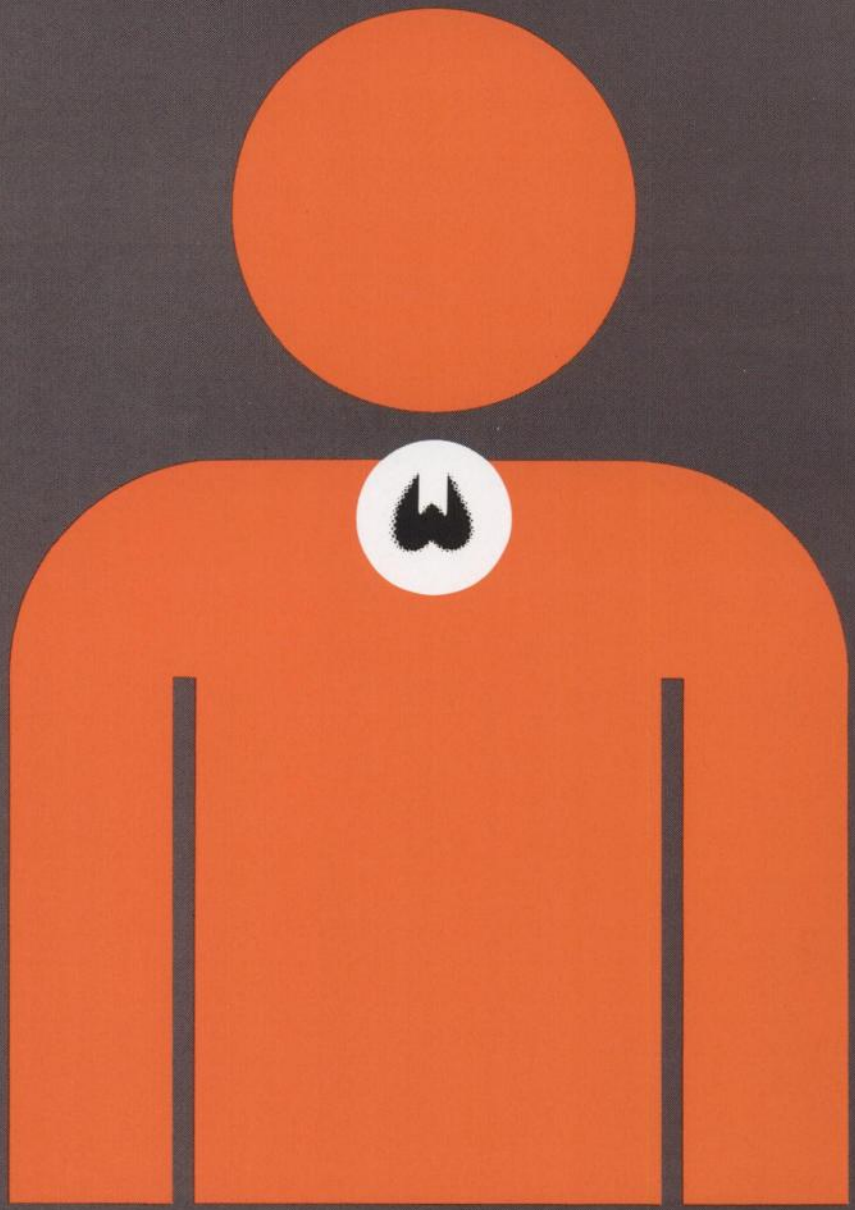
Sodium Iodide I 123

for thyroid studies



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One of the safest decisions you'll ever have to make...and as easy as 1,2,3.

Consider the benefits of MPI-Iodine-123 and your course of action becomes clear. Don't you and your patients deserve these important benefits?

Greater patient safety because of reduced radiation absorbed dose. Substitution of I 131 with MPI-Iodine-123 reduces the absorbed radiation dose more than 24 times to the thyroid gland.

Compare:

Maximal Thyroid Uptake %	Rads/100μCi MPI-Iodine-123	Rads/100μCi I 131
5	1.05	26.0
15	3.19	80.0
25	5.36	130.0

High counting statistics. MPI-Iodine-123 159 keV gamma rays are detected more than 3 times as efficiently on Anger-type cameras as the 364 keV gamma rays emitted by I 131. You get a higher count rate with MPI-Iodine-123 than with equivalent amounts of I 131 on gamma cameras. Therefore, scintiphotos can be obtained more rapidly.

Images that demonstrate true thyroid function. MPI-Iodine-123 is organified by the thyroid so images obtained will depict total thyroid function—not the trapping mechanism alone.

You save money when MPI-Iodine-123 is delivered with other Medi-Physics products. Your Medi-Physics representative will be glad to show you how you can receive MPI-Iodine-123 without delivery charges in certain areas. Call for full information about MPI-Iodine-123, our reliable shipping procedures and other products you can receive along with MPI-Iodine-123.

Use the appropriate toll-free number:
Outside California 800-227-0483
Inside California 800-772-2446

medi+physics™

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

SODIUM IODIDE I 123
CAPSULES AND SOLUTION FOR ORAL ADMINISTRATION
DIAGNOSTIC

DESCRIPTION: Sodium iodide I 123 for diagnostic use is supplied as capsules and in vials as an aqueous solution for oral administration. At calibration time each capsule has an activity of 100 microcuries and each vial contains solution with a total specific concentration of 2 millicuries per ml at calibration time.

INDICATIONS: Sodium iodide I 123 is indicated for use in the diagnosis of thyroid function and imaging.

CONTRAINDICATIONS: None known.

WARNINGS: This radiopharmaceutical 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 radiopharmaceuticals, especially those elective in nature, in women of childbearing capability should be performed during the first few (approximately 10) days following the onset of menses. However, when studies of thyroid function are clinically indicated for members of these special population groups, use of I 123 would be preferable to the use of I 131 in order to minimize radiation dosage.

PRECAUTIONS: Sodium iodide I 123 as well as other radioactive drugs must be handled with care, and appropriate safety measures should be taken to minimize radiation exposure to the patient consistent with proper patient management. The prescribed I 123 dose should be administered as soon as practicable in order to minimize the fraction of radiation exposure due to relative increase of radionuclidic contaminants with time. The uptake of I 123 may be decreased by recent administration of iodinated contrast materials, by intake of stable iodine in any form, or by thyroid, anti-thyroid and certain other drugs. Accordingly, the patient should be questioned carefully regarding diet, previous medication, and procedures involving radiographic contrast media.

ADVERSE REACTIONS: There were nine adverse reactions reported in a series of 1,393 administrations. None of these were attributed to I 123. Five adverse reactions, consisting of gastric upset and vomiting, were attributed to a filler in the capsule. Two cases of headache and a case of nausea and weakness were attributed to the fasting state. One case of garlic odor in the breath was presumed to be attributable to the presence of tellurium.

DOSAGE AND ADMINISTRATION: The recommended oral dose range for diagnostic studies of thyroid function in the average adult patient (70 kg) is from 100 to 400 microcuries. The patient dose should be measured by a suitable radioactivity calibration system immediately prior to administration. Concentration of I 123 in the thyroid gland should be measured in accordance with standardized procedures.

SPECIAL CONSIDERATION: 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.

HOW SUPPLIED: Sodium iodide I 123 for oral administration is supplied in glass vials and in capsules.

When NDL and DSI asked they meant mobile.

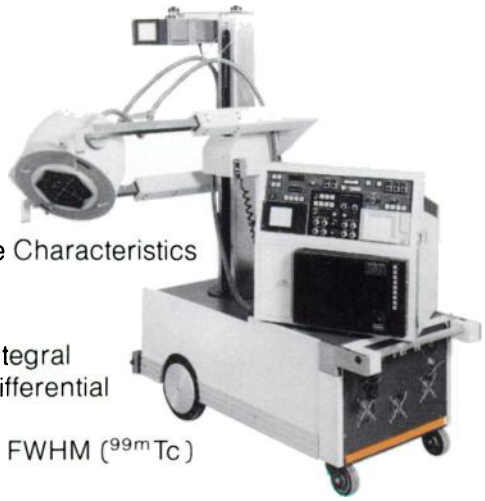
George West and Bill Hinkle, the presidents of Nuclear Diagnostic Laboratories of Irving, Texas and Diagnostic Services Incorporated of Buena Park, Calif., are in the business of taking the latest in medical technology and equipment to hospitals on an "as-required" basis. So when they each decided to put mobile gamma cameras in trucks to improve the quality of the mobile services they offer in their areas, they made exhaustive studies of the equipment available to them.

Their choices? Ohio-Nuclear Sigma 420 mobile gamma cameras with MPC (micro-processor control).

Why Ohio-Nuclear? "Reliability," according to George West. "We have to be able to schedule with certainty, to know our equipment will be available when it is needed. It has to be ready to provide optimum uniformity and resolution as soon as it is wheeled into the hospital. Ohio-Nuclear cameras give us that assurance. They offer us the best value for our investment."

"We have to offer the highest quality instrumentation available, in order to compete in our market area," Bill Hinkle stressed. "We picked Ohio-Nuclear because we think it gives us that. It's reliable, MPC is the most advanced state of the art technology available today, and the Ohio-Nuclear cameras don't lose any of the quality of the images they produce despite being transported in a truck."

Ohio-Nuclear gave them what they wanted.



Sigma 420
Performance Characteristics

Uniformity
- ±5% Integral
- ±3% Differential

Resolution
- 4.5mm FWHM (^{99m}Tc)

Count Rate
- 200K cps

for mobile gamma cameras,

Reliability is only one factor.
Several other factors helped persuade NDL and DSI.

- The Sigma 420 has the same outstanding uniformity, resolution, and count characteristics as the Ohio-Nuclear Sigma 400 and 410 Series stationary cameras.
- Power drive makes the Sigma 420 easy to move and maneuver.
- With no foot to go under the patient bed, the Sigma 420 can be used in almost any room, regardless of the equipment in the room.
- A built-in data system allows post-study data manipulation and analysis.
- Built-in head protection increases reliability.
- The Sigma 420 maintains high voltage to the PM tubes at all times. This allows instant response with no degradation in uniformity.

Nuclear Diagnostic Laboratories serves the five-state area of Texas, Oklahoma, Arkansas, Louisiana and Mississippi with a complete nuclear medicine and electroencephalographic laboratory. Diagnostic Services Incorporated serves a 2,500-square mile area of Orange and Los Angeles Counties with nuclear medicine, ultrasound and echocardiography.

Despite the vast differences in their operations, both companies decided on Ohio-Nuclear Sigma cameras.

If Ohio-Nuclear Sigma Series cameras can perform that well for them, under those conditions, imagine how well a Sigma 400, 410 or 420 could serve your nuclear medicine department.

ohio-nuclear, inc.
A subsidiary of Technicare Corporation
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Phone: (216) 248-8500

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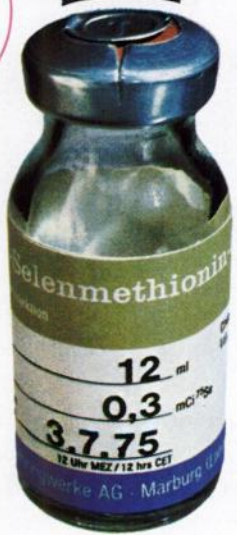
For pancreas scintigraphy as a simple detection method for space occupying lesions like tumors or cysts and alterations of parenchyme.



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

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

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

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

Order No.: SE-515

Calibration day:
1st of the month

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

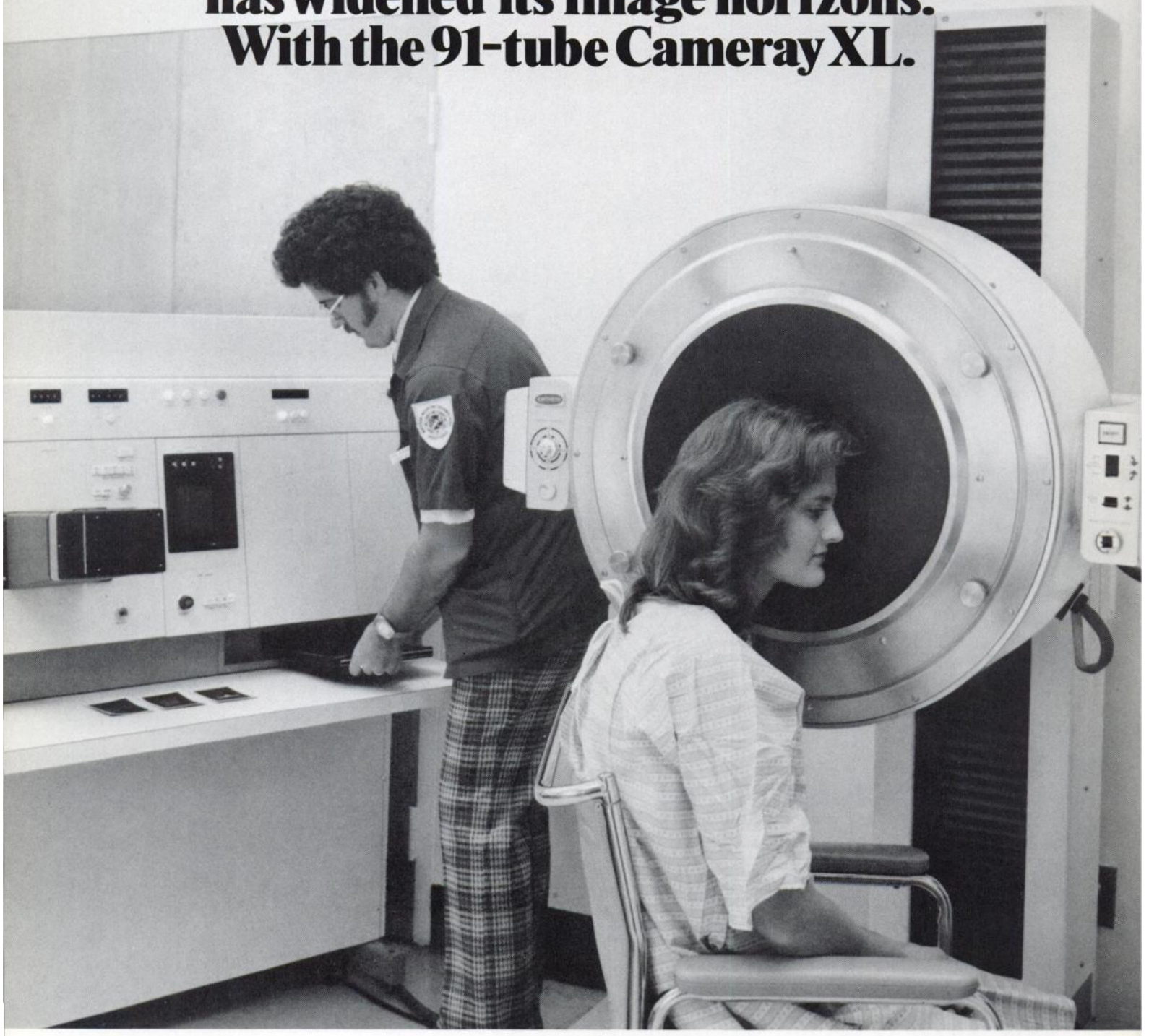
Shelf life:
3 months from the day of first dispatch

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

Lh 71185

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

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



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

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

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

RAYTHEON

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Europe: NEN Chemicals GmbH, D-6072 Dreieichenhain, W. Germany, Daimlerstrasse 26, Postfach 1240. Tel: (06103) 85034.

Advances in Low~Cost

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

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

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

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

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

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

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

varian

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Telephone: (415) 493-4000

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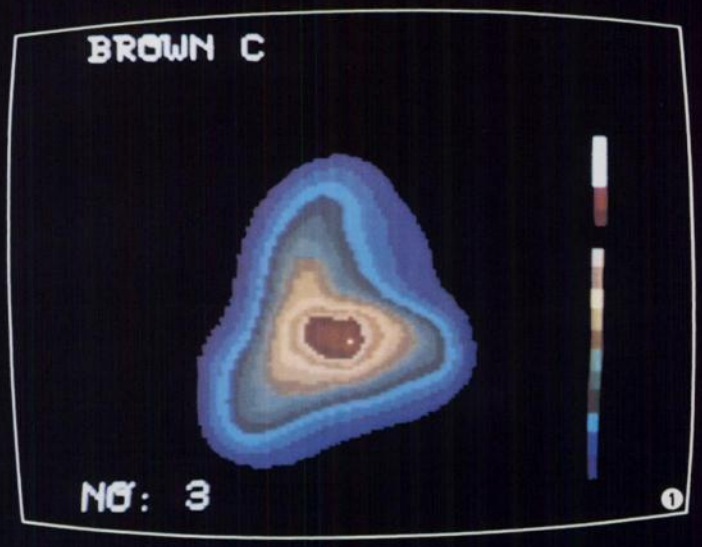
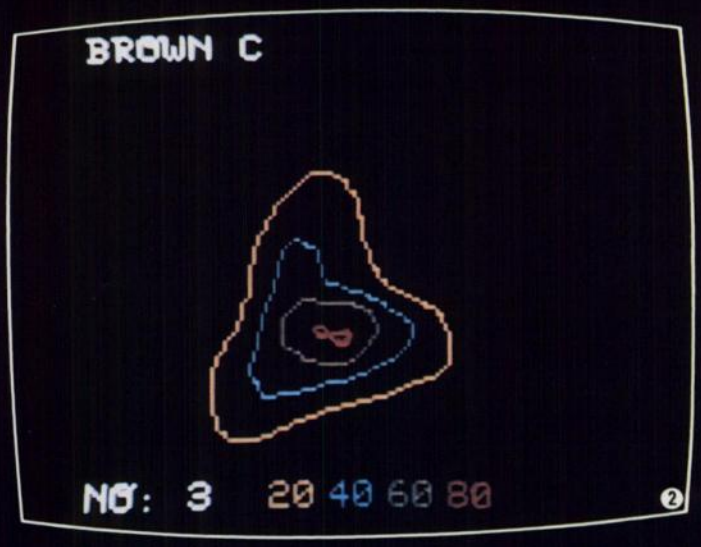
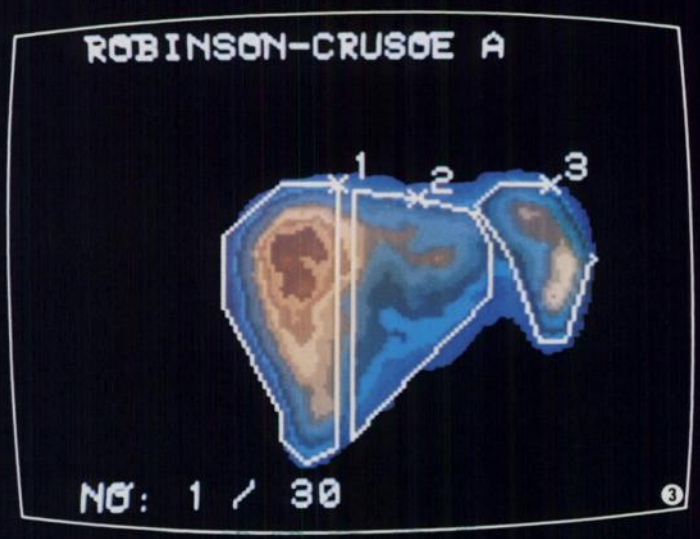
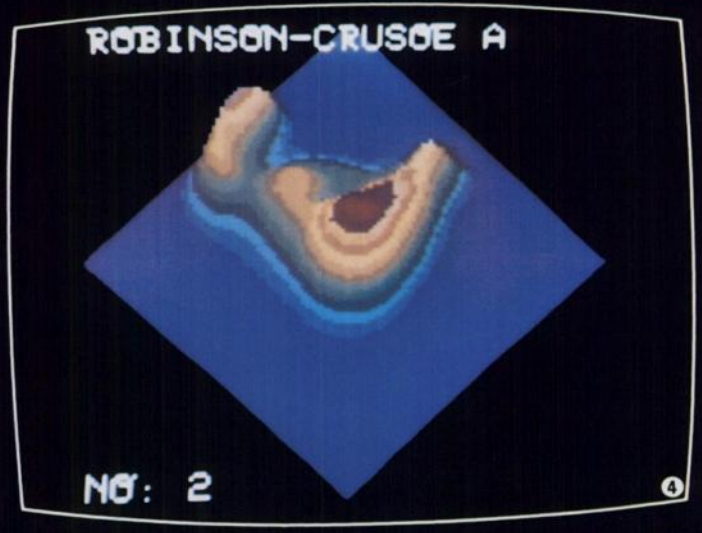
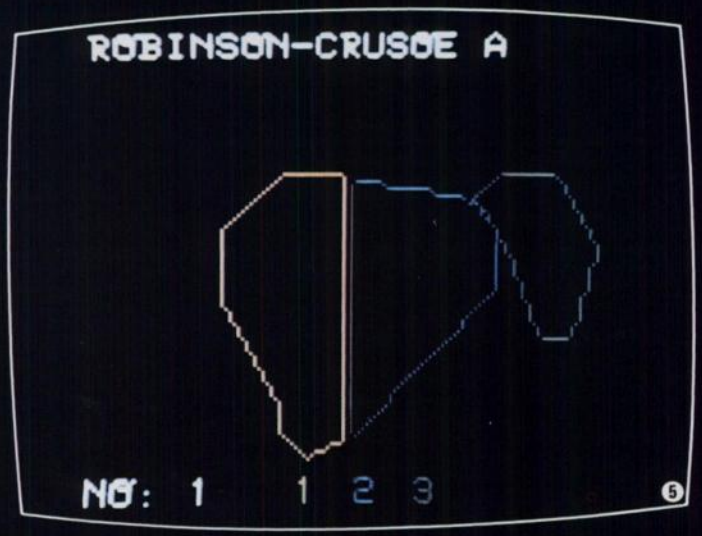
Multiple~Screen Color Displays from varicam

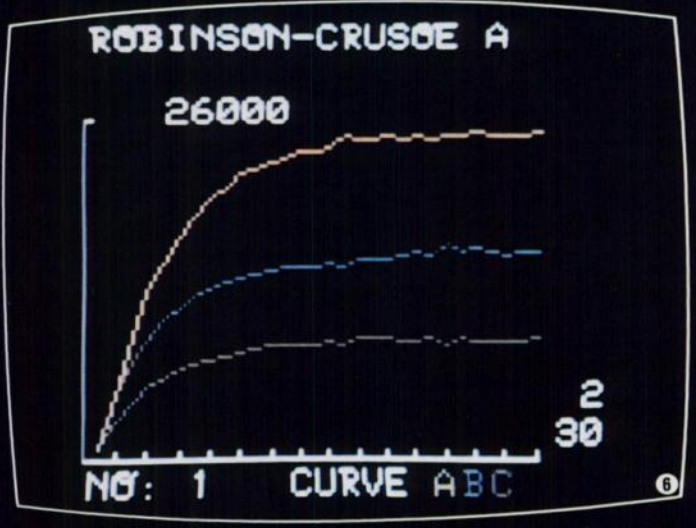












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Portable Radioisotope Monitor

for the Detection of Deep Vein Thrombosis.

THE IBRINITOR

The IBRINITOR is a dramatic breakthrough in DVT detection and monitoring. It is ideally suited for use with Radionuclide I-125 labeled fibrinogen in monitoring patients for deep-vein thrombosis. It is designed to assure accumulation of procedurally and statistically valid data. The IBRINITOR features a design that insures that monitoring be performed in the correct sequence, while accumulating statistically valid counting data plus eliminating most procedural errors, before displaying and printing results. Visual and audio warning systems indicate operator error or procedural error.

OPERATION

The IBRINITOR is engineered to be fail-safe. The instrument provides both a digital readout and a printout for ease and accuracy of data collection. An analog circuit ratemeter electronically controls data collection and assures statistical accuracy of the counts collected. Push button controls on the detector probe are provided for operator convenience and speed.

OPERATOR CONVENIENCE

The IBRINITOR is the only portable radioisotope monitoring instrument with a built-in printout. This eliminates need for the operator to record data during testing, thus reducing transcription time and chance of error. The IBRINITOR requires short set-up time and is stable and accurate. The probe's unique body design prevents it from rolling off a table or counter top. In addition, the angled head facilitates positioning for maximum operator convenience and patient comfort. Rechargeable Nickel Cadmium (NiCd) batteries provide stable current allowing for approximately 12 hours of use on a full charge. A source is provided for calibration convenience. The total instrument weighs less than eight pounds.

The IBRINITOR System of DVT detection is certain, safe, simple and involves minimum patient discomfort.

To order, call 800-323-9750 toll-free for complete details! Or dial 312-593-6300 In Canada: 1-800-261-5061

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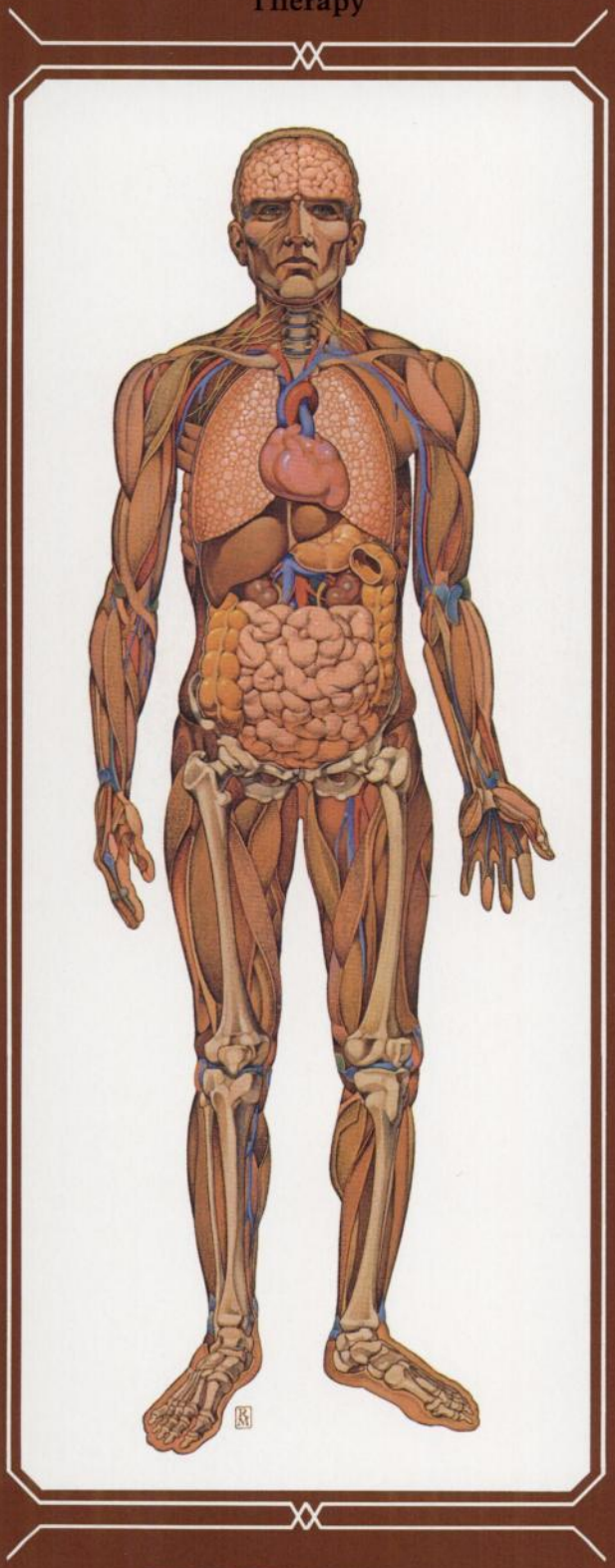

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Head and Central Nervous System

Types of Applications

Space occupying and atrophic lesions
Hematoma
RCVF
Vascular Lesions
Cerebral Angiography
Drug Abuse

Picker Systems

X-Ray
Ultrasound
Nuclear
Computed Tomography
Clinical Laboratory
Accessories

Vascular [Cardio & General]

Types of Applications

Circulatory Disease
Cardiac Deficiency Studies
Hematoma
General Malfunction

Picker Systems

X-Ray
Ultrasound
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Clinical Laboratory
Therapy
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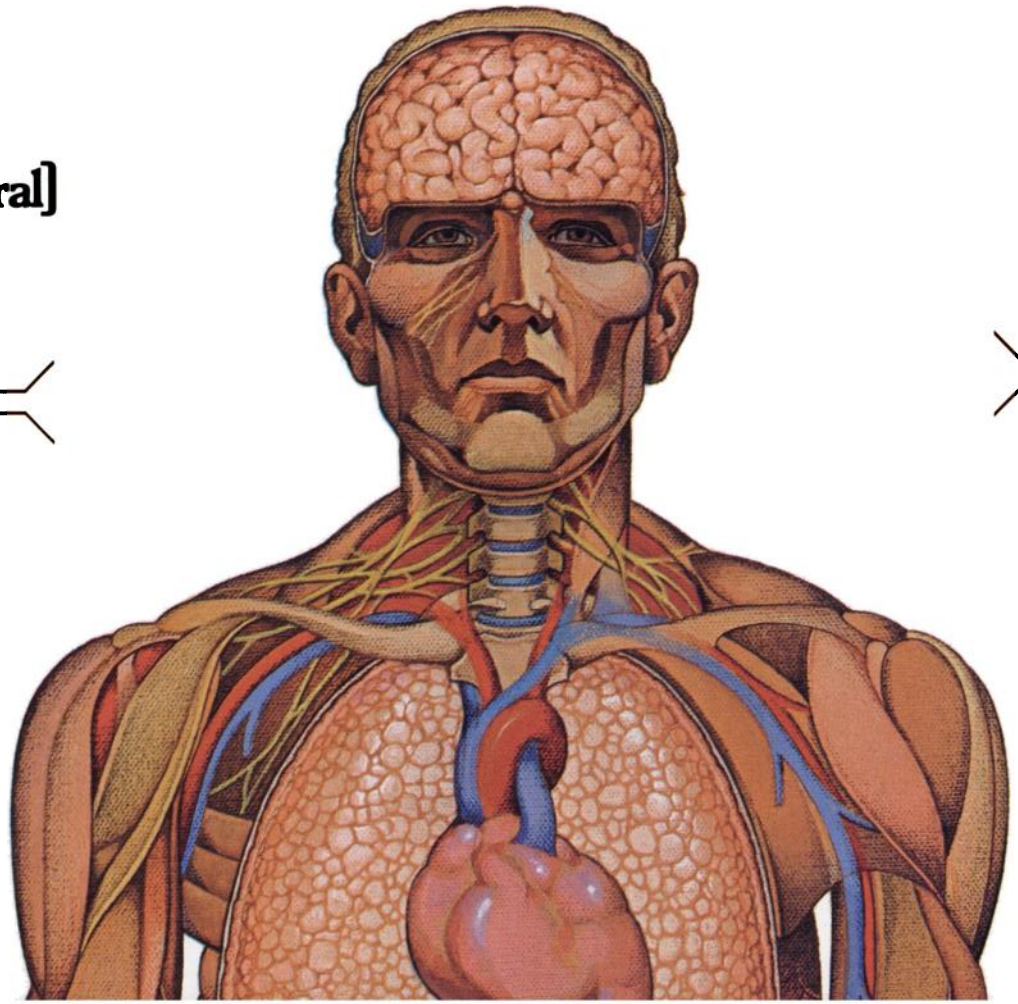


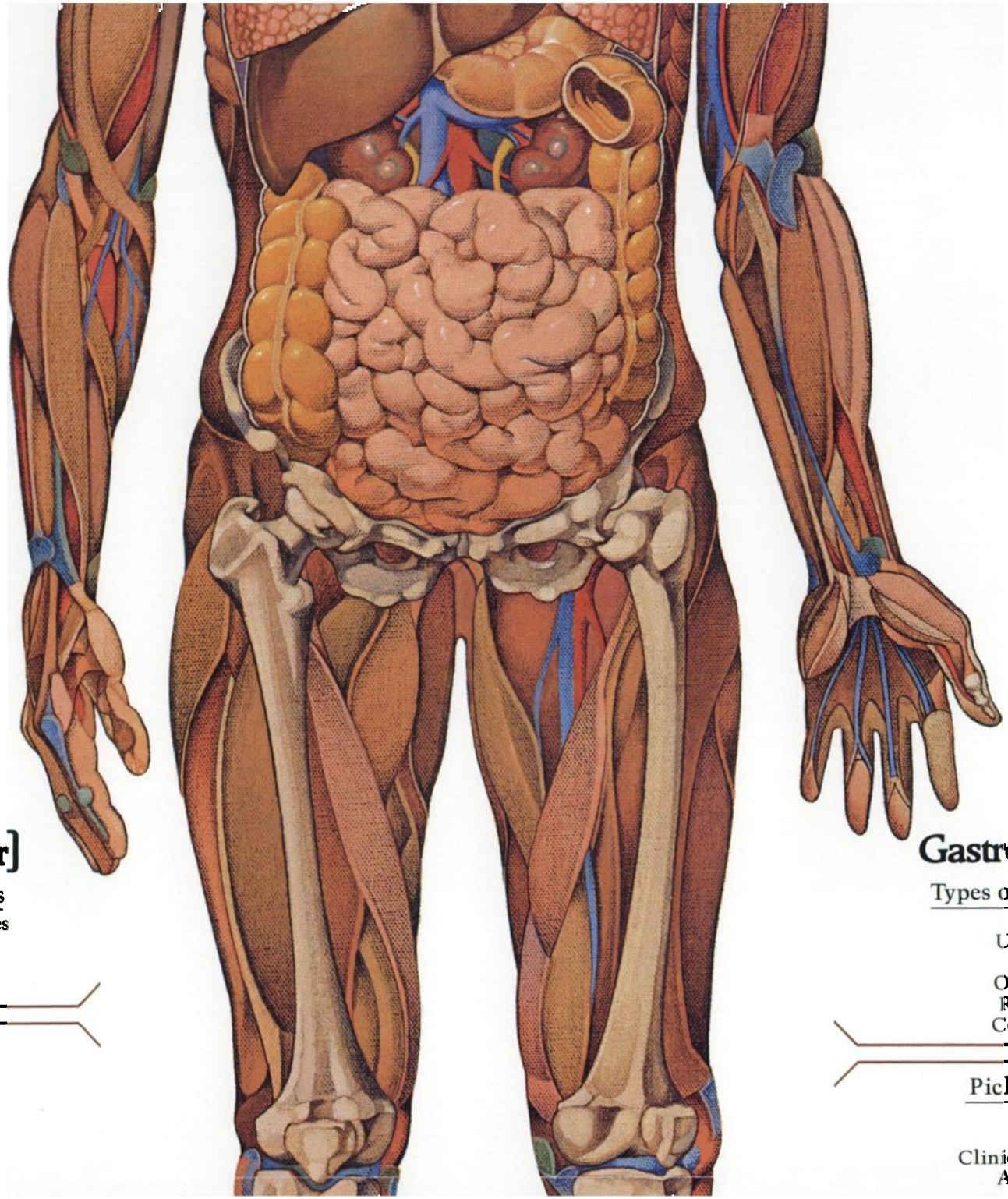
Lungs

Types of Applications

Ventilation & Perfusion
Lesions
Respiratory Diseases

Picker Systems

Nuclear
X-Ray
Computed Tomography
Accessories
Therapy



Soft Tissue [liver]

Types of Applications

Dynamic Function Studies
Lesions
Endocrine Function
Organ Size

Picker Systems

Ultrasound
Clinical Laboratory
X-Ray
Computed Tomography
Accessories
Therapy

Gastro-Intestinal

Types of Applications

Lesions
Ulcerations
RIA
Obstruction
Restriction
Constriction

Picker Systems

X-Ray
Therapy
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Accessories

Picker'synergy

is the complete interfacing of systems and services for improved diagnostic results. It represents Picker's corporate attitude toward our business of diagnostic visualization and how it should serve the professionals who use our products and services. It also indicates that Picker is adapting to the present and looking to the future with an aggressive, active corporate commitment to enhance health care and improve patient management in every way possible under our control.

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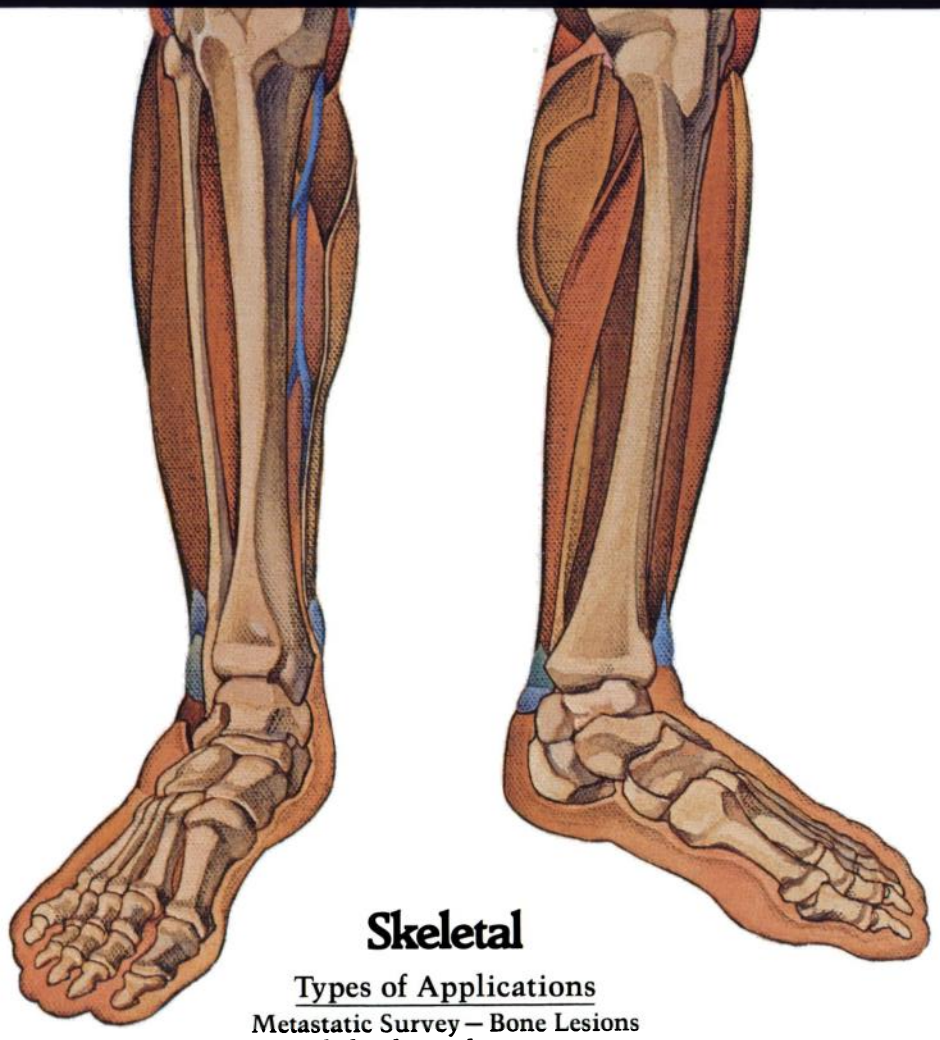

Skeletal

Types of Applications

Metastatic Survey – Bone Lesions
Skeletal Misalignments

Picker Systems

X-Ray
Nuclear
Accessories
Therapy

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If you would like a 24" x 37" copy suitable for framing of this artist's conception of the human anatomy, contact Picker Marketing Services, 6119 Highland Road, Cleveland, OH 44143.

A conclusive diagnosis often requires a series of studies involving more than one diagnostic technique.

Given a particular condition, one technique may be preferred over another. But comparative results verify and document the diagnosis indicated by the preferred technique.

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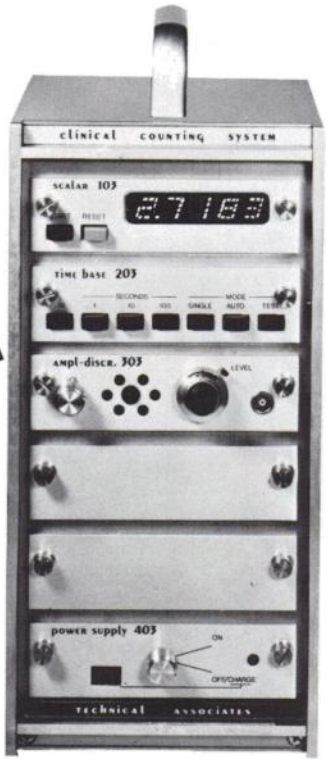

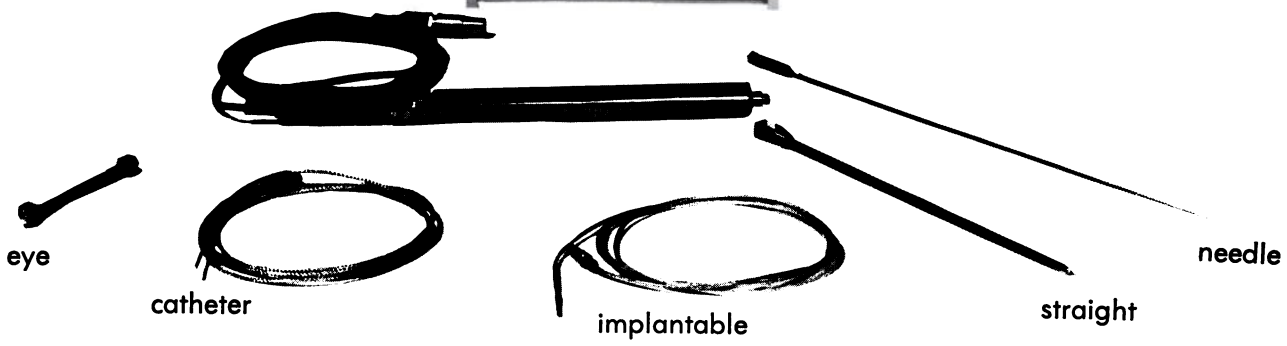

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Handily compact and portable, with standard D cell battery operation providing at least 100 hours of uncycled use, the 145A Localization Monitor offers unlimited isotope selection, stainless steel collimator, and solid state design.

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- Direct *Percentage* Analog Display
- Compact & Portable (6½ lbs including batteries & probe)
- Powered by 3 flashlight batteries (No A.C. Hazards)
- Unlimited Isotope Selection

Specifications

Range: Percent Scale — 0-120%
CPS Scale — 30, 100, 300, 1000, 3000 CPS

Meter Response: Fast — 2 seconds
Slow — 14 seconds

Dimensions: 4½″ H × 5½″ W × 8″ L (exclusive of handle)

Recorder Output: 10 mv

Detector: NaI (Tl) crystal, 1″ diam. × 1 mm thick, mounted on PMT with 7 mg/cm² aluminum window

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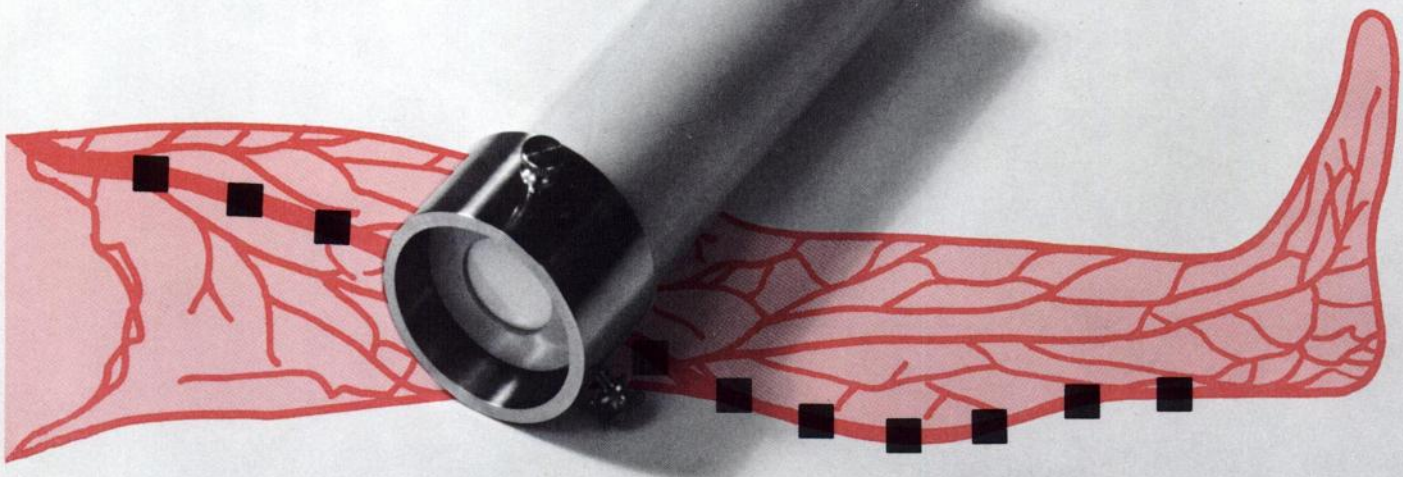
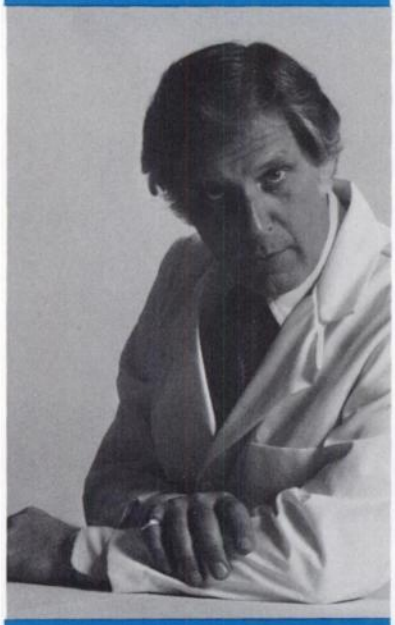
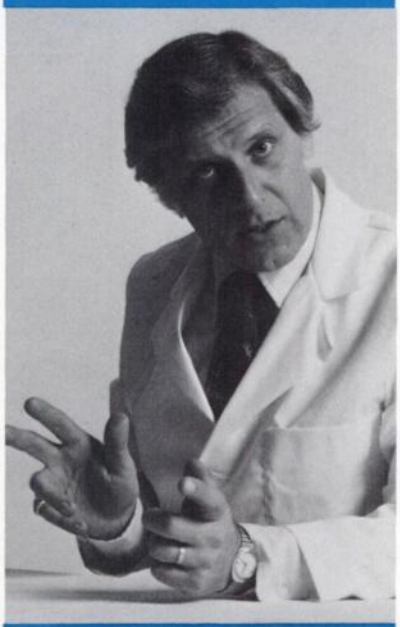


Early detection of Deep Vein Thrombosis

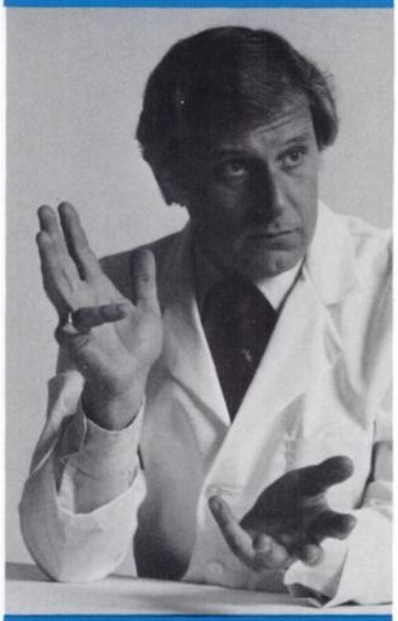
"Some of my patients just can't tolerate 90 minutes on a scanning table."



"For them, I prefer a Cleon scan."



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



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for labeling with technetium 99m

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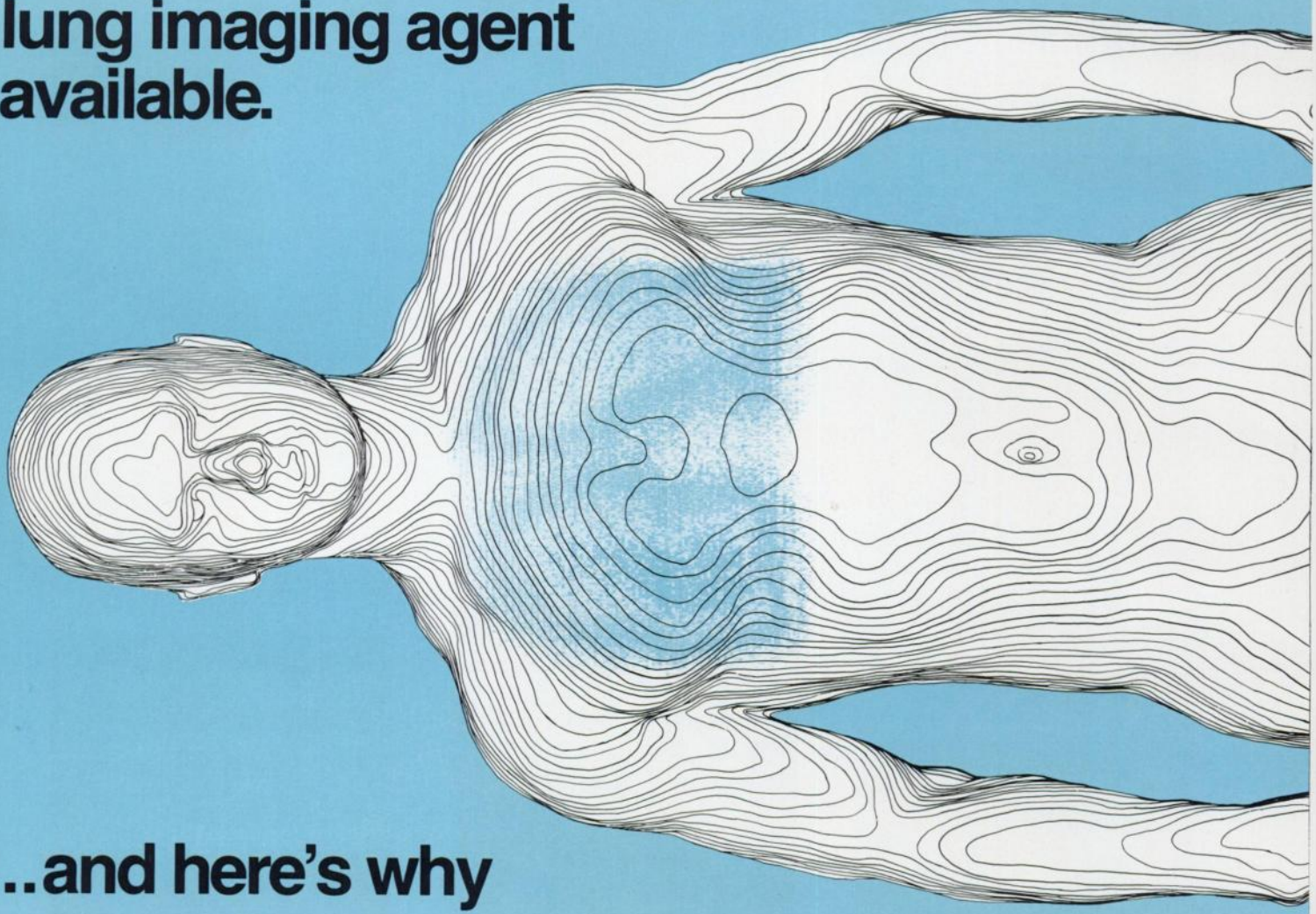

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Simple, two-step procedure. Not an ampul, not a frozen material. No waiting, no complicated procedures or specialized equipment required. Just two easy steps and you're ready to assay and inject.

Uniform particle size, excellent labeling efficiency. Particle size meets or exceeds Bureau of Biologics standards; 90% in 5-60 micron range. Excellent labeling efficiency when reconstituted with a compatible technetium 99m.

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Ideal for the busy lab. Recommended amount of 99mTc for reconstitution high enough to allow numerous scans from a single vial.

BASIC STEPS IN PREPARING FOUR TECHNETIUM

Squibb Macrotec® Aggregated Albumin (Human)	**1. Add 1-3 ml. of 99mTc** Maintain shielding at all times.**	**2. Shake vigorously for 10-15 seconds.**
Mallinckrodt TechneScan™ MAA Aggregated Albumin (Human)	**1.** Remove reaction vial from *freezer* and *wait approximately 5 minutes* for contents to come to room temperature.	**2.** Add 99mTc** Maintain shielding at all times.
3M Albumin Microspheres (Human)	**1.** Add 4-10 ml. of 99mTc**	**2.** Shield completely and vigorously shake for 5-15 seconds.
Medi+Physics Lungaggregate™ Reagent Aggregated Albumin (Human)	**1.** Shake *ampul* vigorously to suspend particles.	**2.** Open ampul.

Emphasis added by Squibb to point out certain differences in procedures.

MACROTEC® (Aggregated Albumin [Human])

Macrotec (Aggregated Albumin [Human]) is a sterile, non-pyrogenic, lyophilized preparation of aggregated albumin. Each vial of the preparation contains 0.08 mg. tin as chloride, 1.5 mg. denatured human serum albumin, and 10 mg. Normal Serum Albumin (Human).

INDICATIONS: For use in perfusion lung imaging as an adjunct to other diagnostic procedures.

CONTRAINDICATIONS: At present there are no known contraindications to the use of this product.

WARNINGS: Radiopharmaceuticals should not be administered to patients who are pregnant, or during lactation, unless the benefits to be gained outweigh the potential hazards.

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

Since ^{99m}Tc is excreted in milk during lactation, formula-feedings should be substituted for breast-feedings.

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.

Note: Macrotec (Aggregated Albumin [Human]) is not radioactive. However, after ^{99m}Tc is added, adequate shielding of the resultant preparation should be maintained.

PRECAUTIONS: In the use of any 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.

Aseptic technique is essential in the preparation of Technetated (Tc-99m) Aggregated Albumin (Human).

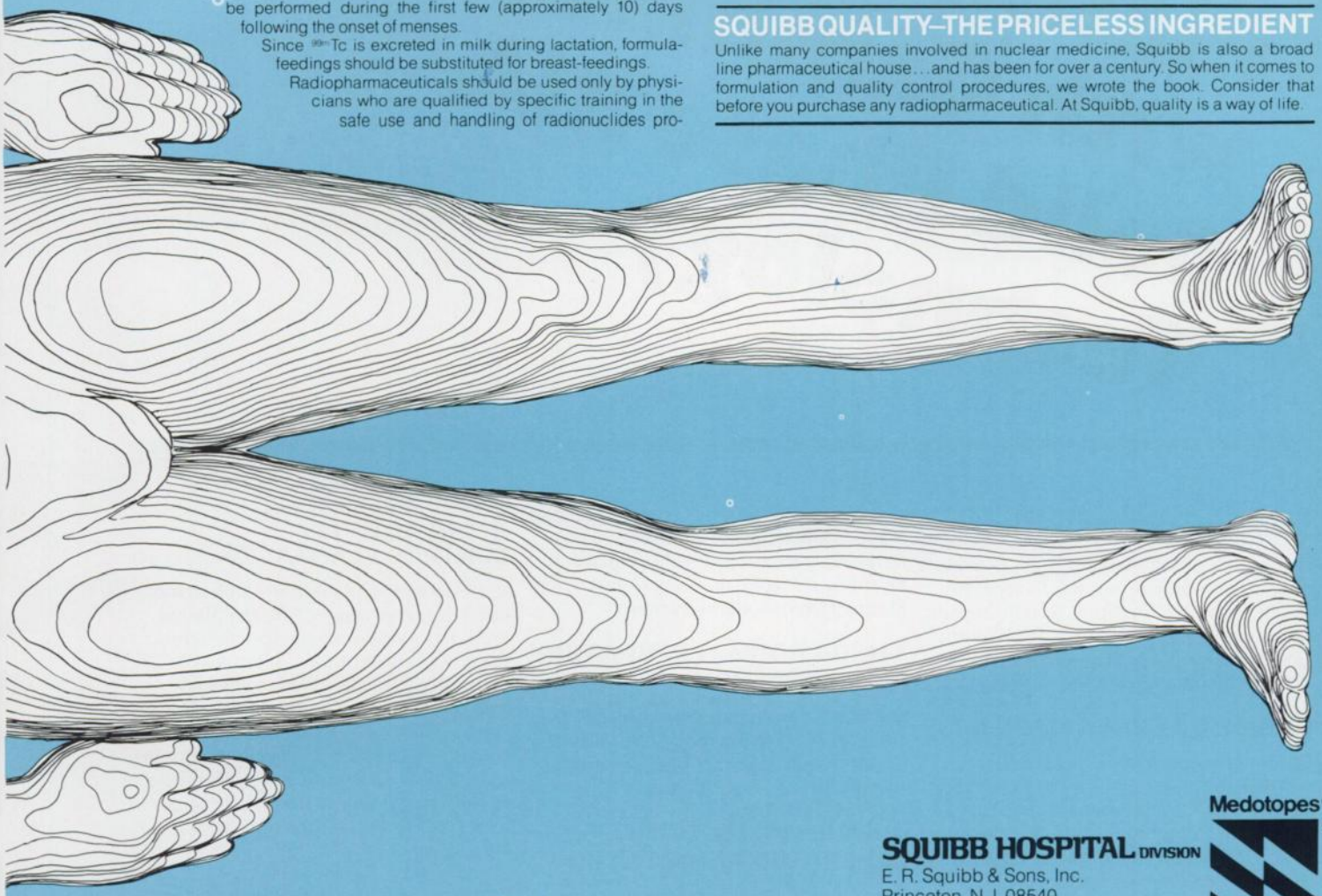
ADVERSE REACTIONS: At present, adverse reactions have not been reported following the administration of this product.

For full prescribing information, consult package insert.

HOW SUPPLIED: In boxes of 5 vials.

SQUIBB QUALITY–THE PRICELESS INGREDIENT

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



Medotopes®

SQUIBB HOSPITAL DIVISION
E. R. Squibb & Sons, Inc.
Princeton, N.J. 08540

H606-504

99m-LABELED LUNG IMAGING AGENTS*

3. Gently agitate vial for few seconds. **4.** *Allow to stand for 15 minutes* at room temperature. **5.** Visually inspect vial for presence of large aggregates. *If present, do not use.* **6.** *Agitate* to effect homogenous suspension of the aggregated albumin.

**Recommended maximum activity: 50 mCi.

3. Remove vial from shield (with forceps) and place in center of operating *ultrasonic bath* containing 3/4" of water. Bath should be protected by *lead glass or bricks.* *Ultrasound for 5 minutes.*

**Recommended maximum activity: 60 mCi.

3. Withdraw (very slowly) 1.5-2.0 ml. of aggregate from ampul with *syringe.* **4.** Inject (very slowly) syringe contents into *mixing vial.* **5.** Wrap mixing vial in *absorbent paper disc* and place in lead shield. **6.** Add 0.5-2.0 ml. of 99mTc** in saline into shielded mixing vial. Shake vigorously for at least 30 seconds. *Incubate* at room temperature *for 2-5 minutes.* **7.** Shake contents vigorously just before removing aliquot intended for patient use.

**Recommended maximum activity: 30 mCi.

**Recommended maximum activity: 25 mCi/ml.

*Based on manufacturers' product information. **NOTE: See manufacturers' package inserts before the preparation of any of these products.**

Now Plasma Renin Activity with GammaCoat Solid Phase RIA Technology

SOLID PHASE SEPARATION

Precision antibody-coated tubes provide a rapid, convenient method to separate bound from free fractions. Simply decant, no centrifugation required. The GammaCoat system eliminates the potential pitfalls of charcoal as a separating agent.

CHOICE OF GENERATION pH

Color-coded buffers are provided for the generation of angiotensin I at either pH 6.0 or 7.4. Antibacterial agents, neomycin and sodium azide, are included in the buffers to retard bacterial growth during extended incubations.

MINIMAL DILUTION OF PLASMA SAMPLE

Only 0.1 ml of buffer is added to a 1.0 ml plasma sample for adjustment and maintenance of pH during generation. Since excessive dilution of renin and renin substrate are avoided, angiotensin I generation proceeds at a maximal rate. The complications of interpreting data obtained from procedures using higher dilutions are avoided in the GammaCoat Plasma Renin Activity System.

3-HOUR ROOM TEMPERATURE RIA INCUBATION

Use of a 3-hour incubation provides a significantly shortened radioimmunoassay. Results, from start to finish, are available on the same working day.

UNIQUE PROTECTION OF GENERATED ANGIOTENSIN I

The GammaCoat Plasma Renin Activity Kit is the first commercial kit to employ the unique proteolytic enzyme inhibiting activity of phenylmethylsulfonyl fluoride (PMSF), which has been shown to be equally effective at both pH 6.0 and 7.4. A single pipetting of this preferred inhibitor, PMSF, is used to block the enzymatic conversion of angiotensin I to angiotensin II.

RENIN ACTIVITY CONTROL PLASMA

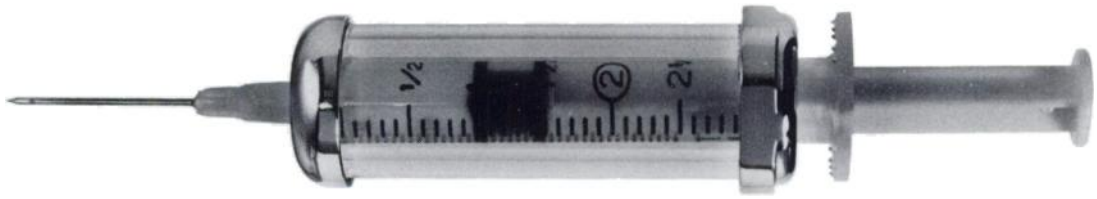
Variations in PRA have been observed upon repeated assay of frozen plasma after various periods of storage. Thus, the use of stored frozen plasma as a control in PRA determinations may lead to erroneous results. The GammaCoat system includes *lyophilized* renin activity controls at two levels. Routine use of these controls during *generation,* as well as *radioimmunoassay,* provides a reliable quality control index for the *entire* assay.

Please write for complete technical data or call, toll free 1-800-225-1241 (in Massachusetts call collect 617-492-2526).

Clinical Assays, Inc.

237 Binney Street, Cambridge, MA 02142

from Clinical Assays



Now.
A syringe shield that offers nearly as much visibility as the syringe itself.

360 degree visibility.
Lightweight. Easy to handle.
Quick, smooth insertion and removal with an "O" ring seal.
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Reduces exposure of ^{99m}Tc by a factor of 70.

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Available for immediate shipment.

Developed by a company with 27 years experience in radiation shielding.
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*3cc syringe shown actual size.

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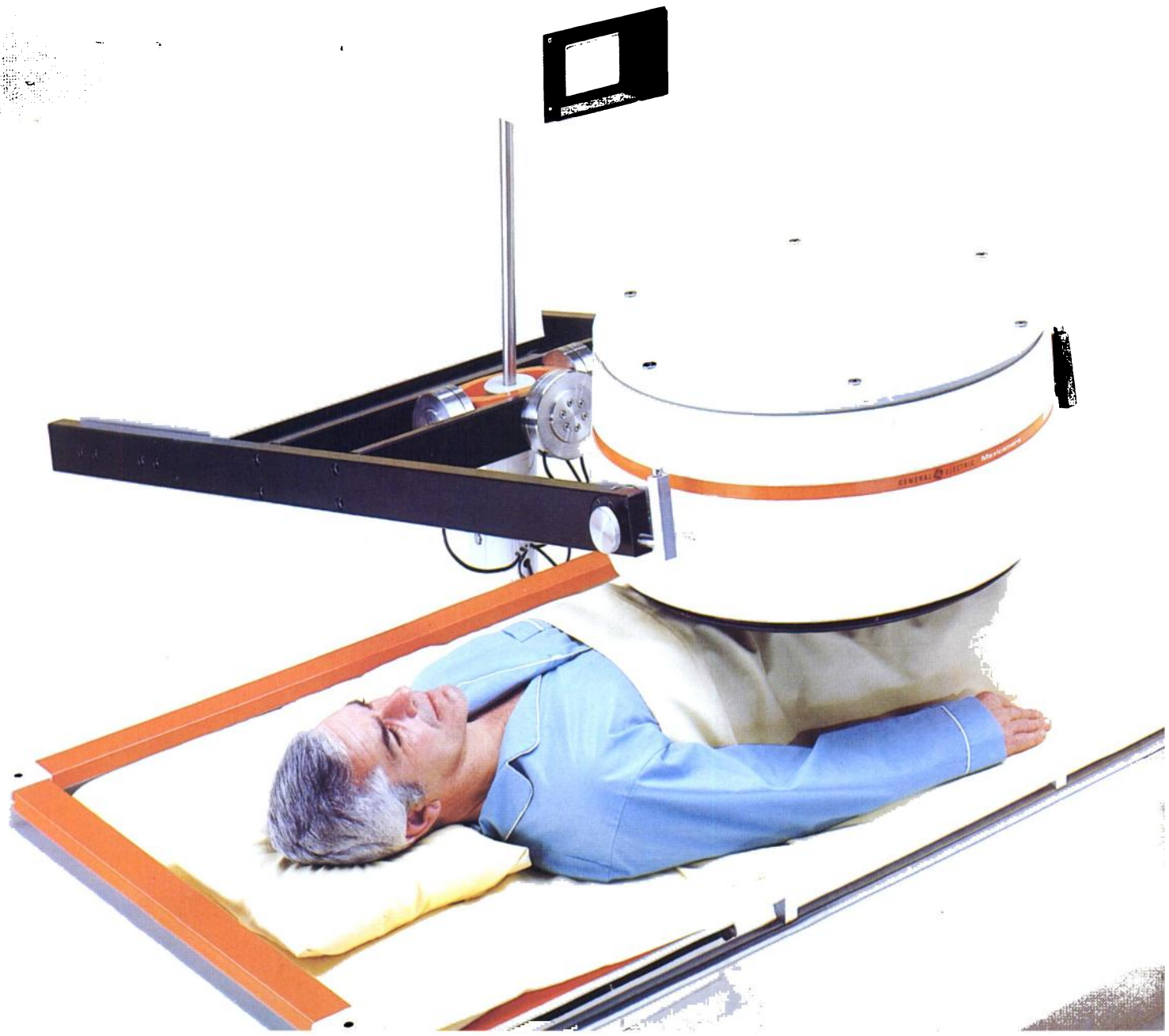
For additional information, contact: Nuclear Pacific, Inc. 6701 Sixth Avenue So. Seattle, Wa. 98108 (206) 763-2170

*Registered U.S. Patent Office. Platinum melted ultra high density optical glass.

MaxiCamera

Now and in the future... rely on GE for your nuclear imaging needs.

Compatible building blocks... permit your MaxiCamera™ system to grow with your needs. You can select equipment to match your requirements now—then add system components such as a GE film Formatter as your department expands. Be confident these components will be compatible with your basic system.



System

It all starts with MaxiCamera...

The 400 mm field of view simplifies imaging for large organ studies. The detector is positioned with ease and precision because of MaxiCamera's gimbal and counterbalance.

You can add a GE Formatter to record up to 42 static or dynamic images on 8 x 10 film and incorporate the camera electronics in the same console. Select data handling systems to fit your needs—from basic acquisition and playback to advanced systems for cardiac and renal studies.

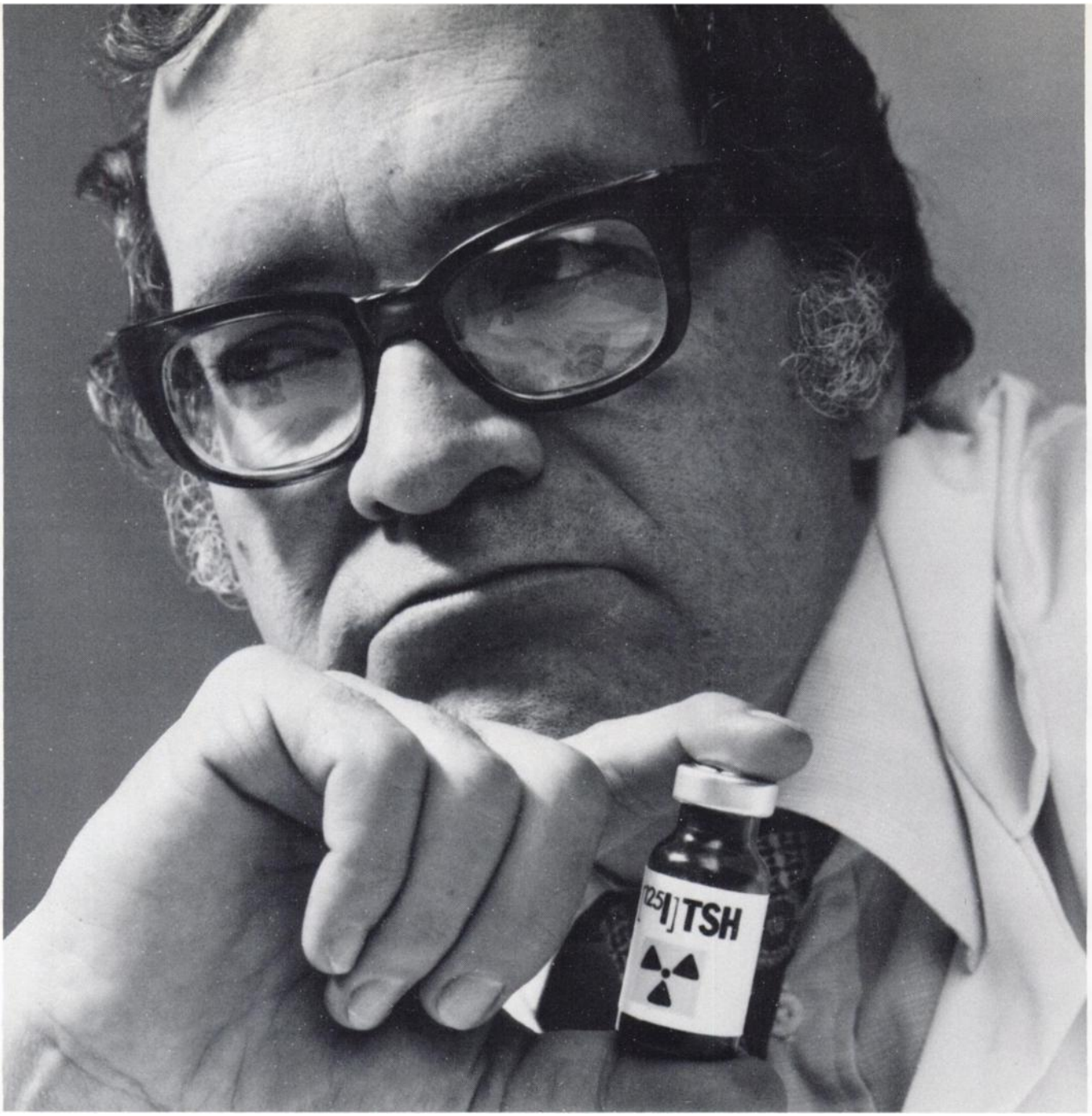
Expand your technic capabilities with an optional Selectascan™ whole body scanner that moves the detector over or under the patient. For easy patient transfer and positioning, include the Universal Imaging Table. And save valuable floor space while simplifying collimator changing with the new Collimator Stacker.

Whether your needs are basic, complex or changing... the MaxiCamera system can satisfy those needs now and in the future. For details, contact your GE representative.

General Electric Medical Systems,
Milwaukee, Toronto, Madrid.

GE: leading the way in nuclear imaging.

GENERAL ELECTRIC



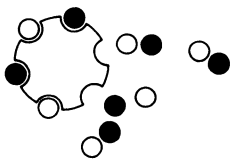
He's not about to change

Unless for the better. Now he can. Because we've just come out with a better TSH to complement our T3, T4, and T3U kits. Our TSH is super-sensitive and super-linear over a range of 2 to 100 μIU/ml.

Faster—total incubation time is 5 hours. More convenient—lyophilized for a 60 day shelf-life and ice-free shipping. With greater precision—a with-in run precision of 2-5%, a run to run precision of 5-7%. And the lowest cross-reactivity with HCG, LH, and FSH.

Changing TSH kits is changing to a better company. Because DPC pioneered in RIA. And we care. About our reputation for quality. Lot to lot consistency. On time deliveries. And being first with kits to meet new needs. But especially we care about our customers. Because our most satisfied customers started out being dissatisfied somewhere else.

TSH from DPC.
Now isn't that nice for a change.



Diagnostic Products Corporation RIA

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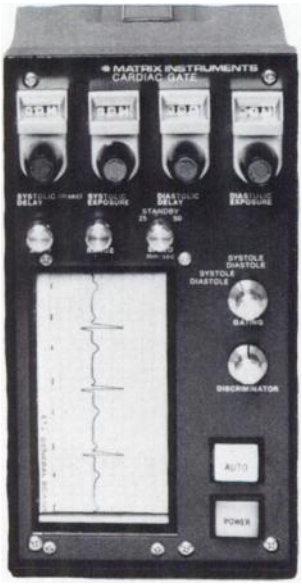
State of the art in cardiac and respiratory synchronization.

Cardiac Gate



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

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

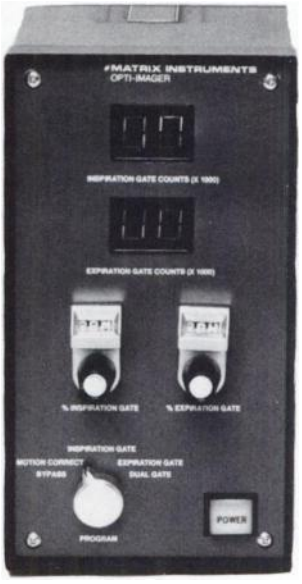
The dual gating operation mode allows recording of both end-systole and end-diastole simultaneously in a split screen two image format.

The cardiac cycle can even be divided into nine equal time segments and the image corresponding to each displayed simultaneously in a nine image format.

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

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

Opti Imager



Opti-Imager is designed to provide an organ image with effects due to respiratory motion minimized. Opti-Imager has two distinct modes of operation: continuous motion correction and respiratory gating. In the continuous motion correction mode, the motion of the organ is tracked and corrected electronically without the need to attach any sensors to the patient. The distribution of counts within the organ image is monitored and corrections are applied to continuously shift the image before it is displayed to compensate for organ motion. Correction is made for motion in both the X and Y direction. Thus, the gamma camera is not gated and all the counts provided by the detector are recorded. The time required to attain a statistically satisfactory image is the same for both a motion corrected and an uncorrected image. In the gating mode, inspiration plateau and expiration plateau images are recorded. The dual gating operation mode allows recording of both inspiration and expiration plateau images simultaneously in a split screen two frame format. Dual scalers record the number of counts in each image.

The Cardiac Gate and Opti-Imager can be synchronized to yield a combination of both cardiac and respiratory gating. Mail coupon to receive detailed information and sample clinical studies.

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ISOTOPE CALIBRATOR

Factory-calibrated for all widely used radionuclides. Others can be added easily.

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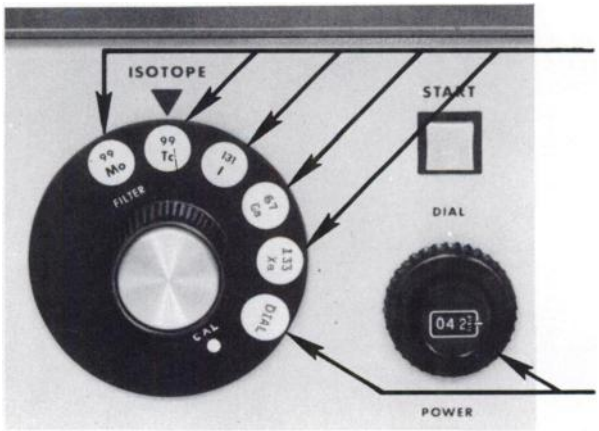
- Fully-shielded chamber.
- Molybdenum breakthrough shield.

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



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

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

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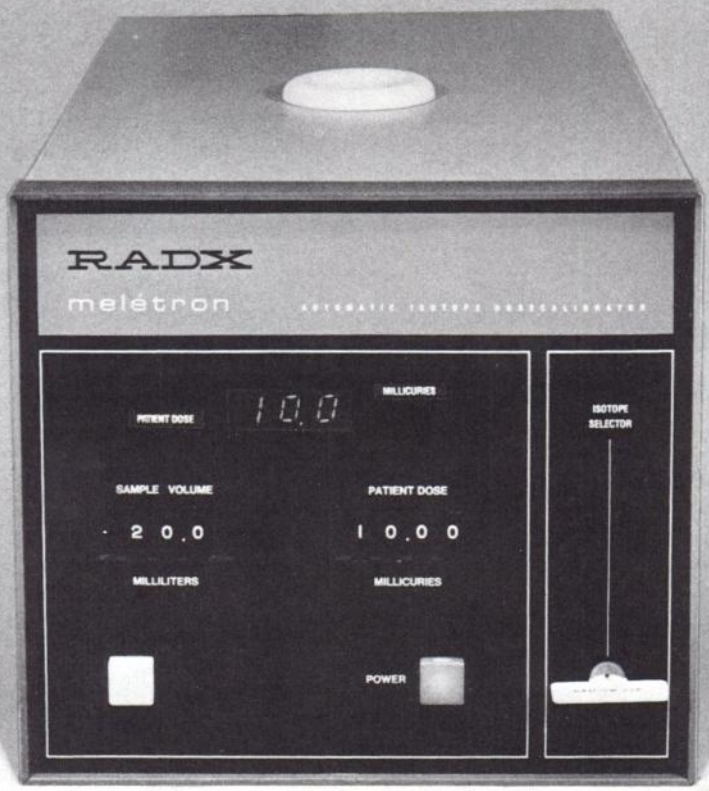

The dosecalibrator that calibrates itself (almost)

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

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

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

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

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

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

For a permanent solution to your dosecalibration and record-keeping problems, call RADX — the innovators in nuclear medicine. RADX, P. O. Box 19164, Houston, Texas 77024, 713/468-9628.

RADX

Melétron & Melécord . . . your key to accurate dosecalibration and error-free records.

When two tests are better than one

The combined information from Cortisol and ACTH measurements is often necessary for the differential diagnosis of disorders of the hypothalamic-pituitary-adrenal (HPA) axis. When choosing a radioassay method for each hormone, you need to select the most reliable radioassay kits available, and we can supply both.

We were the first supplier of an ACTH RIA Kit, and routine clinical use has established its specificity, sensitivity and reproducibility. The kit has an assay range of 10-4,000 pg/ml and uses an antiserum directed at the biologically active (N-terminal ∝1-24) part of the ACTH molecule.

Our Cortipac* Cortisol radioassay is simple, convenient and is backed by more than 2 years' clinical experience. The assay requires only a 100 µl serum sample and results are obtainable within 2 hours.

Both kits are γ-labelled for simple counting in the routine laboratory. Both are supported by our high standards of production and quality control.

Full information on both kits and a medical monograph "The hypothalamic-pituitary-adrenal axis" are available. Please write or telephone for your free copies.

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The CRC-20 dose calibrator incorporates a micro-processor which stores time and activity information for up to 19 formulations of 8 radionuclides.

The decay-adjusted volume is calculated and displayed automatically.

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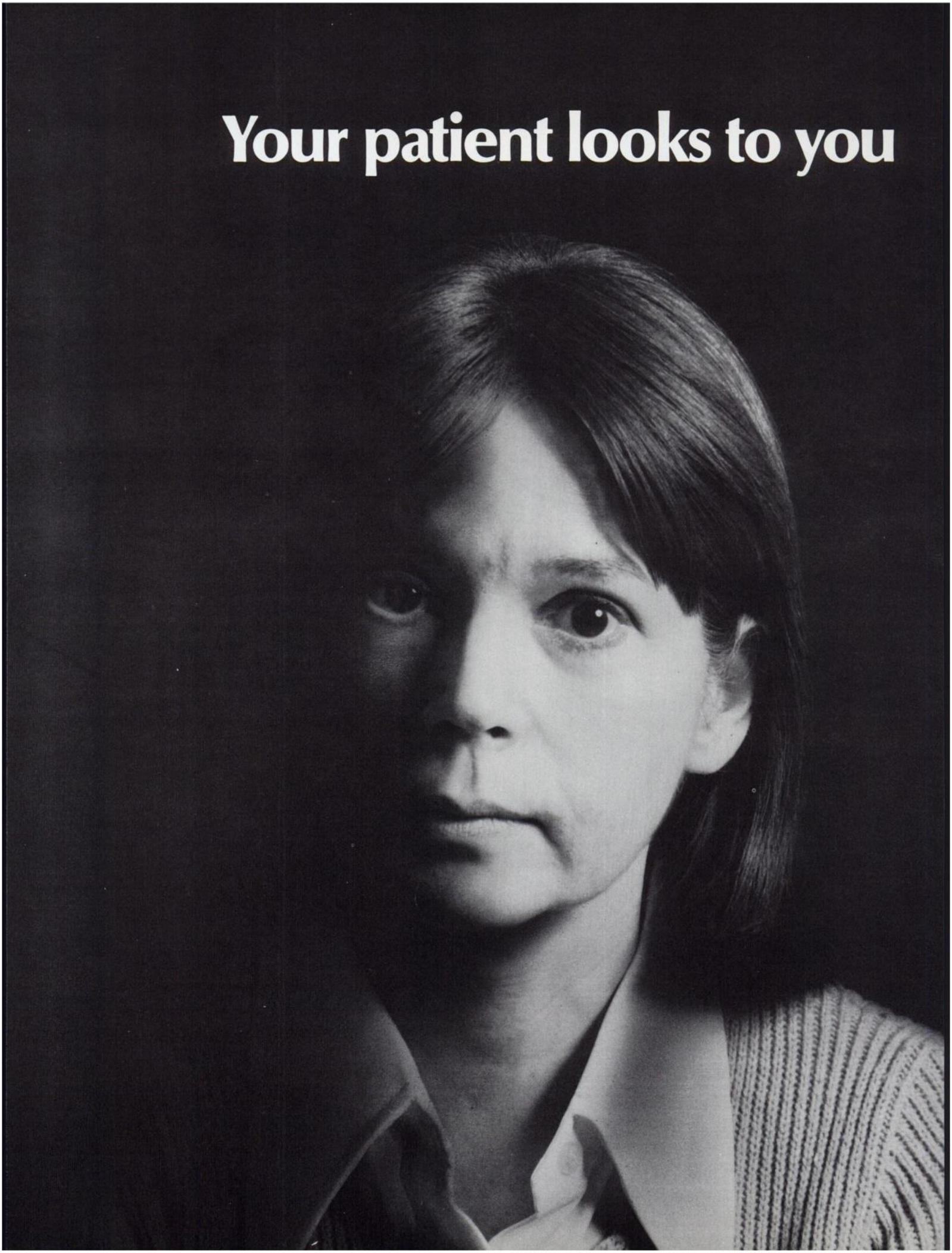
Your patient looks to you



for the right diagnosis.

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Our business . . . our only business . . . at Diagnostic Isotopes, is the production of radiopharmaceuticals.

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Diagnostic Isotopes manufactures products for use in brain, kidney, lung and pancreas imaging, skeletal imaging to delineate areas of altered osteogenesis, cerebral blood flow, muscle blood flow, pulmonary function studies, estimate glomerular filtration rate, assess renal perfusion and for the diagnosis of cardiac abnormalities.

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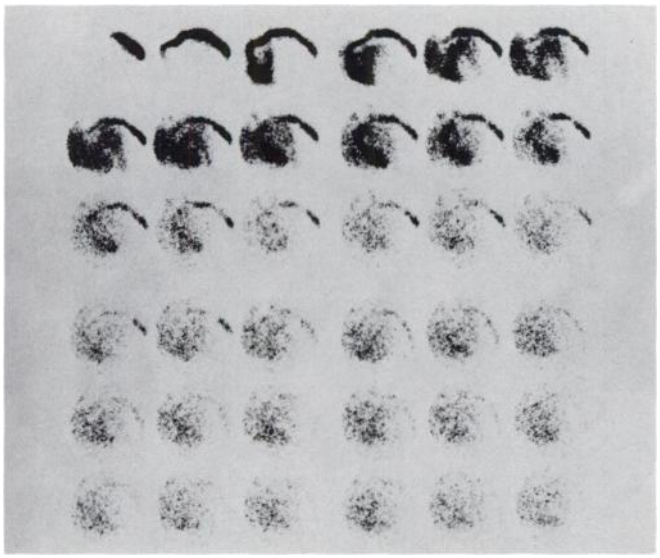
The new Elscint Mobile 1

Gentle as a pussycat.
Yet powerful.
For every clinical need.

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

Mobile 1: Exceptional performance in a mobile camera

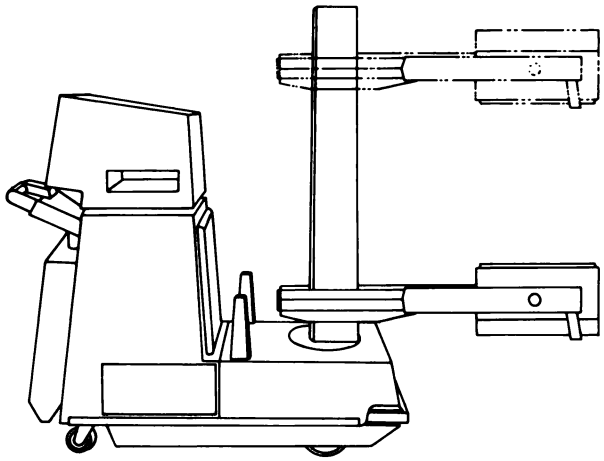
Results, of course, must be the ultimate measure of any diagnostic system. Here, Elscint is second to none. The MOBILE 1 provides a full 12″ FOV with bar resolution better than 3.2 mm. It images at rates



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

Mobile 1: Maximum maneuverability

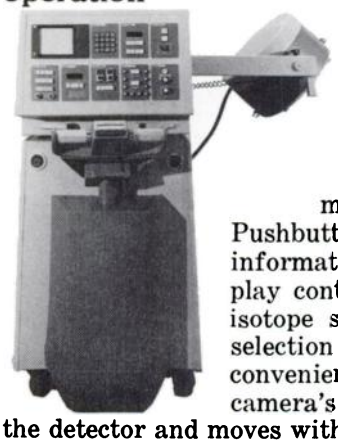
Extreme ease and convenience of movement are major features of the MOBILE 1. Its under-30″ width and compact overall size enable passage through any doorway or narrow hall. Its low profile facilitates excellent forward visibility while in motion and its low center of gravity produces high stability even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



Designed for over *and under* patient imaging

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

Mobile 1: Convenient controls for easy operation



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

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

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

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Our table model

Introducing our Model 450 Four Manual Video Camera. It's a mid-priced, table-top camera that plugs into any imaging system with a video readout—Ultrasound, CT, or Nuclear Medicine computer systems—producing four, 115mm images on a sheet of 8x10 x-ray film.

Dunn did it. We combined the compactness and mechanical simplicity of our Model 400 Camera, with the exceptional quality of the Conrac SNA 9 monitor. The result is a stand-alone camera, with many of the features of our 600 series cameras, at a price you can stand.

Call us at (415) 957-1600. Or write to Dunn Instruments, 52 Colin P. Kelly Jr. Street, San Francisco, Ca 94107. We'll show you our best feature of all. No commercials.

Dunn Instruments, Inc

Is serum folate bioassay now due for retirement?

Until now, bioassay has been the method of choice in folate testing. Even though there are inherent disadvantages in the method, there hasn't been a more reliable alternative.

Now there is, with our new Serum Folate Radioassay which is simpler, faster and more reproducible than bioassay.

Our test is not affected by antibiotics, and is standardised on N^5 methyltetrahydrofolate the predominant form of folate circulating in blood. A unique selenium-75 γ-label is used for ease of counting, and the assay has been designed to be most precise in the clinically important range of 1.5–4.0ng/ml.

Added to all these advantages our radioassay only takes 2-3 hours, so who needs bioassay?

The new Serum Folate Radioassay kit

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The Radiochemical Centre Limited, Amersham, England. Telephone: 024-04-4444
In the Americas: Amersham Searle Corp. Illinois 60005. Telephone: 312-593-6300
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0823

ADC proudly introduces the Smith Orthogonal Hole Phantoms*...

Now the complete daily quality assurance procedure for the scintillation camera in less than 5 minutes.

Single image study provides quality assurance data for:
- "X" & "Y" axis linearity
- Non-uniformity of response
- Uniformity of spatial resolution
- Field size

Plus the capability of:
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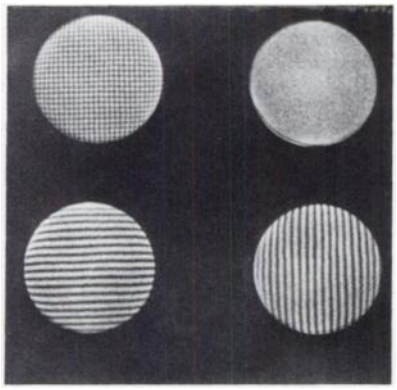
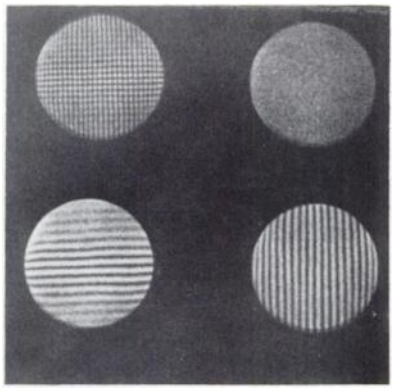
- Estimating the linear dimensions of the organ imaged
- Evaluating performance of total body scan accessory

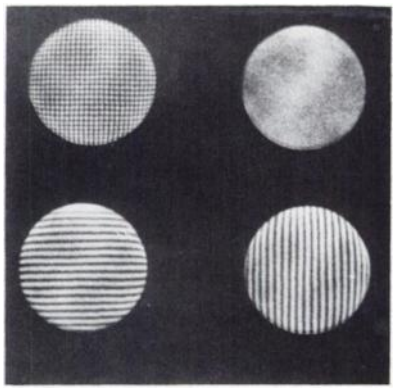
REPRESENTATIVE QUALITY ASSURANCE PHANTOM STUDIES



Camera with acceptable operating characteristics



Camera with "Y" axis misalignment



Camera with energy setting (PHA) too low

The comparison of the Smith Orthogonal Hole Phantom (single image) to the PLES Phantom (two images required) and field flood image demonstrates that the information obtained from a single image with the Orthogonal Hole Phantom will detect any deficiency in camera performance, thereby enabling the physician or technologist to rapidly diagnose the exact problem source.**

The Smith Orthogonal Hole Phantom can be used with the collimator on or off the standard or the large field-of-view cameras. Currently available are:

Model CP-250– 1/4 in. holes on 1/2 in. centers
Model CP-187– 3/16 in. holes on 3/8 in. centers
Model CP-125– 1/8 in. holes on 1/4 in. centers

Also available are lead collars for studies performed with the collimator off the camera, as well as a complete line of other phantoms and quality assurance accessories.

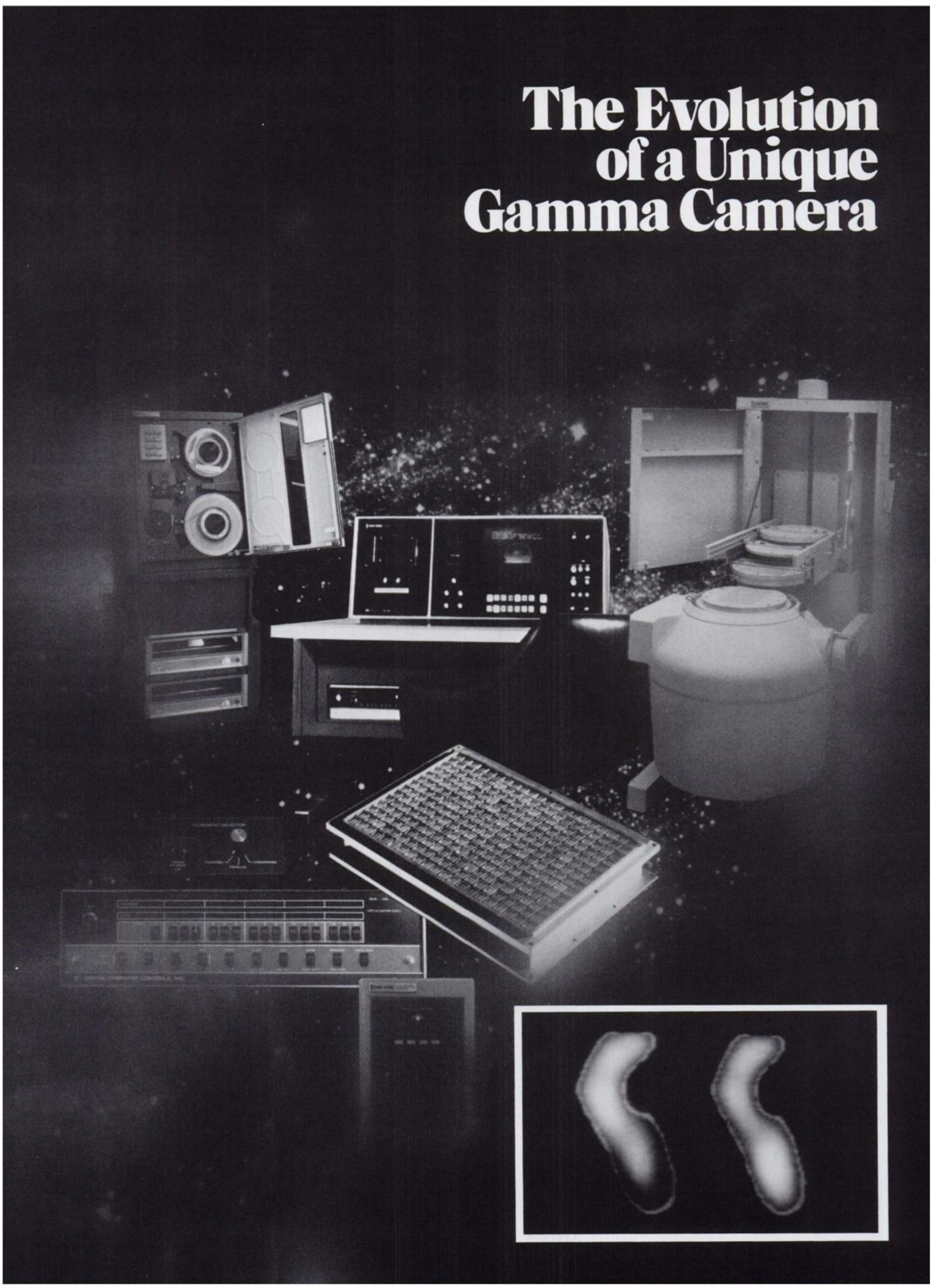
A suggested protocol for quality assurance measurements with the Smith Orthogonal Hole Phantom is available upon request. Please write or call for further details.

*Patent Pending

**Reprint of paper entitled "A comparison of Orthogonal Hole Phantoms against other Phantoms in Quality Assurance Programs" presented at the Southeastern Chapter Meeting, Society of Nuclear Medicine, 10/16/76, by Edward M. Smith and F. David Rollo, is available upon request.

ADC ATOMIC DEVELOPMENT CORP. 7 FAIRCHILD COURT, PLAINVIEW, N.Y. 11803 (516) 433-8010

The Evolution of a Unique Gamma Camera



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JOURNAL OF NUCLEAR MEDICINE

The Baird SYSTEM SEVENTY SEVEN

For the past forty years, Baird-Atomic has set the pace in high-technology instrumentation in a wide variety of disciplines and, most importantly, in nuclear medicine. The accent has always been on innovation — taking a fresh, incisive look at each problem and devising an original way to solve it. In nuclear medicine the critical problem as we initiated development was the necessity of incorporating the means to obtain clinically viable static *and* dynamic studies in the same basic system.

In the earliest stages of the system's design we realized that existing mono-crystal systems had inherent disadvantages which would inhibit their use as clinical studies became more sophisticated and higher count rates became a necessity for statistical accuracy and integrity. *The answer was a multi-crystal detector.* The decision to design and build it — a long, difficult, and expensive process — became the critical step in the evolution of a unique gamma camera system, one *versatile* enough to accommodate future changes in clinical procedures.

Our foresight has been gratifyingly rewarded. System Seventy-Seven is today the *only* gamma camera that has consistently negated obsolescence. Because of the excellence of our original concept, it is inevitable that we remain years ahead of the competition. As clinical needs and capabilities have matured, as professional awareness of the vast new possibilities of dynamic function studies has grown, System Seventy-Seven has easily kept pace — has indeed in many ways *set* the pace. Among the features and options that have kept us in the lead, are: A comprehensive library of nuclear medicine software activated through the innovation of pushbutton computer programming. A minicomputer-based image processing console that analyzes greater than 200,000 observed counts per second at any energy level. The multiposition measurements which virtually eliminate collimator dead space and optimize resolution for uniform, always reproducible imaging. Whole-body imaging capability. A video-to-film organizer for optimal imaging and formatting versatility. CTI, a new continuous tone image system which provides unprecedented resolving detail for gamma camera images.

There are more. And more details about these. Further capabilities will evolve as the dynamics of the new nuclear medicine become manifest. For more information on System Seventy-Seven or if you wish to be put on our mailing list, please get in touch with us. Why not do it today?

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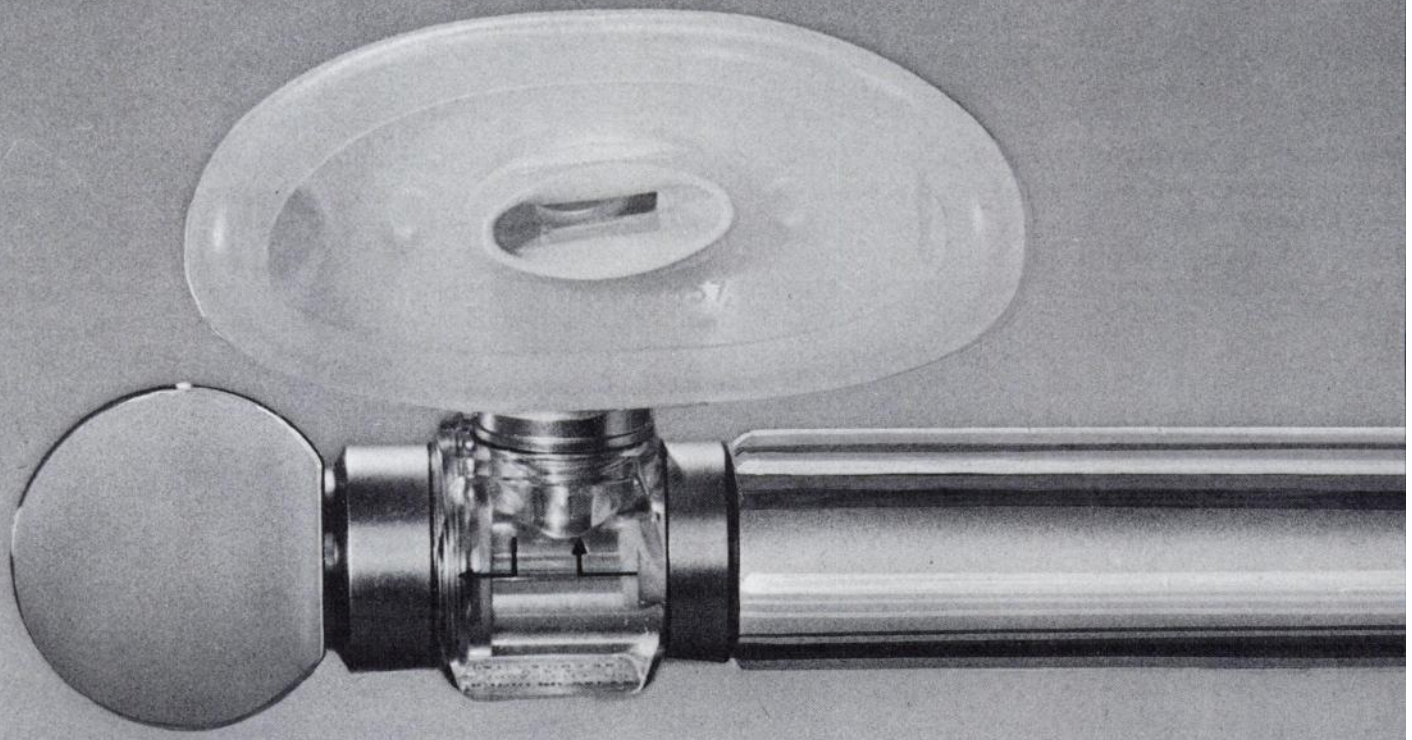
Photo insert: Wall motion of the left ventricle, a typical example of the kind of selective imaging possible with System Seventy Seven's unique data processing capabilities. Zones of interest and histograms of selectively specific target areas can be routinely obtained, and as many as four can be simultaneously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

Now Everybody Can Breathe Easier



Everybody benefits from comprehensive technological advances like the widely used Omnimedical AVM-3 Automated Ventilation Module. With the AVM-3 radioxenon ventilation studies are automated, simplified, reproducible one man operations. Patient cooperation is not needed. Interfaced with the gamma camera, the operator selects a study sequence—Single Breath (tidal volume or vital capacity) or Rebreathe, singly or in combination—and pushes the start button. Scintiphotos are initiated automatically at precise predetermined intervals. The data is then collected. The entire system is enclosed in a streamlined case mounted on an overbed table for use on patients in either sitting or supine positions. The AVM-3 is easy to position, easy to use, easy on the patient, even easy to store. And it's easy to buy. $3,750. F.O.B. Los Angeles. Omnimedical guarantees 30 day delivery. Now, you can breathe easier, too! AVM-3 by Omnimedical, P.O. Box 1277, Paramount, Ca. 90723 (213) 633-6660.

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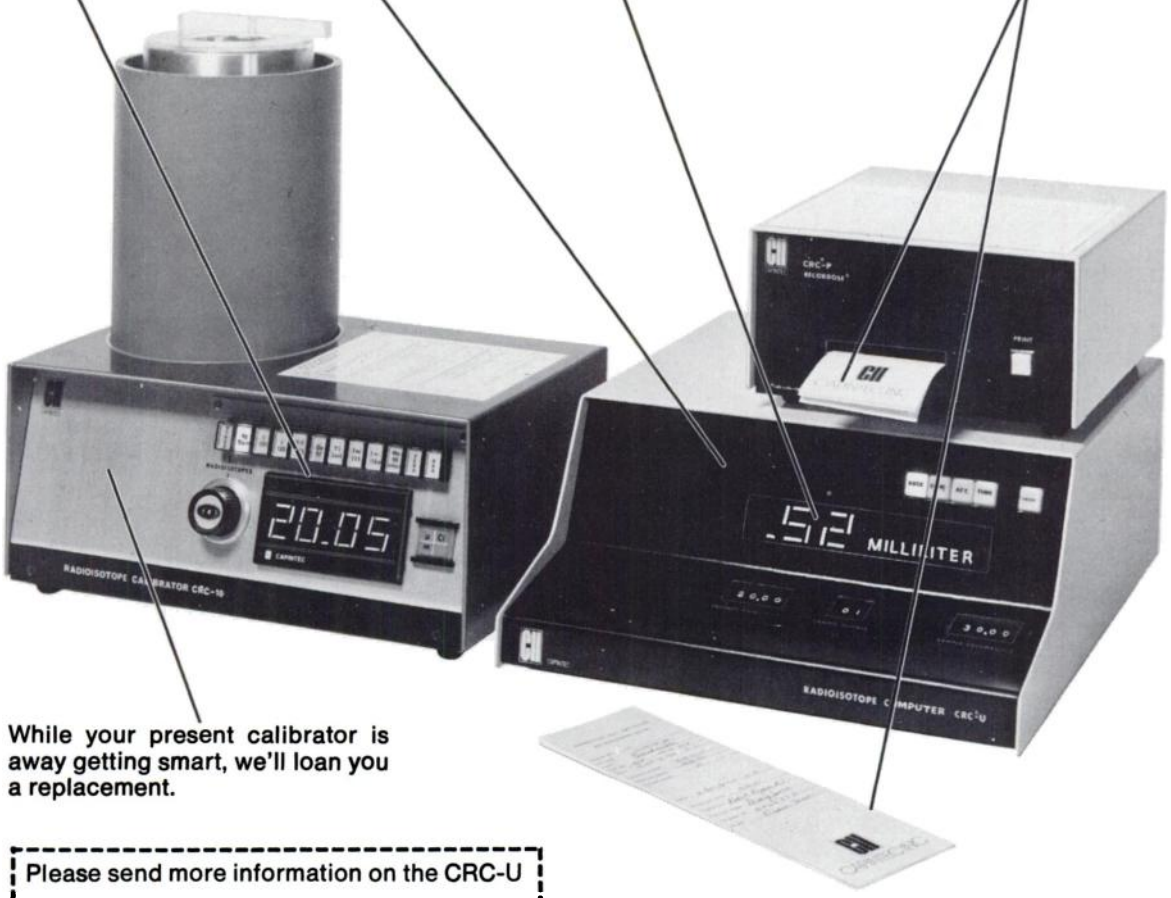

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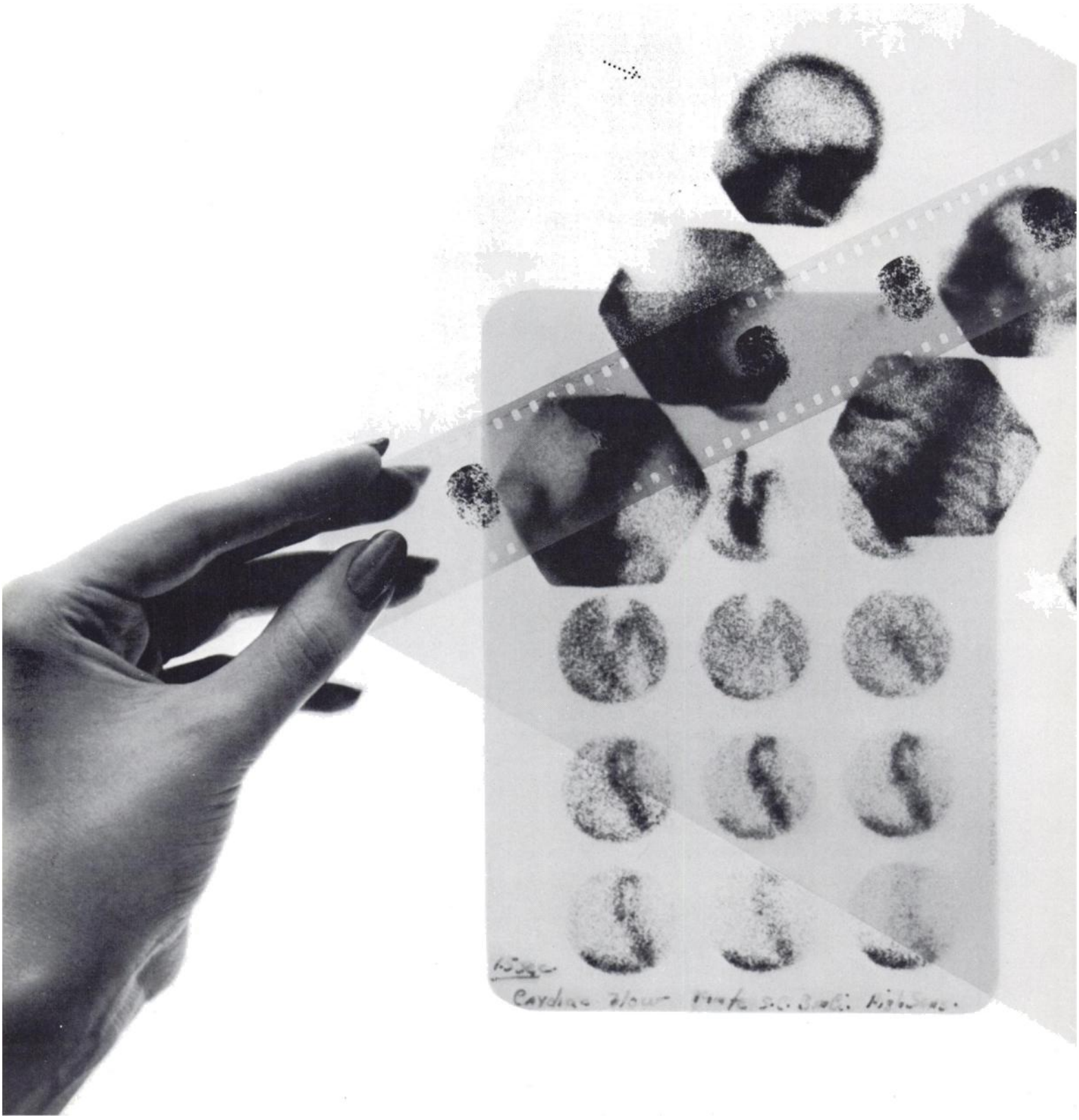
In Nuclear Medicine, the answer is transparent.



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Advances in nuclear medicine have increased the need for recording multiple, single, or dynamic images. And Kodak continues to help meet the need with a family of transparency films that are compatible with what your equipment can do now–or can be adapted to do.

You can record single images on sheets of Kodak film, or on individual frames of Kodak roll film.

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SETHOTOPE®
Selenomethionine Se 75 Injection

Sethotope (Selenomethionine Se 75 Injection) is a sterile, nonpyrogenic, aqueous solution of L-selenomethionine providing a specific activity of not less than 25 microcuries per mcg. of selenium at the time of manufacture. The product also contains not more than 3 mg. L-methionine as a carrier, not more than 12 mg. 2-aminoethanethiol as an antioxidant, sodium chloride for isotonicity, and 0.9% (w/v) benzyl alcohol as a preservative.

CONTRAINDICATIONS: At present, there are no known contraindications to the use of Selenomethionine Se 75 Injection.

WARNINGS: This radiopharmaceutical should not be administered to patients who are pregnant or who may become pregnant or during lactation unless the information to be gained outweighs the possible potential risks from the radiation exposure involved.

The transplacental transport and long biologic half-time of this agent may result in significant radiation exposure to the fetus. Since selenomethionine ^{75}Se is excreted in milk during lactation, formula-feedings should be substituted for breast-feedings.

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 safe handling of radionuclides, produced by nuclear reactor or cyclotron, and whose experience and training have been approved by the appropriate federal or state 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.

Fasting prior to administration may enhance the hepatic uptake of the agent which may result in degradation of pancreatic image quality.

ADVERSE REACTIONS: At present, adverse reactions have not been reported following administration of Selenomethionine Se 75 Injection.

For full prescribing information, consult package insert.

HOW SUPPLIED: Sethotope (Selenomethionine Se 75 Injection) is available in multiple dose vials in potencies of 0.25 millicurie, 0.5 millicurie, and 1 millicurie. Complete assay data for each vial are provided on the container.

Medotopes®

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E. R. Squibb & Sons, Inc.
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For pancreas imaging

Sethotope®

Selenomethionine Se 75 injection

High pancreas specificity

Selenomethionine is a structural analog of the amino acid, methionine, in which the selenium has been substituted for the sulfur atom. Chemically and biologically, they behave alike, including a relatively high degree of uptake in the pancreas during protein synthesis.

Levorotatory compound

Radioactive selenomethionine can be produced in racemic form by chemical synthesis from ^{75}Se. At Squibb, however, selenomethionine is prepared *biosynthetically* by extracting it from the protein product of yeast grown on a low sulfur medium containing ^{75}Se of high specific activity. This compound is levorotatory.

Specific activity

Squibb L-selenomethionine ^{75}Se provides a specific activity of not less than 25 microcuries per microgram of selenium at the time of manufacture.

Sethotope®
Selenomethionine Se 75 Injection

See opposite page for brief summary.

Medotopes®

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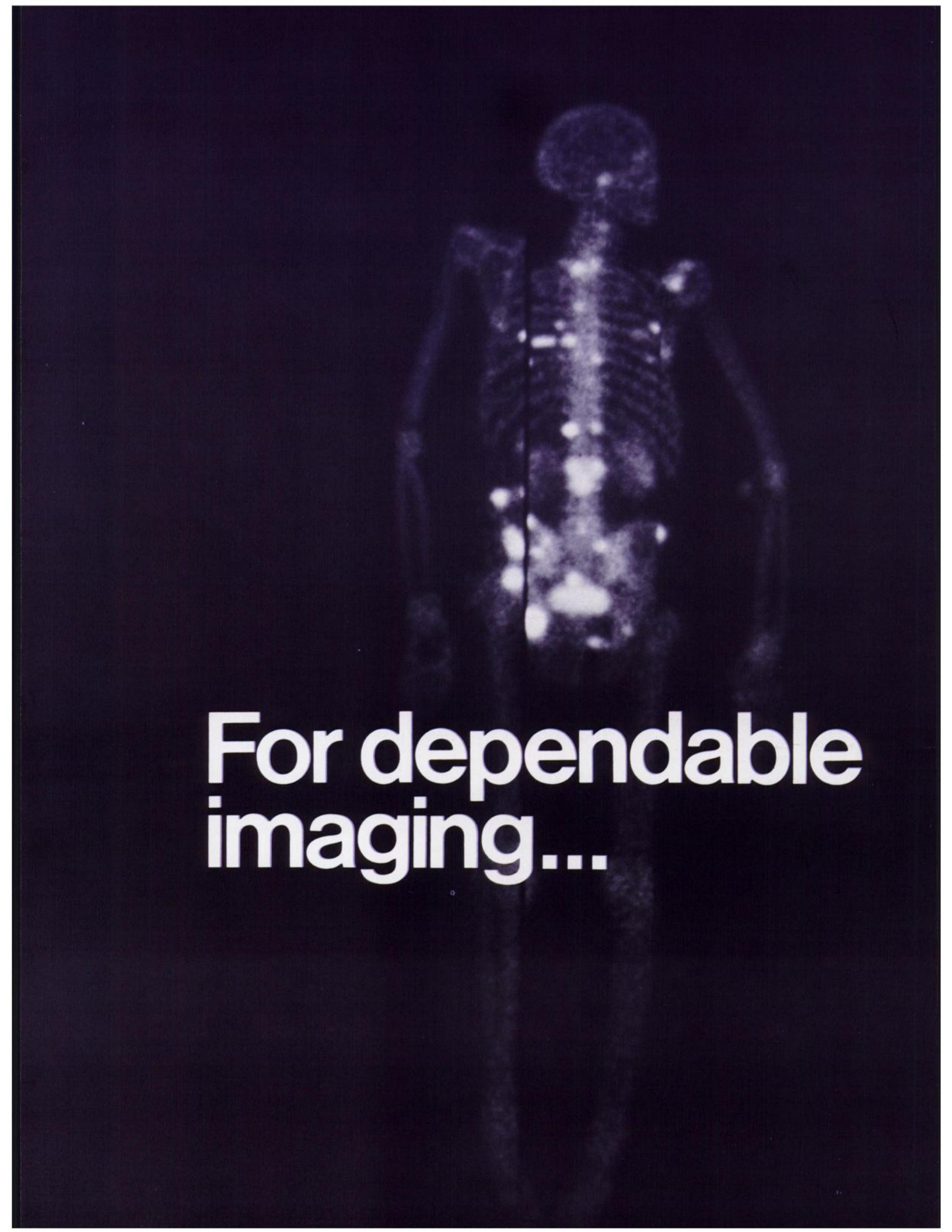
Princeton, N.J. 08540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the dependable diphosphonate

PROCTER & GAMBLE

OSTEOSCAN®

(5.9 MG DISODIUM ETIDRONATE, 0.16 MG STANNOUS CHLORIDE)

SKELETAL IMAGING AGENT

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

See following page for a brief summary of package insert.

PROCTER & GAMBLE

OSTEOSCAN®

(5.9 MG DISODIUM ETIDRONATE, 0.16 MG STANNOUS CHLORIDE)

SKELETAL IMAGING AGENT

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

DESCRIPTION

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

ACTIONS (CLINICAL PHARMACOLOGY)

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

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

INDICATIONS

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

CONTRAINDICATIONS

None.

WARNINGS

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

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

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

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

PRECAUTIONS

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

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

ADVERSE REACTIONS

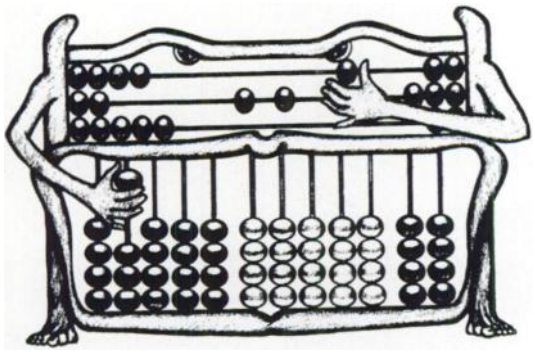
None.

DOSAGE AND ADMINISTRATION

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

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

WHERE WOULD THE COMPUTER HAVE BEEN, WITHOUT A COLLEGE EDUCATION?



Still an abacus. Probably.

After all, man's first computer was good enough for several thousand years. Till a bunch of college men started experimenting with a new concept called cybernetics.

And suddenly, you have the computer. A billion-dollar business and still counting.

Radio. Television. Plastics. Petrochemicals. The new rice and the new wheat. Hunger-fighters that may save the world from famine.

All products of colleges and college-trained minds.

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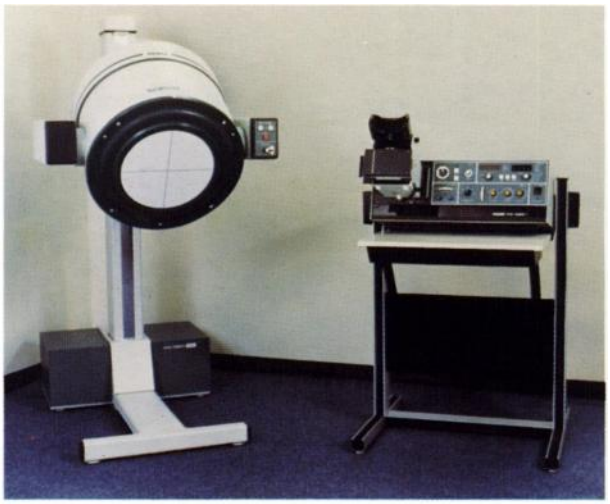
Lung View, Anterior



Bone View, Posterior

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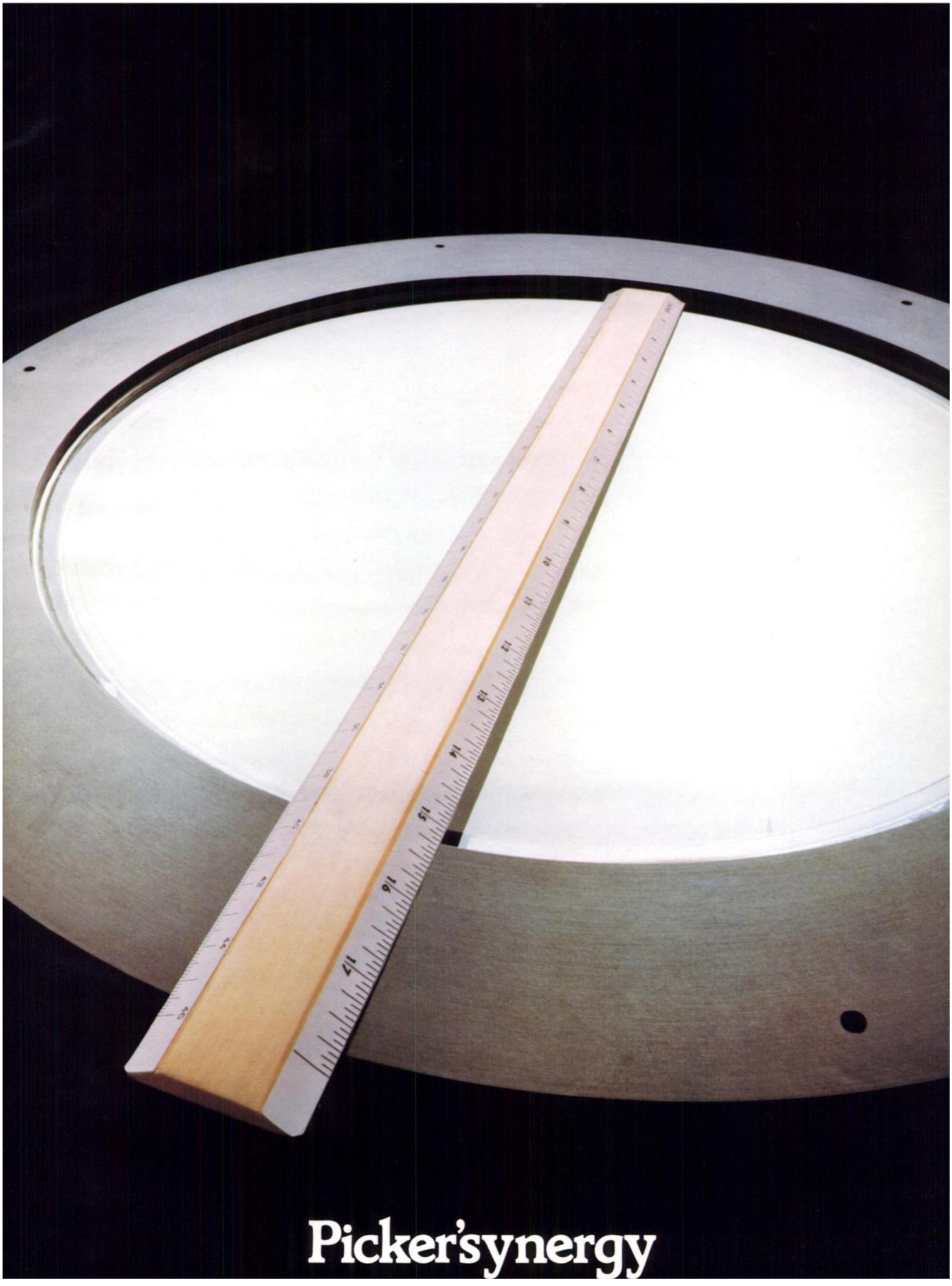
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New Amersham/Searle Estriol RIA Kit

There is only one thing wrong with measuring estriol in urine, and that's the urine. Amersham/Searle's new Estriol RIA Kit avoids the time consuming and inconvenient 24-hour urine collection.

- Simple, highly specific RIA method—no solvent extraction or chromatography.
- Only 50μl serum or plasma sample.
- Rapid and reproducible results. 5-8% C.V. in an individual hospital.
- Easy gamma counting with I-125 labeled Estriol.

Benefit to the obstetrician:
no 24-hour wait, high reliability

Benefit to the laboratory:
no urine handling or purifying, easy gamma counting with I-125 labeled Estriol, single or serial estimations easily performed

Benefit to the patient:
no inconvenient urine collection, storage, handling and delivery

Complements the clinically-proven HPL RIA Kit from Amersham/Searle

Amersham/Searle

AMERSHAM/SEARLE CORPORATION
AN ACTIVITY OF G. D. SEARLE & CO. AND THE RADIOCHEMICAL CENTRE

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Toll-free (800-323-9750)

In Canada
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Oakville, ONT
(416) 844-8122
Toll-free (1-800-261-5061)

New Amersham/Searle Estriol **RIA Kit**

INDICATIONS AND USAGE: Technetium Tc 99m Pyrophosphate/Trimetaphosphate-Tin may be used as a bone imaging agent to delineate areas of altered osteogenesis.

CONTRAINDICATIONS: None known.

WARNINGS: Technetium Tc 99m Pyrophosphate/Trimetaphosphate-Tin should not be administered to patients who are pregnant or lactating unless the benefits to be gained outweigh the potential hazards.

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

It has been reported that false-positive or false-negative brain scans may result when brain scans using sodium pertechnetate Tc 99m are performed after a bone scan has been done using an agent containing stannous chloride, e.g., a pyrophosphate or polyphosphate bone agent. This is thought to be due to the interaction of Tc 99m with stannous ions inside red blood cells. Therefore, in those cases where both brain and bone scans are indicated, the brain scan should be performed first, if feasible. Alternatively, another brain imaging agent, such as Tc 99m DTPA, may be employed.

PRECAUTIONS: Tc 99m Pyrophosphate/Trimetaphosphate-Tin, 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.

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.

Technetium Tc 99m Pyrophosphate/Trimetaphosphate-Tin should be used within six hours of preparation.

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. Tc 99m Pyrophosphate/Trimetaphosphate-Tin 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: No adverse reactions specifically attributable to the use of Technetium Tc 99m Pyrophosphate/Trimetaphosphate-Tin have been reported.

DOSAGE AND ADMINISTRATION: The suggested dose range for i.v. administration to be employed in the average patient (70kg) is:

Bone imaging: 5-15mCi Technetium Tc 99m labeled Pyrophosphate/Trimetaphosphate-Tin. Scanning post-injection is optimal at about 3-4 hours.

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.

The components of the New England Nuclear Technetium Tc 99m Pyrophosphate/Trimetaphosphate-Tin 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.

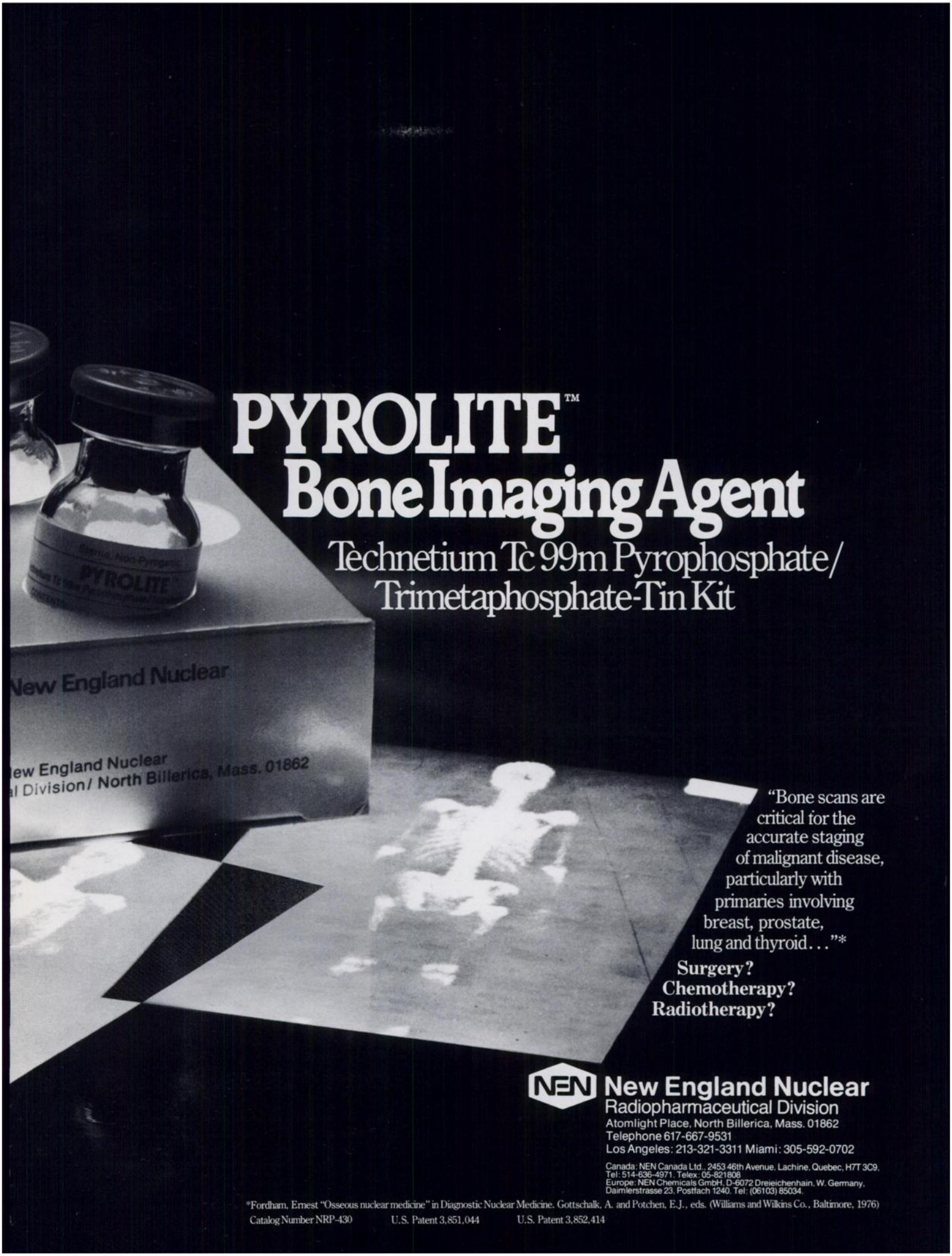
Technetium Tc 99m Pyrophosphate/Trimetaphosphate-Tin is prepared by simply adding 3-7ml of sodium pertechnetate Tc 99m solution to the vial and swirling for about one minute. Shielding should be utilized when preparing the Tc 99m Pyrophosphate/Trimetaphosphate-Tin.

HOW SUPPLIED: NEN's PYROLITE™ Technetium Tc 99m Pyrophosphate/Trimetaphosphate-Tin Kit is supplied as a set of five or thirty vials, sterile and non-pyrogenic. Each vial contains in lyophilized form:

Sodium Pyrophosphate—10mg
Sodium Trimetaphosphate—30mg
Stannous Chloride—1mg

Prior to lyophilization the pH is adjusted to between 4.5-5.5 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).

Included in each five (5) vial kit is one (1) package insert and twelve (12) radiation labels. Included in each thirty (30) vial kit is one (1) package insert and seventy-two (72) radiation labels.


PYROLITE™
Bone Imaging Agent
Technetium Tc 99m Pyrophosphate/
Trimetaphosphate-Tin Kit
New England Nuclear
New England Nuclear
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"Bone scans are critical for the accurate staging of malignant disease, particularly with primaries involving breast, prostate, lung and thyroid..."*
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Radiotherapy?
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Europe: NEN Chemicals GmbH, D-6072 Dreieichenhain, W. Germany, Daimlerstrasse 23, Postfach 1240. Tel: (06103) 85034.
*Fordham, Ernest "Osseous nuclear medicine" in Diagnostic Nuclear Medicine. Gottschalk, A. and Potchen, E.J., eds. (Williams and Wilkins Co., Baltimore, 1976)
Catalog Number NRP-430
U.S. Patent 3,851,044
U.S. Patent 3,852,414

State of the art in gamma camera hard copy recording.

Multi-Imager 1

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

Multi-Imager 4

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

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

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NEW... automatic

XDS

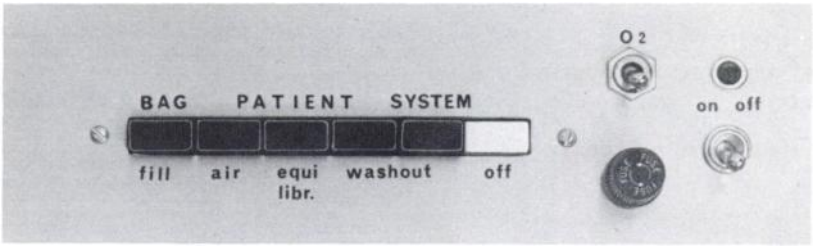
(Xenon Delivery System)

For the busy department that demands operating ease, speed and efficiency in ventilation and perfusion studies using any radioactive xenon

- Push-button control.
- All functions facilitated by two internal blowers.
- Resistance-free patient breathing.
- Uses 20-liter breathing bags in fully-shielded chamber.
- Accepts any radioactive xenon... ^{133}Xe, ^{127}Xe, ^{125}Xe.

XDS makes lung function studies easier for both the patient and the technologist. With "up-front" push-button controls and two internal blowers doing the work, the patient enjoys resistance-free breathing; the technologist has full control of each programmed function at his fingertips. Studies are fast, efficient and effortless.

XDS— the system with the versatility and performance features of more-expensive systems.



Control Panel

Each programmed function is controlled by two in-system blowers which are independent of the patient's breathing efforts. From "Fill" to "System Washout" the blowers automatically balance the breathing circuits, providing resistance-free patient breathing and complete system clearance.

For full details, write for Bulletin 217-B

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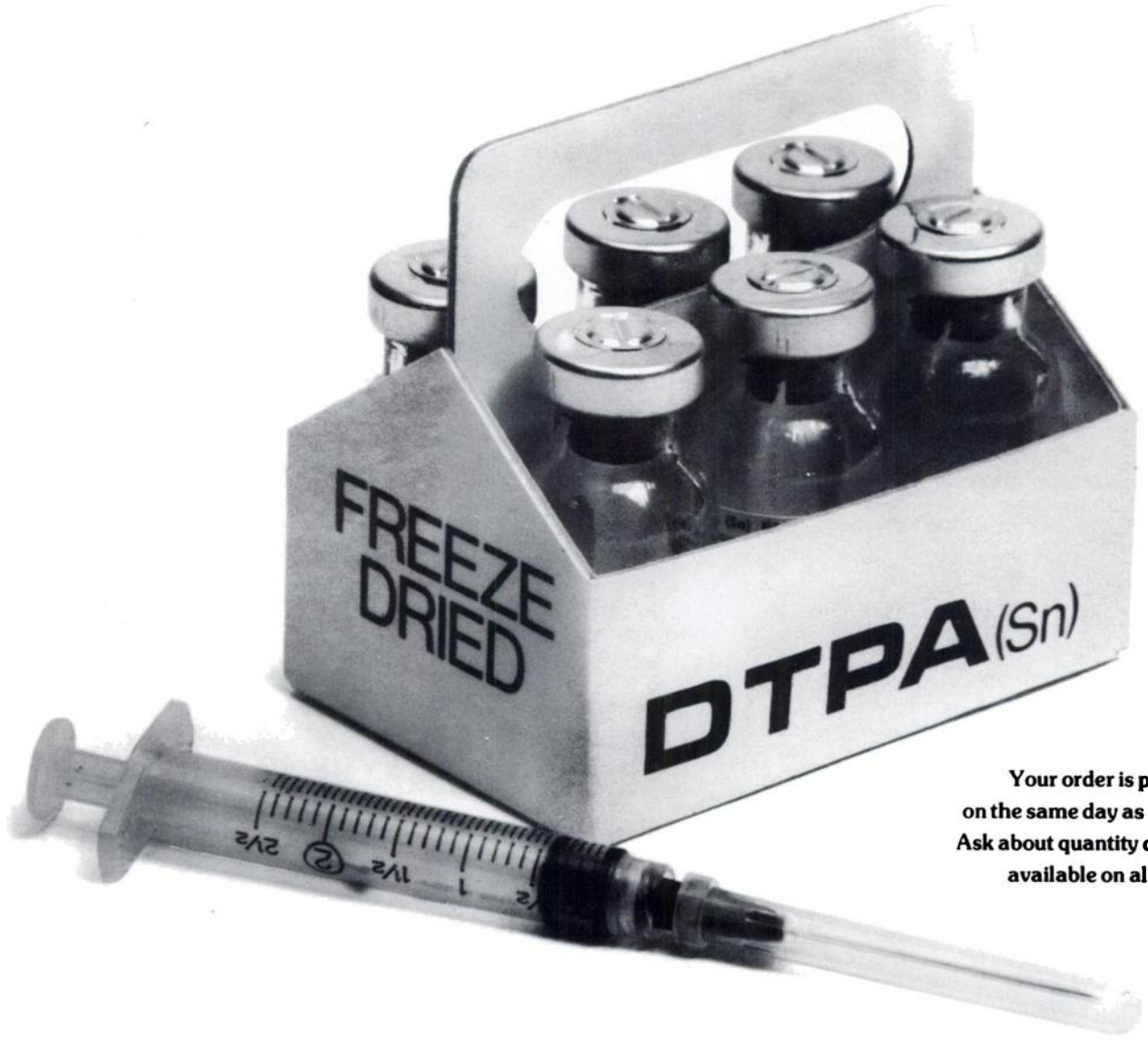
Remember!

Ours is a freeze-dried DTPA that does not require refrigeration and is ready for addition of Tc99m solution. Made with monocalcium trisodium salt, rather than pentasodium salt.

Available in a six pack, each of the six vials contains a sterile, pyrogen-free mixture of 20.6 mg of $CaNa_3$ diethylenetriaminepenta acetate, 0.210 mg of stannous chloride and HCl and/or NaOH to adjust pH.



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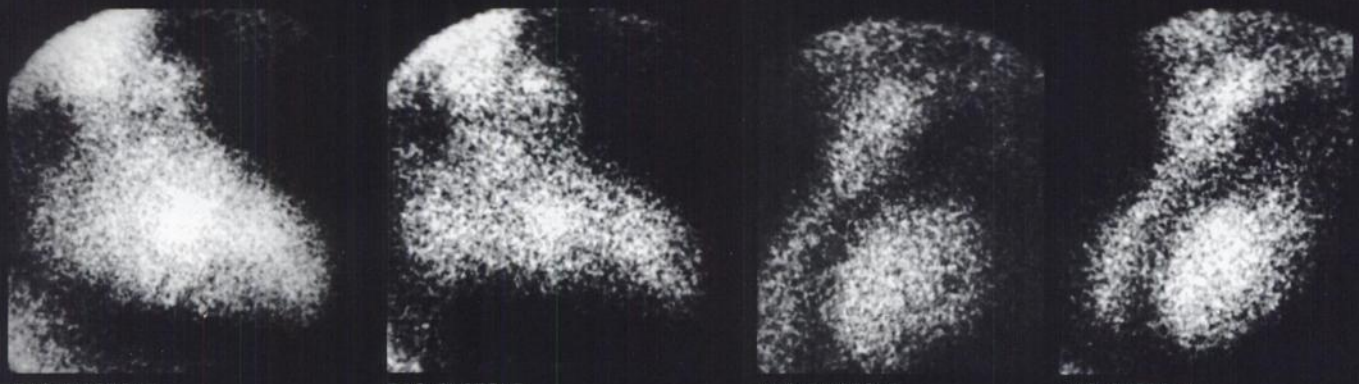
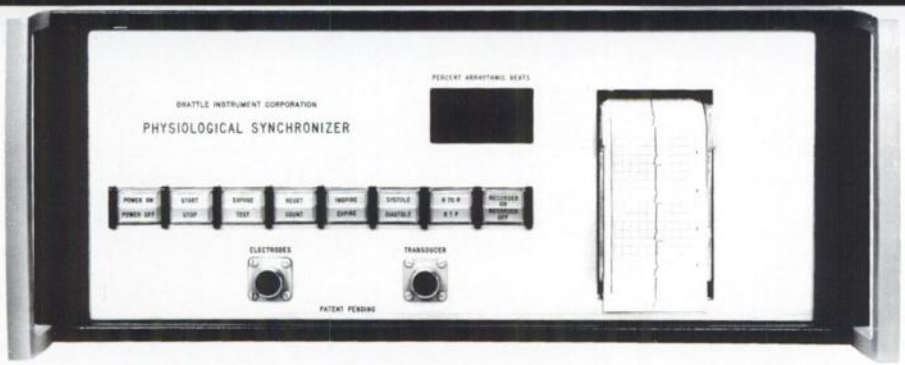
Help your cardiologist study heart kinetics non-invasively with Brattle-gated scintiphotos.



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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Searle is helping shape this era of advancement. Over the past decade, guided by your needs, we have developed sophisticated nuclear imaging instruments to a high degree of performance. Now, the knowledge gained during that time is being applied to the creation of instrumentation in the fields of ultrasound and CT scanning.

What Searle developed yesterday in nuclear imaging, the medical community relies on today. And *today* we are planning significant advances in ultrasonic, CT, and nuclear imaging. Tomorrow is in view.

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SR-514