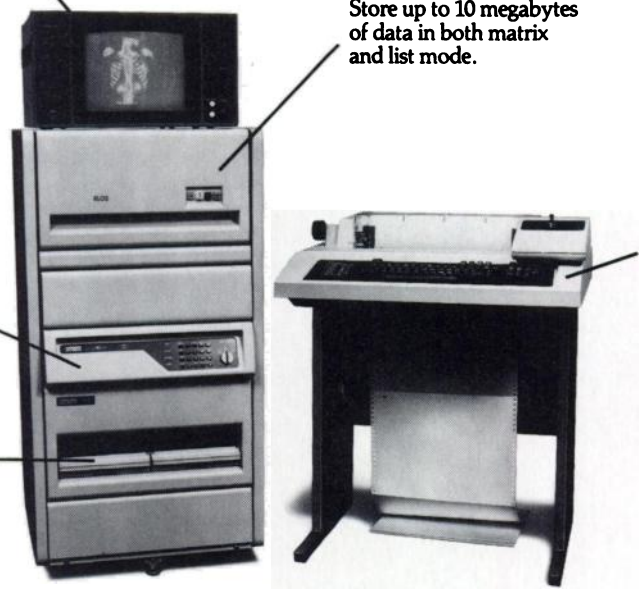
Make crisp, permanent copies for ready reference.

Floppies
Create permanent patient files for quick access to vital data.



Digital's new Gamma-11 delivers five essential features you can get from our competitors.

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Digital's new Gamma-11 offers by far the most complete imaging system available. And at a price no one else can touch.

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For complete details, write **Digital Equipment Corporation,** Medical Systems Group, 428 Main Street, Hudson, MA 01749.

*U.S. price only

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Rendez-vous in Paris

The champagne is cooling and waiting for you at our stand N° T-30 at the 3rd Congress of the World Federation of Nuclear Medicine and Biology in Paris August 29 – September 2, 1982.

Come and join us!

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PHARMATOPES
VS.
OTHER DELIVERY SYSTEMS

LET US PRESENT OUR CASE:

WHEREAS, it is in the best interest of all radiation workers to keep their radiation exposure as low as reasonably achievable;

WHEREAS, it is in the best interest of all institutions to keep costs as low as reasonably achievable;

WHEREAS, it is in the best interest of Nuclear Medicine Physicians to interpret studies performed with quality controlled radiopharmaceuticals, delivered when they need them;

WHEREAS, it would benefit all the aforementioned parties to utilize a unit dose service that is simple, safe, and efficient;

NOW, THEREFORE, BE IT RESOLVED that Pharmatopes, Inc. will provide all the above services at a fair, just, and equitable price.

For a presentation of our case, please call your local representative.

Pharmatopes, Inc.

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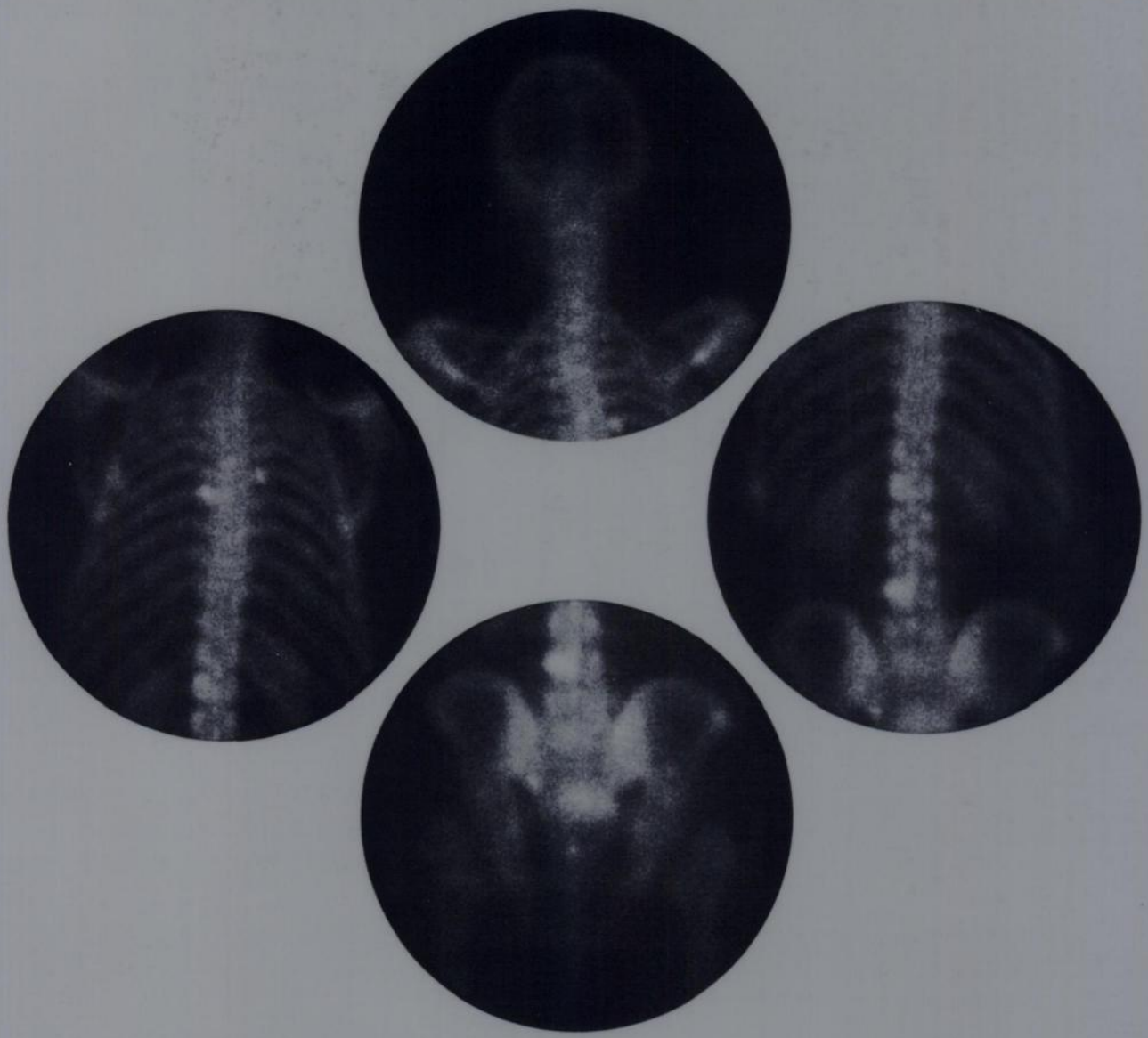
WE REST OUR CASE

Leadership images...



Posterior study, 2 hours postinjection, in 65-year-old male shows multiple areas of abnormal uptake. From Cedars-Sinai Medical Center.

OSTEOLITE™

Technetium Tc 99m Medronate Sodium Kit (MDP)

from the leader in nuclear medicine

NEN® New England Nuclear
a Du Pont company

Please see following page for brief summary of prescribing information.

OSTEOLITE™

Technetium Tc 99m Medronate Sodium Kit (MDP)

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 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 any 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 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.

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 feeding.

Pediatric Use. Safety and effectiveness in children below the age of 18 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: Although adverse reactions have not been reported that are specifically attributable to the use of Technetium Tc 99m Medronate, allergic dermatological manifestations (erythema) have been infrequently reported with other similar agents.

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 (70kg) is:

Bone imaging: 10-20mCi Technetium Tc 99m Medronate
Scanning post-injection is optimal at about 1-4 hours

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

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

Medronate Disodium–10mg
Total Stannous and Stannic Chloride–1mg
Stannous Chloride ($SnCl_2 \cdot 2H_2O$) (minimum)–0.5mg

Prior to lyophilization, the pH is adjusted to between 7.0-7.5 with hydrochloric acid and/or sodium hydroxide solution. The contents of the vial are lyophilized and stored under nitrogen. Store at room temperature (15°-30°C) before and after reconstitution. 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 components of the Technetium Tc 99m Medronate 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.

Technetium Tc 99m Medronate is prepared by adding 2-8ml of oxidant-free sodium pertechnetate Tc 99m solution to the vial and swirling for about one minute. Shielding should be utilized when preparing the Technetium Tc 99m Medronate.

Catalog Number NRP-420 (5-Vial Kit)
Catalog Number NRP-420C (30-Vial Kit)

December 1981

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Scintigram is only faintly positive shortly after suspected MI.

3 days/Ant.
Intensified activity clearly indicates anterolateral and apical MI.

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Markedly decreased activity, probably due to constantly changing pathophysiology of infarcted tissue.

"...SERIAL MYOCARDIAL IMAGES MUST BE OBTAINED in order to derive maximal information from the test."[1]

After performing technetium Tc 99m pyrophosphate myocardial scintigraphy on more than 3,000 patients, a group of clinicians has reported that *"Our rewarding experience utilizing this particular imaging technique has been almost certainly the result of our utilization of serial myocardial imaging..."*[1]

The accuracy of serial myocardial imaging as an adjunct in the diagnosis of acute myocardial infarction is well-established. In another recent study, researchers *"...have found less than 4% false negative scintigrams when imaging is performed during optimal timing postinfarction and serial ^{99m}Tc-PYP myocardial imaging is performed. Other groups have reported 5%-10% false negative results, but this is often without the benefit of serial myocardial imaging."*[2]

For a reprint of the papers cited here plus more information about TechneScan PYP, just call your Mallinckrodt sales representative or call 800-325-8181 toll free. (In Missouri, 314-895-2405 collect)

For brief summary see opposite page.

TechneScan® PYP®
Technetium Tc 99m Pyrophosphate Kit

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Technetium Tc 99m Pyrophosphate Kit

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 by 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 Pyrophosphate Injection. **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
Technetium Tc 99m Pyrophosphate Kit.

Kit Contains:

5—Stannous Pyrophosphate Reaction Vials for the preparation of Technetium Tc 99m Pyrophosphate Injection.

Reaction Vial Contains In lyophilized form:

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

5—Radioassay Information String Tags.

FOOTNOTES:

1 Willerson JT, Parkey RW, Buja LM, Bonte FJ: Are 99mTc-stannous pyrophosphate myocardial scintigrams clinically useful? Clin Nucl Med 2:161, 1977.

2 Parkey RW, Bonte FJ, Buja LM, Stokely EM, Willerson JT: Myocardial infarct imaging with Technetium-99m phosphates. Sem Nucl Med 7:1, 1977.

Heart chamber illustration inspired by photos by Lennart Nilsson.

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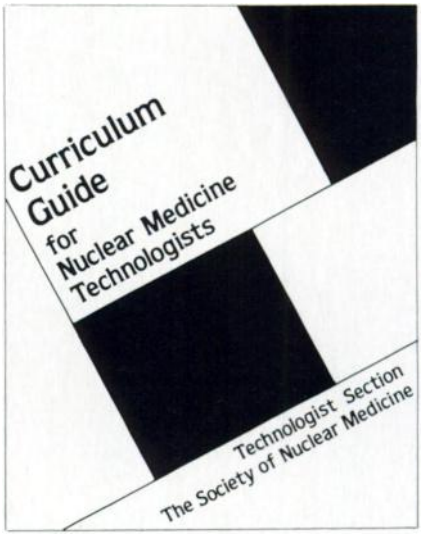

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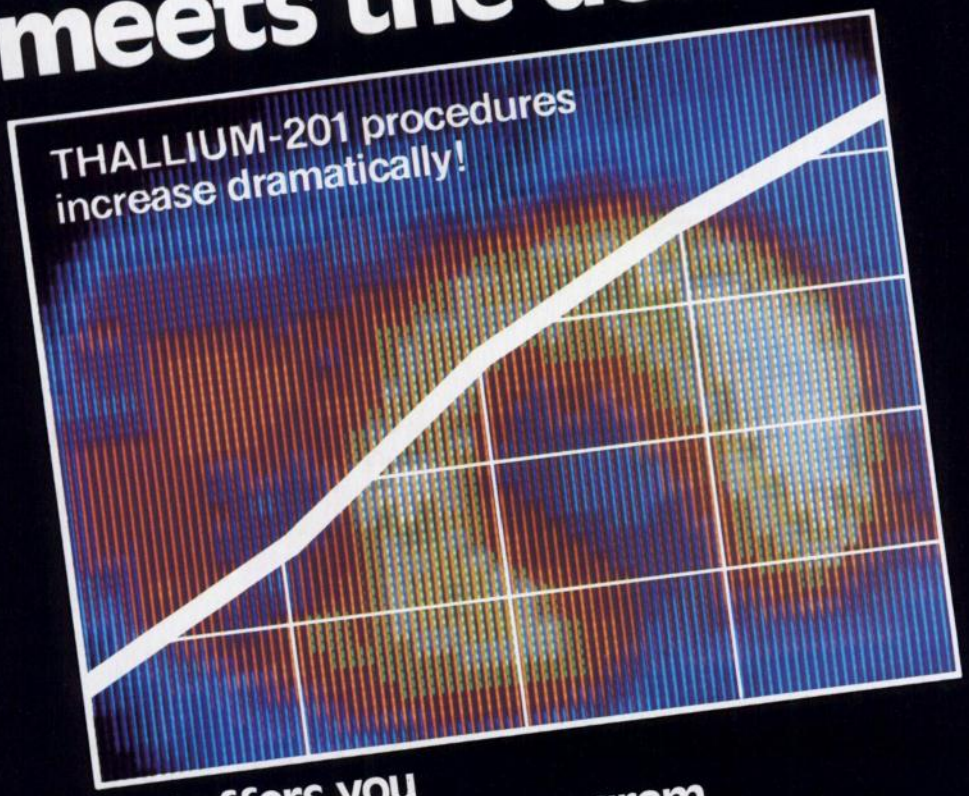

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*Diagnostic Imaging, June 1981

See brief summary on adjacent page.

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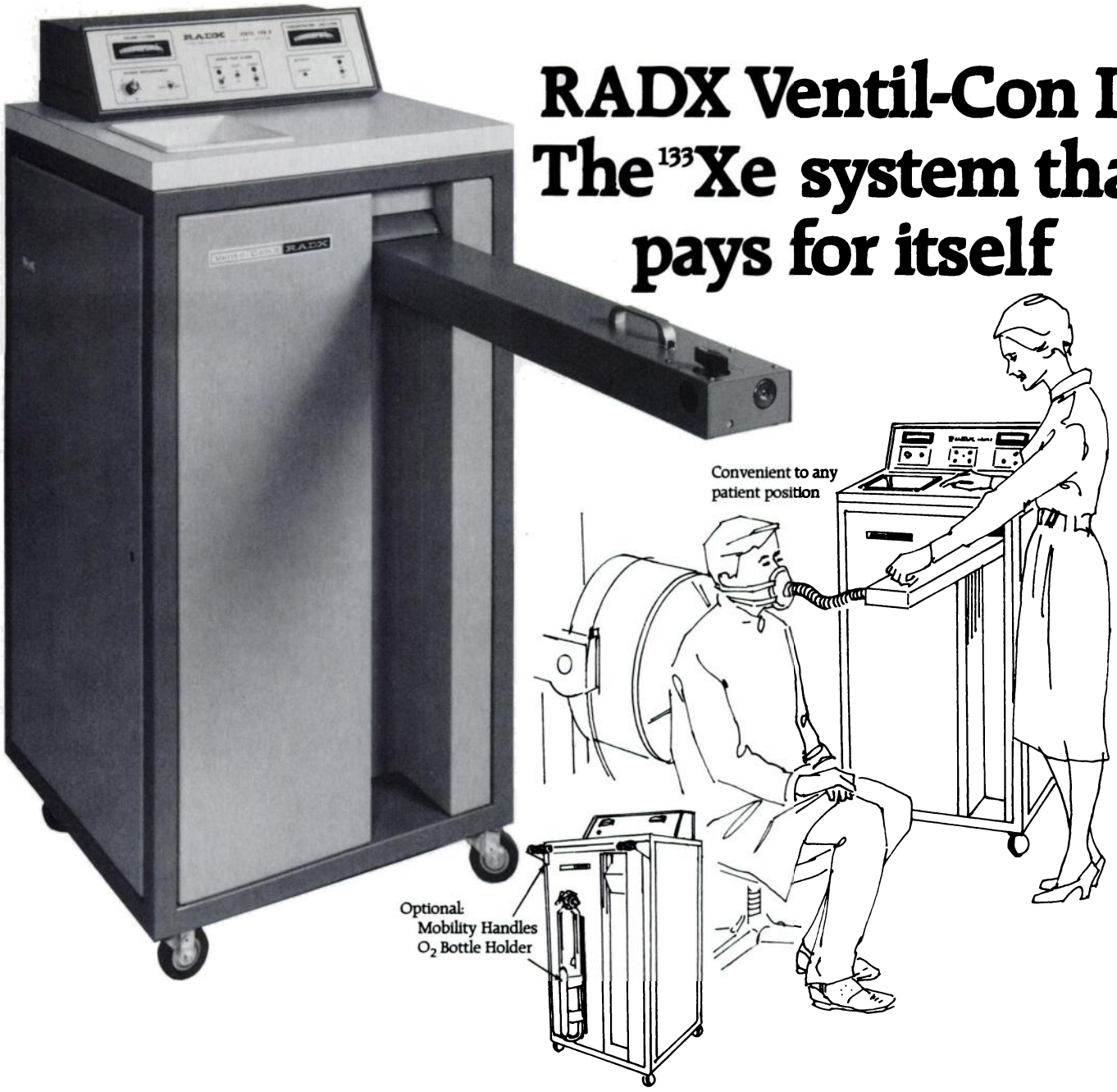

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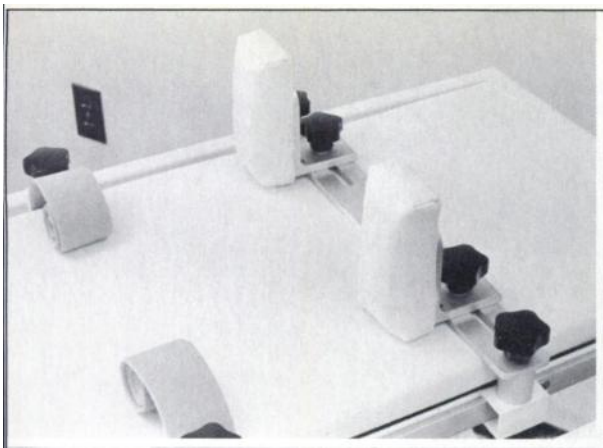

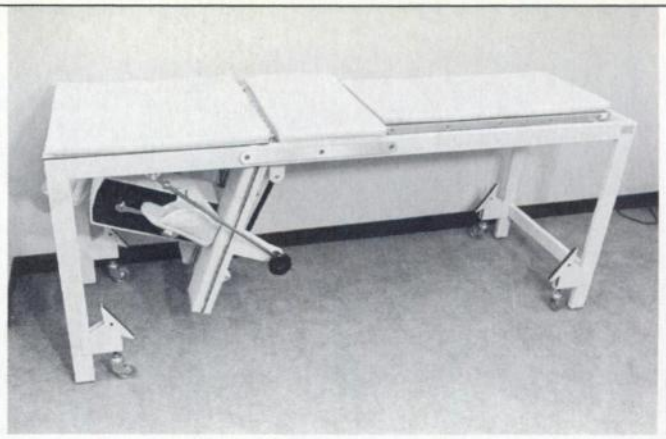

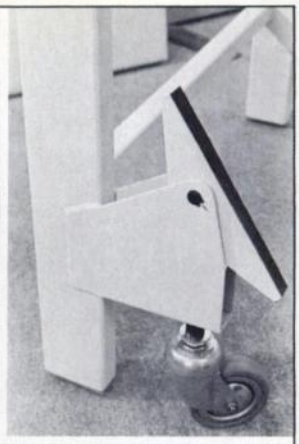

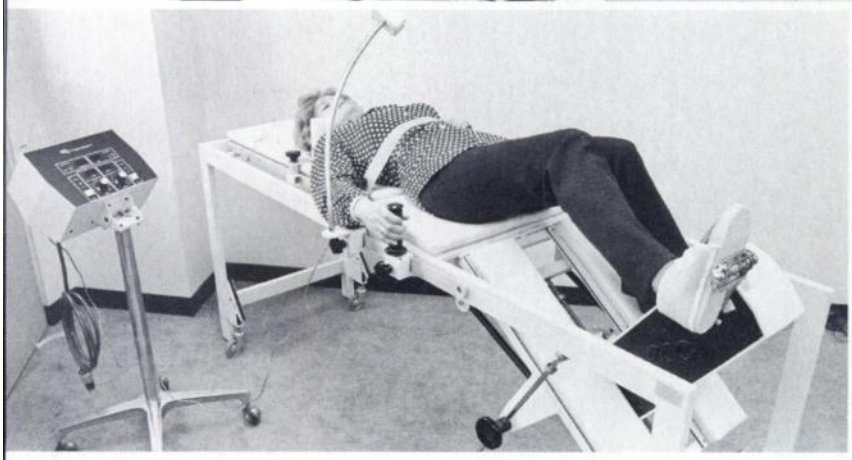

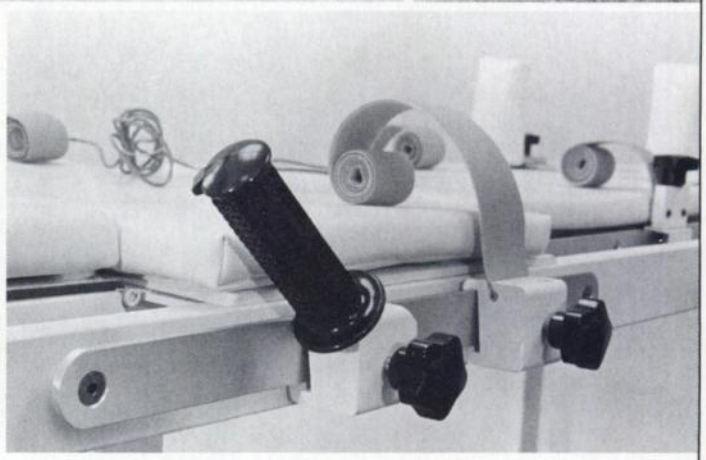

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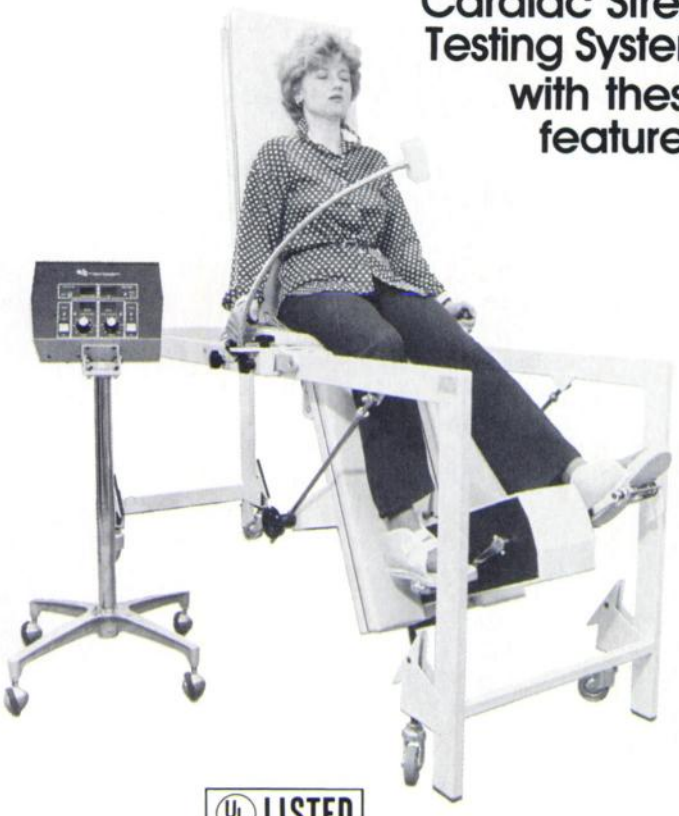

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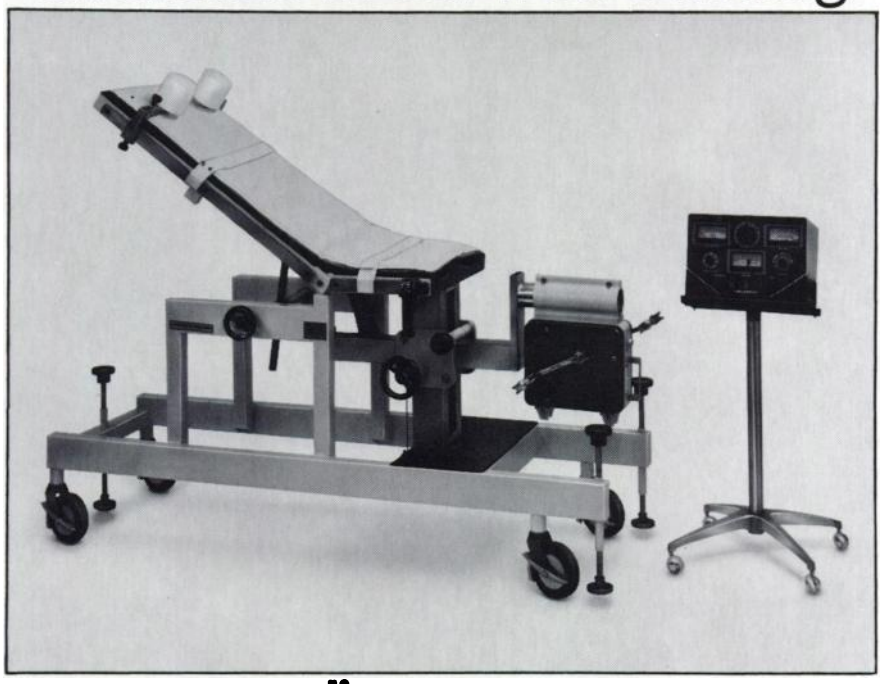

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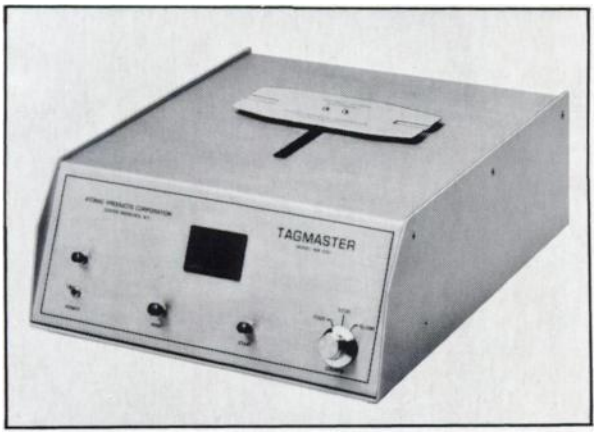

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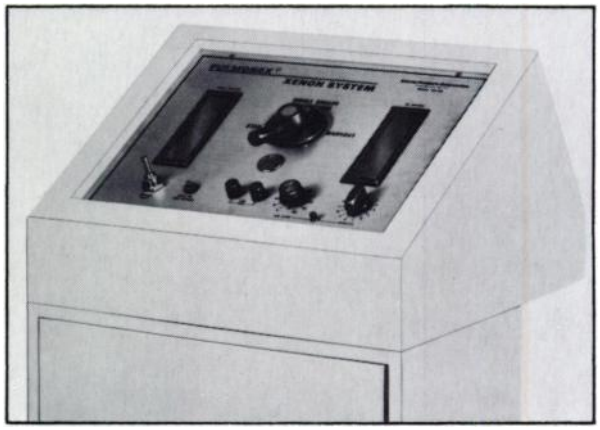

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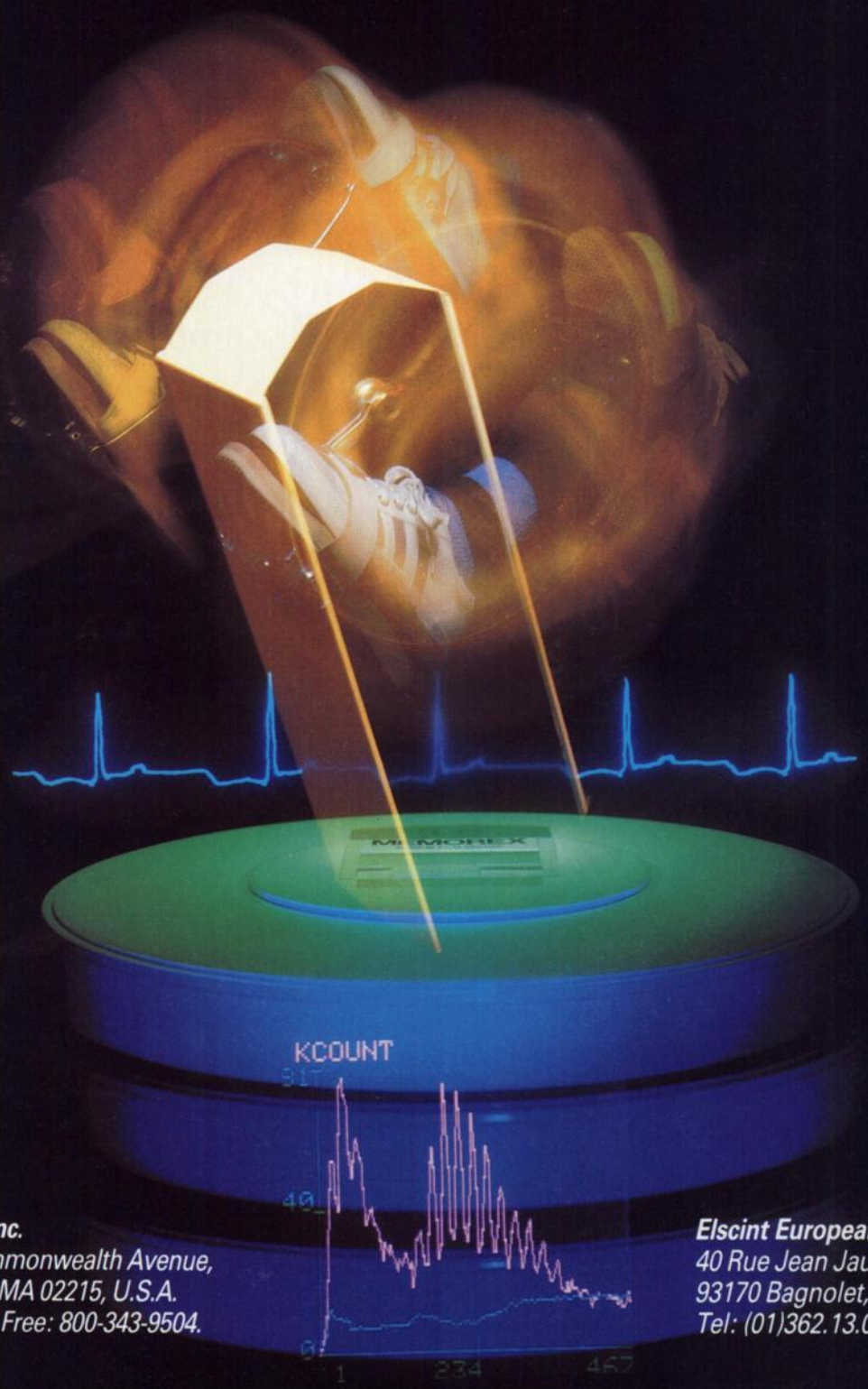

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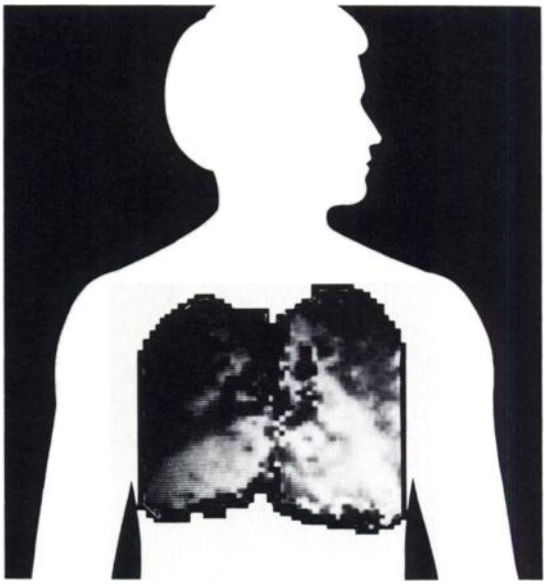

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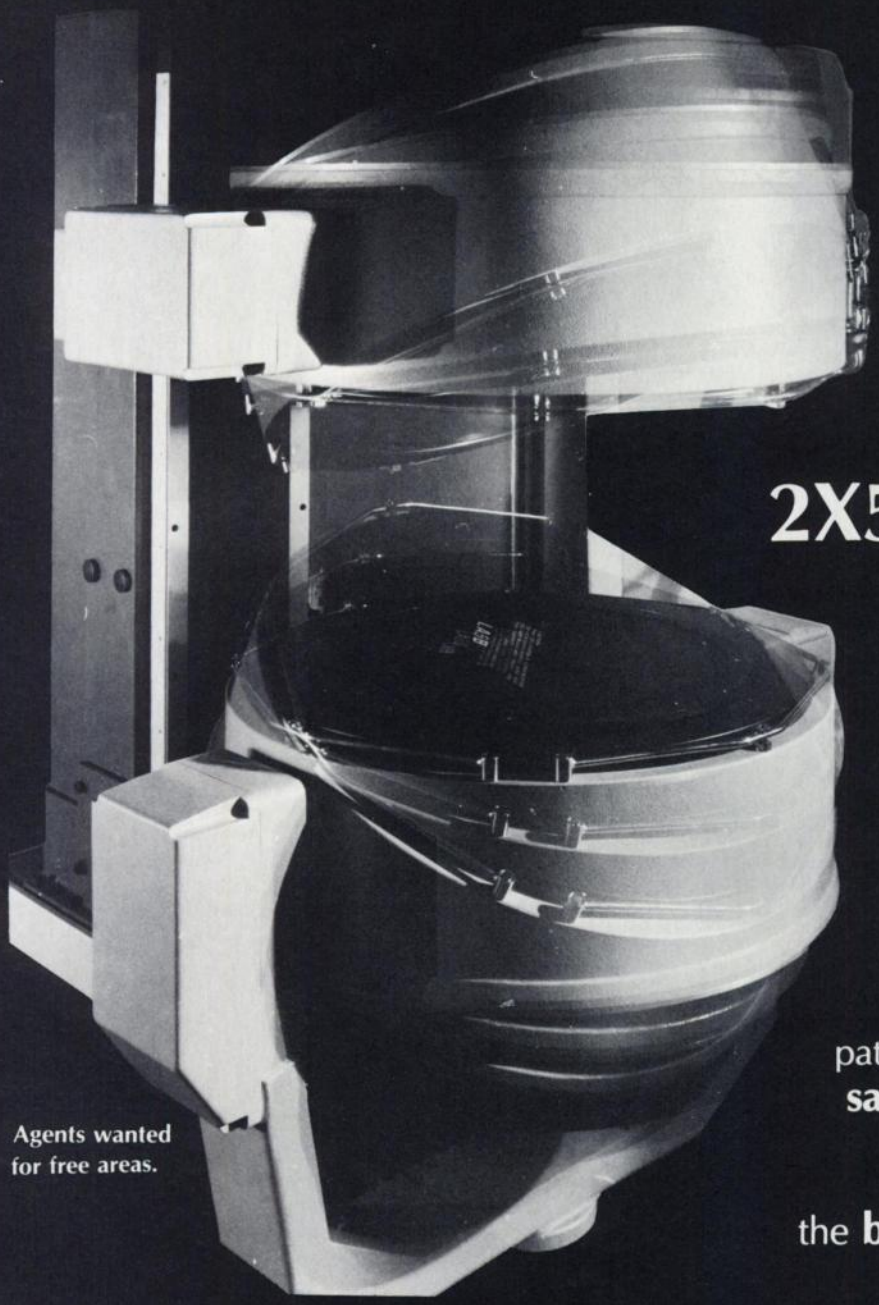

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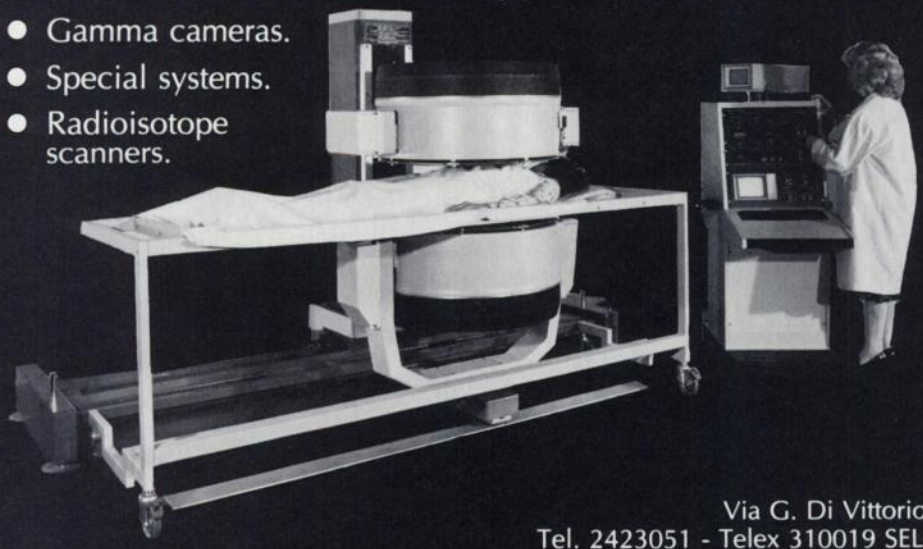

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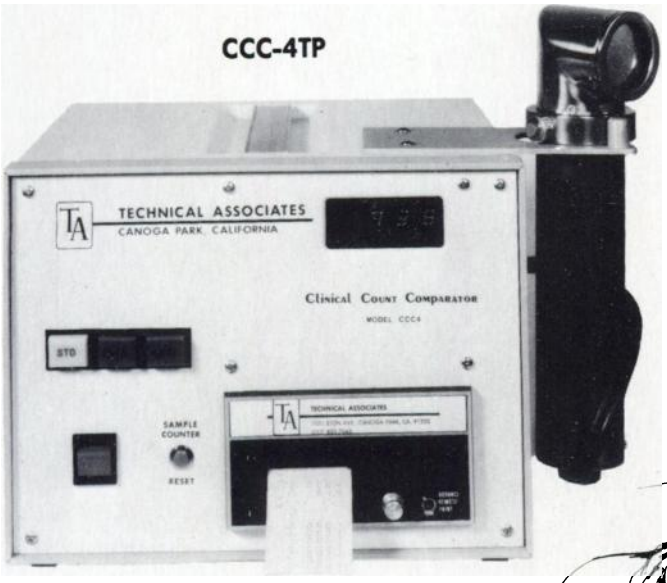

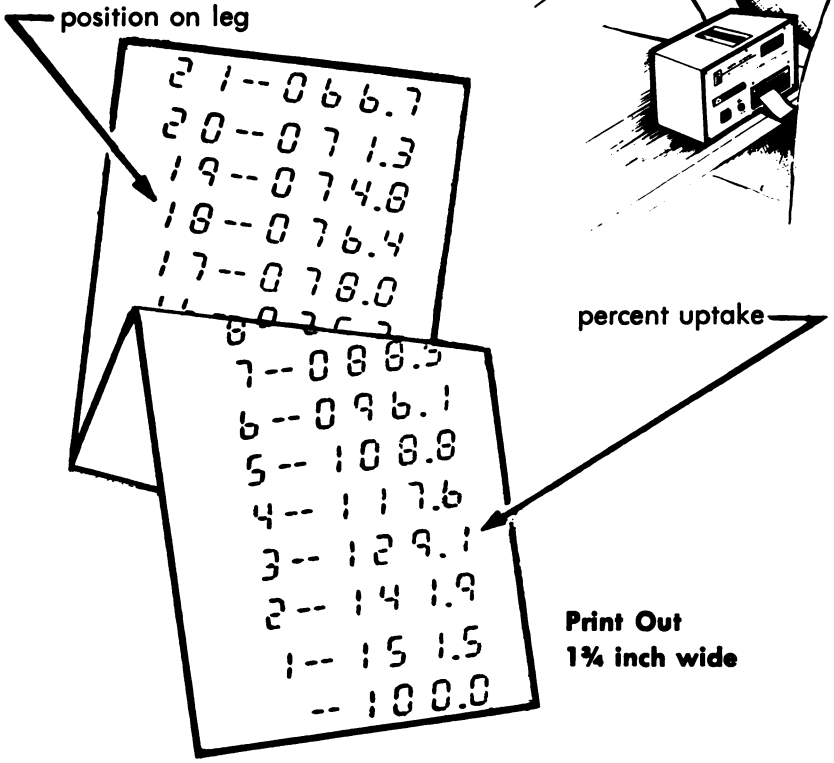

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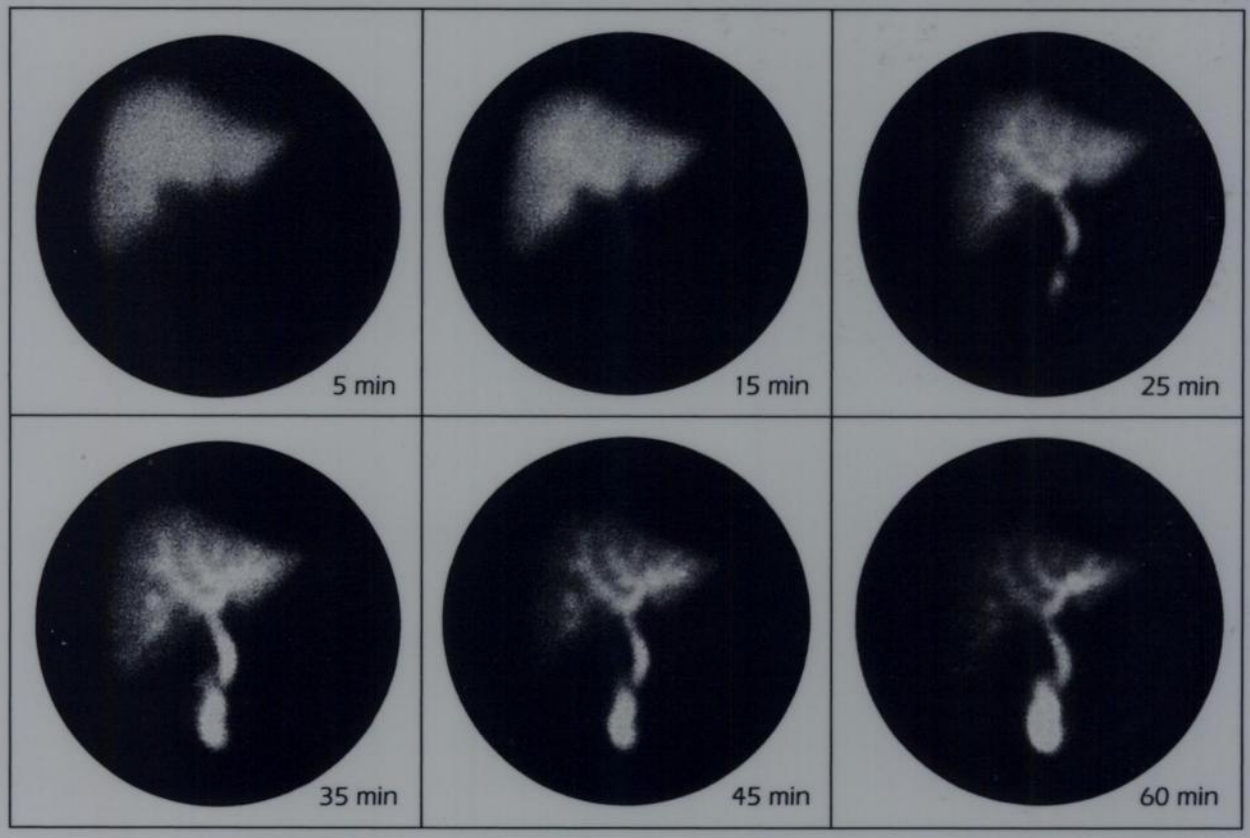

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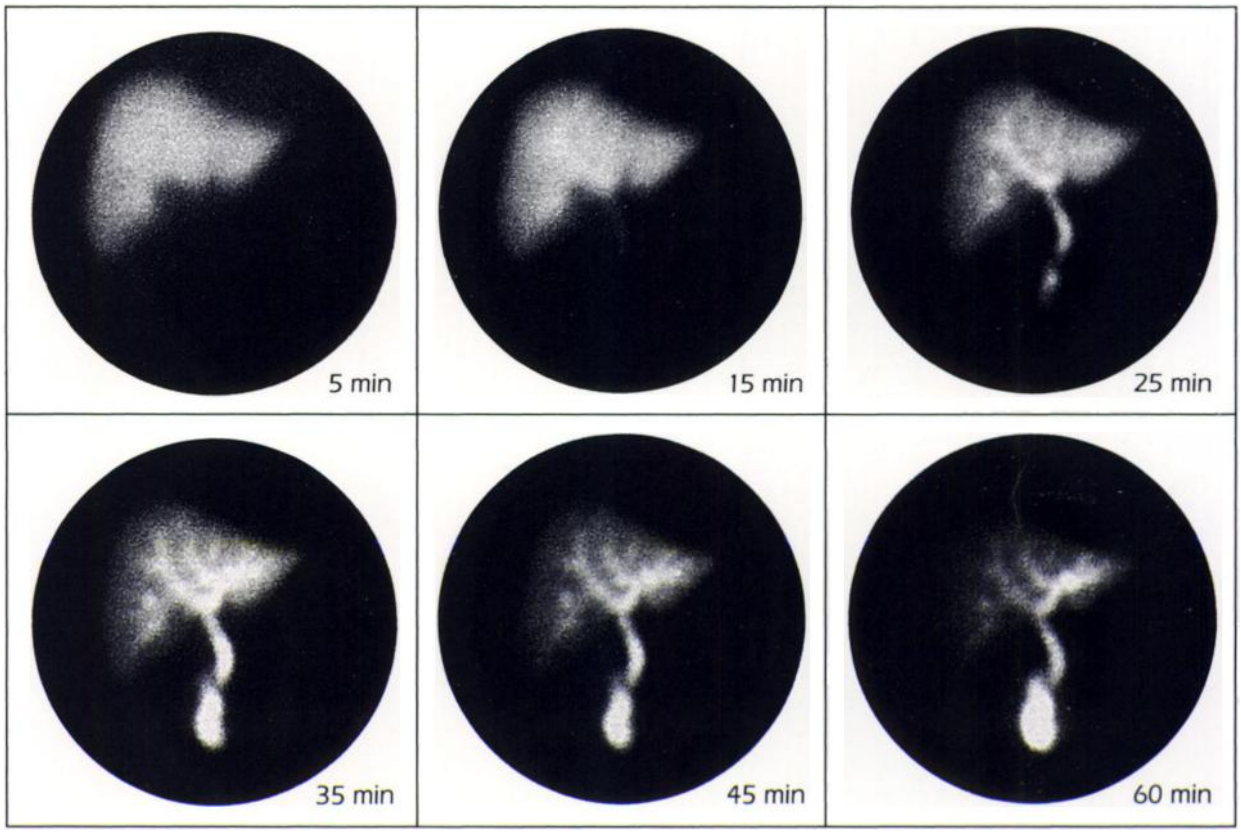

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Wistow et al[3]

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Read et al[4]

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"Tc-99m DISIDA [Hepatolite] appears to incorporate the best properties of all the currently available IDA analogs... it is the only IDA derivative that a "hot lab" would need to stock."
Weissmann et al[5]

References

1. Weissmann HS, Badia JD, Hall T, abstracted: J Nucl Med 21:18, 1980.
2. Hernandez M, Rosenthall L: Clin Nucl Med 5:159, 1980.
3. Wistow BW, Subramanian G, Gagne GM, et al: Radiology 128:793, 1978.
4. Read ME, Teates CD, Croft BY, et al: In press.
5. Weissmann HS, Sugarman LA, Freeman LM, in Freeman LM, Weissmann HS (eds): Nuclear Medicine Annual 1981. New York, Raven Press, 1981, pp 35-89.

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"Hepatobiliary Imaging in the Diagnosis of Acute Cholecystitis"

Program Faculty
Leonard M. Freeman, MD
Robert E. Henkin, MD
James H. Thrall, MD
Heidi S. Weissmann, MD

HEPATOLITE™
Technetium Tc 99m Disofenin Kit

INDICATIONS AND USAGE: Technetium Tc 99m Disofenin is indicated as a hepatobiliary imaging agent

CONTRAINDICATIONS: None known.

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

PRECAUTIONS: Contents of the vial are intended only for use in the preparation of Technetium Tc 99m Disofenin and are NOT to be administered directly to the patient

Technetium Tc 99m Disofenin 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.

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

Carcinogenesis, Mutagenesis, Impairment of Fertility

No long term animal studies have been performed to evaluate carcinogenic potential or whether Technetium Tc 99m Disofenin affects fertility in males or females

Pregnancy Category C

Animal reproductive studies have not been conducted with Technetium Tc 99m Disofenin. It is also not known whether Technetium Tc 99m Disofenin 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 feeding.

Pediatric Use

Safety and effectiveness in children below the age of 18 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 Disofenin 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 (70kg) is:

Non-Jaundiced patient:	1-5mCi
Patients with serum bilirubin level greater than 5mg/dl:	3-8mCi

The patient dose should be measured by a suitable radioactivity calibration system immediately prior to patient administration. (If blood is drawn into the syringe, any unnecessary delay prior to injection may lead to clot formation in situ.) Do not backflush the syringe, slow injection is recommended. Radiochemical purity should be checked prior to patient administration.

The patient should be in a fasting state; 4 hours is preferable. False positives (non-visualization) may result if the gall bladder has been emptied by ingestion of food.

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

HOW SUPPLIED: NEN's HEPATOLITE™, Technetium Tc 99m Disofenin Kit is supplied in kits of five (5) and thirty (30) vials, sterile and pyrogen-free, each vial containing in lyophilized form:

Disofenin	20mg
Stannous Chloride ($SnCl_2 \cdot 2H_2O$) (Minimum)	0.24 mg
Total Tin, Maximum (as stannous chloride, $SnCl_2 \cdot 2H_2O$)	0.6mg

The pH is adjusted to between 5.5-6.5 with hydrochloric acid and/or sodium hydroxide solution prior to lyophilization. The contents of the vial were lyophilized under nitrogen. Store at room temperature (15°-30°C) before and after reconstitution. Protect from light. The lyophilized drug product is light sensitive. Technetium Tc 99m Disofenin contains no preservatives. 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.

The components of the Technetium Tc 99m Disofenin 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.

Technetium Tc 99m Disofenin is prepared by adding no more than 100 millicuries of additive-free sterile, non-pyrogenic sodium pertechnetate Tc 99m solution in 2-5ml (≥20mCi/ml) to the vial and swirling for about one minute. Shielding should be utilized when preparing the Technetium Tc 99m Disofenin.

Catalog Number NRP-475 (5 vial kit)
Catalog Number NRP-475C (30 vial kit) February 1982

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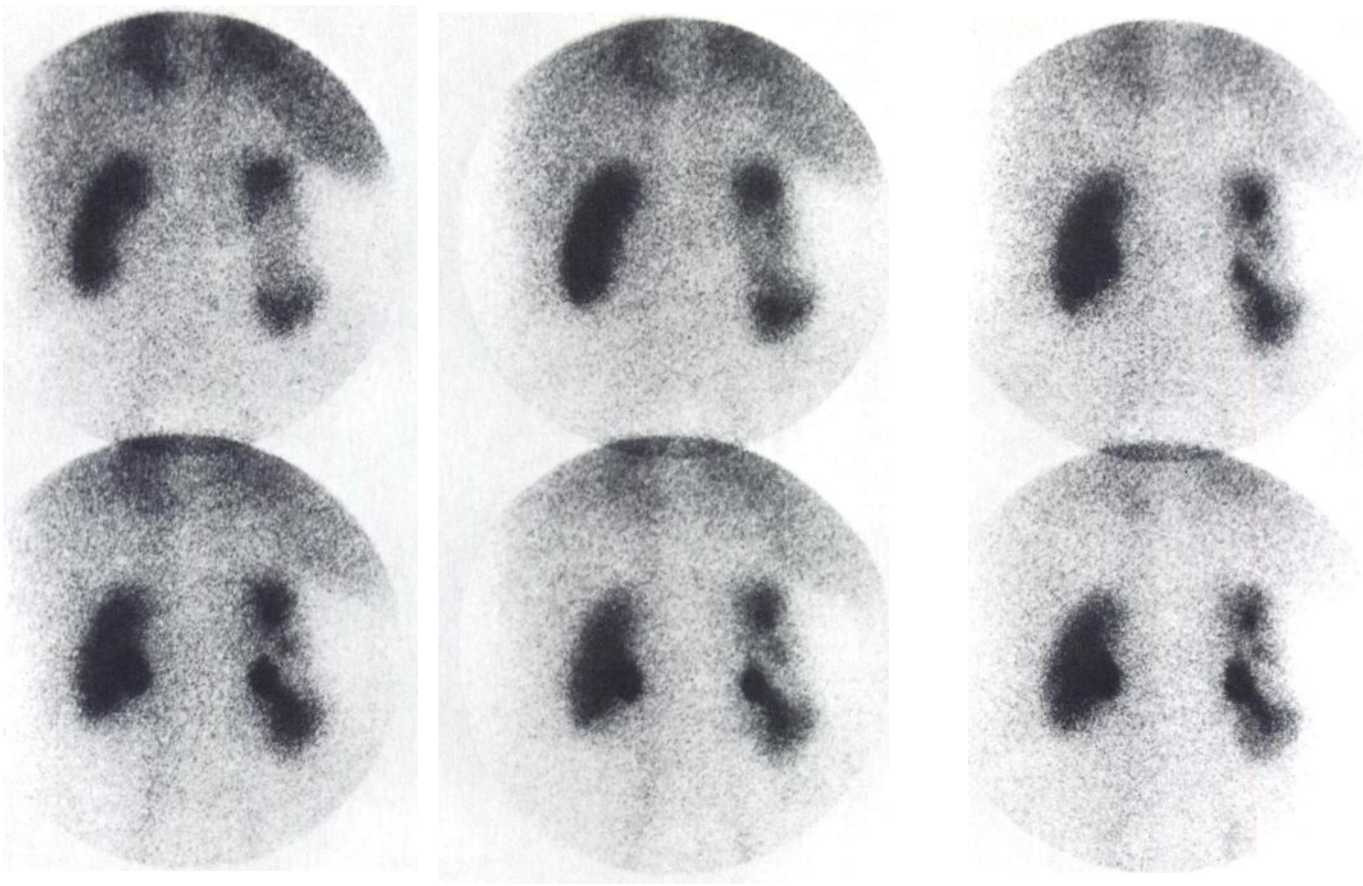

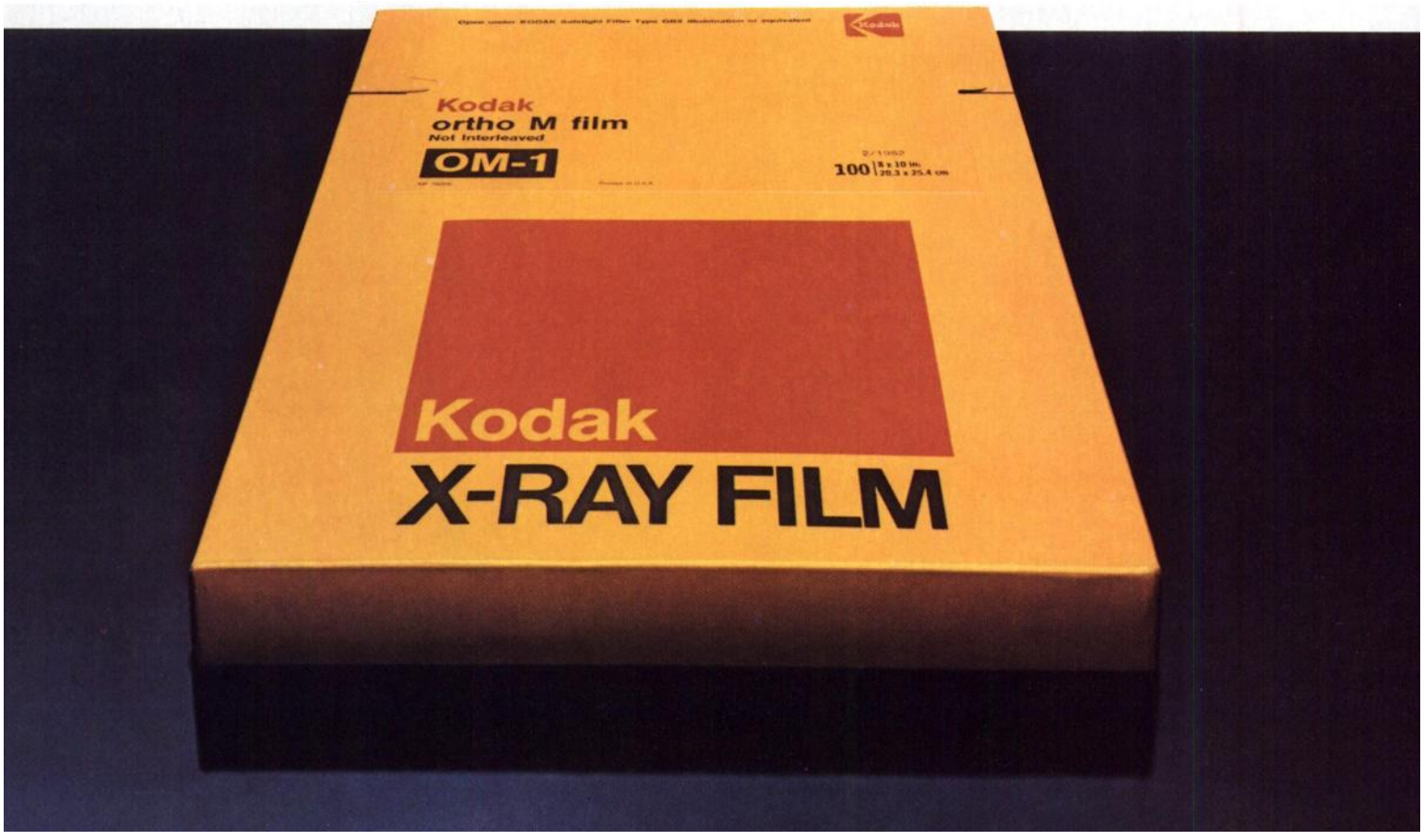
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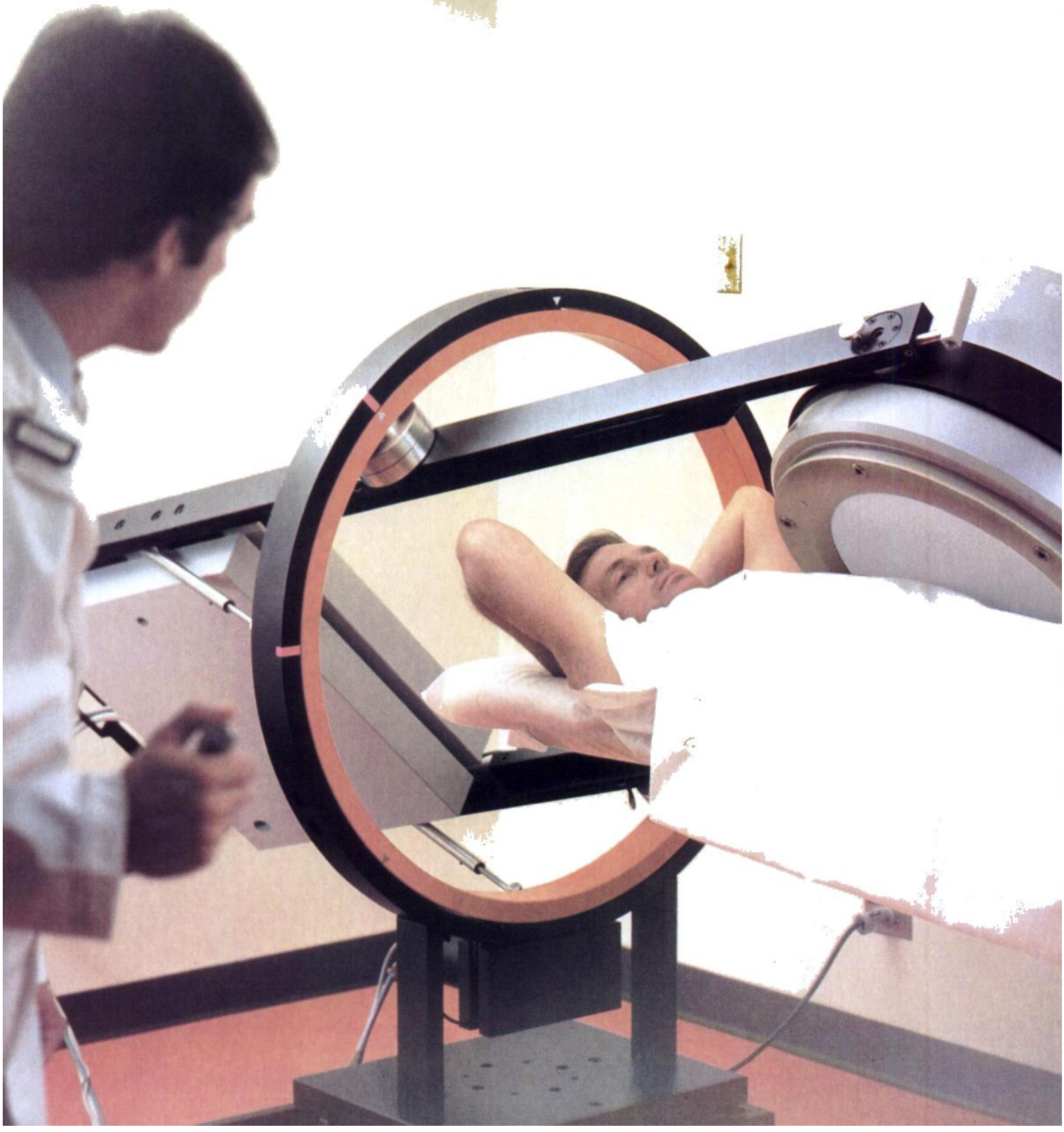

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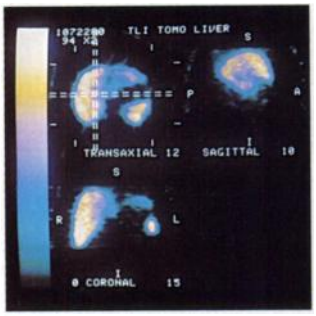

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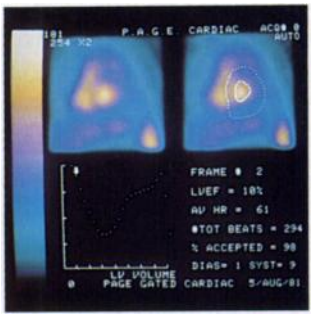

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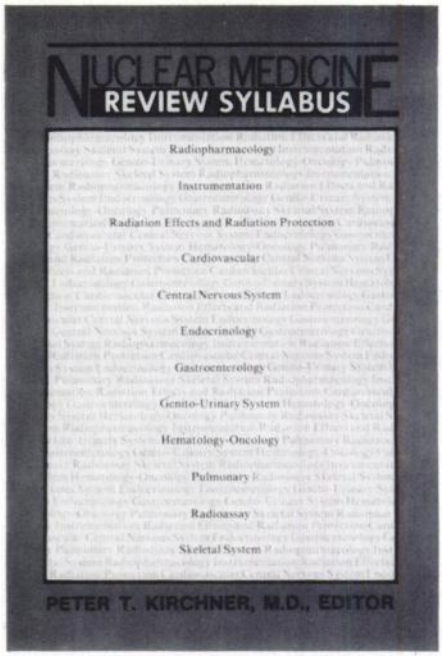

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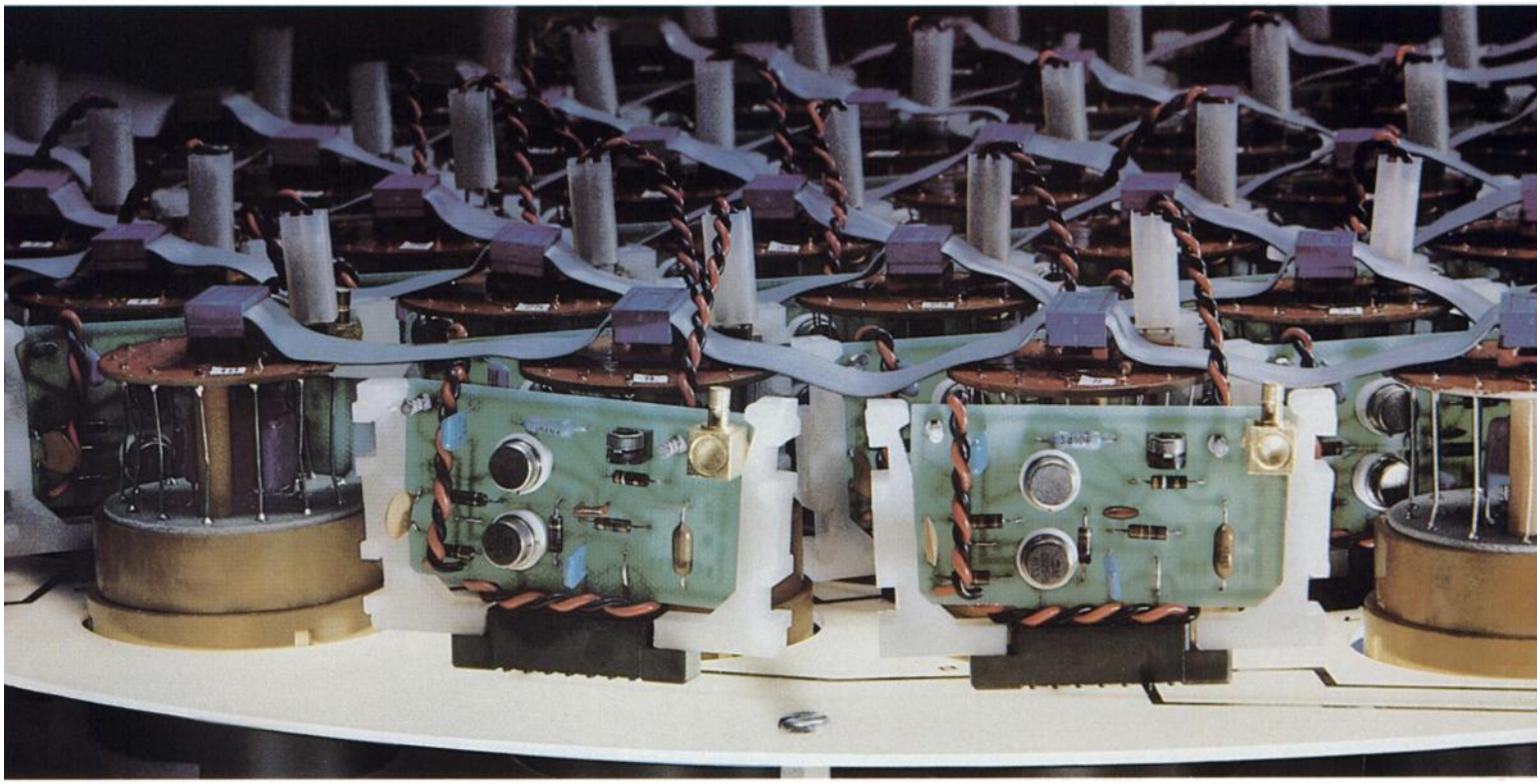

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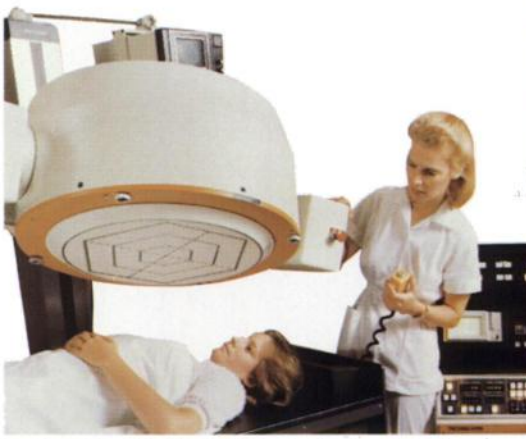

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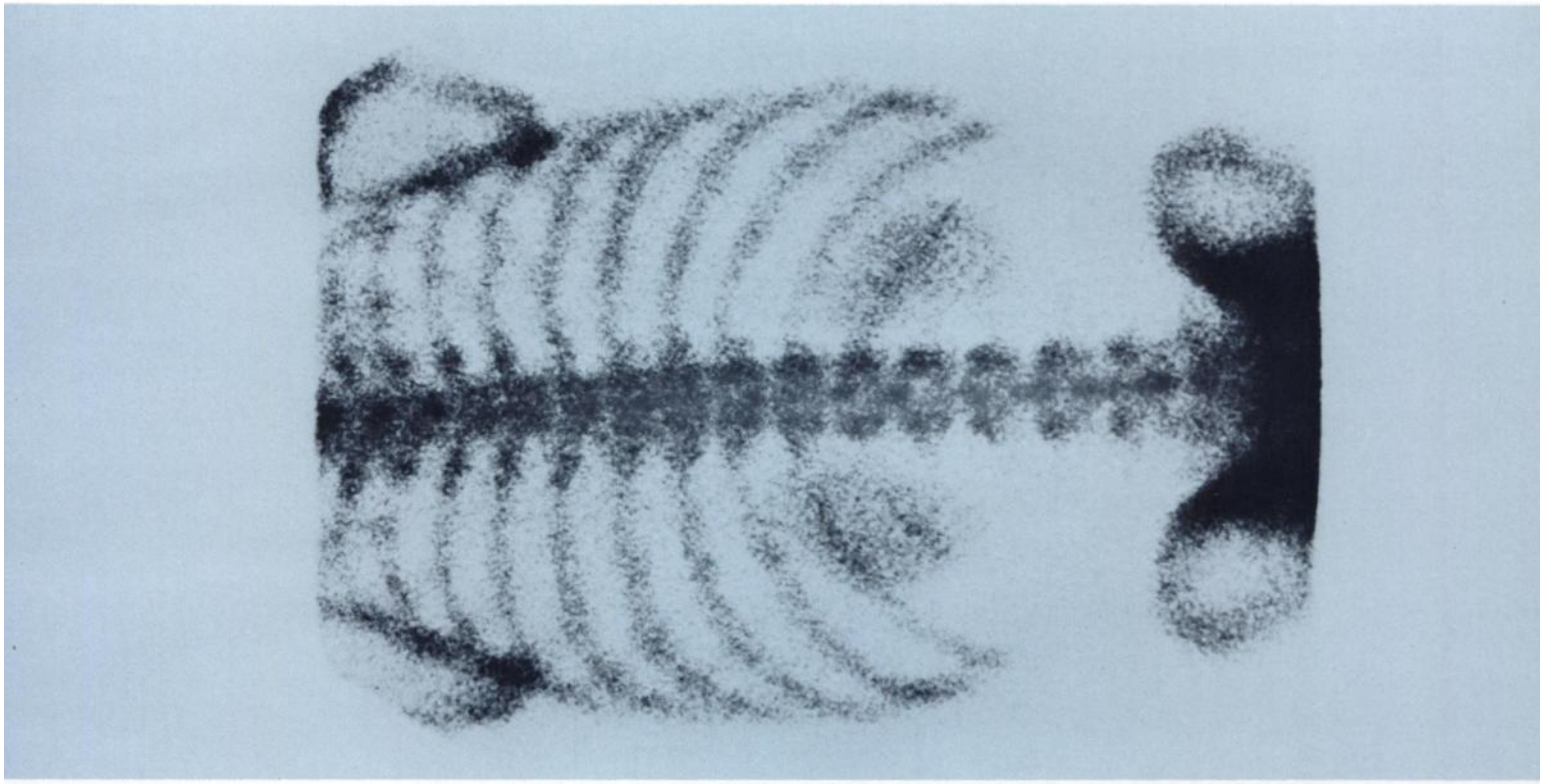

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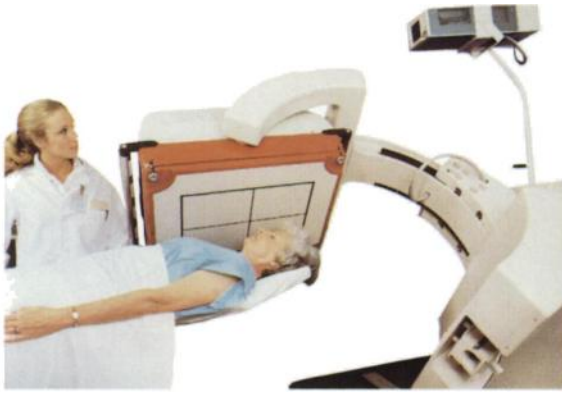

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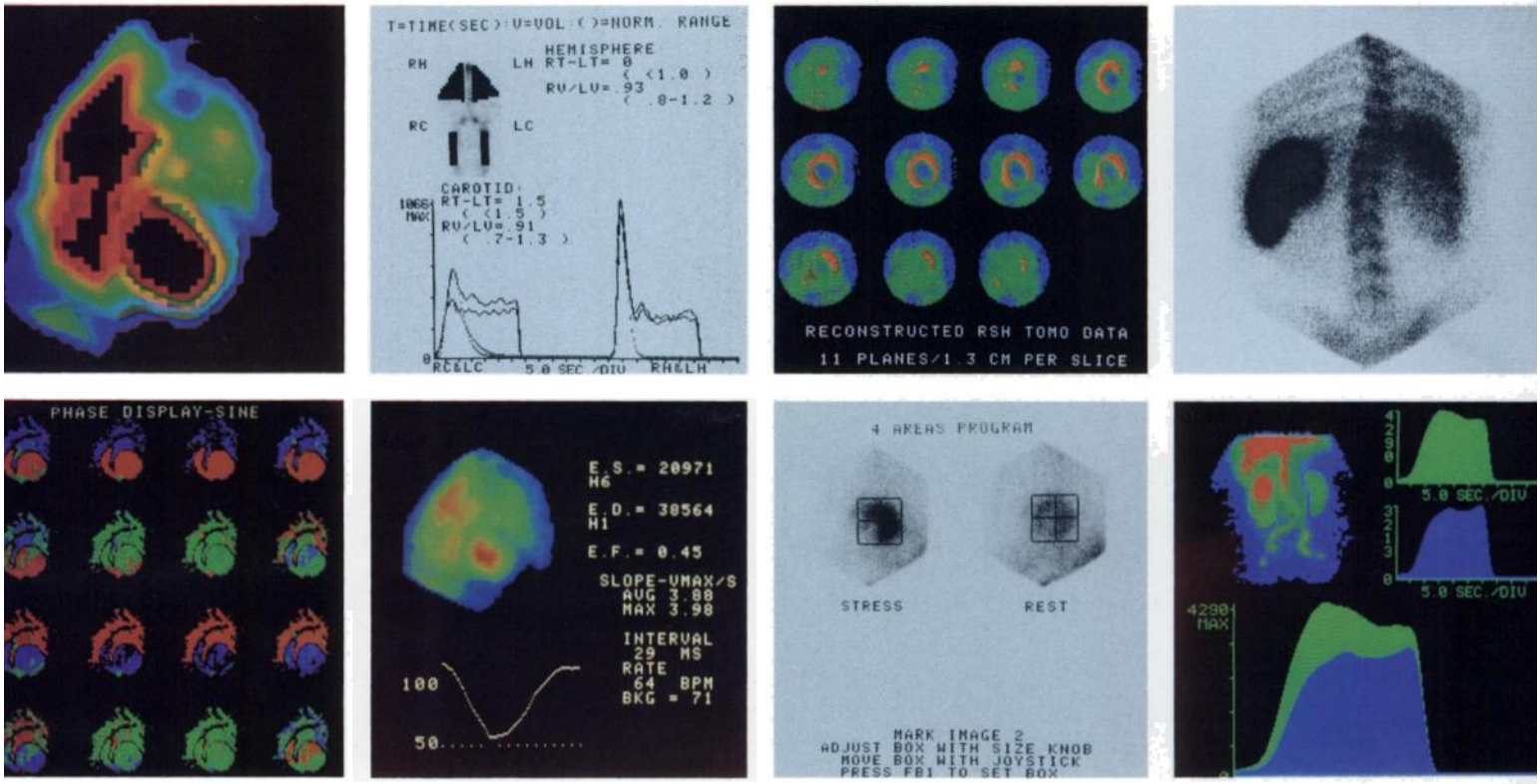

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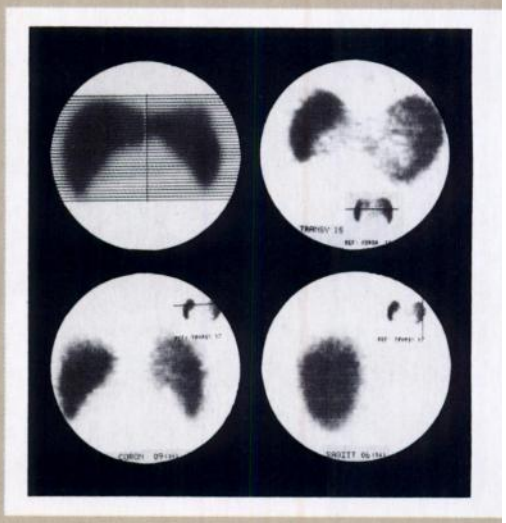

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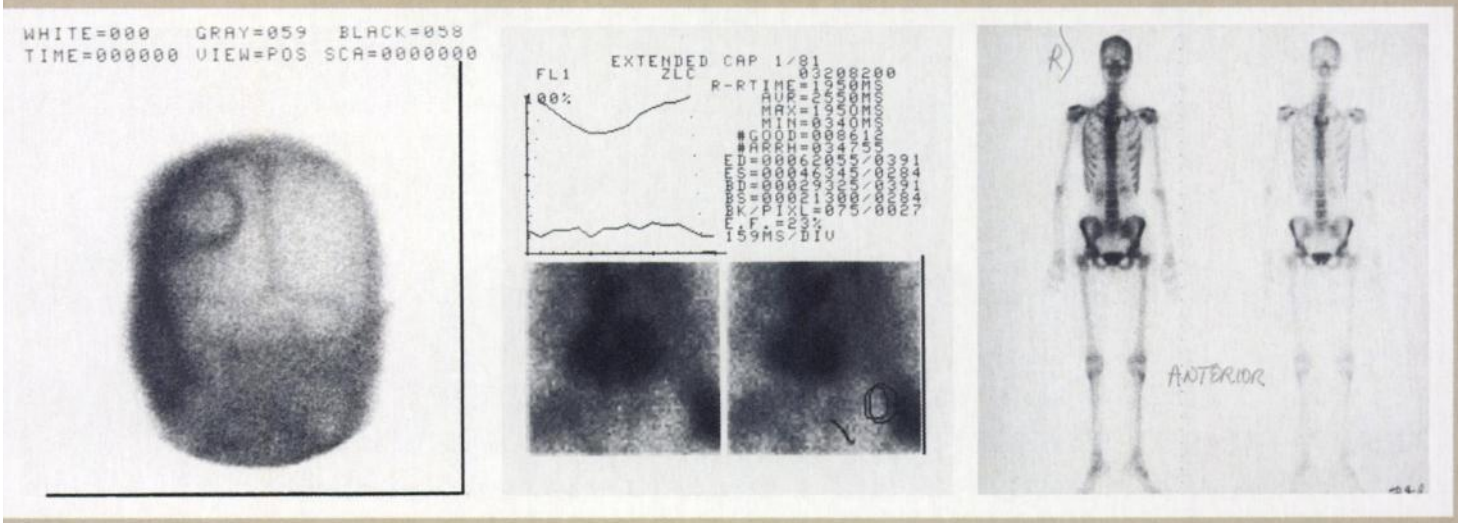

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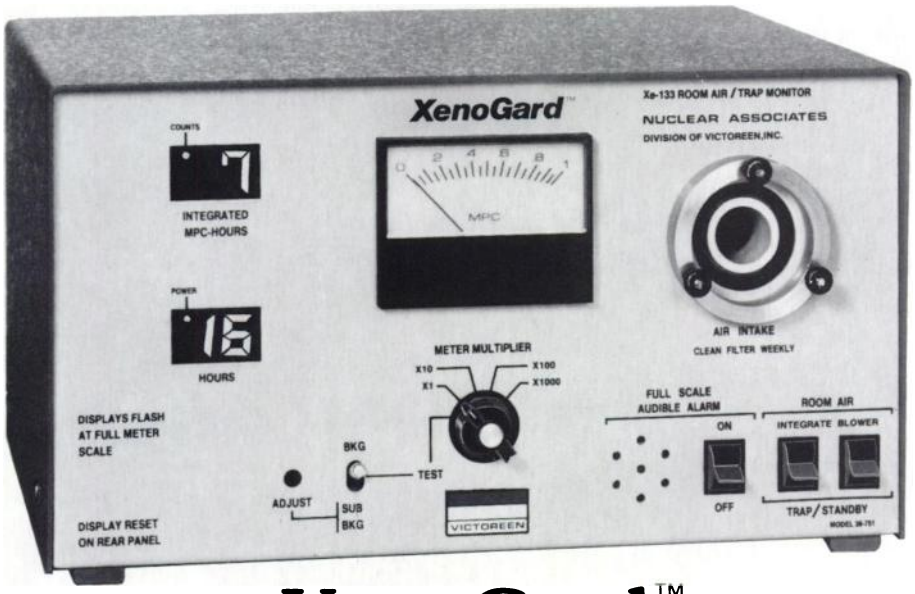

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†*10 CFR, Part 20, Sec. 20.103 and Appendix B, Table 1.*

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For more information, write or call: Joan A. Becker, M.B.A., R.T.-R, The George Washington University, School of Medicine and Health Sciences, 2300 Eye Street, NW, Washington, DC 20037; (202)676-3650.

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SI-3 Dynamic Brain Imaging
P. Hoffer, A. Gottschalk, J.L. Quinn III, and R. Henkin

SI-4 Dynamic Renal Studies
Robert Polcyn

SI-5 Lung Imaging
Naomi Alazraki

SI-6 Thydoid Scanning
Samuel Halpern

SI-8 Skeletal Imaging (Revised in 1980)
Robert O'Mara

SI-9 Thyroid Uptake Testing
David Charkes

SI-10 Radionuclide Cisternography in Adult Hydrocephalus
John Harbert

SI-11 Technetium-99m
Thomas S. Gnau

SI-12 Evaluation of Imaging Performance
Martin L. Nusynowitz

SI-13 Radioactive "Decay" Processes Related to Nuclear Medicine
R. Eugene Johnston

SI-14 Radiopharmaceuticals for Tumor and Adrenal Scanning
Samuel Halpern

SI-15 Scintillation Cameras
Bryan Westerman

*SI-16 Scintillation Spectrometers and Pulse Height Analysis (1980)
Robert Zimmerman and William Kaplan

SI-17 Radionuclide Liver Imaging (Available August 1982)
James D. Ball and Robert J. Cowan

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Glen W. Hamilton

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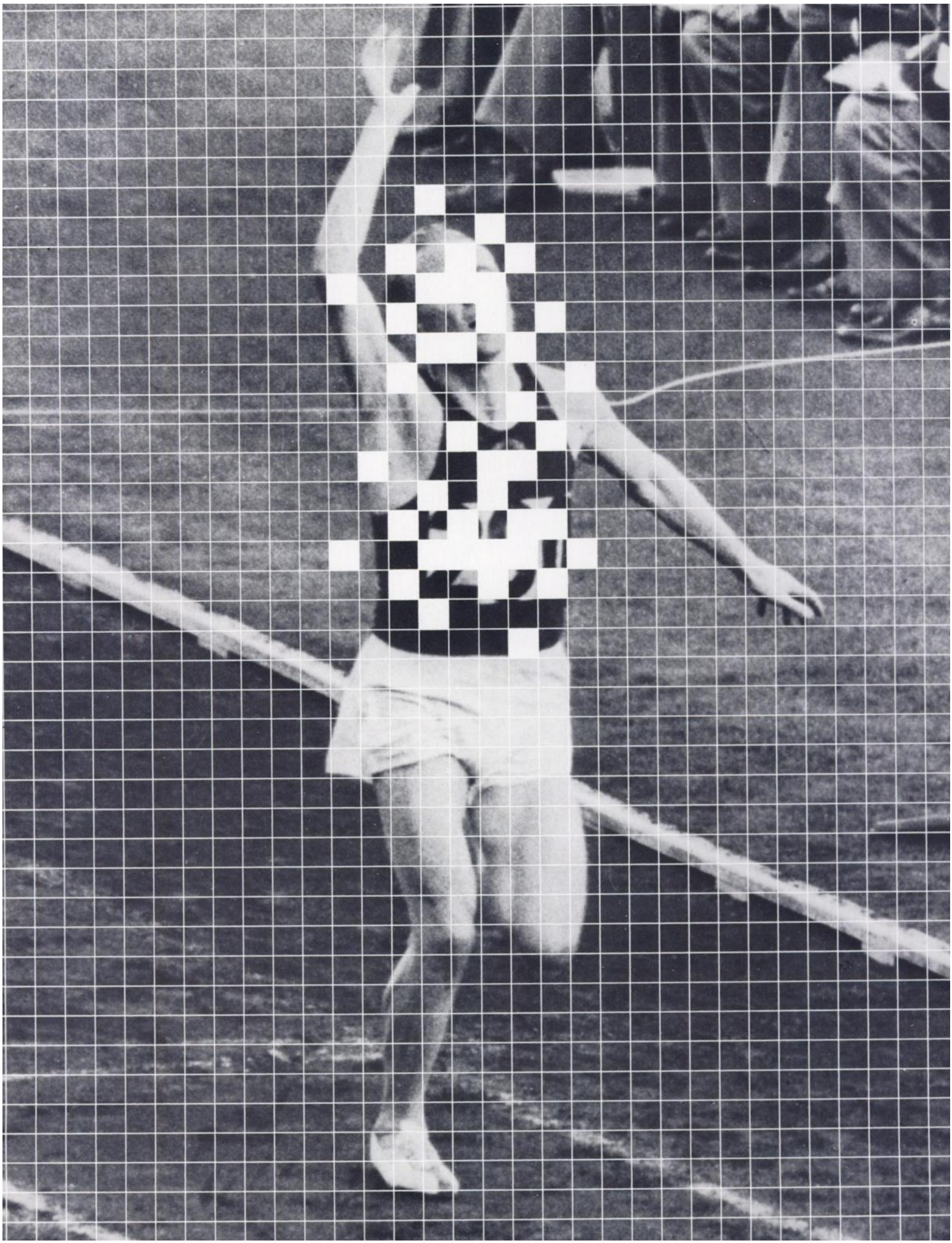

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