Pregnancy, oral contraceptives, estrogens, etc., can produce misleading results by falsely listing euthyroids in either the hypothyroid or hyperthyroid range if only one test is used to determine thyroid function.

“No single laboratory test of thyroid function is diagnostically perfect for all patients.”*

What’s more, patients may knowingly or unknowingly give a false history. To prevent this, schedule both a T-3 test (Triosorb) and a T-4 test (Tetrasorb), which supplies the T-7 Value (T-3 x T-4) — a highly reliable result:

- When both test values are decreased, the patient is usually hypothyroid.
- When both test values are increased, the patient is usually hyperthyroid.
- When both test values are normal, the patient is usually euthyroid.
- When a patient is on oral contraceptives or is pregnant, the test values move in opposite directions.

Millions of Triosorb tests have been performed over the past 7 years and today it is considered the standard of T-3 tests.

Tetrasorb is the first diagnostic kit offering a direct measurement of thyroid function by determining serum thyroxine.

Both Triosorb and Tetrasorb are in vitro tests providing accuracy, speed and convenience. They are available in disposable kits ready for use.

By multiplying the results of both tests, you arrive at the T-7 Value—a new level of confidence in thyroid diagnosis.


ABBOTT LABORATORIES
North Chicago, Illinois 60064
World’s Leading Supplier of Radio-Pharmaceuticals
Vertretung für Europe: Labor-Service GmbH, Abt. Radiopharmazeutika, 6236 Eschborn/Ts, Germany, Postfach 1245

T-3 x T-4 = T-7 Value

TRIOSORB®-131 or
TRIOSORB®-125
T-3 Diagnostic Kit

TETRASORB®
125
T-4 Diagnostic Kit

001187
Thyroid dysfunction? Pregnant? On the “pill”?
The LOGIC™ Series -

THE FULL LINE NUCLEAR MEDICAL INSTRUMENT COMPANY
products of the Space Age!

- **Speed of Electronics** (count and display in excess of 15,000,000 counts per minute!)
- **Solid State Integrated Circuitry** (highly reliable; less down time)
- **Simple to Operate** (minimum of controls) with **Direct Ratio Readout** (in %)
- **Integrated System** (Models 101 & 111 have spectrometer and well in one instrument)
- **Simplified Service** (easy-to-use service manual; replacement boards in 24 hours; no waiting for servicemen)
- **Modular Concept** (built-in versatility protects your investment by letting you add on)

ABBOTT LABORATORIES, NORTH CHICAGO, ILLINOIS 60064
Nuclear Instruments You Can Count On

Vertretung für Europa: Labor-Service GmbH, Abt. Radiopharmazeutika, 6236 Eschborn/Ts, Germany, Postfach 1245
CHARCOAT T-3. No fuss, no muss, no multiple pipetting or rinsing.

You don't even have to throw in a sponge. What's more, CHARCOAT T-3 tests take only thirty minutes — start to finish — without complicated setups. You do everything in one little two-part vial. Merely pipette 0.5 ml of patient serum into each test vial, invert, incubate, centrifuge, and count the supernatant. But don't take our word for how simple and economical CHARCOAT T-3 kits are. Put one to the test. A standard kit (13 test vials) is only $20, and just a phone call away. Moreover, the extra long shelf-life of the CHARCOAT T-3 test kit makes quantity discounts practical. Ask about our Automatic T-3 Computer. Easy to use — no calculations. $1680 for purchase.
ELSCINT BRINGS

COMPUTERIZED

NUCLEAR

MEDICINE

WITHIN YOUR MEANS

ELSCINT LTD.
AN ELRON SUBSIDIARY
P.O.B. 5258 HAIFA, ISRAEL.

ELRON INC.
9701 N. KENTON AVE.
SKOKIE ILLINOIS 60076
When you have a good thing, you like to see it grow. That's why we've added three branch laboratories to the Hastings family.

Now you can get the highest obtainable quality radiopharmaceuticals in Dallas, New Orleans, and Miami, as well as in Houston.

We're doing our part to better serve the population explosion.

Branch Labs:  Suite 100
Locke Medical Building
Dallas, Texas 75235
4031 Jefferson Highway
New Orleans, Louisiana 70121
1549 San Remo
Coral Gables, Florida 33146
WHEN THE PILL OR PREGNANCY DISTORTS THYROID TESTS

Res-O-Mat™ Free Thyroxine (FT4) Index — easiest way to a more reliable determination of thyroid function

The Res-O-Mat FT4 Index comes closest to being the most reliable assessment of thyroid function with the easiest procedure. The combined use of Mallinckrodt's Res-O-Mat T3 and Res-O-Mat T4 Tests gives an FT4 Index that compensates for conditions of pregnancy, estrogen medication, and other factors affecting this measurement.

It is so much easier and time-saving because the Res-O-Mat T3 and T4 strips simplify procedures. In the T3 measurement the strip eliminates all pipetting except initial transfer of serum to the vial. There is no washing, no critical temperature control, and the T4 procedure requires no evaporation or ice bath. There are fewer counting steps. Merely rotate the vials, remove the strips, and count the serum directly.

The Res-O-Mat FT4 Index is the ratio of Res-O-Mat T4 and T3 values. The FT4 index has been shown to have a high degree of correlation with the blood level of free thyroxine. And this simple Res-O-Mat FT4 method makes this determination a routine laboratory procedure.

Send for complete information on the Res-O-Mat FT4 Index, or contact your Mallinckrodt sales representative.

The Picker Dynacamera 2:
The scintillation camera with both high resolution and a large undistorted field of view:

Resolution

Resolution and large undistorted field of view

Resolution and large undistorted field of view

Phantom description: 3/8" thick lucite with four 1/8" thick radiating voids filled with activity.

Phantom description: 1/8" thick by 15" dia. lead circle mounted between two circular pieces of 1/8" thick lucite.
A. 3/8" dia., 3/8" space
B. 5/16" dia., 5/16" space
C. 1/4" dia., 1/4" space
D. 3/16" dia., 3/16" space
E. 3/16" dia. holes with centers on 9" dia. circle.
F. 3/16" dia. holes with centers on 10" dia. circle.
G. 3/16" dia. holes with centers on 11" dia. circle.
H. 3/16" dia. holes with centers on 12" dia. circle.

Phantom description: 1/8" thick lead bars mounted between two circular pieces of 1/8" thick lucite. A 14" outside diameter, 1" wide, lead ring surrounds the bars.
A. 1/4" bars, 1/4" spaces
B. 5/16" bars, 5/16" spaces
C. 3/8" bars, 3/8" spaces
D. 1/2" bars, 1/2" spaces
Please call your local Picker technical specialist for information about other Dynacamera 2 features or to learn about Dynacamera 3, the scintillation camera with a built-in image enhancement system. Or write Picker Medical Products Division, Dept. N, 595 Miner Road, Cleveland, Ohio 44143.

**The scintillation camera with more clinically useful and proven capabilities:**

**Quantification of static studies**
(a built-in capability)
Dynacamera 2 is the scintillation camera that provides both Scintigrams and the total count in an organ or any portion of it.

**Quantitative regions of interest**
(a built-in capability)
Dynacamera 2 permits the selection of two regions of interest and simultaneously displays both count rate vs. time and total integrated counts in both regions.

**Quantitative dynamic studies**
(a built-in capability)
Dynacamera 2 performs quantitative dynamic function studies in selected regions without the need for modifications, accessory systems, or extra cost and produces digital histograms simultaneously for quantification of each discrete phase.
This is Pertgen-99m, the cow that doesn't leak. Nothing comes out until you're ready to milk it.

**Convenience**—the protection afforded by the unique Rayshield™ (shown underneath the Pertgen-99m Generator), means that Pertgen-99m can be used on the lab bench—there's no need to hide this system behind the bricks!

**Safety**—the Rayshield, Abbott’s exclusive Radioisotope Shielded Dispensing Unit, keeps radiation to operating personnel at a minimum.

**Economy**—because Pertgen-99m is precalibrated, you get more useable activity at no increase in cost!

Yields are consistent and high—an unbeatable combination!

Also available:

**PERTSCAN®-99m**
SODIUM PERTECHNETATE Tc 99m

Abbott Laboratories  North Chicago, Illinois 60064
World's Leading Supplier of Radio Pharmaceuticals

LABOR-SERVICE GMBH, Abteilung RADIO-PHARMAZEUTIKA,
6236 Eschborn/Ts (West Germany), Postfach 1245
## Pulmonary problem?
### Answer: Macroscan-131

- **Uniformity of particle size distribution**
- **Minimal free iodide**
- **Superior manufacturing technique** (supernatant is removed in the manufacturing process)
- **Safety** (no recorded reactions to date in thousands of scans)
- **Cost** (lowest of the 3 leading products)

Macroscan-131 is aseptically prepared and non-pyrogenic. It is ready to use and should not be heated prior to use.

**INDICATIONS:** For scintillation scanning of the lungs to evaluate total, unilateral, and regional arterial perfusion of the lungs.

**WARNINGS:** Radio-pharmaceutical agents should not be administered to pregnant or lactating women, or to persons less than 18 years old, unless the information to be gained outweighs the hazards. There is a theoretical hazard in acute cor pulmonale, because of the temporary small additional mechanical impediment to pulmonary blood flow. The possibility of an immunological response to albumin should be kept in mind when serial scans are performed. If blood is withdrawn into a syringe containing the drug, the injection should be made without delay to avoid possible clot formation.

**PRECAUTIONS, ADVERSE REACTIONS:** Care should be taken to administer the minimum dose consistent with patient safety and validity of data. The thyroid gland should be protected by prophylactic administration of concentrated iodide solution. Urticaria and acute cor pulmonale, possibly related to the drug, have occurred.

---

**P.M.—If it’s a pulmonary problem, think Macroscan-131.**

**MACROSCAN®-131** AGGREGATED RADIO-IODINATED ($^{131}I$) ALBUMIN (HUMAN)

**ABBOTT LABORATORIES** North Chicago, Illinois 60064  World’s Leading Supplier of Radio-Pharmaceuticals

Vertretung für Europa: Labor-Service GmbH, Abt. Radiopharmazetika, 6236 Eschborn/Ts, Germany, Postfach 1245
an Automatic Liquid-Liquid Extraction System for the Production of High Quality Technetium-99m, is Now Available to Those Hospital Isotope Units Now Using a Molybdenum Column Generator!

What is an automatic MEK or Liquid-Liquid Extraction System? Simply this!

MEKTec-99 automatically measures and mixes Methyl Ethyl Ketone (MEK) in a shielded container with an aqueous solution containing Mo-99/Tc-99m. Phase separation is allowed to occur. The ketone layer containing Tc-99m is transferred automatically through an alumina adsorbent column and a sterilizing membrane filter to a sterile, pyrogen-free vial. The MEK is then automatically evaporated by MEKTec-99.

The sterile, pyrogen-free, carrier free Tc-99m is now ready for dilution with any aqueous media such as sodium chloride injection, to any desired volume, and for quick and easy processing into chemical compounds such as technetium sulfur colloid and albumin.

The advantages of a MEK Extraction System have been known for some time. Indeed, several commercial suppliers of “instant technetium” and several hospital units have been using this method, but on a time consuming manual basis.

In terms of QUALITY, highlighted by the far lower molybdenum and alumina levels in the product, COST, indicated by the weekly savings, and CONVENIENCE of a completely automated extraction system, the MEKTec-99 Automatic Extraction System is far superior to the now outmoded generator (cow).
CALIFORNIA RADIOCHEMICALS, INC. ANNOUNCES:

MEKTec-99™

A Completely Automated Liquid-Liquid Extraction System for the Production of Tc-99m. "All Molybdenum Column Generators Are Now Obsolete!"

ELIMINATES . . .
moly breakthrough problems!

GUARANTEES . . .
consistent, high technetium yields!

CONCENTRATES . . .
technetium for any desired volume!

REDUCES . . .
weekly cost below all Tc-99m generators!

<table>
<thead>
<tr>
<th>Mo-99 at Delivery</th>
<th>Tc-99m Yield (approximate)</th>
<th>Cost/Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 mCi</td>
<td>160 mCi</td>
<td>$120</td>
</tr>
<tr>
<td>400 mCi</td>
<td>320 mCi</td>
<td>155</td>
</tr>
<tr>
<td>600 mCi</td>
<td>480 mCi</td>
<td>205</td>
</tr>
</tbody>
</table>

Greater quantities available upon request.

*Cost is based upon a one year service agreement, cancellable within the first 30 days, and includes sterile vials, filter cartridges, weekly shipments of Mo-99 and MEK, and use of a MEKTec-99 Automatic Extraction System.

Mo-99 is delivered Tuesday mornings throughout the U.S. with calibration for 12 Noon, Pacific Time. Weekly delivery and an initial nominal freight charge are extra.

OPERATING PROCEDURE

1. Each week insert a fresh filter cartridge into the machine. Insert the transfer needle into the new shipment of Mo-99. The MEKTec-99 Extraction System will automatically transfer the Mo to the mixing reservoir which is shielded by 3½" of lead.

2. Initially set the MEKTec-99 clock to the time and to the days of the week for which the product is desired.

3. Set the MEKTec-99 Extractor to AUTO. Insert a sterile collecting vial and replenish the MEK supply. The product will automatically be delivered dry, within the sterile vial, at the time and on the days specified. The product is now ready for dilution as may be required.

4. For additional Tc-99m requirements set the control key to MANUAL and immediately initiate an extraction with a yield of approximately 70%.

To institute service or for additional details about the MEKTec-99 Automatic Liquid-Liquid Extraction System, contact your nearest sales agent office!
Success has been reported recently in the use of In113m-labelled particles and colloid for lung and liver scanning, and of carrier-free In113m as a blood-pool scanning agent for heart and placental scanning, and as a complex for brain scanning. For this purpose, Duphar have introduced STERCOW 113m, which generates 1.73-hour half-life In113m by elution of the parent isotope, Sn113, with a half-life of 118 days. For some applications, In113m has demonstrated certain advantages over other nuclides. The relatively long half-life of the parent means that fewer generators need be purchased over a given period. In brain scanning, the tumour-to-brain ratio is relatively high. Preparation of labelled compounds is simple. STERCOW 113m is available with activities of 5, 10, 25, 50 and 100 mCi, in a standard-sized cartridge. It comes complete with sterile, pyrogen-free elution needles, vent needles, marked elution vials, elution tubing, and a plastic bag containing 500 ml of eluent. Have you been thinking of trying In113m? Now is a good time to do it.
**LEAD-LINED REFRIGERATORS**

For radiopharmaceuticals, tagged biological and other radioactive materials requiring low-temperature storage. Completely lead-lined, 1/8" thick. Key-lock prevents unauthorized access.

53-350  Lead-Lined Refrigerator, 2 cubic ft. Only 20" high x 20" wide x 23" deep. Compact enough to fit on or below a lab bench......$425.00*

53-375  Lead-Lined Refrigerator, 5 cubic ft., with 1/3 cu. ft. freezer compartment. 34" high x 19" wide x 23" deep..........................$595.00*

**PROTECTIVE LEAD BARRIER**

Eliminate radiation to your body or face while milking a Tc-99m generator or handling any other radioactive material. Most generators provide enough shielding for the generated activity but not for the setting-up process (e.g., energetic Mo-99 gamma radiation to the face, at 3 feet from a generator, can be as high as 35 mR/hr). All exposure is stopped by a 12" x 12" x 1/2" lead shield and a 12"x24" lead-glass sheet (4.8 gm/cc).

56-600  Protective Lead Barrier......................$275.00*

**NUCLI-FOAM HEAD POSITIONERS**

For positive, comfortable immobilizing of a patient's head during nuclear scanning. Made of washable polyurethane foam. Lighter and easier to use than other cumbersome devices. Two instant-adjust straps hold patient's head and block of foam snugly against an aluminum base. Set of 4 Positioners includes adult and child sizes (one each for lateral and A.P. positions).

17-400  Nucli-Foam Head Positioners...............$35.00

**IMMEDIATE DELIVERY**

Also send for NEW CATALOG 70-B
Contains a complete line of Nuclear and X-Ray accessories

**NUCLEAR ASSOCIATES, INC.**
358 URBAN AVENUE, WESTBURY, N.Y. 11590, PHONE (516) 333-9344

*Plus shipping charges
ARE YOU TIRED OF TRYING TO EVALUATE SCINTIPHOTOGRAPHS WITH SKULLS THE SIZE OF THUMBNAILS?

FOR ABOUT 1% OF THE INITIAL COST OF YOUR CAMERA YOU CAN ADD AT LEAST 50% IN CAPABILITY WITH OUR ENLARGER ATTACHMENT FOR YOUR SCINTILLATION CAMERA OR ANY OF THE SO-CALLED ADVANCED RADIONUCLIDE IMAGING SYSTEMS THAT USE THE OSCILLOSCOPE FOR READOUT.

OUR ENLARGER USES REGULAR X-RAY FILM AND PROCESSING.

MAGNIFICATION IS SELECTED PER YOUR DESIRES.

ENLARGER EASILY ATTACHES OR DETACHES.

ALLOWS OBSERVATION ON REGULAR X-RAY FILM VIEW BOXES AND IMAGE MANIPULATION WITH CLOSED CIRCUIT TELEVISION.

FULL SIZE NEGATIVE PICTURES FOR EVALUATION OR DISPLAY.

Manufactured by:
FRED S. DUNNING COMPANY, 2910 FRANKLIN BOULEVARD
SACRAMENTO, CALIFORNIA, 95818, PHONE 451-4259
General Electric introduces the first fully portable, ultra-sensitive nuclear counting system. And, it's under $3,000.

The NUCLE EYE® Monitor.
This new system can count low-energy radiations in vivo you couldn't count before—at remarkably low background levels. An advanced solid-state "Proportional Counter" makes it possible.
You can now think of using $^{35}$I for organ scanning, for example. For the first time, use low-energy emitting isotopes like $^{35}$S, $^{55}$Fe and $^{46}$Ca in in vivo experimental work. X-ray fluorescence scanning and analysis. Tumor detection and measurement of tumor dynamics. Detection of $^{55}$Fe x-rays in blood measurements and $^{51}$Cr x-rays in spleen scanning. Carbon-14 research.
A patient's body heat creates no problem. The NUCLE EYE Monitor maintains its unique low-background counting capability from room temperature to 85°C. Without cooling.

What's more, the eight-pound system is fully portable. Take it from laboratory to laboratory. Even to patient bedside. Nickel-cadmium batteries give five hours of continuous operation before recharging.

Want more information about this new system? Write Space Technology Products, P.O. Box 8439, Philadelphia, Pa. 19101. Or phone (215) 962-8300.

GENERAL ELECTRIC
Which would you rather use?

PGL 35mm System
- Film Cost: $120 per year
- Picture Quality: Extended grey scale
- Dynamic Studies: Automatically advanced

Polaroid
- Film Cost: $3000 per year (More than the total cost of the PGL System)
- Picture Quality: Limited Latitude
- Dynamic Studies: Manually Pulled

Want Proof? We'll send you clinical studies, cost analysis, and complete specifications on the PGL MODEL 250 automatic camera system.

Write or Call Collect

1280 COLUMBUS AVE.   SAN FRANCISCO, CA 94133    (415) 474 6338
Behold the "mini-scan!" Makes possible whole body scans recorded 5-to-1, all on single, comprehensive, 14" x 17" sheets of film with no loss in diagnostic quality or detail, and a big gain in efficiency.

Ohio Nuclear series 84 radioisotope scanners equipped with this remarkable option, not only provide basic 1:1 scale recordings, but 2:1 and 5:1 mini-fied recordings. This avoids serial scan examination and consolidates diagnosis in a compact, more perceptible and uniform visual field.

5:1 rectilinear field reduction capability is equivalent to increasing count rate by a factor of 25, which in turn, affords the possibility for corresponding increases in scan speed per unit area of examination.

Think about "mini-scan" next time you have to piece together two or five pieces of film for a comprehensive analysis.

Full descriptive brochures available on the versatile 84 and compact 76 scanners.

ohio-nuclear, inc.
7700 St. Clair Ave., Mentor, Ohio 44060 (216)946-5506
Finally.. THE PGL MODEL 500
A Table for Imaging
With a Movable Top

The "floating" top overhangs to allow supine posterior brain views. Ten inches of travel in both longitudinal and lateral planes.

Graduated calibration scale and positive cam locks assures reproducible positioning.

No crossmembers or support bars to interfere with placement of probes, scanner heads, or camera detectors.

WE WILL ARRANGE FOR YOU TO SEE ONE IN CLINICAL USE
WRITE OR CALL COLLECT

1280 COLUMBUS AVE. SAN FRANCISCO, CA 94133 (415) 474 6338
This glass syringe is the vehicle for a significant advancement in Thyroid Diagnostics.

It contains the new isotopic Micro T-3 test, and it comes from the oldest, most experienced company in Nuclear Medicine.

Here's what the new system can do:

a. It's a micro method (only 0.1 ml of serum is used).

b. It's fast - we call it an "accelerated" system; it takes only 40 minutes.

c. It's easy: pipette 0.1 ml of serum, rotate 40 minutes, expel into a counting vial and count. No pipetting of radioactive material.

Call Collect: L.A. 213/232-3531 N.Y. 914/592-4060

CURTIS NUCLEAR CORPORATION 1948 EAST FORTY-SIXTH STREET, LOS ANGELES, CALIFORNIA 90058
NEW YORK OFFICE: THREE WESTCHESTER PLAZA, ELMSFORD, NEW YORK 10523
Following initial detection of abnormality on persistence scope.

~3.4 sec. following initial detection of abnormality on persistence scope.

~1.2 sec. later.

~2.7 sec. later.

~11.8 sec. later.

Static scintiphoto.

Anterior view.

Arteriographic study.

Right oblique view.

The Pho/gamma scintillation camera.
Evaluation of Cerebral Vascular "Flow" with the Nuclear-Chicago Pho/Gamma® Scintillation Camera

In this technique using $^{99m}$technetium pertechnetate for dynamic study of vascular "flow" pathways (both intra- and extra-cranially), the Pho/Gamma Scintillation Camera is equipped with the Nuclear-Chicago Super-8/Persistence Scope.

SETTING-UP. The standard 4000 parallel-hole collimator is used. The area to be visualized includes the patient’s neck and head. With the patient in the supine position, the Pho/Gamma detector is positioned touching the tip of the nose. This orientation can be readily achieved, because of the Pho/Gamma detector’s positioning flexibility.

ISO TOPE AND DOSE. An intravenous injection of 10 mC of $^{99m}$technetium pertechnetate is administered, preferably in one of the antecubital veins. No attempt is made for a bolus injection.

DATA ACCUMULATION AND DISPLAY. At the first detection of events on the persistence scope (which displays data in live "fluoroscopic" fashion), the scope display is filmed with the Super-8 movie camera. Frame rate is 32 per second. Filming is stopped when the recirculation phase is detected — usually about one minute after the beginning of the study.

Then, approximately one hour later, conventional scintiphotos are taken, in a variety of viewing positions, each representing approximately 250,000 counts.

The motion-picture film is subsequently viewed with the Super-8 Analyst projector in slow, fast, or stop-motion, as necessary for evaluation.

These Pho/Gamma-generated data can also be recorded, in high-resolution digital form, on the Nuclear-Chicago Data-Store/Playback Accessory or on the CDS-4096 Clinical Data System. With either of these system accessories, patient data can be stored and then re-played, processed, and manipulated at the clinician’s discretion. The result is an increased range of analysis, yielding additional qualitative and quantitative data.

CASE HISTORY. The clinical study illustrated on the opposite page is of a patient with the following history: Male, 51 years old. Three-month history of intermittent episodes (one to three minutes duration) of right visual-field constriction. Physical examination negative, except for slight blurring of right optic disc.

EVALUATION. In the selected frames from the Super-8 motion-picture film shown at left, these clinically relevant indications are seen: Frame 119, there is no isotope flow through right carotid artery pathway (arrow); note also outline of anterior and middle cerebral artery pathways, with relatively decreased concentration in right hemisphere. In Frame 158 (capillary phase), block in right carotid pathway is still evident. In Frame 204 (venous phase), delayed arterial perfusion in the right hemisphere begins. And, in Frame 490, recirculation with evident delayed arterial perfusion in right hemisphere is seen.

The static scintiphoto shown is essentially negative for any evidence of abnormal isotope accumulation, as were a number of other scintiphotos taken following the Super-8 study.

CONCLUSIONS. In this case, detection and localization of an abnormal "flow" pattern in the Super-8 dynamic study—but not in the static scintiphotos—led to a meaningful differential diagnosis. To this end, a serial arteriographic study was performed. The radiograph selected from that study reveals complete occlusion (arrow) of the right internal carotid artery at the bifurcation with the external carotid on the right. The intra-cranial problem was therefore shown to be the result of extra-cranial pathology.

Thus the Pho/Gamma Scintillation Camera permits the use of a relatively innocuous, yet rapid, technique to produce supplementary diagnostic information. This information can provide direction for the use of other investigative techniques and make possible a more definitive diagnosis.
The case for the classical radioisotope scanner, or...

Why does Picker keep refining and improving its basic rectilinear scanner (Magnascanner® 500), when it also has a most sophisticated high-speed scanner (Dynapix®), and two exceptional cameras (Dynacamera™ and Magnacamera®)?

Because: despite the rapid forward thrust of progress—which we ourselves aid, abet, foster and contribute to—nothing we or anyone else has done has obsoleted the basic rectilinear scanner. What basic scanners do, nothing does better, and few do as well. Examples?

For a small hospital starting a diagnostic radioisotope laboratory with a small patient load and a modest budget, there is nothing quite as appropriate as a scanner. Hence, four out of five nuclear medicine departments get started with a Magnascanner and are now over 2500 in use throughout the world. Similarly, a Magnascanner is a most relevant choice for larger hospitals in need of an instrument with the highest resolution for diagnostic confirmation. A basic scanner like the Magnascanner is still the best device available for static-imaging applications by virtue of its very high resolution, large field of view, wide energy range, contrast enhancement, wide choice of focusing collimators, and modest cost.

None of this should imply that the Magnascanner is an untouched island in the stream of progress. Today's instrument is generations away from yesterday's. Note: (1) maximum scan speed has been increased from 200 cm/min to 500 cm/min; (2) detector can be positioned by a control on the detector head itself, and a ratemeter on the detector head facilitates and speeds location of "hot" and "cold" spots; (3) a new color photo recording system is available in addition to black and white photorecording, multicolor dot recording, and Tele-detlos black dot recording; (4) push button energy window selection (in addition to manual selection) for the most common radioisotopes used in diagnosis.

And Now the Dual Magnascanner®—This instrument is essentially identical to the Magnascanner® 500 except that it has two separate opposed detectors which acquire information independently. AP and PA, or RL and LL rectilinear scans can be performed simultaneously. This capability minimizes the need for patient re-positioning and reduces the scanning time by half.

Further information is available—Please write for detailed information on the Magnascanner® 500 and the Dual Magnascanner to Picker Medical Products Division, 595 Miner Road, Cleveland, Ohio 44143. Please request file 235R.

Picker
The “single source responsibility” company.
NUCLEAR MEDICINE RESIDENCY:

Two-year program compatible with preliminary requirements of the proposed American Board of Nuclear Medicine available July 1, 1970. Minimum prerequisites: one year clinical internship followed by one year residency training in either internal medicine, radiology or pathology. Contact: Merrill A. Bender, M.D., Professor and Director of Nuclear Medicine, State University of New York at Buffalo, School of Medicine, Buffalo, New York 14214.

FELLOWSHIP IN NUCLEAR MEDICINE at Milwaukee Veterans Administration Hospital and Marquette School of Medicine. Large, well-equipped clinic with training at two 1,000-bed hospitals. Didactic training in nuclear physics. Instrumentation, laboratory procedures and biomedical engineering. Excellent research facilities. Completed residency in radiology, internal medicine or equivalent desired. U.S. citizenship or immigration visa required. Stipend to $18,489. Nondiscrimination in employment. Write Robert C. Meade, M.D., Chief, Nuclear Medicine Service, VA Center, Milwaukee, Wis. 53298.

ASSOCIATE PATHOLOGIST: Full-time position available for physician with training in the clinical and laboratory aspects of nuclear medicine. High quality personnel and excellent instrumentation provide interest and stimulation. Apply in writing to: Dr. Edward Wagman, Pathologist in Chief, Bergen Pines County Hospital, E. Ridgewood Ave., Paramus, N.J. 07652.

NIH-SPONSORED TRAINEE SHIPS are available in the Nuclear Medicine Section of the University of Michigan Medical Center for qualified applicants who have a U.S. citizenship or an immigrant's visa and who have had at least 2 years of clinical training past their M.D. degree, preferably at least 1 year in internal medicine, radiology or pathology. 1 to 3-year programs of learning are available in the diagnosis, treatment and investigation of disease using radioisotopes and radionuclide-labeled compounds. Training by faculty within the section may be supplemented with formal course work in the Graduate School. Contact William H. Beierwaltes, M.D., Director, Nuclear Medicine Section, University of Michigan Medical Center, Ann Arbor, Mich. 48104.

POSITIONS WANTED


RADIOCHEMIST, Ph.D.: EXPERIENCE nuclear fission, isotope production, labeling compounds, activation analysis, drug regulatory affairs. Seeks position in R & D or teaching. Reply box 781, Society of Nuclear Medicine, 211 E. 43rd St., N.Y., N.Y. 10017.

RADIOPHARMACISTS AVAILABLE FOR POSITIONS

The first class of experienced graduate pharmacists, obtaining a Master of Science in Radiopharmacy from the University of Southern California will be available for permanent positions beginning Fall, 1970.

Interested persons should address information requests and job descriptions to:
Professor Walter Wolf, Chairman
Department of Biomedical Chemistry
Radiopharmacy Program
University of Southern California
Los Angeles, California 90007
(213) 746-2737
The digital image and processing system that provides *more* diagnostic information from data provided by organ imaging devices.

The Nuclear Data 50/50 MED presents data exactly as the scintillation camera sees it... *not* as film usually presents it. This means you do not lose detail. You do not have to repeat studies due to improper setting. And you do not lose data because of poor film quality. The actual photographs demonstrate what we mean when we say the 50/50 MED tells it as it is.

**Intensity modulated record of abnormal brain.**

**Profile view of abnormal region from above record.**
Volume-for-volume, on a day-to-day basis, NEN Technetium-99m Generators provide higher concentrations because of their smaller elution volumes.

A recent analysis of five commercially available Technetium-99m Generators to evaluate elution concentrations* showed that activity increases rapidly in each successive aliquot. As the curves above indicate, NEN Generators provide equivalent activity in significantly smaller volumes.


and it's the only Tc-99m Generator that provides...
ANNOUNCEMENT TO AUTHORS

PRELIMINARY NOTES

Space will be reserved in each issue of THE JOURNAL OF NUCLEAR MEDICINE for the publication of one preliminary note concerning new original work that is an important contribution in Nuclear Medicine.

Selection of the preliminary note shall be on a competitive basis for each issue. One will be selected after careful screening and review by the Editors. Those not selected will be returned immediately to the authors without criticism. Authors may resubmit a rejected or revised preliminary note for consideration for publication in a later issue. The subject material of all rejected manuscripts will be considered confidential.

The text of the manuscript should not exceed 1,200 words. Either two illustrations, two tables or one illustration and one table will be permitted. An additional 400 words of text may be submitted if no tables or illustrations are required. Only the minimum number of references should be cited.

Manuscripts should be mailed to the Editor, Dr. Belton A. Burrows, 720 Harrison Avenue, Boston, Mass. 02118. They must be received before the first day of the month preceding the publication month of the next issue, e.g., preliminary notes to be considered for the January issue must be in the hands of the Editor before December 1.

For convenience of West Coast users, NEN Generators are shipped with special calibration for Western States.
KIT FOR RADIOIMMUNOASSAY OF HUMAN GROWTH HORMONE

the simplest way to solve your HGH assay problems

The reagents contained in the HGH immunoassay kit are intended for use in a "Double Antibody Method" which basically resembles that described by Hales and Randle for the immunoassay of insulin. According to this method the complex of HGH and anti-HGH antibody is rendered insoluble by a second antibody. The precipitate is separated from free HGH by filtration.

CONTENT OF THE KIT
125I-labeled HGH solution is phosphate buffer pH 7.4 (30 ng/ml), a standard solution of HGH (1 μg/ml), anti-HGH antibody (raised in guinea pigs) and a second antibody (raised in rabbits).

WHAT IS ALSO AVAILABLE FOR RADIOIMMUNOASSAY?
- Insulin Kit
- 125I-labeled hormones: Insulin, HGH, ACTH, Glucagon, Angiotensin (II)

cea . cen . sorin

for information please write to

SORIN, Nuclear Research Center
Radioisotopes Department
13040 SALUGGIA (Vercelli) Italy
Telex 20064 SORINSAL

xxvii

INDEX TO ADVERTISERS

Abbott Laboratories
North Chicago, Ill. .......... Cover, i, xii, xiii
Baird Atomic
Bedford, Mass. ................. xxxx, IBC
Curtis Nuclear Corp.
Los Angeles, Calif. ............ xxvii
Fred S. Dunning Co.
Sacramento, Calif. ............. xxii
Philips Duphar, N.V.
Petten, The Netherlands ....... xvi
Elscint, Ltd.
Haifa, Israel ..................... iv
General Electric Company
Poughkeepsie, N.Y. .......... xxiii
Hastings Radiochemical Works, Inc.
Friendswood, Tex. ............ vii
Intertechnique Instruments
Dover, N.J. ...................... xvii, xviii, xix, xx
Mallinckrodt/Nuclear
St. Louis, Mo. .................. viii, ix
Modern Electronic Diagnostics Corp.
Los Angeles, Calif. .......... xiv, xv
New England Nuclear
Boston, Mass. ................... ii, xxxiv, xxxv
Nuclear Associates
Westbury, N.Y. .................. xxi
Nuclear Chicago
Des Plaines, Ill. ............... xxvii, xxix, BC
Nuclear Data, Inc.
Palatine, Ill. ................... xxxii, xxxiii
Nuclear Medical Systems
Roslyn Heights, N.Y. ............ xxxvii
Ohio-Nuclear, Inc.
Mentor, Ohio .................... xxv
PGL—Instruments & Services for Medicine
San Francisco, Calif. .......... xxiv, xxvi
Picker Nuclear
White Plains, N.Y. ............. x, xi, xxx
Radx Corp.
Houston, Tex. .................. xxxix
Raytheon, Inc.
Boston, Mass. .................. xxxviii
SORIN, Nuclear Research Center
Saluggia, Italy ................. xxxvi
SNM Placement
New York, N.Y. ................. xxxi
These photographs were taken simultaneously on a scintillation camera.

Which would you rather base your diagnosis on?

Polaroid Photograph

NMS 35mm Photograph

Time-lapse photographic systems for medical recording

Contact:
Nuclear Medical Systems, Inc., 142 Mineola Avenue
Roslyn Heights, N.Y. 11577, Tel: (516) 621-6700
The new Raytheon family of digital scanners provides the ultimate in head placement flexibility. Tomograms, oblique scans of normally masked cranial base lesions, and parallel headed scanning of large areas are just some of the clinical possibilities. Of course, Raytheon scanners can operate in the conventional opposed detector position with data subtraction, addition and independent detector operation.

Versatility just begins in detector head placement. Raytheon scanners feature digital data acquisition and manipulation. Four data display channels are available for photorecord and 9-color dot recording, with or without data blending.

Scan set up is simplicity itself – insert the automatic energy selector plug, search for the hot spot, and select a scan speed (up to 600 cm/min) and line spacing, which automatically changes the dimensions of the light aperture. Then you can read out information density and film contrast on a single easy-to-read meter. Raw scan data can be fed to a magnetic tape recorder for subsequent set-up correction – or for that matter, data enhancement or reduction at speeds up to four times as fast as the original.

What’s more, Raytheon scanners can adapt to meet your changing clinical requirements. A single 3” scanner can be hospital converted to a dual 3”, single 5”, or dual 5”.

For more information on the new Raytheon family of nuclear scanners, contact Raytheon Company, Medical Electronics, 190 Willow Street, Waltham, Massachusetts 02154. Tel: (617) 899-5949.

In medical electronics . . . Raytheon makes things happen.

RAYTHEON
PROBLEM: How to display and file a film strip of organ images taken on your new 35mm camera attached to your scintillation camera.

SOLUTION: Our new two ply clear plastic holder capable of displaying three — 6 frame 35mm strips in a 5” x 8” holder.

WRITE OR CALL FOR PRICES AND SAMPLES

RADX CORP

P. O. BOX 19164 • HOUSTON, TEXAS 77024 • PH (713) 468-9628
What is the secret behind the Baird-Atomic Scintillation Camera

Success

The Autofluoroscope® has been perfected. Its secret lies in the detector. Small individual crystals forming a rectangular 294 element matrix are positioned to collect data from that part of the patient's body opposite each crystal. Each crystal is tied electronically to its own magnetic core memory in the computer console, consequently it is the only scintillation camera specifically designed for quantitative imaging where discreet picture elements are collected and stored and may be manipulated for both visual observation and quantitative assessment at will. Send for Brochure. 125 Middlesex Turnpike, Bedford, Massachusetts 01730. Telephone: (617) 276-6200. Baird-Atomic Limited, Braintree, Essex. England  Baird-Atomic (Europe) N.V., The Hague, The Netherlands.
Up to now, whenever you read in the literature of a clinician using a "scintillation camera," the chances are it could mean only one thing. He was using our scintillation camera—the Nuclear-Chicago Pho/Gamma Ill Scintillation Camera or one of its predecessors.

That fact prompts us to call Pho/Gamma Ill the most (if you will) experienced scintillation camera there is. And, as such, it's the instrument of choice for the in-vivo visualization of radioisotopes in body organs.

Note that we've given the current Pho/Gamma detector a significantly increased range of positioning. We've also improved the electronics and arranged everything to fit into a human-engineered desk console.

And, perhaps most importantly, no Pho/Gamma Ill will ever become obsolete. Because its performance can be continuously enhanced through an always-widening array of accessories. Recently added to this array are the Data-Store/Playback Accessory, the Super-8/Persistence Scope Accessory, and the CDS-4096 Clinical Data System. Which join the following accessories: 35-mm automatic time-lapse camera for sequential scintiphotos; dual-pen recorder/dual-channel rate-meter; Photo/Scope Ill attachment for 1-to-1 scintiphotos; and high-speed digital printer.

The proof of Pho/Gamma's experience is in the hands of your Nuclear-Chicago sales engineer. Please call him or write to us.

You'll find that we're the people who successfully marketed the first and, consequently, the most experienced scintillation camera—the Pho/Gamma Ill. And experience, after all, is the best teacher.

The world's most experienced scintillation camera.