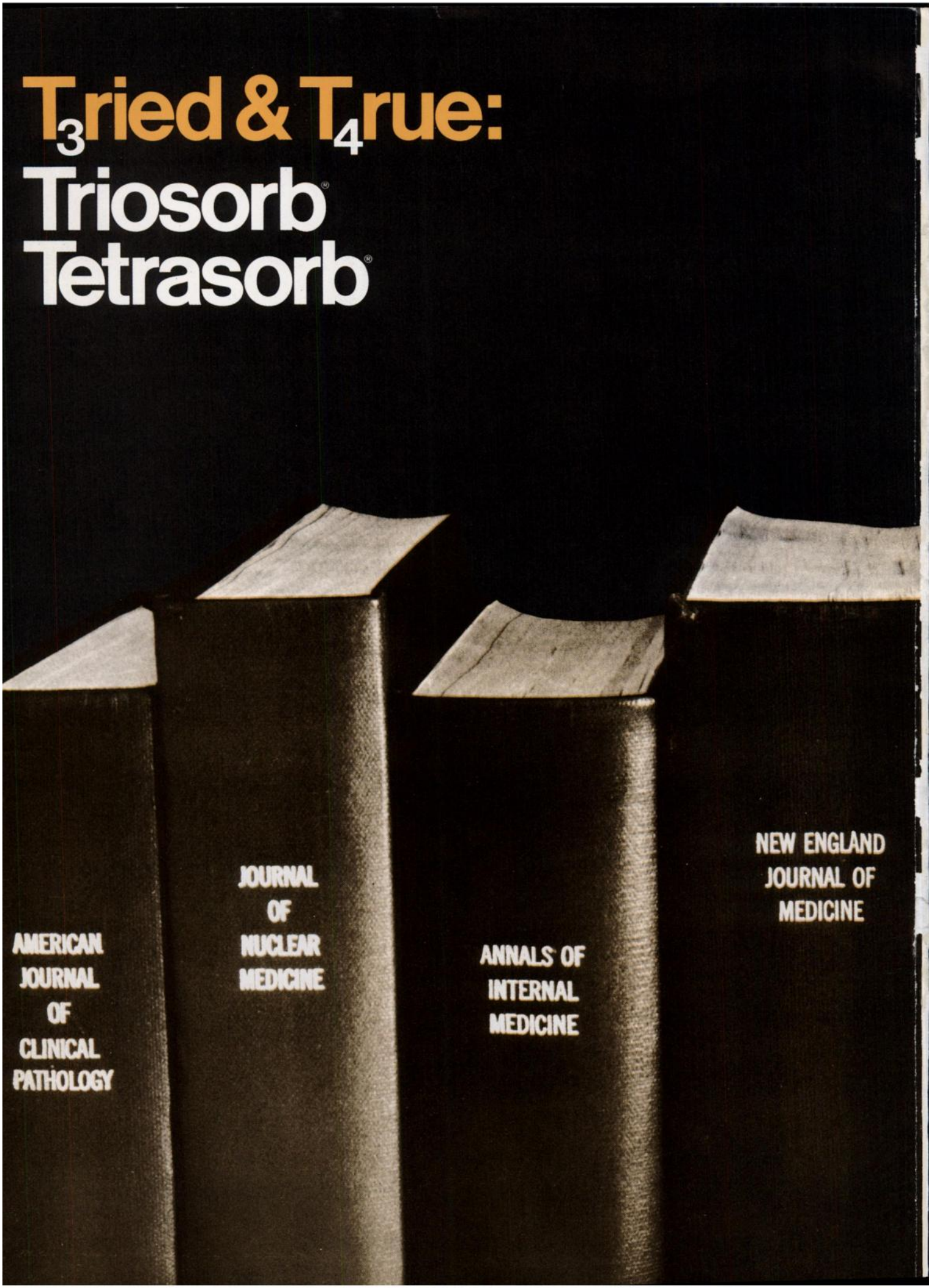
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AMERICAN JOURNAL OF CLINICAL PATHOLOGY
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The best known, best used tests are always open to challenge.

Triosorb and Tetrasorb have become standards for comparison—the best documented, described, contrasted and compared of any T_3 and T_4 Tests.

Yet, to our knowledge, the clinical accuracy of Triosorb in T_3 testing—of Tetrasorb in T_4—has never been surpassed in any published study.

If you have used these tests, you know their accuracy, reproducibility, and dependability.

If you would like to know more about them—how they compare with others in determining thyroid function—the literature speaks far more eloquently than any claims we could make.

Please ask your Abbott Representative for a bibliography. 204368

Triosorb®-125
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T-4 Diagnostic Kits

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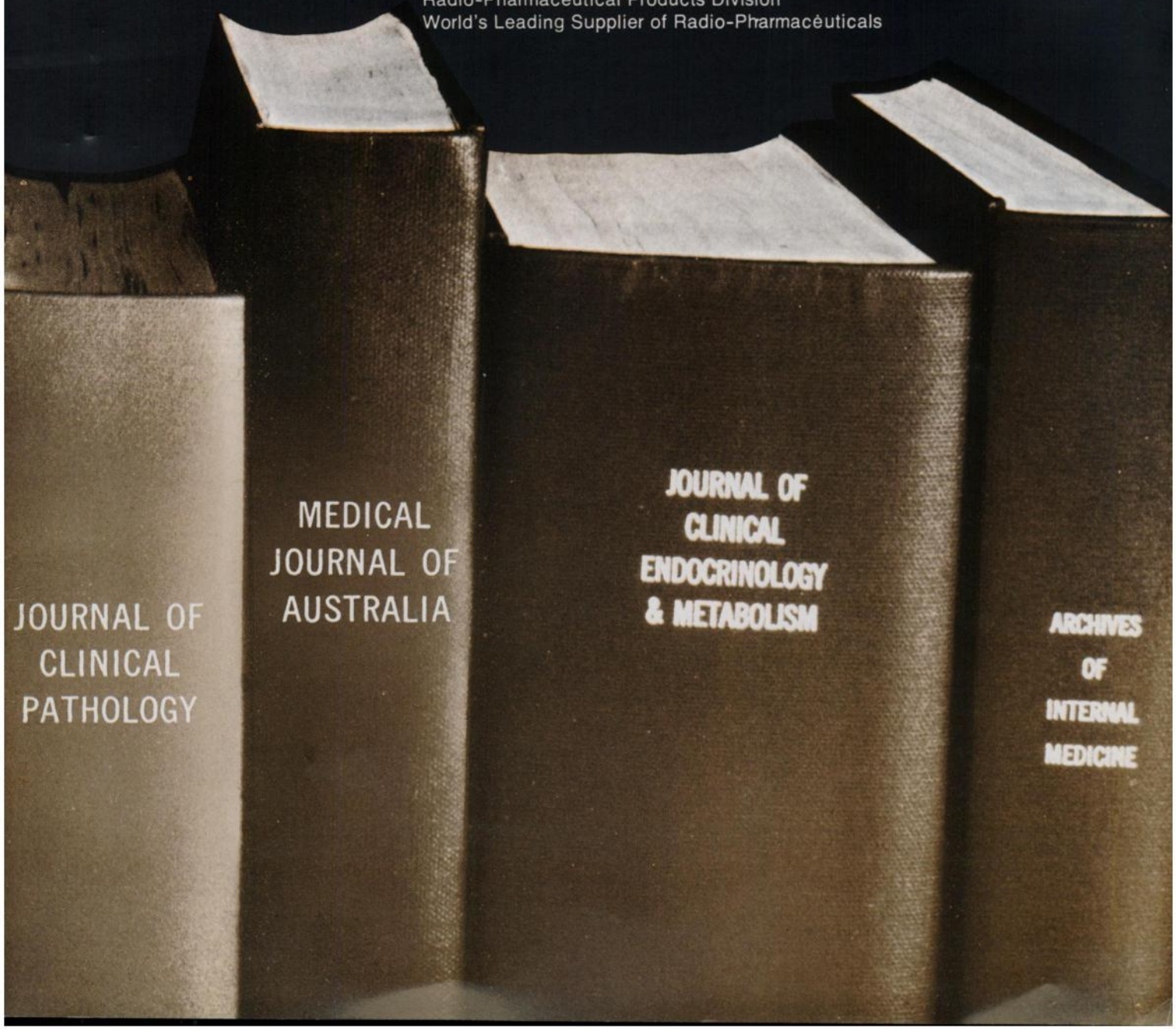

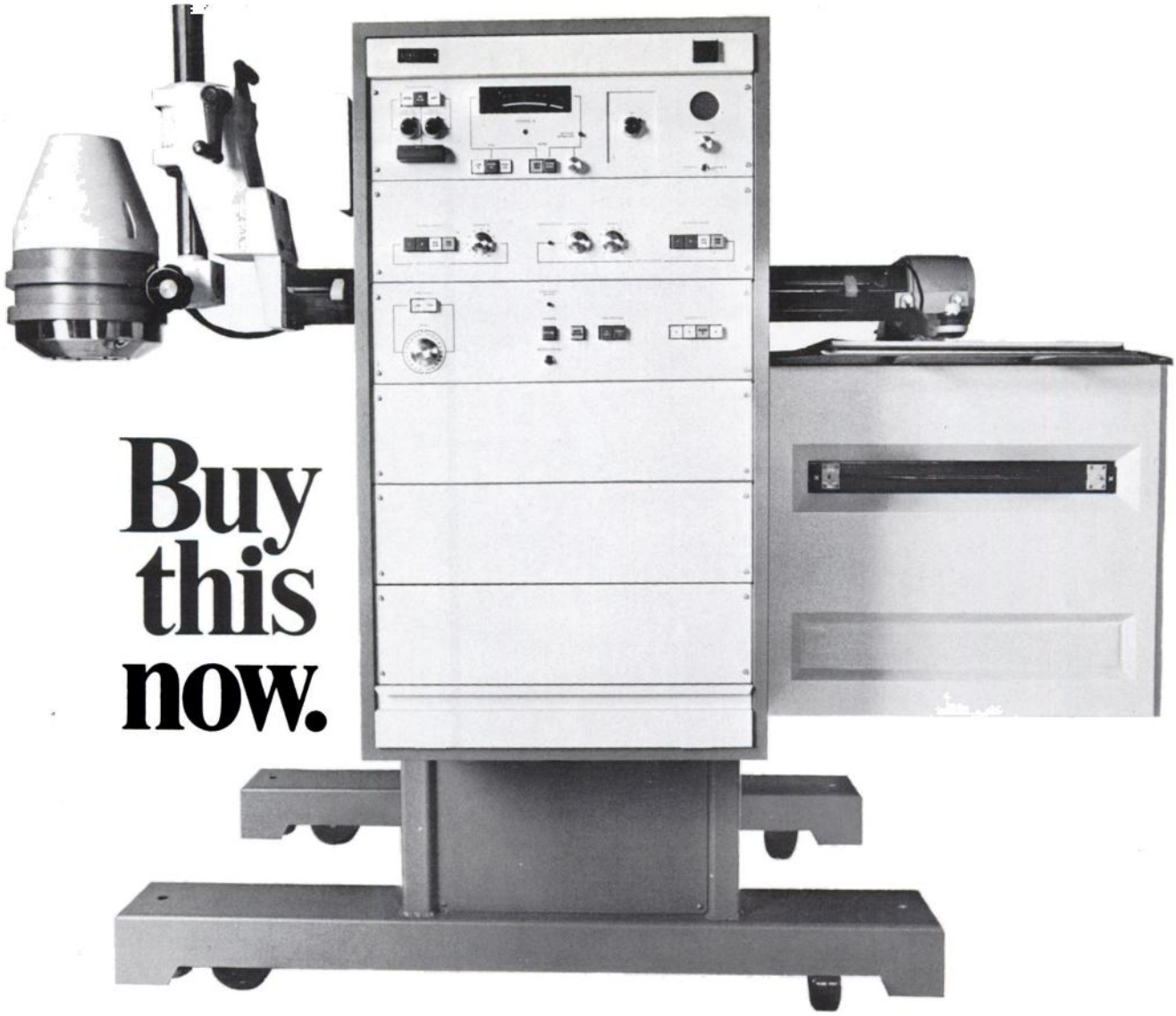

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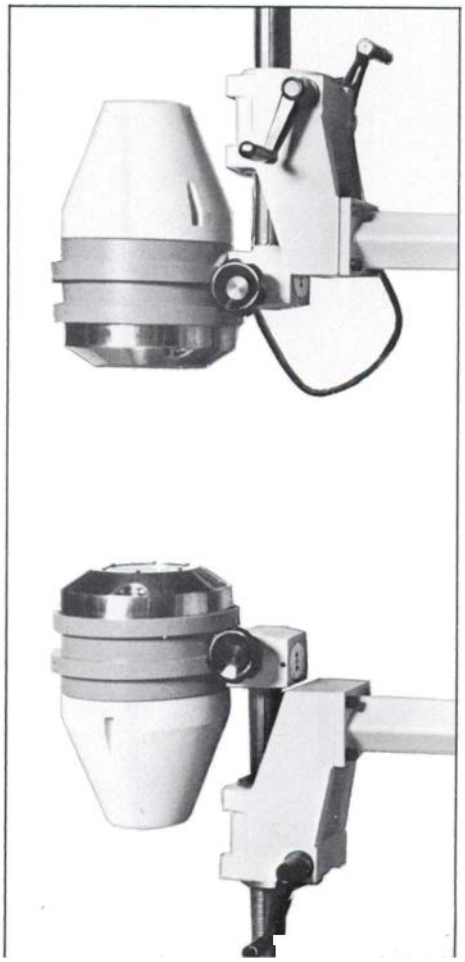

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Buy a single-headed scanner now, upgrade at your convenience. You can convert our single 5″ scanner to a dual 5″. Right in the hospital. In hours.

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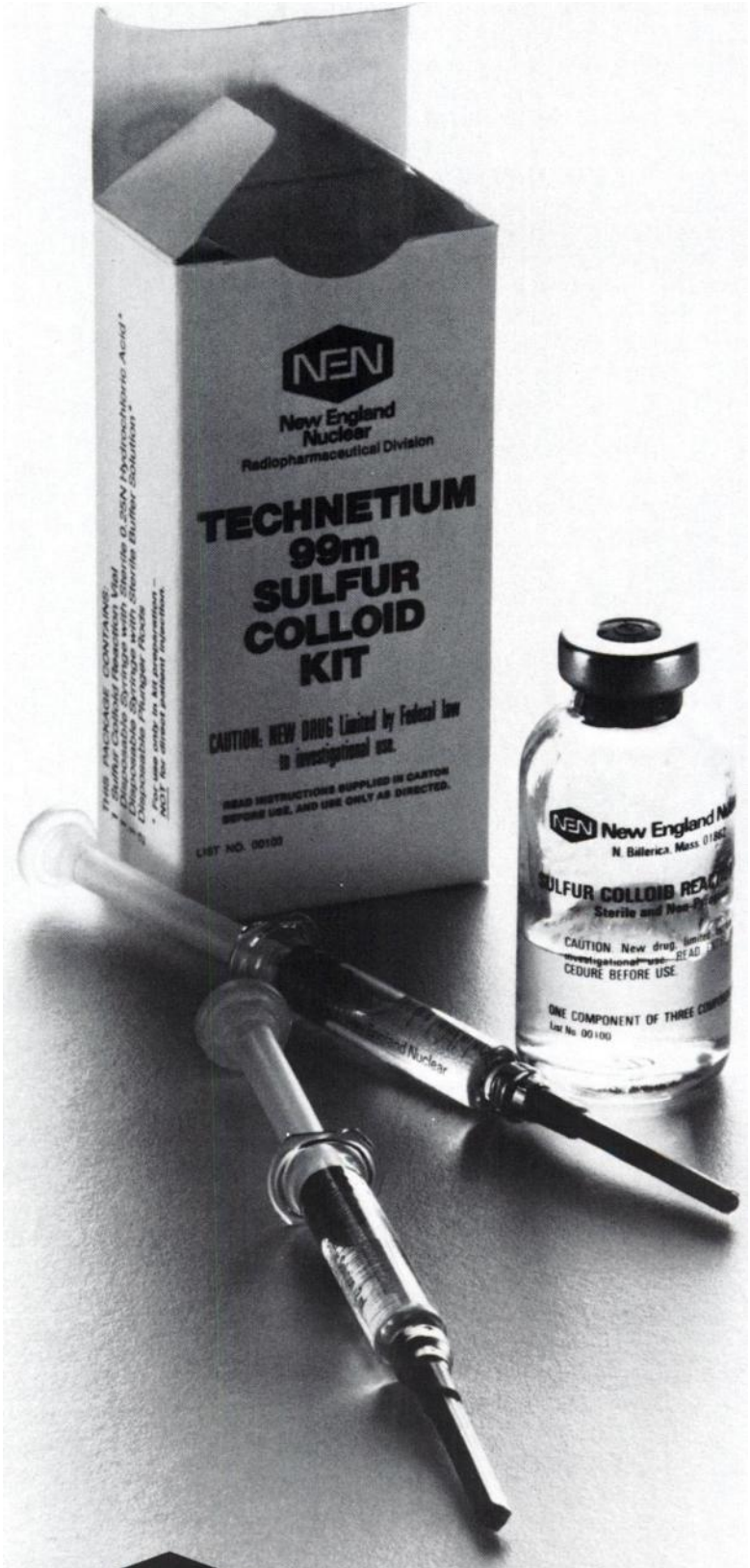


NEN **New England Nuclear**
Radiopharmaceutical Division
Atomlight Place, North Billerica, Mass. 01862
Telephone (617) 667-9531

Clinical Newsletter
from Bio-Rad

Straight talk about a new T-3 test

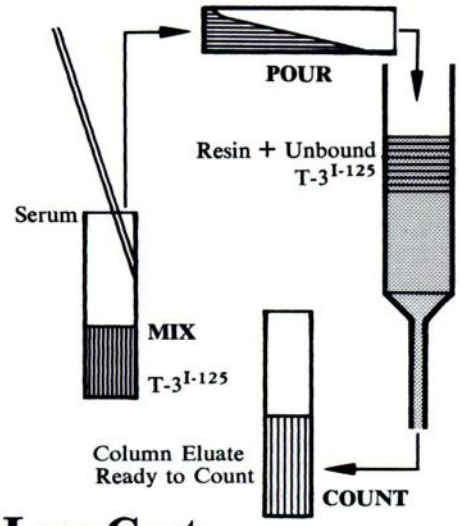
Bio-Rad's new TRI-COUNT T-3 combines simplicity, reproducibility and low cost.

Bio-Rad recently introduced a new T-3 by column test called **TRI-COUNT** that combines simplicity and reproducibility at a price you may find hard to believe. We accomplished all this by utilizing the same ion exchange technology as the Bio-Rad T-4 by Column Test. We kept the test as simple and uncomplicated as possible, building the reproducibility into the test itself rather than depending on operator technique.

Simplicity

TRI-COUNT T-3 has only three quick steps: mix, pour and count.

The sample is first mixed with radioactive T-3 buffer solution and allowed to stand at room temperature 15 minutes or more. The time is not critical. If the operator can't get to the next step for an hour it won't make any difference in the final results. Next, the mixture is poured into the **TRI-COUNT T-3** column and the eluate collected. Finally, the eluate is counted to determine T-3 value. That's all there is. No centrifugation, no incubation, no precise timing. It's a simple matter of mix, pour, count.



Low Cost

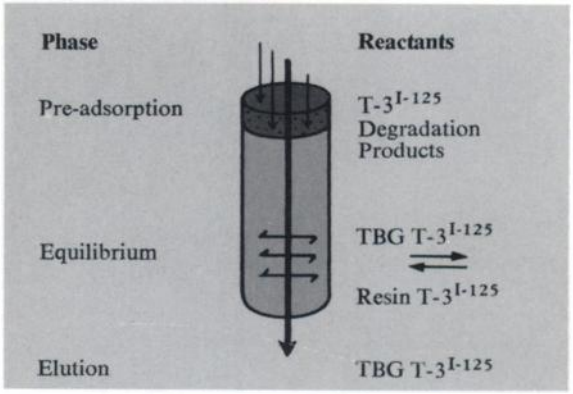
We set out to design the simplest and most reproducible T-3 test possible. When the laboratory results were fully evaluated and the test's simplicity became readily apparent, the low cost came as no surprise. Actually laboratories save money two ways with **TRI-COUNT T-3:** They save money when they buy it and they save time when they use it. An individual test can be performed in only 20 minutes and 20 tests can be completed in just 40 minutes.

Reproducibility

TRI-COUNT T-3 has the highest degree of reproducibility of any T-3 test now on the market. There are three major reasons for this.

1. The **close control** of the ion exchange resin manufactured by Bio-Rad specifically for this T-3 test.
2. The **simplicity** of the test that practically eliminates any effect of differences in operator technique.
3. The elimination of hormone degradation products as a cause for error. The **TRI-COUNT T-3** column is designed to adsorb hormone degradation products and separate them from the equilibration reaction.

None of this "just happened". It was all designed into the test at the start to reduce and eliminate potential errors before they occurred.



NM

BIO-RAD Laboratories

32nd & Griffin Avenue, Richmond, CA 94804.
Phone (415) 234-4130.

☐ Send introductory offer at $39.95 (50 tests).

☐ Send more information.

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new convenient kit for preparation of Technetium-99m Sulfur Colloid

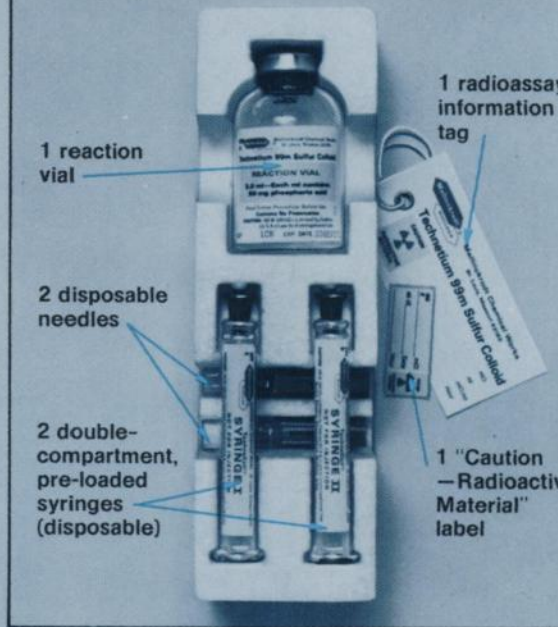
Now you'll find it easy to prepare technetium-99m sulfur colloid in your own laboratory. This new kit was designed to help you—to make the procedure as reliable as possible—to provide you with a finished product having consistently high quality.

The Mallinckrodt/Nuclear TechneColl™ Kit offers exclusive convenience in use:

- Dispenser package makes the preparation units readily available.
- Viewing aperture shows when it's time to reorder.
- Each preparation unit is complete and self-contained, to eliminate possible mixing of components.
- Unique two-compartment syringes permit separate storage of reagents for maximum stability.
- Mallinckrodt/Nuclear's formulation allows use of the kit with any commercially available generator.

Try this new kit now in your own laboratory (subject to necessary licensing). Ask your Mallinckrodt representative for a demonstration.

Ready-to-use TechneColl unit contains:



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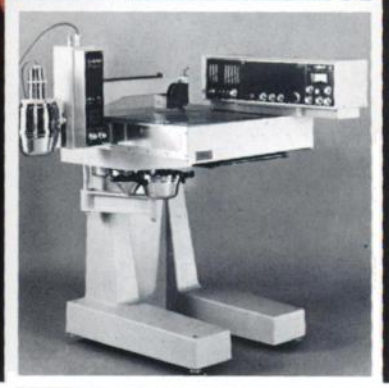

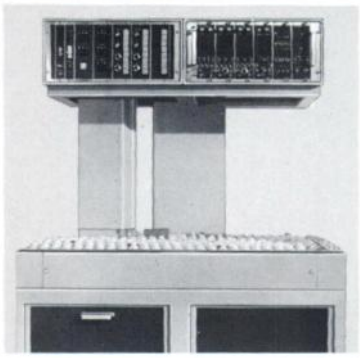

...the tools for getting there are here today.

The journey won't be easy. You'll have to travel past the limitations of your five senses. And be extra-familiar with the submolecular, as well as the intracellular, world.

We have the instrumentation to take you there. For instance, Nuclear-Chicago's Pho/Gamma Scintillation Camera. It's the choice of more than 95% of U.S. teaching hospitals and medical schools. They like its high resolution, ease of patient positioning, and its choice of 12 specialized collimators allowing one to switch from routine, "bread-and-butter" imaging to highly sophisticated procedures.

Our Pho/Dot is the world's most proven rectilinear scanner. Our Liquid Scintillation and Automatic Gamma Counters embody the newest ideas in capability-expansion for radioimmunoassay and competitive binding tests. And we could say equally good things about our Pho/Gamma Tomocamera, Data/Store Playback System, and similar products. But that wouldn't be modest.

When the last of the Great Plagues that afflict humanity has been wiped out, it will be because dedicated people have pin-pointed the method of attack. With instruments like these.

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2000 Nuclear Drive, Des Plaines, Illinois 60018
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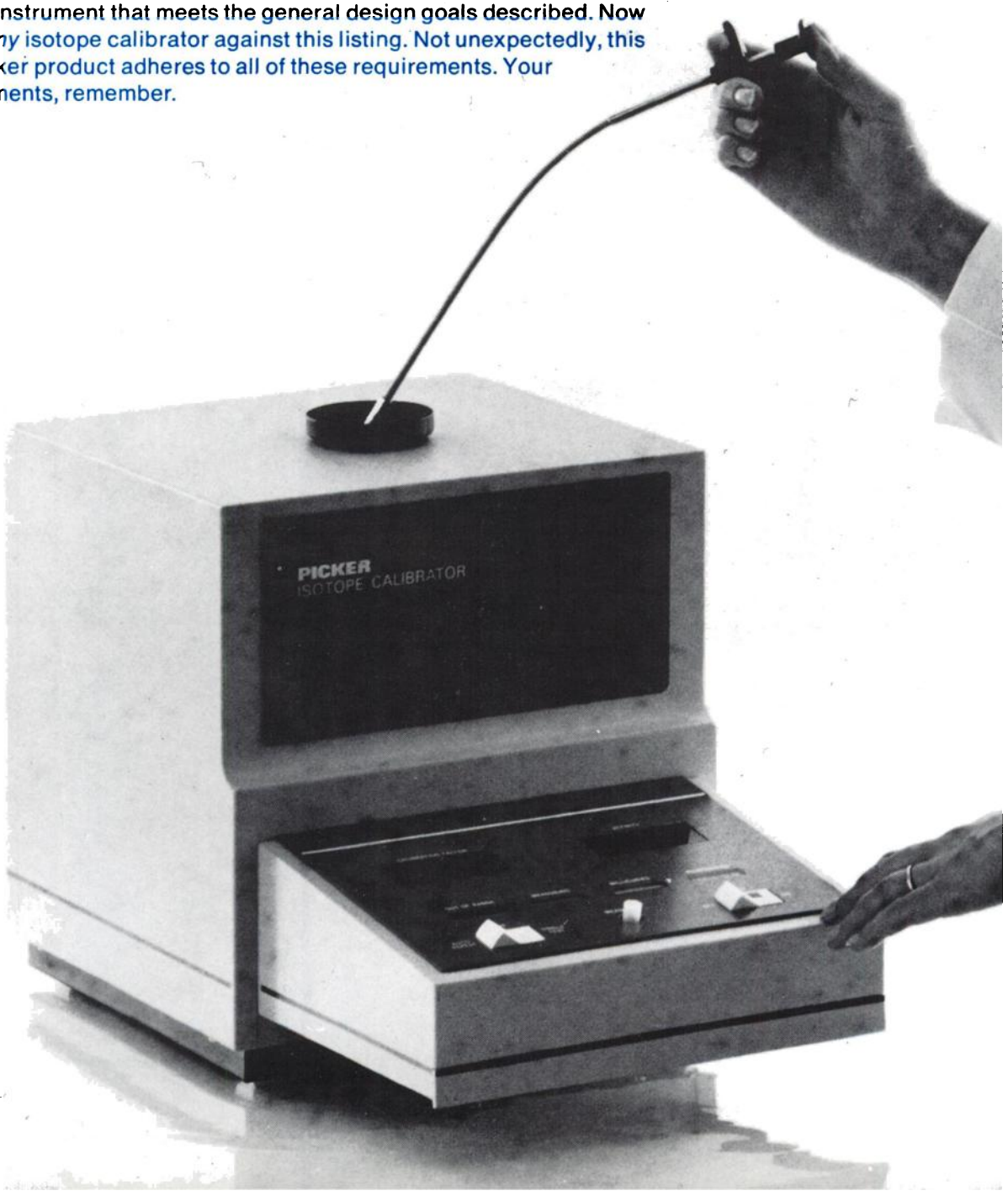
The future-oriented company

The new Picker Isotope Calibrator:

It's as if you had studied the others... and then designed your own.

Which is, of course, precisely what happened. As expected, many of the existing instruments have desirable features. Why not then combine these features into a single instrument. Why not provide an instrument that emphasizes simplicity of use, dependability (dependability in the broadest sense: dependable data, dependable operation), and maximum flexibility? These are, after all, the characteristics that users care most about.

You'll see on the facing page a list of the specifications that will provide users with an instrument that meets the general design goals described. Now check *any* isotope calibrator against this listing. Not unexpectedly, this new Picker product adheres to all of these requirements. Your requirements, remember.



1. Simple to operate—just position sample, select calibration factor, push a button and read. Read activity directly in milli- or microcuries without calculations. (Digital readout, of course.)

2. Rapid measurements—less than one second in most instances.

3. Wide energy range—25 KeV to 3 MeV (encompasses all clinically used isotopes).

4. Maximum flexibility—easily optimized calibration for any dose volume or geometry.

5. Wide activity range—1 μCi to 999mCi (accommodates any diagnostic dose).

6. Accuracy—don't settle for less than $\pm 5.0\%$.

7. Repeatability (short term)—at least $\pm 3\%$.

8. Stability (long term)—$\pm 1.0\%$ will eliminate annoying drift.

9. 110V AC operated—batteries fail; batteries need replacement.

10. Avoid plug-in modules—not sufficiently flexible; no provision for different geometries or volumes; involve extra costs.

11. Self-zeroing—eliminates manual adjustments.

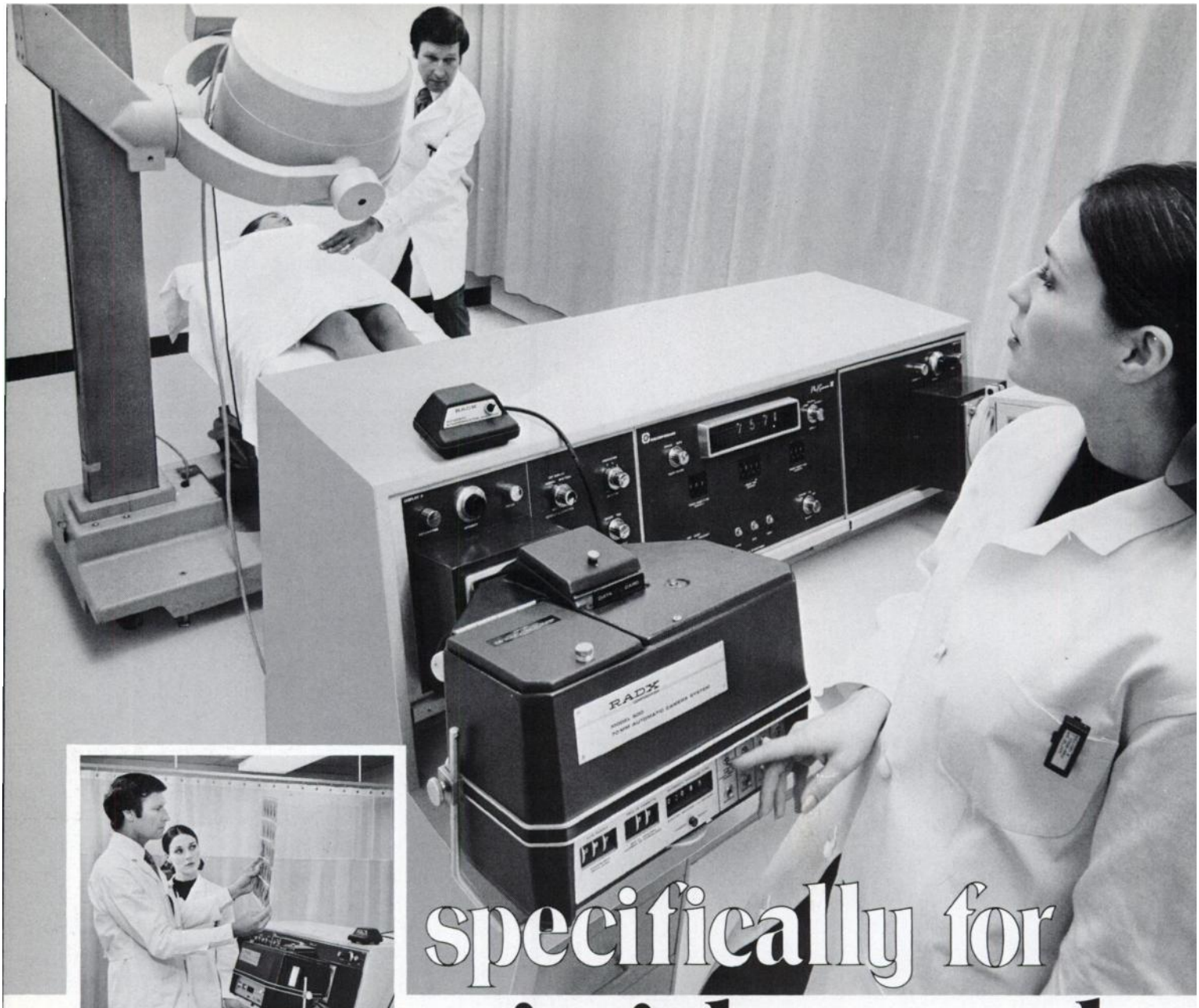
12. Minimal size—space is always scarce.

13. Competitive price—money is *always* tight.

What else might you check? The existence of adequate field service, for one. Some companies don't have any which can become a major aggravation. The availability of a molybdenum-99 breakthrough kit, for another. Finally, will you be locked into a generator purchase arrangement that diminishes your overall flexibility? *First* choose the best generator, *then* the best calibrator.

Is there any other information you'd like? Please speak to your local Picker representative, or write Picker Corporation, 595 Miner Road, Cleveland, Ohio 44143

PICKER®



specifically for scintiphotography

The RADX Model 600

Not just another "put together" system. The Model 600 was specifically designed for the exacting requirements of nuclear medicine.

Camera, lens, timer, power supply are in one integral unit. Daylight loading of 70mm film – 150 feet of it. 720 exposures (up to 10 per second), automatic threading, advancing, cutting, releasing.

CAMERA SYSTEM	Format	Film Capacity	Framing Rate	"Dead Time"	Data Loss at 1.0 sec.	Capability to Preset number of exposures	Lens Speed	Time for changing Takeup cassette	Built-in film cutter	Automatic synchronization with Gamma Camera	Remote foot control
RADX MODEL 600	70 mm	150 feet	10 frames per sec	30 milli-seconds	3%	Yes	f2.0	Approx 10 sec	Yes	Yes	Yes
Hasselblad Model 500 EL	70 mm	16 feet	1.3 frames per sec	750 milli seconds	75%	Yes	f3.5	Approx 1 min	No	Yes	Yes
RADX Model 250 Nikon 35 mm	35 mm	33 feet	2.5 frames per sec	300 milli-seconds	30%	No	f3.5	Approx 3 min	No	No	No

Film advance and shutter time of 30 milli-seconds. Direct film viewing with no projection required.

A view port lets you view the CRT directly, and a data card records patient information on the film. The Model 600 is also 10 times faster than the 35mm Nikon; 25 times faster than the Hasselblad. Check the comparison chart. Then check with us.

RADX CORP

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Stercow 99m gives you high Tc99m activities - that's what you want. The elution volumes are small - that's also what you want. And you can have what you want when you want - Stercow 99m is always available from Duphar.

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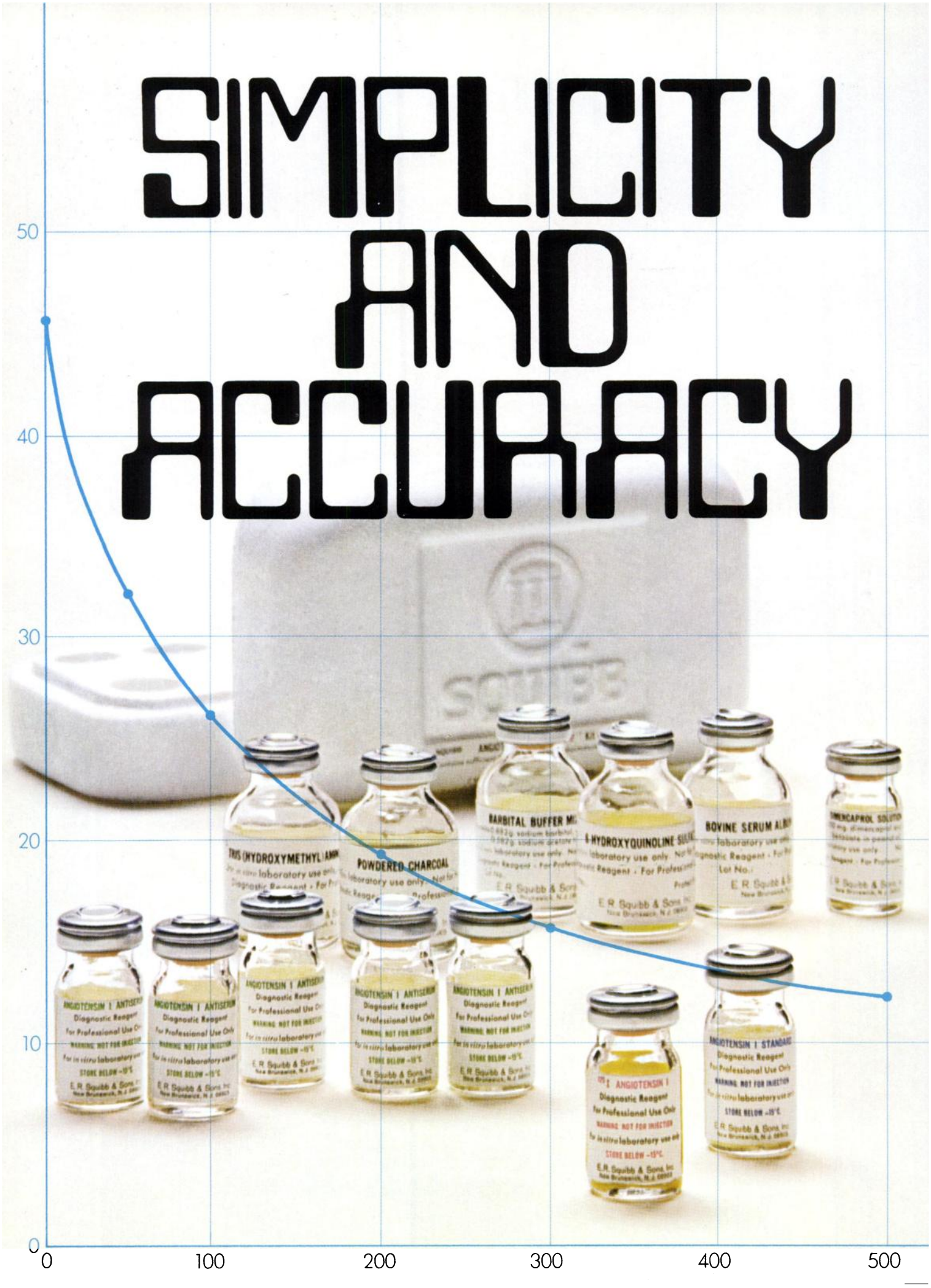
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Isn't that what
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plasma renin
activity?

Designed for precision and accuracy

Three important features of the Immutope Kit assure reliable, reproducible results in determination after determination. First, a special formulation makes the Angiotensin I Standard stable. Second, standardization is protected by a built-in iodine scavenger. Third, *all* the reagents in the Immutope Kit are stable (when properly stored) and all are matched—specifically formulated and tested to assure compatibility.

Designed for simplicity

Usual work time is significantly reduced because the reagents are premeasured. Because there's no need to run repeat blanks. No ice baths required as with another similar kit...all Angiotensin I Immutope procedures, except for incubations, are done at room temperature. No need to make up fresh reagents every time a series is run...properly stored, the diluted ^{125}I Angiotensin I solution lasts for a week, the Tris Acetate Buffer with BSA for a month, and the remaining reagents for three months.

Low cost of individual determinations

The Angiotensin I Immutope Kit doesn't need expensive accessory equipment. It has a big capacity of 500 determinations, only 12 of which need be used for standards—and none of which need be run as reagent blanks. All the required reagents are provided in one complete, reasonably priced kit, for a low cost per individual determination.

for determination of plasma renin activity by radioimmunoassay

ANGIOTENSIN I IMMUTOPE™ KIT

combines the extreme sensitivity of radioisotope methodology with the extreme specificity of immunologic techniques

(SQUIBB radioimmunoassay kits are identified by the trade name, IMMUTOPE.)

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Is your bone scanning just luck?

With Strontium-87m, luck is not involved.
Stercow 87m gives the activity when you need it -
when you need it to obtain clear scans.

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more diagnostic information is at your fingertips

Consider a situation like this: The scanning procedure is completed. Film processed; and, probably exposed satisfactorily. Maybe a little under, maybe a little over what you'd like.

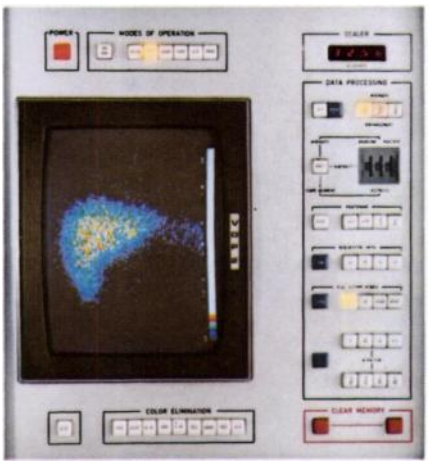
Still, you have some patient count information in hand. Fine. Except, what you see is all you get for interpretation and diagnosis. Unless you reset the instrument. Then re-scan the patient. Time. Bother. And unnecessary.

Now the General Electric Videodisplay and Processing unit, with patient count data displayed in full-count, fully-functional color, has changed all that.

General Electric Videodisplay provides unlimited image/information manipulation without rescanning. Like this...

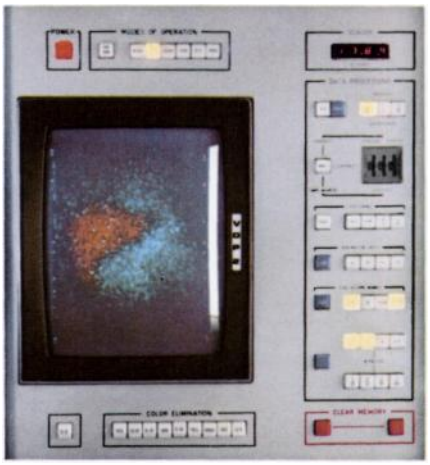
These images are of a liver/ pancreas dual isotope scan. Each is a manipulation, displayed on the face of a color TV screen.

GE's Videodisplay color change is instant, reproducible and can be manipulated even after the patient has left the room.

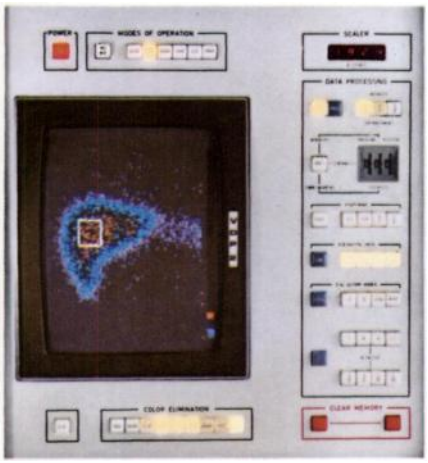


The gold isotope, only, is displayed here, with intensity manipulated to ⅛ scale (4 counts per cell instead of 32). Makes more colors discernible; aids interpretation and diagnosis.

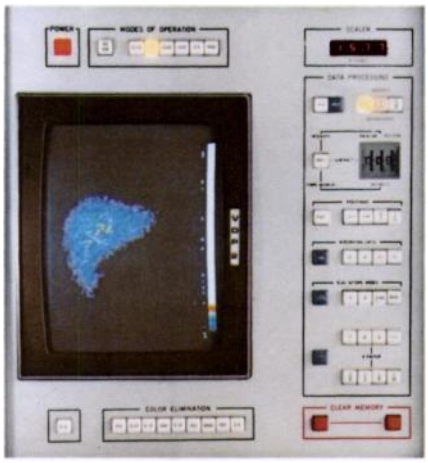
The selenium isotope, selected here, is displayed at ¼ scale and with more background subtracted because it displays at least twice as many counts as gold. Note the pancreas appearing beneath the liver.



This isotope subtraction manipulation reveals the pancreas; displays only two colors with various intensities. Gold is subtracted to the point where the isotope counts have been normalized (equal).



A single isotope scan display, with several colors eliminated, has an area of interest enclosed within X, Y cursor lines. Area size and shape are adjustable and moveable. Scaler displays only the count of the colors within the box.



Lower counts may not be of clinical interest. The color scale can start at any count level, by turning the thumb-wheel. Thus it is possible to show a dynamic range of 64 shades. Here the image starts at 12 counts (shown at indicator).

View any scan in shades of gray, instead of color, by pressing the B & W button. Each shade represents a specific number of counts in each cell; can be manipulated just like color display.

Now, a better way to view patient counts

Blue isn't green. Green isn't yellow. Yellow isn't red. No matter how pale or vivid a color, the eye notes a definite difference. Variances in shades of gray, though detectable, can never be so definitely discernible.

The General Electric Videodisplay and Processing Unit starts with this basic fact. Then makes color fully functional. And manageable, with the push of a button or turn of a thumbwheel, to enhance any desired details in the scan. Literally provides more ways to look at, or for, suspected pathology.

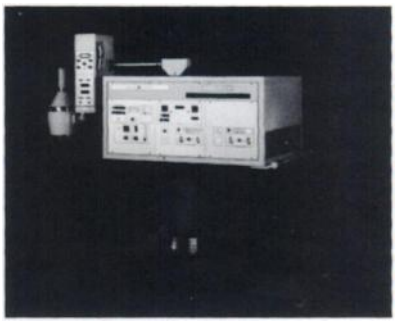
During a scanning procedure, the patient counts detected are recorded and stored in the Videodisplay's electronic memory. The actual number of counts in each memory cell is then represented by one of eight vivid, distinct colors. Combined into an image of the organ scanned, they're ready for instant display on a video monitor. The result is true electronic visualization of the accurate count data at every point of the scan.

The series of scan manipulations, shown and briefly explained at left, demonstrates the Videodisplay unit's broad range of data versatility. For each image or area of interest displayed, a continuous digital readout of counts is shown at the scaler.

And, as you consider each scan display, remember: the scanner was set up only once. The patient was scanned only once. Yet the manipulation capability of the patient data from that one scan is virtually unlimited. And, can be performed any time. As long as the information remains in the unit's memory, it's always fully and immediately recoverable.

For added diagnostic flexibility, any scan can be photographed, directly from the monitor, for patient records. And any scan in the memory can be recorded on cassette tape, in only 40 seconds. Feed it back into the memory just as fast. Whether taped or in the memory, any scan can be transmitted to any other Videodisplay unit over regular telephone lines. Then can be independently manipulated at each unit.

Let the GE Videodisplay add this information versatility to your scanning procedures. Talk with your GE medical systems representative soon.



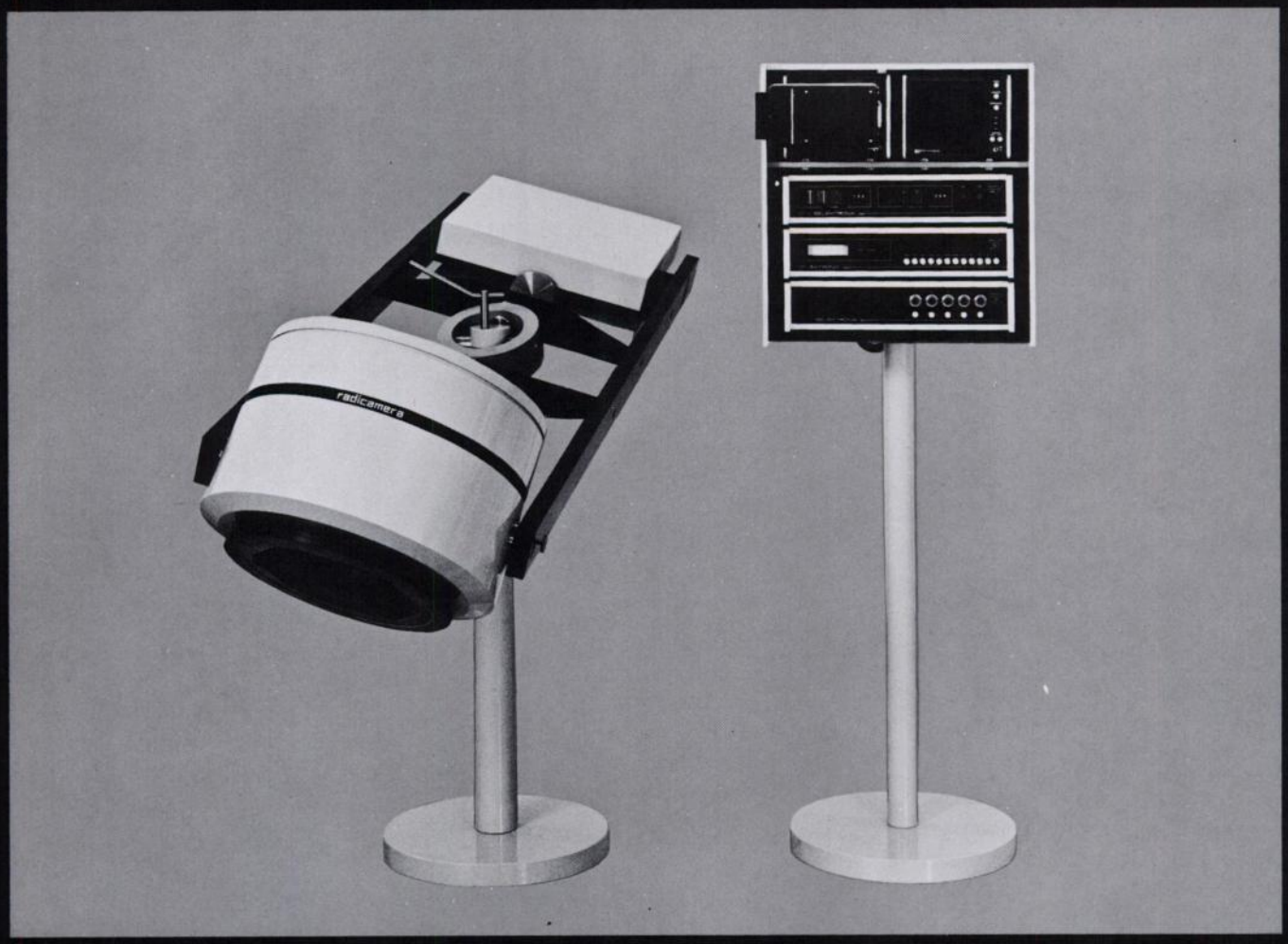
Use Videodisplay with virtually any scanner or camera. Operates on-line with the GE single probe or whole-body digital scanner. And, with attachments, can easily interface with other digital or analogue scanner or camera to extend your diagnostic information capability.

General Electric
Medical Systems,
Milwaukee and Toronto.
In Europe, Elscint
GmbH, Wiesbaden; Elscint
France SARL, Buc.

See the Videodisplay unit, and other GE instruments, at the meeting of the Society of Nuclear Medicine, in Boston, July 11-14.

GENERAL ELECTRIC

Radicamera



an entirely new standard of gamma camera performance.

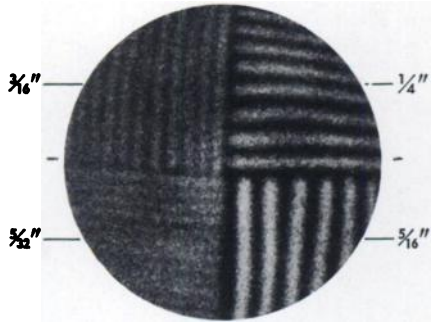
ND

Radicamera

Compare resolution
Radicamera resolves 5/32-inch (less than 4 mm) phantom bars using a technetium source—a capability unparalleled by any other gamma camera. Images are clearer, sharper than ever before.

Field uniformity has been improved through more compact arrangement of detector phototubes.

A new 20,000-hole high sensitivity and high resolution technetium collimator has been developed to provide clinicians with the finest imaging system available for any clinical requirement.



Resolution

This bar phantom scintigraph was taken with the new Radicamera. The phantom was placed directly on the crystal, with a ^{99m}Tc source (140 keV) at a distance of six feet.

On conventional gamma cameras, the lower quadrant would appear blurred. But Radicamera easily provides clear separation between the 5/32-inch wide phantom bars—an improvement of almost 20% over any other gamma camera.*

Compare features
Counterbalanced detector permits unequalled speed and ease of positioning.

Greater range of motion and faster patient positioning are provided via the new gimbal stand assembly. Hand locks secure detector orientation if desired.

"Stereo" or three-dimensional images can be produced using the new Radicamera's ability to take pre-calibrated opposing scintigraphs. A special holder for these scintigraphs allows stereoscopic viewing.

Radicamera offers simultaneous readout of both counts and elapsed time. Either may be pre-set to yield greater flexibility in organ imaging.

Detector head shielding has been increased to virtually eliminate background activity.

A dot-shaped electronic marker has been provided to identify relevant anatomical landmarks. More than one dot can be generated to outline areas or define boundaries.

Operator controls have been simplified. Calibration, marker positioning, pre-set operations are all accomplished via pushbuttons.

Improved electronic design means reliable, consistent operation and quality scintigraphs.

Improved dual image Polaroid camera is standard.

Both normal and variable persistence oscilloscopes have been included to provide standard and cumulative display of radiopharmaceutical distribution.

Optional cart permits total mobility. System can be taken into intensive care units and to patients' bedsides.

Compare performance
Radicamera offers better resolution, easier operation, and faster positioning than any other gamma camera available. It takes up less laboratory space than any of its predecessors. And it offers a wide range of capabilities vital in the clinical evaluation of organ function and morphology. All at a price significantly below that of conventional gamma cameras.

Radicamera is available for your evaluation at the 1972 Meeting of the Society of Nuclear Medicine, where Nuclear Data will occupy booths 73-76. The MED II Digital Image Processing System and the Radilog Image Recording System will also be on display.

Radicamera is sold worldwide. In the United States, it is available exclusively to government institutions and agencies, including all military, Veterans Administration and Public Health Service Hospitals.

For more information write or call:

*Since conventional printing processes tend to obscure fine detail, original scintigraphs clearly demonstrating Radicamera's ability to resolve 5/32-inch phantom bars are available on request.

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Nuclear Data
Scandinavia AB
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Here are four ways to handle your in-vitro and in-vivo testing requirements.

IN-VITRO

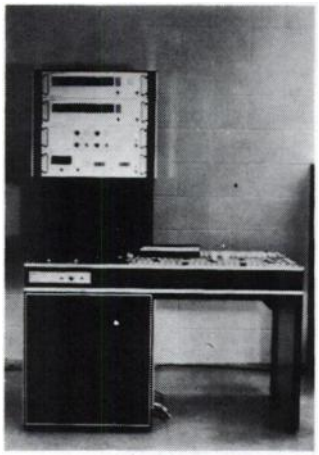
LOGIC™ scintillation well counter

LOGIC™ is a simplified integrated spectrometer and well counter that's easy to operate. Most important is the LOGIC™ unique service commitment. When problems arise, a unique service program goes into action and your unit is back in operation fast. Every LOGIC is built with solid state and integrated circuitry to give greater reliability and less downtime.

The LOGIC™ symptom describing manual allows you to pinpoint most service problems in minutes. A call to our technical representative confirms or corrects your diagnosis immediately. The correct plug-in circuit board or a replacement LOGIC™ is air shipped to you the same day. You're back in operation within 24 hours. In short, if you have trouble with a LOGIC™, we'll repair or replace it with a service loaner in 24 hours or less.

Wallac automatic gamma sample changer

The Wallac LKB 80000 automatic sample changer handles a large capacity of samples to free your skilled staff for other duties. It allows long uninterrupted automatic runs with either uniform or intermixed samples.

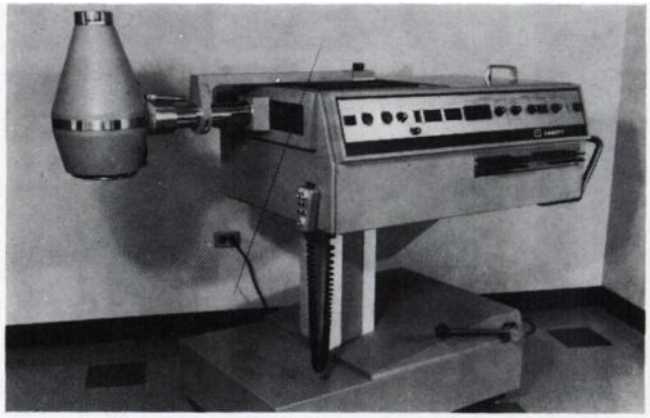


The sample conveyer operates as an endless belt giving you fast, safe and secure pneumatic handling of samples. There are two methods for positive sample identification before measurement, its position on the conveyer belt, and a binary coded cap. And, samples are changed in only 10 short seconds. Data readout is supplied in printed form or on punched tape. The Wallac automatic sample changers simple foolproof controls allow you to handle your needs efficiently and accurately.

IN-VIVO

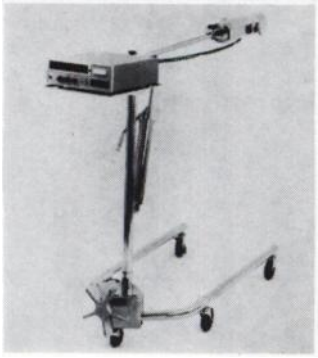
GRAPHIC™ Rectilinear scanner

GRAPHIC™ operation is simple. The control panel is designed for a logical left to right set-up procedure. Start at the left with Power On and work your way in a logical sequence to the right of the panel to Scan On. GRAPHIC™ two-position film cassette allows you to scan 14″ x 17″ in either direction, across the chest or lengthwise along the body. GRAPHIC™ will accomodate a variety of large scan field requirements with uniform ease. And, GRAPHIC™ is built to last requiring a minimum of service attention. It's so rugged that we warranty it for mobile operation. You have to be tough to work under these conditions.



LOGIC™ with uptake module

By simply adding a medical stand and probe with collimator to either of two LOGIC™ models, the 111 or 121, you're ready for thyroid uptake studies. The LOGIC™ modular concept provides add-on capabilities for you. Buy what you need when you need it. And, you still get the unique service commitment provided only by LOGIC™ . . . when problems arise, we'll repair or replace your instrument with a service loaner in 24 hours or less.



And, these instruments come from a full-line supplier who assures you of a continuing service commitment to train and assist your personnel in all their needs. It's our privilege to keep your Abbott instruments operational.

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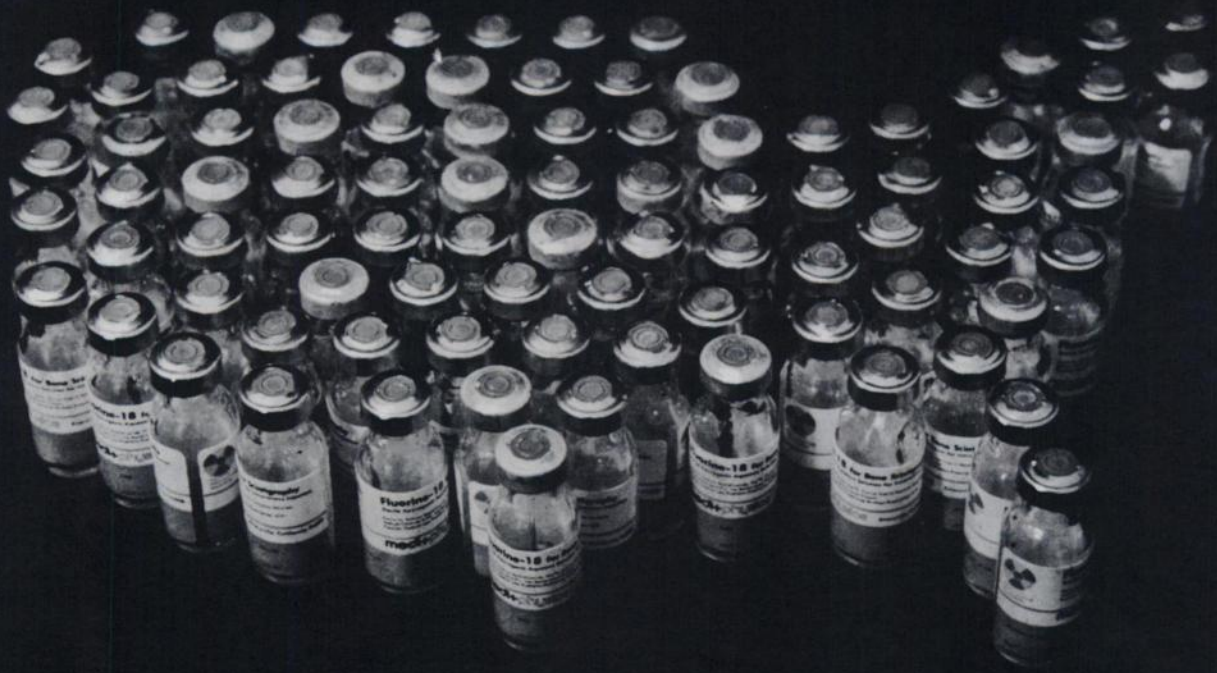
America Gets Fluorine-18 With a 2 Hr. Half-Life

An Approved New Drug



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Whoever thought Bone Scanning F-18 with a 2 hr. half-life could be delivered to your hospital daily from the San Francisco Bay Area and could be done consistently. Medi + Physics is proving it can be done. If your hospital is in one of the direct flight cities listed above and you are interested in taking advantage of F-18 for bone scanning, call or write our Emeryville facility.

medi+physics

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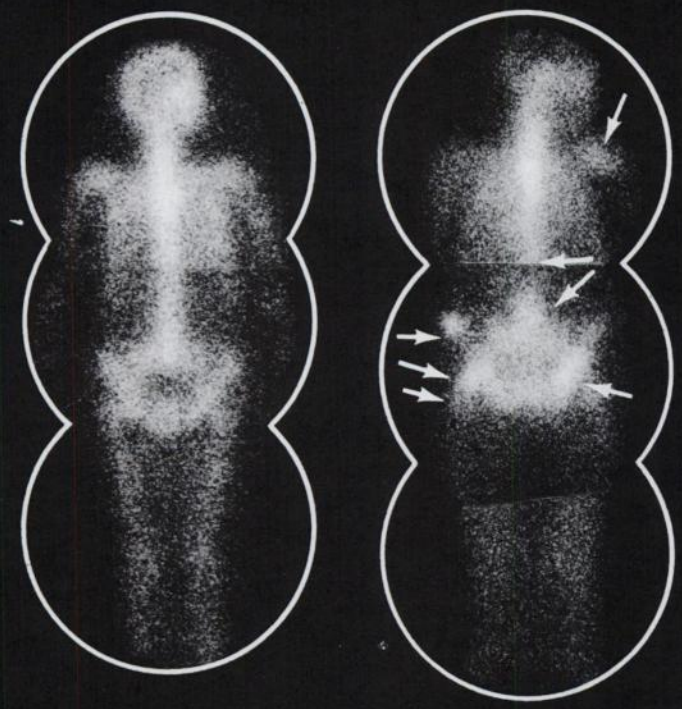
Bone Scintigraphy Using Fluorine-18

Pinhole Collimator-
Scintillation Camera Images

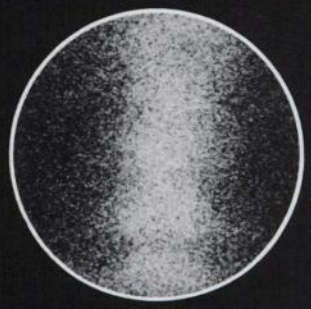
Whole Body Survey
Anterior View



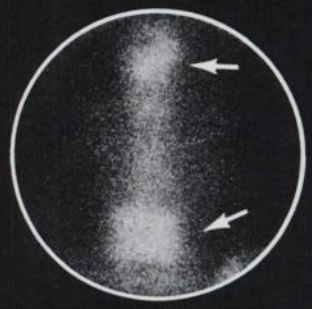
Normal

Metastatic
Breast Ca.

Close Up Images

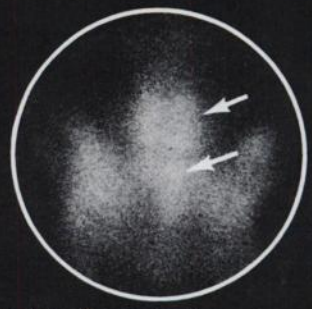


Lumbar Spine (Posterior)
Normal



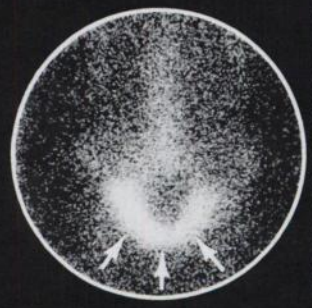
Lumbar Spine (Posterior)
Ca. Breast

Pelvis (Posterior)
Normal



Pelvis (Posterior)
Ca. Breast

Pelvis (Anterior)
Normal

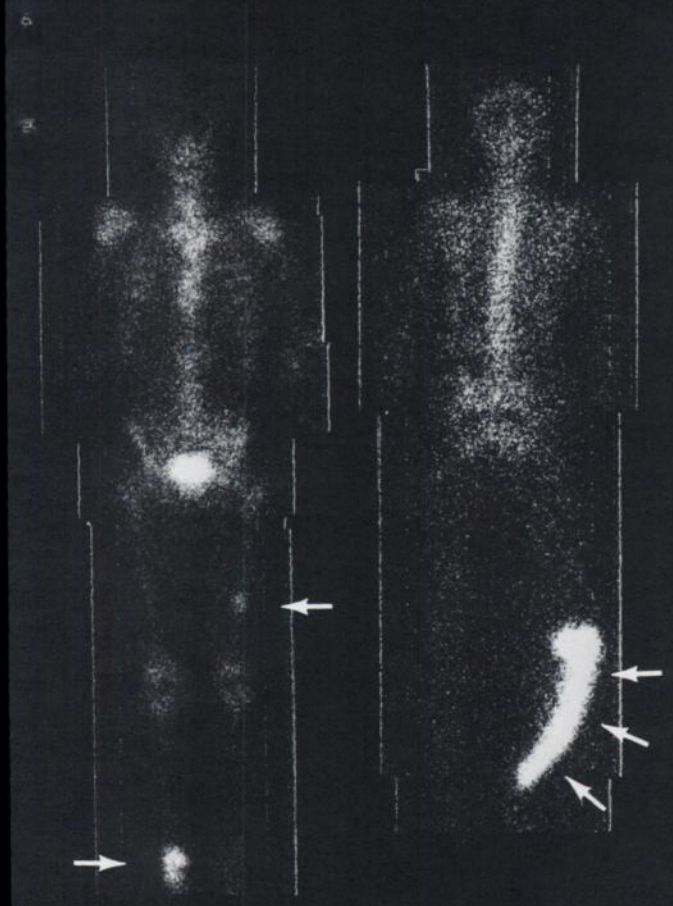


Pelvis (Anterior)
Ca. Prostate

Lesions are commonly found in the axial skeleton and a complete skeletal survey should include imaging of limbs as well as trunk.[5]

Scintillation camera images 2 to 4 hours after I.V. administration of 2 to 4 mCi of ^{18}F required 3 to 10 min. exposures each.

Rectilinear Scanner Images (5 inch crystal)



Metastatic Renal Cell Ca. (Anterior)

Paget's Disease (Posterior)

Dual probe rectilinear whole body imaging 2 hours after I.V. administration of 1 to 2 mCi of ^{18}F required 30 min. exposure. (Negative image of original shown to compare with camera images.)

References

1. Bachman & Sproul, Bull. N.Y. Acad. Med. 31:146 (1955)
2. Edelstyn et al. Clin. Radiol. 18:158 (1967)
3. Sklaroff & Charkes, J.A.M.A. 188:1 (1964)
4. Spencer et al. Brit. J. Radiol. 40, 641 (1967)
5. Ronai et al. J. Nucl. Med. 9, 517 (1968)
6. Harmer et al. Clin. Radiol. 20, 204 (1969)
7. Blau et al. Medical Radioisotope Scintigraphy 11:341, (1969)
8. Harbert & Ashburn. Cancer 22, 58 (1968)

Radioisotopic Imaging of Bone in Clinical Medicine

Review

Various radioisotopes are known to preferentially accumulate in both malignant and benign lesions of bone. When such radioisotope accumulation is detected and imaged, using suitable instrumentation, clinically useful information is frequently obtained which cannot be readily acquired using other methods. Examples of this are the detection of primary and metastatic tumors in bone. Tumors metastatic to bone most commonly spread to spongy (trabecular) bone. Such lesions can be visualized by X-ray examination only when they are greater than 1.5 cm in diameter and 50% to 75% of the local calcium is lost.[1,2] Localization of radioisotopes in the region of metastases has been shown to be an earlier and more sensitive indicator of the presence of bony metastases than that provided by conventional radiographic techniques.[3] While Strontium-85 was the radioisotope most commonly used in initial studies, subsequent evaluations have shown fluorine-18 to be a superior radioisotope since its use results in both improved image quality and markedly lower radiation dose to the patient.[4,5,6,7]

Indications

The suspicion of malignant neoplastic involvement of bone, either primary or metastatic, is the principal indication for performance of a radioisotopic study of bone. Such a possibility should be considered in the primary evaluation of patients with a diagnosis of malignant tumors of the breast, lung, stomach, prostate gland, thyroid gland, and other carcinomas which commonly spread to bone, and in evaluating the extent of involvement of primary bone tumors, multiple myeloma, etc. Such studies should be particularly useful in patients in whom extensive surgery is proposed for the possibility of total extirpation of neoplastic tissue, since demonstration of a previously unrecognized metastasis may influence the proposed therapy. Lymphomas, such as Hodgkin's disease, frequently involve bone, and it has been recommended that patients with these disorders have radioisotopic skeletal surveys as a part of their initial staging.[8] Subsequent to initial evaluation of patients with various carcinomas and sarcomas, periodic radioisotopic skeletal surveys may be useful in demonstrating presence and extent of bone lesions. A large number of nonmalignant conditions can result in abnormal deposition of radioisotopes in bone (arthritis, fractures, osteomyelitis, Paget's disease, etc.). Whether sufficient beneficial information can be obtained from the performance of a radioisotopic bone study in patients with these non-neoplastic diseases to warrant the performance of such a study remains to be established.

Hazards

There are no reported cases of adverse reaction to the administration of carrier-free fluorine-18 in isotonic saline solution. The radiation dose received by the patient in association with a typical fluorine-18 bone study is considered comparable to that which he would receive from similar X-ray studies.

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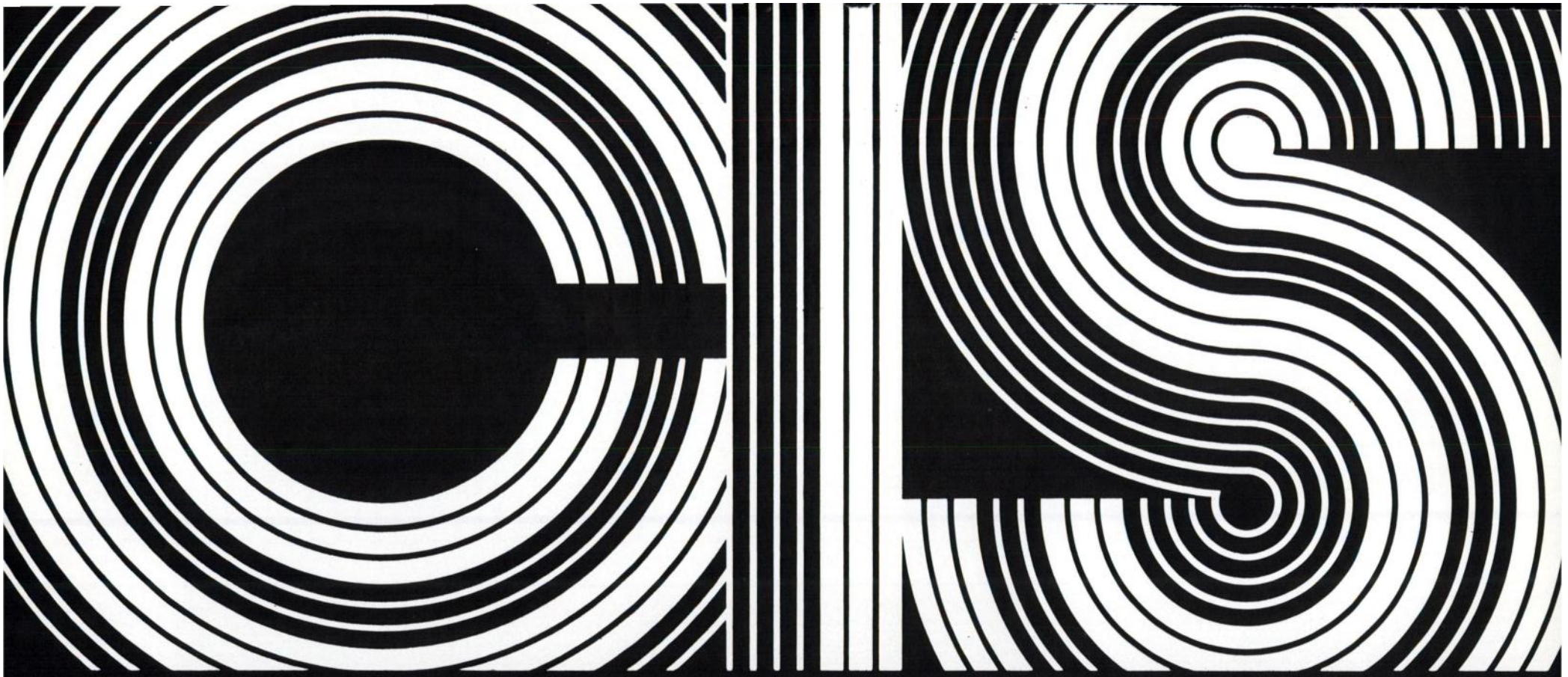
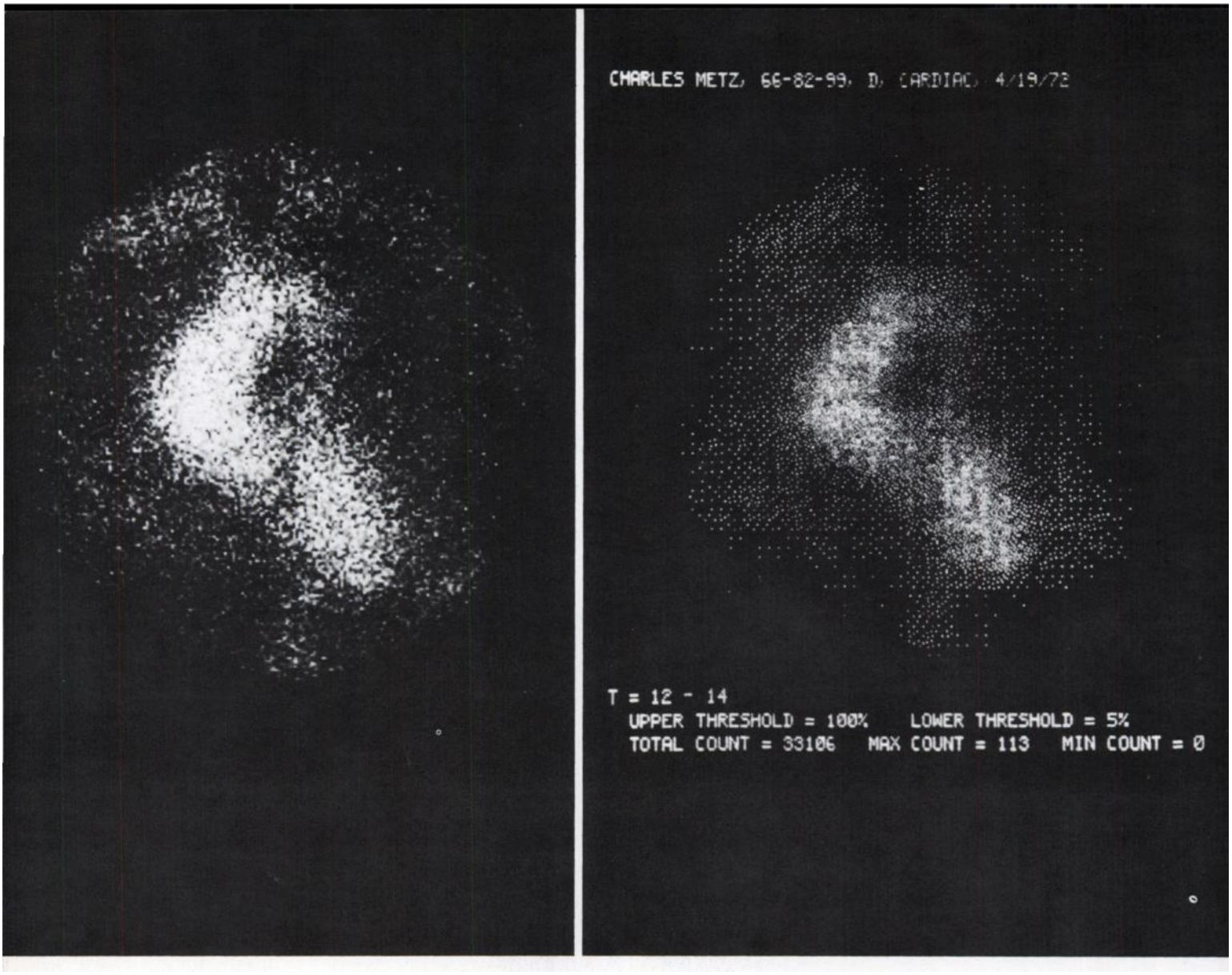


Radiopharmaceuticals



Stop guessing.

Now you can plug your gamma camera into one of our GAMMA-11 systems and computerize the whole process.

You'll turn the art of radioisotope imaging into an exact science. And do better analysis. In a lot less time.

Using GAMMA-11's keyboard, you simply type in the patient's name, number, isotope, organ. Then you start the camera. The data goes straight from the camera into the computer. At up to an incredible 60 frames a second.

GAMMA-11 analyzes each and every frame, correcting for camera flooding, backgrounds and dead time. It puts out a high quality computer-enhanced display, complete with descriptive information.

And you get your image in seconds, because it comes from GAMMA-11's high speed disc memory.

You can use GAMMA-11 to perform both static and dynamic imaging. It can clean up the data for you. And do all manner of statistical manipulation.

But you don't have to be a computer expert to use GAMMA-11. It talks to you in English. You talk back over the teletype. In fact, a couple hours of training should be all you'll need. Because GAMMA-11 comes with all the software you'll need. And all the service.

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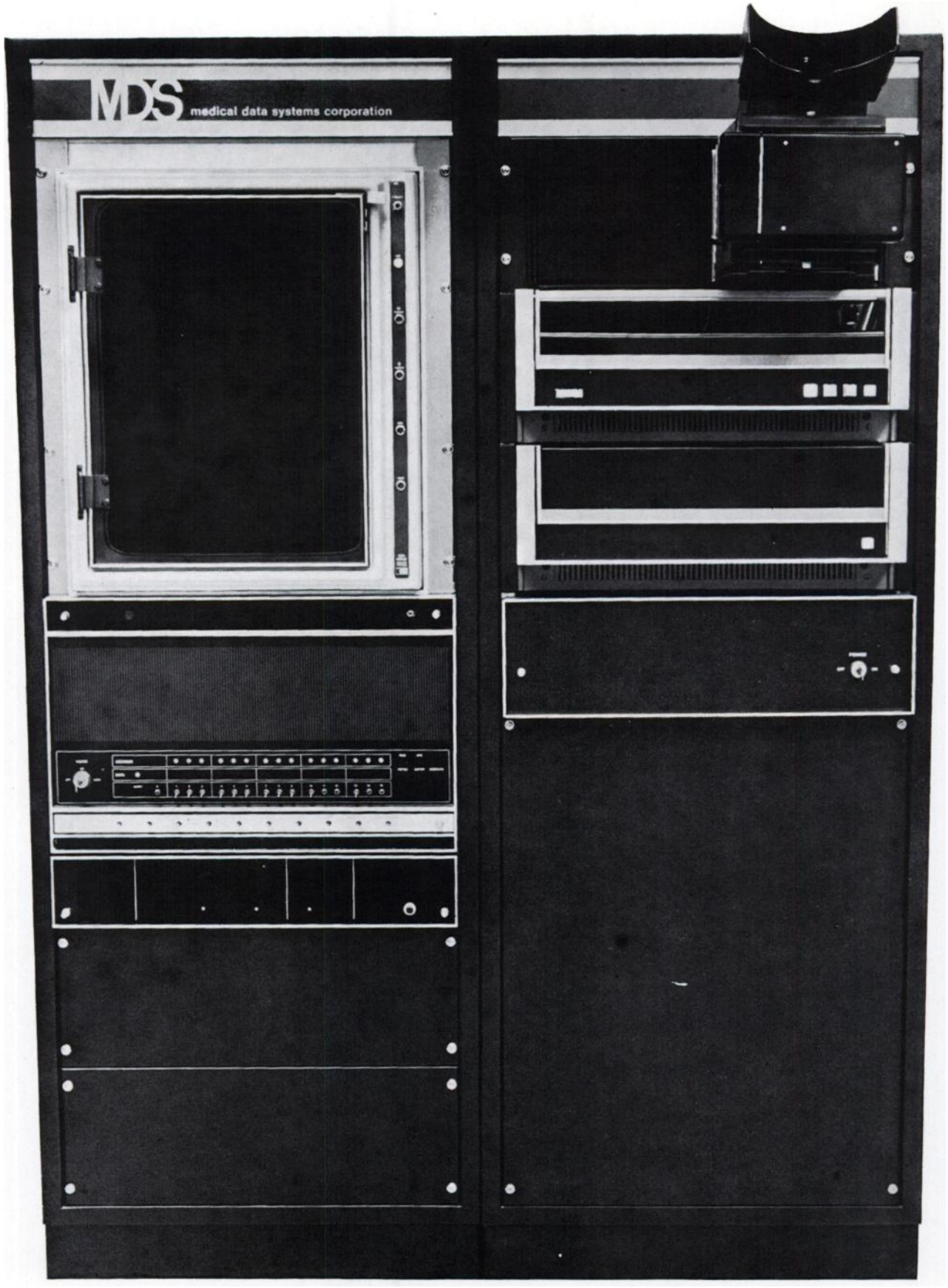

Compact unit pictured measures 63" in height, 44" in width, and 30" in depth.

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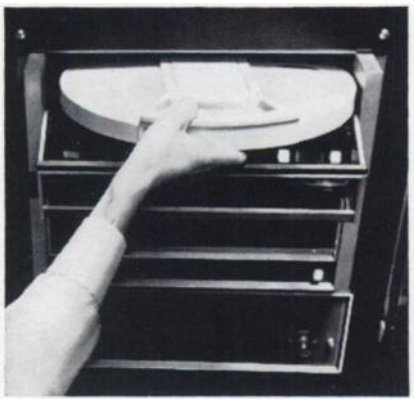
Now you can capture, analyze and re-examine well-defined images from any camera . . . or any that's being developed. MDS has created a precise hardware-software system for gamma-imaging analysis. We've carefully chosen the most advanced hardware and combined it with a comprehensive library of display and analysis programming. The unparalleled result: no other system can outperform the MDS Nuclear Medicine System.

Its remarkable achievements are already setting industry standards. Programs for field-uniformity, data-smoothing, enhancement, and background subtraction instantly refine your studies. You can choose any time-sampling interval and store all data on disk. Retrieve the image later in milliseconds, in order to film the most clearly resolved image.



The disk retrieves stored information in milliseconds. To get any result from the disk quickly, simply tap two letters on the teletype keyboard.

You have comprehensive programmed control of the image on the scope. Divide any dynamic study into two-centimeter squares and order printouts of radioisotope uptake for any curve or curve point. Rotate image slices, specify iso-counts or isometric lines, and add or subtract frames to obtain a composite view.

Perhaps most important, our system will simultaneously show four separate views of an organ. From this display, you can frequently make a diagnosis from the scope alone. You can also isolate areas of interest with the optional light pen, intensify them, and strip them out to be viewed by themselves.

Each component of the MDS system provides maximum versatility. You can expand it at any time to perform treatment-planning, research studies, patient scheduling, and accounting operations. And the Nuclear Medicine Module is fitted to your clinic by a medical-science team that specializes in nuclear medicine.

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AN OPEN LETTER TO FRIENDS IN NUCLEAR MEDICINE BY DICK PURDUM OF PGL

(FORMERLY)

As the man said to a packed elevator of typically silent strangers, "I suppose you are all wondering why I called you together."

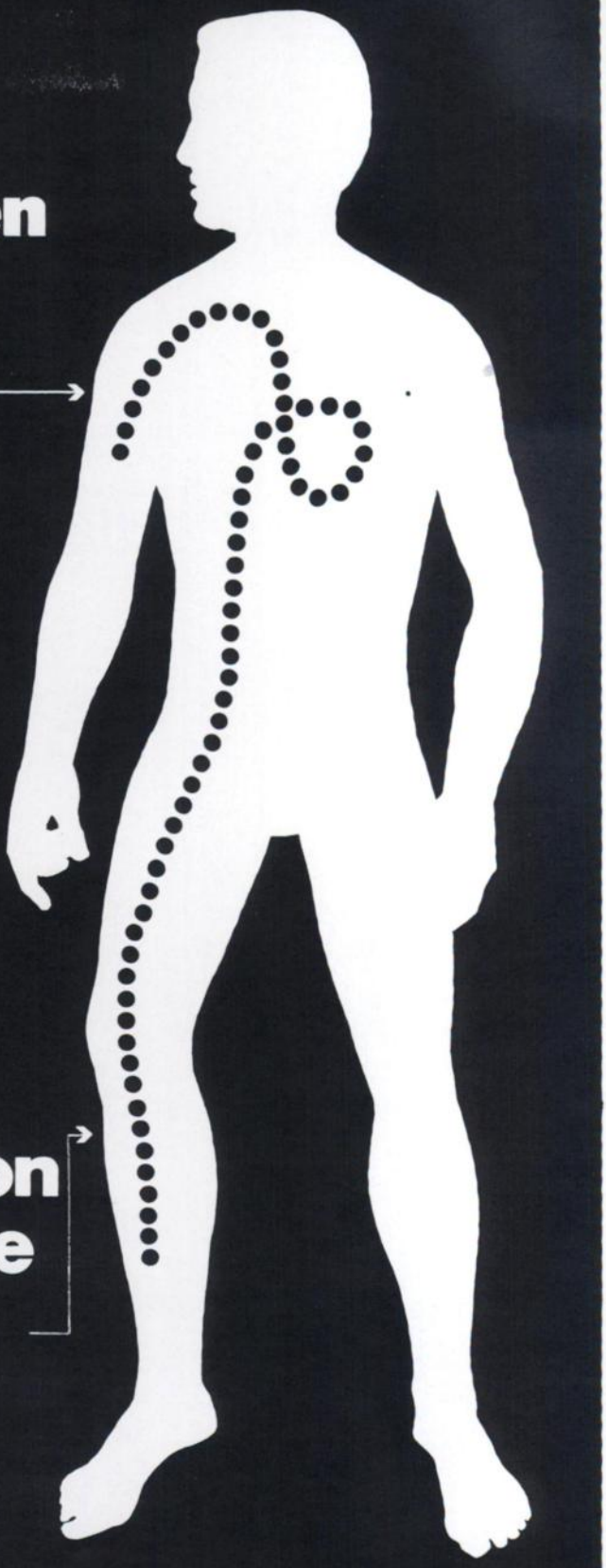
I am buying this space in the Journal of Nuclear Medicine to inform our community quickly and efficiently that as of May 16, 1972 I am no longer associated with PGL of San Francisco. Subsequent to this date, RADX of Houston, who purchased PGL stock in September of 1971, assumes complete control and responsibility for all its activities. The policies established at PGL will, I am sure, be maintained by RADX. I hope this announcement helps reduce the usual confusion that accompanies business transactions of this nature.

In retrospect I am extremely proud of PGL's accomplishments, its many fine products, and its friends. Naturally, I do not want to lose these friends. Equally, I do not intend to leave the exciting field of Nuclear Medicine.

Thank you again and see you soon,

Dick Purdum

Iodinated $^{(125I)}$ human fibrinogen



- 90% of iodinated fibrinogen is available for coagulation.
- prepared from a restricted pool of donors, screened to minimize the possibility of transmission of serum hepatitis.
- can be used for monitoring treatment of thrombus as well as detection.
- more convenient than phlebography–can be used for routine screening by ward staff.
- available from stock.

Post-operative deep vein thrombosis of the leg can give rise to many serious sequelae, including fatal pulmonary embolism, yet in many cases there are no clinical signs of the thrombus, itself. Labelled fibrinogen, administered by intravenous injection, becomes incorporated in the thrombus, and can be followed by daily scanning of each leg (using a hand held Isotope Localization Monitor). The area of maximum radiation intensity indicates the size and site of the thrombus. This simple daily procedure can be easily carried out at the patient's bedside.

Full information on the material and the technique is available from The Radiochemical Centre.

Availability of this product may be subject to national regulations.

For early detection of post-operative deep vein thrombosis

The Radiochemical Centre Amersham England

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The DI 800 Triaxial Table: The total performance imaging table

Ultimately, it had to happen . . . a table that matches the high diagnostic aims of Nuclear Medicine. When you consider the high cost and sophistication of imaging equipment, partially adequate tables seem slightly incongruous. Long needed was a stable platform with movement capabilities that maximized patient comfort, facilitated patient handling and access, and was easy to operate. Above all, the table would have to allow a precise control of the patient's position so that the entire organ of interest could be encompassed within the limited field of view of the detector. Result: The DI 800 Triaxial Table.

The DI 800 offers continuous height adjustment. Hence, easy patient transfer (whatever the height of the conveyance vehicle) onto either side of our table because of its flush edges. All four wheels lock from two controls.

For final precise positioning the DI 800 has long axis adjustment of 18 inches in the horizontal plane. Most important, the top is tiltable, head up or head down. This means greater patient comfort. More, it will permit oblique imaging. Example: tilting will permit cephalad displacement of the liver for improved pancreas imaging.

With its open under carriage, overhanging adjustable head rest and ¼ inch lucite top, the DI 800 offers an unobstructed view of the patient—above, below, either side and vertex. That's total performance.

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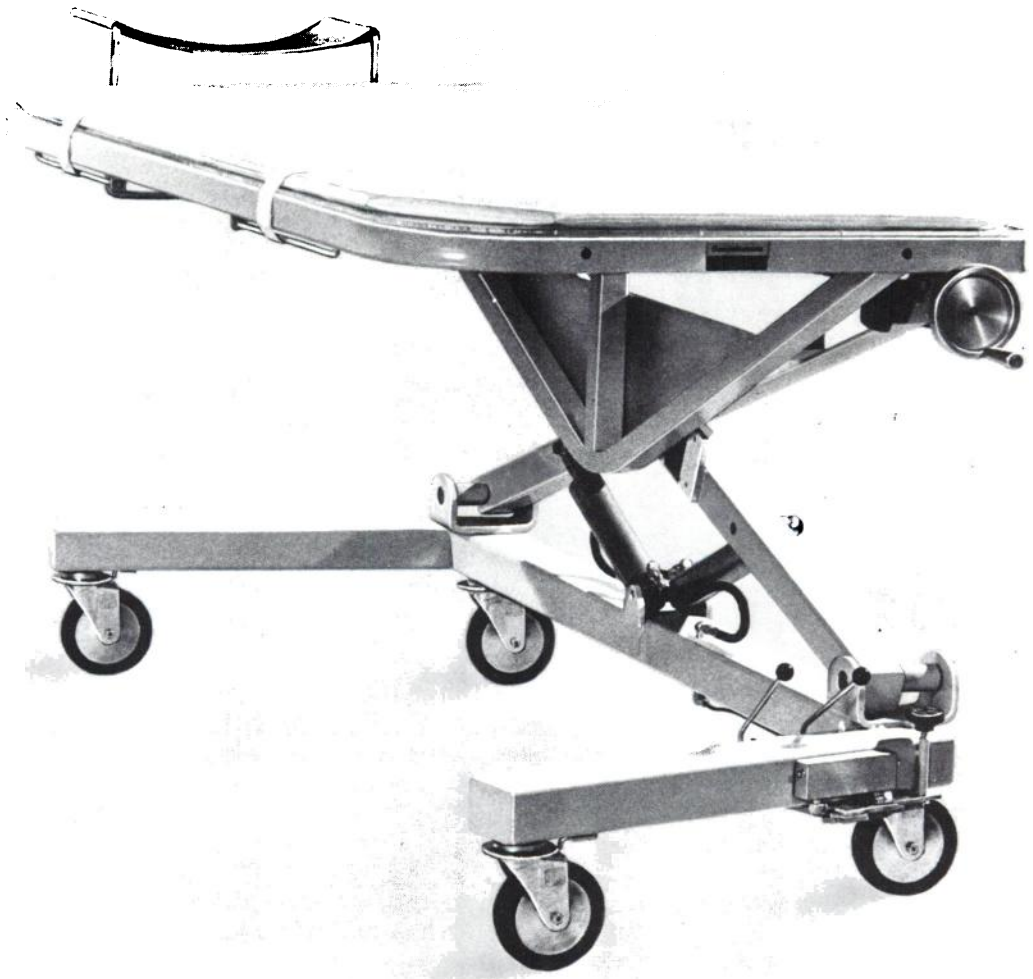
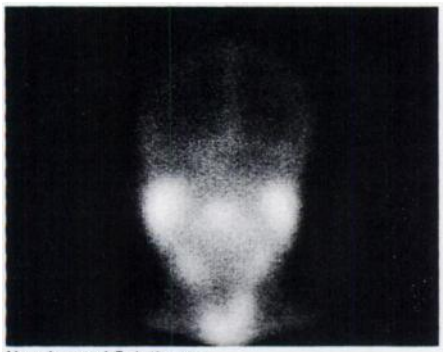
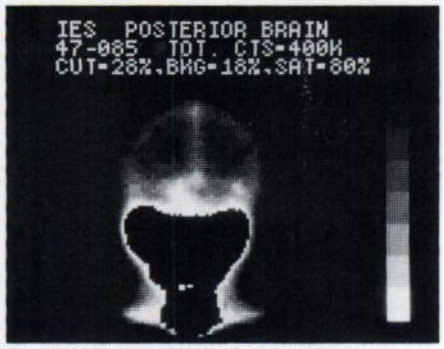


If you were the patient, you wouldn't want less.

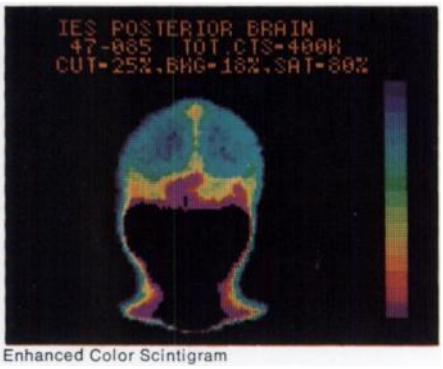
Study A



Unenhanced Scintigram



Enhanced Black and White Scintigram



Enhanced Color Scintigram

That is, you wouldn't want less than Picker's Image Enhancement System. This system, coupled to our Dynacamera™2, provides diagnostic information that just cannot be matched by any other nuclear medicine imaging system of any kind. Anywhere.

When the lesion is elusive, it is *this* system that provides the wherewithal for its confident visualization. What "couldn't quite be seen" with other gamma imaging systems, becomes discernible with this one. And certainly this is the ultimate challenge for any such system.

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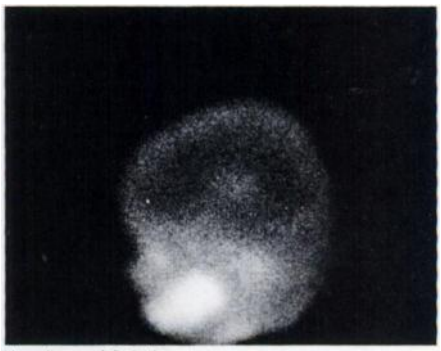
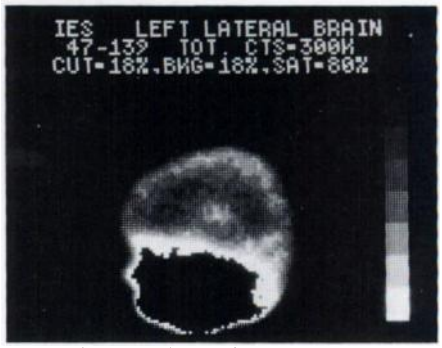
Study B



Unenhanced Scintigram



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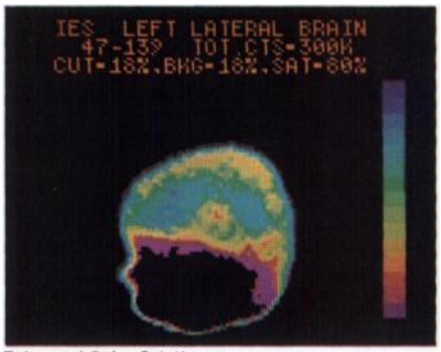

Enhanced Color Scintigram

Study A (Posterior View)

Study Data: The patient was intravenously injected with 10mCi Tc^{99m}. 1000 counts/sq. cm. information density exposure was used.
Impression: Posterior fossa lesion. Surgically removed. Histologically confirmed as malignant meningioma.

Study B (Left Lateral View)

Study Data: The patient was intravenously injected with 10 mCi Tc^{99m}. 1000 counts/sq. cm. information density exposure was used.
Impression: A 6 cm. lesion, midline pinealoma was confirmed by angiography and pneumoventriculography techniques.
No surgery was performed.
Treatment: Cobalt teletherapy.

Studies courtesy of: Dr. E. S. Pederson, Clarkson Hospital, Omaha, Nebraska

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Picker's Image Enhancement System. How does it work?

Basically, the Image Enhancement System takes gamma image data from a Dynacamera 2 scintillation camera and stores the data in its built-in computer. The computer, acting on commands from the user, provides uniformity correction, contrast enhancement, background suppression, and a color or black and white enhanced scintigram. These features, functioning in concert, provide the mechanism for differentiating the frequently too subtle gradations between normal and pathologic tissue and for eliminating the false positives caused by instrument artifacts.

In effect, this computerized system improves the "target-to-nontarget ratio." Actually, by using two image views (e.g., AP and lateral), one can accurately locate the lesion while enhancement removes the interfering counts of nontarget tissue in order to permit clearer visualization of the target tissue.

A word about the computer part of this system. This is fiddle-free computerization because *we've* done all of the programming work. The clinician spends his time diagnosing, not engineering. And this system can be plugged in and used immediately because all the required programming and instruction is supplied. Further, user entry of essential data is simple because the programming format involves a logical sequential dialogue between the user and the instrument.

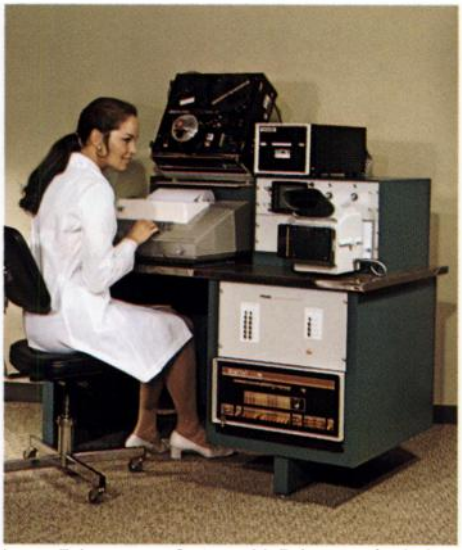

Image Enhancement System with Pulmonary Analysis Accessory

Enhanced Image on IES's Monitor Display

Finally, we offer two intriguing accessories for this Image Enhancement System. One is a Pulmonary Analysis Accessory that actually computes and anatomically relates xenon ventilation/perfusion indices automatically. Other applications of this accessory include time-compressed storage and playback of gamma images.

The second accessory is a Dynamic Function Study Accessory that achieves two things: it is the most flexible method for studying and quantitating organ dynamics; it also functions as an image bank capable of storing 2,000 images per tape (typically two months' work).

These are the highpoints. The complete story is available from your local Picker representative. Or write to Picker, 595 Miner Road, Cleveland, Ohio 44143. Or complete the attached Reply Card.

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NUCLEAR MEDICINE TECHNOLOGIST needed for rapidly growing Nuclear Medicine Department. Salary commensurate with experience and qualifications. Excellent employee benefit program. Contact Donald Morel, M.D. Nuclear Medicine Department, Allentown Hospital, Allentown, Pa. 18102.

NUCLEAR MEDICINE RESIDENCY. Two positions available in the George Washington University - Washington Hospital Center Training Program for July 1, 1972 and 1973. Clinical and research program active in all phases of nuclear medicine: Imaging, radioassays, radiochemistry/radiopharmacy; access to reactor and cyclotron for isotope production and trace analysis. Co-directors: Richard C. Reba, M.D., and Vijay M. Varma, M.D. Send inquiries to: Washington Hospital Center, Department of Nuclear Medicine, 110 Irving St., N.W., Washington, D.C. 20010. An Equal Opportunity Employer. Phone: 202-541-6066.

NUCLEAR MEDICINE TECHNOLOGISTS: Position available June 1, 1972, for technologist in Nuclear Medicine Laboratory at Ohio State University Hospital. Salary commensurate with experience and qualifications. Employee benefit program available. Contact: X. J. Riccobono, M.D., Radiologist, Ohio State University Hospital, 410 West 10th Ave., Columbus, Ohio 43210, or call 1-614-422-7652.

ASCP CERTIFIED MEDICAL TECHnologist eligible for license by California Department of Public Health must have experience with nuclear medicine in vitro technology. Generous salary with liberal fringe benefits including paid health insurance, sick leave and vacation time, and retirement plan. Hospital laboratory directed by three pathologists. Northern California recreation hub. Write Drs. Flynn, Keye, and Severance, 2005 Court Street, Redding, California 96001.

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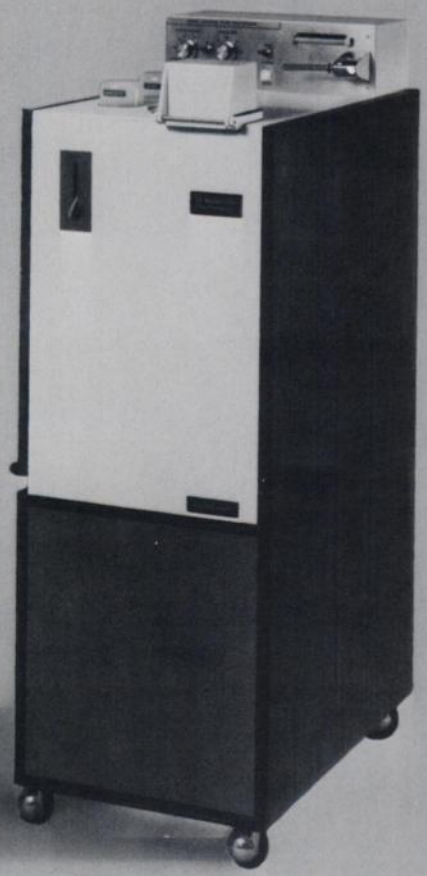

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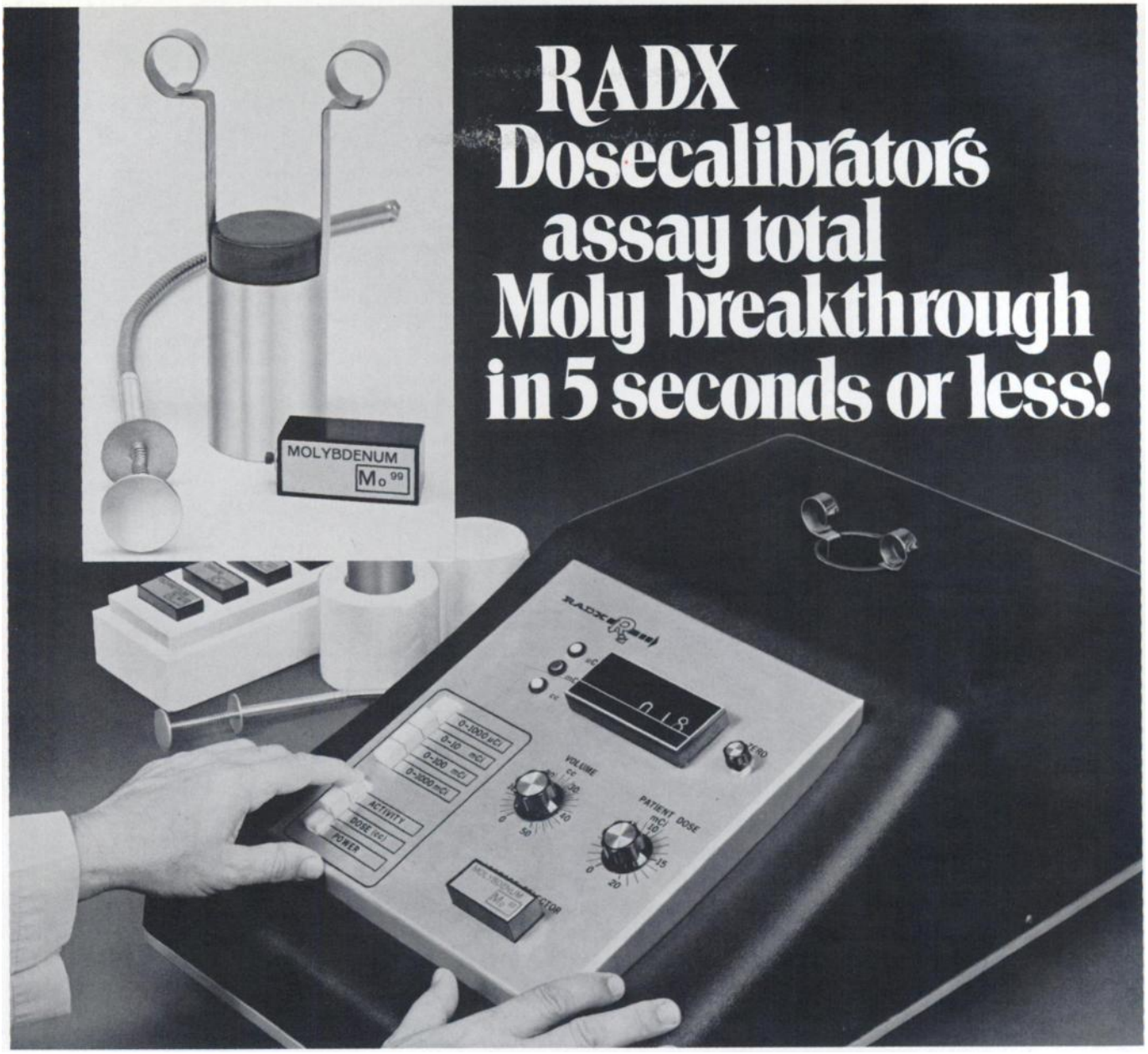

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Can you describe ten clinical benefits of Image Data Processing Systems?

Several hundred articles dealing with clinical applications of nuclear medicine image processing have now been published. Tens of progressive nuclear medicine departments rely upon image processing on a daily basis. And with good reason.

Here are a few of the important protocols being done. And some unique capabilities.

Flood Correction

Eliminates field artifacts and reduces the possibility of false negatives and false positives (due to gamma camera sensitivity non-uniformity) to a minimum. Many hospitals accustomed to the value of flood correction won't look at a study until it has been corrected.

Increased Resolution

Increased resolution is a natural offshoot of field uniformity or flood correction. Most gamma cameras are detuned off the photopeak to avoid the phototube rosette pattern artifact. In other words, the cameras are "compromise tuned" for concomitant optimization of field uniformity and resolution. However, some gamma cameras, such as the Radicamera, can also be operator tuned right on the photopeak to ensure the highest possible resolution. Subsequent flood correction by the image data processing system can then be used to eliminate camera uniformity variations.

Residual Isotope Subtraction

Permits you to subtract the data remaining from a previous study before you evaluate the followup.

Data Exponentiation

Allows you to substantially enhance subtle contrast differences by squaring, cubing or raising the data in each image channel to a given power.

Image Frame Condensation

Lets you add image data in successive frames to optimize statistics in subsequent time-activity histograms.

Automatic Study Sequencing

Permits you to automatically acquire a dynamic frame sequence followed by a static image. With a protocol such as this, you can automatically acquire half second sequential frames for a specified number of seconds—followed by a ten second static image—when doing dynamic cerebrovascular transit studies.

Exposure Optimization

Can be achieved by telling the system to continue data acquisition until one of the data points comprising the image contains a given number of counts. With this capability, different views of the liver, for example, all contain the same "brightest level." Much better (more uniform) image intensity/exposure control from view to view is obtained in this manner than is possible when taking views to preset time or total image field counts.

Quick Histogram Generation For Multiple Areas Of Interest

A particularly important capability of image processing systems. Since much of the work done with such systems is dynamic and involves histograms, speed is of the essence. Some image processing systems can generate separate time/activity curves for each area you've defined within a 25 minute renal function series in just seconds. When compared to conventional recording systems, over a period of a year an image processing system can save you a few hundred hours in histogram generation time alone.

Unexcelled Dynamic Scintigraphy

Another primary feature. You can not only store and replay a multi-frame study, but also show only the *change* from frame to frame, generate *isocontour plots* for successive frames, quickly define and view *profiles* across each image frame, and print out an activity map showing the *number of counts comprising each image data point.*

Ability To Do Several Clinical Routines Not Otherwise Possible

This is probably the most important capability of an image processing system. Because most such systems are programmable, everything from isotope inventory to fractional clearance rate calculations is possible. Image processing systems are being used for clinical protocols ranging from determination of hepatic phagocytic, metabolic and blood transit changes to verification of the existence and degree of septal defects. Cardiac ejection fraction studies are being made routinely in some hospitals as part of the serial evaluation of, for example, mitral valve disfunction characterized by valvular regurgitation, and left heart failure associated with myocardial infarction. While it is sometimes possible to obtain function indices using alternative nuclear medicine procedures, the speed, convenience, accuracy and replicability available with a good image data processing system cannot be duplicated.

Conclusion

There are literally dozens of procedures—vital ones—which are only possible with a programmable image processing system. Such systems have graduated from the research phase of their development. They belong in any up-to-date clinical nuclear medicine imaging laboratory. Image processing is no longer image obfuscation. It is better resolution. Organ function indices. Scintigraphs free of instrumentation artifacts. Region-of-interest analysis. Exposure optimization. Contrast enhancement. Activity maps. Tumor to non-tumor ratios. Pre- and post-operative comparisons. Improved pancreas visualization. And a host of other clinically valuable capabilities.

In short, sophisticated image processing is an idea whose time has come!

The MED II... It works for you.

The MED II can do any of the already described operations. And many more besides. But the best rationale for making your image processing system a MED II can be provided by a MED II user.

Many MED II users are research oriented, many clinical; most are both. The one thing they have in common is full MED II utilization. Visit some image processing system installations and you'll find their several thousand dollar system sitting idle. Visit a MED II installation, and you'll find the system hard at work . . . sometimes acquiring and processing data from three separate camera rooms. There are several reasons for this distinction.

The MED II Is Ready To Start Working For You The Day It's Installed

Flood uniformity correction, area-of-interest analysis, activity profiles . . . and a multitude of other capabilities are pre-programmed. Want to smooth a curve? Just type CS. Want to retrieve a frame? Type MR, specify the frame number, and in a few milliseconds yesterday's flood corrected right lateral brain view appears on the CRT. Dozens of other commands are executed with equal facility. It's great if you have a full- or part-time programmer. But with the MED II, plenty of important and helpful work can be done by the usual technologist-physician team just by using the extensive pre-programmed capabilities that are fully operational in every MED II shipped.

You'll Belong To The World's Largest Image Processing Club

More nuclear medicine physicians own Nuclear Data image processing systems than any other. That means you'll have plenty of company to share ideas and trade new protocols with. For example, while one of your colleagues develops a procedure for lesion characterization with extended time ^{67}Ga uptake and retention studies, you might be developing a protocol for the differential diagnosis of chronic myelocytic and acute leukemias using isocount contours and histograms for dynamic display of the time-varying distribution of ^{51}Cr labelled erythrocytes within the spleen. In your own clinical experience, you can undoubtedly think of several protocols for which the speed, accuracy and routinizing capabilities of the MED II would be ideal. Subsequent trading of routines is easy because MED II procedures and programs are fully compatible from system to system. Everyone saves time and an extensive library of clinical routines can be quickly accumulated.

MED II Is Backed By More Clinical Experience Than Any Other System

Nuclear Data pioneered the world's first image processing system. The MED II is a second generation system . . . backed by a great deal of interaction with clinicians. As a result, the MED II has been equipped with software and electronic features that render it unexcelled in both routine clinical and the most esoteric research environments. Seemingly trivial features, like having the compiler in core so that you can modify programs while working with them, become pretty important. Nuclear Data knows this. It has learned a lot of other things too. Most of them are reflected in the design and performance features of the MED II. That's why a number of clinicians with a wealth of image processing system experience have selected it.

MED II Service Is Fast And Competent

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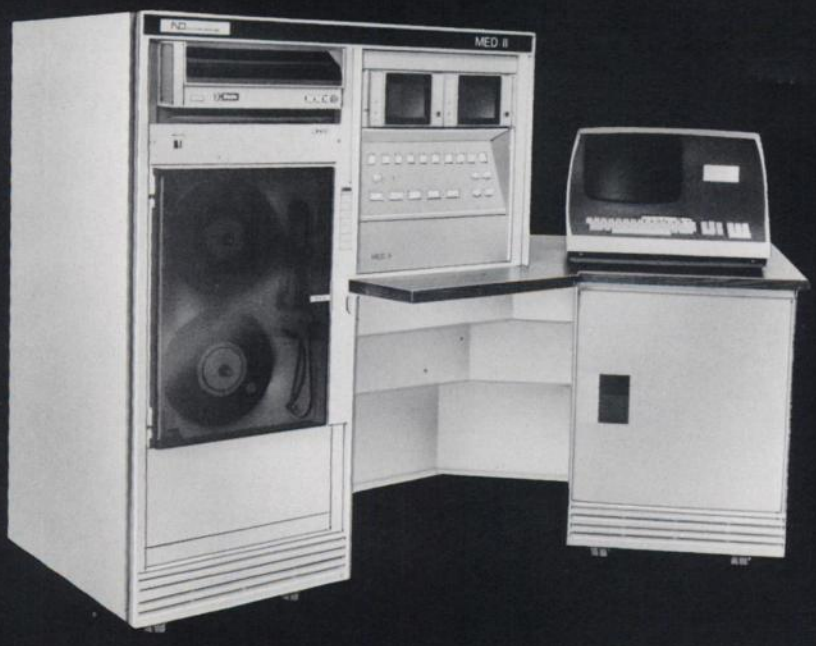
A New MED II Brochure Tells All And Shows All

Clinical studies, system specifications and much additional information is available in the comprehensive new Nuclear Data MED II brochure. Write, call or fill out the reply coupon and it's yours.



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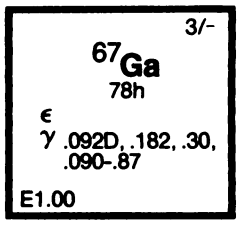

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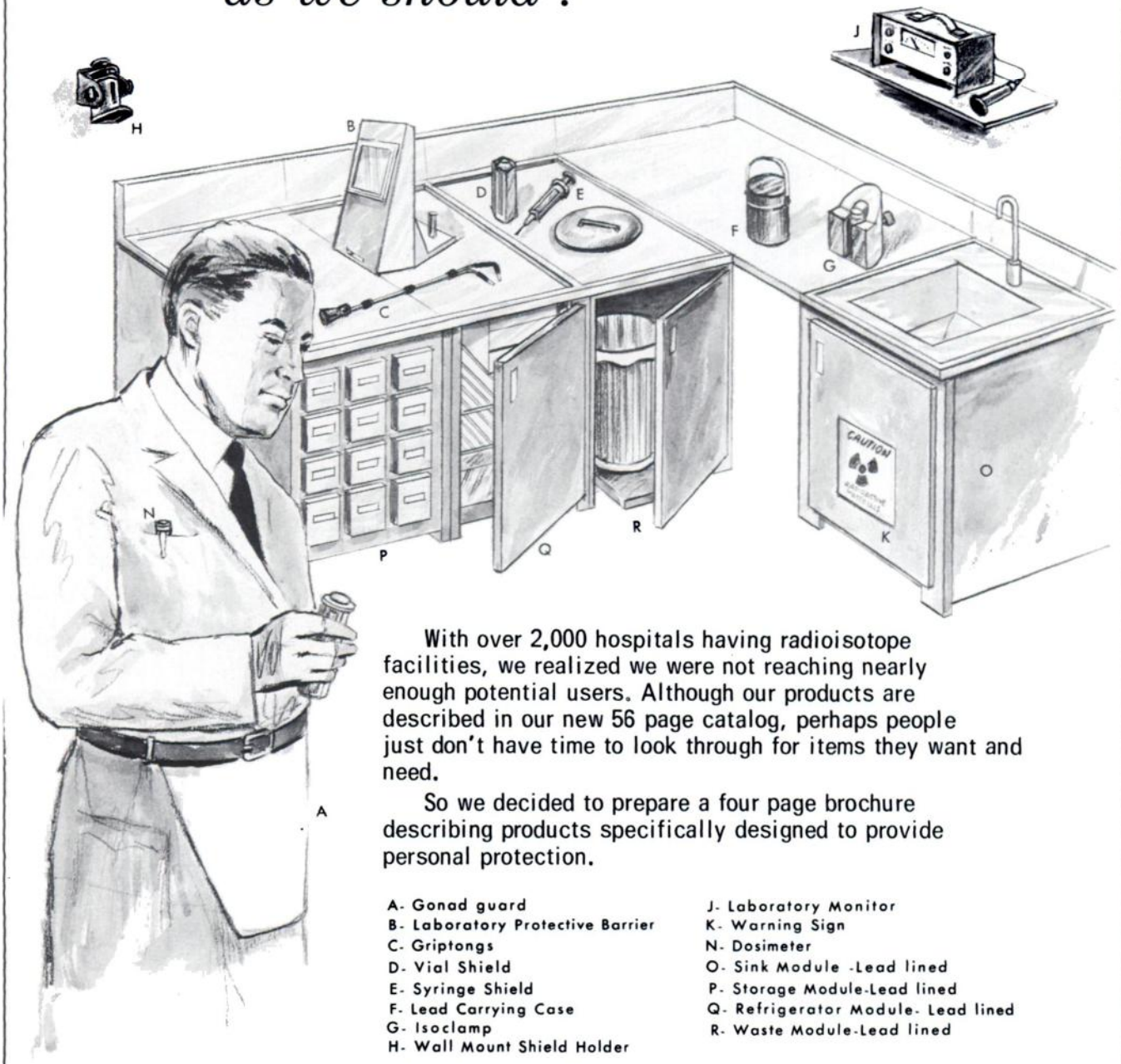

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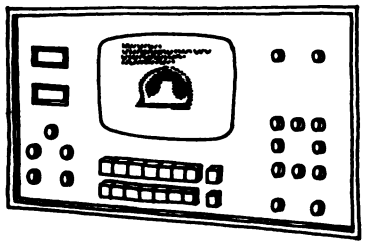

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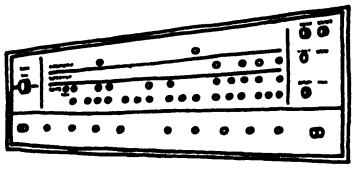

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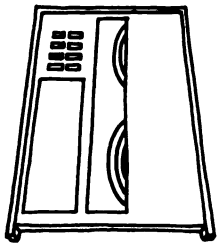

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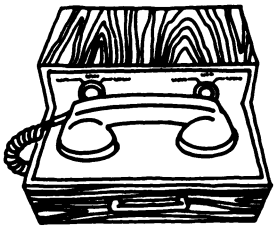

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