The T-7 Value minimizes misleading thyroid results

Pregnancy, oral contraceptives, estrogens, etc., can produce misleading results by falsely listing euthyroids in either the hypo-thyroid 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 Europa: 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
Thyroid dysfunction?  
Pregnant? On the “pill”? 
NEW! This is the pair to see

Announcing COLLOKIT™
KIT FOR TECHNETIUM SULFIDE Tc 99m

Collokit is a “cold” kit that can be stored without refrigeration until you’re ready to use it. Then, following directions, it takes just minutes to prepare a sterile, non-pyro- genic colloidal solution of Technetium Sulfide Tc 99m. Collokit offers many advantages:

- **Simplicity** (ease of handling)
- **Mannitol stabilizer** (patent pending)
- **Economy** (less cost than ready-made products)
- **Convenience** (individual units, each with all of the components for a day’s use)

Collokit is specifically designed for use with Pertgen-99m. It is not recommended for systems with eluates containing oxidizing agents (such as sodium hypochlorite).

**PERTGEN®-99m TECHNETIUM Tc 99M GENERATOR KIT**

**Fractional elutions** — the exclusive Abbott Metering Unit permits fractional elutions of the Pertgen-99m Generator allowing the preparation of high assay material using Collokit.

**Safety** — 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!

**Choice of calibration** — to best fit your needs, you can now order Pertgen-99m shipped on the weekend calibrated for Wednesday or Pertgen-99m shipped on Thursday calibrated for Tuesday.

Collokit and the consistent and high yields of Pertgen-99m eluates provide an unbeatable combination!
when you want to “see” the liver!

TECHNETIUM SULFIDE Tc 99m

**Indications:** For direct visualization of the liver and spleen.

**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. Radio-pharmaceuticals should be used only by physicians who are qualified by specific training approved by an individual agency or institution already licensed in the use of radio-isotopes.

**Precautions:** Care should be taken to ensure minimum radiation exposure to the patient as well as to all personnel. Although there have been no untoward reactions reported from the use of mannitol stabilized colloid, physicians administering this agent should be prepared to institute emergency resuscitation in the event of an anaphylactoid reaction. The absence of a lesion in the scan does not necessarily rule out its existence.

**COLLOKIT**
(KIT FOR TECHNETIUM SULFIDE Tc 99M)

**How Supplied:** Package of 6 units, each containing:
- Vial 1: Sterile Thiosulfate—Mannitol Solution, 1 ml. Each ml. contains Mannitol 100 mg. and sodium thiosulfate 2.0 mg.
- Vial 2: Sterile Hydrochloric Acid 0.25 N, 1 ml.
- Vial 3: Sterile Buffer Solution, 2 ml. Each ml. contains potassium biphosphate 40.8 mg., sodium hydroxide 5 mg., and disodium edetate 1 mg. And accessory equipment.

**PERTGEN-99m**
(TECHNETIUM Tc 99M GENERATOR KIT)

**How Supplied:** 50, 100, or 200 millicurie generators, and accessory equipment.

ABBOTT LABORATORIES
North Chicago, Illinois 60064

World’s Leading Supplier of Radio-Pharmaceuticals

Vertretung für Europa: Labor-Service GmbH, Abl. 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 discount purchases practical. Ask about our Automatic T-3 Computer. Easy to use — no calculations. $1680 sale or lease.
INTEGRATING SURVEY METER MODEL GSM-2 performs similar functions to Model GSM-1, but in addition also indicates the total radiation in rads, accumulated during the survey time. An adjustable preset alarm level activates a warning signal when the predetermined integrated level is reached. It is equipped with rechargeable batteries.

GEIGER SURVEY METER MODEL GSM-1 is portable, battery operated and equipped for detection of $\alpha$, $\beta$, $\gamma$ or X-ray radiation. It is energy independent (up to 20%) in the range 60 KeV to 1.3 MeV, while its internal loudspeaker eliminates the need for earphones. The probes of both this version and Model GSM-2 can operate on cables of up to 50 M (160 ft) long.

RADIATION MONITOR MODEL GRM-1 is used with a wide variety of Geiger tubes or with scintillation detectors for investigation of body and instrument contamination. An adjustable preset alarm control triggers an audible signal when predetermined radiation levels are exceeded.

RADIATION MONITOR MODEL LRM-1 is similar to Model GRM-1 but has in addition a "SCALER" mode, in which it presents a reading of the accumulated counts during one minute.

CALL FOR COMPLETE DATA ON ELSCINT NUCLEAR MEDICINE INSTRUMENTATION.
A "Goliath" we're not...you might call us a "David"

We aim for the highest attainable quality in all our radiopharmaceuticals. Orders are accepted 24 hours a day. Emergency orders are filled immediately at no extra charge.

Come to think of it, you might call us a "Goliath" after all.

Hastings Radiochemical Works, Inc.
P. O. Box 479 • Friendswood (Houston), Texas 77546
Quality products since 1963.
SEND FOR FREE CATALOG.
THE NUCLEAR CUPBOARD NEED NEVER BE BARE

Mallinckrodt/Nuclear’s NUCLEOMATIC PROGRAM regularly supplies radiopharmaceuticals calibrated to your usage requirements

With this new program your radiopharmaceutical needs are anticipated with a regular supply schedule, so you won’t be caught short or left waiting. The Nuclematic Program is automatic.

It removes uncertainties, reduces supervision of detail, and saves you money because it eliminates extra shipping charges. Your radiopharmaceuticals arrive calibrated for use on a prearranged schedule which you specify.

Establish your program needs on the Nuclematic Program. If additional products are needed for special requirements, they can be supplied promptly from the Mallinckrodt local area laboratory nearest you.

Ask your salesman for complete information, or write the address below. Ask why “We Think Even One Day is Too Long to Make a Patient Wait.”
WHEATON MICRO-PRODUCT VIALS

FOR HANDLING AND STORAGE OF MICRO SAMPLES

- Cone-shaped interior for maximum retrieval of contents by syringe or micro pipette.
- Sturdy bottom permits centrifugation.
- Deep-skirted teflon*-lined cap protects against contamination.
- VITRO Brand borosilicate glass to protect purity of contents.
- Vials and caps can be autoclaved.
- Available in 3 sizes (0.3 ml., 1 ml., and 2 ml.) or custom-made to your specifications.

NEW CATALOG
A new catalog of products for Nuclear Research is now available. Send for your copy today.

DuPont trademark.

WHEATON GLASS COMPANY
Scientific Division, 1000 North 10th Street
Millville, New Jersey 08332, U.S.A.

... innovations come from Wheaton

Call on the 11-hour shift
ICN-Tracerlab

Your single source for nuclear products and services from coast to coast, ICN-Tracerlab, is on tap for you 11 hours a day, with order taking and order processing facilities on each coast. Your orders can be called in and filled at either facility. This gives you the additional three hours time difference from east coast to west coast as an added bonus.

The ICN-Tracerlab 11-hour day is geared to serve you rapidly. Give us a try and see.

WRITE FOR NEW CATALOG No. 5

ICN TRACERLAB
Chemical & Radiosotope Division
International Chemical & Nuclear Corporation
Waltham, Massachusetts
irvine, California
(617) 974-6600
(800) 854-3288
Lung scanning?

All macroaggregated serum albumins are not the same. Macroscan-131 offers all 5 of these benefits:

- 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.

MACROSCAN®-131 AGGREGATED RADIO-IODINATED (131I) ALBUMIN (HUMAN)

Each milliliter contains 1 to 3 mg. aggregated human serum albumin labeled with iodine 131, with benzy alcohol, 0.9%, as preservative. Radioactivity is usually between 500 and 1300 microcuries per ml on first day of shipment. For full prescribing information, see package insert.

ABBOTT LABORATORIES North Chicago, Illinois 60064

World’s Leading Supplier of Radio-Pharmaceuticals

Vertretung für Europa: Labor-Service GmbH, Abt. Radiopharmazeutika, 6236 Eschborn/Ts, Germany, Postfach 1245
The Picker Dynacamera 2:
The scintillation camera with both high resolution and a large undistorted field of view:

Resolution

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

Resolution and large undistorted field of view

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.

Resolution and large undistorted field of view

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
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.

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 "single source responsibility" company.
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).
**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!
we wouldn’t leave “well enough” alone!

improved Albumotope® – LS
Aggregated Radio-Iodinated (I₁³¹) Albumin (Human) for Lung Scanning

introduced by Squibb...
improved by Squibb

- Reduced Protein Content
Squibb has reduced the amount of protein by 50% while maintaining good lung scans.

- Reduced Supernatant Activity
Squibb has sharply reduced the amount of radioactivity in the supernatant, decreasing the possibility of liver interference with the lung scan.

- Reduced Unbound Iodine
Squibb has substantially reduced the amount of unbound iodine 131, effectively reducing the problem of blood background radioactivity. Albumotope–LS—a good example of Squibb leadership in radiopharmaceutical research and development. Some people won’t leave “well enough” alone.

Contraindications: Radiopharmaceuticals should not be administered to pregnant women or to persons under the age of 18 years unless the indications are very exceptional. Because iodide is excreted in human milk, aggregated radioalbumin should not be administered to nursing mothers.

Side Effects and Precautions: There have been no reported cardiovascular or other untoward effects attributable to Albumotope–LS. Extensive clinical use of Albumotope–LS has not borne out the hypothetical possibility that particles of large size might induce deleterious cardiovascular or cerebrovascular effects. The product appears to possess no antigenic properties. One patient with a known history of angioneurotic edema, who had been given Lugol’s solution in conjunction with aggregated radioalbumin similar to Albumotope–LS, developed urticaria.
For full prescribing information, see package insert.
Available: As a sterile, nonpyrogenic, aqueous suspension. Each cc. contains approximately 0.5 mg. aggregated human serum albumin labeled with iodine 131. Not less than 90% of the aggregates are between 10 and 90 microns and none are more than 150 microns in size. The preparation also contains 0.0% (w/v) benzyl alcohol as a preservative. The potency ranges from 250 to 450 microcuries per cc. on date of assay.

Squibb Division of Nuclear Medicine
New Brunswick, New Jersey 08903
Radioimmunoassay offers one of the most sensitive methods available for testing in medicine. This is because it can be used to measure physiological levels of protein hormones in millimicrogram to micromicrogram quantities. But obstacles in developing antibodies (an essential part of the test) have limited the use of radioimmunoassays.

Now, Abbott has helped this situation by introducing a complete radioimmunoassay kit — HGH-125 Imusay Kit.

With this kit, the quantitative determination of human growth hormone in serum becomes a practical matter. Children, whose growth rates are suspect, can be checked for a hypopituitary or an acromegalic condition. Since this is an in vitro test, the child receives no radioactivity.

The HGH-125 Imusay Kit introduces tomorrow's diagnostic tools today — and this is only the beginning. Abbott is now working on additional radioimmunoassay kits for other hormones.
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 minified 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.

think scan minification

Brain scan:
1:1 and 2:1 right lateral.
Contrast enhancement 60%.
Typical speeds 250 to 350 cm/min.

Whole-body bone scan:
Typical speeds 400 to 700 cm/min.

Brain scan:
1:1 and 2:1 posterior—anterior.
Contrast enhancement 50%.
Typical speeds 280 to 350 cm/min.
Which would you rather use?

<table>
<thead>
<tr>
<th></th>
<th>PGL 35mm System</th>
<th>Polaroid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Film Cost</td>
<td>$120 per year</td>
<td>$3000 per year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(More than the total cost of the PGL System)</td>
</tr>
<tr>
<td>Picture Quality</td>
<td>Extended grey scale</td>
<td>Limited Latitude</td>
</tr>
<tr>
<td>Dynamic Studies</td>
<td>Automatically advanced</td>
<td>Manually Pulled</td>
</tr>
</tbody>
</table>

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
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 FORTYSIXTH STREET, LOS ANGELES, CALIFORNIA 90058
NEW YORK OFFICE: THREE WESTCHESTER PLAZA, ELMSFORD, NEW YORK 10523
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
A NEW TRACER
FOR CIRCULATION STUDIES

MISA®
Human Serumalbumin Microspheres

3 DIFFERENT FORMS

- **MISA®** — $^{99m}$Tc — Kit for Tc-99m labelling of microspheres
- **MISA®** — $^{113}$In — Kit for In-113m labelling of microspheres
- **MISA®** — $^{131}$I — 1-131 labelled microspheres

CEA - Département des Radioéléments, B.P. n° 2 - 91, Gif - sur - Yvette - Tél. 951.80.00 - Telex 27621
CEN - Département des Radioisotopes, Mol - Donk - Tél. (014) 31.801 - Telex (011) 32405
SORIN - Radiosotopi, 13040 Saluggia (Vercelli) - Tel. (0161) 48.155 - 6 - 7 - 8 - 9 - Telex 20064 Sorinsal
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 "I" for organ scanning, for example. For the first time, use low-energy emitting isotopes like "S, "Fe and "Ca in in vivo experimental work. X-ray fluorescence scanning and analysis. Tumor detection and measurement of tumor dynamics. Detection of "Fe x-rays in blood measurements and "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
SUPER-8 MOTION-PICTURE STUDY. SELECTED FRAMES. ANTERIOR VIEW.

~3.4 SEC. FOLLOWING INITIAL DETECTION OF ABNORMALITY ON PERSISTENCE SCOPE.

~1.2 SEC. LATER.

~2.7 SEC. LATER.

~11.6 SEC. LATER.

STATIC SCINTIPHOTO. ANTERIOR VIEW.

ARTERIOGRAPHIC STUDY. RIGHT OBLIQUE VIEW.

THE PHO/GAMMA SCINTILLATION CAMERA.
The Cerebral "Flow" Study

Evaluation of Cerebral Vascular "Flow" with the Nuclear-Chicago Pho/Gamma® Scintillation Camera

In this technique using 99mtechnetium 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.

ISOTOPE AND DOSE. An intravenous injection of 10 mC of 99mtechnetium 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 supplemental diagnostic information. This information can provide direction for the use of other investigative techniques and make possible a more definitive diagnosis.

Nuclear Reviews

WHAT'S A CDS-4096? That's our Clinical Data System. For image-data storage from the Pho/Gamma in digital form. For a variety of displays and manipulation. Write for the CDS-4096 brochure.

THE PLACE FOR IN-VITRO COUNTING. It could be in your lab. Because gamma counting, in-vitro, is the way to go at times. We make it easy. Ask us for details on our gamma-counting systems.
This particle of difference in TRESITOPE® makes a big difference in your in vitro thyroid function tests*

Now the resin powder is granulated for more reliable, reproducible results than ever before. The new resin particles in our Tresitope Diagnostic Kit provide a more effectual secondary binding site for the T₃ hormone.

The resin uptake powder uniformly absorbs the serum-buffer solution, facilitates simplicity of test procedures and is a key factor in yielding reliable, reproducible results.

*NOTE: While the resin uptake test is a very useful aid in the evaluation of thyroid func-
tion, it should not be used as the sole basis for such an evaluation. In any patient, the clinical state is probably the best indication of thyroid status, and any laboratory test must be interpreted with caution when test results do not agree with clinical evidence.

There is a Tresitope Diagnostic Kit to meet your needs. The 12-test kit containing 10 light-resistant (amber) vials of solution for serum testing, plus 2 vials for use with reference samples, is designed to save refrigerator space. The vials of radioactive test solution are packaged separately and are the only parts requiring refrigeration. A handy styrofoam platform holds the vials. One end of the platform is modified to facilitate suction washings of the resin powder.

The Tresitope Diagnostic Kit is also available as a 105-test kit and a bulk vial kit. The 105-test kit contains 100 light-resistant (amber) vials of solution for serum testing, plus 5 vials for use with reference samples. The vials of radioactive test solution are packaged separately with these two kits and are the only parts requiring refrigeration. Included is a sufficient supply of tubes of resin powder and individual droppers for each test.

The bulk vial kit contains a 60 ml. bottle of test solution with a sufficient number of plastic tubes of resin powder to perform at least 105 tests.

**IMPORTANT**
Use appropriate radiation precautions in handling, identifying and discarding all radioactive material. Remember that minute amounts of radioactivity remain on components used in the test, including the styrofoam platform when it is used in performing the test, and particularly when the Tresitope Suction Method is used for a number of tests.

**SQUIBB**
Division of Nuclear Medicine
New Brunswick, New Jersey 08903

**TRESITOPE® DIAGNOSTIC KIT**
Resin Uptake Kit with Liothyronine I 125 Buffer Solution
© E. R. Squibb & Sons, Inc. 1970
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 (Dynamamera™ 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 there 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 Teledeitos 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.

The "single source responsibility" company.
FIRST WORLD CONGRESS OF NUCLEAR MEDICINE AND BIOLOGY

ANNOUNCEMENT

The First World Congress of Nuclear Medicine & Biology will take place in Montreal, Canada, between August 30 and September 4, 1971.

The Congress is sponsored by the WORLD FEDERATION OF NUCLEAR MEDICINE & BIOLOGY and by the SOCIETY OF NUCLEAR MEDICINE (U.S.A.) for all matters concerning the scientific program.

The WORLD FEDERATION OF NUCLEAR MEDICINE & BIOLOGY is a nonpolitical nonprofit organization of professional and academic nature, founded in 1967. Membership in the Federation comprises the national societies of nuclear medicine & biology, as well as technical affiliates, representatives of organizations involved in the technical developments of biomedical uses of radionuclides.

The scientific program of the Congress is expressed by its theme:

"NUCLEAR MEDICINE—THE SECOND GENERATION"

The thematic program will attempt to evaluate the progress achieved by biomedical specialties during the past generation, as well as the contribution of nuclear sciences to this progress. There will be a number of panels covering the major clinical and fundamental aspects, as well as some timely topics, such as aerospace medicine, environmental medicine, etc. Other panels will be devoted to educational problems in the field of nuclear medicine. The conclusions of the panels will be discussed in a plenary session, where the broad lines of development will be sketched and the most urgent needs will be defined.

Other specialized subjects will be treated in symposia, where the broad lines of development analyzed in the thematic program will be replaced by analysis in depth of a well delimited technical subject. A number of topics are being examined by the Scientific Program Committee, such as computer problems in nuclear medicine, high resolution radioautography, trace elements, etc.

Free communications will be accepted, insofar as they report original contributions or new developments in radionuclidic procedures. Also, a limited number of films or video tapes could be accepted, when specific techniques are presented.

Technical and commercial exhibits are accepted; the administration of the Society of Nuclear Medicine (U.S.A.) is in charge of the arrangements with the organizations who contemplate such exhibits.

Persons interested in attending the Congress and in contributing to the scientific program are requested to apply for the information form, either at the Administrative Office of the Society of Nuclear Medicine, 211 E. 43rd St., New York, N.Y. 10017, or to the:

SECRETARIAT GENERAL DU PREMIER CONGRES MONDIAL DE MEDECINE & BIOLOGIE NUCLEAIRES. — UNIVERSITE DE MONTREAL
P.O. Box 6128, Montreal, Canada
POSITIONS OPEN

EXPERIENCED SENIOR NUCLEAR medicine technologist required for the department of nuclear medicine. Reply Royal Victoria Hospital, Dr. P. Farrer, Director of Nuclear Medicine, 687 Pine Ave., West Montreal.

NUCLEAR MEDICINE TRAINEESHIP: 1 or 2-year program, University of Minnesota Hospitals Minneapolis, available immediately. Minimum prerequisites: 1 year clinical internship followed by 1 year residency training in internal medicine, radiology or pathology. Contact: Merle K. Loken, M.D., Professor of Radiology, Director, Division of Nuclear Medicine, University of Minnesota Hospitals, Minneapolis, Minn. 55455.

PHYSICIAN WANTED: PHYSICIAN needed part time for ultra modern nuclear medicine laboratory in Bridgeport, Conn. Contact David Fischer, Administrator, Nuclear Facilities, Inc., 1401 Ocean Avenue, Brooklyn, N.Y. 11286 or call 212-382-7711.


CHIEF TECHNOLOGIST WANTED: Challenging position available about Sept. 1, 1970 in Bridgeport, Conn. Equipment will include scintillation camera with on line computer, twin probe scanner, liquid scintillation system, etc. Salary open. Send resume to: David Fischer, Administrator, Nuclear Facilities, Inc., 1401 Ocean Avenue, Brooklyn, N.Y. 11286 or call 212-382-7711.

POSITION WANTED

Ph.D. WITH EXPERIENCE IN LOW energy nuclear physics and computer, desires teaching and research position in field of medical physics in a department of radiology and/or physics. Available immediately. Reply to Box 961, Society of Nuclear Medicine, 211 E. 43rd St., New York, N.Y. 10017.

JNM Classified Section contains "Positions Open" and "Positions Wanted." Non-display insertions by members of the Society are charged at 20¢/word for each insertion with no minimum rate. Non-display insertions by employers or nonmembers are charged at 50¢/word with a minimum of $15. Display advertisements are accepted at $40 for 1/6 page, $80 for 1/3 page, $115 for 1/2 page and $210 for a full page. The closing date for each issue is the 20th of the second month preceding publication month. Agency commissions and cash discounts are allowed on display ads only. Box numbers are available for those who wish them.

New formula/now even more effective

for Radiodecontamination

Specifically formulated for broad-band ease and efficiency in cleansing glass, metal, and plastic labware of isotope activity. Safe for skin.

ISOCLEAN CONCENTRATE

ONE LITER BOTTLES

Each $6.90

Case of 6 36.00

FOUR LITER BOTTLES

Each $22.00

Case of 4 72.00

Contact: Phone 216/823-4528

ISOLAB INCORPORATED

Drawer 4350, Akron, Ohio 44321

THE SOCIETY OF NUCLEAR MEDICAL TECHNOLOGISTS announces and invites you to the
6th ANNUAL SCIENTIFIC SYMPOSIUM
November 13-15, 1970
Statler Hilton Hotel
Dallas, Texas

Registration deadline October 26, 1970

Address all inquiries to:
Society of Nuclear Medical Technologists, Inc.
1201 Waukegan Rd.
Glenview, Illinois 60025

312-724-7700
And it's a sight better word than sorry.
In radiopharmaceuticals, we can do the job almost always. But we can't promise miracles.
Which means you can count on whatever we do promise. When we say material will be in your hands at 0700 hours, that's when you'll have it. And its activity is 20.00 mCi, if that's what we said. Nothing less.
Service is the top of our line, and it's only as good as its reliability. Look at our catalogue of radiopharmaceuticals. The range is wide. But the tolerances for purity and stability are strict.
That goes for the quality of our comprehensive line of standards and clinical nuclear laboratory supplies, too.
Our home and 11 branch offices communicate by Telex. For fast order service, call the office that is nearest you.
All shipments are made the fastest way, usually the day we get your order. But, if there is a delay, you'll know about it as soon as we can say can't.

How many dual-headed nuclear scanners can be positioned in all these ways?

Just one.

The new Raytheon family of digital scanners provides the ultimate in head placement flexibility. Tomograms, oblique scans of normally masked crania 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.
Another NMS System Plus

NMS 35mm and 70mm photographic systems routinely record pathology often missed by Polaroid. NMS systems give you another big plus—they add dynamic recording capability to your scintillation camera.

Time-lapse study performed by Dr. Lester Levy,
Long Island Jewish Hospital, New Hyde Park, New York
Scintillation Camera: Picker Dynacamera
Photographic System: NMS 200

Nuclear Medical Systems, Inc.
For specifications contact: 142 Mineola Avenue, Roslyn Heights, N.Y. 11577
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

Another problem solved!

RADX CORP.

P.O. BOX 19164 • HOUSTON, TEXAS 77024 • PH (713) 466-9628
Radioimmunoassay Kits from Schwarz/Mann.
A major factor in radiochemicals makes a major commitment to a major new field.

Renin Activity
Developed by Schwarz/Mann, this is the first such commercially available kit for the determination of renin activity by the measurement of generated Angiotensin I. Highly sensitive, highly specific, rapid method for serum samples. Contains 4 vials Angiotensin I antisera (each vial sufficient for 100 tubes), 1 vial 125I Angiotensin I, and 1 vial Angiotensin I standard solution. Kit sufficient for 400 tubes.

Insulin
Permits measurement of insulin concentration in small volumes of blood plasma, urine, or tissue homogenates. Contains 1 vial 125I-labeled pig insulin, 1 vial human insulin standard solution, and five vials of insulin Binding Reagent (each vial sufficient for 80 individual tubes). Kit sufficient for 400 tubes. (Note: Developed by the CEA-CEN-SORIN Association in collaboration with the Laboratory of Clinical Physiology of C.N.R., Pisa, Italy.)

Human Growth Hormone
Permits measurement of low concentrations of Human Growth Hormone in small volumes of serum or plasma. Contains 1 vial 125I-labeled HGH solution, 1 vial HGH standard solution, two vials anti-HGH antisera (produced in guinea pigs), and two vials of precipitating antiserum (produced in rabbits). One vial of each of the two antibodies is sufficient for 80 tubes. Each kit is sufficient for 160 tubes. (Note: Developed by the CEA-CEN-SORIN Association in collaboration with the Laboratory of Clinical Physiology of C.N.R., Pisa, Italy.)

Digoxin
For monitoring digoxin levels in cardiac patients. Being developed by Schwarz/Mann—to be introduced shortly.

Subsequent Introductions
Schwarz/Mann is actively involved in the development of additional radioimmunoassay kits. To be kept informed of the newest introductions, please check the appropriate box on the coupon below.

Note: An AEC or participating state radioactive license is required to order these kits. Please include appropriate license number on coupon. Thank you.

Order form for kits and/or information.

<table>
<thead>
<tr>
<th>Kit</th>
<th>Catalog Number</th>
<th>Price</th>
<th>Quantity Desired</th>
<th>Check Here For Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renin Activity</td>
<td>0750-03</td>
<td>$75 ea.</td>
<td>$70 ea. (2-5)</td>
<td>$65 ea. (6-11) $60 ea. (12+)</td>
</tr>
<tr>
<td>Insulin</td>
<td>0750-02</td>
<td>$55 ea.</td>
<td>$50 ea. (2-4)</td>
<td>$45 ea. (5-9) $40 ea. (10+)</td>
</tr>
<tr>
<td>HGH I</td>
<td>0750-01</td>
<td>$60 ea.</td>
<td>$55 ea. (2-4)</td>
<td>$50 ea. (5-9) $45 ea. (10+)</td>
</tr>
<tr>
<td>Digoxin</td>
<td>0750-04</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Note: To be informed of future radioimmunoassay kit introductions, please check here. □

Date__________________________Order Number__________________________Radioactive License Number__________________________

Name__________________________Title__________________________Department__________________________

Organization__________________________Phone Number__________________________

Address__________________________State__________________________Zip__________________________

Schwarz/Mann, Mountain View Avenue, Orangeburg, New York 10962
Squibb takes the mercury out of kidney scanning.
The new Renotec™ Kit.
(Technetium 99m-Diethylenetriamine Pentaacetic Acid [DTPA])

The Non-Mercurial Renal Scan
A convenient, easy-to-use kit for preparing technetium 99m-DTPA—a renal scanning compound that gives you all these advantages:
- low radiation exposure to the kidney
- sustained activity in the kidney for conventional rectilinear scans
- doses prepared in minutes, utilizing 99mTc eluate from your Squibb generator.

After intravenous injection, 99mTc-DTPA is rapidly cleared by the normal kidney. Sufficient activity remains in the kidney, however, to permit conventional scans at two hours after injection.

Unlike radiomericulral compounds for renal scanning, the much shorter physical half-life of technetium 99m (only six hours) greatly reduces the radiation exposure to the kidney.

Toxicity due to DTPA is not a major problem with the dose of chelate administered in subjects with either normal or depressed renal function.

With Renotec, doses can be prepared in minutes, as you need them, utilizing the 99mTc eluate from your Technetope® II (Technetium 99m) Sterile Generator.

New Versatility For Your Squibb Generator

The Technetope II (Technetium 99m) Sterile Generator provides a means of obtaining a sterile, non-pyrogenic supply of technetium 99m for use with two different Squibb diagnostic kits: the new Renotec (Technetium 99m-DTPA) Kit and the Tesuloid® (Technetium 99m-Sulfur Colloid) Kit (an easy-to-use kit for preparing technetium 99m-sulfur colloid solution for liver and spleen scanning).

See next page for brief summary.
New Renotec™ Kit
(▶Technetium 99m-Diethylenetriamine Pentaacetic Acid [DTPA])

The non-mercurial renal scan.

The RENOTEC (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 0.07N Sodium Hydroxide Solution providing 2.5 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, 85.5 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 provides 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 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 humans, 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 years of age, procedures using 99mTc-DTPA or 99mTc-S colloid are occasionally necessary in such patients. The low internal radiation dosage of 99mTc-DTPA makes it a very satisfactory agent when liver or spleen scans are necessary in young patients. The low internal radiation dose of 99mTc 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 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 solutions from Technetope II (Technetium 99m) Sterile Generator, proper radiation safety precautions should be maintained at all times. The column containing 99Mo need 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.

The stoppers of the eluent bottle, of the elution tube, and of the collecting vial, as well as both rubber closures in the generator column, should be swabbed with a suitable germicide before each entry. All entries into the generator column must be made aseptically with sterile needles. 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. All equipment used to collect or administer sodium pertechnetate 99mTc must be sterile. Do not administer material eluted from the generator if there is any evidence of foreign matter.

NOTE: The Renotec Kit and the Tesuloid 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 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 99mTc 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 renal 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 radiochloromerodrin scan, and because the choroid 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 Kit and the Tesuloid Kit were designed for use with the sodium pertechnetate eluate obtained from a Technetope II Sterile Generator. It is recommended that only Technetope II 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 II.
Graphic™! Dynamic™! Logic™!

To test, to “see” and to learn what goes on inside the patient!
Announcing

Graphic...
...a new concept in scanners!  

Speed!  
Portability!  
Simplicity of Operation!

Scan speed ranges to 1,000 cm./min.

... variable from 10 to 1,000 cm./minute with appropriate fixed index level. 1,000 cm./minute makes it the fastest scanner available. Portal to portal patient time may be less with some studies than with camera devices.

Portable

... system is readily portable and can be easily moved on its 5" casters. Will fit through any standard door opening. It is the only scanner that can easily be taken right to the patient in his hospital bed.

Simple to operate

... technician can master scanner operation within 30 minutes. Remote control for detector positioning. Detector angle may be adjusted 360°.

Scan area 17" either way

... 17" x 14" in either direction. Allows for easier patient set-up to scan large lung fields, liver, spleen, etc. Can scan 17" laterally or horizontally (important in obese patients). Uses standard 14" x 17" x-ray film.

Convertible

... the Graphic is available with either a 3" or a 5" detector head. Can be converted easily in the hospital from a 3" to a 5" scanner.

Versatile

... five levels of contrast enhancement including digital mode and six levels of background erase.

Integrated circuitry

... allows fast, reliable photoscans in the shortest possible time with less instrument down time.

Ask about Abbott's unique service concept!
Announcing Dynamic...
...to study the life systems!

**Four chart speeds**
... 0.1 millimeter/second, 1.0 millimeter/second, 10 millimeters/second, and 20 millimeters/second which are keyed to the circulation times relating to dynamic function studies of the important organs of the body. Included are the brain, lungs, heart, and kidneys.

**Digital**
... the Dynamic system is entirely digital in operation.

**"Foldover" capability**
... this unique feature of the strip chart recorder assures you that no data will be lost. A Dynamic exclusive.

**Heated stylus**
... in each of the strip chart recorders eliminates the messy chore of ink changing. This prevents blurred information as well as smudged fingers.

**Choice**
... of one, two, and three detector systems. 1.5 x 1.5 inch sodium iodide detectors mounted on electrically operated arms. This modular concept allows you to add on as your needs expand.
Radioisotope tests
... including T-3, T-4, thyroid uptake*, hepatic uptake*, plasma volume, fecal Rose Bengal excretion, iron binding, fat absorption, and placenta localization*.

Speed of electronics
... count and display in excess of 15,000,000 counts per minute.

Solid state integrated circuitry
... assures higher reliability; less down time.

Simple to operate
... minimum of controls with Direct Ratio Readout in %.

Choice of 3 models
... 101 and 111 have spectrometer and well in one instrument. The 121 has an external well.

Fast service
... with easy-to-use service manual; replacement boards in 24 hours. There’s no waiting for servicemen.

Modular concept
... with built-in versatility. Protect your investment by adding components as the need arises.
*May be done by adding medical stand, external probe (shield and collimator).

The Full Line Nuclear Medical Instrument Company
ABBOTT LABORATORIES North Chicago, Illinois 60064
Nuclear Instruments You Can Count On
Vertretung für Europa: Labor-Service GmbH, Abt. Radiopharmazeutika, 6236 Eschborn/Ta, Germany, Postfach 1245
We don’t expect you to believe that STERCOW 99m is the safest, most convenient, most efficient generator of Technetium-99m... until you try it. And we don’t ask you to accept our claim that there is no more reliable delivery system than that provided by Duphar... until you try that too. That’s why your Philips representative has been authorised to offer you the chance to sample both STERCOW 99m and the Duphar delivery service... at our expense.

STERCOW 99m comes in three sizes. This allows us to produce a maximum concentration of “milk”, by matching the activity and elution volume of the generator. You can inject smaller volumes, and prepare labelled components in smaller volumes. The milk is sterile and pyrogen-free... no further sterilisation is necessary. All orders are despatched over the weekend. Activity is p-3-calibrated for the first day of use... usually Monday at 18.00 hours M.E.T. No matter where you work, or how much you need, delivery is prompt and dependable. Are you ready to try it? We’re ready to deliver it. Pick up the phone now and give us... or your representative... your no-charge order. Or send it through the post. We’ll do the rest.

N.V. Philips-Duphar Cyclotron and Isotope Laboratories Petten, The Netherlands

...try it for yourself

...at our expense
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® III Scintillation Camera or one of its predecessors.

That fact prompts us to call Pho/Gamma III 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 radionuclides 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 III 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 ratemeter; Photo/Scope III 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 III.

And experience, after all, is the best teacher.