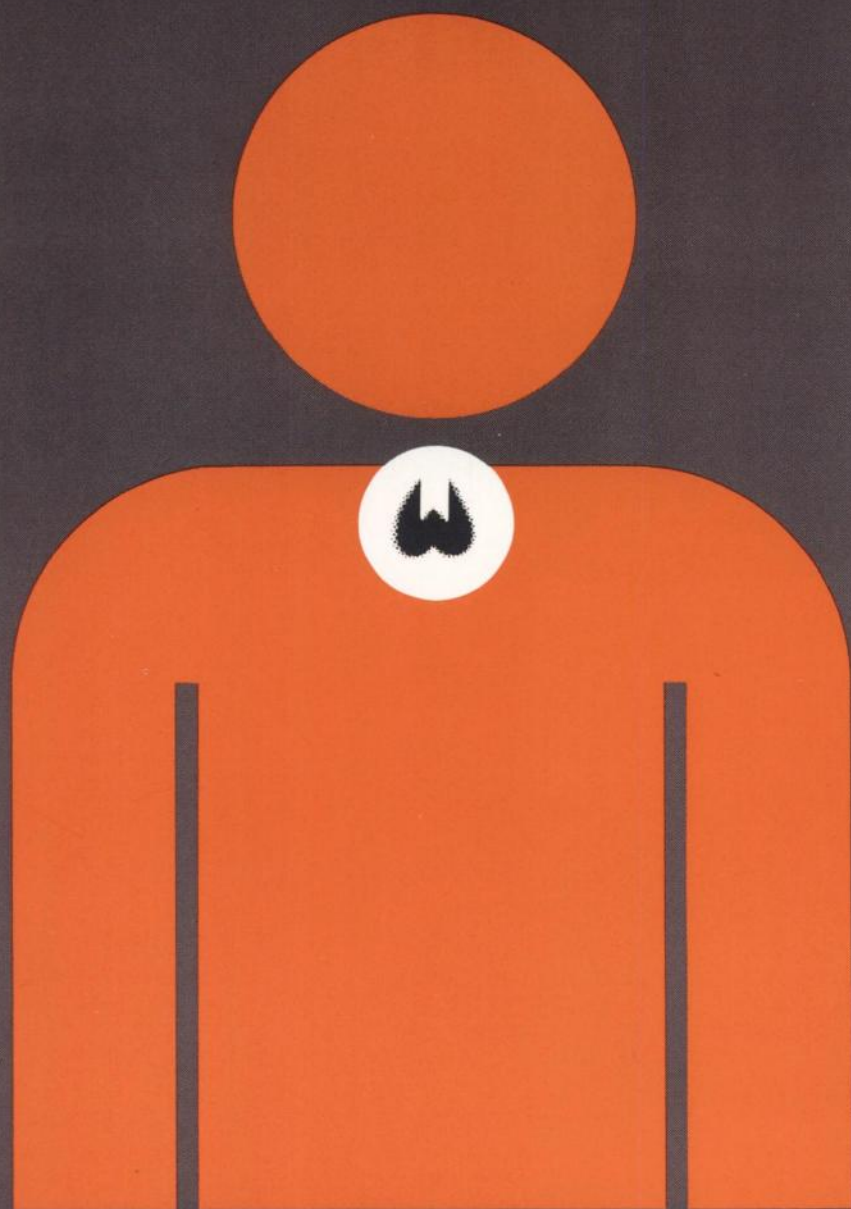


Sodium Iodide I 123 for thyroid studies



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

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.

Pho/Gamma® L.E.M.

Low Energy Mobile Scintillation Camera

Designed for a new environment

MOBILITY AND FLEXIBILITY

When movement of a critically ill patient is risky...but the diagnostic support of nuclear imaging is indicated, consider Searle's new Pho/Gamma L.E.M. Compact and maneuverable, the L.E.M. can easily be moved to the patient's environment in the emergency room, ICU or CCU where heart, lung, brain and renal studies can be done without compromising patient comfort and safety.

PROVEN ELECTRONICS

The L.E.M. has the same high-speed electronics as Searle's proven Pho/Gamma LFOV. It has six factory pre-set isotope windows for operator convenience. Automatic peaking assures remarkable reproducibility from study to study and from day to day. Window width and energy level can be set independently on 2 analyzers for dual-peak isotopes and special studies.

INCREASED PATIENT THROUGHPUT

New ratio correction circuitry allows wider window widths, shortens study times and increases patient throughput. Other electronic innovations include pulse-pair pile-up rejection and event buffering circuitry. As a result, the L.E.M. is capable of count rates up to 200,000 cps.

CHOICE OF COLLIMATORS

The L.E.M. offers a wide selection of lightweight collimators for optimum resolution under any conditions. With its converging collimation capabilities, it offers significant improvement in resolution of deep-seated structures. Renal studies, for example, yield images of such clarity that it is possible to obtain even oblique views of diagnostic quality.

TAILORED FOR SPECIAL APPLICATIONS

In heart imaging, the L.E.M. can be "gated" for systolic or diastolic studies, and the high count rate capability makes it suitable for advanced techniques such as dynamic cardiac imaging. The L.E.M. reveals midline brain lesions with unequalled clarity in static studies with the converging collimator. Parallel-hole and diverging collimation is used for large-area studies, such as lung imaging for pulmonary emboli.

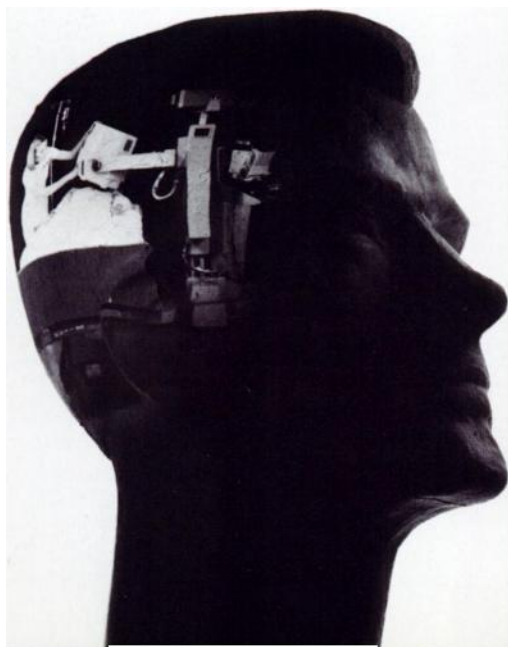
INSTRUMENTATION BACKED BY SUPERIOR SERVICE

Searle Service is one of the largest, highly trained Service Organizations in the nation. This trained and knowledgeable group is dedicated to maintaining highest quality instrument performance in your laboratory.

For more information about the Pho/Gamma L.E.M., including sample studies, call your Searle representative or write: Searle Radiographics, Inc., 2000 Nuclear Drive, Des Plaines, IL 60018. Telephone: (312) 298-6600.

SEARLE

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IMAGING:
The Living Art



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kit for the determination
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capacity in serum

Radiodiagnostics



**The time-saving test
for your lab:
pipette once,
incubate for one hour,
automatic
phase separation,
measure.**

Contents: 12 calibrated tubes each with 3.5 ml thybon[®] (I-125)-solution.
Total activity: 1.5 μ Ci I-125.

Preservative: 0,02 % sodium azide. 12 adsorption inserts, 1 ml standard
serum of defined TBG capacity.

These reagents are only for in-vitro application.

Code No.: I 5113, 1 package = 12 tests.

Storage: store protected from light in the refrigerator at +4° to +6° C.

Stability: 8 weeks properly stored. The expiry date is indicated
on the label.

Lh 82154a

Think NEN first when it comes to nuclear medicine.

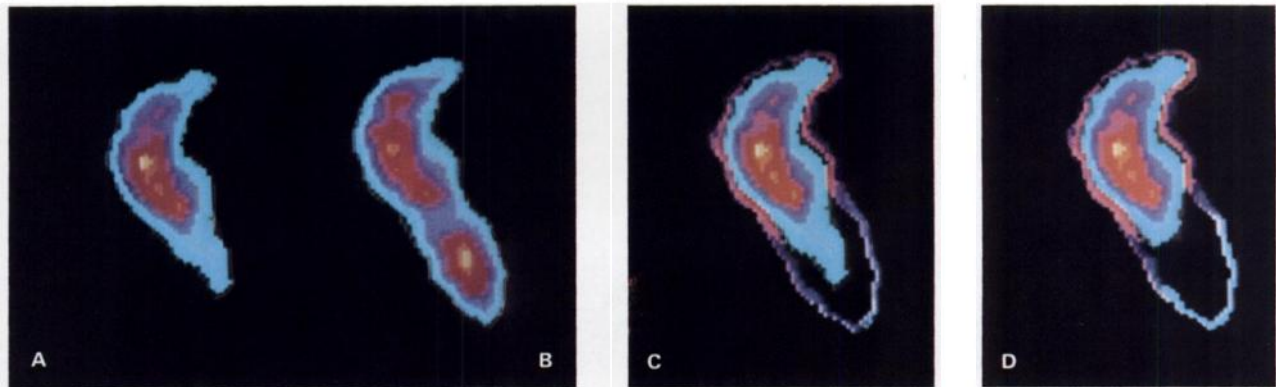


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Radiopharmaceutical Division
Atomlight Place, North Billerica, Mass. 01862
Telephone 617-667-9531
Los Angeles: 213-321-3311 Miami: 305-592-0702

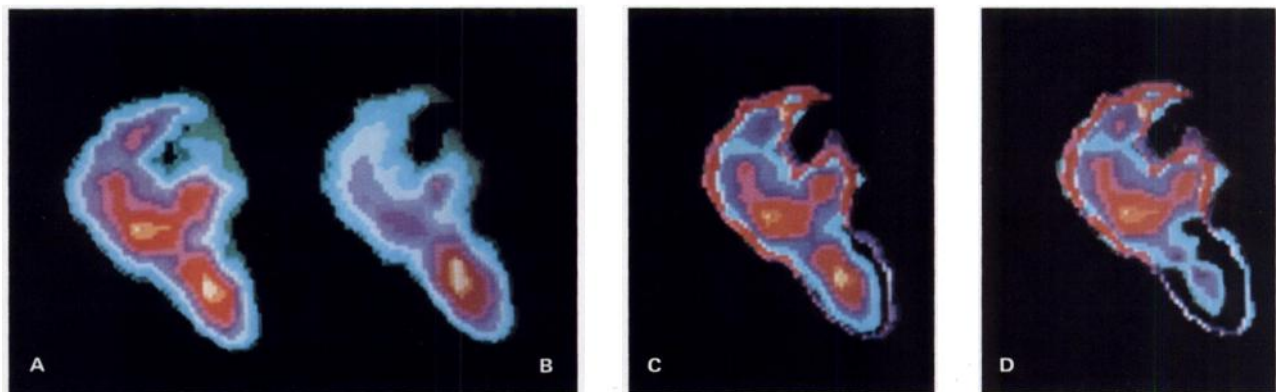
Canada: NEN Canada Ltd., Lachine, Quebec, H7T 3C9, Tel: 514-636-4971, Telex: 05-821808
Europe: NEN Chemicals GmbH, D-6072 Dreieichenhain, W. Germany, Daimlerstrasse 26, Postfach 1240. Tel: (06103) 85034.

SEVENTY SEVEN REASONS:

1. Comprehensive, first-pass dynamics of cardiac wall motion



NORMAL PATIENT. Anterior View. Ejection Fraction 63%. (A) Image at End Systole shows volume displacement flow is maximum in the aorta and volume is minimum in the ventricle. (B) Image shows that volume displacement flow is minimum in the aorta and volume is maximum in the ventricle at End Diastole. (C) ES, with perimeter at ED superimposed, shows normal volume displacements and symmetric wall motion band due to motion of the septal and lateral walls. (D) Subtraction of stroke volume from ES, with ED perimeter superimposed, shows that all volume displacements in the stroke volume exceed volume components in residual distribution at ES.



ABNORMAL PATIENT. Anterior View. Ejection Fraction 34%. (A) ES, showing spatial distribution of volume components. Abnormally high residual volume at ES in the ventricle compared to volume flow components in the aorta. (B) ED, showing distribution of left heart volume components. Comparison with ES suggests relative lack of ventricular volume displacement during systole. (C) Lack of wall motion is indicated by very narrow wall motion band between ED perimeter and the ES distribution along the septal wall to the apex. Wall motion of the lateral wall is closer to normal. (D) Volume component in ES distribution exceeds stroke volume displacement because of reduced anterior or posterior wall motion proximal to the septal wall.

Shown here are stop-action data extracted from the representative cycle of first-pass images showing hemodynamics of the left heart, including volume distribution of end systole, end diastole, end systole with the end diastolic perimeter superimposed, stroke volume subtracted from end systole with end diastolic perimeter superimposed. These images provide the basis for the clinical diagnosis of ventricular wall motion, in addition to providing data for a closer examination of specific areas for evidence of hypokinesia, akinesia, or dyskinesia.

Because of the high count rate of System Seventy Seven's multicrystal matrix detector, no ECG gating was required. These studies are therefore unique in nuclear medicine and, because of the computer built into the system, remarkably fast and easy to perform. There is simply no other gamma camera that can do all that you see here.



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**High quality images, consistently
reproducible, to further increase
diagnostic accuracy;**

**High speed data acquisition with
minimal loss;**

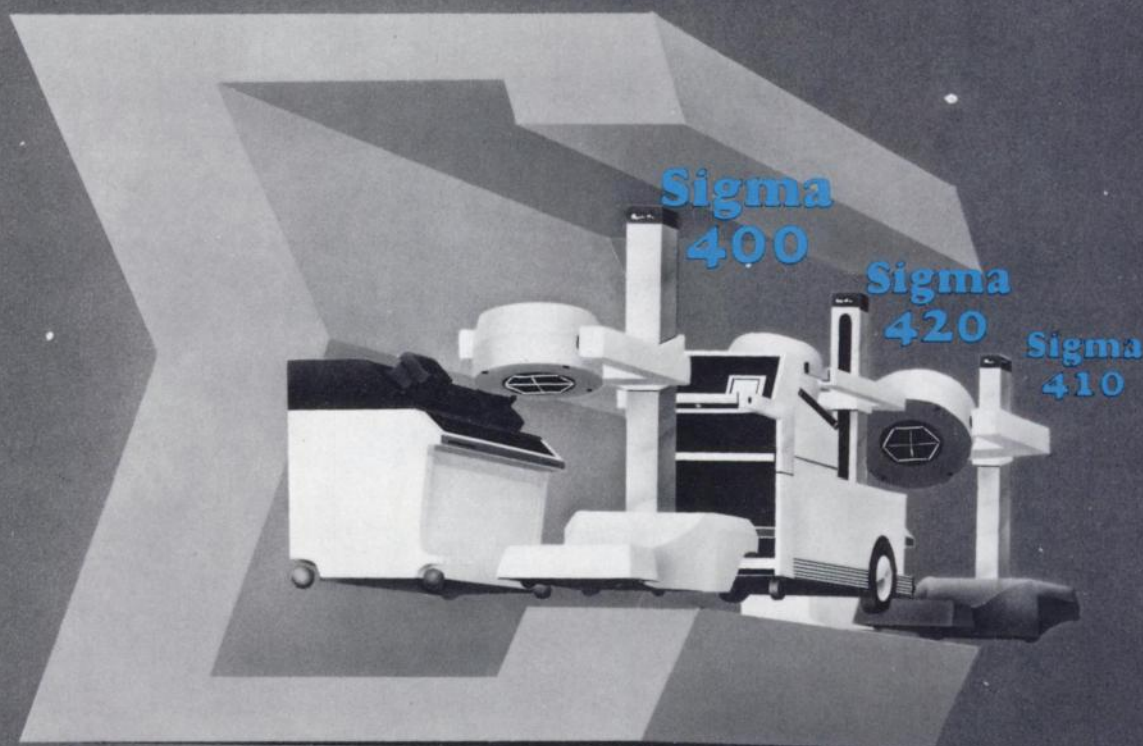
**Simple setup for increased
thruput and optimized
performance; and**

Protection against obsolescence.

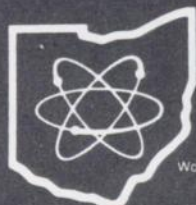
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We are not a subsidiary or sub-division of some giant corporation that also sells drug store items or machinery. Our only reason-for-being is to produce quality diagnostic kits and prepared radiopharmaceuticals.

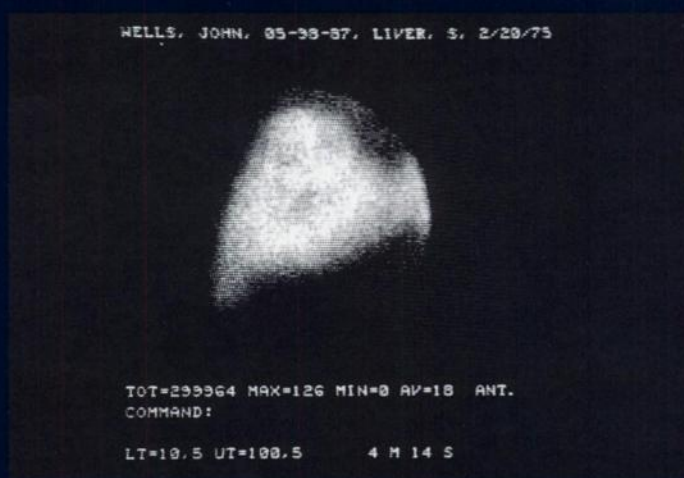
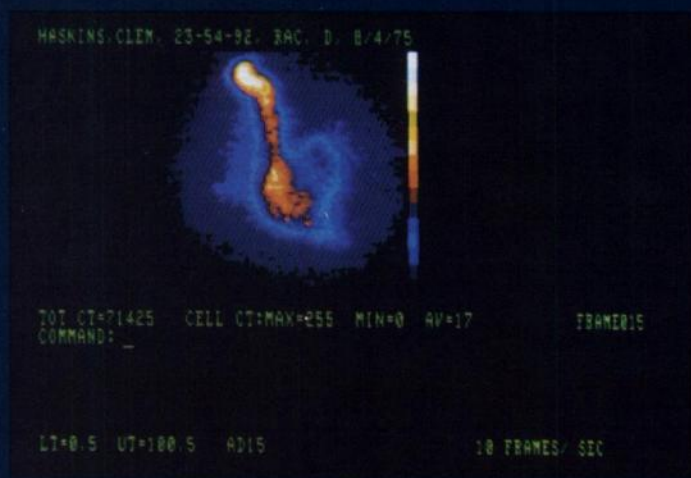
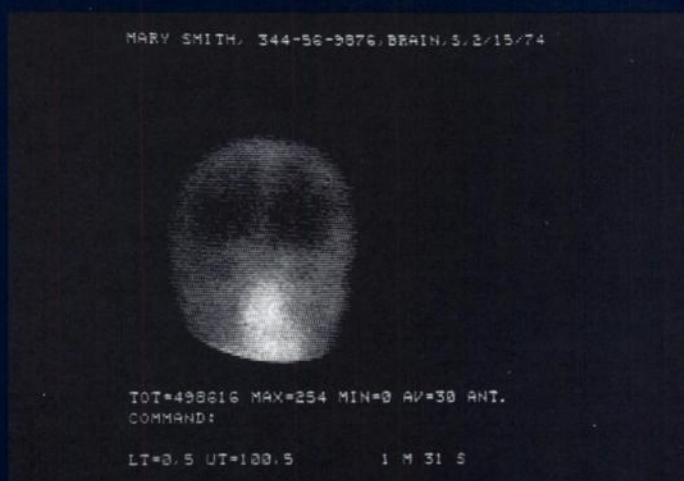
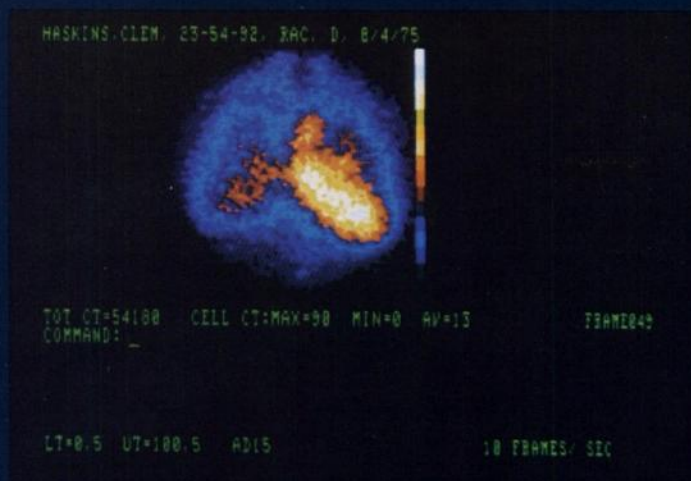
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The proof? Gamma-11 lets you acquire and analyze information from single or multiple gamma cameras. Simultaneously. Gamma-11 also lets you choose from more than 150 different data acquisition and analysis functions. What's more, you can display that data in either black-and-white or color. And replay high speed dynamic studies up to 16 frames/second with no flicker.

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digital

Hewed out of solid tradition

Searle's new Pho/Gamma V is a worthy addition to the proven Pho/Gamma scintillation camera series. Designed for the clinic or laboratory looking for cost-effective instrumentation, the Pho/Gamma V features the advanced, high-speed electronics of the Pho/Gamma LFOV in a standard field of view camera. It also offers a large assortment of parallel-hole, pin-hole, diverging-converging and spot-converging collimators.

EASE OF OPERATION

Like the Pho/Gamma LFOV, the Pho/Gamma V has eleven factory pre-set isotope windows for operator convenience. Automatic peaking assures remarkable reproducibility from study to study and from day to day.



TRIPLE PEAK CAPABILITY

Window width and energy level can also be set independently on 3 analyzers for unique isotopes and special studies. Thus, your facility can take full advantage of the diagnostic potential in multi-peak nuclides such as Gallium 67. This is especially important in soft-tissue studies where high sensitivity and superior resolution are vital.

IMPROVED ELECTRONICS

New ratio correction circuitry allows wider window widths, shortens study times and increases patient throughput. Other electronic innovations include pulse-pair pile-up rejection and event buffering circuitry. As a result, the Pho/Gamma V is capable of count rates up to 200,000 cps, which is sufficient for even highly specialized techniques such as dynamic cardiac studies.

INSTRUMENTATION BACKED BY SUPERIOR SERVICE

Searle Service is one of the largest, highly trained Service Organizations in the nation. This trained and knowledgeable group is dedicated to maintaining highest quality instrument performance in your laboratory.

IMAGING:
The Living Art

The Pho/Gamma V is the most advanced standard field of view scintillation camera available today. Like other instruments in the famous Pho/Gamma line, it consistently delivers high quality images to give the physician maximum diagnostic support.

For more information on the Pho/Gamma V system, including the unique Micro Dot™ Imager and Scintiscan™ Whole Body Table, call your Searle representative or write: Searle Radiographics, Inc., 2000 Nuclear Drive, Des Plaines, IL 60018. Telephone: (312) 298-6600.

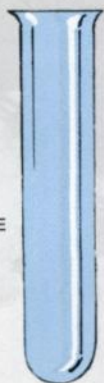
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Clinical Assays GammaCoat™ T4 RIA

ADD
SAMPLE



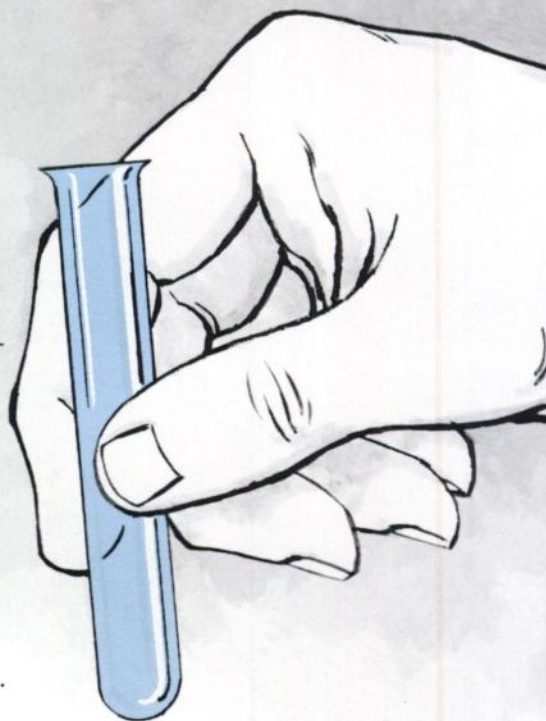
ADD
TRACER
REAGENT



DECANT



COUNT



SOLID PHASE SEPARATION- ANTIBODY COATED TUBES

T4 Radioimmunoassay is as elegant as it looks:

- Technician training and operating time reduced to a minimum.
- T4 antibody coated on the tube — just decant to separate bound from free. No centrifugation or rotation required.
- Extraction eliminated.
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Protocol:

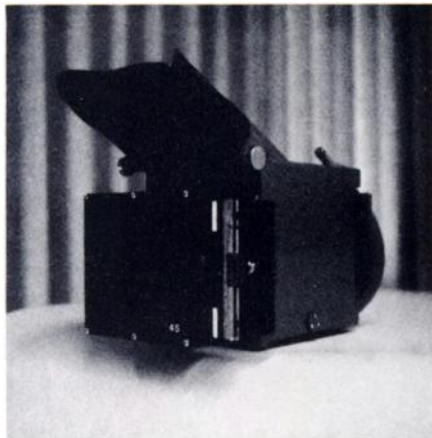
- Add sample directly into GammaCoat tube.
- Add Tracer-Buffer Reagent.
- Incubate — for 45 minutes at room temperature.
- Decant or Aspirate.
- Count — the tube is counted for as little as 30 seconds.

For further information call toll free
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TWX (710-320-6460) or write:

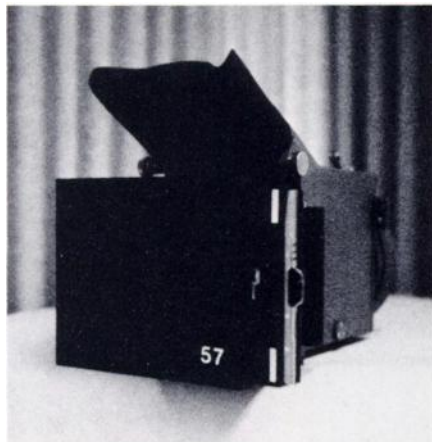


**Clinical
Assays, Inc.**

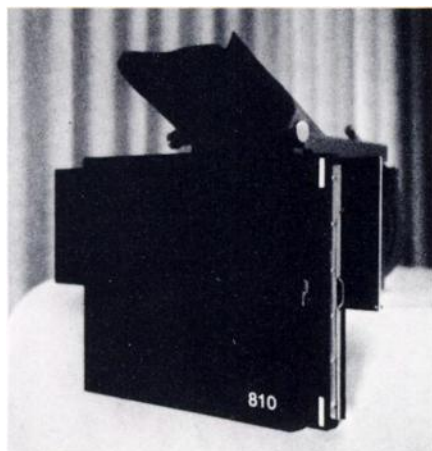
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MODEL "45" (4 x 5)



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*As shown at the 22nd Annual Meeting of the S.N.M. in Philadelphia, PA.

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- Double-sided Cassette can be inserted from either side (left or right)
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*The GE commitment to nuclear medicine:
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GE: new ideas solve nuclear needs.

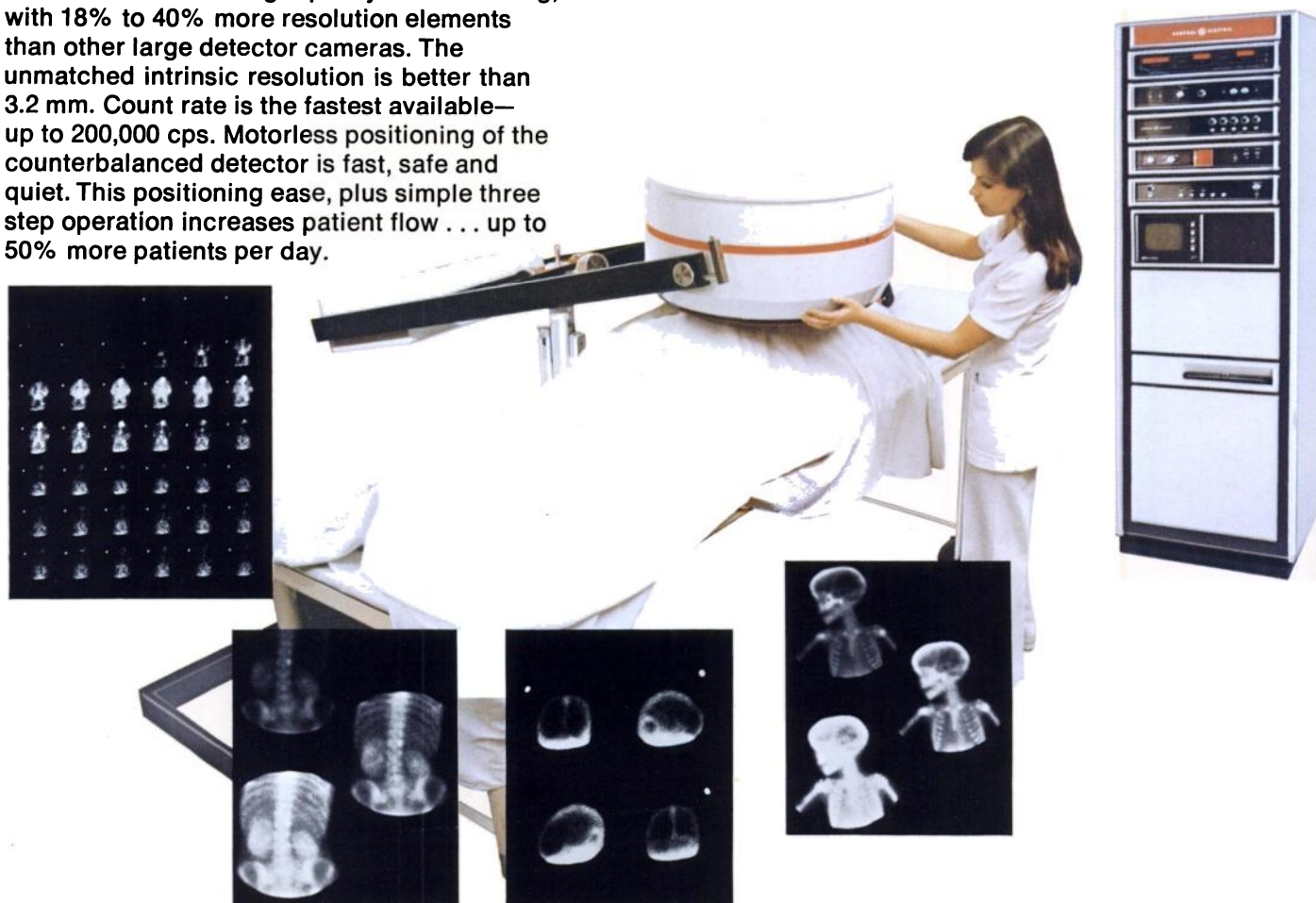
Innovative systems are needed to meet the many needs of today's nuclear departments. That's why GE has combined new product ideas with proven concepts to provide the latest in nuclear capability.

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

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

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

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





PortaCamera system: nuclear department on wheels.

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



GE computer capability improves diagnostic data.

Med II™ is a complete image processing and data analysis system. It allows the physician to use the latest GE computer capability to maximize diagnostic information. The Med II system is a second-generation, push-button

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

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GENERAL  ELECTRIC

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Cortipac*

Cortisol CPB Kit

- * Assay range 2.5–45 $\mu\text{g}/100\text{ml}$
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- * 30 minute incubation, 2 hour assay
- * Small sample size (100 μl serum)
- * Excellent correlation with Mattingley methods

ACTH RIA Kit

- * Assay range 10–4000 pg/ml
- * ^{125}I gamma label
- * Plasma extraction with adsorbent glass minimizes non-specific interference
- * Antiserum directed at biologically active (N-terminal $\alpha 1-24$) part of ACTH molecule
- * 24 hour assay

Full information available on request



**The Radiochemical Centre
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The sign of quality in Radioassays

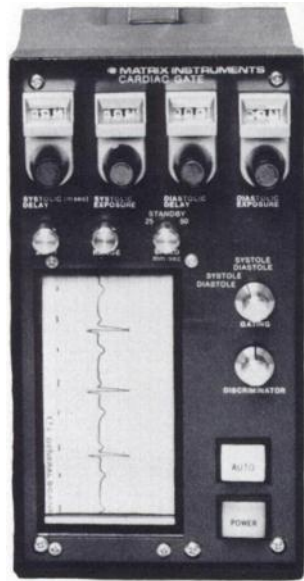
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In the Americas: Amersham/Searle Corp., Illinois 60005. Telephone: 312-593-6300
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State of the art in cardiac and respiratory synchronization.

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.

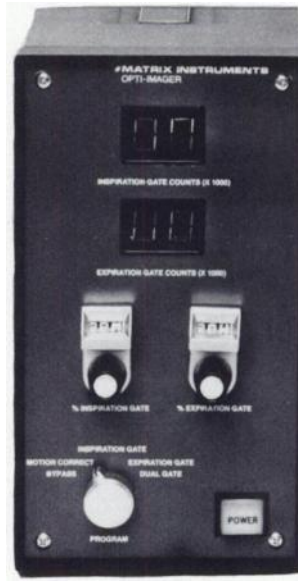
The dual gating operation mode allows recording of both end-systole and end-diastole simultaneously in a split screen two image format.

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 scalars 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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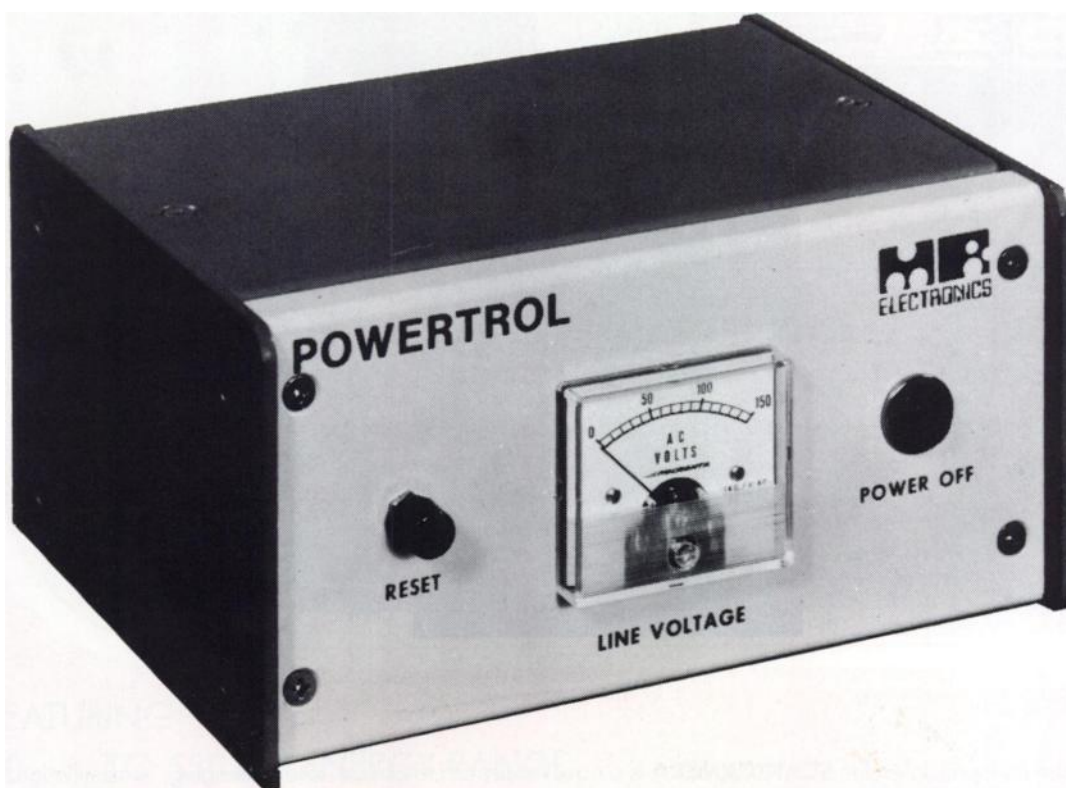
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PRODUCT INFORMATION

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.

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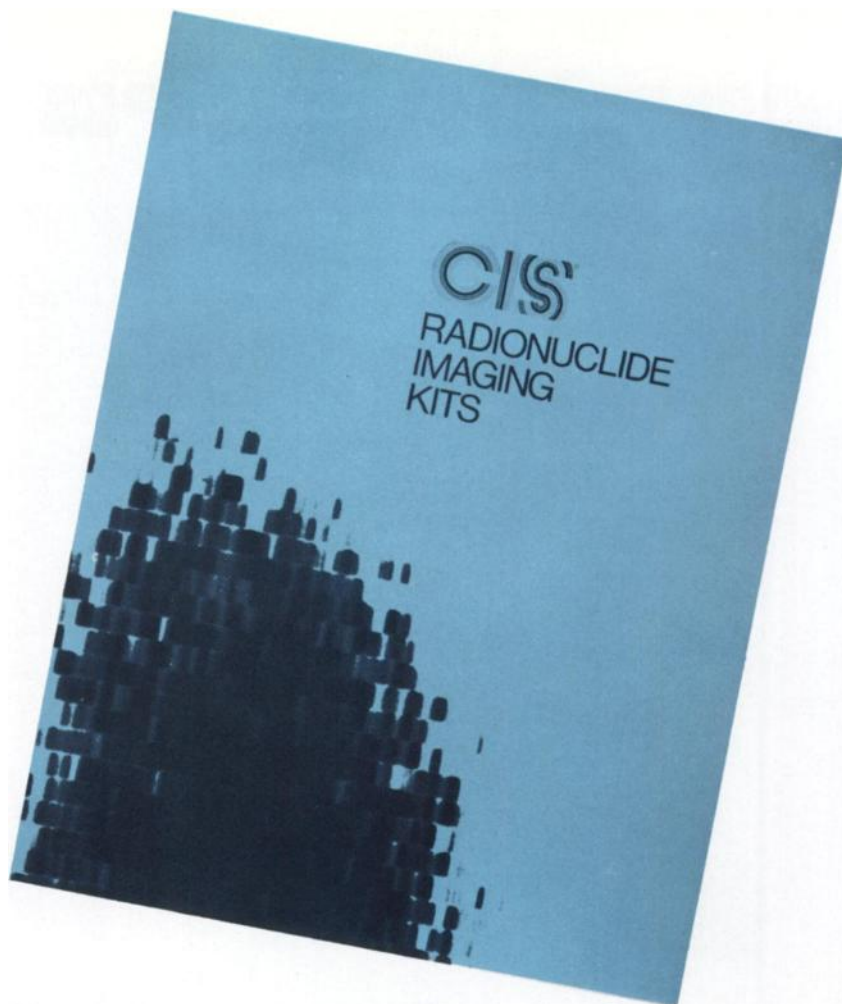
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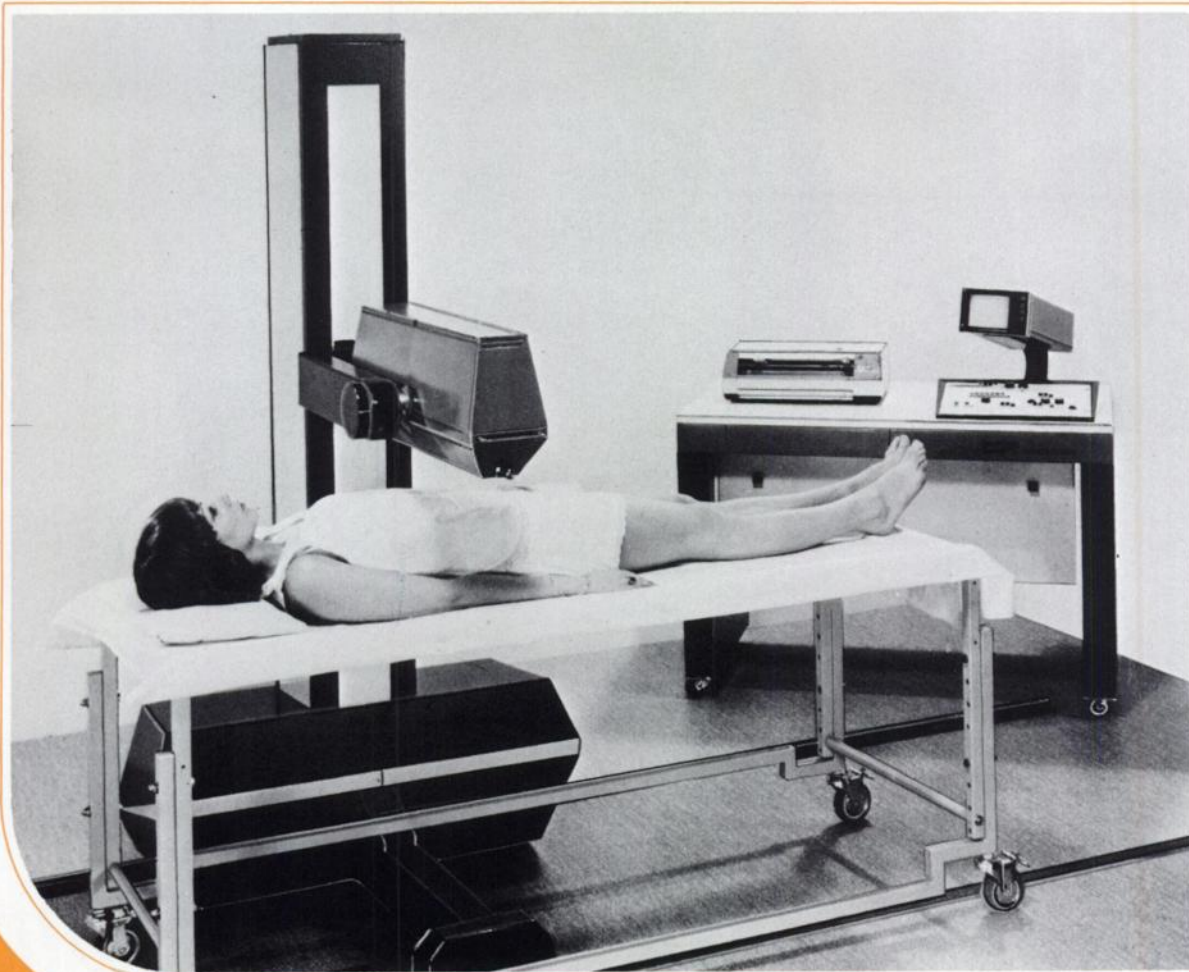
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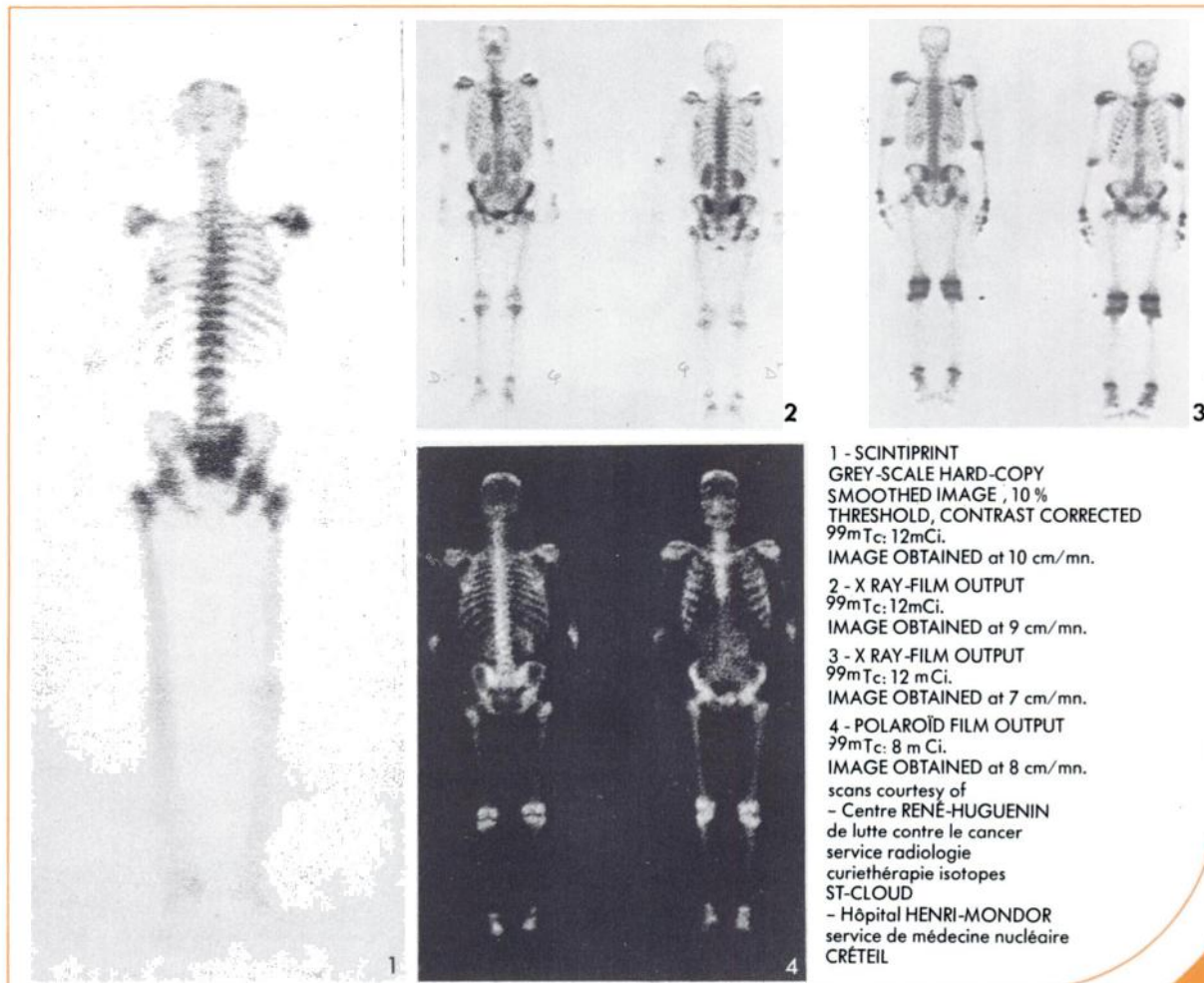
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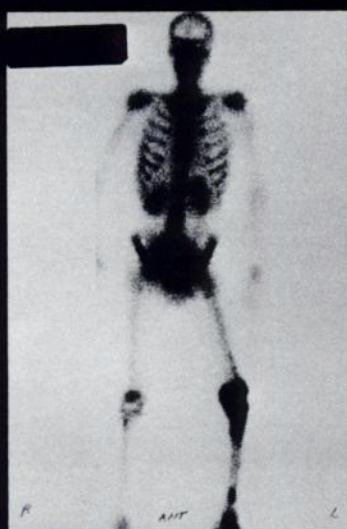
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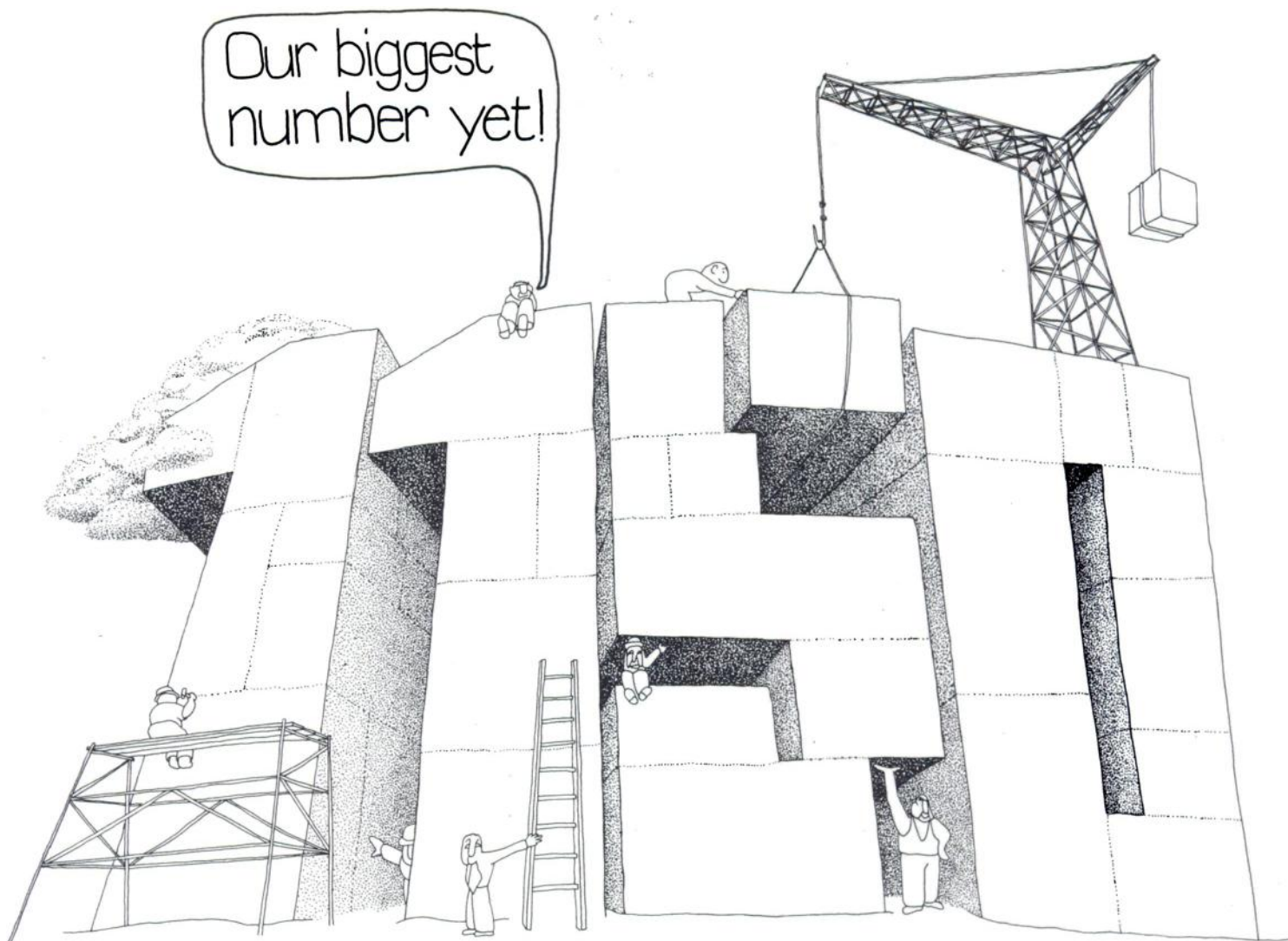
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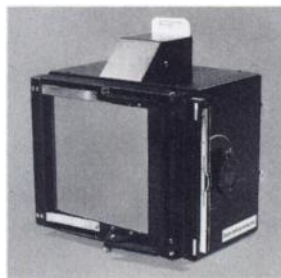
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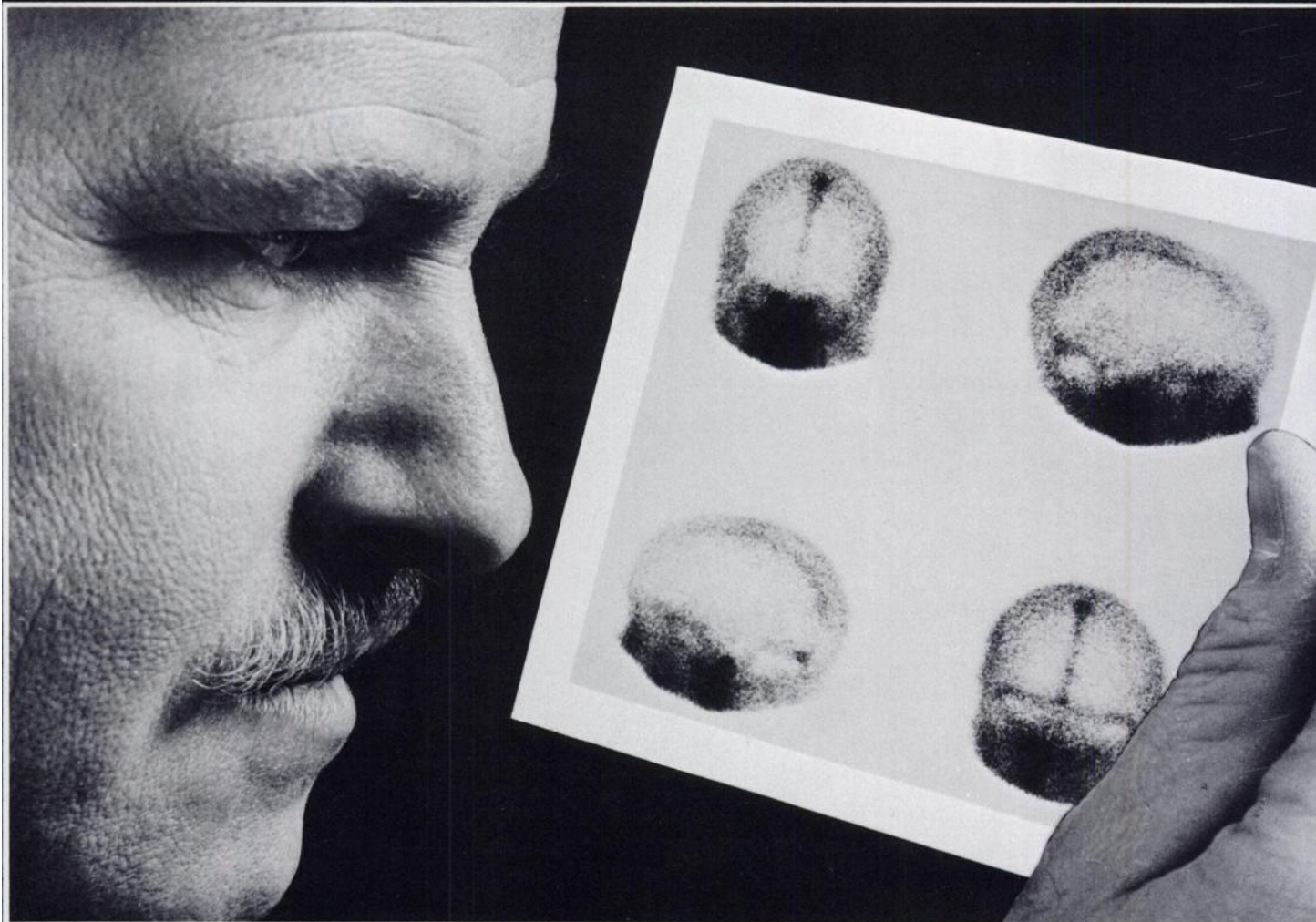
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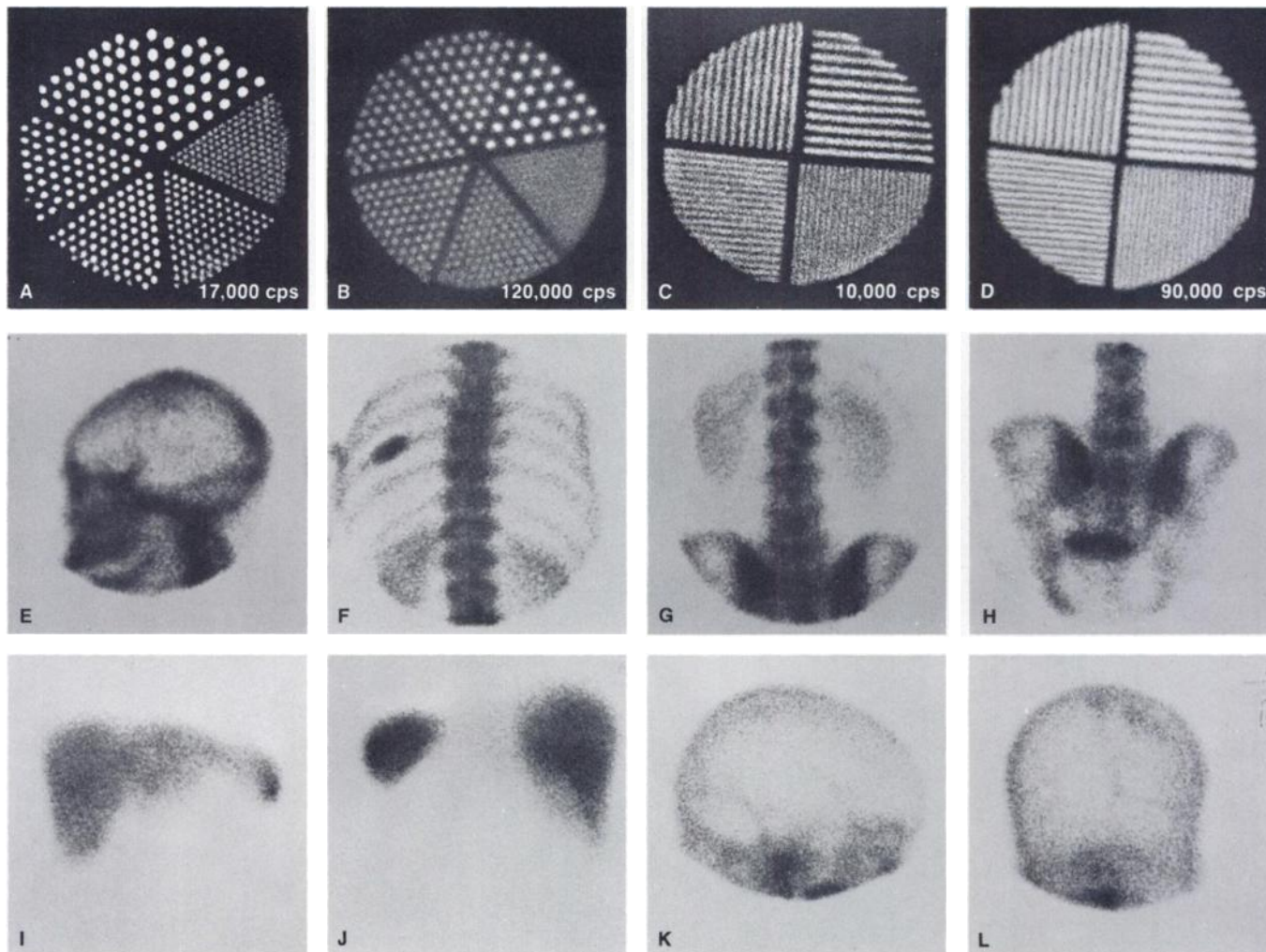
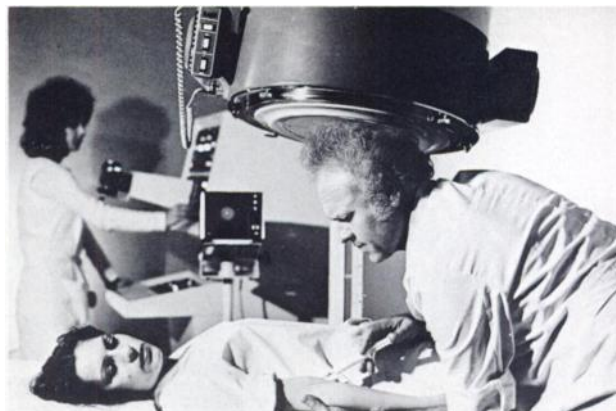


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Photo above: normal brain scan multi-image display with CE-1-7 camera. Data shown courtesy Albert Einstein College of Medicine Hospital, Bronx, NY; Atlantic City Medical Center, Mainland Div., Pomona, NJ; Temple University Hospital, Philadelphia, PA.

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A, B. Anger phantom studies carried out at Albert Einstein College of Medicine Hospital.

C, D. 1/8" bar phantoms with CCL-4 high-resolution collimator.

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

I, J. Anterior and posterior liver scans: CCL-4 Ultrafine —

resolution collimator; 400,000 counts; 3 mCi ^{99m}Tc sulfur colloid; 1/2 hour post injection. 56 sec. for anterior; 66 sec. for posterior.

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

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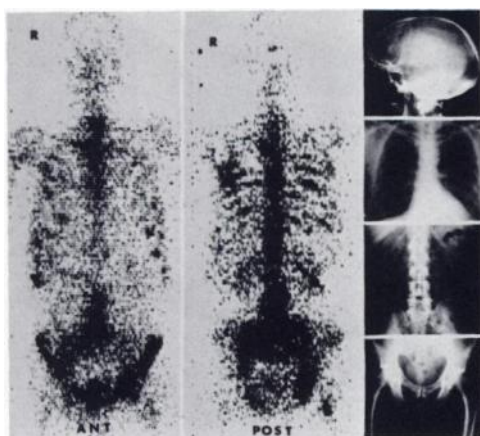
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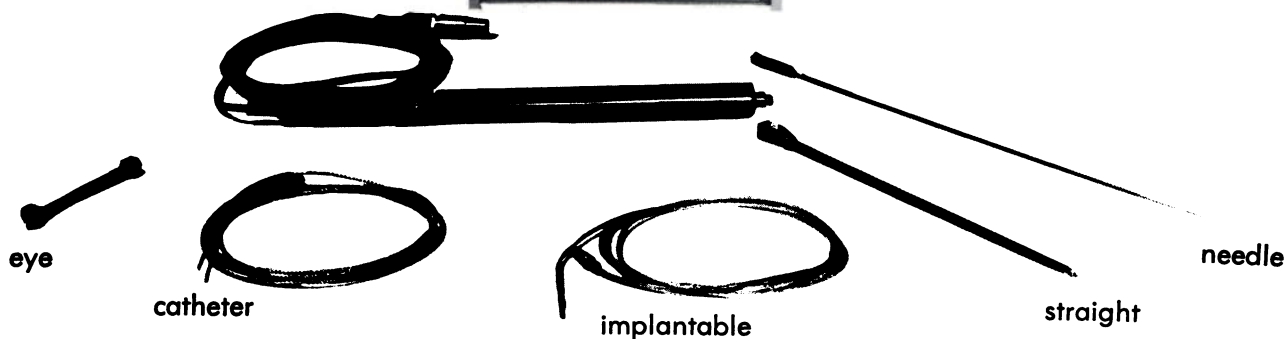
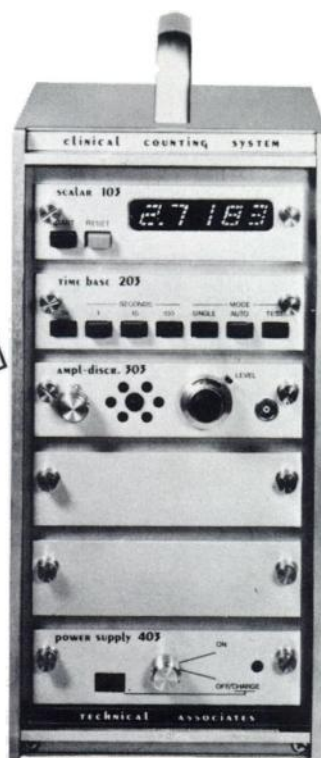
1. Obrist, W. D. et al, "Determination of Regional Cerebral Blood Flow by Inhalation of Xenon-133", Circulation Research, XX,124-134, January 1967.

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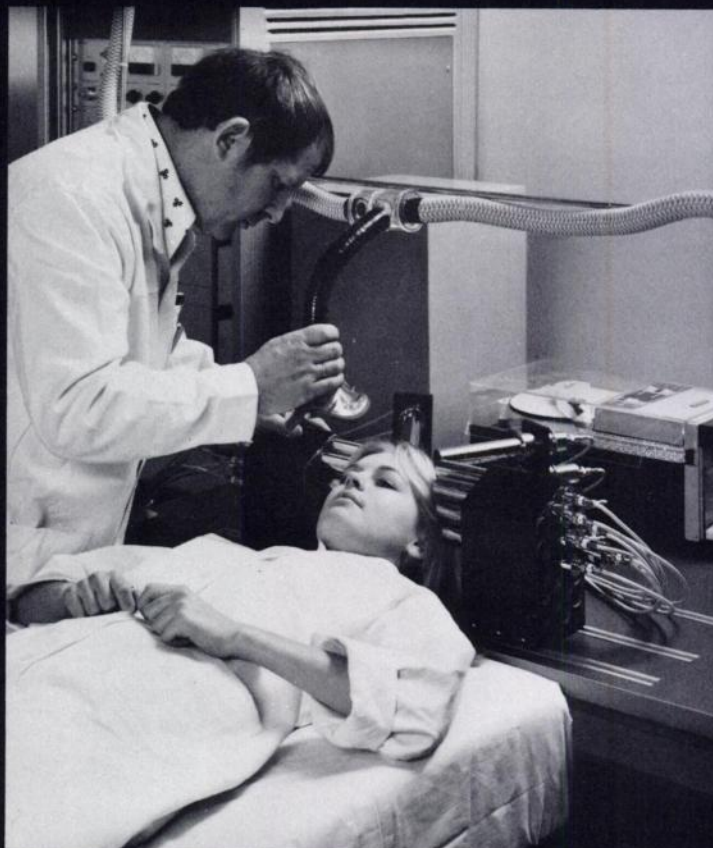
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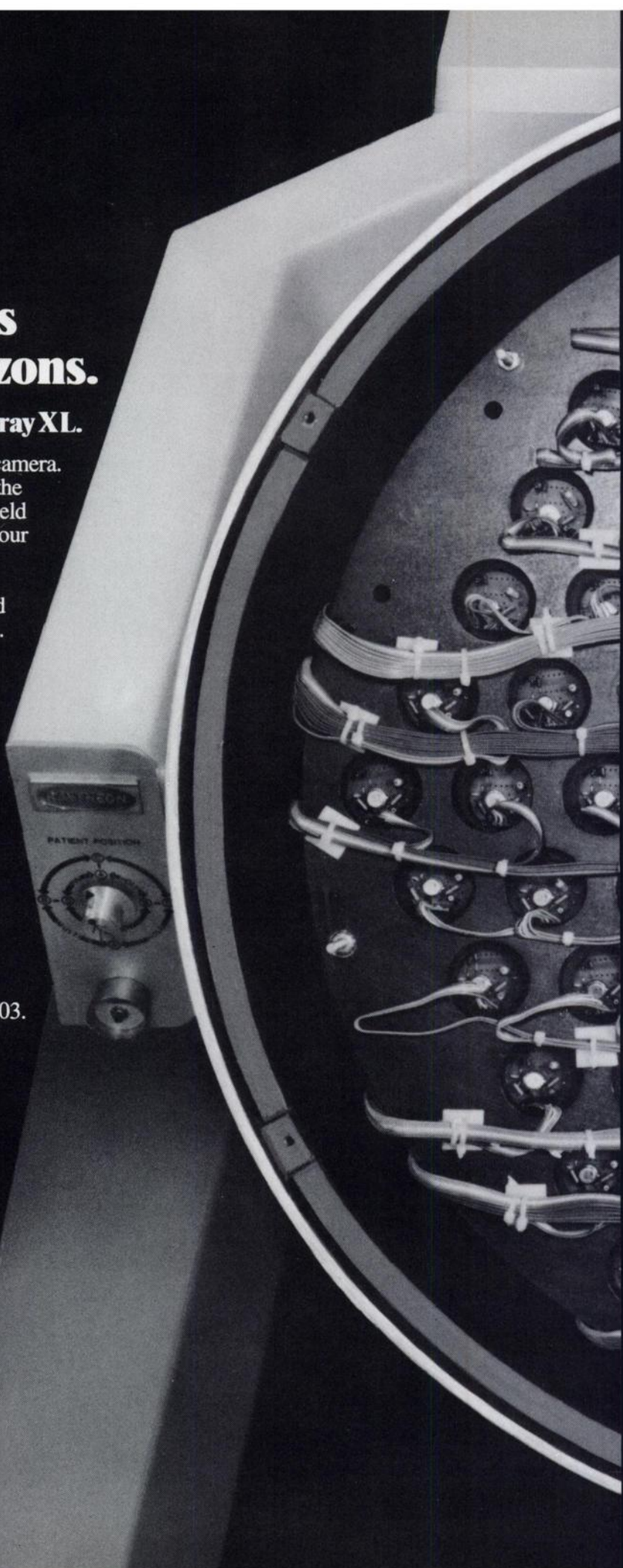
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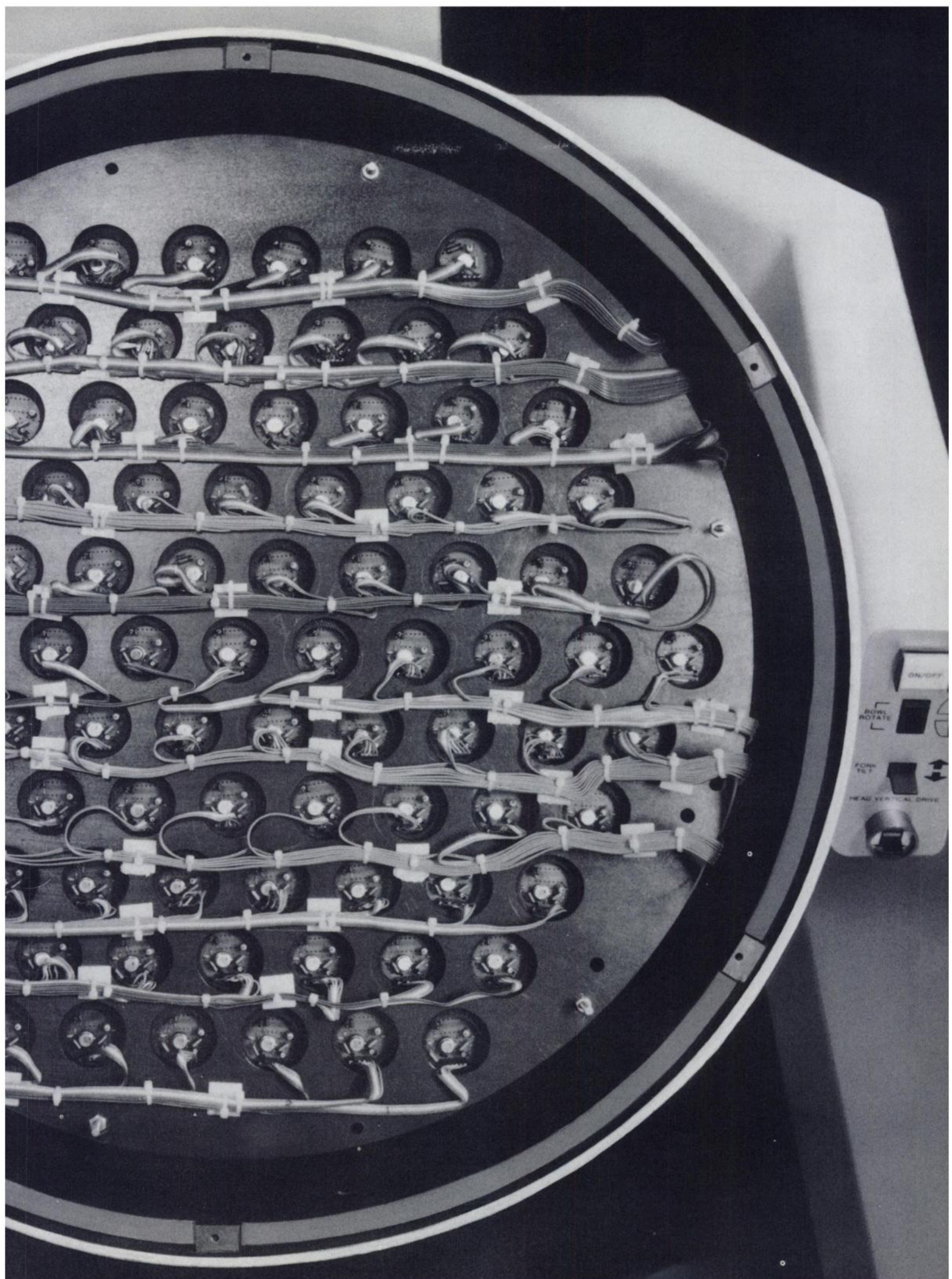
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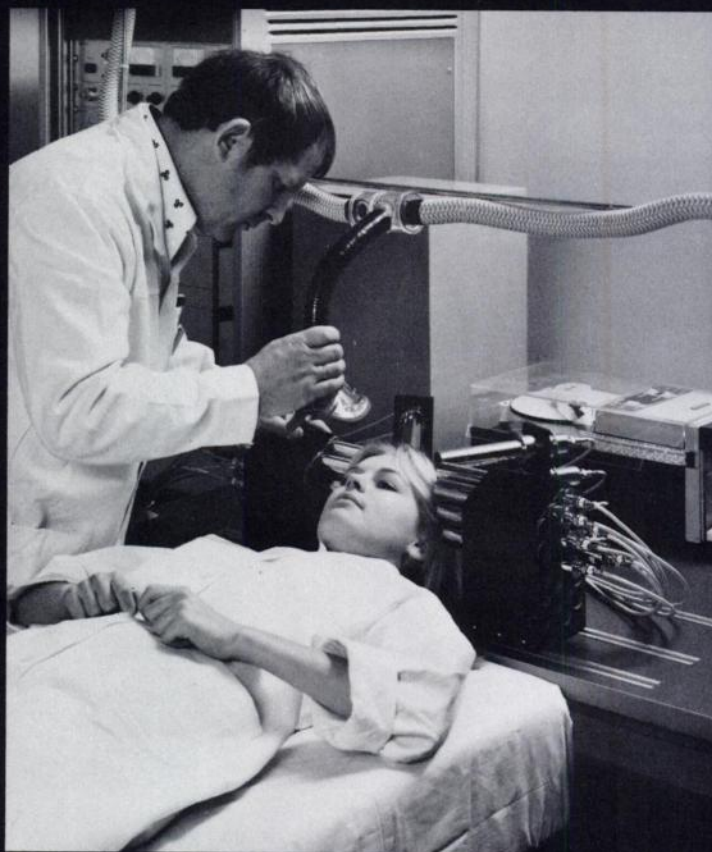
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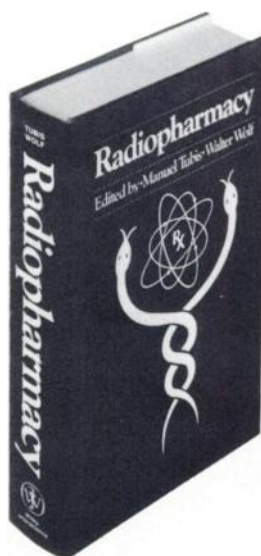
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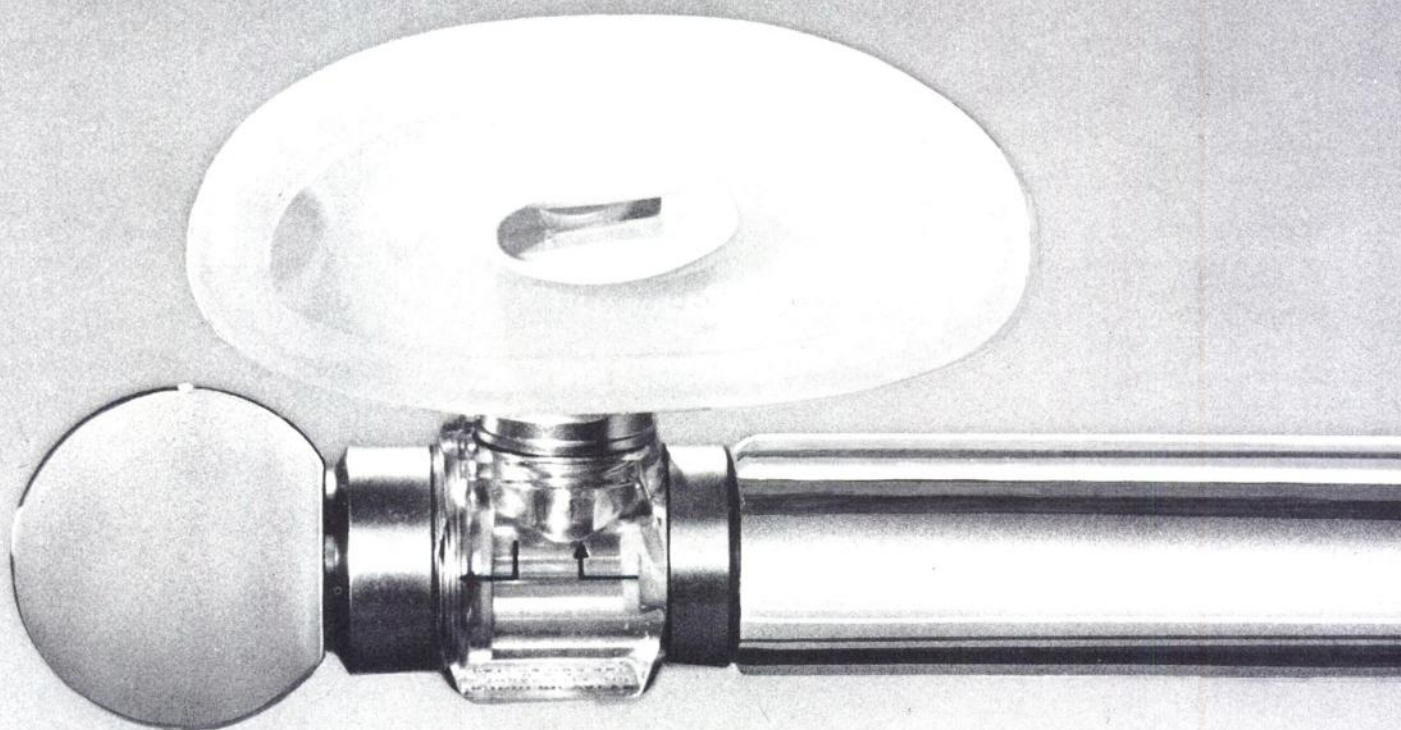
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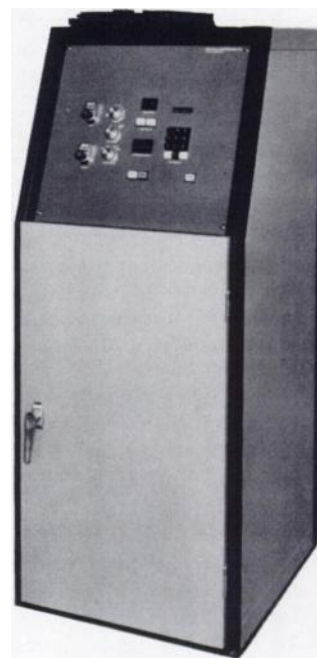
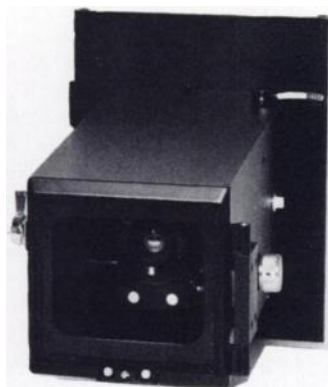
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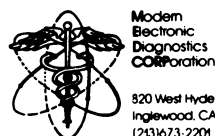
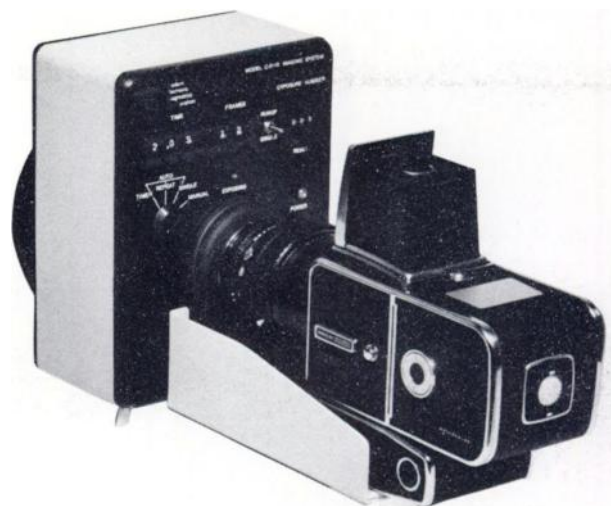
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Skeletal Scintigraphy

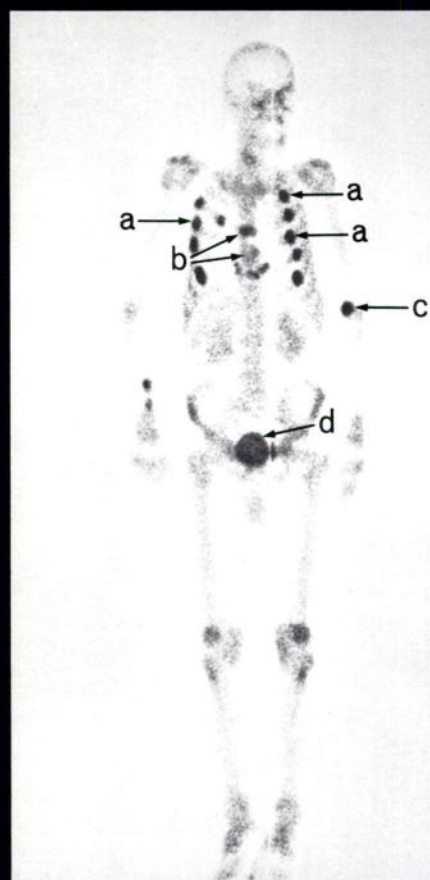
With the advent of the bone-seeking complexes of ^{99m}Tc Technetium has come a revolution in the early identification of innumerable osteoarticular conditions. Because the technic is nonspecific, the clinical history is of paramount importance.

The following bone scans were obtained using intravenous ^{99m}Tc Technetium pyrophosphate (^{99m}Tc PyP).

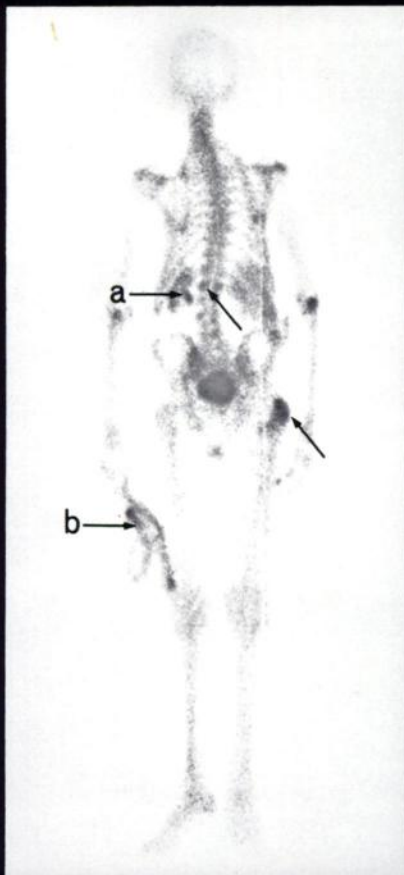
Like ^{99m}Tc Technetium polyphosphate or diphosphonate, ^{99m}Tc Technetium pyrophosphate has an affinity for increased vascularity, altered exchange processes, and new bone or new collagen in the skeleton which can render bone scans positive days, weeks, even months before related roentgenograms demonstrate the same abnormality.



Healthy young adult (18 years) demonstrates the normal affinity of ^{99m}Tc PyP for growth areas in the axial skeleton and ends of long bones.



Numerous fractures of ribs (a) and sternum (b) following aggressive treatment for cardiac arrest. Site of intravenous injection (c) and collection of radionuclide in the bladder (d) are obvious.



Metastatic Prostatic Carcinoma. This patient's routine skeletal roentgen study was normal. The arrows reveal metastatic foci demonstrated by ^{99m}Tc PyP the day the patient was examined roentgenographically. Note the hydronephrotic kidney (a) and the plastic container of urine (b) draining the bladder.



Metastatic Breast Cancer. Metastatic disease in the axial skeleton had been demonstrated roentgenographically. It remained for the scintigraphic study the following day to demonstrate metastases (arrows) in the ribs and pelvis.



Paget's Disease. Routine roentgen studies demonstrated the involvement of the skull and axial skeleton. What was not appreciated, until the rectilinear whole body ^{99m}Tc PyP scans were obtained, were the massive changes in the femur and pelvis (arrows). Despite the ^{99m}Tc PyP evidence of Paget's disease in the feet (arrows), no changes were demonstrated roentgenographically.



Whether you're recording multiple, single, or dynamic nuclear images, Kodak offers a family of transparency films that is compatible with what your equipment can do now—or can be adapted to do. Kodak transparency films offer high image quality, longevity, and economy. They're fade-resistant, curl-resistant, and easy to store.

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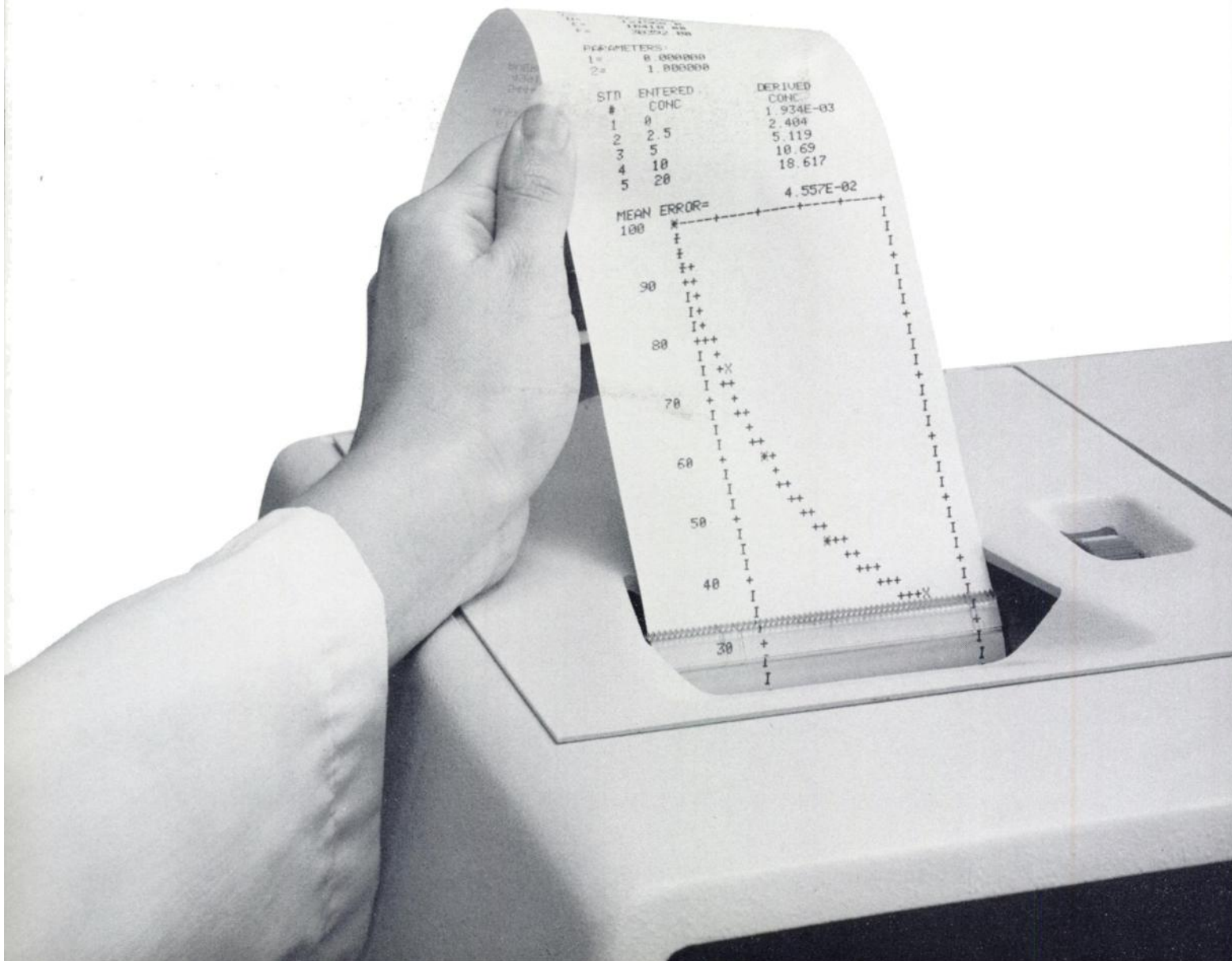
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? Lymphoma
? Hodgkin's disease
? Bronchogenic carcinoma

Gallium Ga 67:

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Indications and Usage: Gallium Citrate Ga 67 may be useful to demonstrate the presence and extent of certain malignancies such as Hodgkin's disease, lymphomas, and bronchogenic carcinoma. Positive Ga 67 uptake in the absence of prior symptoms warrants follow-up as an indication of a potential disease state.

Contraindications: None known.

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

Precautions:

General

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

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

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

Gallium Citrate Ga 67, as well as other radioactive drugs, must be handled with care and appropriate safety measures should be used to minimize external radiation exposure to clinical personnel. Also, care should be taken to minimize radiation exposure to patients consistent with proper patient management.

Carcinogenesis

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

Pregnancy Category C

Adequate reproduction studies have not been performed in animals to determine whether this drug affects fertility in males or females, has teratogenic potential, or has other adverse effects on the fetus. Gallium Citrate Ga 67 should be used in pregnant women only when clearly needed.

Nursing Mothers

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

Pediatric Use

Safety and effectiveness in children have not been established.

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

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

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

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

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

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

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

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

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

CAUTION: Federal (U.S.A.) law prohibits dispensing without prescription.



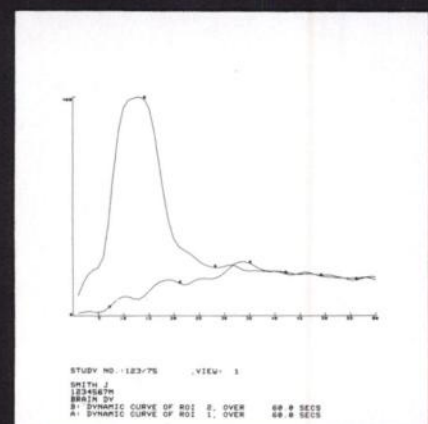
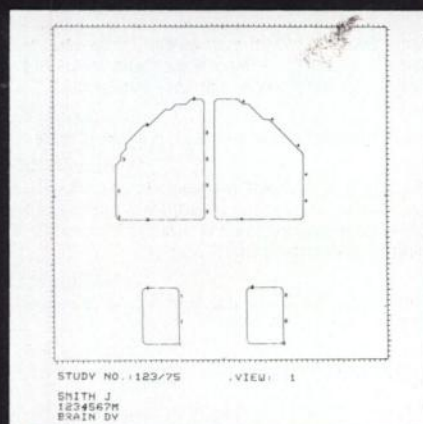
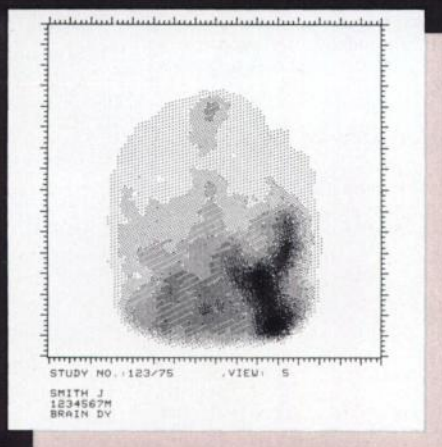
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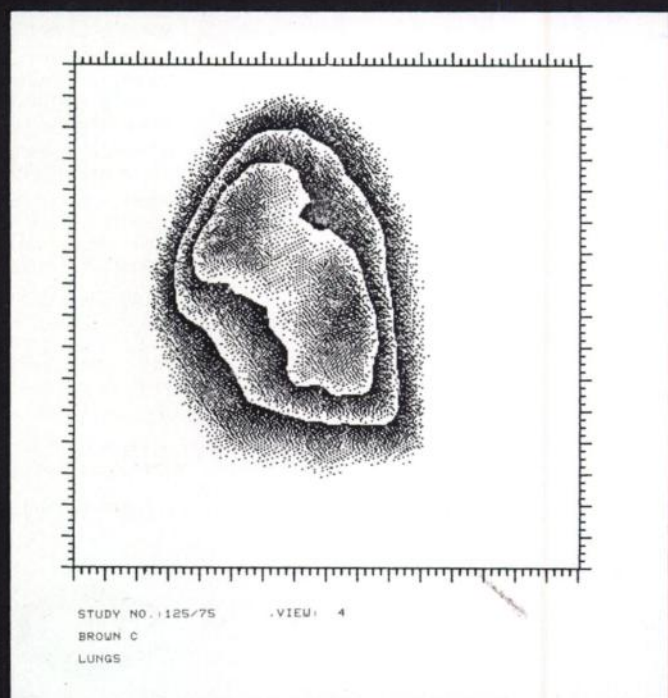
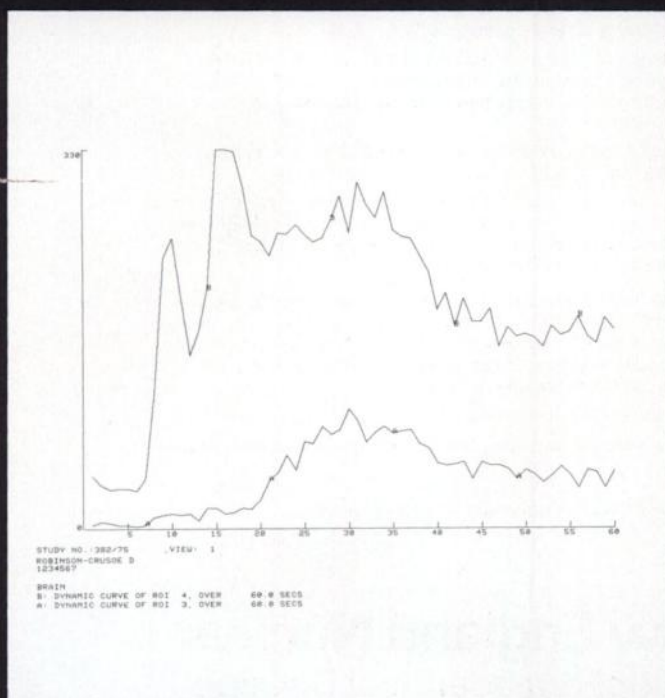
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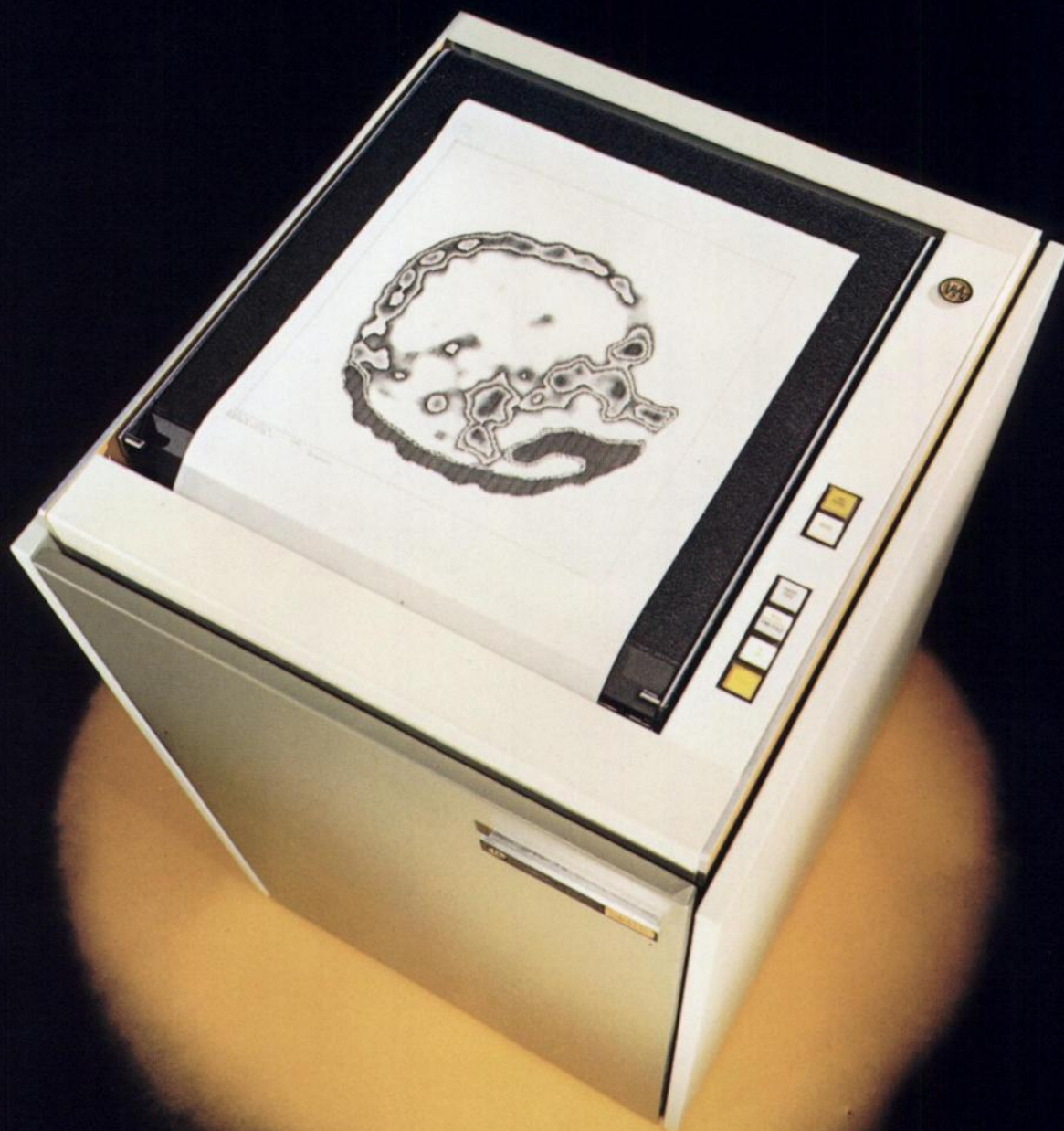


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To sharpen your images even more, the Pho/Gamma LFOV offers a large assortment of converging and parallel hole collimators designed and developed by Searle Radiographics. There is a significant improvement in the resolution of deep-seated structures with converging collimation. In renal studies, for example, the images

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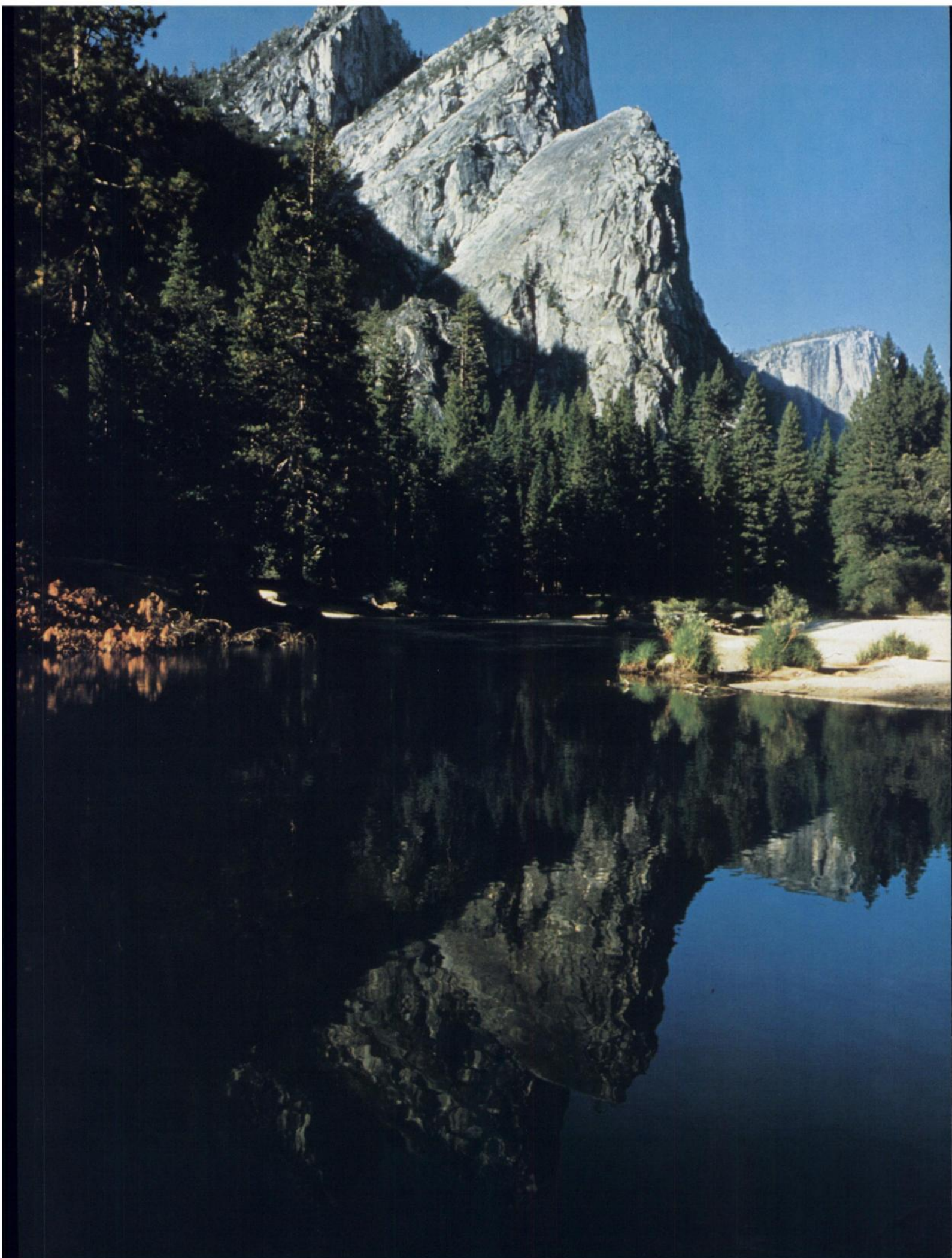
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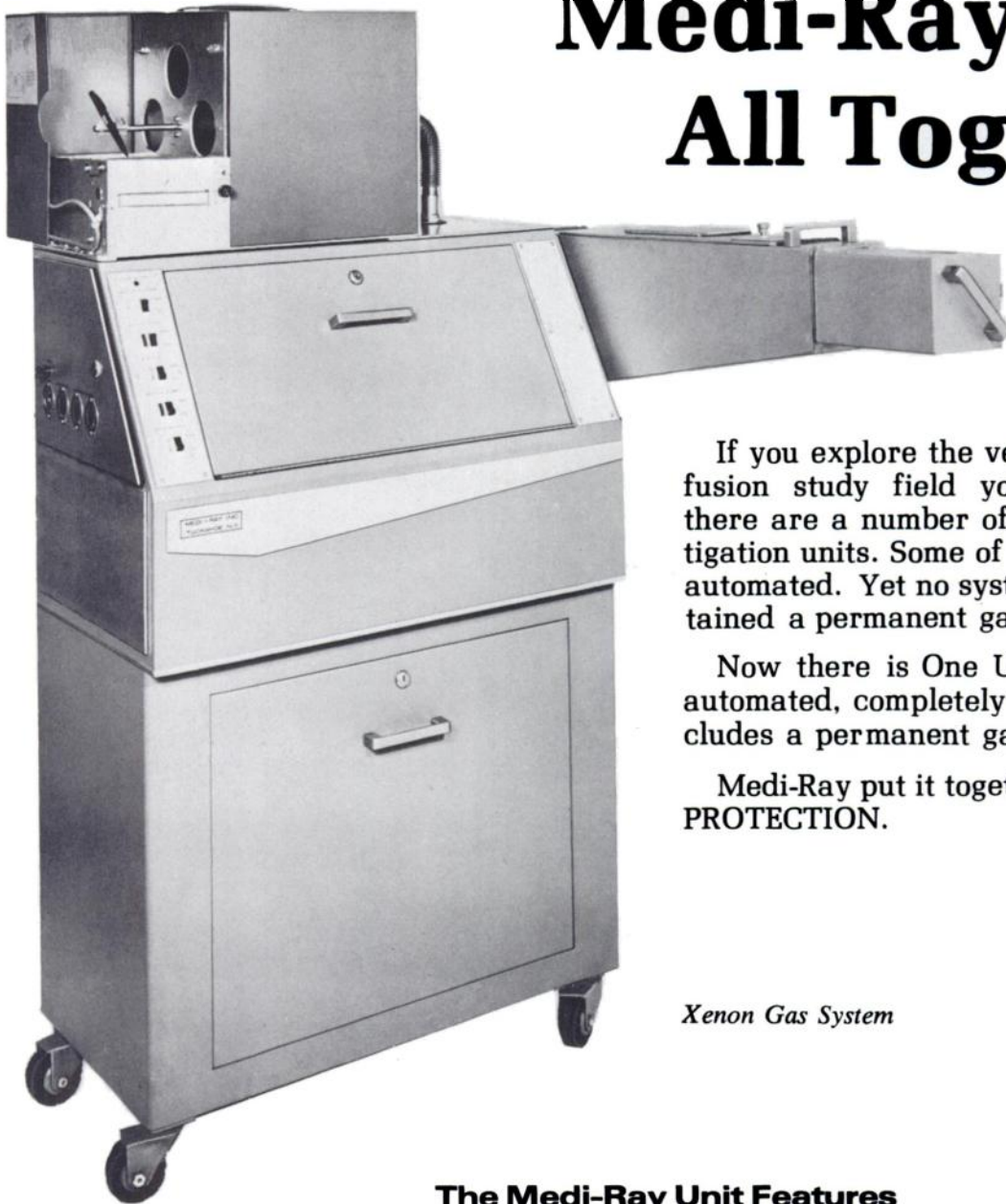
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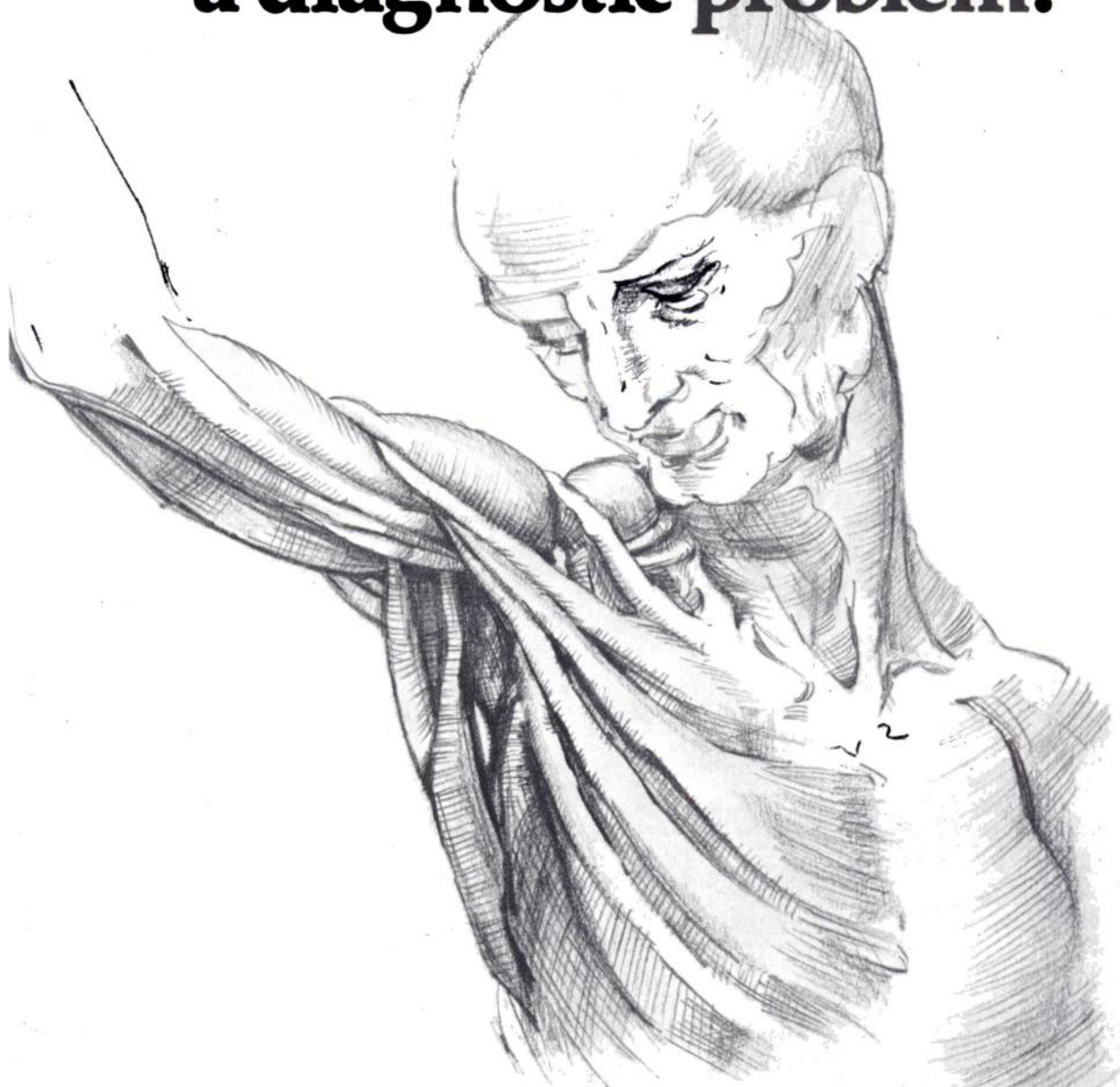
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Aug. 30-Sept. 3, 1976

Cleveland, Ohio

A review course, designed for physicians participating in the 1976 Nuclear Medicine Board examination, will be held August 30, 1976 through September 3, 1976 in Cleveland, Ohio. Course is being sponsored by the Nuclear Medicine Associates. Lectures and case studies will be presented by Drs. Thomas Verdon (Colorado Springs) and Robert O'Mara (Rochester). Basic principles of nuclear medicine physics, chemistry, etc. will be presented by the staff of NMA. Application has been made for AMA Category I for this course.

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RAO, SYSTOLE



LAO, DIASTOLE

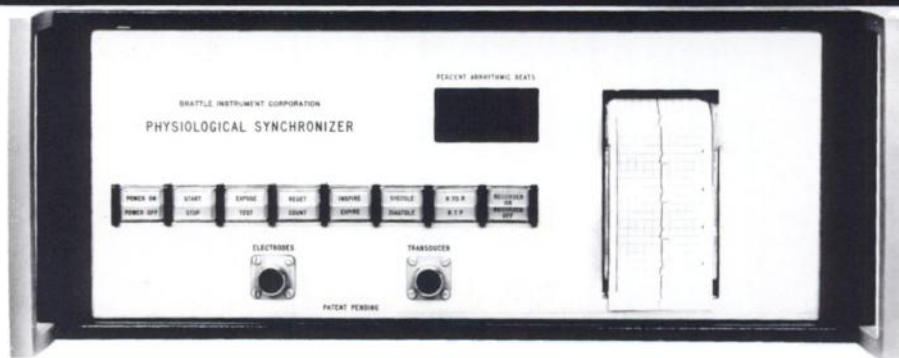


LAO, SYSTOLE

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

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SR-514