This sponge revolutionized thyroid testing!

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., Jrnl. 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.

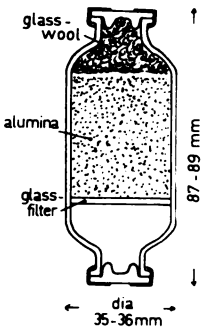
Irosorb-59 is available to all doctors, hospitals and clinical laboratories—AEC licensing is not required.

IROSORB-59®
DIAGNOSTIC KIT
ABBOTT LABORATORIES NORTH CHICAGO, ILLINOIS

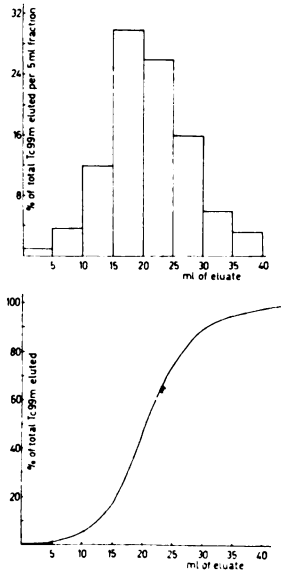
601182

Stercow Tc99m

The DUPHAR Stercow is a new design of a sterile generator and presents a revolution in radioactive cows. During milking the sterile eluant, the generator and the milk are comprised in a closed system. Therefore the milk is sterile and suitable for injection.



Tc99m elution



DRN 4332 Technetium (Tc99m) Stercow
Prices ex works Amsterdam
for nominal Mo99 activities:

10 mC	Dfl. 150.—
25 mC	Dfl. 180.—
50 mC	Dfl. 230.—
100 mC	Dfl. 300.—
150 mC	Dfl. 355.—
200 mC	Dfl. 400.—
250 mC	Dfl. 440.—
300 mC	Dfl. 475.—
350 mC	Dfl. 505.—
400 mC	Dfl. 530.—
500 mC	Dfl. 580.—
600 mC	Dfl. 630.—

Delivery: Mondays after 18,00 hours M.E.T.

Ask for Isotip nr. 5

NUCLEAR PHARMACEUTICALS

N.V. PHILIPS-DUPHAR
Cyclotron and Isotope Laboratories
PETTEN HOLLAND

Telephone: (0)2246 - 678
Telegrams: Cyclotron-Petten

E656

Now in your own laboratory... **Sterile...**

Sodium Pertechnetate Tc 99m with TechneKow®-CS

COMPLETE SYSTEM by Mallinckrodt/Nuclear

(formerly Nuclear Consultants)

MALLINCKRODT / NUCLEAR

formerly Nuclear Consultants—leading supplier of a full line of radiopharmaceuticals.

*new sterile, pyrogen-free **TechneKow-CS** Generator; also supplied in dual purpose shipping shield

Pyrogen-Free...ASSAYED...Ready-for-Injection

Now, the new Mallinckrodt/Nuclear **TechneKow-CS** Generator provides a truly *complete* laboratory procedure — with all equipment necessary — for daily production and immediate assay of injectable sodium pertechnetate Tc 99m for use in brain scanning.

Complete System includes the new **TechneKow-CS** (closed system) Generator . . . completely sterile and pyrogen-free to meet all of the requirements of the US AEC and agreement states. An exclusive double chamber design permits injection of the eluant solution into the unique vacuum/pressure eluting system . . . also provides a reservoir below for complete solution removal from the alumina column.

Milking is simple and rapid. The vacuum in the collecting vial, combined with elevated pressure in the generator, causes the eluate solution to be forced rapidly through the milking system. The milking needle makes no contact with the alumina. The closed milking system eliminates venting to the atmosphere. And the **TechneKow** Shielded Dispenser offers additional convenience, eliminating the necessity for a cumbersome "hot lab".

Major Advancement in Assay and Calibration

Mallinckrodt/Nuclear's Complete System solves the complicated, time-consuming process of assaying ^{99m}Tc and checking for ^{99}Mo contamination, with the simple and easy-to-use MOLYTECH™ Assay Kit. The Kit utilizes calibrated standards and a fast, direct method for quick daily assay of the milked solution.

Mallinckrodt/Nuclear will be happy to answer all inquiries and render assistance in obtaining necessary user licenses. Call or write today.

Mallinckrodt NUCLEAR

RADIOPHARMACEUTICALS

(formerly Nuclear Consultants)

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

Atlanta • Chicago • Cleveland

Los Angeles • New York

CONTRAINDICATIONS — Radiopharmaceuticals are contraindicated in pregnancy and during lactation and in persons less than 18 years of age, unless in the judgment of the physician the situation requires their use.

Sodium pertechnetate ^{99m}Tc should not be administered orally to patients who have recently ingested aluminum hydroxide or other similar antacid preparations, since such compounds may interfere with the absorption of the radioisotope.

PRECAUTIONS — Adequate care should be taken to minimize the radiation exposure to the patient and other individuals involved in the procedure. Any physician employing a radioactive drug should be thoroughly familiar with the technique and the clinical literature as well as the equipment required for its use. In addition, users should be knowledgeable concerning the safe handling of radioactive materials.

When making withdrawals from the Collecting Vial, do not remove the Vial from its protective lead shield. Note: Solutions obtained from the **TechneKow-CS** Generator should be free of particulate matter. Any solutions containing visible particulate matter should not be administered.

SIDE EFFECTS — At the dosages employed in diagnostic scanning procedures, side effects are rarely, if ever, encountered.

"...[pulmonary embolism] may exist in a grave form for a considerable time without objective signs being present on physical examination or routine chest films."[1]

Pulmonary embolism is a mimic. Because its symptoms resemble those of other cardiorespiratory diseases—particularly myocardial infarction[2,3] and pneumonia[4]—investigators have long sought simple and certain methods of diagnosing it.

Many diagnostic clues—but often no clinical picture

Until a few years ago diagnosis depended primarily on the clinical history, physical findings, chest films, electrocardiograms, angiography, and pulmonary function studies. Each of these was helpful. Sometimes not even *all* of them were conclusive.

Surgery, prolonged immobilization, metastatic carcinoma and trauma often precede pulmonary embolism—but are not necessarily followed by it. Pain, dyspnea, hemoptysis may signal pulmonary embolism—but they aren't necessarily peculiar to it. The electrocardiogram may be normal in spite of it.[5] And there is no pathognomonic radiographic picture of pulmonary embolism.[5]

To be clinically valuable, however, a new diagnostic test should meet two criteria:
1. it should be correlated with known pathology; i.e., it should be carefully compared with other diagnostic procedures;
2. it should offer information not attainable as easily or as safely by accepted tests.[6]

Pulmonary arteriography meets the first criterion and is a most reliable diagnostic tool. It is, however, a time-consuming procedure and one that requires experienced personnel.[2]

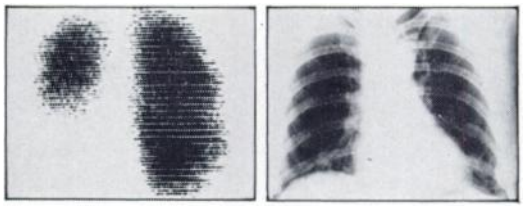
"...lung scintiscanning can detect an obstruction of the pulmonary circulation as soon as it is established."[7]

Not only is the diagnostic procedure of lung scanning both safe and easy,[2] but there is information that is not attainable on chest films. "...it appears that the lung scan can point to the site of the embolic lesions before signs of lung infarction are recognizable on plain chest films."[1]

The scan and the x-ray shown confirm this statement.* The photoscan of this female patient, aged 58, was taken August 13, 1965 with Albumotope-LS (Squibb Aggregated Radioiodinated [I^{131}] Albumin [Human]). Pulmonary emboli are clearly evident. The x-ray, taken the same day, shows no radiographic evidence of pulmonary emboli.

Lung scanning meets both criteria for a clinically valuable diagnostic test. Findings are correlated with pulmonary function studies, angiography, pathology and the clinical state of the patient. And, scanning with Albumotope-LS has been proven to be "simple, rapid, and safe in the diagnosis, localization and ultimate fate of pulmonary emboli."[2] But the lung scan should not be relied upon as the only diagnostic procedure in the diagnosis of pulmonary embolism.[1]

*Illustrations furnished through the courtesy of George V. Taplin, M.D., Harbor General Hospital, Torrence, California.



Dosage and Scanning Procedure: Recommended scan doses of 150 to 300 microcuries of Albumotope-LS (Squibb Aggregated Radioiodinated [I^{131}] Albumin [Human]) depending on the instrumentation available and the technics employed. Scanning can immediately follow administration of slow intravenous injection or be delayed up to 1 to 1½ hours depending on preferred technic.

Side Effects and Precautions: 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. No antigenic properties have been specifically related to this product; 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.

Radioisotopes should not be used in pregnant women, nursing mothers, or in patients under 18 years of age unless indications are very exceptional.

Available: As a sterile, non-pyrogenic, aqueous suspension. Each cc. contains approximately 1 mg. aggregated human serum albumin labeled with 800-1500 microcuries of iodine-131 at time of manufacture. Also contains 0.9% benzyl alcohol as a preservative.

References: 1. Haynie, T. P., et al.: J. Nucl. Med. *6*:613, 1965. 2. Sabiston, D.C., Jr., and Wagner, N.H.: Ann. Surg. *160*:575, 1964. 3. Cooley, R.N., and Donner M.W.: Am. J. M. Sc. *247*:601, 1964. 4. Wagner, H.N., et al.: New England J. Med. *271*:377, 1964. 5. Hinshaw, H.C., and Garland, L.H.: Diseases of the Chest, ed. 2, Philadelphia, W. B. Saunders Co., 1963, pp. 438-9. 6. Dworkin, H.J. et al.: Michigan Med. *64*:829, 1965. 7. Quinn, J.L., et al.: Radiology *82*:315, 1964. 8. Taplin, G.V., et al.: Health Physics *10*:1219, 1964.

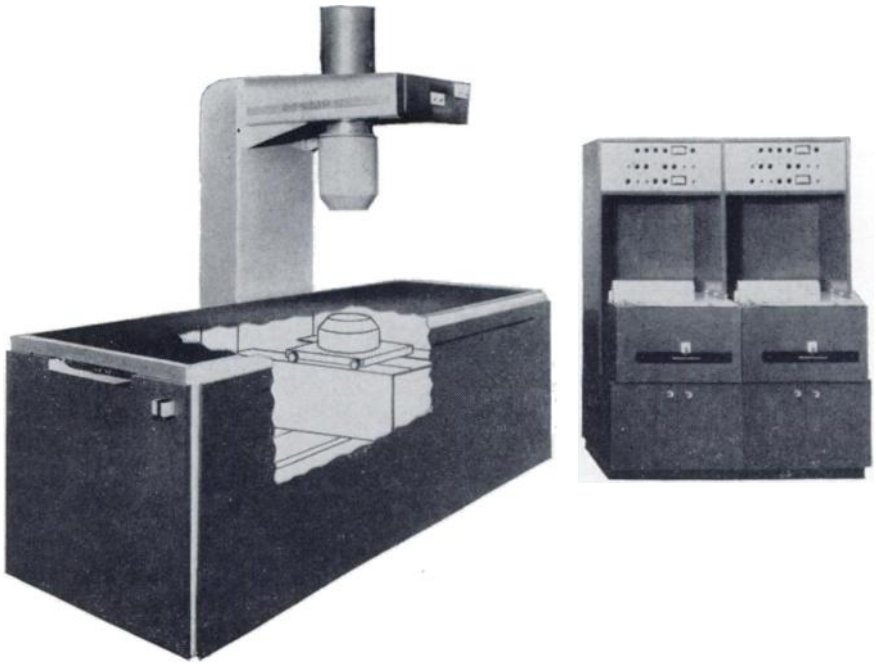
ALBUMOTOPE®-LS

SQUIBB AGGREGATED RADIO-IODINATED (I^{131}) ALBUMIN (HUMAN)

to see evidence of pulmonary embolism *before* it appears on chest films

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.

The two scanning heads, exactly opposite each other, have separate, and complete electronics and print-out so that the data collected by each crystal may be used separately, in coincidence, or additively.

Mechanical and electronic specifications are the same as for our other large-crystal radioisotope scanners Models 54F and 54H: Scanning speeds continuously variable to 200 inches per minute (500 cm/min.); adequate shielding even for high energy gamma emitters (up to 3 inches lead and 1 inch steel); high resolution crystals (9 per cent or better); accurate, reproducible scanning speeds and line spacing; no scalloping at any speeds; low background crystals (2 inch thick pure NaI light pipe); Gammagraphic (patent pending) or slit mask photoscans; unequivocal one year warranty anywhere in USA or Canada.

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

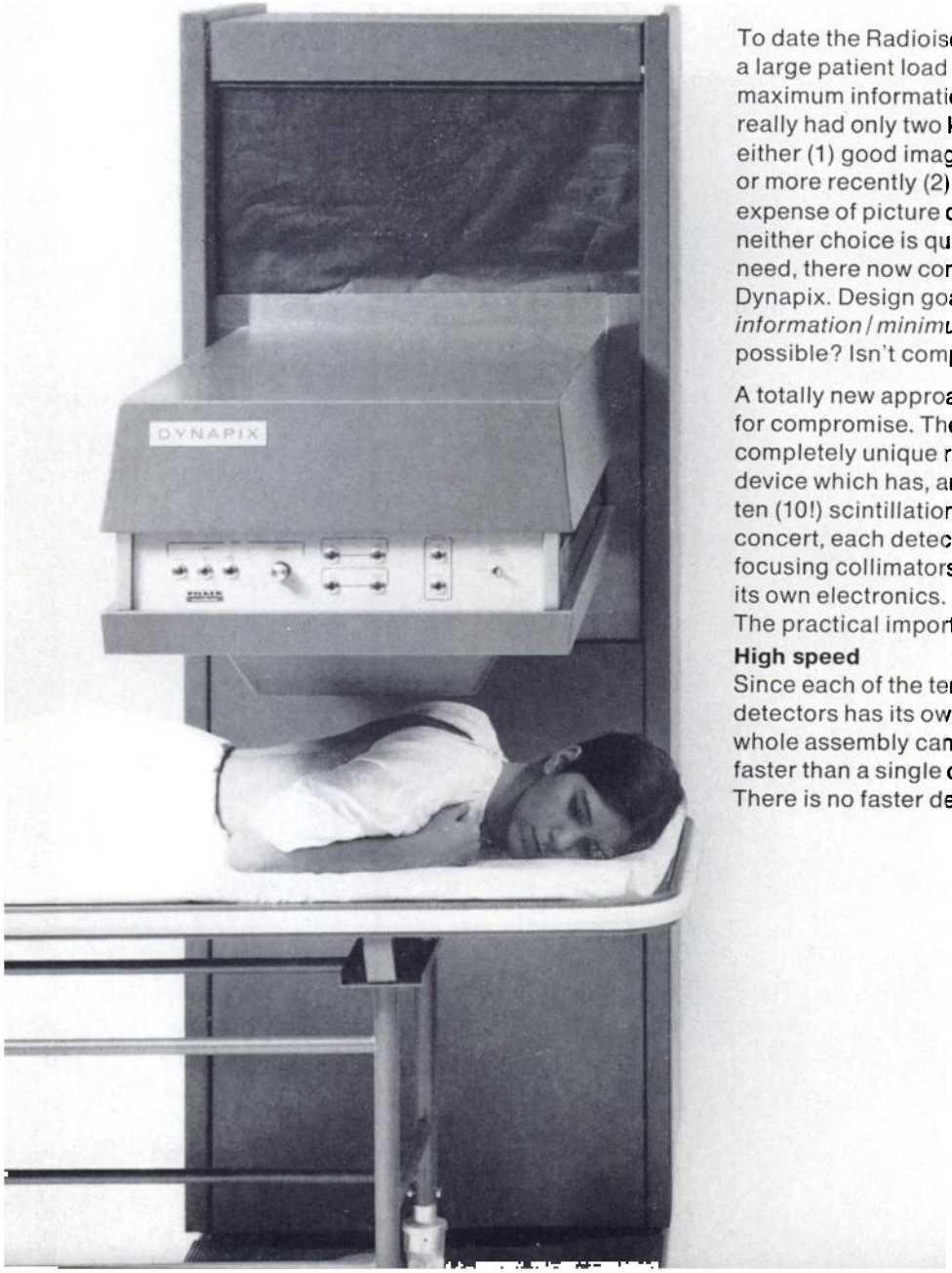
OHIO-NUCLEAR, INC.

1725 FALL AVENUE CLEVELAND, OHIO

216 - 621-8477

The new Dynapix® was designed for the busy Radioisotope Department.

(Too demanding of information to sacrifice imaging quality for the sake of speed. And vice versa.)



To date the Radioisotope Department with a large patient load and the need for maximum information per picture has really had only two kinds of choices: either (1) good images, slowly achieved, or more recently (2) higher speeds at the expense of picture quality. But since neither choice is quite appropriate to the need, there now comes a third option, the Dynapix. Design goals: *maximum information / minimum time.* Is this actually possible? Isn't compromise inevitable?

A totally new approach obviated the need for compromise. The Dynapix is a completely unique radioisotope imaging device which has, among other things, ten (10!) scintillation detectors working in concert, each detector with its own focusing collimators, each detector with its own electronics.
The practical import of this?

High speed
Since each of the ten scintillation detectors has its own electronics, the whole assembly can count many times faster than a single detector of *any* size. There is no faster detection system now

available; clinical scans take from a fraction of a minute to a few minutes. Ideal for recording dynamic processes or for multiple views. Minimizes discomfort to patient by reducing time of immobilization.

High imaging quality

Dynapix pictures yield maximum information to the clinician. Since each crystal has its own focusing collimators (choice of three), spatial resolution equivalent to that of conventional scanners can be obtained without the "out of focus" problem of large single crystals. The Dynapix features contrast enhancement which produces 64 grey shades proportional to the counting rate above background.

Large scanning field

The scanning field is a full 10" x 20" which effectively permits imaging of most organs in a single scan or high-speed whole body scanning with several adjacent scans. This field size is at least 2½ times larger than that of other high-speed instruments and has no distortion at the edges.

Other important features, briefly

(1) Three types of data readout provide maximum flexibility: TV screen, Polaroid camera (positive or negative film), and scaler.

(2) Magnetic tape storage of *total* data for rapid playback at variable data enhancement settings.

(3) Easy to use: experienced workers in this field can be getting usable Dynapix scans on the day of installation.

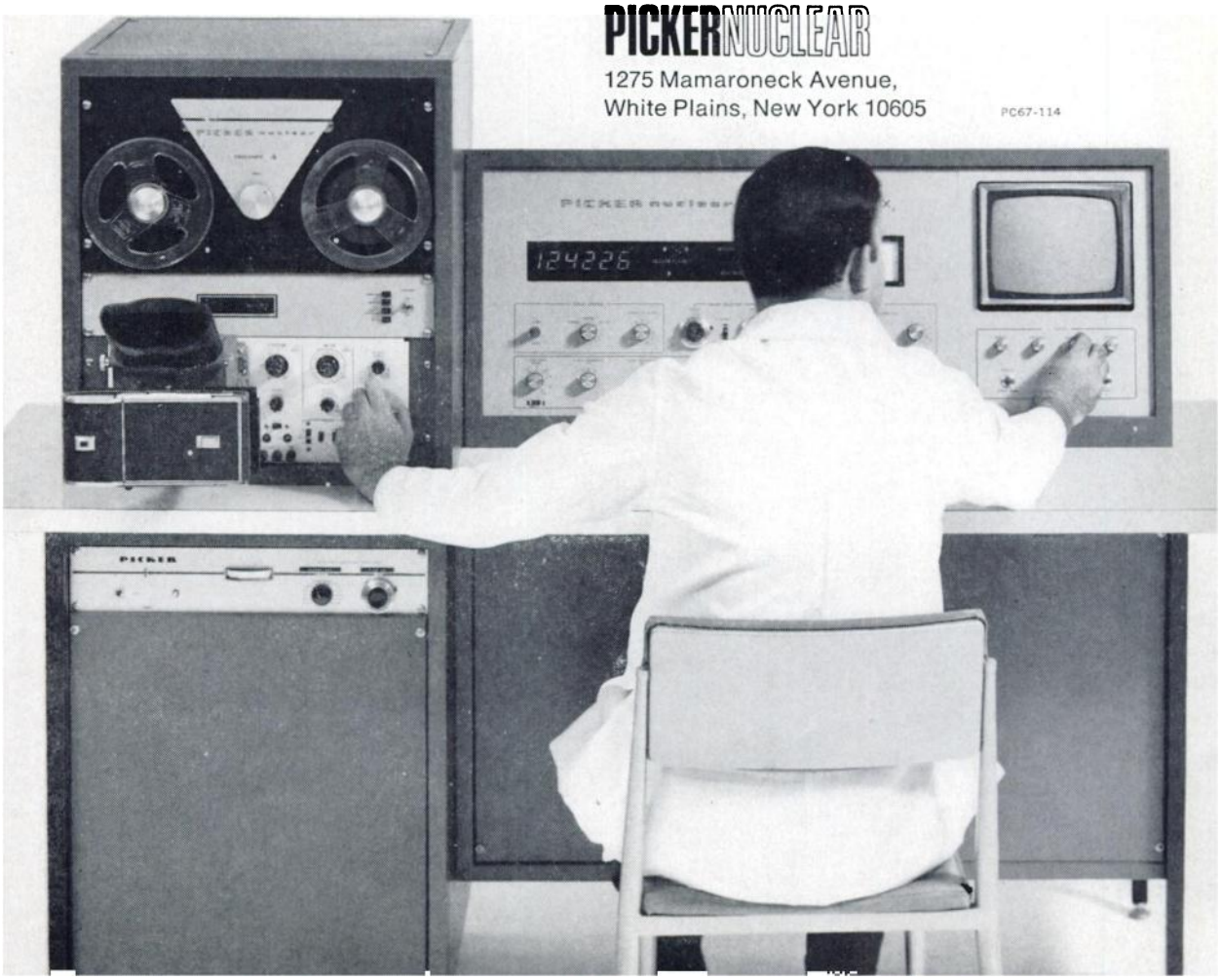
(4) The Dynapix produces pictures which are familiar and can be easily related to one's prior experience.

Finally

The Dynapix has been proven in major clinical installations. This enables us to provide proof of the many claims above. Accordingly, the object of this entire presentation is to solicit such challenges, and to leave you with the simple message: Dynapix provides *maximum information / minimum time:* Now demand proof by requesting data file 114N

PICKER NUCLEAR
1275 Mamaroneck Avenue,
White Plains, New York 10605

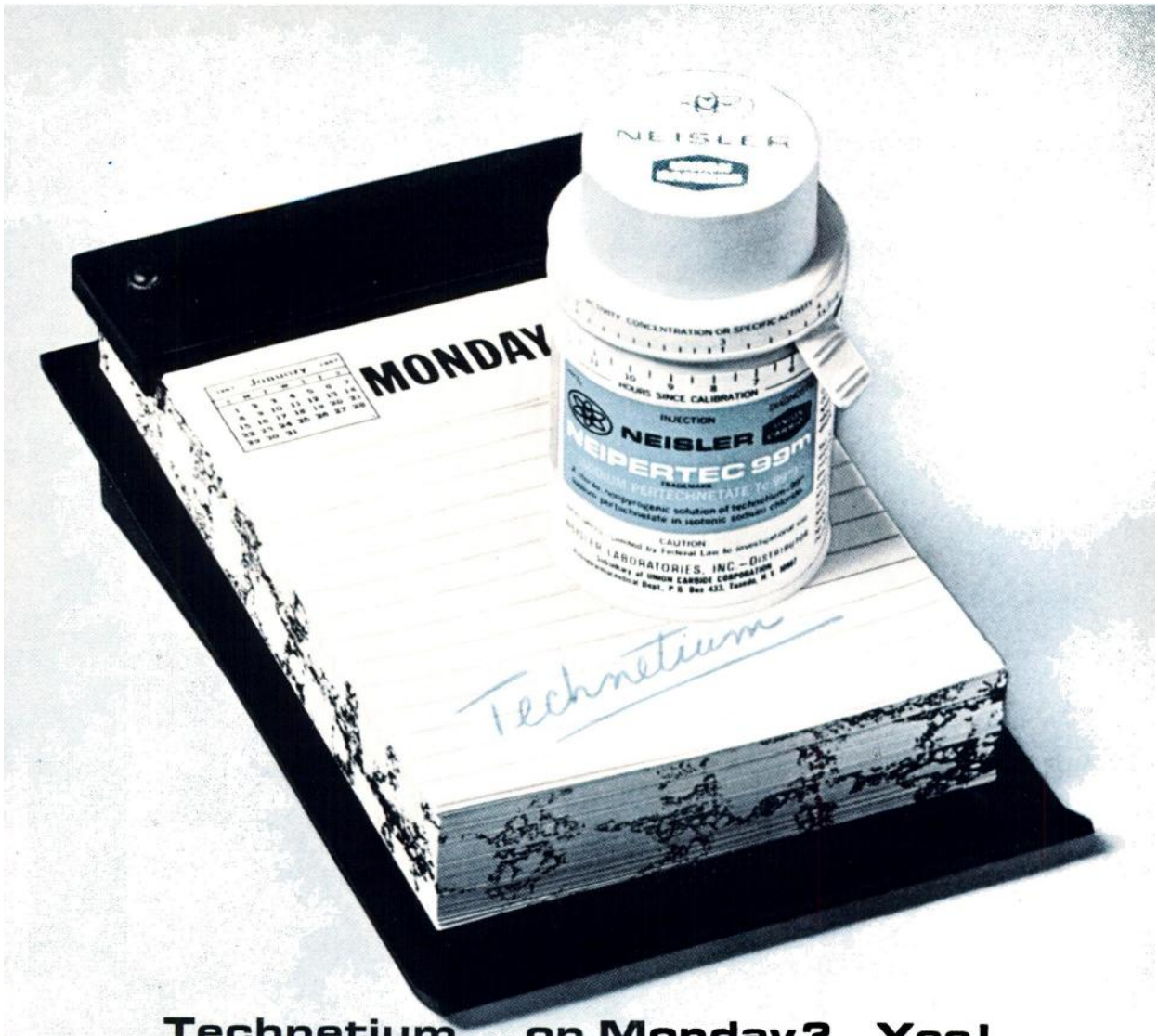
PC67-114



Advertising Index

Journal of Nuclear Medicine

February, 1967



Technetium...on Monday? Yes!

Now available in ready-to-use form directly from our nuclear reactor to your radioisotope laboratory Monday through Friday

NEIPERTEC* 99m

(SODIUM PERTECHNETATE Tc 99m)

the radionuclide with "...ideal physical characteristics..."[1] for brain scanning

- 6-hour half-life, clean 140 keV gamma-ray emission
- the photons you need for rapid scanning, excellent resolution
- with minimal radiation dose to the patient

sterile, pyrogen-free...precalibrated...ready-to-use...

with unique, new packaging feature—the COMPUTERCAP[T.M.]—for automatic computation of activity and concentration at any time after calibration

Precautions: Proper radiation safety precautions must be maintained at all times. Physicians should familiarize themselves with available literature on the use of ^{99m}Tc before administering the radioisotope to patients. The administration of radioactive materials to pregnant or lactating women, or to patients under the age of 18 years, requires careful evaluation by the physician of the potential benefits and risks involved.

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.

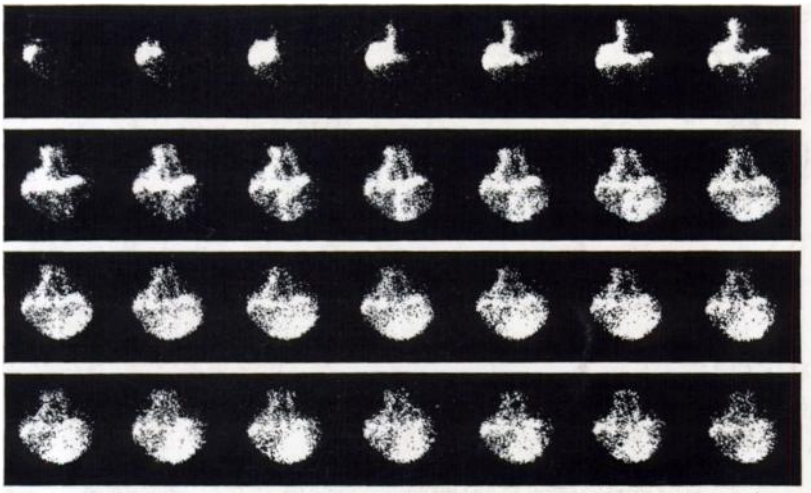
NEISLER
A New Name in Nuclear Medicine

UNION CARBIDE

NEISLER LABORATORIES, INC.
Subsidiary of
UNION CARBIDE CORPORATION
Radiopharmaceutical Dept.
P.O. Box 433, Tuxedo, N.Y. 10987
Phone: 212-682-5057

*TRADEMARK

Fast-sequence scintiphotography lets you see what happened in an organ. As it happened.



Dynamic cardiac blood-flow study, 10mc Tc^{99m}, exposures 4 sec. serially from time 0 (upper left).

Only the Pho/Gamma® Scintillation Camera gives you true dynamic radioisotope images.

Just one more way Pho/Gamma is making important contributions to modern diagnostic procedures. Get the full story from your local Nuclear-Chicago sales engineer. Or write directly to us.

You'll receive detailed information on Pho/Gamma's clinical applications and on new Pho/Gamma III.

NUC 0-0-000

NUCLEAR-CHICAGO CORPORATION

313 East Howard Avenue, Des Plaines, Illinois 60018, U.S.A./Donker Curtiusstraat 7, Amsterdam W, The Netherlands.