

Sodium Iodide I 123 for thyroid studies



medi+physics™

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/100 μ Ci MPI-Iodine-123	Rads/100 μ Ci 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



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.

IMMUNITY



Yes, the Powertrol unit will make your costly electronic equipment immune to power line fluctuations such as intermittent loss of power, brown outs, emergency power change over, and normal power company line transients.

The Powertrol protects instrumentation from 90 to 140 volts – above or below these parameters the Powertrol cuts out, thereby protecting electronic equipment. One Powertrol unit can afford complete protection to an entire laboratory. Manual or automatic operation allows the return of power to the instruments.

The Powertrol unit is just a fraction of the cost of expensive electronic equipment, and yet it can save that very equipment from total ruin! Get the whole Powertrol story by calling collect at (914) 961-8484, or write Medi-Ray Electronics, Inc. 150 Marbledale Road, Tuckahoe, N. Y. 10707.

Medi-Ray, Inc.

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.

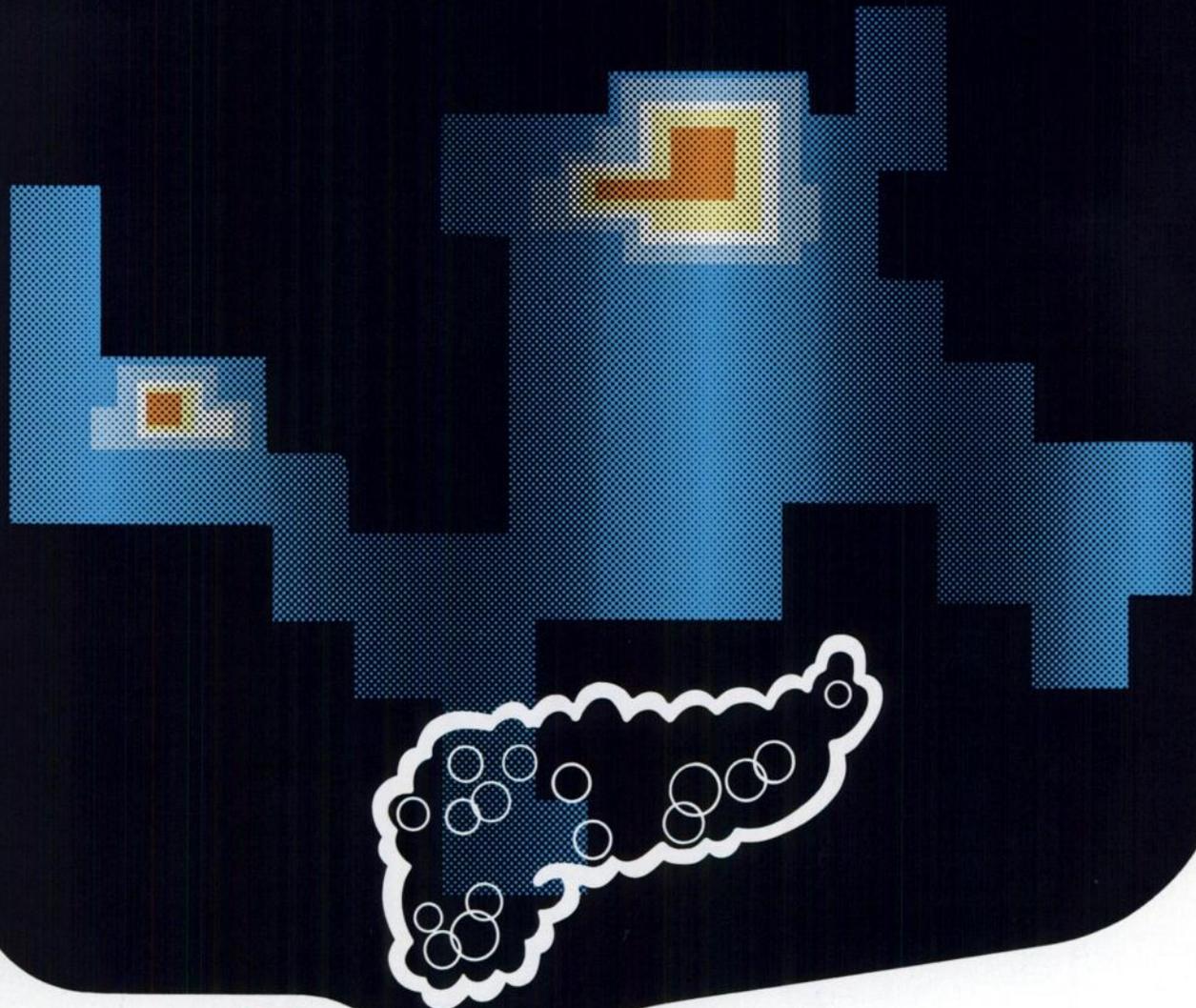
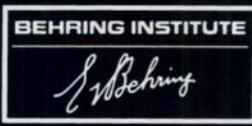
Please write for complete technical data or call, toll free 1-800-225-1241 (in Massachusetts call collect 617-492-2526).



**Clinical
Assays, Inc.**

237 Binney Street, Cambridge, MA 02142

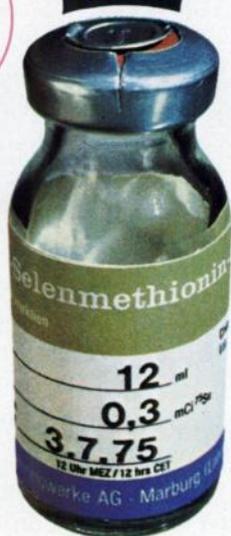
from Clinical Assays



According to our own new method

L-Selenomethionine (Se-75)

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



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

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

Specification

L-Selenomethionine- (Se-75)
Less than 5% D-Selenomethionine.
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 (12ml beaded rim vial)

Order No.: SE-515

Calibration day: 1st of the month

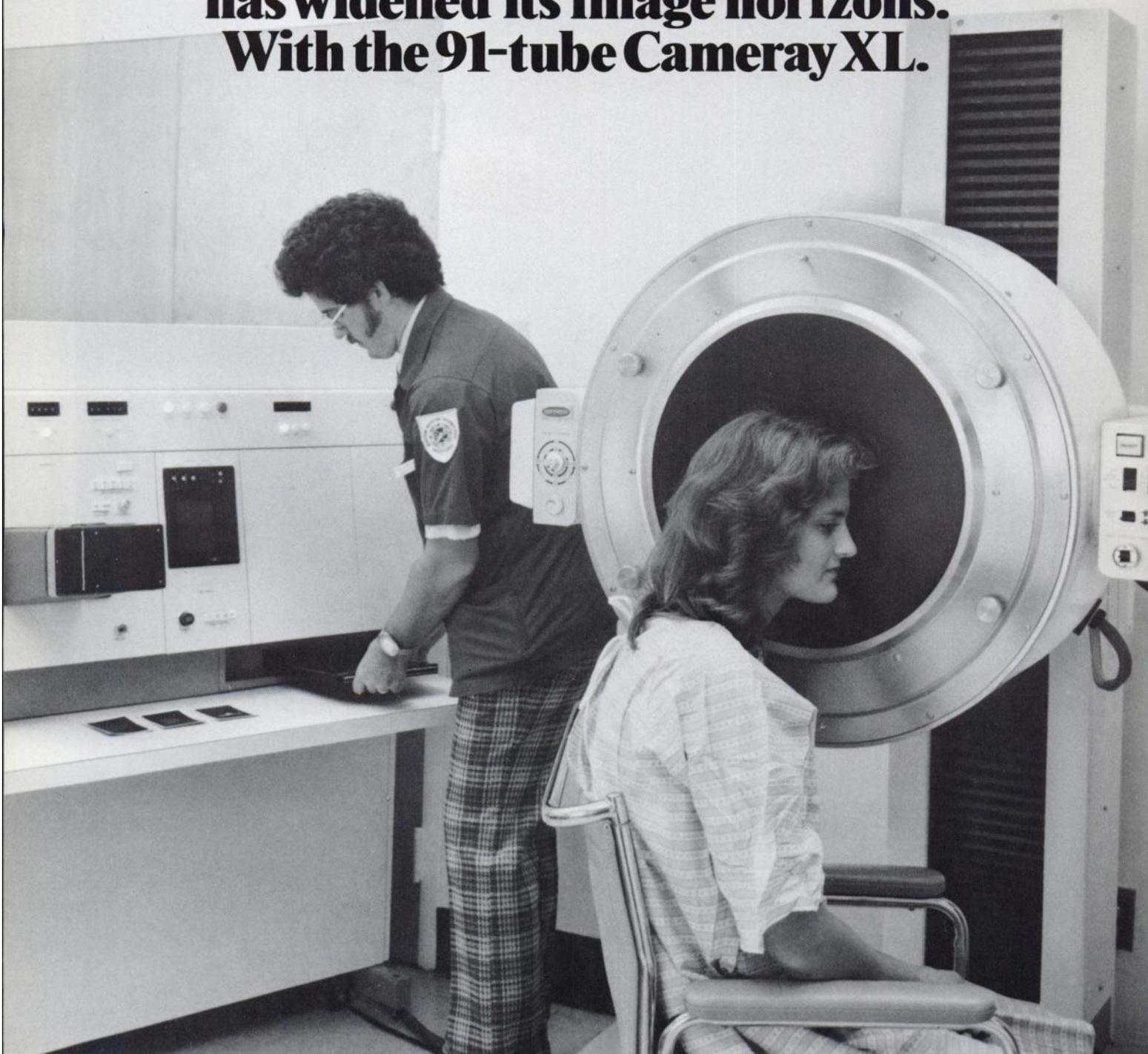
Dispatch: daily from the 1st of the previous month on

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.

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. 

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Generator
is new.**

**The convenience
is traditional:**



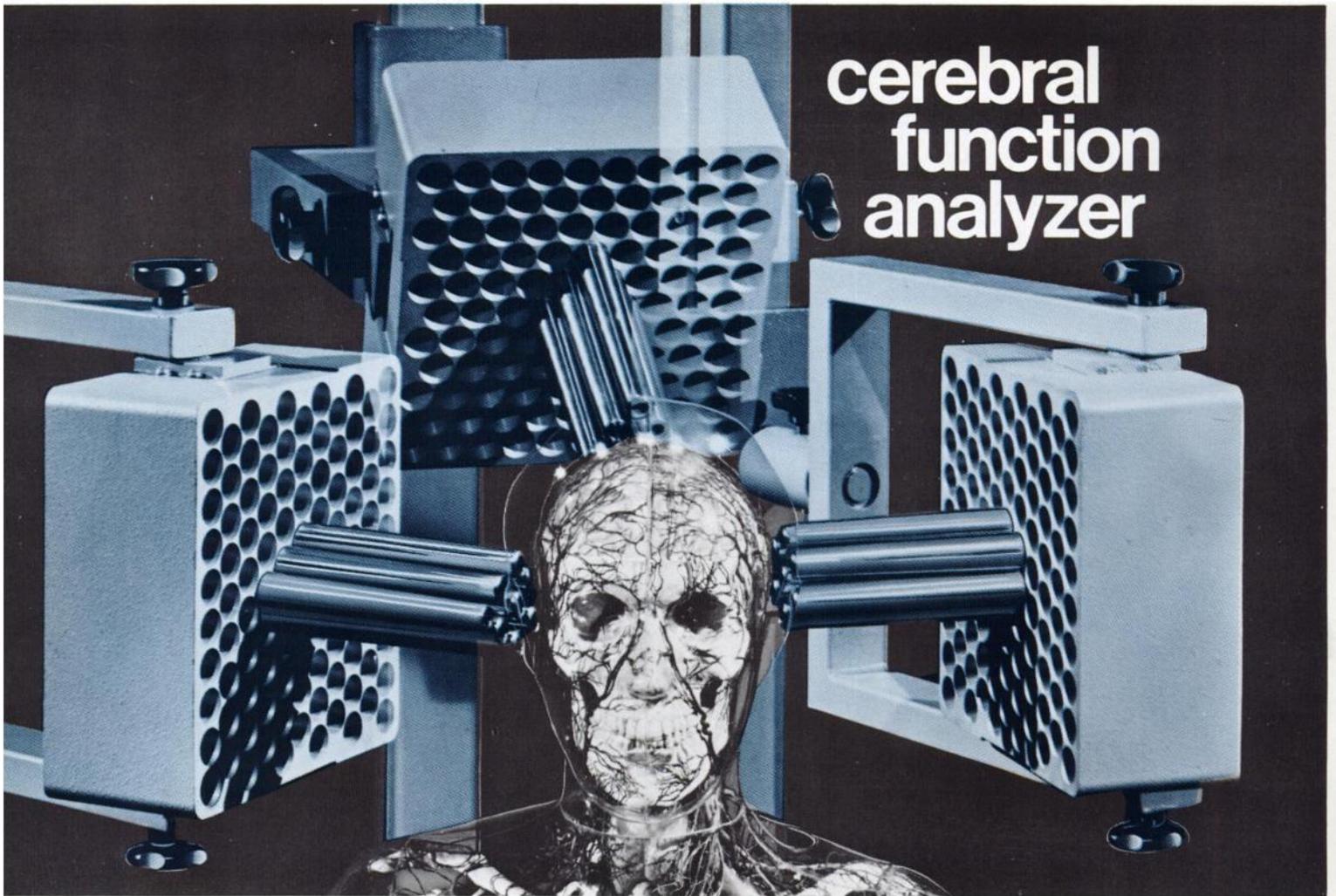
**New England Nuclear
Radiopharmaceutical Division**

Atomlight Place, North Billerica, Mass. 01862
Telephone 617-667-9531

Los Angeles: 213-321-3311 Miami: 305-592-0702

Canada: NEN Canada Ltd., Lachine, Quebec, H7T 3C9, Tel: 514-636-4971, Telex: 05-821808
Europe: NEN Chemicals GmbH, D-6072 Dreieichenhain, W. Germany, Daimlerstrasse 26, Postfach 1240, Tel: (06103) 85034.

cerebral function analyzer

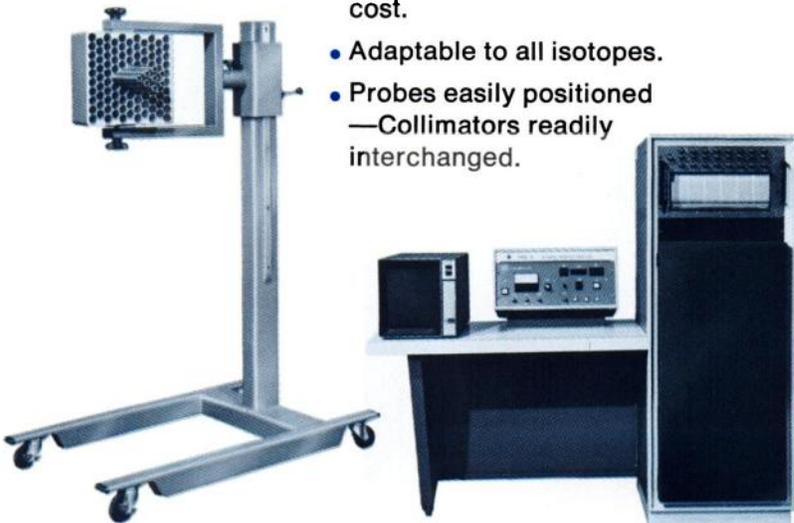


Harshaw's TASC-5 multi-probe system is a new clinical research instrument for the acquisition of quantitative data on regional alterations of cerebral blood flow utilizing Xenon-133.

TASC-5 offers the clinical investigator these advantages—

- True modular design allows system expansion at any time and at minimum cost.
- Adaptable to all isotopes.
- Probes easily positioned—Collimators readily interchanged.
- Minimum probe diameter allows maximum number of probes over area of interest.
- Stabilization circuitry maintains probe sensitivity.
- Provisions for both analog and/or digital data handling.

Our new 8-page brochure discusses TASC-5 in detail. Write or call us for a fast reply.



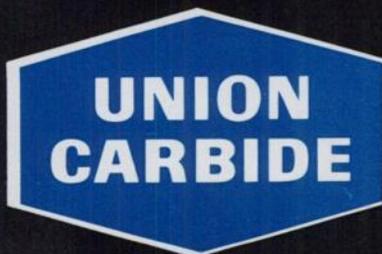
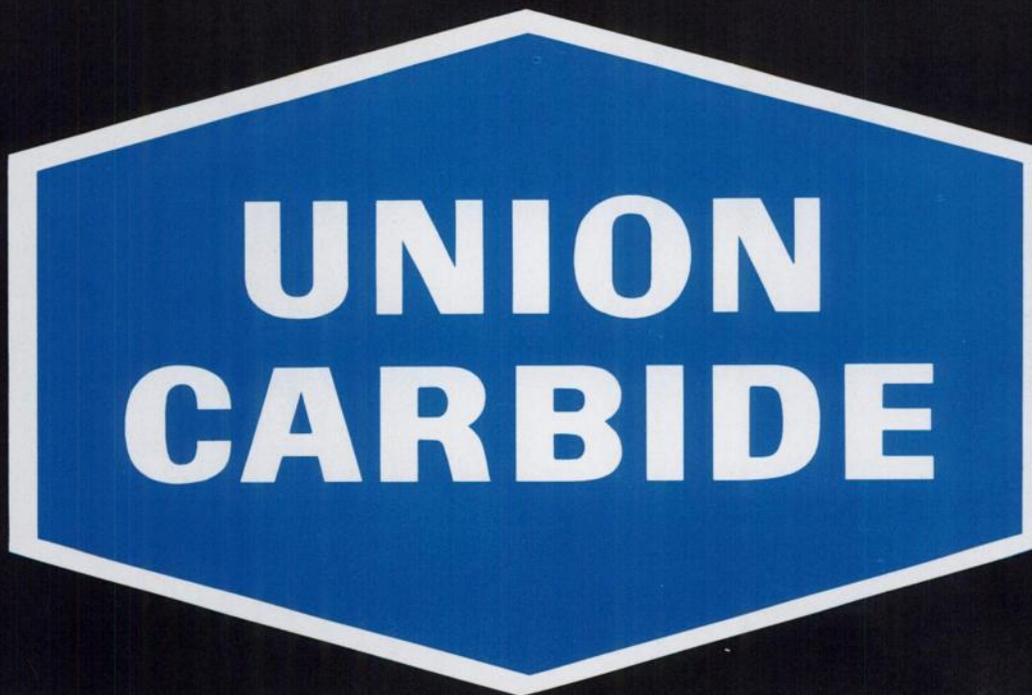
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...the CLEON Whole Body Imaging People

Perhaps that is what we should be called. Because The Radiochemical Centre is one of the largest radiopharmaceutical producers in the world. It also has a large research and development programme for new products in the diagnostic, therapeutic and research fields.

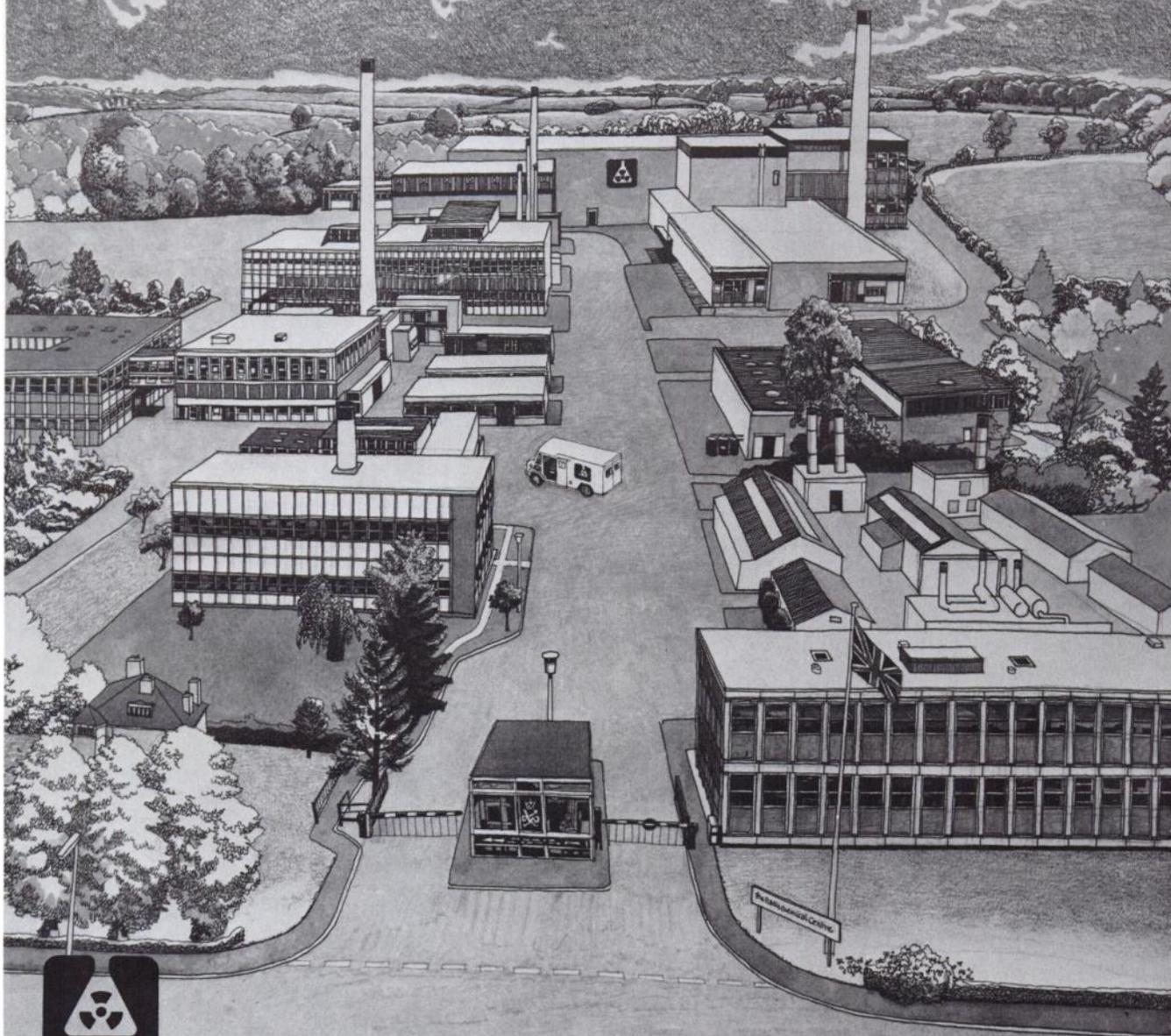
By setting ourselves a high standard of Production and Quality Control we can assure you of the reliability of our products. Their performance is validated by extensive clinical trial

data much of which is published in our literature.

We offer, for example, ^{75}Se selenomethionine, ^{67}Ga citrate, $^{99\text{m}}\text{Tc}$ and $^{113\text{m}}\text{In}$ generators, and a wide range of iodinated compounds including ^{125}I -labelled fibrinogen. Our catalogue also lists a number of unique products like the Dicopac* kit, a valuable aid in haematology.

But we have many more. Why not write or telephone for our catalogue.

The Radiopharmaceutical Centre?

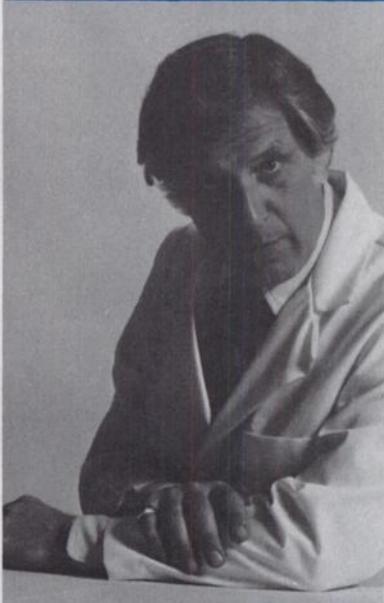


**The Radiochemical Centre
Amersham**

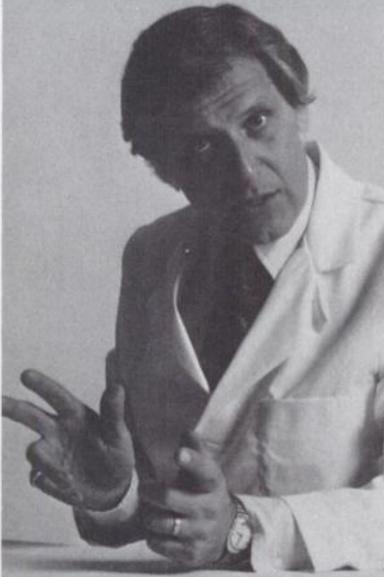
Full information is available on request.
The Radiochemical Centre Limited, Amersham, England. Telephone: 024-04-4444
In W. Germany: Amersham Buchler GmbH & Co KG, Braunschweig. Telephone: 05307-4693-97

*Trade mark 0825

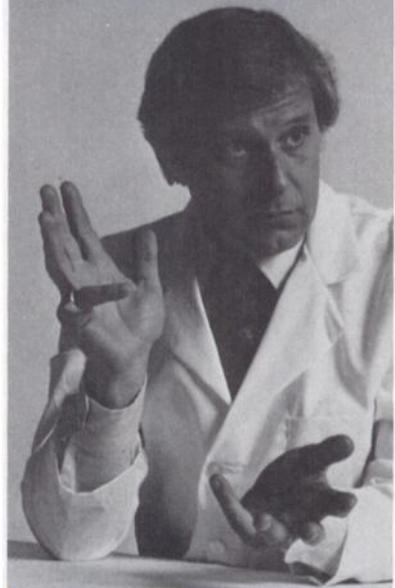
“Some of my patients just can't tolerate 90 minutes on a scanning table.”



“For them, I prefer a Cleon scan.”



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



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for maximum patient throughput in whole-body imaging.

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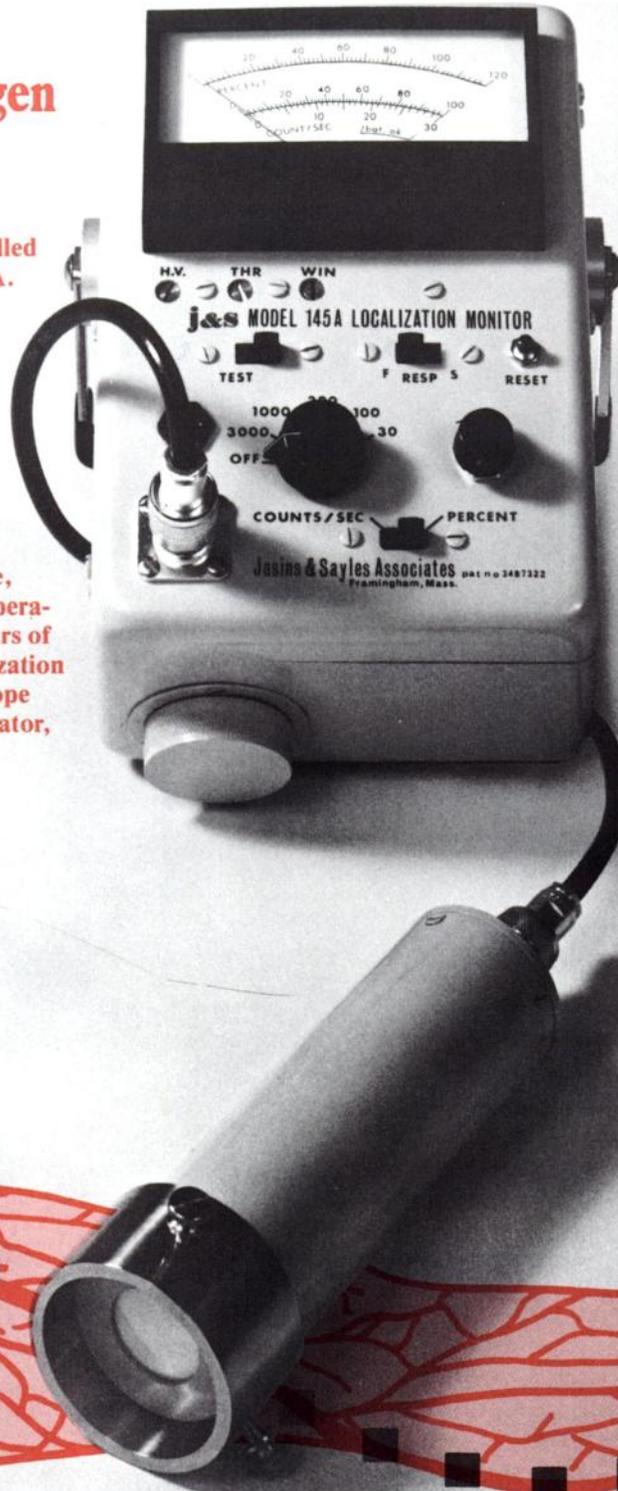
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...the CLEON Whole Body Imaging People

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

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

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



Features

- 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 (TI) crystal, 1" diam.
× 1 mm thick, mounted on PMT
with 7 mg/cm² aluminum window

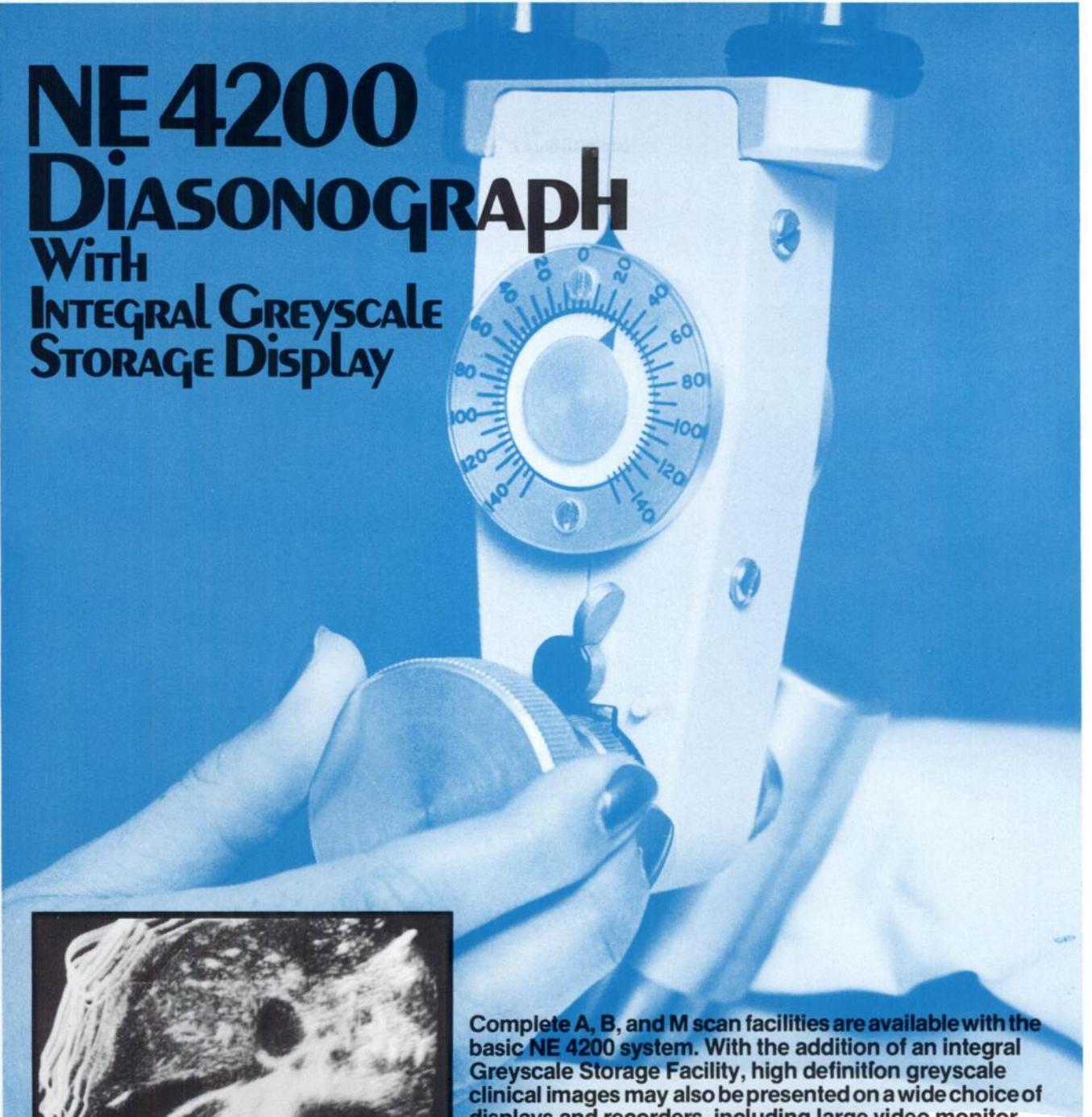
And our service, when you need it, is courteous and quick. Write or call for complete information.



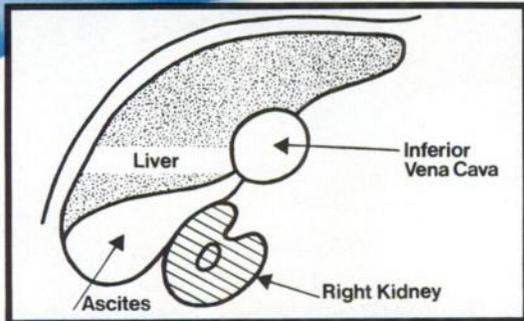
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Early detection of Deep Vein Thrombosis

NE 4200 DIASONOGRAPH With INTEGRAL GREYSCALE STORAGE DISPLAY



Transverse scan of liver showing ascites, right kidney and inferior vena cava. (Courtesy Northwick Park Hospital, Harrow)



Complete A, B, and M scan facilities are available with the basic NE 4200 system. With the addition of an integral Greyscale Storage Facility, high definition greyscale clinical images may also be presented on a wide choice of displays and recorders, including large video monitor, and, for permanent recording, Polaroid film, 70mm negative film, hard copy or video cartridge recorder.

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Advances in Plain Language Control of Data Systems from varicam

```

NEXT PROGRAM NAME ? DEFI
(VIEW, )ROI NUMBER ? 5,11
QUADRANT? 2

BUG READY....
NUMERIC TO MOVE BUG
SHIFT TO GO FAST
SPACE TO FIX POINT
CR TO CLOSE ROI

ROI INSIDE OR OUTSIDE LINE? 11
ROI INSIDE OR OUTSIDE LINE? 11
REPEAT? M

NEXT PROGRAM NAME ? _

```

Interactive R.O.I. selection dialogue.

```

NEXT PROGRAM NAME ? DRDI
ERASE ? M
QUADRANT? 2
(VIEW, )ROI NUMBER ? 5,11
ROI NUMBER ? 1
REPEAT? 1

NEXT PROGRAM NAME ? DISPI
VIEW NUMBER(,FIRST, LAST)? 11
BACKGROUND SUBTRACT ? 1
SATURATION LEVEL? 1
CYCLES OF GRAY? 1
ERASE ? 1
QUADRANT? 1
REPEAT? 1

NEXT PROGRAM NAME ? _

```

Display program dialogue.

```

NEXT PROTOCOL NAME? LIVER1
CURRENT PATIENT IS: ROBINSON-CRUSDE D          SS56789
THIS PROTOCOL COLLECTS THREE STATIC VIEWS, THE FIRST
IS THE ANTERIOR, THE NEXT THE RIGHT LATERAL AND THE
LAST THE POSTERIOR.
NORMALISATION IS DONE WITH THE 'DIV' CORR. MTX.

STUDY NUMBER (12)? 127/741
NAME (30)? JONES D1
NUMBER (SS ETC) (14)? SS3481

CURRENT PATIENT IS: JONES D                      SS345

ADD, DELETE, LIST OR SELECT ? 1

NOW POSITION THE PATIENT SUPINE WITH THE LIVER AND
SPLEEN VISIBLE ON THE PERSISTENCE 'SCOPE.

TYPE CR TO GO ? 1
HIT SPACE BAR TO STOP EARLY
AGAIN, RESTART, KILL OR STOP? S1
VIEW NUMBER = 11; NUMBER OF MATRICES = 1

NOW POSITION THE PATIENT LYING ON THE LEFT SIDE.

TYPE CR TO GO ? _

```

Typical protocol control dialogue (customer prepared).

```

G = GENERATE PROTOCOL
R = RUN PROTOCOL
T = TAPE STORAGE OF DATA
S = SEARCH FOR DATA ON TAPE
N = NAME NEXT PROGRAM
U = USER PROGRAM DEVELOPMENT
L = LEAVE SYSTEM
H = HELP

ACTION? 1

NEXT PROGRAM NAME ? MDCPI
+ - = DR /? -1
FIRST VIEW
VIEW NUMBER(,FIRST, LAST)? 11
PERCENTAGE OF FIRST ? 561
SECOND VIEW
VIEW NUMBER(,FIRST, LAST)? 21
PERCENTAGE OF SECOND? 671
VIEW NUMBER = 71; NUMBER OF MATRICES = 1

NEXT PROGRAM NAME ? _

```

Matrix mathematical operations program dialogue.



VARICAM's operator dialogue is designed to require the minimum of operator initiative and expertise, whilst preserving flexibility.

In the manual mode of operation modules are specified in reply to the question "next program name?" These are named obviously such as "MXOP" for matrix operations or "ERASE" for erase. Subsequent parameters of operation are requested by VARICAM as required in plain language.

In the protocol mode, modules are chained together and fixed (or variable) parameters are specified. Protocols are used to automate routine workloads; the comment facility enabling the principle user to ensure that consistent procedures are used by all operators.

Ease of use is an extremely important factor often overlooked—at its least it can allow an expert user to work at optimum speed, at its best it can make the difference between a 'computer-lay' technician's enthusiasm or complete inability to drive the system at all.



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

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

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XYZ Imaging Table MODEL XYZ-202



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XYZ Features:

- Accommodates both large and small field-of-view cameras.
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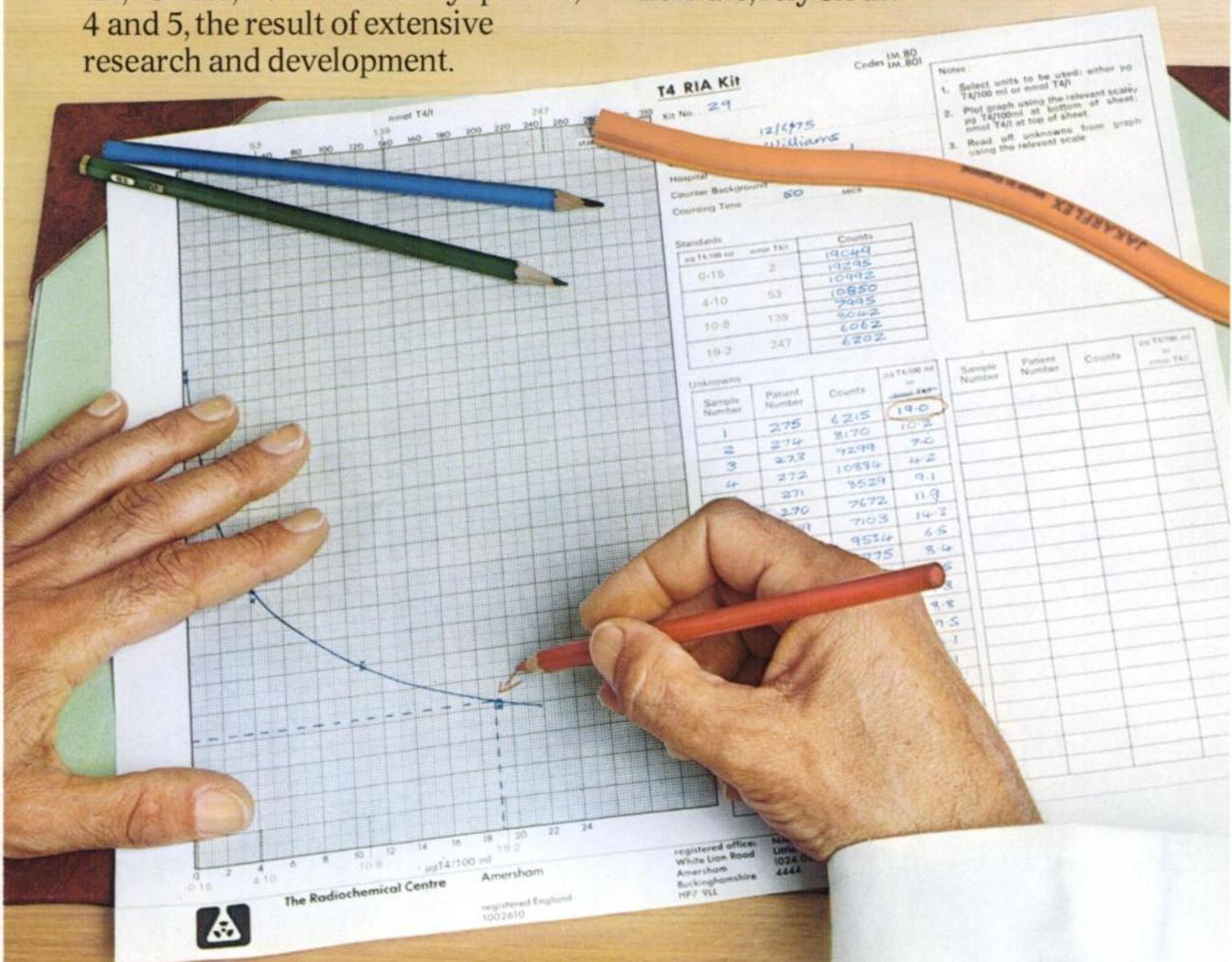
If you get an odd result when using one of our thyroid testing kits, there's something wrong with the patient.

Because when you use one of our kits you can depend on the accuracy and reproducibility of the test.

You can depend, too, upon the simplicity and reliability of every kit, T3 RIA, T4 RIA and Thyopac*-3, 4 and 5, the result of extensive research and development.

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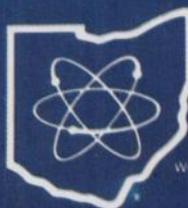
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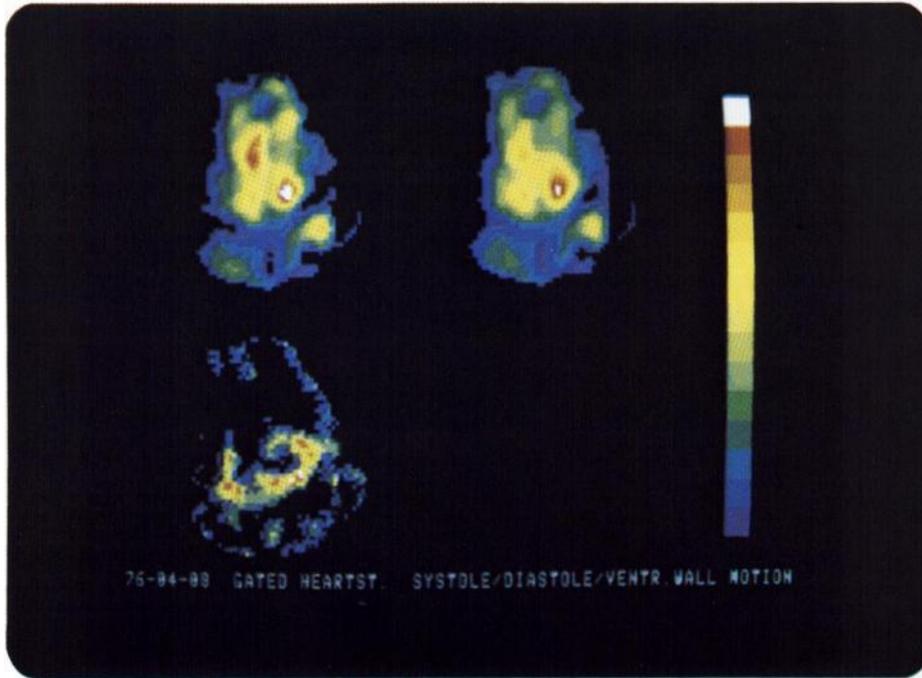
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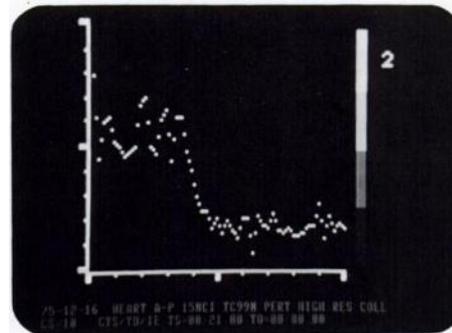
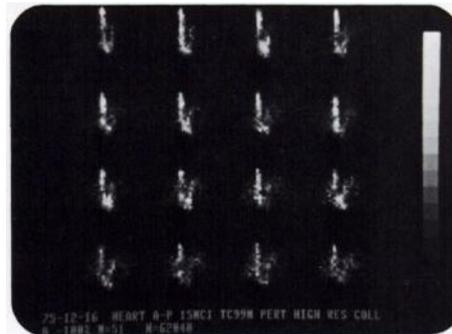
Indepth evidence



```

# NEW PROTOCOL
1. BRN1 76-81-27 STAT 100120
   HNZ1 BCS LYN 32 1 SM2
2. BRN1 76-81-27 BYN 64664 TRISH 8 CTS
   K4230 81 88 88100 88 88 88100 88 88 T-00 15 88
3. KIDN1 76-81-20 BYN 32832 TRISH 18 CTS
   K4230 38 88 88100 88 88 88100 88 88 T-20 00 88
4. KIDN1 76-81-20 BYN 32832 TRISH 18 CTS
   K4230 18 88 88100 88 88 88100 88 88 T-20 00 88
5. HEART 76-81-20 BYN 64664 TRISH 708 CTS
   T4230 00 20 88100 88 88 88100 88 88 T-00 21 88
6. FILM TRSH 76-81-20 BYN 64664 TRISH 204 CTS
   K4230 81 88 88100 88 88 88100 88 88 T-00 15 88
7. TRNCP1 121 76-81-20 BYN 64664 TRISH 18 CTS
   K4230 12 88 88100 88 88 88100 88 88 T-10 00 88
8. TRNCP1 211 76-81-20 BYN 64664 TRISH 188 CTS
   K4230 00 88 88100 88 88 88100 88 88 T-10 00 88
9. TRNCP1 301 76-81-20 BYN 64664 TRISH 8 CTS
   K4230 15 88 88100 88 88 88100 88 88 T-00 00 88

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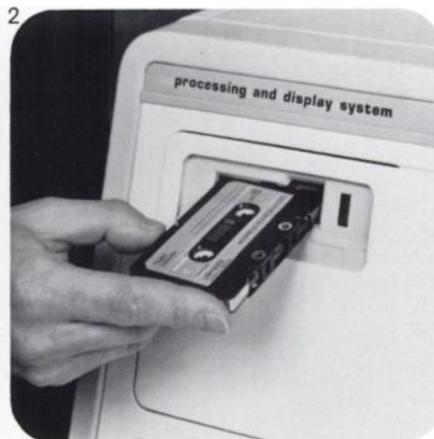


Modern radio-isotope techniques enable non-invasive visualisation of ischemic areas of the heart . . . and processing the mass of data obtained is a task for a Philips Processing and Display System. In the colour video display, the two upper images show the heart in systole and diastole, acquired under ECG gating, while the third image, corresponding with the motion of the ventricular wall, is generated by a special program. If desired the user can also compose special programs – by simply linking existing sub-routines – and call them at any time by pressing the relevant program number. Replay of the total study with 16 images at a time enable the optimal replay mode to be selected. Replay can be interrupted for the selection of regions of interest from

which the computer calculates the time/activity graphs corresponding with the organ function.

This indepth evidence admirably illustrates the effectiveness of the Philips Processing and Display System in providing rapid quantitative and qualitative diagnostic information obtained during dynamic investigation in nuclear medicine.

The system employs a Philips mini-computer with a 32k 16-bit memory which, together with disc-operated software programs, provides considerable processing speed and flexibility. Furthermore, it has been designed specifically for use by medical personnel and program execution requires no specialized knowledge of data processing techniques.



1 Direct access to disc-stored programs covering a complete range of routine examinations is by means of ergonomically grouped key arrangements; the results being immediately displayed on the 30 cm black- and- white video monitor. The system can be extended with a colour monitor. Frequently used procedures can be combined to form new programs. In cases where a single key offers the choice of more than one routine, the program assumes a 'question-answer' mode enabling the operator to make a suitable choice. Incorrect operation is not possible. If a non-acceptable procedure is inadvertently selected, the keyboard is immediately blocked and an 'error' condition displayed on the monitor.

2 Software programs, including standard as well as improved routines, are introduced via the system's built-in

compact-cassette recorder. This facility also enables results to be recorded for eventual image playback and appraisal.

3 FORTRAN IV option. The capability of Philips Processing and Display System can also be extended to solve special problems. In such cases data can be pre-processed in the convenient PDS way and further analysis carried out using the FORTRAN IV option. Programs can be written in FORTRAN language by the user and results monitored on the PDS display or printed-out on the same terminal that is used to enter or retrieve the FORTRAN program.

Part of a complete program of nuclear medicine equipment and systems, and fully supported by an international service organisation, the Philips Processing and Display System represents the perfect integration of operational simplicity and

efficiency with applicational flexibility and reliability.

COUPON

If you would like further evidence on Philips Processing and Display System, or on any other equipment in our nuclear medicine programme, complete this coupon and send to: Philips Industries Medical Systems Division, Building QM, Room 326, Eindhoven, The Netherlands.

Company: _____

Name/Position: _____

City/Country: _____

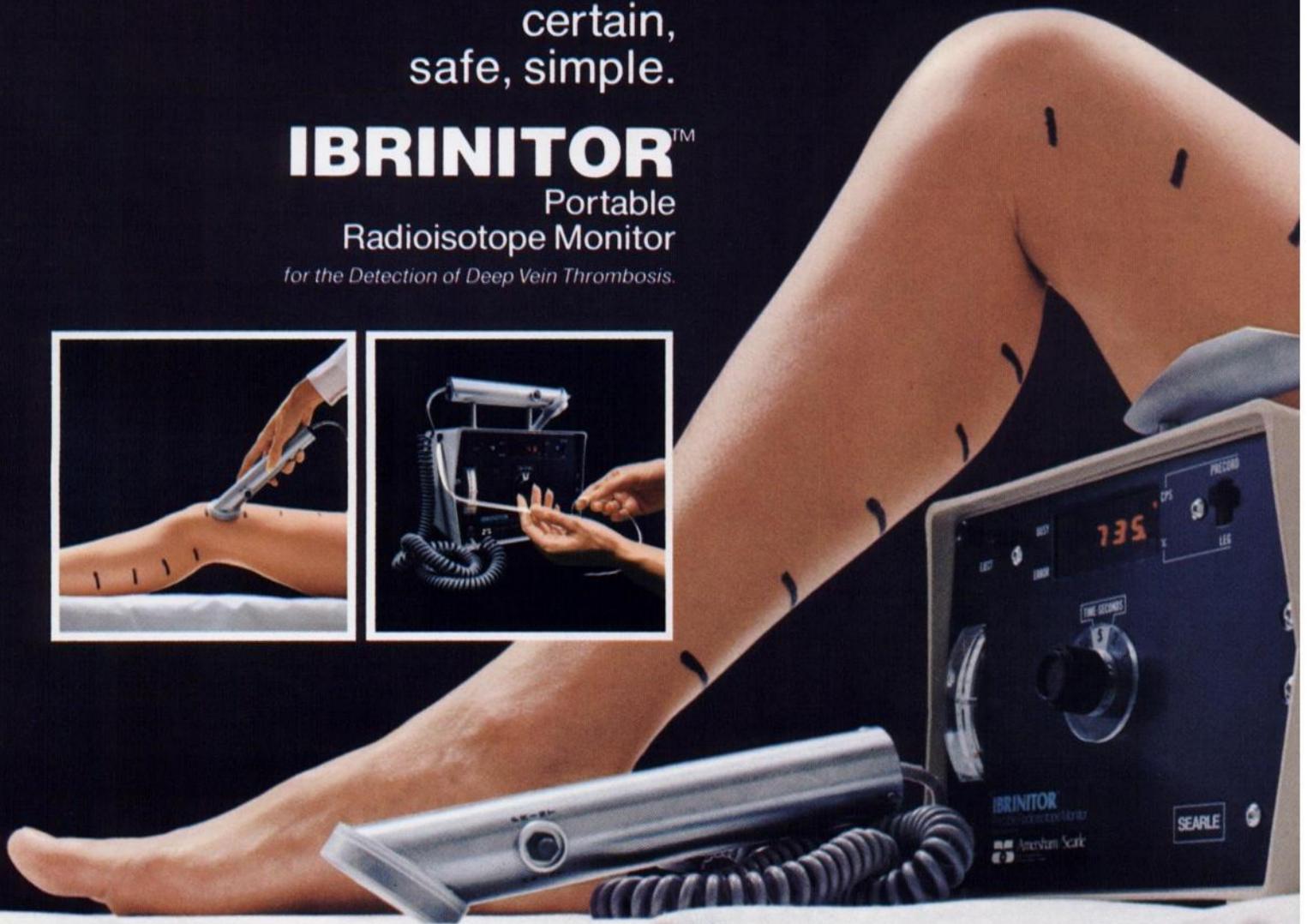
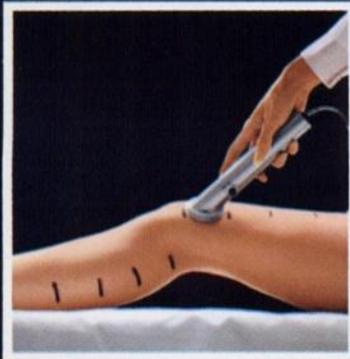
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Early warning
of DVT now
certain,
safe, simple.

IBRINITOR™

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

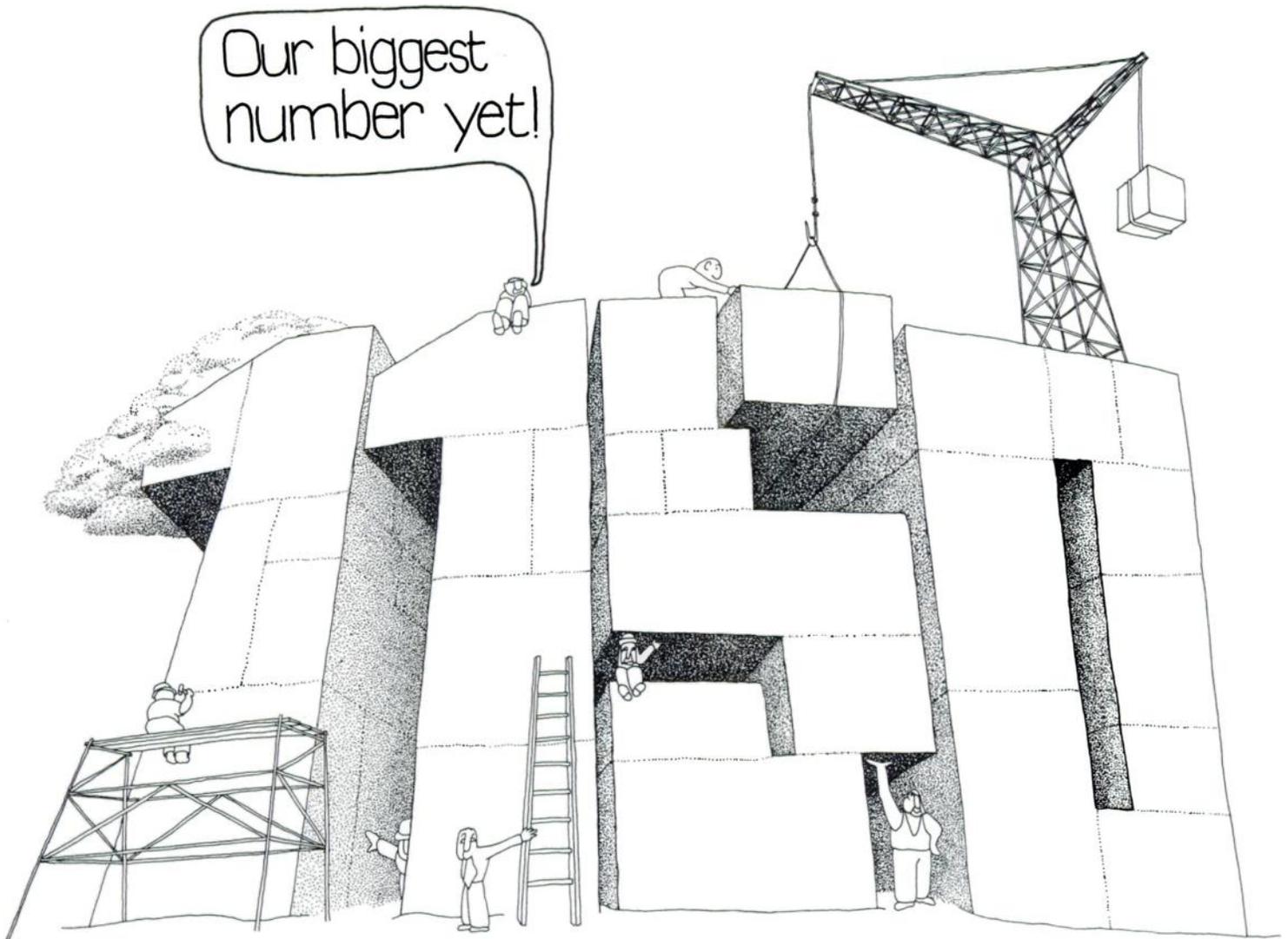


Amersham/Searle

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

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What's an 1150? That's what you get when you combine our 750-04 Electronic Programmer and 400 Oscilloscope Camera. So why not call it an 1150-04? Well, we didn't want *that* big a number.

But seriously, our big number gives you an incredible combination of versatility and for very little money produces some of the sharpest dots available in Nuclear Medicine. Your choice of formats (1,4,9,12, 16,19,21,34,64, etc.) with the 1150 is practically

unlimited. Not to mention all the benefits derived from the 8x10 x-ray film format such as availability, gray-scale, group viewing, familiarity, and economy. And not to forget our 750-01 users out there, you can upgrade to 1150 capabilities simply with additional electronics and our 400 Oscilloscope Camera.

So, if you want to know more about our 1150 combination, mail this coupon. Or give a call. We'll be glad to do our big number for you.

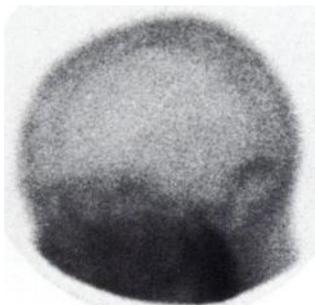
MODEL 1150 MULTI-FORMAT CAMERA SYSTEM DUNN INSTRUMENTS, INC.

52 Colin P. Kelly Jr. Street, P.O. Box 77172,
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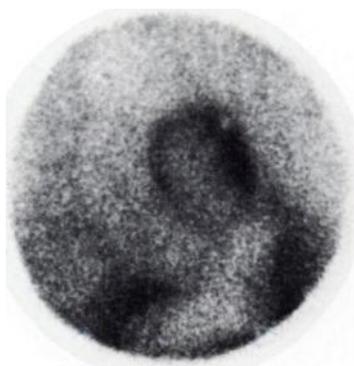


NAME _____	TITLE _____
ADDRESS _____	PHONE _____
CITY _____	STATE _____ ZIP _____

Think smaller.



Brain study, left lateral view
^{99m}Tc DTPA



Adult heart, LAO view
²⁰¹Thallium



Brain study, right lateral view
^{99m}Tc Pyrophosphate

For the big job of small area work, think Dyna[®]Camera 4 with 11" detector – the nuclear imaging system that delivers 2.1mm (1/12") intrinsic resolution.

Small patient or big patient, the excellent resolution of the Picker 4/11 allows you to visualize small lesions previously impossible to locate, as well as to clearly define the larger lesions.

The new DynaCamera 4/11's unparalleled spatial and energy

resolution is exceptionally useful in cardiac work with low energy radionuclides such as ²⁰¹Thallium for imaging the myocardium to locate and measure infarcts, for precise region placement in left ventricular ejection fraction studies, and for cardiac output measurements.

Consider 13% energy resolution and $\pm 10\%$ uniformity. Include differential quantification, information density, auto expose and anatomical landmarking.

Compare the image divergence/distortion of competitive 10" detectors to Picker's 11" detector. You'll think Picker when you think smaller.

DynaCamera 4/11 is another example of Picker's synergy – the complete interfacing of systems and services for greatly improved diagnostic visualization.

Contact your local Picker representative. Or write Picker Corporation, 12 Clintonville Road, Northford, CT 06472.

PICKER[®]
ONE OF THE C.I.T. COMPANIES



Picker'synergy

The **NEW** Model C-5110

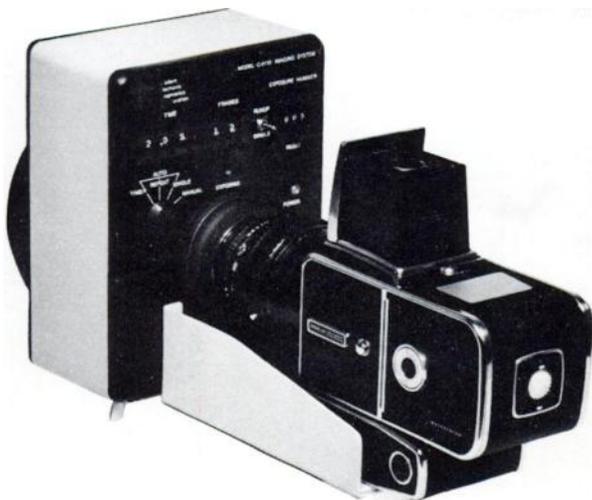
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Record the best scintiphotos that your Gamma Camera is capable

of and that your patients deserve. Don't forsake static image quality for dynamics speed. Don't pay an inflated price and waste valuable floor space for images less than those routinely available from our HASSELBLAD/Zeiss Systems.

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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 ⁷⁵Se 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®



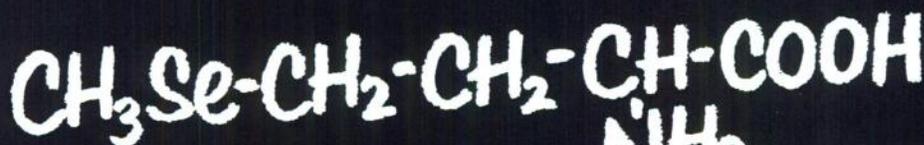
SQUIBB HOSPITAL Division
E. R. Squibb & Sons, Inc.
P.O. Box 4000
Princeton, N.J. 08540

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For pancreas imaging

Sethotope[®]

Selenomethionine Se 75 injection



 **L**-selenomethionine Se 75
Biosynthetic

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 ⁷⁵Se. At Squibb, however, selenomethionine is prepared *biosynthetically* by extracting it from the protein product of yeast grown on a low sulfur medium containing ⁷⁵Se of high specific activity. This compound is levorotatory.

Specific activity

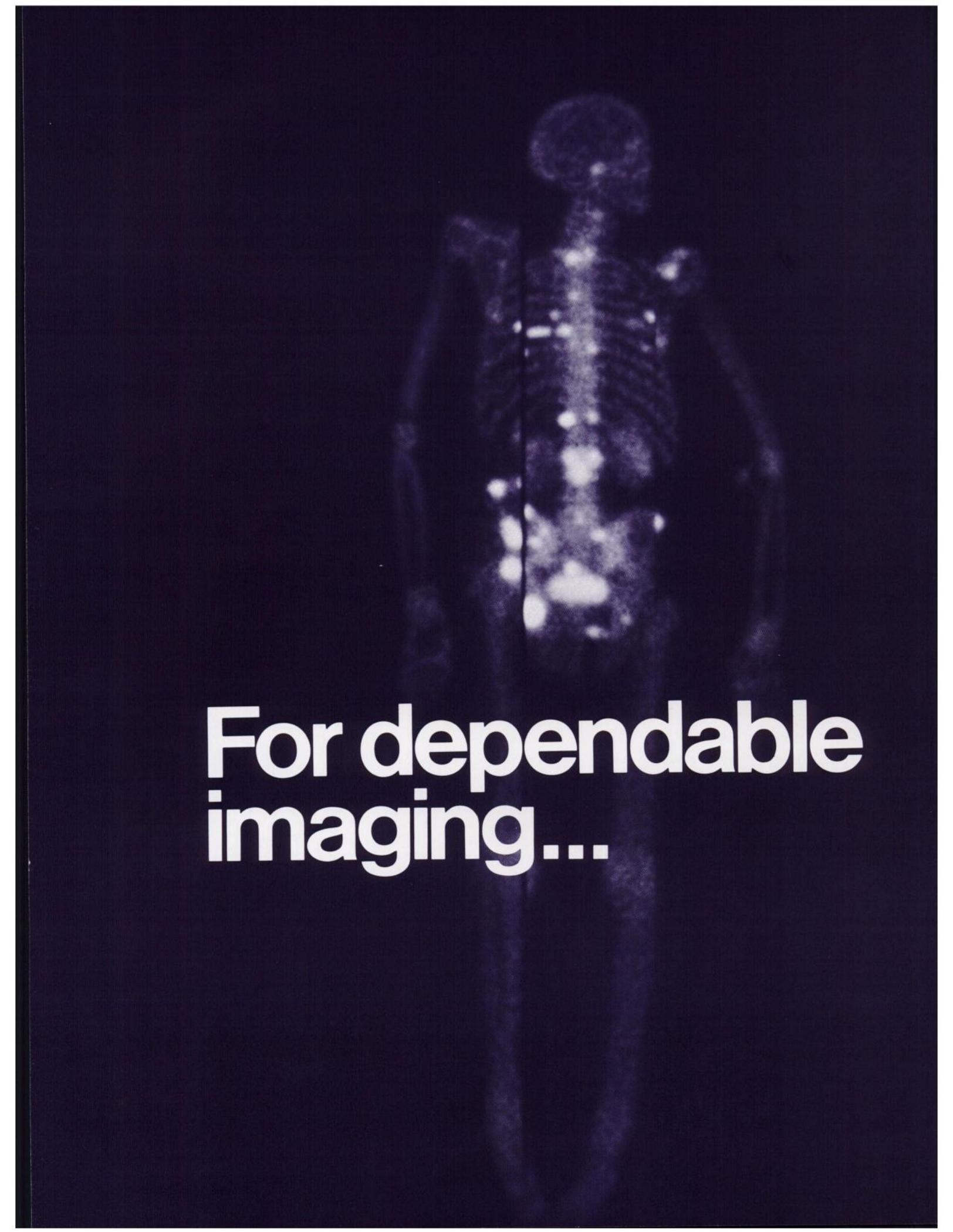
Squibb L-selenomethionine ⁷⁵Se provides a specific activity of not less than 25 microcuries per microgram of selenium at the time of manufacture.

Sethotope[®]
Selenomethionine Se 75 Injection

See opposite page for brief summary.



SQUIBB HOSPITAL Division
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**For dependable
imaging...**

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

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

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

the dependable diphosphonate



PROCTER & GAMBLE

OSTEOSCAN[®]

(5.9MG DISODIUM ETIDRONATE, 0.16MG 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[®]

(5.9MG DISODIUM ETIDRONATE, 0.16MG 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

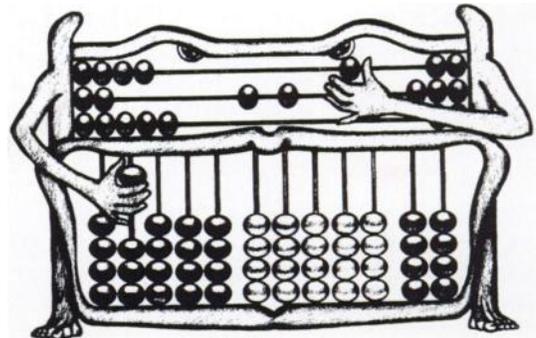
None.

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.

You don't want the flow of college-bred new ideas, improvements, inventions to stop. Ever. Not if you're a *good* businessman.

So perhaps you'd better take a good hard look at how much *your* company is giving to higher education. Because inflation has hit colleges and universities even harder than most.

Freedom to experiment is the first casualty of tight budgets.

For the sake of the future, "Give to the college of your choice. Now." Who knows what new billion-dollar business of tomorrow is germinating on some college campus today.

CF Council for Financial Aid to Education, Inc.
AE 680 Fifth Avenue, New York, N.Y. 10019

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Varian... The Right Company for the Times.



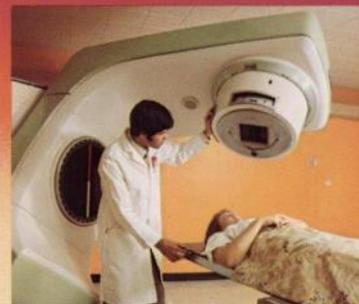
Today's remarkable growth in the capability and complexity of advanced medical systems makes Varian the right company for the times, a company that can deliver tomorrow's medical systems today, just as it has for the past 15 years! Since 1961, Varian has built a worldwide reputation for leadership in high-technology medical products.

A diversified international corporation at the forefront of the electronics industry, Varian leadership in advanced therapeutic and diagnostic medical systems comes from its established depth of expertise in the fundamental technologies forming these systems. Varian was an early leader in the development of electron linear accelerators for radiation therapy, resulting in today's Clinacs,[®] the most widely accepted radiation therapy accelerators in the world. Comparable leadership in CT scanners, real-time ultrasound and clinical computation systems is already producing the diagnostic equipment of choice for tomorrow.

Clearly, the right company for the times, Varian's continuing record of creative engineering, commitment, and technological depth assure superior therapeutic and diagnostic systems for both today and tomorrow!

Clinac® Radiotherapy Linear Accelerators

Continuous Leadership for 15 Years



Varian Clinac accelerators have established the performance standard for advanced radiotherapy equipment. Clinac leadership began in 1961 and has been marked by a record of innovation and achievement.

The record includes:

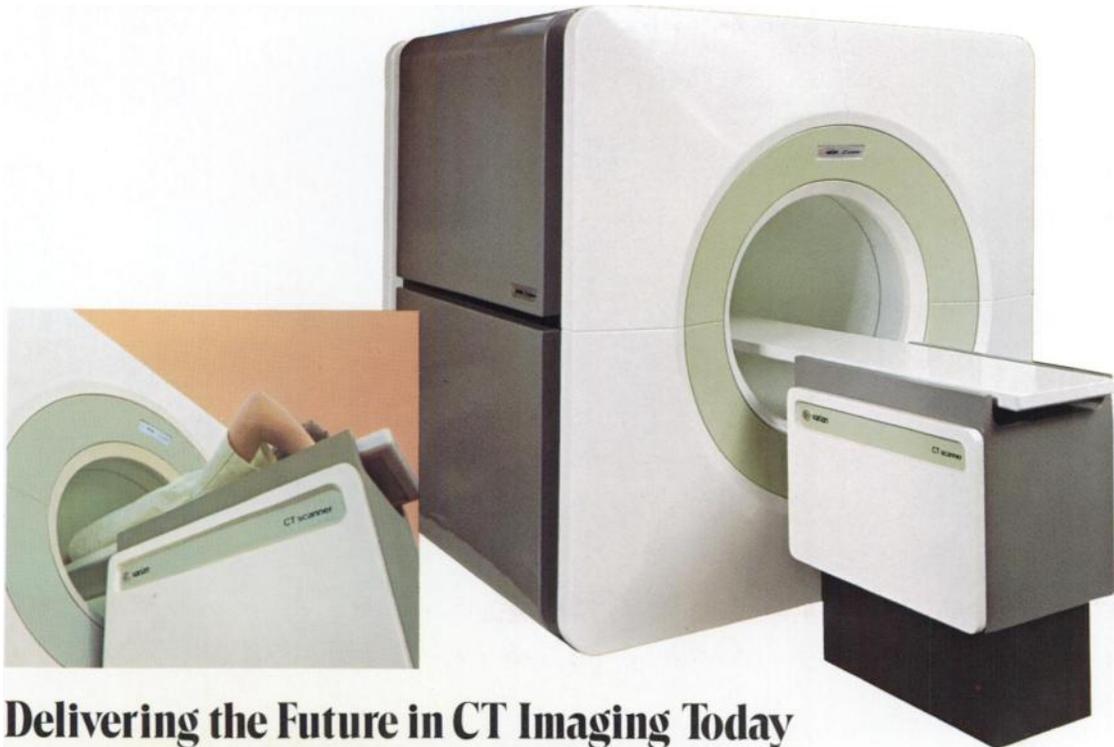
- Clinac 6, the first 360° isocentric bent-beam therapy accelerator without floor pit;
- Clinac 4, the first 360° isocentric standing-wave non-bent beam therapy accelerator;
- Clinac 6X, the first 360° isocentric non-bent beam standing-wave therapy accelerator producing 6 MV X-rays;
- Clinac 18, the most widely accepted high-energy, multi-modality therapy accelerator in routine standardized production.

Varian's success has produced major benefits to Clinac customers, allowing machine standardization, assuring widespread experienced service support, providing training courses, symposia, and other educational aids, and making possible an extensive program of continuing engineering and refinement on all Clinac models.

The Clinacs are a pronounced example of how technological excellence and medical need can be combined to provide a reliable, utilizable clinical tool.

Large photograph—Clinac 18
Upper insert—Clinac 6X
Lower insert—Clinac 4

Whole-Body CT Scanners



Delivering the Future in CT Imaging Today

Varian's Whole-Body CT scanner, now in production, is engineered for tomorrow's state of the art in CT imaging. Anticipating the future, Varian has incorporated three important design features: continuous, non-stop gantry rotation; an extremely powerful Varian V-76 computer system; and an extra large patient aperture. These features plus the superior head and body images already achieved on the Varian CT Scanner, project it far beyond the dimensions of current CT technology.

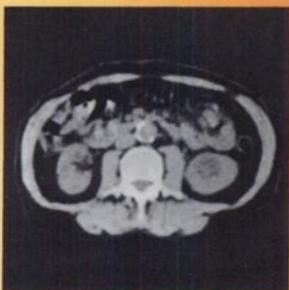
Design Features of the Future

6-Second Scan. The Varian CT Scanner collects over 108,000 data points through 360° in six seconds. It uses a precisely collimated fan beam detected by a Varian-designed linear array of 301 optimized Xenon-Krypton detectors.

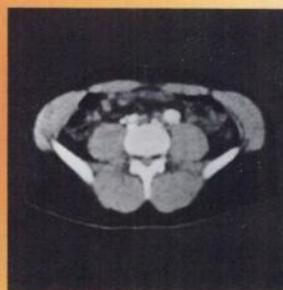
Continuous Rotation via Slip Ring. The slip ring construction allows simple, trouble-free continuous gantry rotation for single or multiple rotation examinations or, as a standard feature of the Varian unit, triggered physiological gating of data collection.

Customized Scanning. By virtue of the power and speed of the Varian V-76 computer, the operator can easily adjust pixel size, field size, algorithm parameters or other major system parameters at the control console to achieve optimum displays for a variety of clinical situations. Optimization can be carried out virtually simultaneously with data collection and reconstruction of images.

90 cm (36") Diameter Patient Aperture. The extra large patient aperture gives unique flexibility in patient positioning, and use of clinical accessories during scanning.



Abdominal scan showing both kidneys and extensive gas in the intestines. Note calcium in the wall of the aorta.



Lower abdominal scan following lymphangiogram demonstrating opacified lymph nodes.



Scan through the hila of both kidneys showing renal vasculature. Note gall bladder.

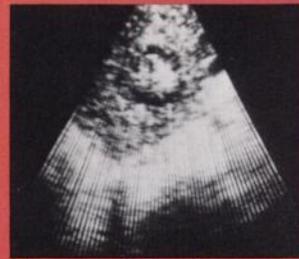
Leadership in Real-Time Ultrasound

The V-3000 establishes Varian leadership in the fast growing field of real-time ultrasound. This instrument greatly extends non-invasive diagnostic capabilities in medical applications such as adult and pediatric cardiology, obstetrics, and abdominal scanning.



The V-3000 scans an 80 degree two-dimensional section at 30 frames per second. When the transducer is positioned to direct the ultrasound beam between the patient's ribs, it can give an unobstructed field of view large enough to image the entire left ventricle of an average adult heart. Or, moved freely across the abdomen, the same transducer produces instantaneous high resolution images, permitting a fast yet meaningful ultrasonic examination, the ultrasonic equivalent to fluoroscopy.

Images are displayed in gray scale on a cathode ray tube and can be recorded on video tape for stop-action or slow-motion viewing. For cardiological applications, standard M-mode and ECG triggering can be included.



Metastatic Colon Cancer.



Transverse section of normal left ventricle at level of mitral valve.



Transverse section of left ventricle with stenotic mitral valve.

V-3000 Phased Array Ultrasonograph

Real-Time Two-Dimensional Imaging with Ultrasound

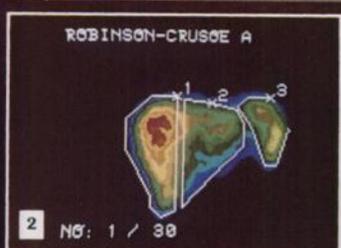
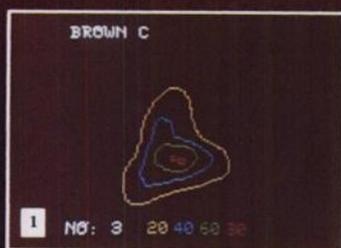
Varian Clinical Computation Systems

New Dimensions in Advanced Computer Applications

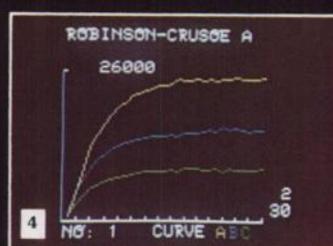
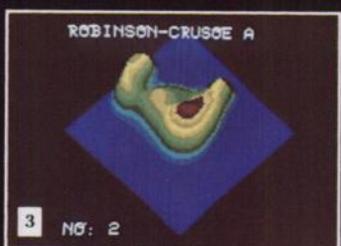
The fast and flexible Varian V-70 series minicomputers and supporting software have, through application in the Varian CT scanner and other medical equipment, proven to be ideal for clinical use. Varian's real-time, multi-task operating systems VORTEX and BETA give wide flexibility and ease of use for busy, patient-oriented environments. Combined with Varian special application software, Varian systems put the most advanced digital data-processing tools at the medical staff's fingertips.

The first standardized clinical system introduced by Varian was VARICAM, a comprehensive nuclear medicine data processing system, now in use in many hospitals around the world. Gamma camera raw-data are directly input to VARICAM and submitted to data processing procedures according to simple operator instructions. VARICAM gives the user unique options for developing his own processing protocols and manipulating data output format. VARICAM processed data are displayed in video black and white, color, or as life-sized hard-copy by the remarkable Varian STATOS® electro-static printer/plotter.

Varian digital computers are used in major medical centers for many other applications including radiotherapy planning, ultrasound image processing, infra-red image processing, electro-cardiology diagnosis, and intensive care monitoring.



- 1 Contour map of embolized lung in left lateral view.
- 2 Dynamic liver examination showing Regions of Interest as defined by operator.
- 3 Isometric view of summed matrix of dynamic liver examination.
- 4 Curves formed from each Region of Interest shown in 2.



Varian Therapeutic and Diagnostic Medical Systems... Leadership in Advanced Technology

Varian leadership and experience in advanced therapeutic and diagnostic medical systems has resulted in modern systems designed for years of reliable operation... human engineering that pays attention to utility, operator ease and patient comfort... customer support and service that start even before the installation.



VARIAN ASSOCIATES, Palo Alto, California

Built-In Quality and Reliability

Varian quality and reliability are the result of both design and workmanship. Varian design engineers have developed a high degree of expertise in incorporating modularity, easy component access and system reliability. Production workmanship is just as vital for quality and long term reliability. At Varian's modern, highly specialized facilities in Palo Alto, California, therapeutic and diagnostic systems are produced by a quality conscious staff.



Customer Support From the Beginning

A medical system is bought to be used. Varian installation experts give support that expedites installation planning and smooths the necessary steps of actual installation. After installation, continuing engineering and service support help assure proper performance. Varian maintains close communication with customers to promote proper utilization of the equipment. For example, Varian's Clinac training courses in Palo Alto teach aspects of equipment operation, preventative maintenance, troubleshooting, and many routine repair procedures.



Worldwide Service

Varian's service organization is one of the largest in the world for medical linear accelerators. This organization is the base of service support for the Varian CT and ultrasound medical systems. Skilled service personnel are located in Field Offices throughout the United States and overseas. These offices are strategically located for rapid response to emergency calls and for routine preventative maintenance.



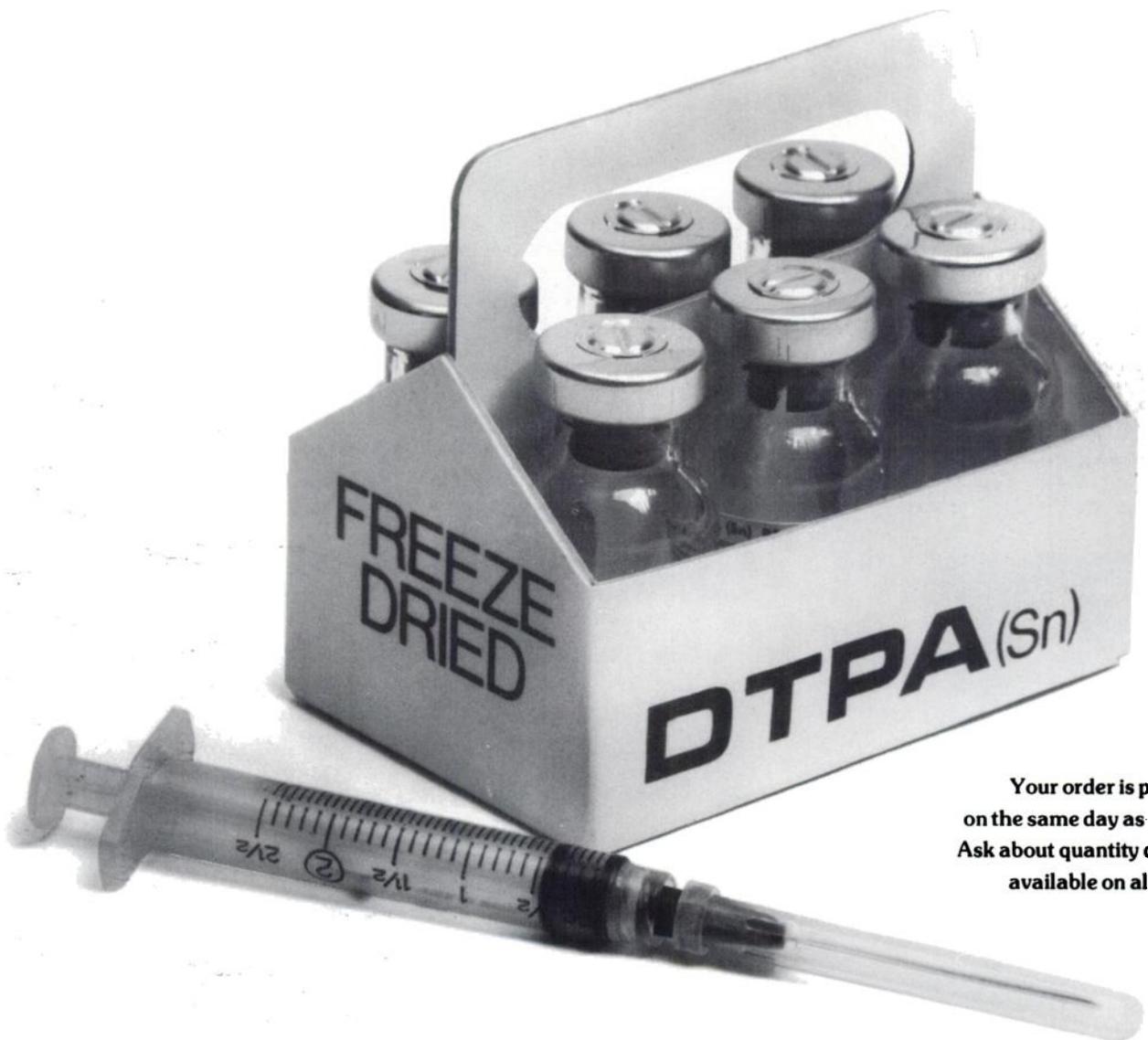
varian

Varian Radiation Division
611 Hansen Way, Palo Alto, CA 94303
Phone: 415/493-4000

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.

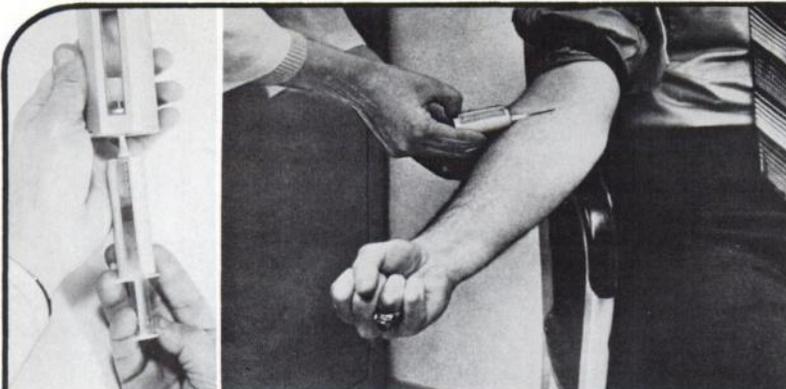


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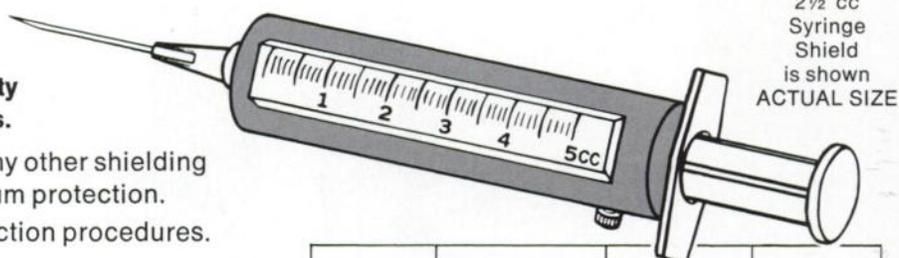
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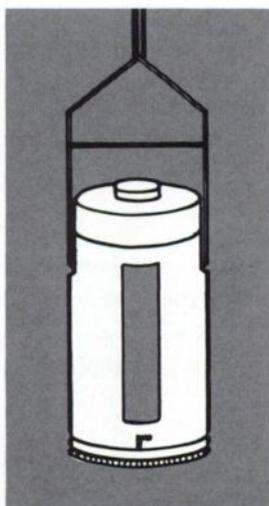
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Meletron



The dose calibrator 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 dose calibrators 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 dose calibration.

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 dose calibrators.

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.

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RADX



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The Evolution of a Unique Gamma Camera



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.

This is the calibrator that remembers, computes and puts it in writing.

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

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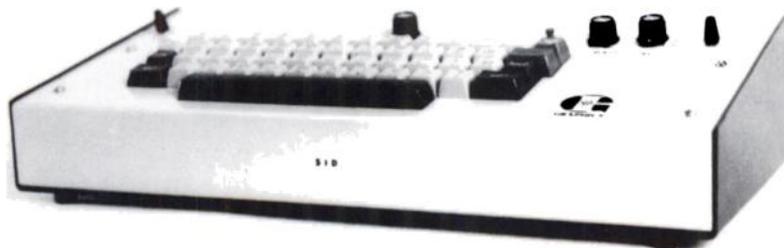
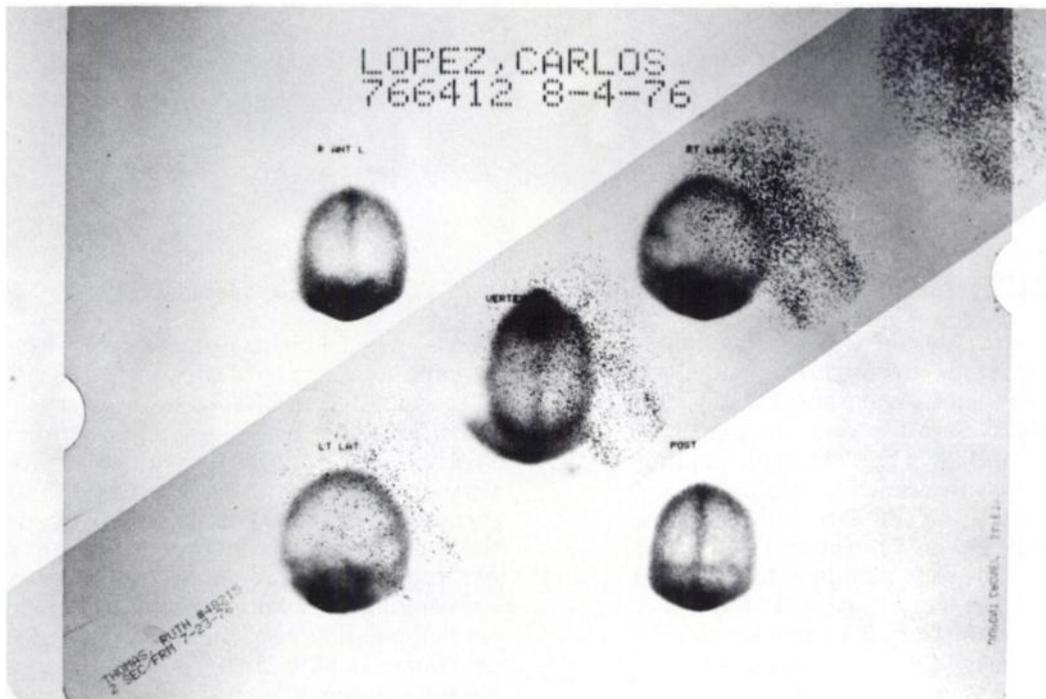


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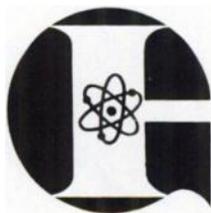
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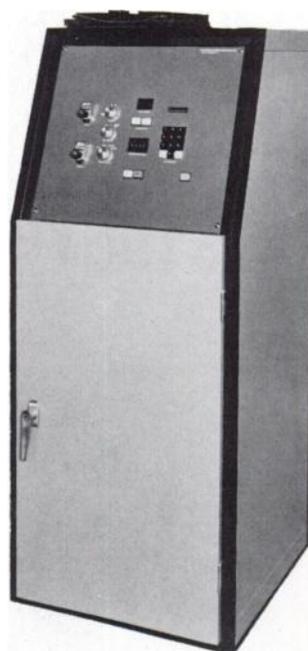
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Multi-Imager 4

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 identification is achieved through a nine digit keyboard LED system.

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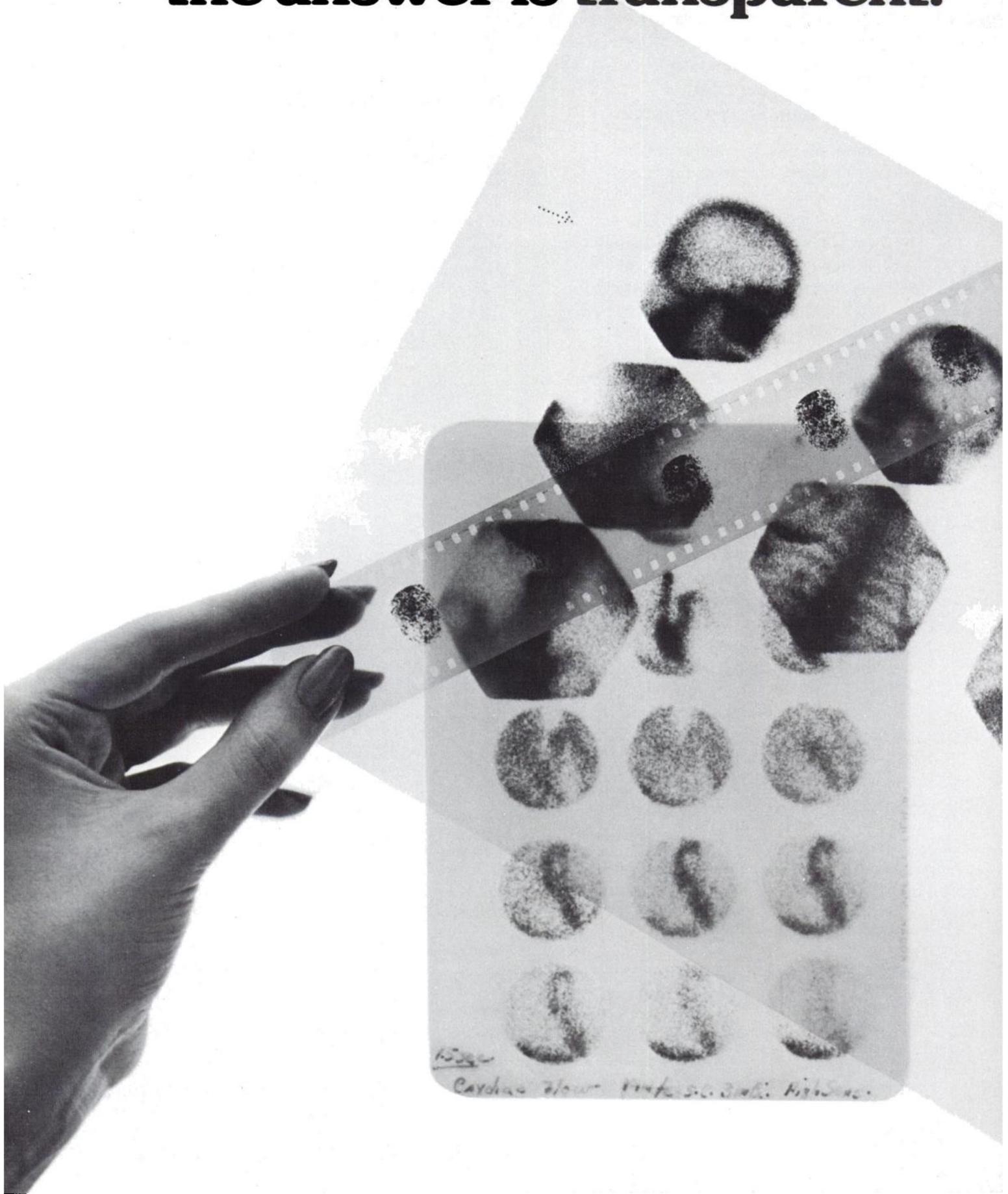


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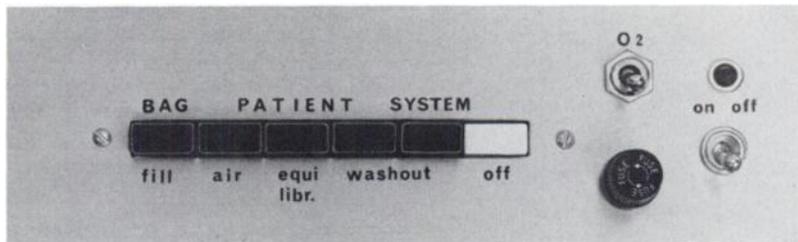
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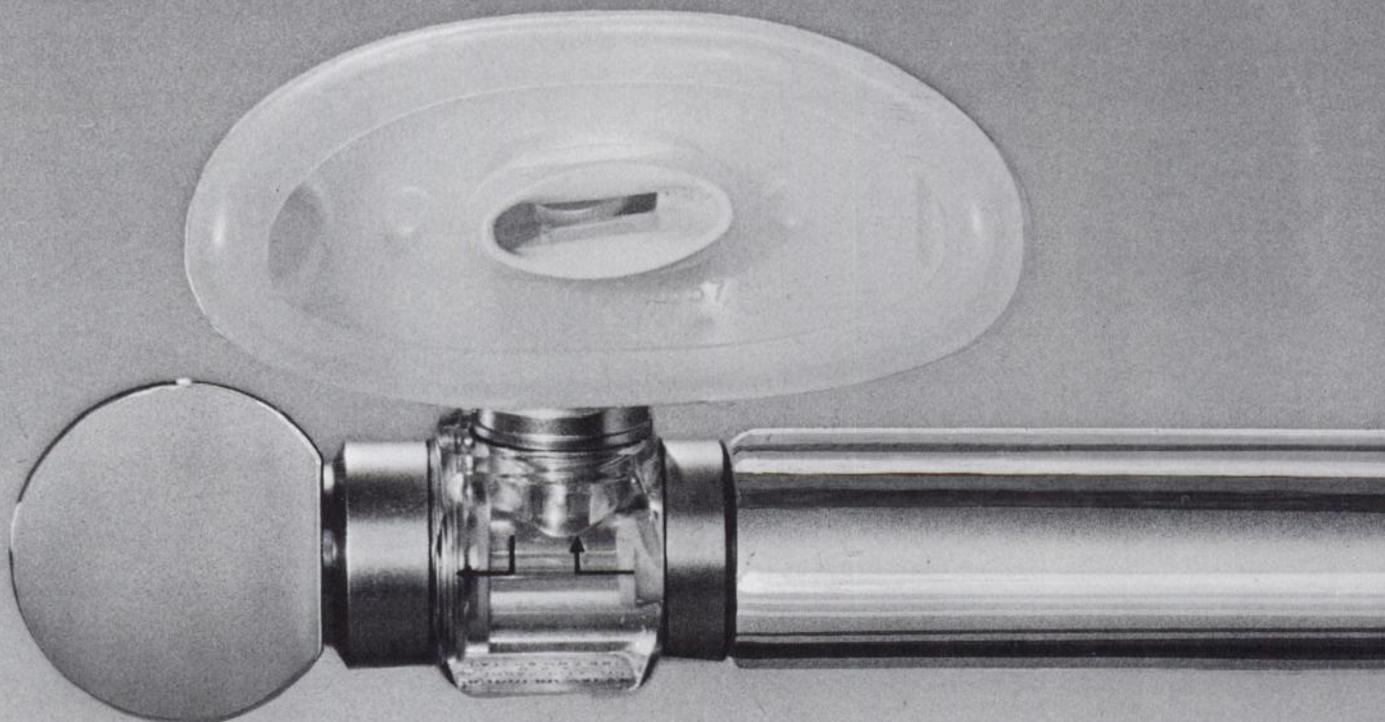
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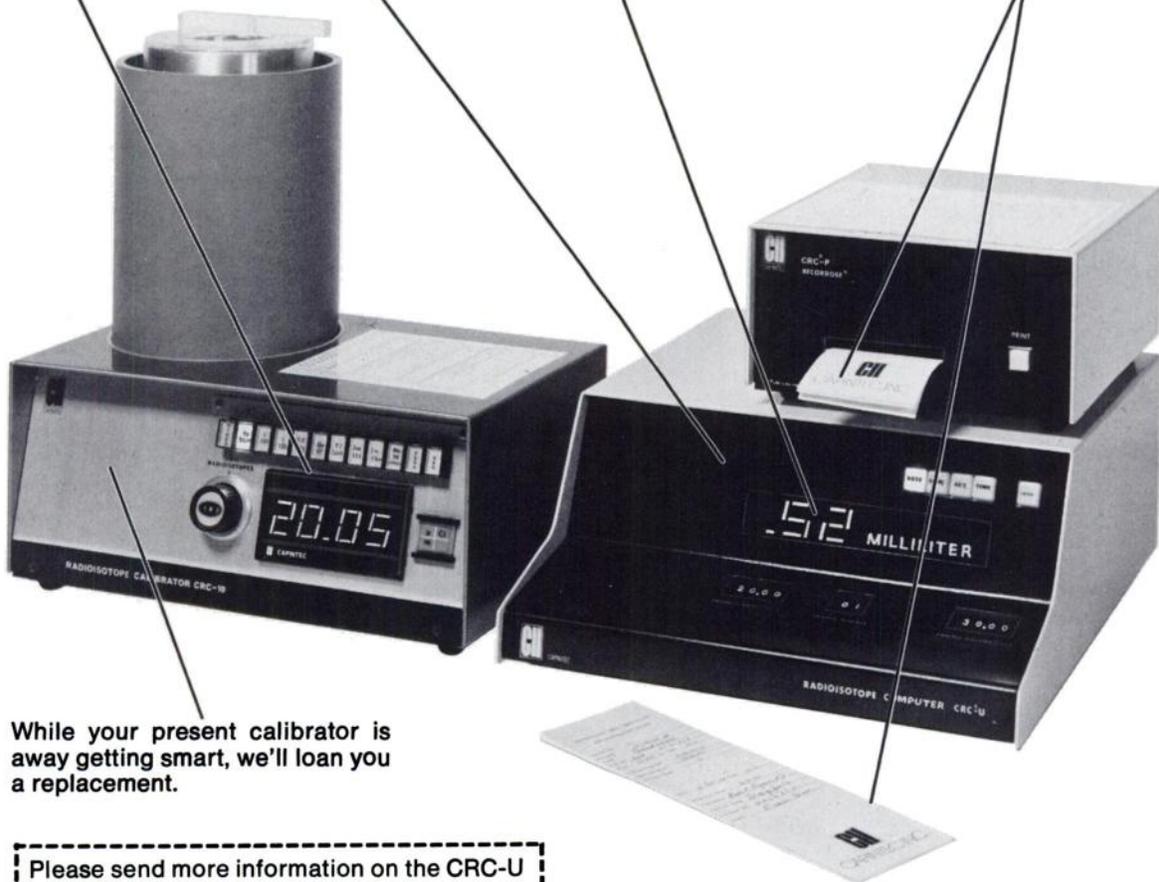
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Requests for further information should be directed to John A. Burdine, M.D., Chief, Nuclear Medicine Section, or Paul H. Murphy, Ph.D., Residency and Fellowship Coordinator, Department of Radiology, Baylor College of Medicine, Houston, Texas 77030.

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Rex B. Shafer, M.D., Chief, Nuclear Medicine Service (115), Veterans Administration Hospital, 54th Street & 48th Avenue South, Minneapolis, MN 55417

OR

Merle K. Loken, M.D., Ph.D., Director, Division of Nuclear Medicine, University of Minnesota Hospitals, Box 382, Mayo Memorial Building, Minneapolis, MN 55455

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The Minneapolis Veterans Administration Hospital seeks candidates for the position of Assistant Chief, Nuclear Medicine Service effective July 1, 1977.

Requirements include certification by the ABNM, a strong patient orientation and expertise in all phases of clinical nuclear medicine, including imaging, radioassay and internal radionuclide therapy. In addition, the Assistant Chief, Nuclear Medicine Service will have specific responsibilities in research and education.

Applications from all qualified candidates are welcome. Inquiries, including a curriculum vitae and an autobiographical letter, should be sent to:

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Applications from all qualified candidates are welcome; minorities and women are encouraged to apply.

If you are interested in this position, please write to the address below including a curriculum vitae and an autobiographical letter.

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Division of Nuclear Medicine
Ohio State University Hospitals
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Contributors: Harold Atkins, M.D., Raymond Barrall, M.S., James Cooper, Pharm.D., Paul Feller, M.S., James Kereiakes, Ph.D., Sheila Smith, B.A., Guy Simmons, Ph.D., Bryan Westerman, Ph.D., and Robert Wilson, Ph.D.

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This section in the Journal of Nuclear Medicine contains "Positions Open", "Positions Wanted", and "For Sale" listings. Nondisplay "Positions Wanted" ads by members of the Society are billed at 30¢ per word for each insertion with no minimum rate. Nondisplay "Positions Wanted" ads by nonmembers and all nondisplay "Positions Open" and "For Sale" ads by members and nonmembers are charged at 65¢ per word. Display advertisements are accepted at \$90 for 1/8 page, \$125 for 1/4 page, \$210 for 1/2 page, and \$370 for a full page. Closing date for each issue is the 1st of the month preceding publication. Agency commissions and cash discounts are allowed on display ads only. Box numbers are available for those who wish them.

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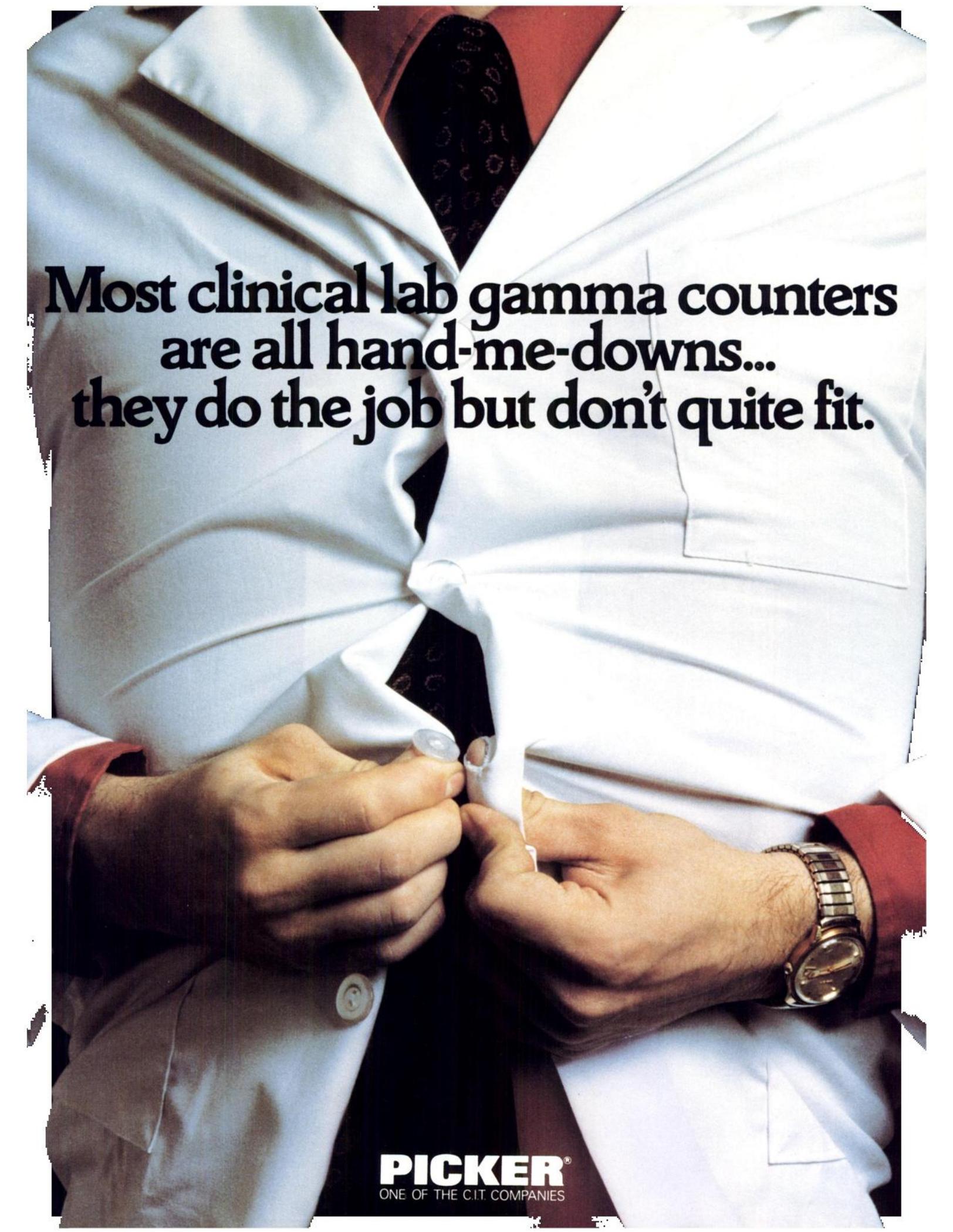
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The American Board of Nuclear Medicine announces that its Sixth Certifying Examination in Nuclear Medicine will be held on Saturday, September 17, 1977.

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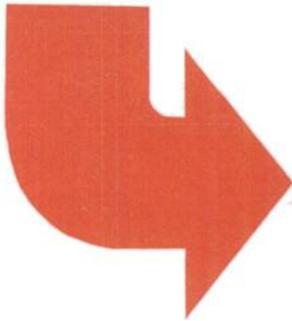


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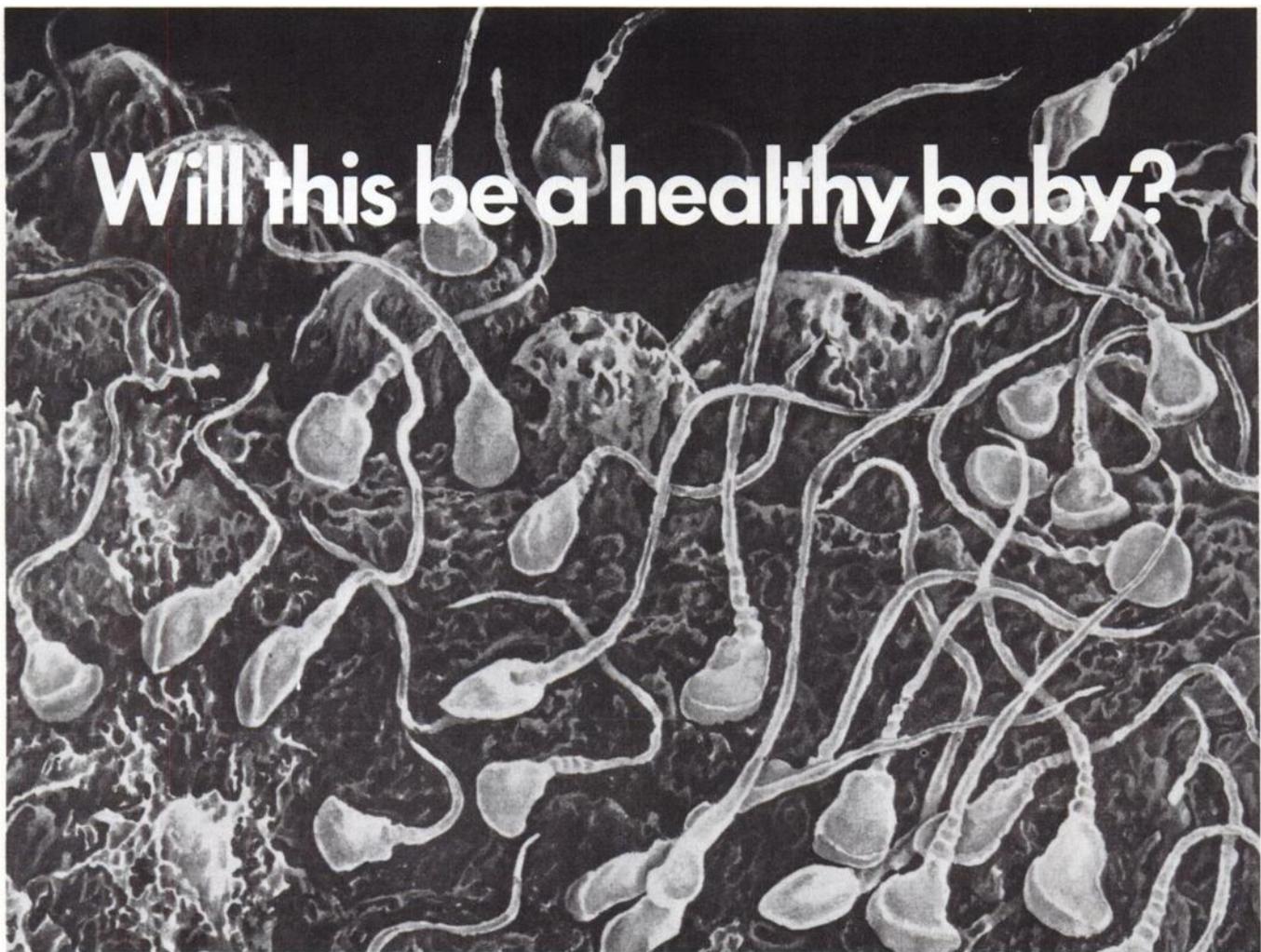


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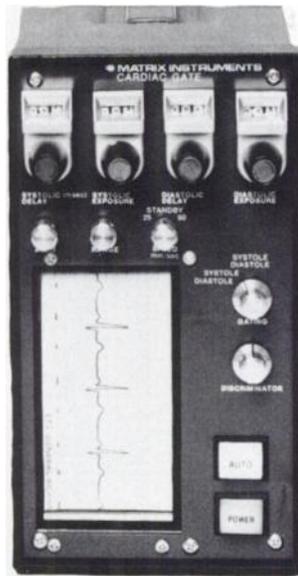
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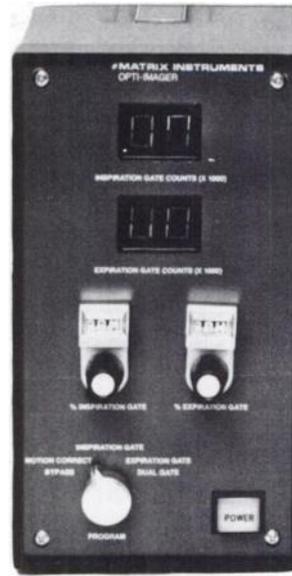
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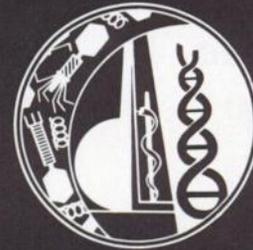
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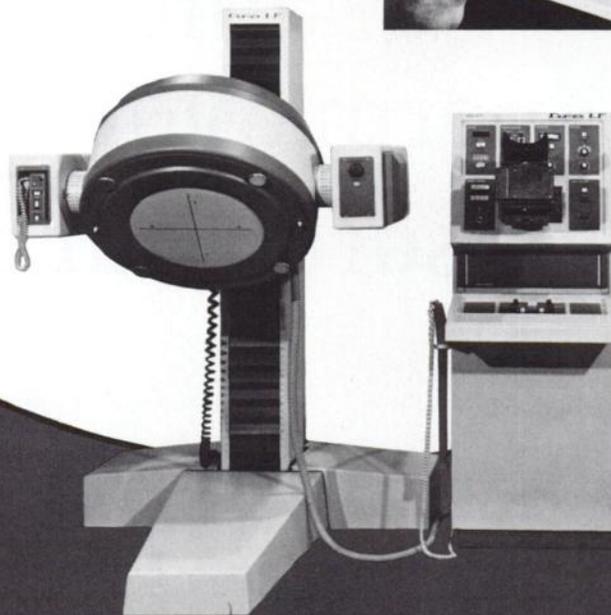
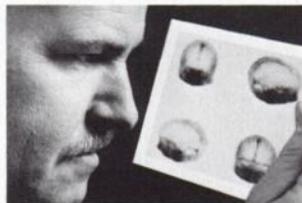
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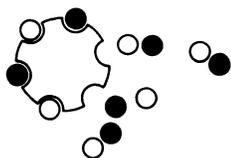
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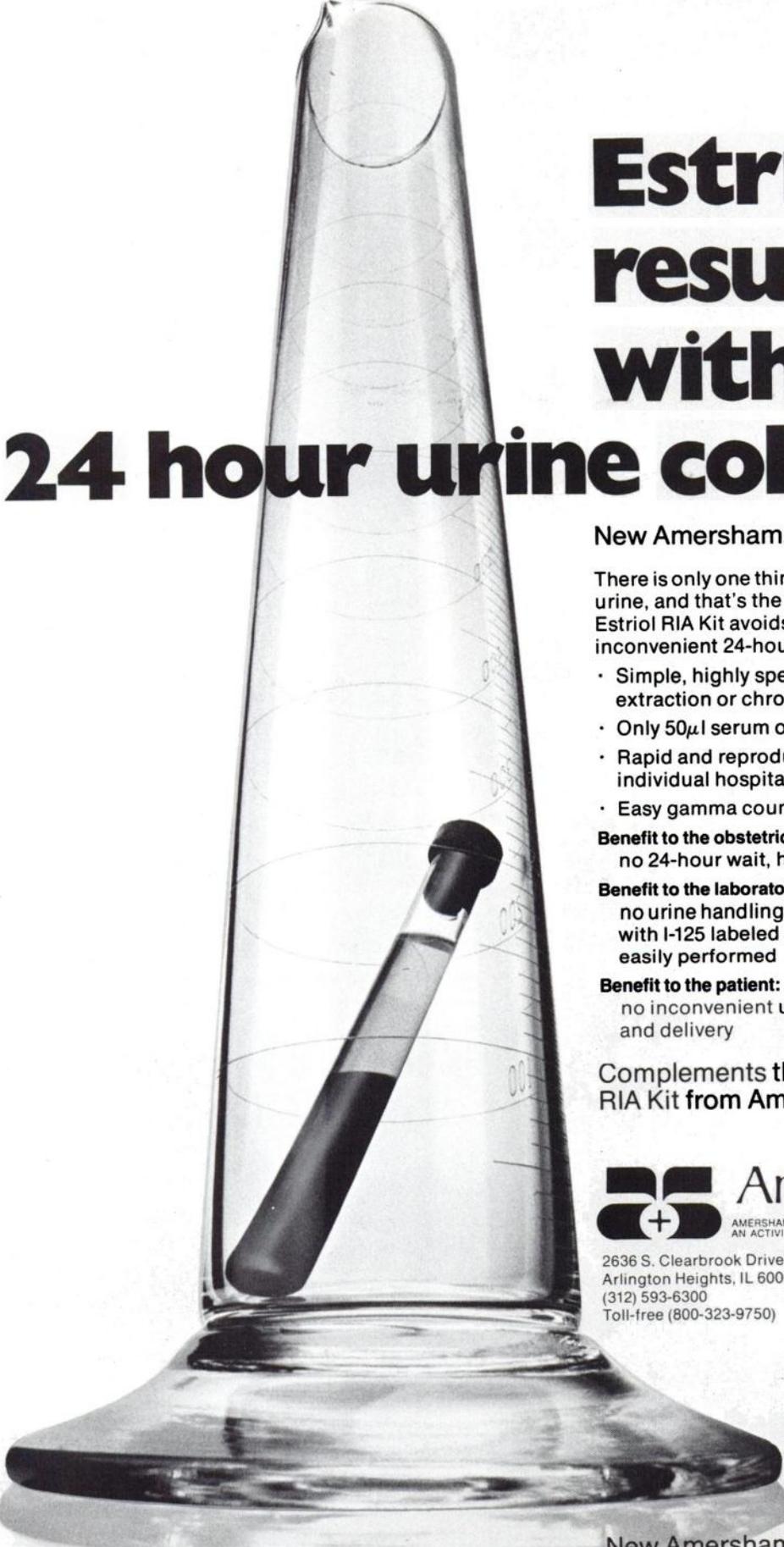
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gas handling equipment.**



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- **Resistance free breathing**
- **Accepts any external xenon source**
- **Performs all regional ventilation studies**

- **Easy to use**
 - **Washout timer**
 - **Guaranteed charcoal cartridge**
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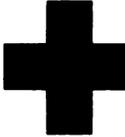
Because easing people over life's rough spots makes them easier in their minds. And no one has to tell you how important that is on the job.

So help Red Cross any way you can.

When you help us, it helps your people.

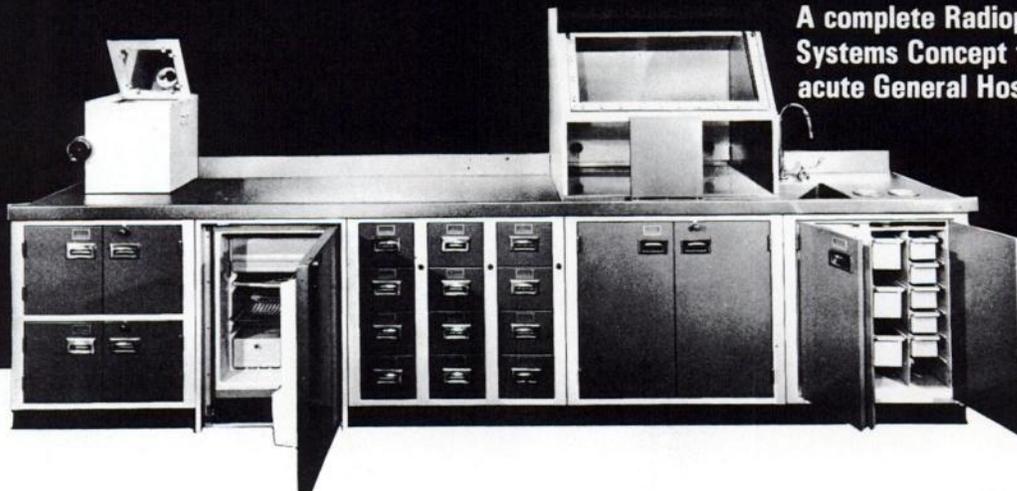
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The lead shielding within the system provides for personnel

safety from radiation. Maximum efficiency is obtained through the "Work-Flow" pattern concept.

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- Resistance free breathing
- Accepts any external xenon source
- Performs all regional ventilation studies

- Easy to use
 - Washout timer
 - Guaranteed charcoal cartridge
 - Exceeds all NRC/State requirements
- Total performance...at an affordable price.**

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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.

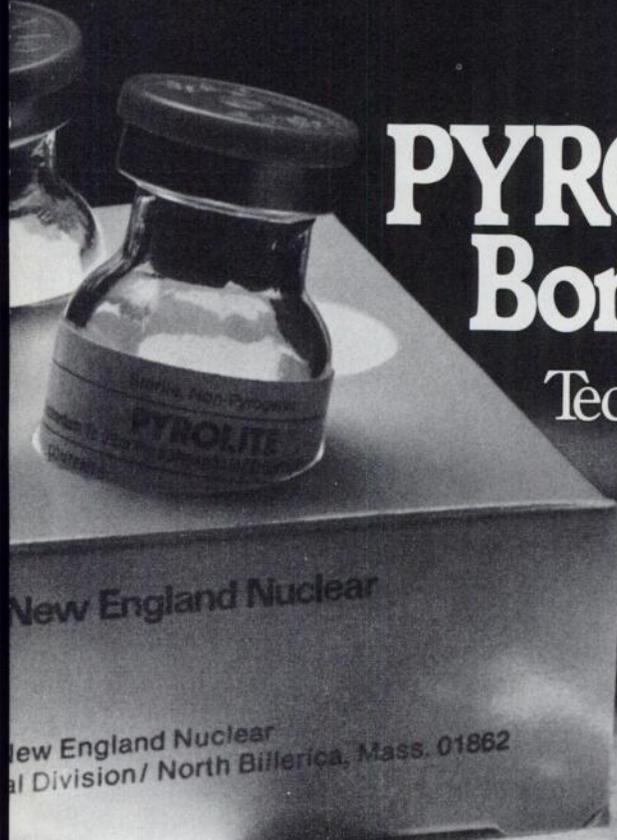
HOW SUPPLIED: NEN's PYROLITE™ Technetium Tc 99m Pyrophosphate/Trimetaphosphate-Tin Kit is supplied as a set of five or thirty vials, sterile and non-pyrogenic. Each vial contains in lyophilized form:

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

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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

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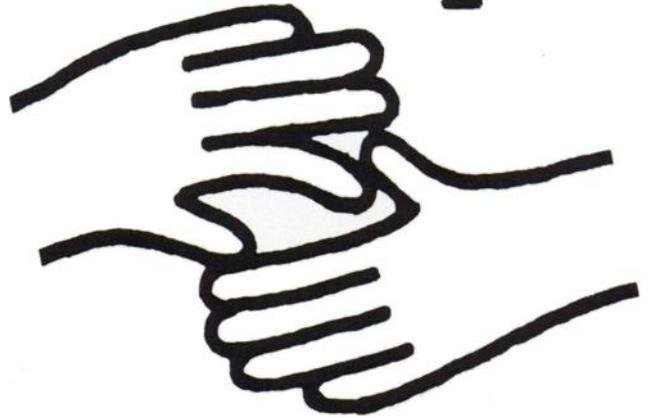
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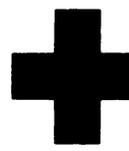
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So help Red Cross any way you can.

When you help us, it helps your people.

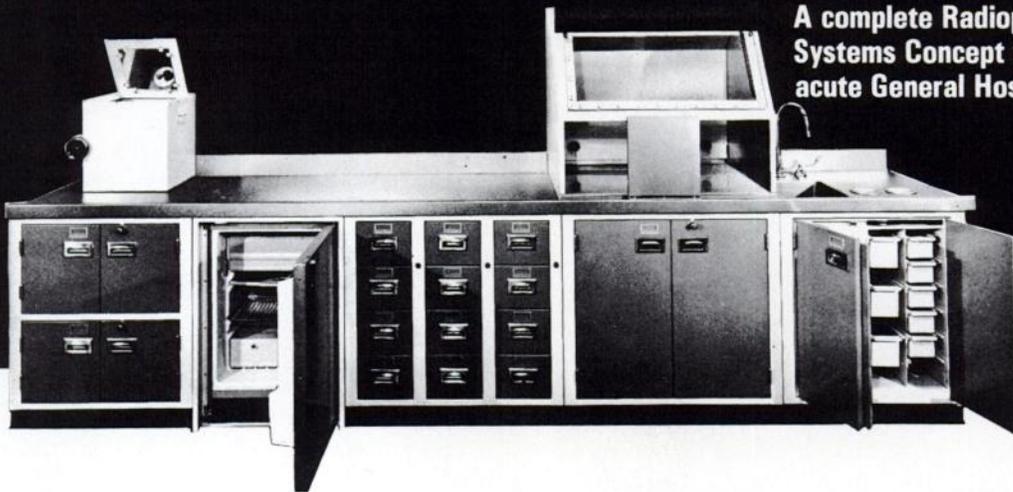
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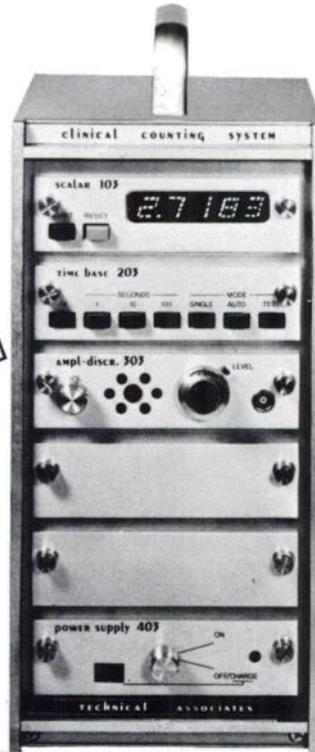
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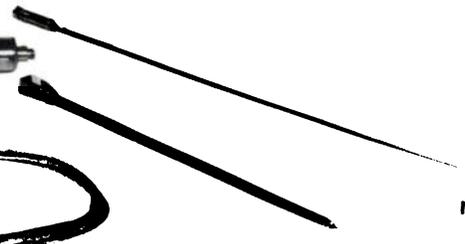
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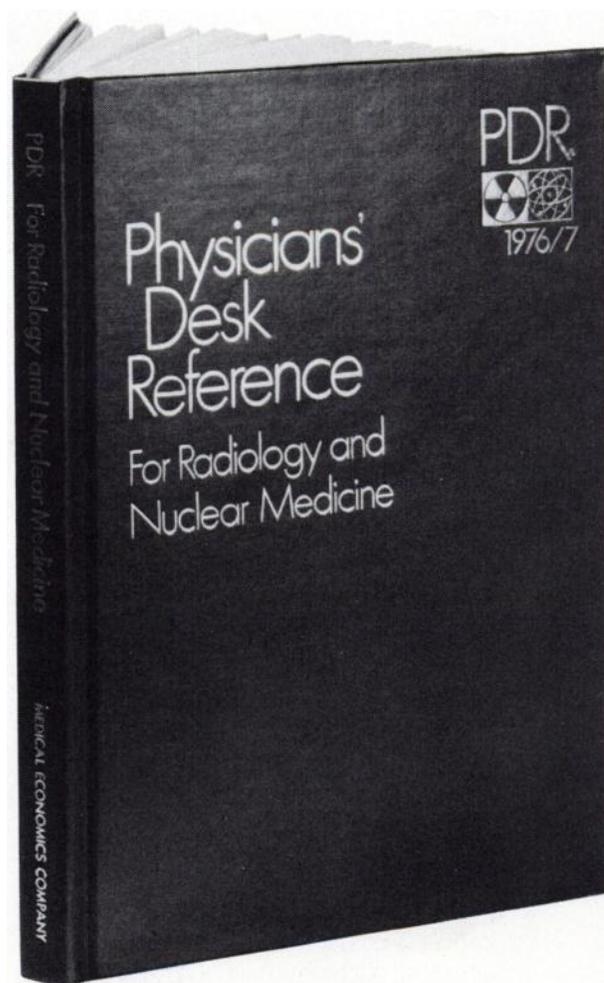
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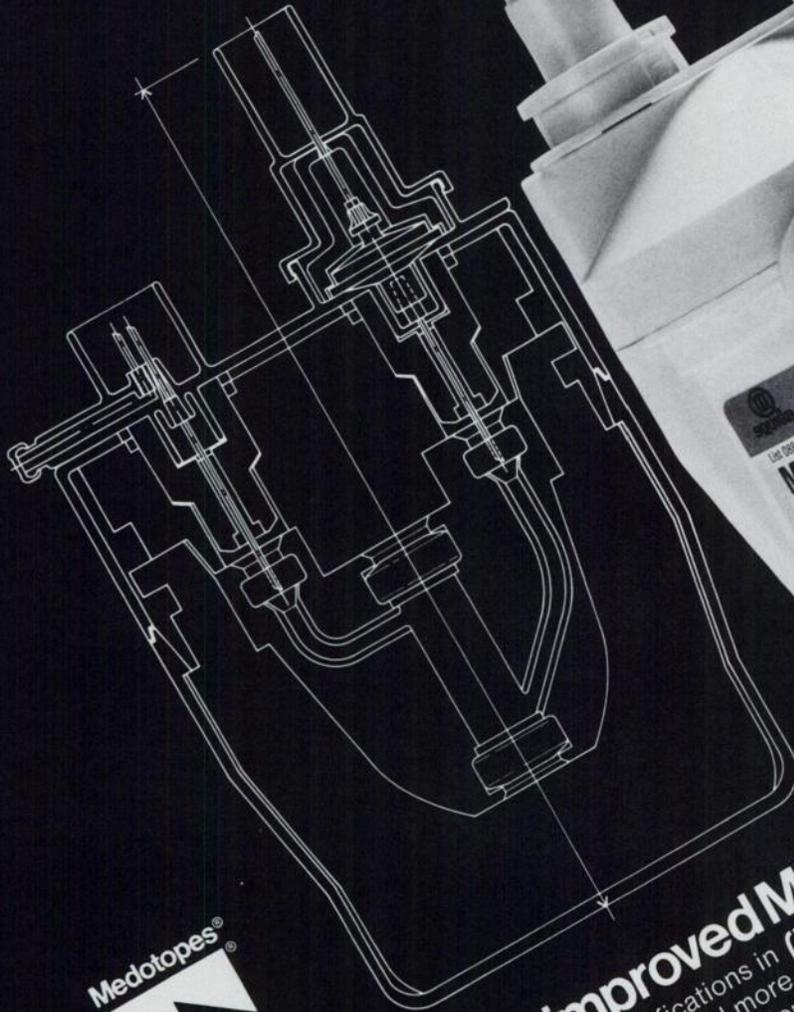
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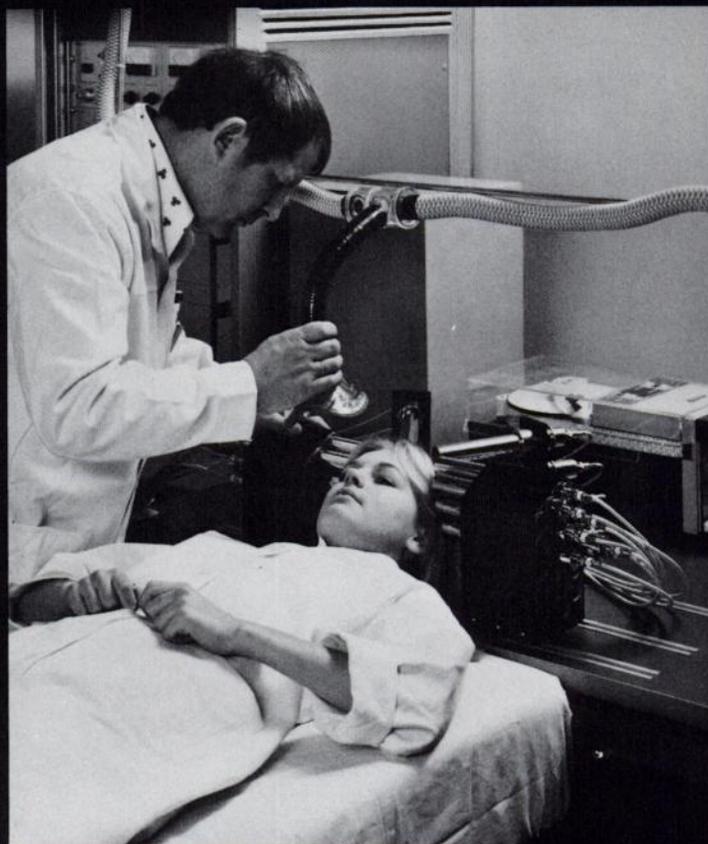
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The START Xenon-Kow II

^{133}Xe is most economically obtained in curie quantity glass ampules. The Xenon-Kow II was designed to safely and conveniently crush the ampule and dispense ^{133}Xe in smaller doses. The dynamic volume storage chamber provides for constant concentrations (decay excepted), and transfer efficiencies exceed 98%. The economies realized will pay for the entire system, usually in the first year. Let us analyze and compare your current cost with our system cost.



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The Ventil-Con controlled gas delivery system is used for patient administration of ^{133}Xe . You may administer the ^{133}Xe as a bolus or homogenous mixture with air and oxygen to perform the single breath, equilibrium and washout phases of lung ventilation studies.

Major features are:

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

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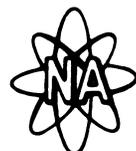
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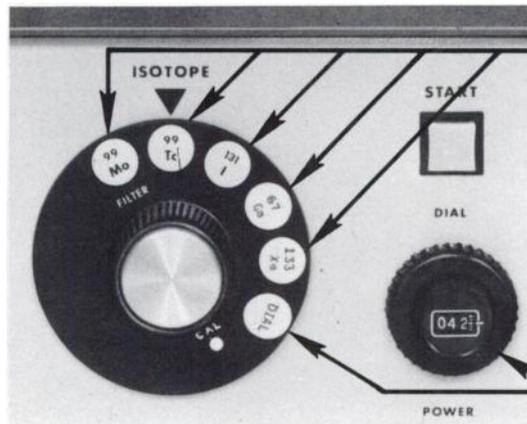
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RAO, SYSTOLE



LAO, DIASTOLE

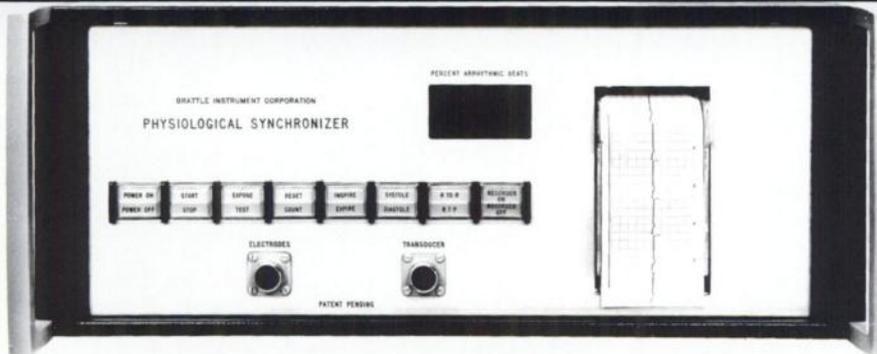


LAO, SYSTOLE

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 contrac-

tion 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 be-

cause 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

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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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