



By eliminating the disadvantages of earlier methods, the Triosorb Sponge has achieved a real breakthrough in thyroid testing. **It is an in vitro test unmatched in accuracy, speed and convenience.**

Accuracy: Because factors such as red blood cells and exogenous iodine have been eliminated from consideration in the Triosorb Test, it is unmatched in accuracy.

Speed: With only 3 washes and no need for double pipettings, shakers, or incubators, the Triosorb Test can be more rapidly performed than any other T-3 test.

Convenience: Triosorb is in a disposable kit ready for immediate use at room temperature, making it the simplest and most convenient thyroid function test to perform.

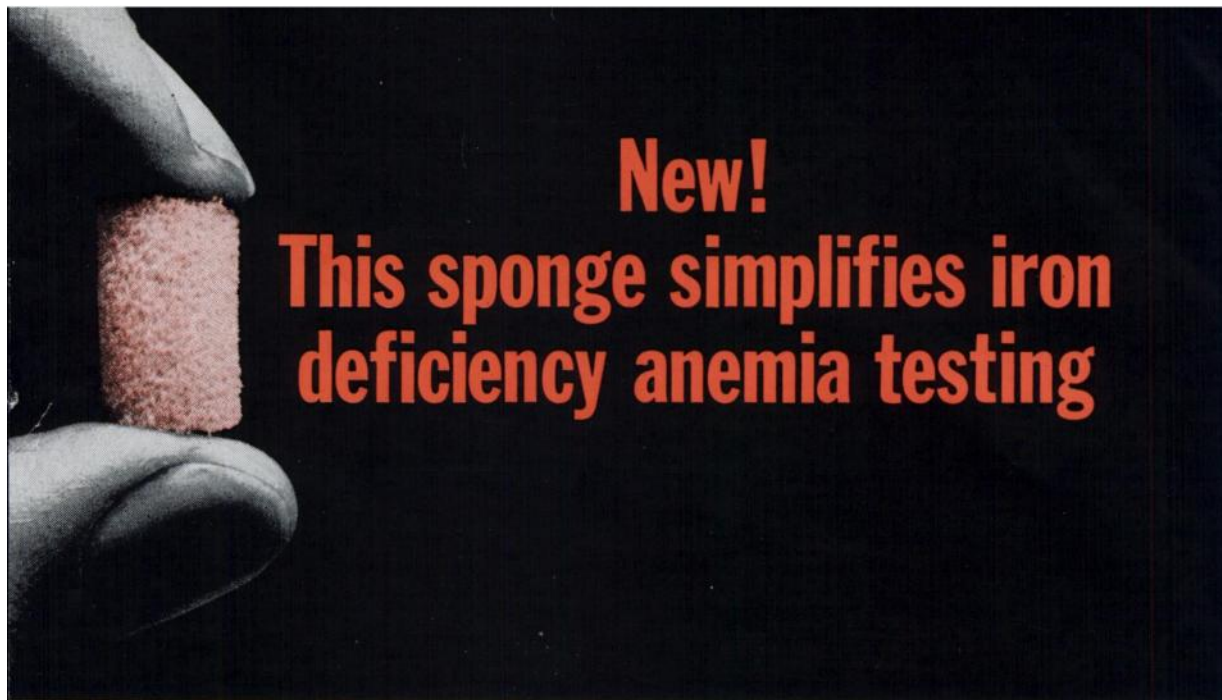
McAdams* reported that "The resin sponge (Triosorb) technique is superior to the erythrocyte method for performing the I^{131} T3 test in terms of simplicity, convenience and elimination of errors characteristic of the erythrocyte procedure."

Triosorb is available to all doctors, hospitals and clinical laboratories—AEC licensing is not required. Because Triosorb will enable far more screenings to be performed, this procedure may soon become as standard as today's blood counts and urinalyses.



*McAdams, G. B. and Reinfrank, R. F., Jnl. Nuclear Med., 5:112, Feb., 1964.

TRIOSORB®
T-3 DIAGNOSTIC KIT
ABBOTT LABORATORIES NORTH CHICAGO, ILLINOIS



Announcing IROSORB-59 Diagnostic Kit

Irosorb-59 is the second in a series of in vitro radio-pharmaceuticals tests developed by Abbott Laboratories. The Irosorb-59 sponge consists of a polyether foam in which is embedded a pre-measured finely divided ion-exchange resin. **Irosorb-59 offers a remarkable degree of accuracy and simplicity that makes routine screening a practical matter.**

Accuracy: The diagnostic accuracy of the test is unsurpassed in measuring latent iron-binding capacity. What's more, it can be scheduled where other standard methods may not be applicable. For example, it may be used following the administration of ferrous iron.

Speed: Irosorb-59 can be washed quickly, there being only 3 washes. No incubators or shakers are needed.

Convenience: Irosorb-59 is in a disposable kit form ready for immediate use at room temperature.

Safety: No dilution or pipetting of radioactive material is necessary. Since the patient receives no radioactive material, the test can be used in children, pregnant women, or in adults without any hazard of radioactivity.

Flexibility: The test does not require the presence of the patient for the determination of the radioactivity. The serums can be frozen and saved until a sufficient number has been collected to run a rack full of tubes at one time, or serum samples can be mailed to personnel performing the test.

Irosorb-59 is available to all doctors, hospitals and clinical laboratories—AEC licensing is not required.



IROSORB-59®

DIAGNOSTIC KIT

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801182



new TLD system

Harshaw's Model 2000. Designed for general radiation dose measurements with the sensitivity for personnel dosimetry.

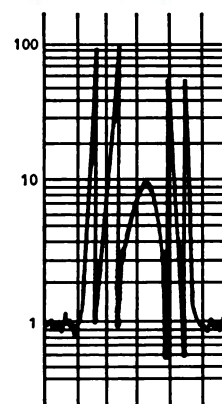
This new, precision Thermoluminescence Dosimeter System offers these features and advantages:

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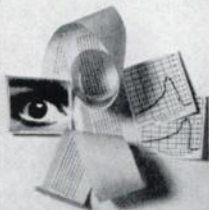


TYPICAL GLOW CURVE using logarithmic current output showing the wide dynamic range obtainable with automatic ranging. Peak displayed here is 100,000 times larger than the background signal.



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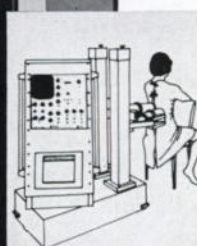
With 554 Scintiscopes, the system counts two isotopes simultaneously with print out via lister-printer or teletype page printer and punch. Complete spectrum analysis possible to check each sample. All-automatic, 2-channel system handles 100 samples.

MULTI-TALENTED MULTI-CHANNEL ANALYZER!!!



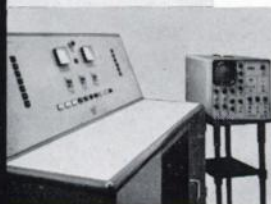
MODEL 810C WELL SCINTILLATION COUNTER SYSTEM

With 554 Scintiscopes, allows use of complete flexibility of multichannel analysis capabilities: dual input; 3-channel digital integration; digital spectrum stabilization; and spectrum expansion.



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With 554 Scintiscopes, stores patient data in memory for permanent recording via strip chart recorder, lister-printer, or page printer and punch. Tape punch allows data retrieval later for future study.



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MODEL 554 SCINTISCOPE One of the most versatile multi-channel analyzers available today, the Baird-Atomic Model 554 scintiscopes is so multi-talented, accurate, fast and adaptable . . . it can serve as the visual and digital memory in a multitude of complete nuclear laboratory applications. Above, it is shown functioning in several systems: *in automatic well sample changing; storing patient data in renal study; in neutron activation analysis; and well scintillation counting.*

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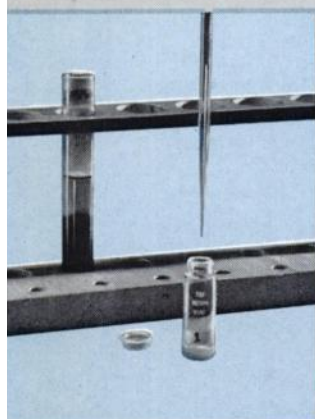
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Rationale
Make radioactive liothyronine available to serum binding sites.



Technique
Add 3 ml TBI buffer to the vial.

Rationale
Maintain normal blood serum pH to assure stability.



Technique
Mix at constant speed for approximately two hours. Exact time and temperature control is not critical.

Rationale
Assure complete uptake of radioactivity on available serum binding sites.



Technique
Transfer 2 ml of serum to a counting vial and count.

Rationale
Determine radioactive uptake by serum. Comparison with normal Control Serum uptake yields "Thyro Binding Index."

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■ Elimination of any need for temperature corrections or critical timing.

■ Each serum is counted just once, for a minimum of serum handling.

■ TBI includes a “matched control” in every kit.

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TBI costs less, too — TBI cost is less than \$1 per test in quantity, permitting its use as a screening test. Write or call for full details.

*In tests performed on over 2200 patients, the TBI test was reported in agreement with final clinical diagnosis in over 90% of the cases. Ref.: Scholer, J. F., J. of Nuclear Med., May '63, p. 192.

Write For This Booklet

Mallinckrodt/Nuclear

Box 6172 Lambert Field, St. Louis, Mo. 63145

Dear Sirs:

Please send a copy of Mallinckrodt/Nuclear's booklet: Thyro Binding Index.

Name (please print) _____

Position or Department _____

Hospital or Laboratory _____

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Name the radioisotope dose you want to calibrate:

Technetium-99m	Mercury-203
Iodine-131	Gold-198
Xenon-133	Chromium-51
Strontium-87m	Selenium-75
Gallium-68	Cobalt-60
Cobalt-57	Cadmium-109
Mercury-197	Iron-59
Radium-226	Cesium-137
Sodium-24	or what have you.

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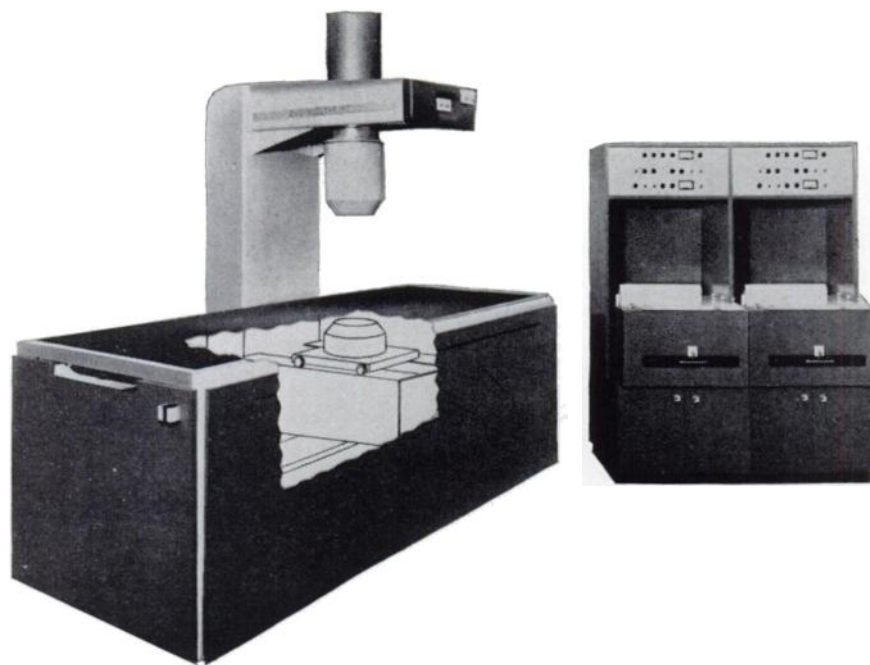
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RADIOISOTOPE SCANNER

MODEL 54-FD

DUAL, OPPOSED, 5-INCH CRYSTALS



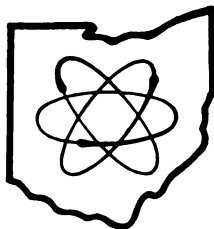
The demonstrable advantages of a dual 5-inch crystal scanner should be investigated by all those with a high clinical load who desire high resolution, rapid scans of both large and small organs or of the whole body.

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This unparalleled radioisotope scanner is priced at \$28,750 with delivery in 90 days guaranteed.



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Research in the Service of Mankind

JAMES PICKER FOUNDATION

On behalf of the James Picker Foundation, the National Academy of Sciences—National Research Council is accepting applications for postdoctoral awards of fellowships and grants in the field of radiology and nuclear medicine for the year 1968-1969. Awards are made in four categories:

The *Advanced Fellowships in Academic Radiology* reflect the primary interest of the James Picker Foundation in the development of students for careers in academic radiology. Emphasis is placed upon the acquisition of a broad background in the basic sciences related to radiology. Preference will be given to applicants under 34 years of age. Completion of clinical training in radiology ordinarily will be a prerequisite. The candidate should be prepared to devote a minimum of two years to course work in the basic sciences and to the application of the techniques and methods of these disciplines to radiological research. Applications will be accepted upon nomination by a clinical adviser, who should be a member of the staff of a department of radiology in a medical school.

Research Fellowships are open to recent graduates who desire investigative experience and training in radiology or nuclear medicine. While persons from closely related disciplines are eligible to apply, candidates with some training in radiology or nuclear medicine or both will receive preference. Applicants must hold the M.D., Ph.D., or Sc.D. degree or the equivalent. Awards are for a period of one year, but requests for renewal will be considered.

Grants for Scholars are offered to assist medical schools, hospitals, and other research institutions in supporting and developing junior staff members in radiology and nuclear medicine. This is a transitional form of support, designed to bridge the gap between the completion of the conventional type of postdoctoral research experience and the period when the young scientist has thoroughly demonstrated his competence as an independent investigator. The application is submitted by the institution on behalf of the prospective scholar. The grant is made directly to the institution as a contribution toward the scholar's support, or his research, or both. Initial grants are made for two years, but renewal for a third year may be recommended.

Research Grants are designed to encourage investigations in radiology and nuclear medicine that offer promise of improvement in methods of diagnosis or treatment of disease. In line with the interests of the Foundation, the program is oriented toward, but not limited to, the diagnostic aspects of these fields. Studies involving the use of radioisotopes fall within the scope of this program. Research grants are awarded to institutions, rather than to individuals. Initial awards may be made for two years.

Applications in these four categories will be reviewed by the Committee on Radiology of the Academy—Research Council's Division of Medical Sciences. Final determination of awards is made by the James Picker Foundation upon recommendation of the Division. Support is not restricted to citizens of the United States or to institutions within this country.

Applications for the fiscal year 1968-1969 should be submitted by *October 1, 1967*. Application blanks and further details may be obtained from the *Committee on Radiology, National Academy of Sciences—National Research Council, 2101 Constitution Avenue, N.W., Washington, D. C. 20418*.

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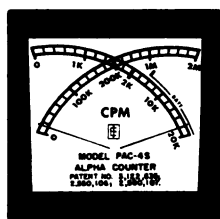
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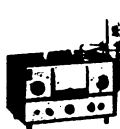
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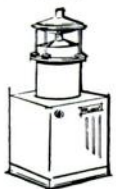
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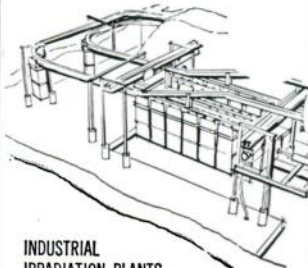


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Barium 133	Mercury 203
Bromine 82	Molybdenum 99
Cadmium 109	Nickel 63
Cadmium 115 ^m	Phosphorus 32
Calcium 45	Potassium 42
Carbon 14	Radium 226
Cesium 131	Rubidium 86
Cesium 134	Scandium 46
Chlorine 36	Selenium 75
Chromium 51	Silver 110 ^m
Cobalt 60	Sodium 24
Copper 64	Strontium 85
Gold 198	Sulphur 35
Iodine 125	Thallium 204
Iodine 131	Tungsten 185
Iridium 192	Tin 113, Tin 114
	Zinc 65

NEUTRON SOURCES

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This is the business end of a simple, self-contained unit¹ that provides sterile², pyrogen-free³ technetium⁴. Quickly.⁵ Safely.⁶ Reliably.⁷

1. Simple, self-contained unit — Nothing else needed. Nothing.

2. Sterile — Every generator is autoclaved before shipment and each eluate is forced through a final 0.22 micron sterilizing filter as an extra precaution. Further: user is notified before calibration time if there is any bacterial or mycotic growth.

3. Pyrogen-free — Every generator is tested for pyrogenicity before shipment.

4. Technetium — As the pertechnetate ion. And we *guarantee* the amount of technetium obtainable from each generator. No vagueness about "yield".

5. Quickly — The entire elution and assay process takes only a few minutes. And speaking of time: because of a simple, logical sequence, and a profusely illustrated, refreshingly simple, instruction manual, only a few minutes are needed to master

the entire procedure — even without any relevant prior experience.

6. Safely — *Patient* safety derives from points 2 and 3 above and this: every elution is easily and precisely checked for possible molybdenum breakthrough; simple, accurate radioassay materials are included for testing all elutions. *Hospital personnel* safety is related to point 5 above since speed reduces exposure, and: the generator never leaves its 3/4" lead shield or its 6 inch diameter can; and the construction is unbreakable.

7. Reliably — Semi-automatic operation eliminates the risk of improper elution with the wrong solvent, the wrong volume of solvent, or at the wrong rate. (See also: most other points above.)

For more information, contact any Picker Nuclear office or write for file 131N.

SQUIBB

a research concept in radiopharmaceuticals

The first sterile generator for Technetium-99m

The new Technetope Sterile Generator is a unique development in the field of radiodiagnostics and reflects the broad Squibb experience and technical know-how in this area. It offers a simple means of obtaining a sterile, non-pyrogenic supply of the radiopharmaceutical Technetium-99m (Tc^{99m})—a versatile scanning agent used for visualizing the brain that can be used both orally and intravenously. Tc^{99m} is the decay product of Molybdenum-99 (Mo^{99}) and is produced by separation from its parent isotope. The relatively simple operation involves allowing the Mo^{99} parent to decay and generate Tc^{99m} , then removing the Tc^{99m} from the generating column by selective elution.

non-pyrogenic and sterile, with important safeguards

For the first time the physician can be assured of a supply of Tc^{99m} that is both sterile and non-pyrogenic, since the Technetope generator is prepared with non-pyrogenic materials and sterilized by autoclaving. It consists of a specially designed lead shield containing an alumina-packed glass column that releases Tc^{99m} upon elution. The lead shield has two access ports to the rubber closures at the top and bottom of the glass column, allowing aseptic elution and storage under conditions of constant shielding. (See Figure 1.) Additional shielding during shipment and during the elution procedure is provided by a removable lead sleeve that surrounds the entire assembly.

Eluting the generator every 24 hours will provide optimal amounts of Tc^{99m} . Most laboratories, therefore, will find it convenient to elute the generator at a specific time each day. However, the generator may be eluted whenever sufficient amounts of Tc^{99m} have accumulated within the column.

available with four different quantities of Mo^{99}

The quantity of Tc^{99m} eluted from the generator is, of course, dependent upon the quantity of Mo^{99} present in the column. Technetope sterile generators contain either 50, 100, 200, or 300 millicuries of Mo^{99} at the time of assay, depending on which activity has been requested. The activity obtained from subsequent elutions will depend on the time interval between elutions. (See Fig. 2.)

Warning: Proper radiation safety precautions should be maintained at all times. The glass column containing Mo^{99} need not be removed from the lead shield at any time. The radiation field surrounding an unshielded column is quite high. Solutions of Tc^{99m} withdrawn from the generator should always be adequately shielded. The early elutions from the generator are highly radioactive. For radiation protection, a lead shield for the collecting vial is included with Technetope.

Precautions: Radiopharmaceuticals should not be administered to pregnant women or patients under 18 unless the indications are very exceptional.

This sterile and non-pyrogenic generator is a Squibb first. Of course, others may emulate it, but none can offer the body of experience that made it possible.

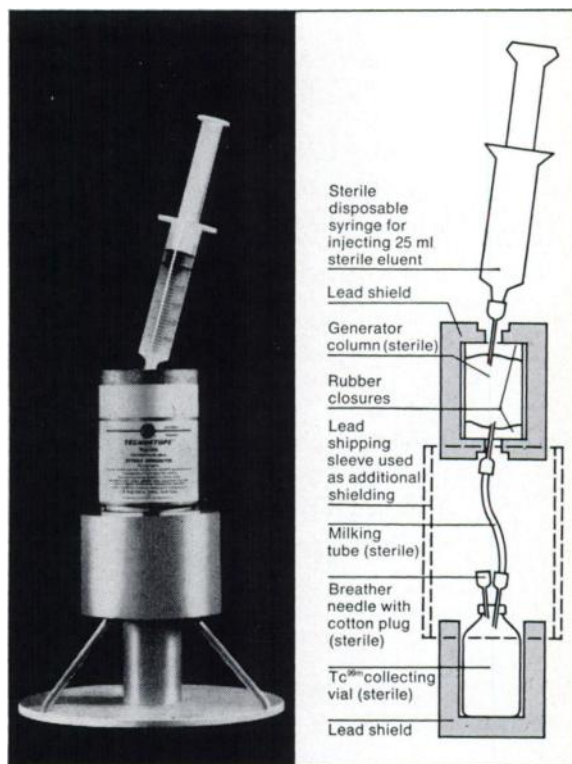


Figure 1. Sterile generator set up for use.

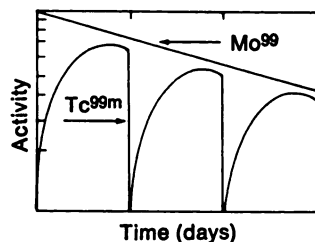



Figure 2. Mo^{99} decay and Tc^{99m} growth after daily elutions.

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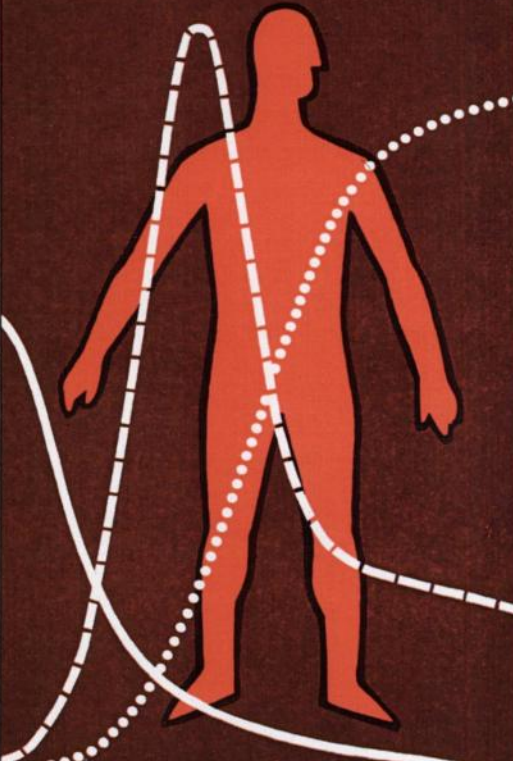
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SIDE EFFECTS: None reported to date; however, care should be exercised in administration.

Comprehensive literature available on request.



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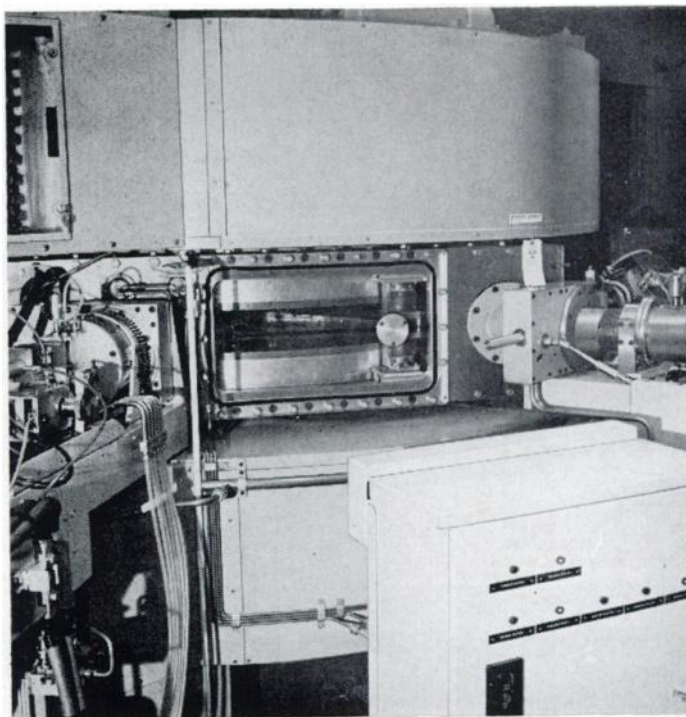
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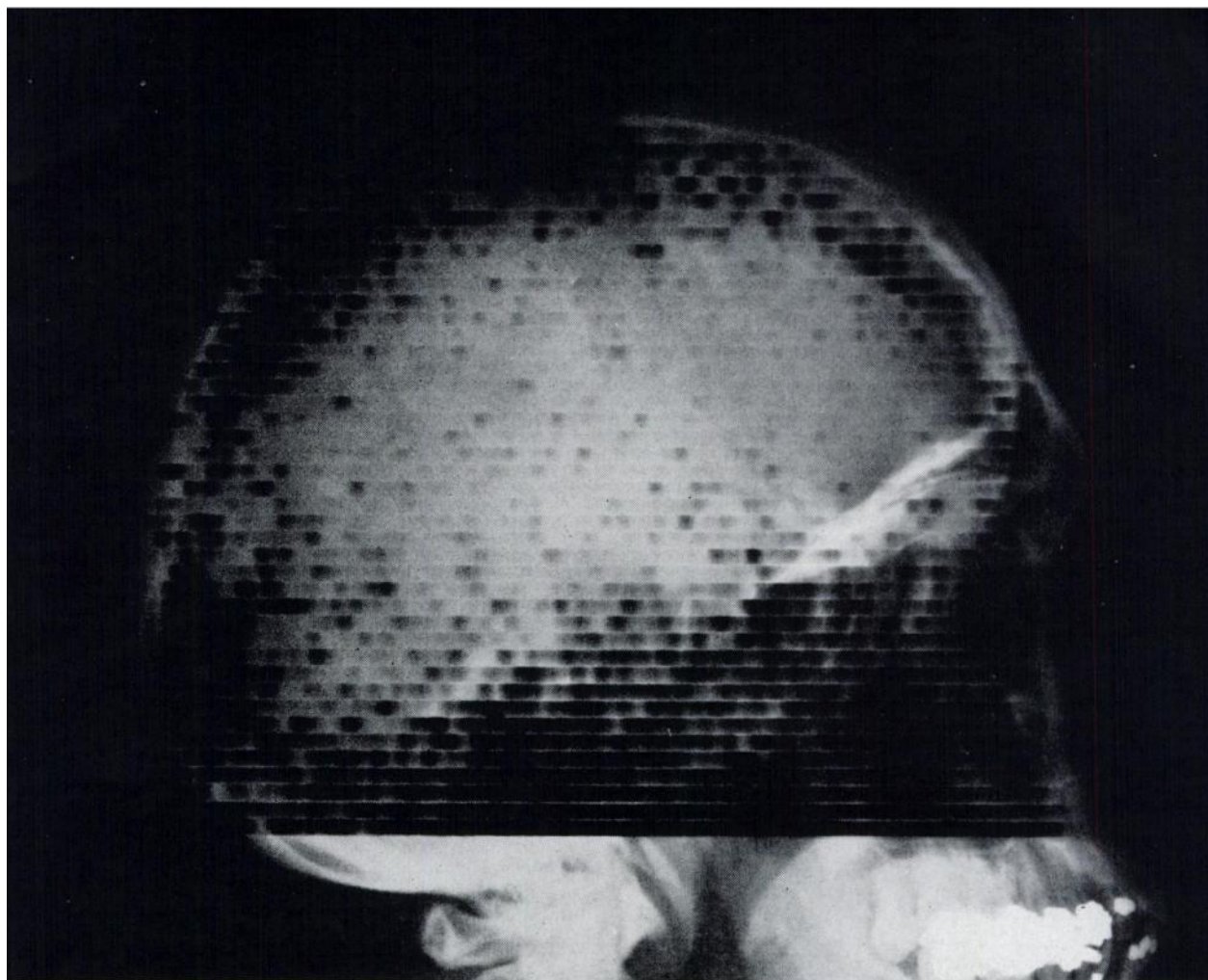
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Journal of Nuclear Medicine

July, 1967

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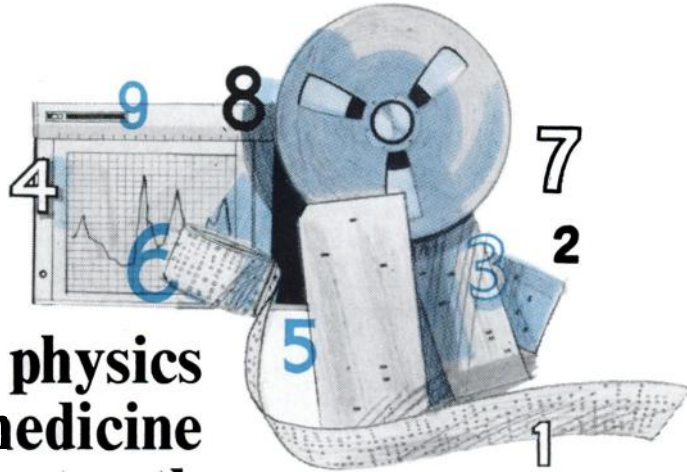
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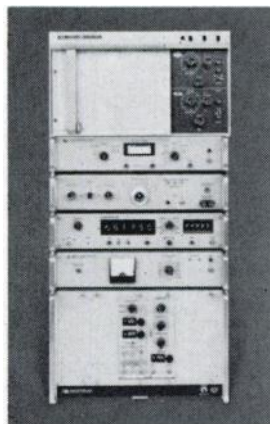
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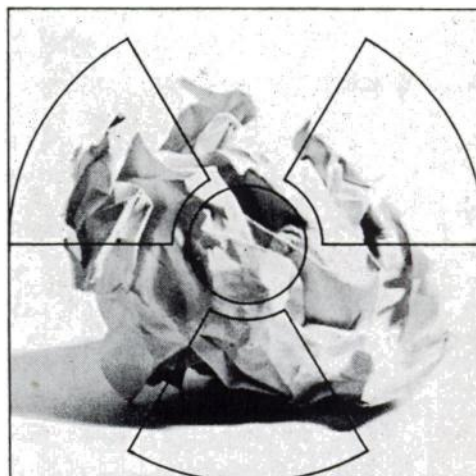
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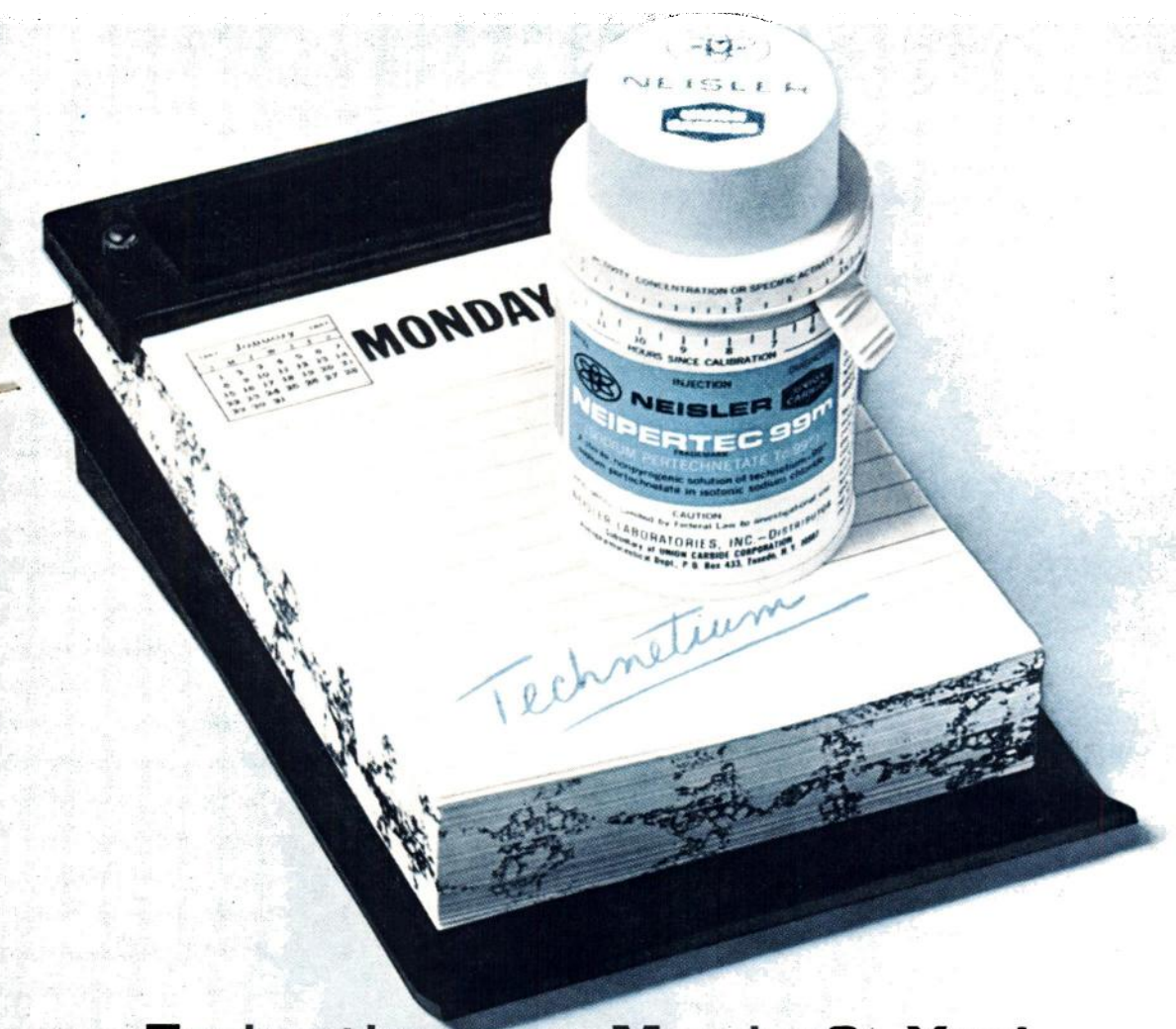
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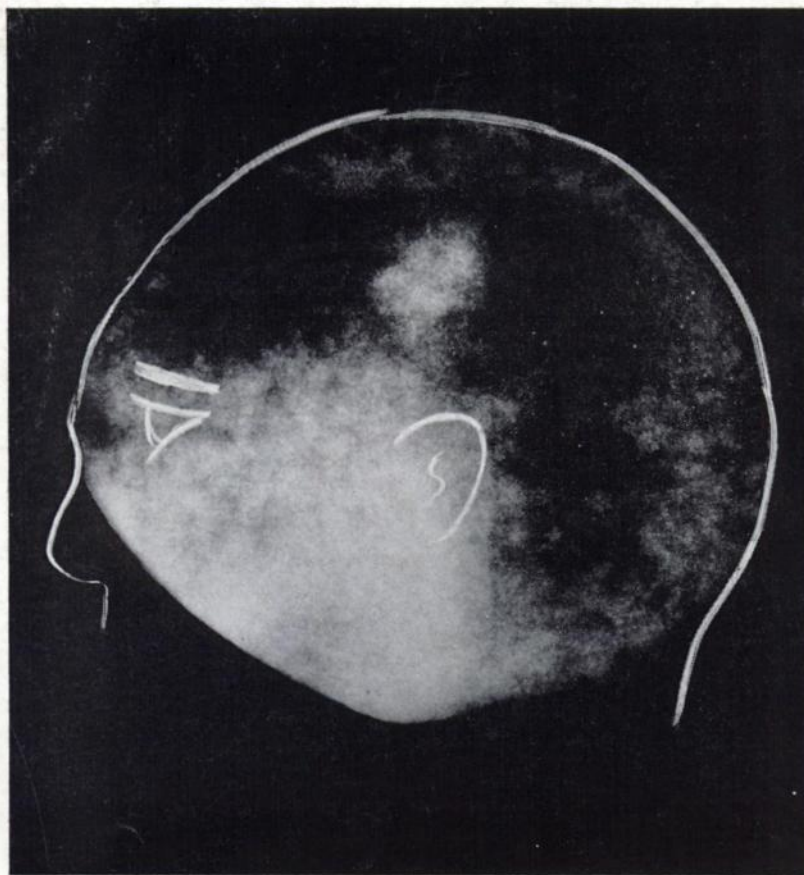
1. J. G. McAfee, C. F. Fueger, H. S. Stern, H. N. Wagner, Jr. and T. Migita: Tc^{99m} pertechnetate for brain scanning, *J. Nucl. Med.*, 5:811, 1964.

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ORGAN: Brain.
DOSE: 2 millicuries
 technetium-99m pertechnetate.
VIEW: Left lateral.
EXPOSURE TIME: 2 minutes,
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 injection.
DIAGNOSIS: Abscess.
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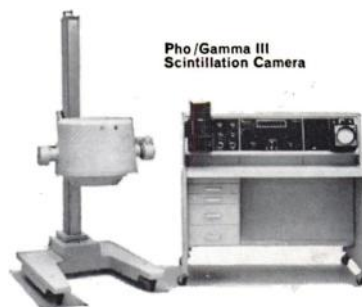
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