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.
The T-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.

With 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.
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 your 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.
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.

Then there are things you don’t see, like our testing of every generator we ship for sterility, non-pyrogenicity, Molybdenum-99, aluminum, and alumina and other particulates. And perhaps most important, the people at NEN, who are dedicated to getting your generator to you when you want it, and who are there when you need them.

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

N.V. PHILIPS-DUPHAR CYCLOTRON AND ISOTOPE LABORATORIES PETTEN HOLLAND
TechneColl
Kit for preparation of Technetium 99m Sulfur Colloid

CAUTION: NEW DRUG — Limited by Federal (U.S.A.) Law to Investigational Use

READ ENTIRE PROCEDURE BEFORE USE (SEE PACKAGE INSERT)

Mallinckrodt Chemical Works
St. Louis, Missouri 63160

PACKAGE CONTAINS
Test Technetium-99m Sulfur Colloid preparation units
Each unit contains:
1. 1.5 mL Technetium-99m Sulfur Colloid preparation
2. 2 mL Disodium EDTA solution

For immediate-use vial protocol:
1. Dilute Technetium-99m Sulfur Colloid with Disodium EDTA solution to the desired concentration.
2. Administer the diluted solution as directed.

For delayed-use vial protocol:
1. Store the diluted solution at room temperature up to 72 hours.
2. Administer the diluted solution as directed.
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 TechnoCol™ 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.
Features

MULTIPLE FRAME VIEWING — Permits user to see several static or dynamic studies simultaneously side by side.

ACCEPTS 35mm & 70 mm — Will accept either the 35mm or 70mm formats interchangeably.

SINGLE FRAME SELECTOR — Permits user to select a particular frame from a sequence being projected and examine closely.

HIGH RESOLUTION OPTICS — To maintain excellent quality of film data.

We have now filled the Gap in the method of Projecting the 35 mm & 70 mm Studies!

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JOURNAL OF NUCLEAR MEDICINE
Abbott introduces Quantum-99.

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 doubt—the suspension's clear.

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

And Collokit™ 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 eluates 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.
make whole-body bone scans in 30 minutes... with scan-minification

We put it all together in our 5:1 scan minification option. It gives you two complete 14'' x 17'' sheets of film (AP and PA views) with a whole-body bone scan in 30 minutes. If you’re not getting scans that fast now, maybe you’d like to hear about Ohio-Nuclear’s Model 84. It’s the only scanner with 5:1 minification (has 1:1 and 2:1 also). Exclusive, versatile, proven, time and materials-saving. Write for “Scan Minification, milestone in nuclear medicine technology,” our new brochure.

ohio-nuclear, inc.
7700 St. Clair Ave., Mentor, Ohio 44060.
Phone: (216) 951-0900
Get the highly concentrated 99m Tc eluate

Squibb — HiCon provides highly concentrated 99mTc eluate in smaller volume

Advantages of the Squibb HiCon Generator:

- Particularly valuable — because there's a smaller volume for injection with the highly concentrated eluate.
- With greater flexibility — provides smaller-volume, highly concentrated 99mTc eluate or the desired concentration in larger volume for certain organ scanning.

HiCon. It's the generator you can use whenever a high concentration of technetium 99m with a low volume is indicated or when the eluate is combined with other compounds in these Squibb-designed kits:

Renotec® (Technetium 99m-Diethylenetriamine Pentaacetic Acid [DTPA]) Kit for kidney scanning and Tesuloid® (Technetium 99m-Sulfur Colloid) Kit for liver and spleen scanning.

For brief summary, see next page.

New Technetope® HiCon
(Technetium 99m) Sterile Generator
Fission Product 99 Mo
The RENOTECH (Technetium 99m-Diethylenetriamine Pentaacetic 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 TESUOID (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 0.03 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 HiCon (Technetium 99m) Sterile Generator provide a means of obtaining a sterile, non-pyrogenic supply of technetium 99m as sodium pertechnetate.

WARNING: The contents of the syringes in the Renotec Kit and the Tesloid Kit should not 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 colloids are occasionally necessary in such patients. The low internal radiation dosage of 99mTc-DTPA makes it a very satisfactory agent when scans of the kidney are necessary in young patients. The low internal radiation dosage of 99mTc-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 HiCon (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 99mTc 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 eluted from the generator if there is any evidence of foreign matter. NOTE: The Renotec (Technetium 99m-Diethylenetriamine Pentaacetic Acid [DTPA]) Kit and the Tesloid (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 Tesloid Kit unless the user has demonstrated that other sources of 99mTc are consistently compatible and meet the standards of Technetope (Technetium 99m) Generators.

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 contusions 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 99mTc pertechnetate scan than on a radiocolloid scan, and because the choroidal plexus may be visible, it is particularly important to recognize the appearance of a normal brain scan when 99mTc pertechnetate is used, in order to avoid incorrect interpretation.

NOTE: The Renotec (Technetium 99m-Diethylenetriamine Pentaacetic Acid [DTPA]) Kit and the Tesloid (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 Tesloid Kit unless the user has demonstrated that other sources of 99mTc are consistently compatible and meet the standards of Technetope (Technetium 99m) Generators.
Elscint’s electronic video display for any scanner produces scans with color (or black-to-white) that is fully functional. Eight vivid colors or grays are displayed exactly and can be manipulated at will for easier, more accurate scan reading.

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

But there’s more! You can record a complete scan in 40 seconds or less on low-cost magnetic tape for permanent records, reference and teaching. Recovery of taped scans is 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.

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

Mallinckrodt Chemical Works
P. O. Box 5439
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St. Louis, Missouri 63160

☐ Send me full information on the Effective Thyroxine Ratio method.
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☐ Now doing radioactive thyroid tests.
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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.

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.
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 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.

I would appreciate further information about your:

☐ Image Enhancement System.
☐ Pulmonary Analysis Accessory.
☐ Dynacamera 2.
☐ Dynamic Function Study Accessory.
☐ Please have your representative call for an appointment.

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A technologic advance in T-4 testing
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 fuzzing 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.

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.
DEVELOP YOUR OWN 35MM OR 70MM FILM IN 5 MINUTES.

WITH POROPAK™ IN BROAD DAYLIGHT.

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 1¾ x 3¼ 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.

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PoroPak Machine: □ 35mm film, $204.
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Scintigraphic Imaging of Liver, Spleen and Bone Marrow

Do-it-yourself Instant Livercolloid™ Reagent (not a kit but a Reagent) is an aqueous solution of hydrolyzed stannous chloride. Mix with 99mTc-Pertechnetate in syringe, wait 7-10 minutes and the efficiently labeled 99mTc 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.

Ready-made 99mTc-Livercolloid™ contains 99mTc-hydrolyzed stannous chloride colloid, human serum albumin stabilized in 0.9% saline solution. Ready-to-use for reticuloendothelial organ studies. 5 mCi in 2.5 ml (2mCi/ml) Technetium-99m calibrated for 12 noon PCT (+10% over-fill). Stable, contains no gelatin or dextran. Sterile and pyrogen free.

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MOTORIZED HI-LO TABLE

- For comfortable patient transfer without physical strain to technicians.
- Removable lucite panel (under patient's head) eliminates table-top interference with the lower probe of dual-probe systems.
- Exclusive Adjust-O-Scan™ Head Rest™ provides maximum comfort during lateral, A.P. and Towns-view scans.

This variable-height motorized table solves the problem of handling patients who are difficult to maneuver and who cannot place themselves on the average high table. Patients can be easily transferred to and from any level within the table's vertical range (22" to 36" above the floor) without physical strain to the patient or technician.

The table includes the exclusive Adjust-O-Scan™ Head Rest™ which adjusts to varying 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.

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

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

Table at full 36" height, without Head Rest.

SCANNING and GAMMA TABLES

GAMMA IMAGING TABLE

- "Floating" top moves lengthwise up to 12" in either direction.
- Unusual frame design permits unobstructed positioning of detectors and probes.

For positioning and maneuvering patients for all types of scintillation cameras and rectilinear scanners. The lateral-plane floating top can move lengthwise up to 12" in both directions, eliminating the need to re-adjust the patient or table during an examination. Unique frame permits the unobstructed positioning of probes and detectors for any type of examination. Table top comes with a heavy-gauge, vinyl-coated thin Dacron top or with 3/8" clear lucite. Dacron offers less radiation attenuation than lucite and greater comfort to patient.

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

Write for Bulletin 93-B

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It's a package with a choice. It means you don't have to depend on a few companies for your static and dynamic function study equipment.

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SERIAL SCINTIPHOTOS. POSTERIOR VIEW.

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2. LUNG VOLUME \((V_2)\)
3. WASH-OUT
4. VENTILATION \((V_1)\)

TIME-ACTIVITY HISTOGRAMS.

LEFT LUNG

RIGHT LUNG
**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 $^{133}$Xenon 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 mCi of $^{133}$Xe 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 rate-meter/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 8-minute 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 ($V_l$, 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 ($V_v$, 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 $^{133}$Xenon 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.

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**Nuclear Reviews**

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An exchange of information on topics related to nuclear medicine, sponsored by: NUCLEAR-CHICAGO A SUBSIDIARY OF G. D. SEARLE & CO.

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Volume 12, Number 11 XLI
Why stop with a scintigram when there's more information down the road?

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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For maximum diagnostic information, for maximum diagnostic confidence, nothing touches the Dynacamera 2.

For further information and a series of Dynacamera 2 "application data sheets," speak to your Picker man or write Picker Corporation, Dept. D12, 333 State Street, North Haven, Connecticut 06473.

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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:
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1. 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.

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you should ask scanner:
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But you don’t have to be a computer man to use it.

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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
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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 prominent advantages to be gained with the MED II.

![Initial analog scintigraph](image1)
![Same data processed by MED II](image2)

**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 areas-of-interest within a recorded renal excretion 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.

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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.

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

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