If you know get to know



Triosorb-125 T-3 Diagnostic Kit*

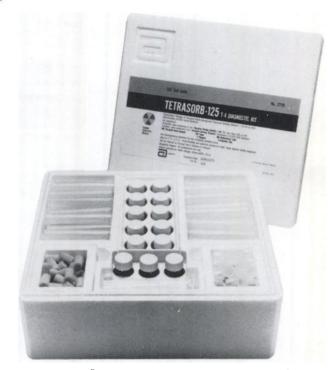
The in vitro test unmatched for reproducibility, convenience and accuracy.

Reproducible. Over 15 million tests conducted over the past eight years have made Triosorb® the standard of T-3 tests.

Convenient. The disposable Triosorb® Kit is ready for immediate use at room temperature making it one of the simplest, most convenient thyroid function tests available.

Accurate. Approximately 15 drugs and conditions produce misleading Triosorb®-T-3 test results, compared with over 200 factors which affect PBI.

* Also available as Triosorb®-131.



Tetrasorb-125 T-4 Diagnostic Kit

An improved, simplified method for measuring total *serum* thyroxine with diagnostic accuracy equal to or better than any currently used measures of thyroid function. Unlike other tests, exogenous iodines don't affect Tetrasorb® results.

one of these, them all.



The I-7 value completes the thyroid profile.

It's the Abbott method for determining the in vitro free thyroxine index.

T-7 is not a test but a numerical value derived from the multiplication of T-3 and T-4 test values. Because it is a product of two other numbers, the *T-7 value* will *move* only when both the T-3 and T-4 values move in the *same direction*. There are *only* two physiological conditions which cause this to occur, *hypothyroidism* and *hyperthyroidism*. With the exception of those patients receiving liothyronine or d-thyroxine therapy, all other factors which affect thyroid function tests will cause the T-3 and T-4 values to move in opposite directions, and the T-7 value to remain in the normal range.

When you provide the Abbott T-3, T-4 and T-7 values you furnish a complete thyroid profile with unparalleled clinical accuracy.

vvith LOGIC your final step is as easy as 1,2,3.

- 1. Establish a baseline.

 Pre-set count for 10,000; read the required time from the NIXIE tubes.
- 2. Take a post-wash reading.

 Pre-set *timer* for the baseline established in step 1.
- 3. Read the percentage uptake directly from the NIXIE tubes.

 LOGIC™ provides direct ratio readout in percentage.

No conversions or calculations needed.

Minimal chance for error.

ABBOTT LABORATORIES • North Chicago, Illinois 60064
Radio-Pharmaceutical Products Division
World's Leading Supplier of Radio-Pharmaceuticals
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With every shipment of a Raytheon isotope scanner, you get a free Mike Bono.

Mike is our customer assurance specialist. And wherever our isotope scanning equipment goes, so goes Mike.

Not a salesman, not a serviceman, he's something more. A bonus for you, really. It's his job to insure that every Raytheon nuclear scanner is operating at peak efficiency in its new environment. That includes supervising the installation, training the staff, even running response curves and grey scales if need be. In short, Mike is the link between our equipment's arrival and vour acceptance.

His credentials? Over ten years' experience in nuclear medicine, including the teaching of various aspects of the science. Now if all this sounds like our equipment needs the help, it's just not so. The truth is though you didn't order Mike, and you may not even need him at all, we just thought you deserved the extra assurance. Raytheon Company, Medical Electronics, 190 Willow Street, Waltham, Mass. 02154. Telephone: 617-899-5949.

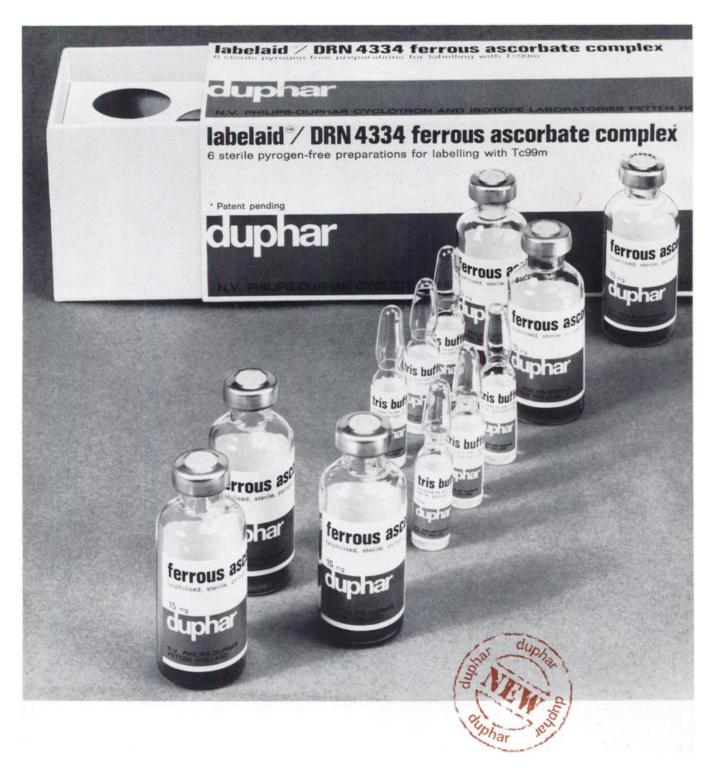
In medical electronics . . . Raytheon makes things happen.

all this...and a generator too.

What you want is Technetium-99m. What you get from New England Nuclear is that and a lot more.

The can opener we supply for example. Other extras are more important. Like the fractional elution and assay kits and the MOLY-CODDLE™ radiation reducer.





New from Duphar: labelaid™

Ferrous ascorbate can now be labelled with Tc99m in two steps only. Add sterile eluate to the vial with lyophilised ferrous ascorbate complex, and buffer. Ready for injection.

duphar





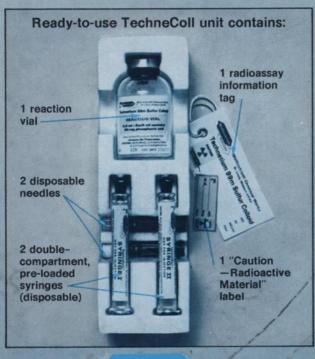
from Mallinckrodt... new convenient kit for preparation of Technetium-99m Sulfur Colloid

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.



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- Permits user to select a particular frame from a sequence being projected and examine closely.
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- To maintain excellent quality of film data.

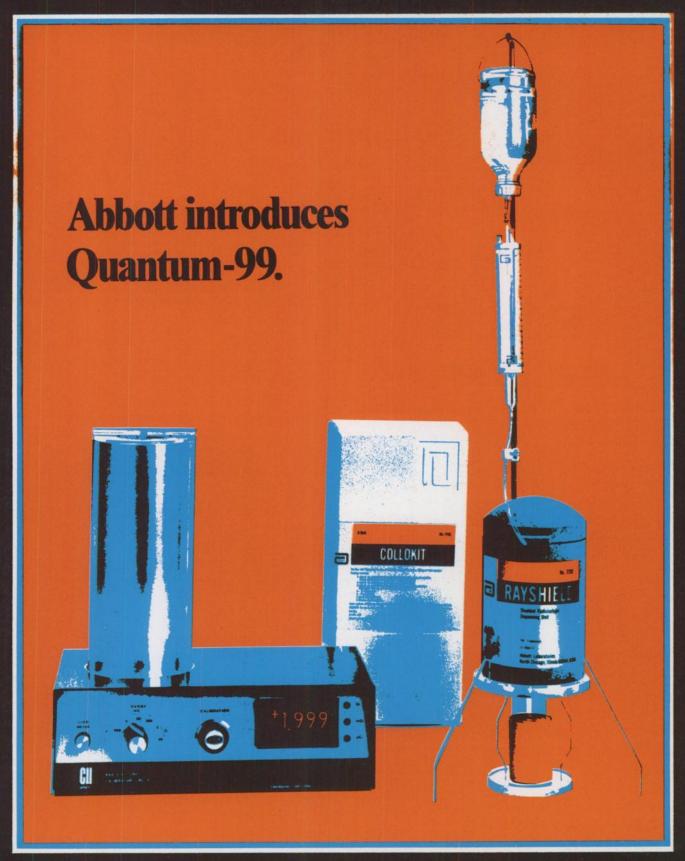
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Tel: (516) 621-6700



The coordinated Tc-99m generator, Dose Calibrator, and Sulfur Colloid Kit that clears up any doubts you may have about contamination, proper dosage, and Alumina or Moly breakthrough.

With Collokit[™]there's never any doubtthe suspension's clear.



Unlike other Sulfur Colloid Kits, Collokit^{IM} produces a cloudy suspension only when Alumina breakthrough or other contamination occurs. There's never any doubt whether the suspension is good.

And Collokit^M offers other advantages. There are fewer entries into the reaction chamber than with competitive products and this means the procedure is safer. The suspension is not vented during the heating/cooling cycle, so no outside air is drawn in and the product remains sterile. Convenient, economical individual units contain the components needed for one day's use.

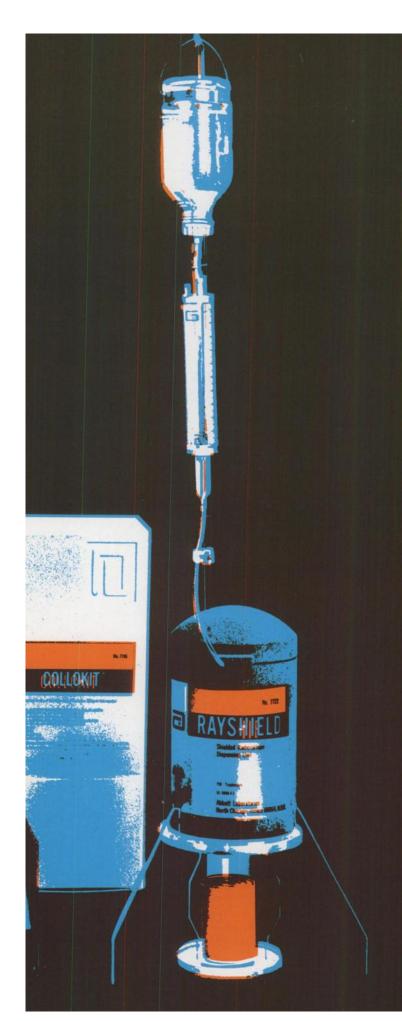
Collokit[™] is not recommended for systems with cluates containing oxidizing agents such as sodium hypochlorite. It is intended for use with the PERTGEN®-99 Technetium Generator Kit.



PERTGEN® is now shipped on Sunday and calibrated for the following Friday to give you all the activity you pay for, when you need it.

PERTGEN* is a "Think Thursday" program product, so you save duplicate shipping charges when you order it together with pre-filled, pre-calibrated in vivo "Think Thursday" diagnostic products.





The Capintec CRC-4, the ultimate Dose Calibrator.



Like most Dose Calibrators, the Capintec CRC-4 eliminates the two most common problems, determination of Mo-99 breakthrough and accurate measurement of Tc-99m activity. The similarity ends there.

The CRC-4 offers more features than any previous Dose Calibrator to make it more accurate, more reliable, and easier to use. For instance, a ten turn digital readout potentiometer gives almost unlimited isotope capabilities.

The CRC-4 offers the most advanced Mo assay system currently available, and it handles whole vial assay.

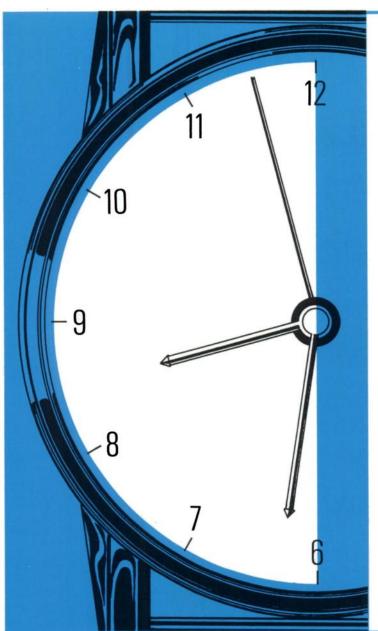
To make it more accurate, an individual background suppression control is built-in to allow you to eliminate background. And your results read out in microcuries, millicuries, or curies on an easy-to-read four digit display panel.

We've designed Quantum-99 to give you more accuracy, convenience and value than any other Tc-99m generator system available. If you want to clear up your doubts about contamination, dosage or breakthrough, talk to your Abbott representative about Quantum-99.

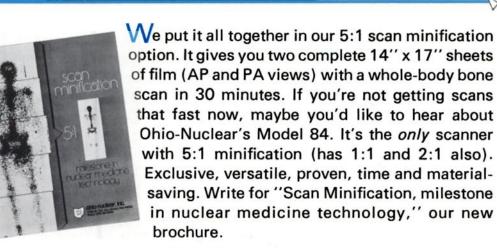


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The RENOTEC (Technetium 99m-Diethylenetriamine Pentagcetic Acid [DTPA]) Kit includes: 1) 5 vials (2 cc. each) of Sterile Reaction Solution providing 5 mg. ferric chloride per cc. and 2.5 to 5 mg. ascorbic acid per cc.; 2) 5 Unimatic® Disposable Syringes (2 cc. each) containing Sterile 0.07N Sodium Hydroxide Solution providing 2.8 mg. sodium hydroxide per cc.; and 3) 5 Unimatic Disposable Syringes (2 cc. each) containing Sterile DTPA Solution providing 2.5 mg. diethylenetriamine pentaacetic acid per cc. The TESULOID (Technetium 99m-Sulfur Colloid) Kit includes: 1) 5 vials (3 cc. each) of Sterile Sulfur Colloid Reaction Mixture providing 4 mg. sodium thiosulfate, 3 mg. gelatin, 8.5 mg. potassium phosphate, and 0.93 mg. disodium edetate per cc.; 2) 5 Unimatic Disposable Syringes (2 cc. each) containing Sterile 0.25N Hydrochloric Acid Solution providing 9 mg. hydrochloric acid per cc.; and 3) 5 Unimatic Disposable Syringes (2 cc. each) containing Sterile Buffer Solution providing 35 mg. sodium biphosphate and 10 mg. sodium hydroxide per cc.

TECHNETOPE II (Technetium 99m) Sterile Generator and TECHNETOPE <u>HiCon</u> (Technetium 99m) Sterile Generator provide a means of obtaining a sterile, non-pyrogenic supply of technetium 99m as sodium pertechnetate.

Warnings: The contents of the syringes in the Renotec Kit and the Tesuloid Kit should <u>not</u> be injected directly into a patient.

Usage in pregnancy—These agents should not be administered to women who are pregnant or who may become pregnant and during lactation unless the indications are exceptional and the need for the agent outweighs the possible potential risk from the radiation exposure involved.

Since sodium pertechnetate 99mTc may be taken up by the fetus and excreted in human milk, administration of the preparation during pregnancy and lactation is not recommended.

Formula feedings should be substituted for breast feedings if these agents must be administered to the mother during lactation.

99mTc-DTPA, 99mTc-S colloid, and sodium pertechnetate 99mTc should not be administered to persons less than 18 years of age unless the expected benefit outweighs the hazards. It should be noted that although radiopharmaceuticals are not generally used in individuals under 18, procedures using 99mTc-DTPA or 99mTc-S colloid are occasionally necessary in such patients. The low internal radiation dosage of ^{99a}Tc-DTPA makes it a very satisfactory agent when scans of the kidney are necessary in young patients. The low internal radiation dosage of ^{99a}Tc-S colloid makes it a very satisfactory agent when liver or spleen scans are necessary in young patients.

Radiopharmaceuticals, produced by nuclear reactor or cyclotron, should be used only by physicians who are qualified by specific training in the safe use and safe handling of radioisotopes and whose experience and training have been approved by the appropriate federal or state agency authorized to license the use of radioisotopes.

When obtaining elutions from Technetope II (Technetium 99m) Sterile Generator and TECHNETOPE <u>HiCon</u> (Technetium 99m) Sterile Generator proper radiation safety precautions should be maintained at all times. The column containing ⁹⁹Mo must not be removed from the lead shield at any time. There is a high radiation field surrounding an unshielded column. Solutions of sodium pertechnetate ^{99m}Tc withdrawn from the generator should always be adequately shielded. The early elutions from the generator are highly radioactive.

Important: Since material obtained from the generator may be intended for intravenous administration, aseptic technique must be strictly observed in all handling. Only the eluent provided should be used to elute the generator. Use a fresh milking tube and collecting vial for each elution; sufficient equipment is provided for this purpose. Do not administer material eluated from the generator if there is any evidence of foreign matter. NOTE: The Renotec (Technetium 99m-Diethylenetriamine Pentaacetic Acid [DTPA]) Kit and the Tesuloid (Technetium 99m-Sulfur Colloid) Kit are not radioactive. However, after the eluted 99mTc is added, adequate shielding of the resulting preparation should be maintained.

Precautions: When using radioactive material, care should be taken to insure minimum radiation exposure to the patient (i.e., by using the smallest dose of radioactivity consistent with safety and validity of data) as well as to all personnel directly or indirectly involved with the patient. Before a test is repeated in the same patient, the need should be carefully evaluated; this is especially true in younger patients. Each elution from Technetope II (Technetium 99m) Sterile Generator and TECHNETOPE HiCon (Technetium 99m) Sterile Generator should be assayed before use for 99mTc activity and for the possible presence of 99Mo. Material containing more than 5 microcuries of ⁹⁹Mo per dose of 'Tc pertechnetate exceeds Atomic Energy Commission limits and should not be administered. Poor gastrointestinal absorption of an oral dose of pertechnetate and resultant low blood radioactivity levels have been observed in the postprandial state, in seriously ill patients, and in a small number of normal, fasting individuals.



Since pertechnetate is concentrated by the gastric mucosa and the salivary glands, secretions of the digestive tract are radioactive and may cause artifacts on the cranial scan. Therefore, all possible care should be taken to avoid extracranial contamination, not only for the protection of patients and of hospital personnel but also to avoid obtaining a falsely positive scan due to extracranial radiation. Any condition which alters the blood-brain barrier or the normal cranial vasculature may cause abnormal areas of increased radioactivity. The brain scan with sodium pertechnetate 99mTc is therefore likely to be abnormal in patients with scalp confusions or acute head injuries. Following a craniotomy, uptake of radioactivity is increased throughout the operative field, usually for only a few weeks but in some instances for prolonged periods. Since cerebral radiographic techniques temporarily affect the blood-brain barrier, brain scanning with sodium pertechnetate 99mTc should precede cerebral angiography when possible, or should be postponed for several days thereafter. A negative brain scan does not rule out the possibility of a lesion and should therefore never be considered diagnostically conclusive. Because the normal vascular structures are more apparent on a ^{99m}Tc pertechnetate scan than on a radiochlormerodrin scan, and because the choroid plexus may be visible, it is particularly important to recognize the appearance of a normal brain scan when 99 Tc pertechnetate is used, in order to avoid incorrect interpretation.

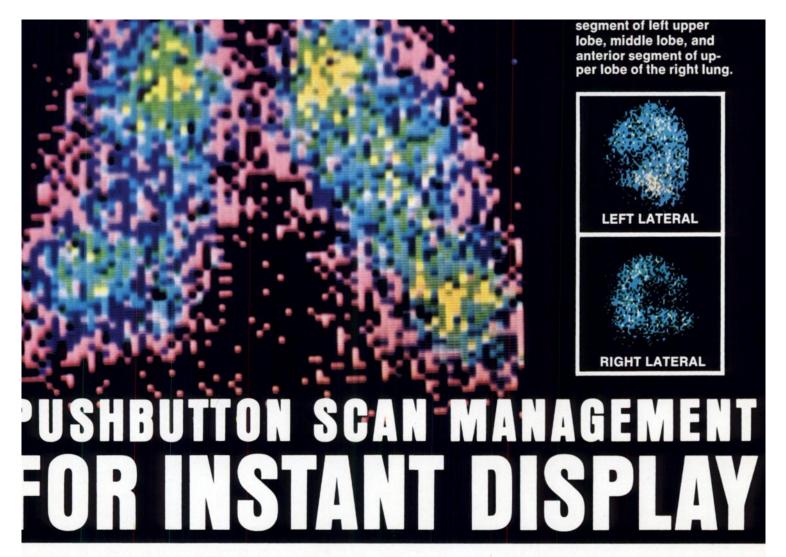
NOTE: The Renotec (Technetium 99m-Diethylene-triamine Pentaacetic Acid [DTPA]) Kit and the Tesuloid (Technetium 99m-Sulfur Colloid) Kit were designed for use with the sodium pertechnetate eluate obtained from a Technetope Sterile Generator. It is recommended that only Technetope Generators be used as the source of sodium pertechnetate with the Renotec Kit and the Tesuloid Kit unless the user has demonstrated that other sources of 99mTc are consistently compatible and meet the standards of Technetope (Technetium 99m) Generators.



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H60-036



Elscint's electronic video display for any scanner prouces scans with color (or black-to-white) that is fully inctional. Eight vivid colors or grays are displayed exactly and can be manipulated at will for easier, more accurate can reading.

You get instant manipulation for area-of-interest and rofile counts, background subtract (not background cut-if!)... isocount elimination selectively over the full count inge... continuous count readout of scan displayed... ad complete recovery of total scan data, no matter what he manipulation has been!

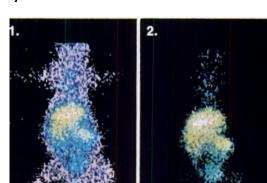
But there's more! You can record a complete scan in 40 econds or less on low-cost magnetic tape for permanent ecords, reference and teaching. Recovery of taped scans just as fast: 40 seconds or less to have the scan back on

the screen, exactly as it was made, accurate to the count!

And more! Elscint video displays can be used with virtually any scanner . . . to get the full, important diagnostic benefits of Elscint scan visualization.

And Still More! Taped or direct scans from the video display can be transmitted over regular telephone lines, anywhere! This makes it possible, for the first time, for outlying hospitals to get expert analyses of scans from the nuclear medical specialist at a central hospital — or in your office! — without delay or chance of misinterpretation.

Let us tell you more about Elscint's video display... such things as *now* service nationwide... and the built-in 12K memory... and an installed price under \$10,000 for a complete display that costs less than a conventional 12K memory alone! Call or write today for prompt action.





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Experimental 100-gram rat, scanned for tumor implant studies using Se⁷⁵. Note sharp delineation of liver and pancreas. 1. Complete scan. 2. Isocount colors eliminated in lower 25% of count range. 3. Isocount colors eliminated in lower 75% of range. All color elimination by pushbuttons.

BREAKTHROUGH E 1,30 Effective Thyroxine Ratio · EUTHYROID 1.20 · HYPOTHYROID A HYPERTHYROID 1,10 1,00 0.90 Graph showing (1) distinct separation between hypothyroid, euthyroid, and hyperthyroid states, and (2) correlation between effective thyroxine ratio and free thyroxine concentration. Shaded horizontal area shows euthyroid range for effective thyroxine ratio. Vertical shaded area shows euthyroid range for free thyroxine concentration. S. C. Thorson, M.D., private communication. Free Thyroxine Concentration - ng%

Res-O-Mat ETR Test

indicates metabolically active thyroxine IN A SINGLE PROCEDURE*

With the Res-O-Mat ETR test you can now assess the level of metabolically active thyroxine in a single test.

Separate determinations of serum T3 uptake and T4 are no longer necessary.

The new Res-O-Mat ETR test is a direct means of determining Effective Thyroxine Ratio, a reliable indication of thyroid function. It effectively compensates for the effect of estrogen medication, pregnancy, and other factors affecting the level of thyroxine binding globulin.

The Res-O-Mat ETR test procedure is straightforward and reproducible. Pipettings are fewer. Time and temperature control are not critical. After simple processing and incubation on the rotator, the Effective

Thyroxine Ratio is obtained by dividing the count rate of the standard (supplied in the kit) by the count rate of the patient serum. There is no curve to draw, no ice baths, no precount-postcount determination.

Effective Thyroxine Ratio is the first direct, single-test measurement having a clinically proven² correlation with the level of metabolically active ("free") thyroxine. Send in the coupon for detailed supporting information about the new test of choice for determination of thyroid function.

Availability
Res-O-Mat ETR Test Kits
are available in 12- and
60-test sizes.

- 1 Mincey, E. K. and Brown, J. L., Thyroid Function Testing: a New Approach. Submitted for publication.
- 2 Mincey, E. K. and Thorson, S. C., et al.: A New Parameter of Thyroid Function—the Effective Thyroxine Ratio. Submitted for publication.

*Patent applied for.

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- Send me full information on the Effective Thyroxine Ratio method.
- Have your representative call to arrange a Res-O-Mat ETR test evaluation.

Name
Laboratory or Hospital

Title

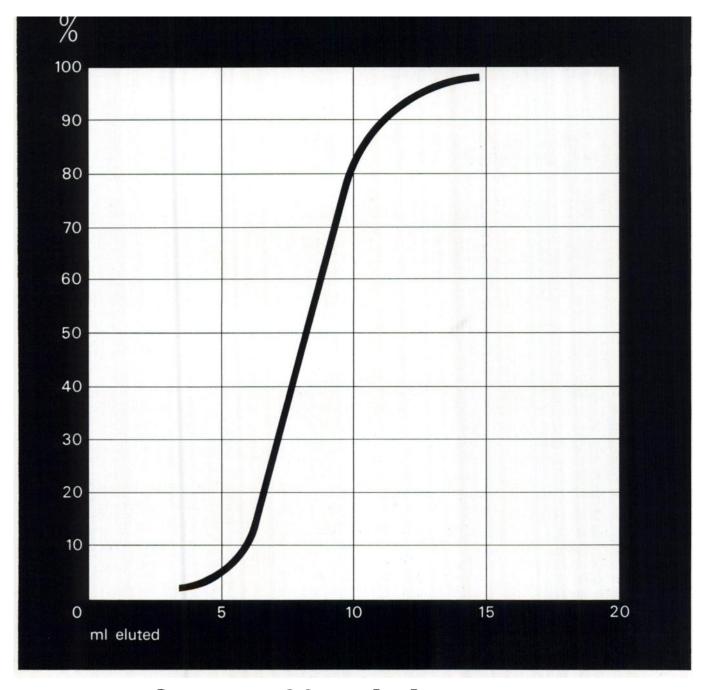
Street

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- Now doing radioactive thyroid tests.
- ☐ Not now doing radioactive thyroid



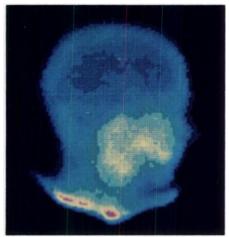
Stercow 99m elution curves are the greatest!

Stercow 99m provides the highest Tc99m activities with the highest concentration. That is why our curves are so great. That is why the elution volumes are small. You can have curves as good as ours - with Stercow 99m.





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



Unenhanced Scintigram

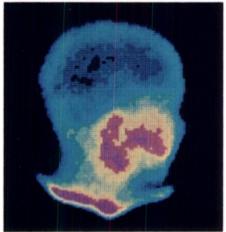


Image enhancement range: 8-70% of maximum count

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.

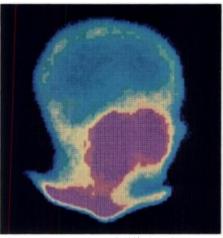


Image enhancement range: 3-55% of maximum count

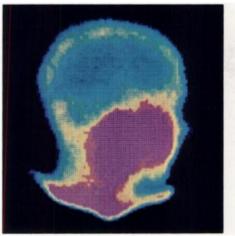


Image enhancement range: 5-50% of maximum count

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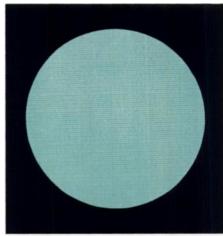
Picker's Image Enhancement System. How does it work?

Basically, by providing complete uniformity correction, contrast enhancement, background suppression, and color readout. 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.

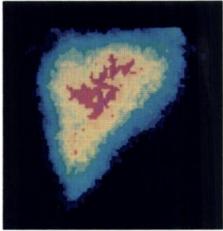
In effect, this computerized system improves the "target-to-nontarget ratio." Actually, by using two image views (e.g., AP and lateral), one achieves a form of electronic or "computer tomography." The two views accurately locate the lesion and enhancement removes the interfering counts of nontarget tissue in order to permit clearer visualization of the target tissue. (It is worth noting that conventional tomographic techniques cannot suppress these superfluous counts and, hence, cannot improve the target-to-nontarget ratio.)

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

Area Code



Uniformity corrected flood field



Number

A P Liver

be plugged in and used immediately because all the required programming 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.

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 that's generating excitement 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, 333 State Street, North Haven, Connecticut 06473. Or complete the attached Reply Card.

□ Dynacamera 2.□ Please have your representative call for a	Dynamic Function Study Accessory.
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Title	
Department	
Institution	
Address	







New Tetralute⁴ Tetralute⁴ 125 | Column T-4 Test for Thyroid Function

Cuts time and steps compared to tests you may be using now

Eliminates centrifuging, incubating and evaporating... cuts testing time significantly

TETRALUTE® is a T-4 test that takes fewer steps and less time than older methods. A technologist can do approximately 60 tests in only 2½ hours.

TETRALUTE measures total thyroxine (both free and bound T-4). It provides information comparable in value to PBI testing, but test results are not distorted by inorganic or organic iodine which so often renders PBI measurements invalid.

In a comparative study, results obtained with TETRALUTE showed a correlation coefficient of 0.95 with results obtained with the Murphy-Pattee T-4 method.* Compared to such T-4 tests, however, TETRALUTE eliminates three time-consuming steps and the need for laboratory equipment to perform them. TETRALUTE

fuging of specimens, evaporation to dryness plus incubation and subsequent cooling.

For T-3 testing

TRILUTE® requires fewer manipulations than most other T-3 methods. No timing or incubation is required, and a complete test takes only 20 to 25 minutes, compared to one to two hours with older methods.

Certain clinical conditions and treatment with certain drugs can affect the results of thyroid tests so that a euthyroid patient may appear to be hyper- or hypothyroid. When interfering factors are



suspected, a "free thyroxine index" which is more representative of true thyroid status, should be calculated from T-3 and T-4 results.

One of the easiest-to-use counting instruments

For added convenience and reliability, both TETRALUTE and TRILUTE may be used advantageously with THYRIMETER—a self-calculating gamma counting instrument, which displays percent retention automatically and presets all adjustments.

*Braverman, L. E.; Vagenakis, A. G.; Foster, A. E., and Ingbar, S. H.: Evaluation of a Simplified Technique for the Specific Measurement of Serum Thyroxine Concentration, J. Clin. Endocrinol., in press.

Tetralute®

125 | Column T-4 Test for Thyroid Function

Trilute®

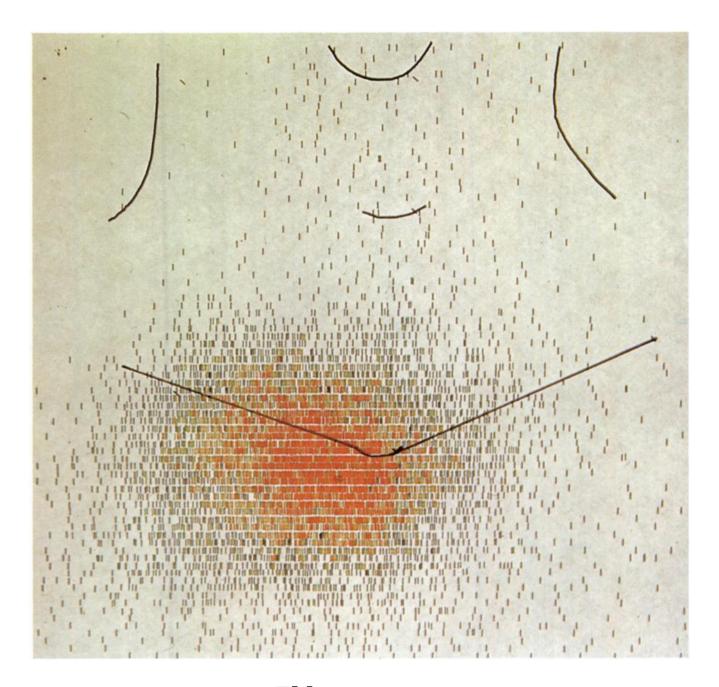
125 | Column T-3 Test for Thyroid Function

Thyrimeter® Direct Ratio Reading Gamma Counter

Ames Company

Division Miles Laboratories, Inc.





This scan was impossible without Ga67

Of course Ga67 is not the single criterion but it represents a valuable contribution to the diagnosis of bronchial carcinoma, thyroid tumours and systemic (R.H.S.) diseases. By its tumour cell affinity Ga67 produces a high tumour to non tumour ratio. It gives optimal scanning with gamma energies of 92, 185 and 296 keV. Supply is no problem - it is available weekly from Duphar.





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CDS introduces a new way to develop your own 35mm and 70mm film, while the patient is still in the room.

Our way you have no mess or wet chemicals to prepare or mix. Not even a darkroom is needed. It's all done in broad daylight with the little box above called a PoroPak™. It measures 13/4 x 31/4 x 5 inches.

After you've finished your flow studies, rewind b/w film leaving a little leader exposed. Open PoroMat* and place as directed into PoroPak. Then insert film with emulsion side down. Close cover to PoroPak and crank handle till it stops. As you start to crank handle, the process has started.

5 minutes later film is fully developed and fixed. Open cover of PoroPak and take out developed film. Inspect flow

studies and let the patient go.

The PoroPak comes in two sizes. One for 35mm film. It costs \$204. 12 rolls of PoroMat is \$27. The other is for 35/70mm film. It costs \$310.

Send in your order today for the 5 minute developing kit, so you don't have to wait any longer. Fill out coupon below and mail.

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Centereach, New York 11720

Gentlemen: I want to develop my film in 5 minutes here is my order:

PoroPak Machine: 35mm film, \$204.

PoroMat 12 rolls \$27. ☐ 35/70mm film, \$310.

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Address_ City_

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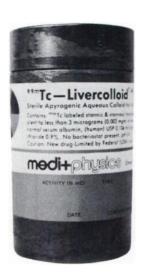


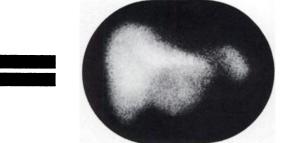






Posterior View
Thoracic-Lumbar Vertebral
Bone Marrow in
Patient with Cirrhosis





Anterior View
Multiple Space Occupying Lesions
in Liver
Normal Spleen

Do-it-yourself Instant Livercolloid tmReagent (not a kit but a Reagent) is an aqueous solution of hydrolyzed stannous chloride. Mix with ^{99m}Tc-Pertechnetate in syringe, wait 7-10 minutes and the efficiently labeled ^{99m}Tc colloid is ready to use. No heating, buffering or other procedures to follow. Supplied in 2.2 ml single dose ampules, sterile and pyrogen free.

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angles and elevations. Besides positioning the patient comfortably during lateral and A.P. scans, the head rest can be adjusted for a Towns view (chin tucked in). The table has a removable lucite panel for use with dual-probe systems. It allows the lower probe to extend through the table (and come very close to the patient's head), thus eliminating table-top attenuation and assuring correct dual probe/collimator geometry correlation.

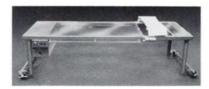


Table at lowest height (22") with Head Rest. Lucite panel has been removed.



Table at full 36" height. without Head Rest.



12-824 Motorized Table \$1325.00† 17-350 Foam Pad Mattress 50.00



Head Rest lowered for A.P. view.



Head Rest is angled for Towns view.



Head Rest raised for lateral view.

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- Unusual frame design permits unobstructed positioning of detectors and probes.

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12-815 Dacron top \$625.00† 12-817 Lucite top...... 740.00†

Write for Bulletin 93-B

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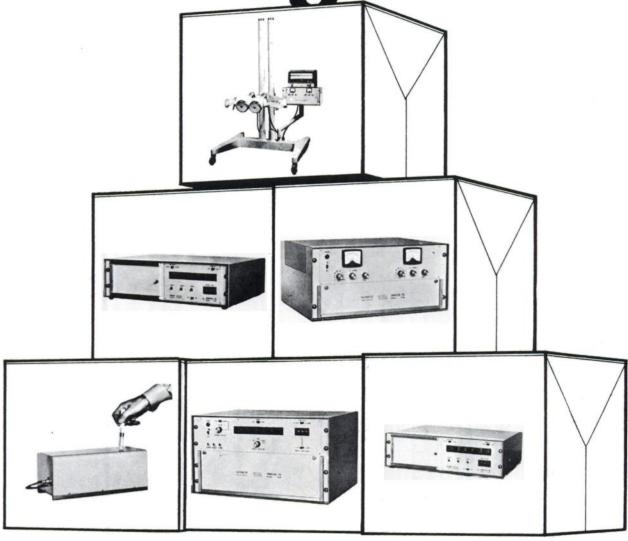


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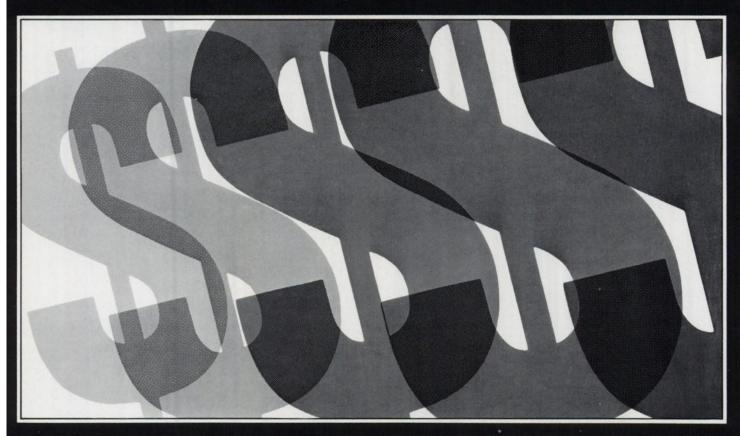
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So we started thinking.

First, we thought about positioning. How could we simplify it: The solution, we decided, was to design a counterbalanced detector assembly. One which a 90 pound female technologist can push around with her finger. And one which doesn't make you wait for motors and gears to bring the detector into place. You merely position it where you want it, when you want it there.

We also thought about the patient. Which is another reason the counterbalanced detector head came into existence. It's quiet. With the Radicamera, your patients remain unperturbed and relaxed during study set-up.

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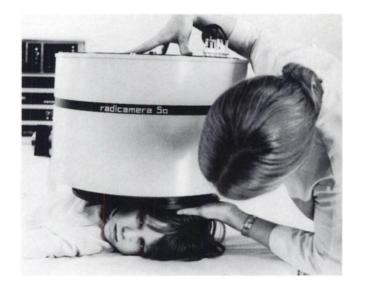
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XXXVIII Volume 12, Number 11



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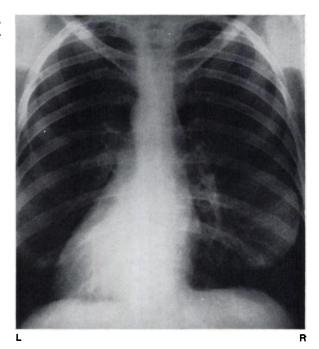
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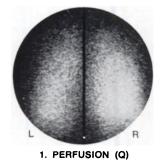
STANDARD CHEST RADIOGRAPH. INVERTED AP VIEW.

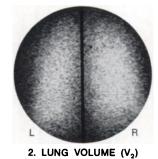
THE PHO/GAMMA SCINTILLATION CAMERA.

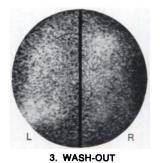


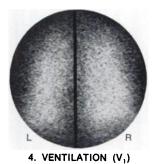


SERIAL SCINTIPHOTOS. POSTERIOR VIEW.

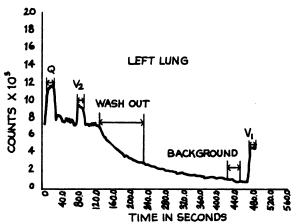


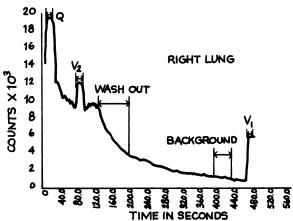






TIME-ACTIVITY HISTOGRAMS.





The Pulmonary Study

Evaluation of Pulmonary Perfusion and Ventilation with the Nuclear-Chicago Pho/Gamma® Scintillation Camera

This technique for dynamic regional pulmonary evaluation uses 133Xenon and the Pho/Gamma Scintillation Camera. The camera is equipped with the diverging hole collimator, allowing the entire lung field to be visualized.

SETTING-UP. The collimator is placed against the posterior thorax. Positioning flexibility of the Pho/ Gamma detector permits this study to be performed with the patient in either the upright or supine position, thus accommodating even the patient with limited or no mobility.

ISOTOPE AND DOSE. The clinician administers 30 mC of ¹³³Xe in sterile solution intravenously as a bolus injection to an antecubital vein. The patient exhales the xenon into a spirometer; he also rebreathes from the spirometer, thus providing data for determination of ventilation.

DATA ACCUMULATION. Serial scintiphotos are taken in the divided output mode, each representing approximately 60,000 counts in a 10-15 second period. (Note that Pho/Gamma can be operated on either a preset-time, preset-count, or preset-time/count basis as desired.) Also, as illustrated, time-activity histograms were made using a dual-channel ratemeter/dual-pen chart recorder.

If desired, this data could have been recorded in high-resolution digital form, on the Nuclear-Chicago Data-Store/Playback Accessory, or in digital form on the CDS-4096 Clinical Data System. Both of these system accessories allow stored patient data to be replayed, processed and manipulated in a variety of ways to produce additional qualitative and quantitative data.

EVALUATION. For comparison purposes, the standard chest radiograph on the opposite page shows a patient presented with mild dyspnea. The four serial scintiphotos illustrate the various stages of the pulmonary study. Finally, the recorder plots of each lung constitute time-activity histograms of a complete 8minute study.

In each histogram, the initial rise indicates passage of xenon into the lungs. Breath-holding at this time permits accumulation of data for determination of regional perfusion (Q. scintiphoto 1). Then, rebreathing from the spirometer to equilibrium is followed by a second deep breath to obtain data on lung volume (V2, scintiphoto 2). Wash-out follows on expiration (scintiphoto 3), after which a final deep breath is taken to determine regional ventilation of a single breath $(V_1, scintiphoto 4).$

CONCLUSIONS. The several data presentations shown here demonstrate that in this case blood flow to the left lung is considerably less than to the right lung. The third scintiphoto shows an irregular pattern of delayed wash-out, characteristic of obstructive lung disease.

This Pho/Gamma 133Xenon technique has been routinely performed on a large number of patients with a variety of lung disorders. It is felt that this data, when augmented with other diagnostic information, will assist the physician in making more definitive diagnoses. The results illustrate the severity of the disease states to be evaluated as well as the effectiveness of treatments indicated for the specific disorder.

Nuclear Reviews

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CM-176

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The typical scintillation camera gives you a scintigram that helps indicate the presence of a lesion. And only that. But one camera (and only one) has a built-in system to help *characterize* the lesion.

By offering this built-in "lesion characterization capability," Dynacamera™ 2 yields more diagnostic information than any other camera.

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This capability permits functional comparisons of one region vs. another. And the comparisons are quantitative. (Output includes histogram plots of both regions.)

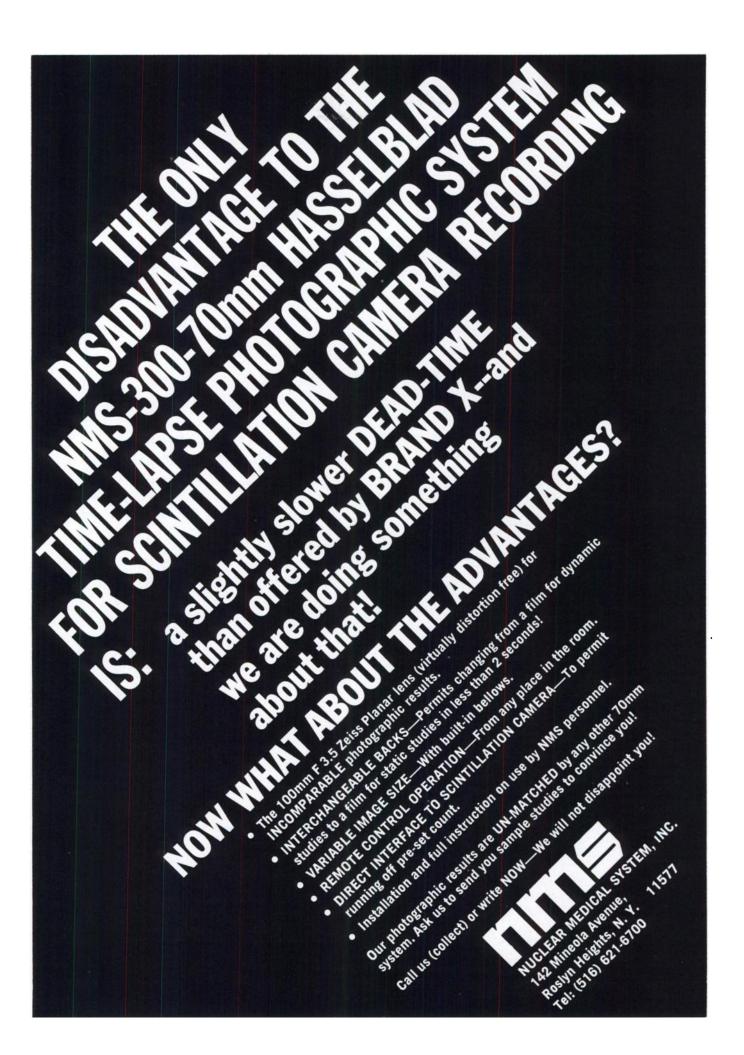
The Dynacamera 2 also permits imaging of two different radiosotopes simultaneously. Plus quantitative data in the form of histograms.

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Write for free copy of "HOW TO CHECK YOUR SCINTILLATION CAMERA & SCANNER"

For more details, ask for Bulletin 88-B



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THE SOCIETY OF NUCLEAR MEDICINE 19th ANNUAL MEETING

July 11-14, 1972

Sheraton-Boston Hotel

Boston, Mass.

SECOND CALL FOR SCIENTIFIC EXHIBITS

The Scientific Exhibits Committee announces that abstracts of exhibits are now being reviewed for the 19th Annual Meeting. Abstracts of exhibits, large or small, are welcomed from members, nonmembers and organizations. Exhibits supporting scientific papers to be presented are encouraged. View boxes for transilluminated material will be available.

Abstract format: Abstracts must be submitted on a special abstract form for scientific exhibits which is available from the Society of Nuclear Medicine, 211 E. 43rd Street, New York, N.Y. 10017.

Scientific Exhibit Awards. The Society is pleased to announce the presentation of Gold Medal, Silver Medal, and Bronze Medal awards for outstanding exhibits in each of the following categories: Clinical Nuclear Medicine; Instructional; and Biophysics and Instrumentation. Judging is based on scientific merit, originality, display format and appearance. Judging will occur on the first full meeting day.

Abstract deadline: Abstracts should be submitted on or before April 1, 1972 to:

Russell C. Briggs, M.D.
Division of Nuclear Medicine
Maine Medical Center
Portland, Maine 04102

Volume 12. Number 11 LXV

Here are the four questions before buying a rectilinear

Does the control panel follow the set-up sequence in a logical left to right pattern?

GRAPHIC does, and the detector head has a built-in rate meter to make positioning easier and more accurate. It's obviously designed with the user in mind.

Does it offer a choice of digital mode scanning or selectable fixed levels of film density, contrast enhancement and background erase?

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Before you buy a rectilinear scanner, ask your Abbott Radio-Pharmaceutical Representative about the GRAPHIC**.

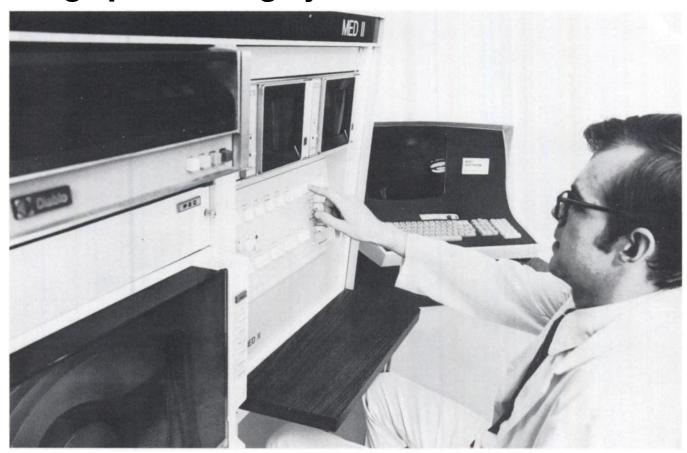




you should ask scanner:



MED II has all the clinical capabilities you expect from a computerized image processing system.



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MED II: what it is

MED II is a data acquisition, storage and playback system. But it is also much more. MED II is a diagnostic image enhancer, a clinical data processor, plus a curve analyzer and a fully programmable 16k computer.

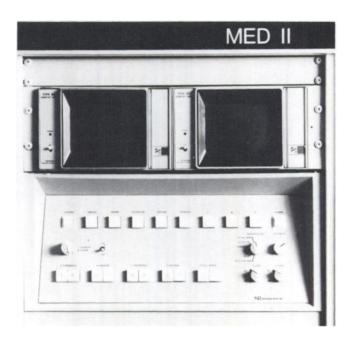
MED II and you

With the MED II, you can record dynamic and static gamma camera images. You can enhance these images in accordance with several clinically tested protocols. You can generate time/activity histograms, and derive data, which cannot otherwise be visualized, from the resultant curves. In addition, you can correct for camera response non-uniformities, add and subtract either sequential or non-sequential images from each other; and perform several additional image manipulation routines which yield improved visualization and higher confidence levels.

MED II: its different

First, the MED II is pre-programmed. To execute a complex clinical protocol, the operator has only to type in the appropriate two letter command.

Second, image enhancement has been vastly simplified. For example, contrast manipulation is now achieved with continuous action pushbuttons.



Third, the image data are now recorded on a high-speed disc. After a given frame or frame sequence is specified, it can be displayed within milliseconds. And magnetic tape continues to be available for bulk storage.

Fourth, the comprehensive image data analysis capability available in Nuclear Data's earlier systems has been extended still further with the MED II. Extraction of exponentials, normalization, curve smoothing and the many additional data analysis routines available with MED II are more refined than ever. And they are easier to execute.

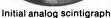
MED II as a storage retrieval system

As a storage device, the MED II records complete studies on a rapid access disc. While acquiring data, frame rates of up to 8 frames-per-second may be specified. If desired, the frame rate may be more rapid during some intervals of the study than others. For example, in a renal function study, it may be desirable to have a rapid frame rate during the first few minutes, and a slower rate during the more gradually changing excretory phase. Another important feature: with the MED II, a recorded frame or frame sequence can be accessed for replay in a matter of milliseconds.

MED II as a static image processor

MED II can be considered a "perception extender." Image enhancement, for instance, allows one to elaborate subtle differences in displayed activity to the point where they can be discerned. Improved delineation of organ contours, lesion boundaries, and other abnormalities are prominant advantages to be gained with the MED II.







Same data processed by MED II

MED II as a dynamic image data processor

As a dynamic processor, the MED II brings a wide range of data quantification and enhancement into the clinician's repertoire.

Renograms, cerebral blood transit, cardiac and pulmonary function studies are all included among the major dynamic study applications of the MED II. For example, separate areasof-interest within a recorded renal execretion study may be specified by the clinician. These areas-of-interest may be assigned to correspond only to the right and left renal contours, or to regions within the kidneys. Then, after appropriate brief instructions, complete right and left renograms appear on the MED II oscilloscope. Since the renograms represent activity only within the defined areas-of-interest, distorting background data, as well as activity within the ureters and bladder, do not mask renal activity. And in pulmonary function analyses, the ability of the MED II to generate dynamic function curves for up to twelve areas-of-interest means that right versus left lung activity comparisons can be made for six different regions simultaneously. Dynamic activity curves for comparing comparable regions within the cerebral hemispheres and right versus left carotid blood transit can also be available for your evaluation within seconds.



MED II as a fully programmable 16k computer

Nuclear Data has incorporated its own fully programmable ND812 minicomputer into the MED II System. As a result, you can program the MED II to include new protocols.

To enable you to establish additional programs, to modify existing ones, and to apply the ND812 in solving other data analysis problems, Nuclear Data has developed NUTRAN (a variant of FORTRAN). NUTRAN is a powerful programming language originated exclusively for nuclear medicine image data processing. It's designed to let you, the clinician, write your own programs, in English, using a minimum number of instruction steps.

And more!

New technics for obtaining increased diagnostic clinical data through image enhancement and analysis are constantly being developed by ND Data System users. And, with their help, ND has found several ways to make the communication between diagnostician and clinical computer a productive and rewarding interaction.

Write, or call:



Post Office Box 451 Palatine, Illinois 60067 Tel: 312/529-4600

Nuclear Data Inc. (U.K.) Rose Industrial Estate Cores End Road Bourne End, Bucks., England Tel: 22733

Nuclear Data, GmbH Mainzerlandstrasse 29 6 Frankfurt/M, Germany Tel: 23 11 44

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The ruggedized meter has an easy-to-read four-decade logarithmic scale. This log read-out prevents scale "searching" in rapid-change situations and greatly reduces the likelihood of reading errors. Operation is simple.

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And remember, our portable LOG-SERIES is also an area monitor. Very practical. Very efficient. And not very expensive. For complete details and specifications, write for our 9100 Series data sheet. 1-218





21 million Americans have high blood pressure. But 50 percent of those who have it, don't know it.

When blood pressure goes higher than it should, and stays high, it sets the stage for heart attack or stroke.

Most cases of high blood pressure can be controlled with drugs and other advances in treatment. That's why you should see your doctor regularly. Only he can tell if you need help.

A public service message from your Heart Association



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35mm, Motor Driven Nikon Camera with extreme resolution lens. Allows up to 36 exposures.

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Meet the new fast scanners from Picker.

Why new scanners?

We asked hundreds of people what they liked about scanners. "Resolution," they said. And what didn't they like? "Too slow." Okay, here are two new fast scanners from Picker: the fast Magnascanner® and the fast Dual Magnascanner®. They're improved in other ways, too, as you'll soon see.

What's been changed?

These new Magnascanners are fast instruments because they're computerized. The implication of this is that the entire setting-up procedure has been radically simplified and

speeded. These machines respond to your commands by making many of the decisions (consistent with the desired output, of course) automatically. Since most of the calculations and adjustments are eliminated, the calibration is virtually instantaneous: these Magnascanners can actually be set up for use in a matter of seconds.

Does the computer limit the user's options?

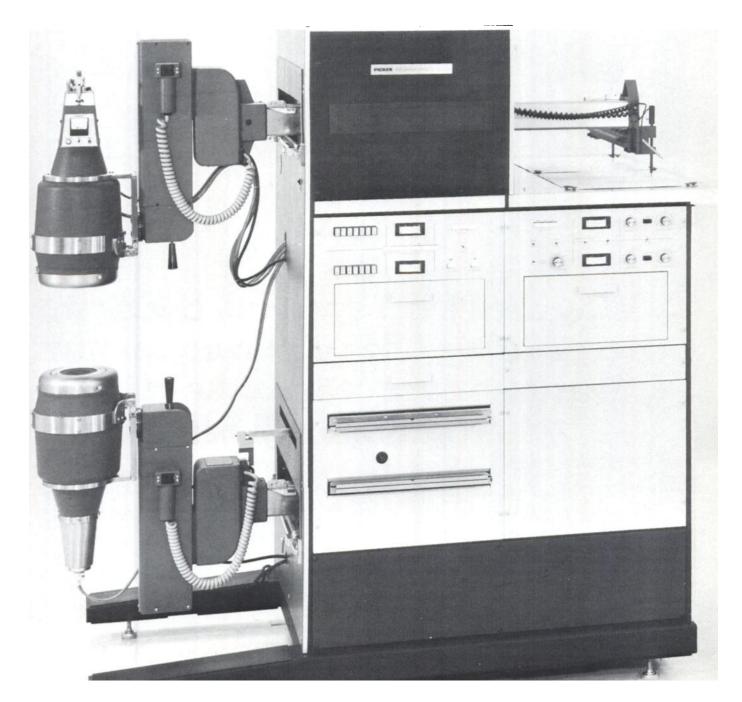
Suppose that you wish to set the scan parameters individually for a specific application. Simple. An alternative manual control overrides the computer and provides maximum flexibility.

What else?

Here are some of the other major user benefits inherent in these new digital Magnascanners.

Consistent scans: with the scan parameters automatically optimized, overall scan quality and consistency are superior and interpretation is improved.

Repeats minimized: automatic calibration provides more consistently usable scans and, hence, minimizes the



annoyance, time, and cost of retakes for you and your patients.

Productivity improved: rapidity of set-up, coupled with the reduction in the need for retakes, significantly reduces total study time.

Training simplified: another obvious advantage of automatic calibration.

Color printer improved: the new color dot scans are simply the highest quality color scans obtainable at any scanning speed. And color ranges are set up automatically.

How about the new, fast Dual Magnascanner?

All of the improvements described above are shared by both the new Magnascanner and the new Dual Magnascanner. In addition to these, the Dual Magnascanner also features: dual isotope and subtraction, improved uniformity, and matching of scans between the lower and upper probes.

How do I learn more?

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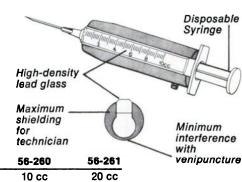
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*Patent Pending

For more details, ask for Bulletin 451-A

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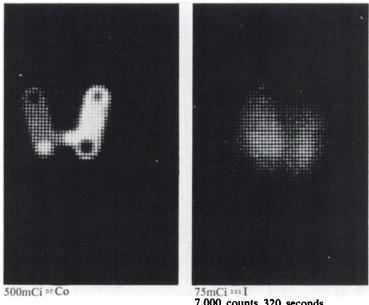
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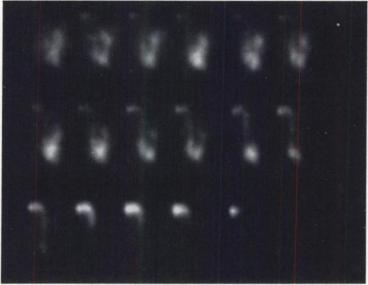
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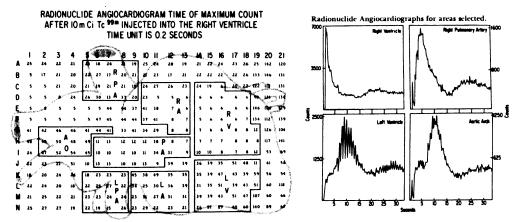


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Actual CRT image of a IV injected bolus of 12.4mCi •• TC passing through the right heart and pulmonary arteries. Average counting rate during this study was 24,000 counts per second.



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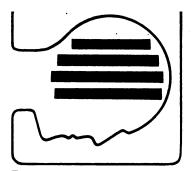
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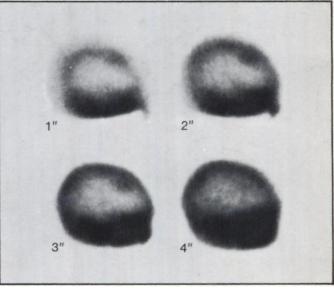
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