If you know get to know

Triosorb®-I25 T-3 Diagnostic Kit*

The in vitro test unmatched for reproducibility, convenience and accuracy.

Reproducible. Over 15 million tests conducted over the past eight years have made Triosorb® the standard of T-3 tests.

Convenient. The disposable Triosorb® Kit is ready for immediate use at room temperature making it one of the simplest, most convenient thyroid function tests available.

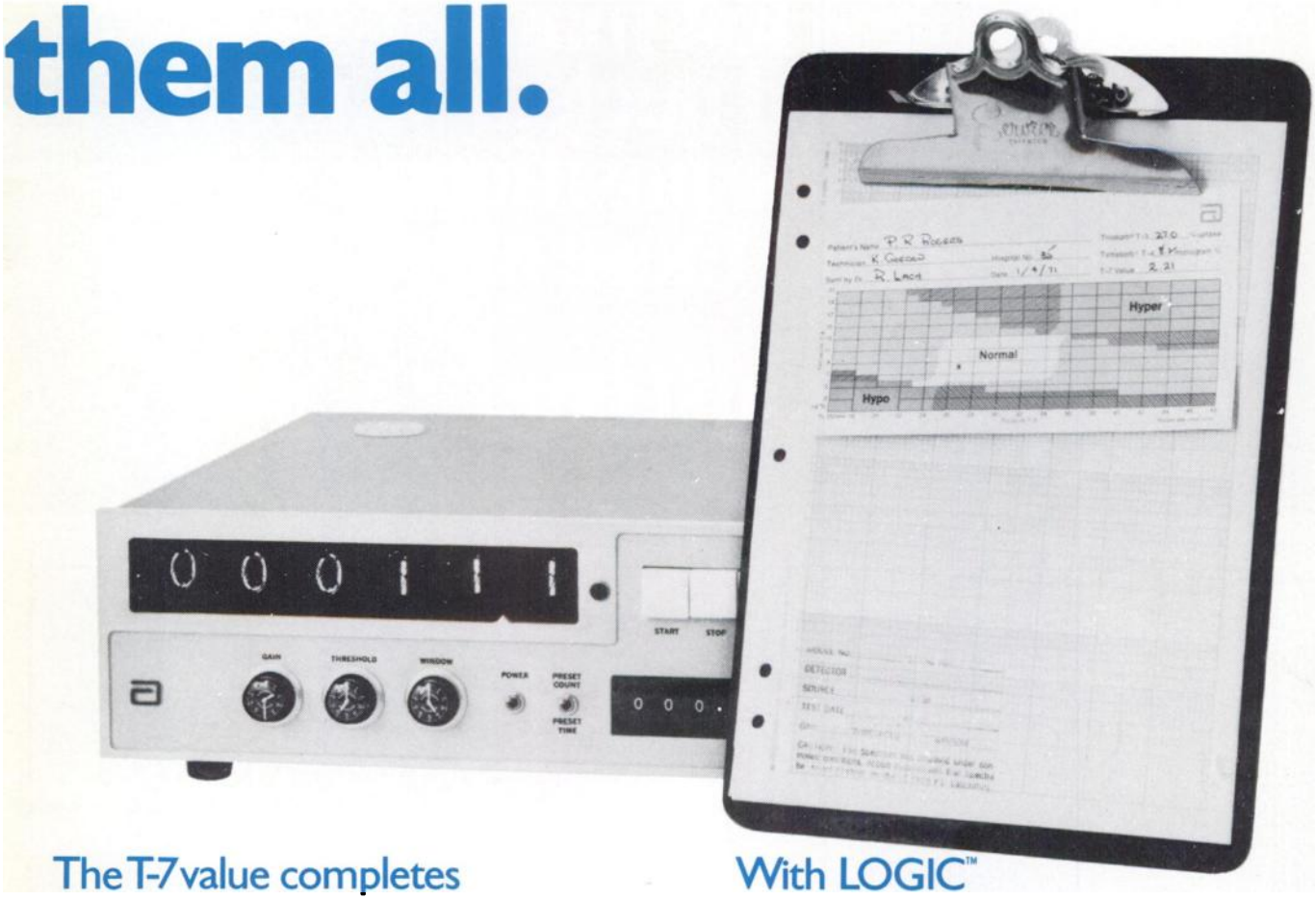
Accurate. Approximately 15 drugs and conditions produce misleading Triosorb®-T-3 test results, compared with over 200 factors which affect PBI.

* Also available as Triosorb®-131.

Tetrasorb®-I25 T-4 Diagnostic Kit

An improved, simplified method for measuring total *serum* thyroxine with diagnostic accuracy equal to or better than any currently used measures of thyroid function. Unlike other tests, exogenous iodines don't affect Tetrasorb® results.

one of these, them all.



The T-7 value completes the thyroid profile.

It's the Abbott method for determining the in vitro free thyroxine index.

T-7 is not a test but a numerical value derived from the multiplication of T-3 and T-4 test values. Because it is a product of two other numbers, the *T-7 value* will *move* only when both the T-3 and T-4 values move in the *same direction.* There are *only* two physiological conditions which cause this to occur, *hypothyroidism* and *hyperthyroidism.* With the exception of those patients receiving liothyronine or d-thyroxine therapy, all other factors which affect thyroid function tests will cause the T-3 and T-4 values to move in opposite directions, and the T-7 value to remain in the normal range.

When you provide the Abbott T-3, T-4 and T-7 values you furnish a complete thyroid profile with unparalleled clinical accuracy.

With LOGIC™ your final step is as easy as 1,2,3.

1. Establish a baseline.
   Pre-set count for 10,000; read the required time from the NIXIE tubes.
2. Take a post-wash reading.
   Pre-set *timer* for the baseline established in step 1.
3. ***Read the percentage uptake*** directly from the NIXIE tubes.
   LOGIC™ provides direct ratio readout in percentage.

   No conversions or calculations needed.
   Minimal chance for error.

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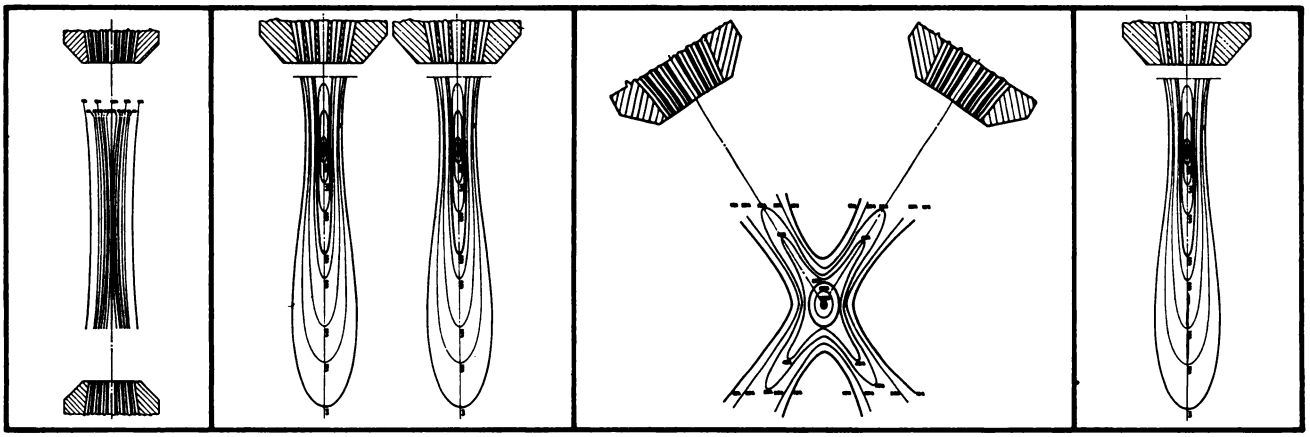
How many dual-headed nuclear scanners can be positioned in all these ways?

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.

RAYTHEON

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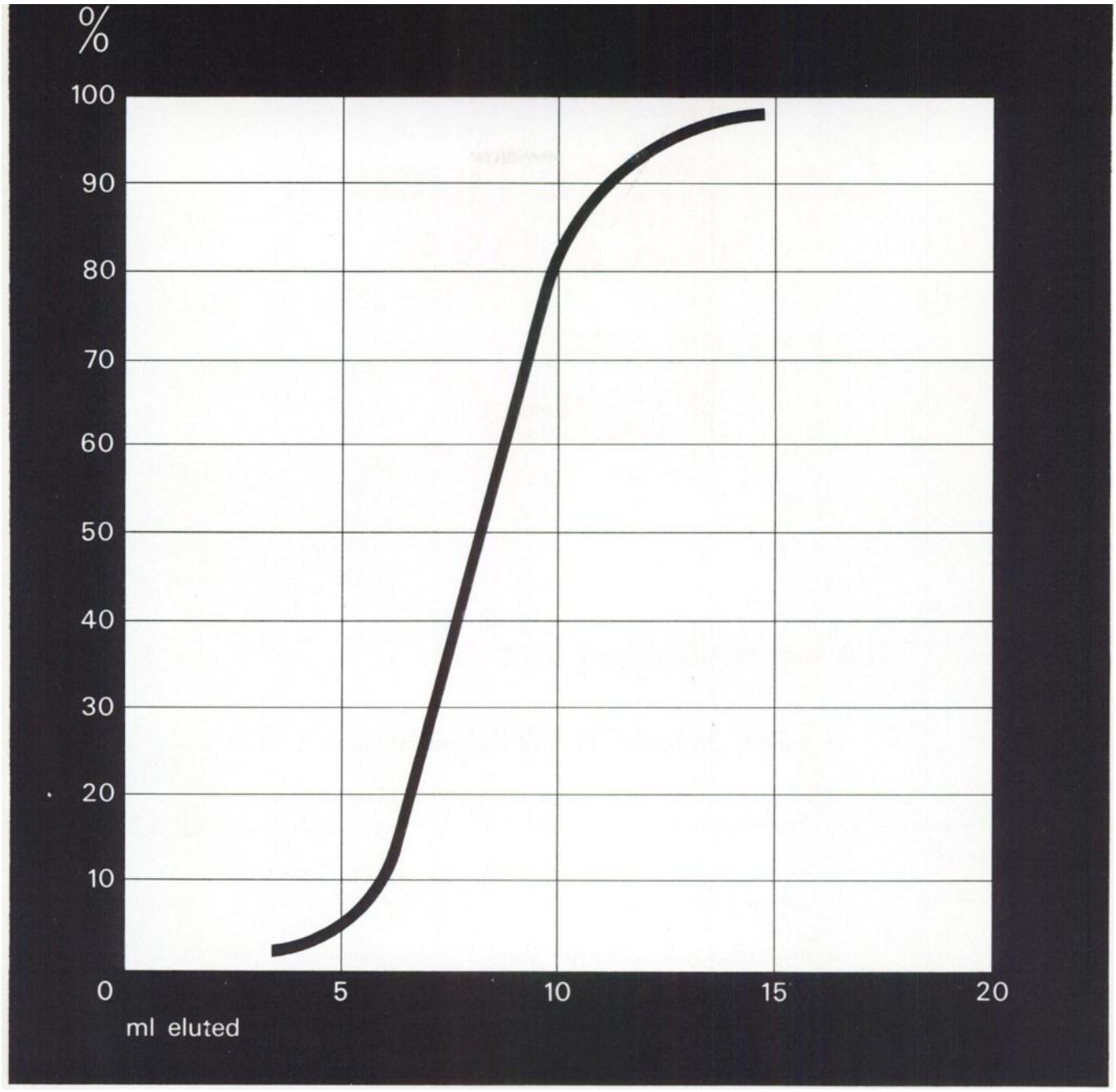

Stercow 99m elution curves are the greatest!

Stercow 99m provides the highest Tc99m activities with the highest concentration. That is why our curves are so great. That is why the elution volumes are small. You can have curves as good as ours - with Stercow 99m.

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First practical way to process oscilliscope scanning film.

Now you can record oscilliscope scanning studies on high quality, low cost, conventional photographic film without banishing a staff member to the darkroom—or letting prohibitive costs limit your exposures. Because now you can process your film on the Pakorol-CTX—practical tabletop processor for conventional photographic film in sheets and rolls.

The CTX handles virtually all B/W film up to 5-inches wide, including ortho-chromatic, high speed and low speed varieties. Delivers film processed and dried in minutes—at a cost of just pennies per frame.

It's easy to get sharp, clear results with the CTX. Anyone on your staff can operate it. Just set the controls and feed the film into the processor. Automatic replenishment, temperature control and precise processing time assure consistent quality results that are impossible to maintain with hand processing. Get the facts on the practical Pakorol-CTX. Find out how you can share it with other departments in your hospital or clinic. Contact your Pako Distributor or write to us.

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Please send me more information about the Pakorol CTX practical processor for oscilliscope scanning film.

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PS Processing System for Medical and Industrial X-Ray, Photographic, Motion Picture, and Graphic Arts Industries.

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 nonpyrogenic. 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 pulmonate, possibly related to the drug, have occurred.

009249

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

Each milliliter contains 1 to 3 mg. aggregated human serum albumin labeled with iodine 131, with benzyl alcohol, 0.9%, as preservative. Radioactivity is usually between 800 and 1300 microcuries per ml. on first day of shipment. For full prescribing information, see package insert.

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World's Leading Supplier of Radio-Pharmaceuticals

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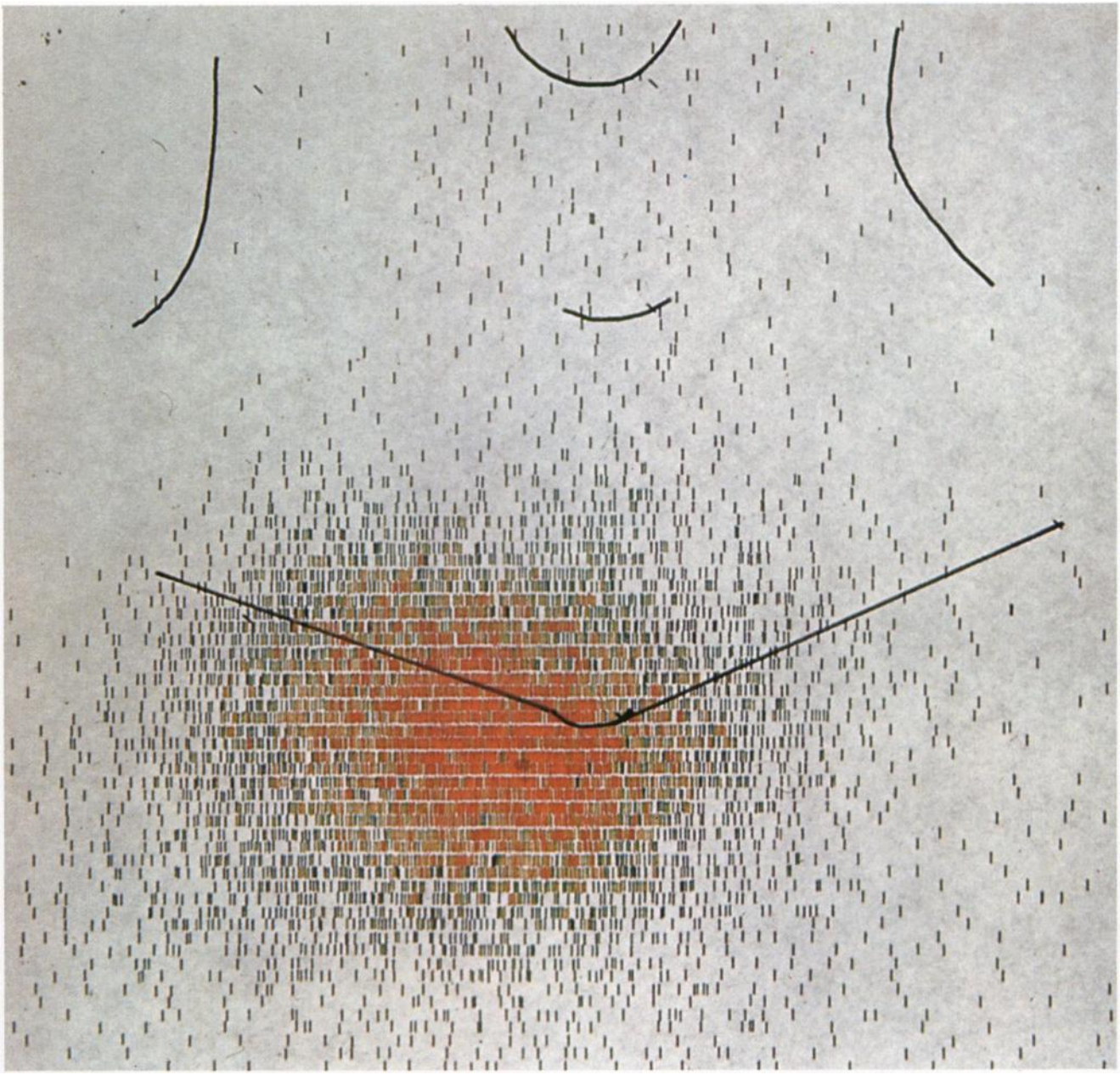

This scan was impossible without Ga67

Of course Ga67 is not the single criterion but it represents a valuable contribution to the diagnosis of bronchial carcinoma, thyroid tumours and systemic (R.H.S.) diseases. By its tumour cell affinity Ga67 produces a high tumour to non tumour ratio. It gives optimal scanning with gamma energies of 92, 185 and 296 keV. Supply is no problem - it is available weekly from Duphar.

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3rd generation radioisotope scanning.

Coming June 28, 1971 to Los Angeles.*

Delay purchase or delivery of either a scanner or camera if you can. Unique new Elscint videoscanner, options and advanced ideas reflect a 3-year consensus of "what doctors want" for better, faster, easier-to-use isotope diagnostics.

For example:

Four distinct digital readout modes (including optional vivid electronic color display *with* solid state memory, *without* ribbons or filters . . . interfaces to any scanner!).

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Automatic control of film exposure density, contrast and speed, using minimum and maximum settings.

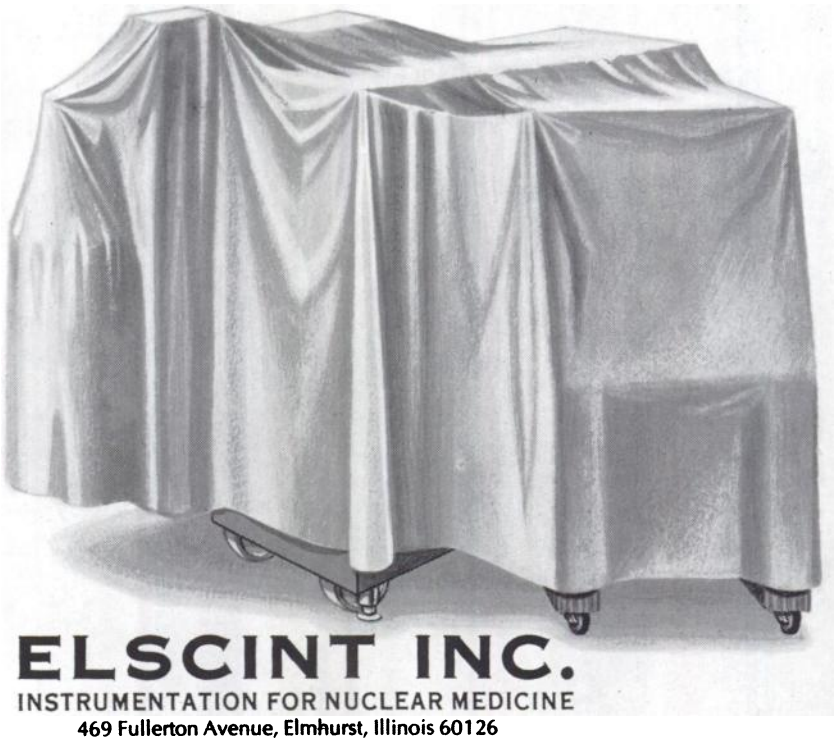
Solid state scalers with burnout-proof display digits.

All U.S. made components.

"Now" service, nationwide.

And new breakthroughs we can't even hint about yet!

*Society of Nuclear Medicine, 18th Annual Meeting, Los Angeles, June 28-July 2, 1971.



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INSTRUMENTATION FOR NUCLEAR MEDICINE

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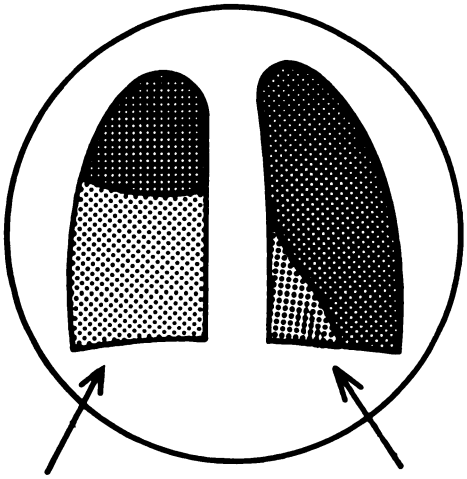
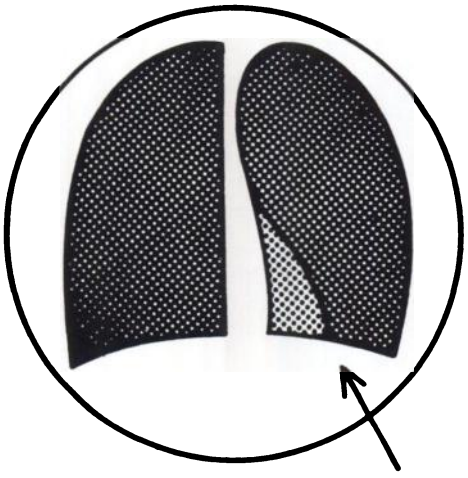
Pulmonary Embolism?



ANTERIOR PERFUSION

"Although perfusion lung scanning has proved clinically useful in the diagnosis of pulmonary embolism, many other disorders that affect ventilation can produce abnormalities of regional pulmonary blood flow. Therefore, some additional test is required for a specific diagnosis of pulmonary embolism." ①

There's one way to be sure....

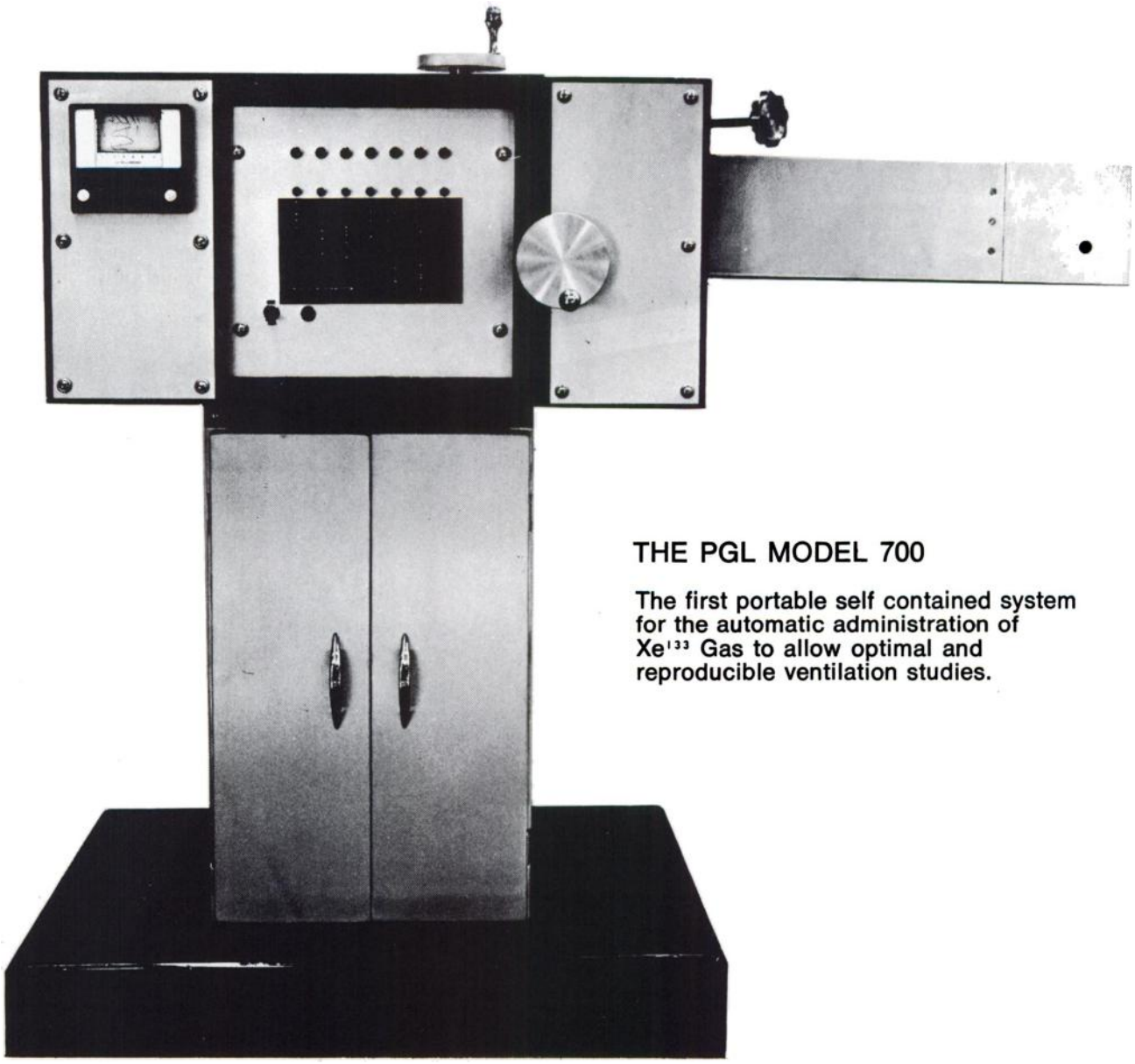


ANTERIOR VENTILATION

"The Xe^{133} ventilatory lung scan is a simple and sensitive method of distinguishing pulmonary embolism from other causes of perfusion abnormality. In embolism without infarction, the embolic area of the lung appears underperfused but well aerated. This is reflected on lung scans by relatively normal ventilation in association with appreciable perfusion abnormalities. In other pulmonary diseases, the ischemic regions are also poorly ventilated." ②

DE NARDO G.L., et al: THE VENTILATORY LUNG SCAN IN THE DIAGNOSIS OF PULMONARY EMBOLISM. NEW ENG J MED 282:1334-1336 (JUNE) 1970

But how do you administer Xe^{133} Gas accurately, safely and conveniently?



THE PGL MODEL 700

The first portable self contained system for the automatic administration of Xe^{133} Gas to allow optimal and reproducible ventilation studies.

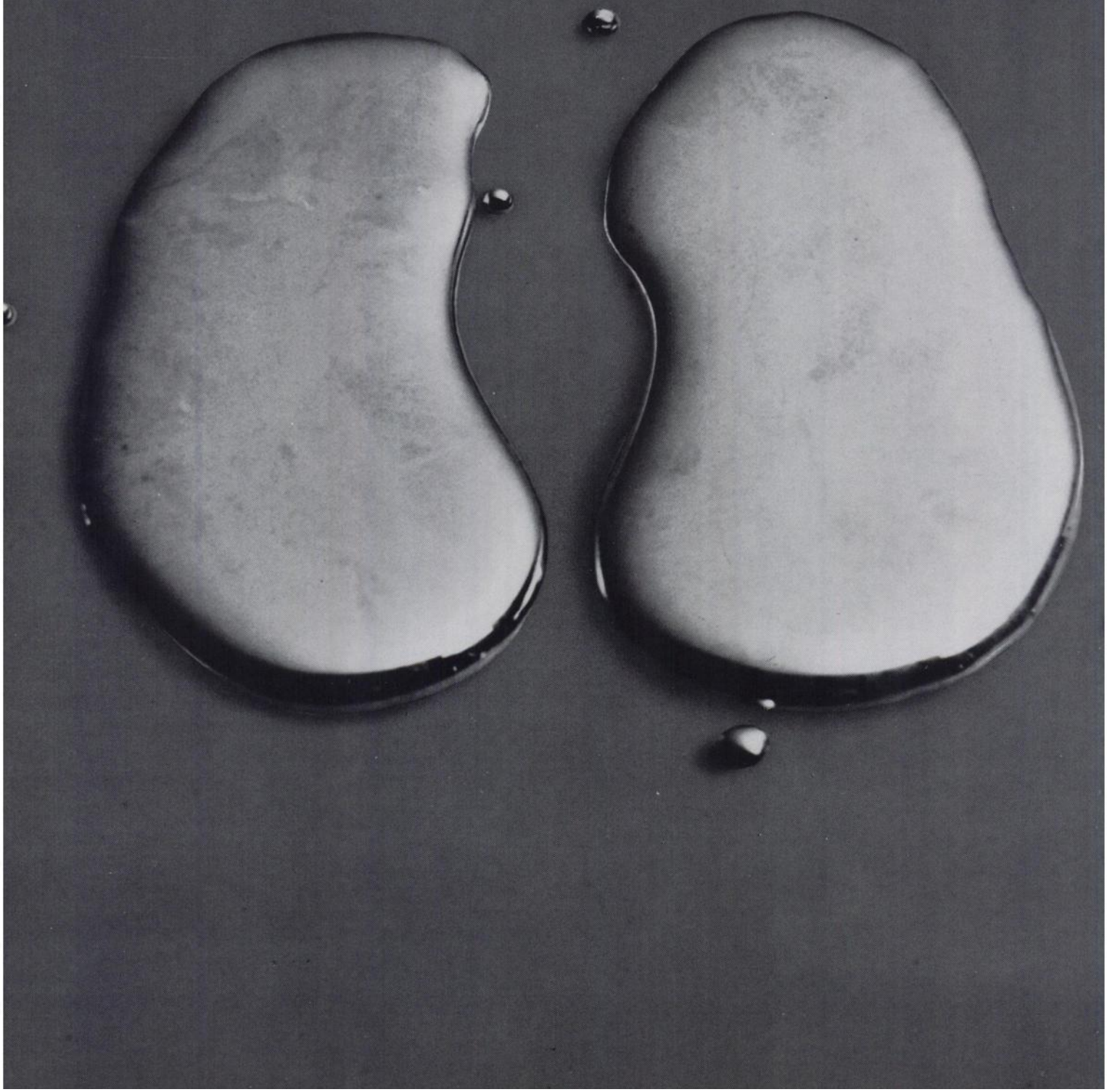
Unique clinical features:

- Automated to assure the precise control of Xe^{133} Gas administered.
- Designed for single technician operation.
- Versatility in programming allows you to vary the clinical regimen (for example, tidal volume inspiration, maximum inspiration, rebreathing, etc.)
- Adaptable to any patient position (seated, supine etc.)

pgl

For complete specifications and ordering information contact:
PGL, 1280 Columbus Avenue, San Francisco, Ca. 94133 (415) 474-6338

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 ^{99m}Tc eluate from your Squibb generator.

After intravenous injection, ^{99m}Tc-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 radiomercurial 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 ^{99m}Tc 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 Sterile 0.07N Sodium Hydroxide Solution providing 2.8 mg. sodium hydroxide per cc.; and 3) 5 Unimatic Disposable Syringes (2 cc. each) containing Sterile DTPA Solution providing 2.5 mg. diethylenetriamine pentaacetic acid per cc.

The 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, 8.5 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 ^{99m}Tc may be taken up by the fetus and excreted in human milk, administration of the preparation during pregnancy and lactation is not recommended.

Formula feedings should be substituted for breast feedings if these agents must be administered to the mother during lactation.

^{99m}Tc-DTPA, ^{99m}Tc-S colloid, and sodium pertechnetate ^{99m}Tc should not be administered to persons less than 18 years of age unless the expected benefit outweighs the hazards. It should be noted that although radiopharmaceuticals are not generally used in individuals under 18, procedures using ^{99m}Tc-DTPA or ^{99m}Tc-S colloid are occasionally necessary in such patients. The low internal radiation dosage of ^{99m}Tc-DTPA makes it a very satisfactory agent when scans of the kidney, brain, or blood vessels are necessary in young patients. The low internal radiation dosage of ^{99m}Tc-S colloid makes it a very satisfactory agent when liver or spleen scans are necessary in young patients.

Radiopharmaceuticals, produced by nuclear reactor or cyclotron, should be used only by physicians who are qualified by specific training in the safe use and safe handling of radioisotopes and whose experience and training have been approved by the appropriate federal or state agency authorized to license the use of radioisotopes.

When obtaining elutions from Technetope II (Technetium 99m) Sterile Generator, proper radiation safety precautions should be maintained at all times. The column containing ^{99}Mo 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 ^{99m}Tc 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 ^{99m}Tc 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 ^{99m}Tc 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.

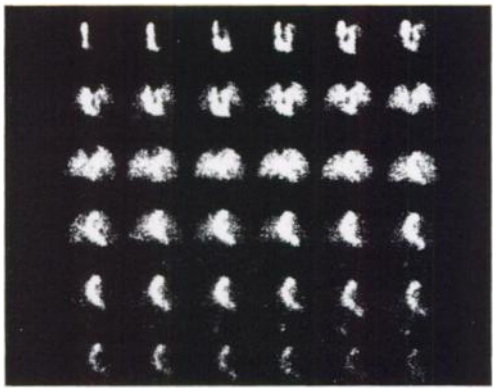
Each elution from Technetope II (Technetium 99m) Sterile Generator should be assayed before use for ^{99m}Tc activity and for the possible presence of ^{99}Mo. Material containing more than 5 microcuries of ^{99}Mo per dose of ^{99m}Tc pertechnetate exceeds Atomic Energy Commission limits and should 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 cranial scan. Therefore, all possible care should be taken to avoid extracranial contamination, not only for the protection of patients and of hospital personnel but also to avoid obtaining a falsely positive scan due to extracranial radiation. Any condition which alters the blood-brain barrier or the normal cranial vasculature may cause abnormal areas of increased radioactivity. The brain scan with sodium pertechnetate ^{99m}Tc 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 ^{99m}Tc 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 ^{99m}Tc pertechnetate scan than on a radiochlormerodrin scan, and because the choroid plexus may be visible, it is particularly important to recognize the appearance of a normal brain scan when ^{99m}Tc 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 ^{99m}Tc are consistently compatible and meet the standards of Technetope II.

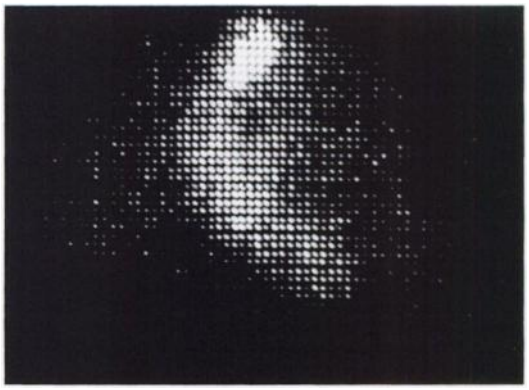
SQUIBB
Division of Nuclear Medicine
New Brunswick, New Jersey 08903

Medcotope®

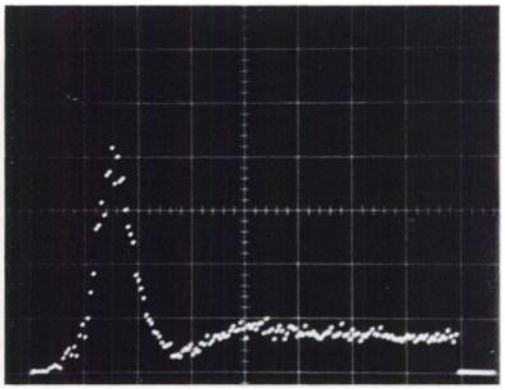
50/50 MED: DIGITAL DYNAMIC CARDIAC FUNCTION STUDY.



36 frame sequence showing cardiac circulation.



Intensified area of interest corresponding to aortic arch.



Dynamics of circulation plotted automatically by computer. Curve shows time/activity over 160 frames.

This dynamic study was recorded in 64 x 64 channel resolution, 160 frames at 0.5 seconds each. The patient was injected with 10mC 99m Tc-m Pertechnetate. Nuclear Data's 50/50 MED recorded each frame on magnetic tape, selected the area of interest, and integrated this area over every frame in the study. Four areas of interest can be selected and plotted automatically. Each curve can include over 1000 time/activity points. Identical studies can be performed on kidneys, lungs, brain, or any other varying phenomena.

The 50/50 MED Digital Image and Processing System provides more diagnostic information from data provided by organ imaging devices. In addition, the system can often provide data without an additional dedicated recording system. Case in point: the above cardiac function study.

NUCLEAR DATA INC

1330 E. GOLF ROAD, PALATINE, ILLINOIS 60067 PHONE 312/529-4600 NUCLEAR DATA GMBH, FRANKFURT, GERMANY

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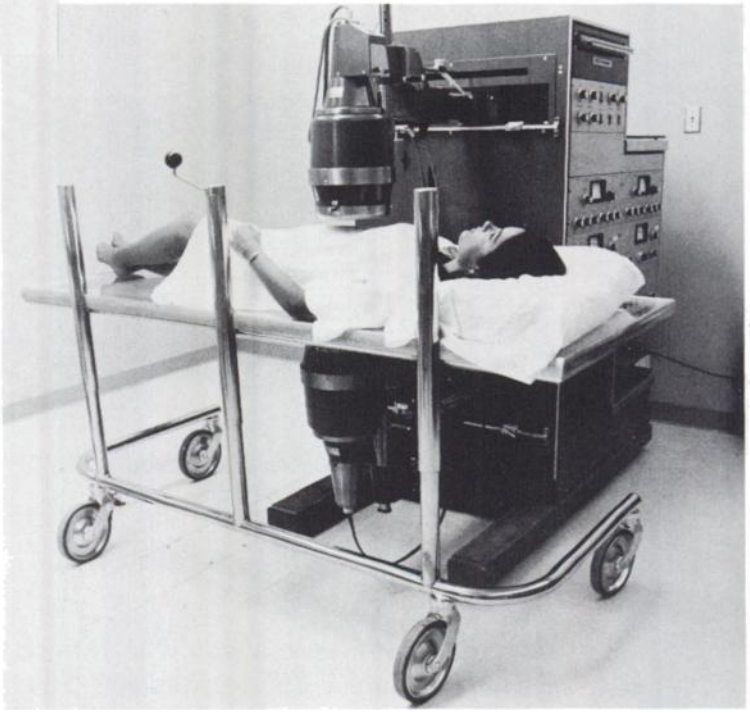
Another new table designed specifically for Gamma Imaging from PGL.



IDEAL FOR ALL IMAGING SYSTEMS:

1) Scintillation & Positron Cameras (Pho/Gamma, Dyanacamera, etc.)
2) Single & Dual Headed Rectilinear scanners (Nuclear Chicago, Picker, Baird Atomic, Ohio Nuclear, Raytheon, etc.
3) Multidetector Scanners (Dynapix, etc.)
4) Diagnostic X-Ray units.

UNIQUE FEATURES & CLINICAL BENEFITS

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- Allows vertical height adjustment with patient on table — convenient & accurate patient positioning.

LUCITE IMAGING TOP

- Transparent — detector head easily positioned below patient for posterior views. Strong—accommodates 400 lbs. and still raises & lowers smoothly. Low-Density—maximum transmission with low energy nuclides.

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- Lucite Top: 72''x30''x½''
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- Finish: Brushed aluminum and chrome.
- Accessories provided: Restraining belt and polyurethane mattress with conductive vinyl cover.

UNOBSTRUCTED FRAME DESIGN

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

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FOR FORMAL QUOTATION & ORDERING INFORMATION, CONTACT:
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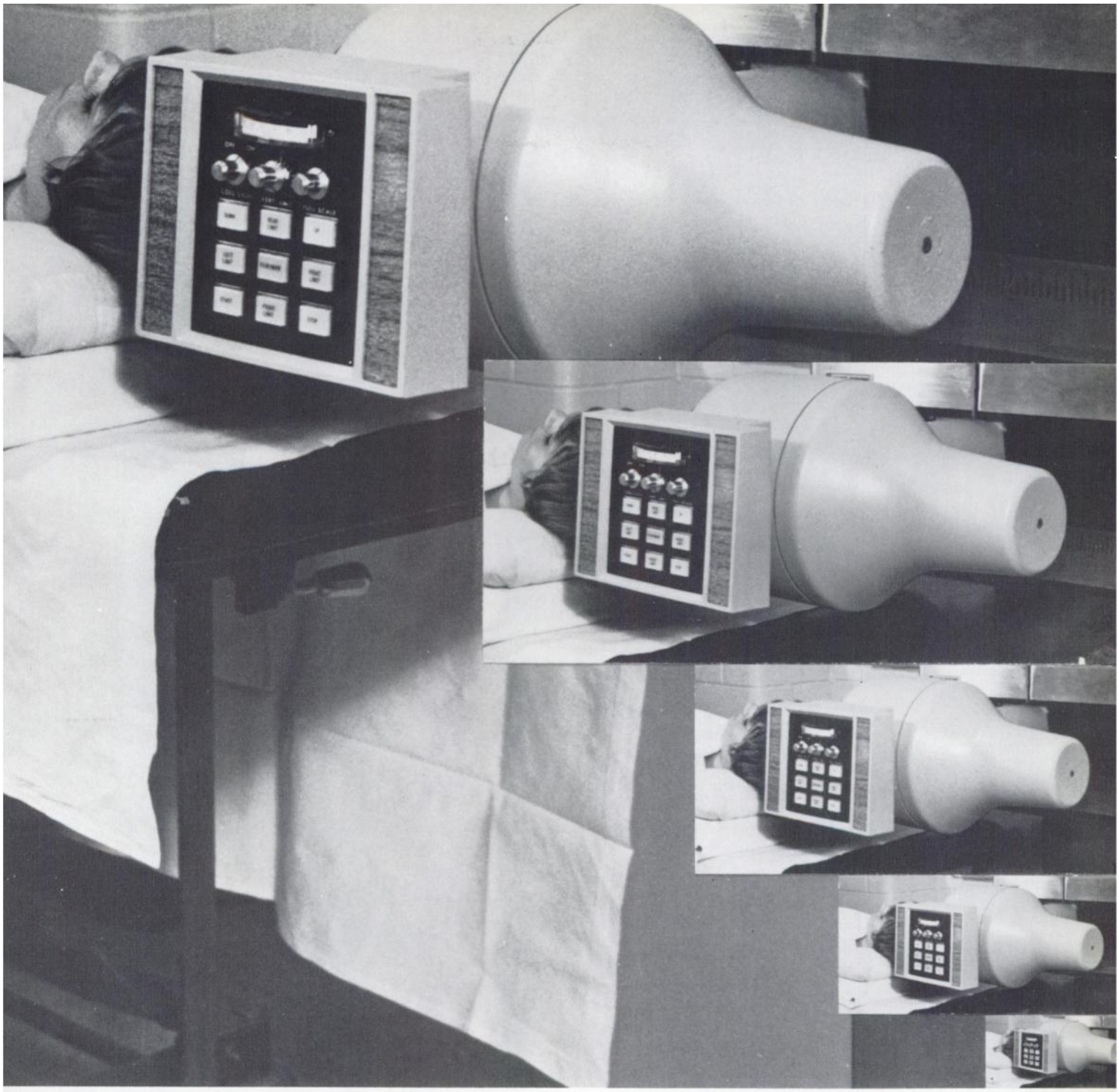

The Baird-Atomic Scanner sees more patients. It's that simple.

Set-up is simple, for one thing. And so is operation, for another. The technician stays right there at the Scanner head. The B/A Scanner performs all views without repositioning the patient. It has the highest possible scan speed. A new concept in collimation and minification means portal to portal time (including 5 scans) is reduced to that of a dual detector . . . with no misleading artifacts.

And optional vertical scanning further compounds the value.

Performance? Ask the dozens of people who have them.

The B/A Scanner gives you greater patient comfort and greater patient through-put.

You'll want to know more, of course.

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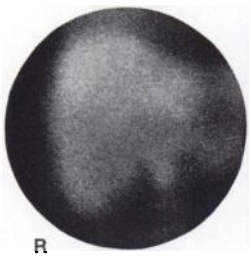
Baird-Atomic, 125 Middlesex Turnpike, Bedford, MA 01730. (617) 276-6208

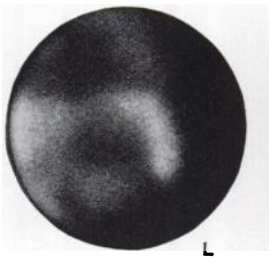
Baird-Atomic Limited, Braintree, Essex, England. Baird-Atomic (Europe) N.V., The Hague, The Netherlands.

CASE STUDY NO. 1. CIRRHOSIS WITH FOCAL NECROSIS.

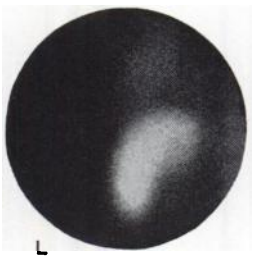
STATIC SCINTIPHOTOS.

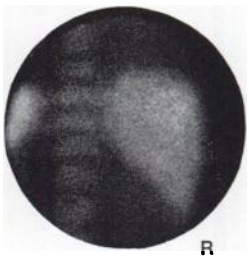
ANTERIOR VIEW.





POSTERIOR VIEW.



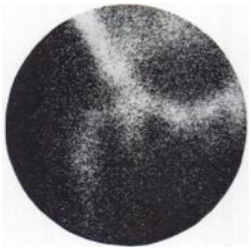


LATERAL VIEWS.

RIGHT

LEFT

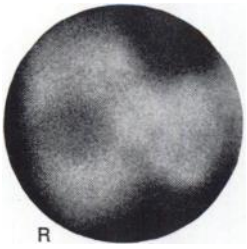
RIGHT PELVIS.



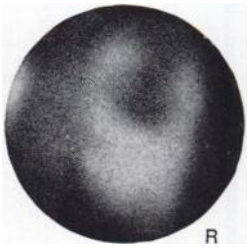
CASE STUDY NO. 2. LEIOMYOSARCOMA METASTATIC TO LIVER.

STATIC SCINTIPHOTOS.

ANTERIOR VIEW.

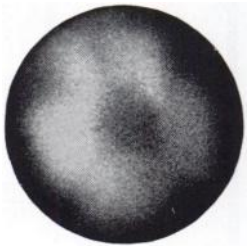


POSTERIOR VIEW.



RIGHT ANTERIOR VIEW
(WITH MARKER).

RIGHT LATERAL VIEW.



The Liver Study

Evaluation of Reticuloendothelial System Labelling in the Liver with the Nuclear-Chicago Pho/Gamma® Scintillation Camera

Liver scintiphotography employing ^{99m}technetium sulfur colloid and the Pho/Gamma Scintillation Camera offers extremely high resolution images of reticuloendothelial-system distribution in the liver, spleen and bone marrow.

PRELIMINARY DISCUSSION. In the normal liver, the reticuloendothelial system is uniformly distributed, with areas of decreased labelling showing only in the region of the porta hepatis, gall bladder fossa, and in intersegmental fissures.

Abnormal regional decreases of liver labelling may be recognized as either (1) *irregular decrease of labelling* in the whole liver or an area of it or (2) *focal decreases of labelling* with discrete margins and clear definition in comparable scintiphoto views.

SETTING-UP. Liver scintiphotography is usually best performed with the high-resolution, low-energy Pho/Gamma collimator appropriate for ^{99m}Tc. The patient is positioned touching the collimator, and is examined in the recumbent position to reduce respiratory and other motions. In circumstances where the entire liver and spleen area are to be visualized in one view, the diverging collimator may be used.

ISOTOPE AND DOSE. An intravenous injection of 3 or 4 mCi of ^{99m}Tc sulfur colloid is administered.

DATA ACCUMULATION. Twenty minutes after injection, a series of static scintiphotos of the liver, spleen and bone marrow is obtained. A non-enlarged spleen is best imaged in left posterior and oblique views. Useful marrow views include upper sternal area, and left pelvis, hip and femur.

Data densities of 500,000 counts for an anterior view of the liver are desirable. Preset exposure time is kept constant throughout examination of the liver and spleen so that exposure intensity will be comparable in all the scintiphotos of these organs. For marrow scintiphotos, increased dot density and 2-minute exposures are normally used.

CASE HISTORIES. Case Study No. 1: Male, 60 years old. Known cirrohosis probably due to chronic alcoholism. Admitted for evaluation of low-grade fever.

Case Study No. 2: Female, 62 years old. Admitted for evaluation of abdominal cramping and liver enlargement. Seven years earlier, partial gastrectomy yielded the diagnosis of "leiomyoma, ulcerated stomach." Two years prior to this admission, laparotomy had revealed leiomyosarcoma in the left lobe of the liver.

EVALUATION. The purpose of these Pho/Gamma liver studies is to evaluate (1) shape, position, and general outline of the liver as imaged on the scintiphotos and (2) the nature of any labelling decrease, whether uniform, irregular or focal. Labelling in the spleen and marrow is compared with liver labelling to assess the possibility of portal-systemic shunting (indicated by greater spleen and marrow labelling, relative to the liver) or hypertrophy of the bone marrow.

In the clinical scintiphotos shown at left, examples of uniform decreased labelling, irregular labelling, and focal defects of labelling are evident.

The patient with cirrhosis (Case Study No. 1) has generalized decrease and irregularity of labelling consistent with that disease. Furthermore, a focal defect of labelling exists in the left lobe of the liver and is best seen in the left lateral view. (This defect was subsequently found by local surgical biopsy to be the site of focal necrosis which had been responsible for the patient's low-grade fever of unknown origin.) Also typical of a cirrhotic are the bright labelling of the slightly enlarged spleen and bone marrow (with marrow extension into the right femur).

The patient with leiomyosarcoma (Case Study No. 2) is an excellent example of focal metastatic lesions causing some decrease of liver labelling, as well as enlargement of the liver that is so common with metastatic disease of the liver. Giant splenomegaly also exists on a congestive basis.

CONCLUSIONS. Liver scintiphotography with the Pho/Gamma Scintillation Camera and ^{99m}Tc sulfur colloid appears to be a markedly improved liver-imaging technique and sensitive diagnostic test for liver disease.

This form of scintiphotography provides a large amount of specific information about liver structure and hemodynamics and is an accurate guide for the selection of biopsy sites. When combined with other special procedures, such as liver scintiphotography during rose-bengal excretion or liver-blood-flow evaluation, the Pho/Gamma liver study with ^{99m}Tc sulfur colloid offers many other diagnostic possibilities.

0-232

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.

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(4) You are not licensed for it.
(5) You have no time for it.

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Picker Nuclear—the largest company in nuclear medicine—has set up a program to help cope with the problems of getting into this field. That these problems are soluble *even for smaller institutions* is evident from this statistic: there are now 700 hospitals with fewer than 200 beds that have Departments of Nuclear Medicine. And it's probably safe to assume that all of these smaller hospitals also faced—and overcame—problems akin to those listed above.

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☐ Please send relevant small hospital case histories and other information on starting a Department of Nuclear Medicine.

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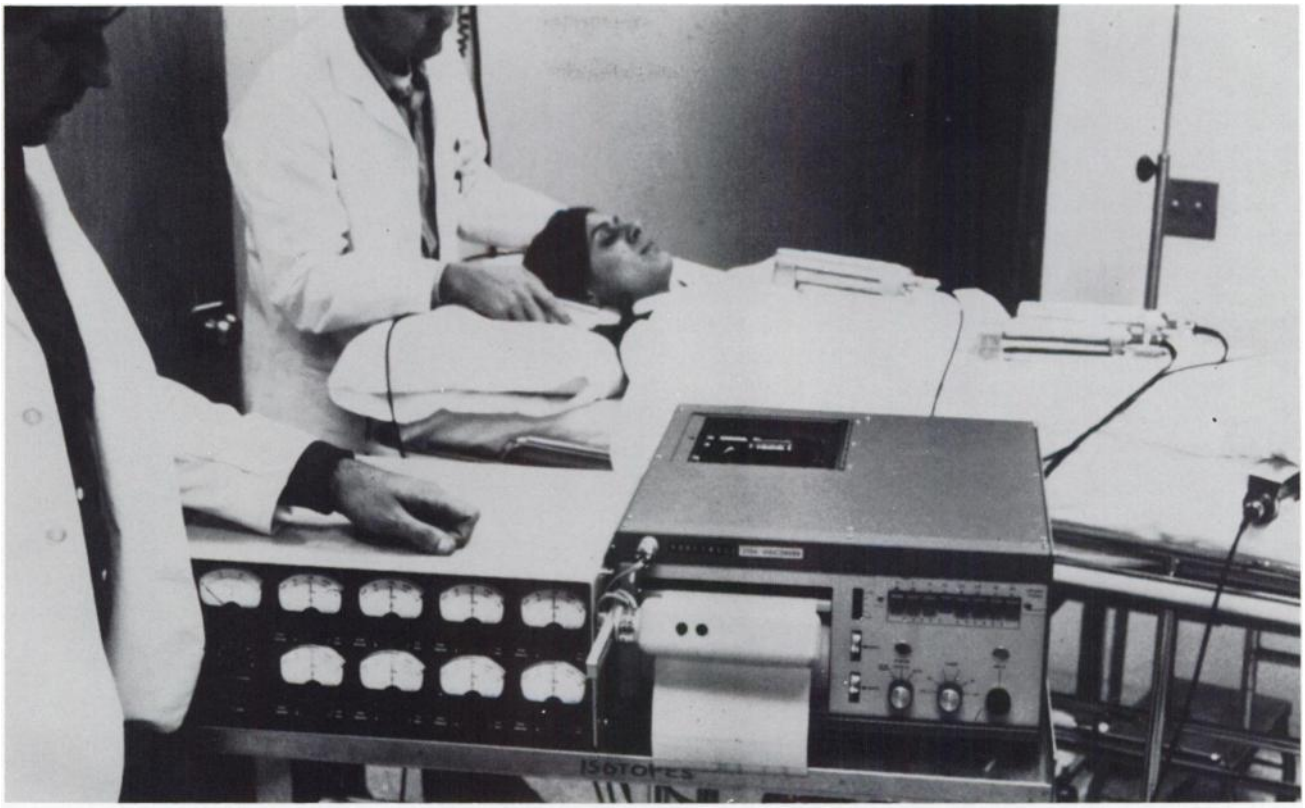
BLOOD FLOW DETERMINATIONS



Eberline announces the "multipurpose" Monitor

Both photos depict the Blood Flow Monitor with side window detector collimators and eight channel oscillograph recorder.

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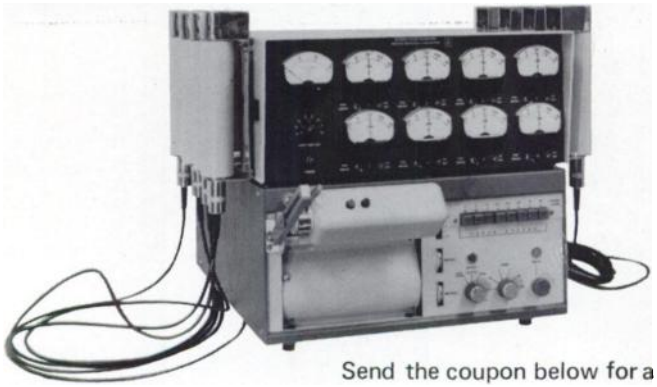

Send the coupon below for a free copy of our new applications brochure: "A New Instrument for Nuclear Medicine: the Multipurpose Monitor."

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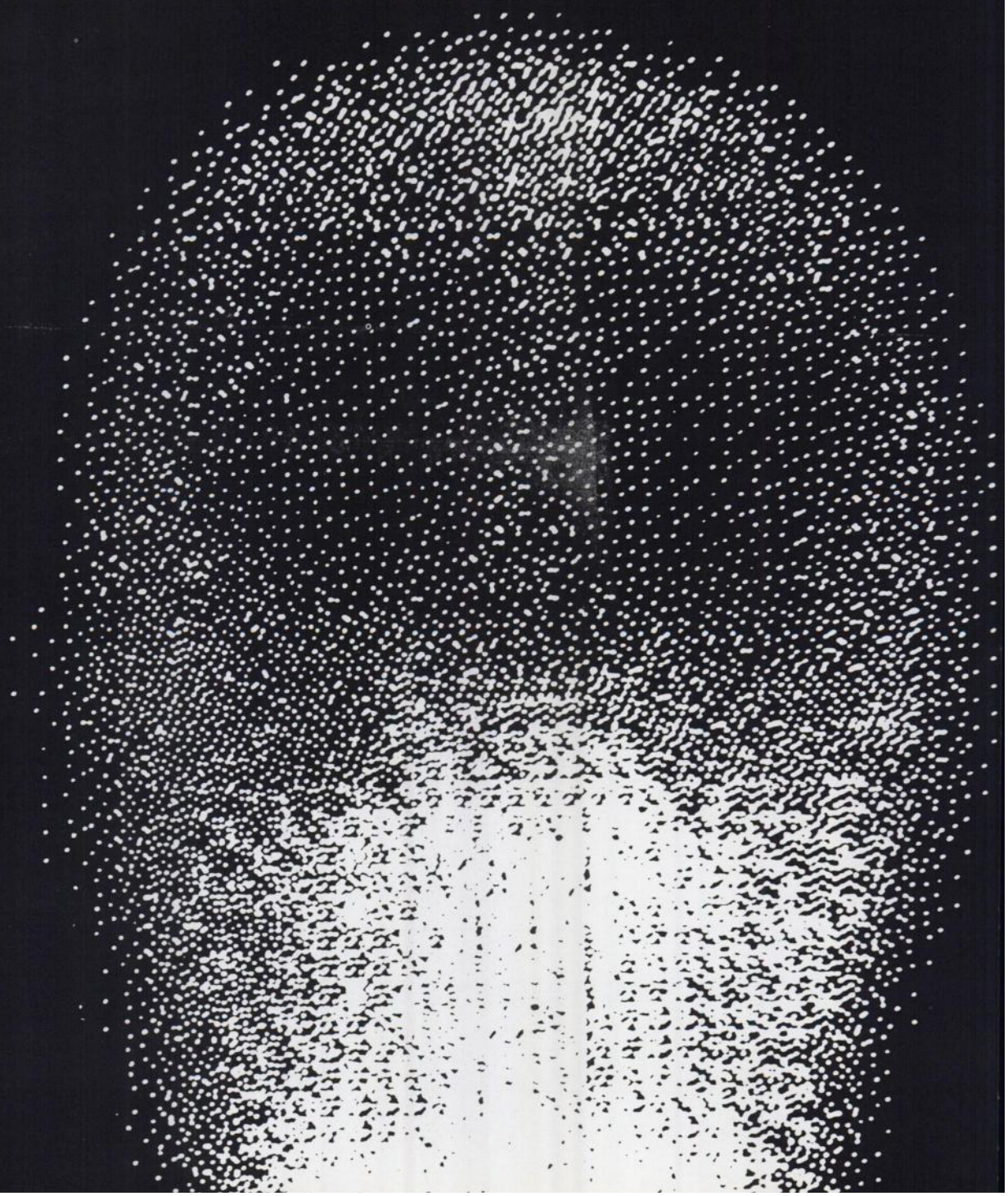

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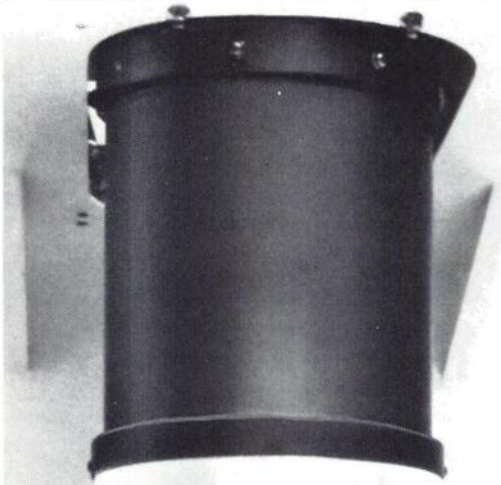

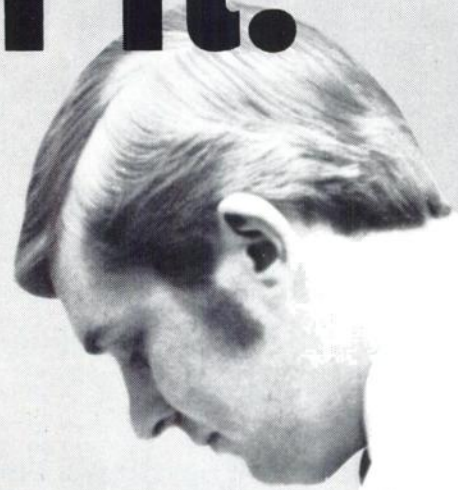

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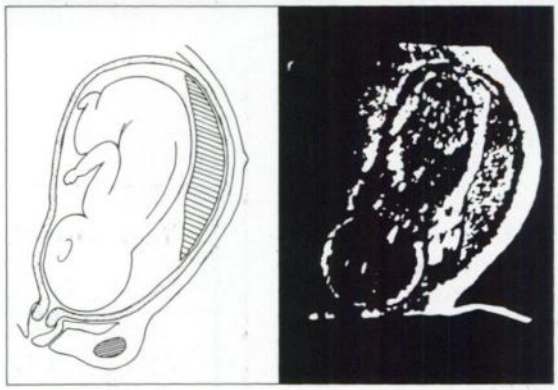

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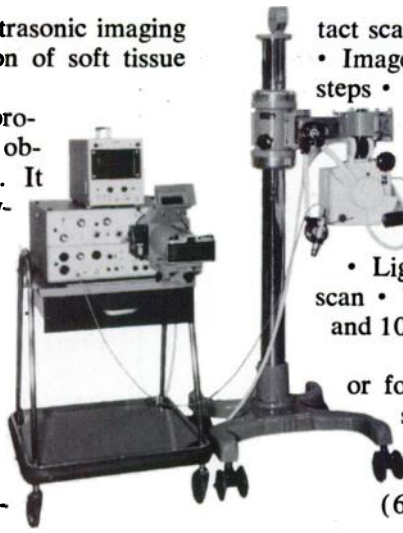
Other applications include differentiation of cystic and solid masses, as well as mapping cf the liver, kidney, spleen, gall bladder and the carotid artery for blocks and occlusions.



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NUCLEAR MEDICINE STAFF POSITION available July 1, 1971. Clinical service and teaching development predominantly. Research interests encouraged. Please contact Milton B. Yatvin, Ph.D., Chairman of Search Committee, Department of Radiology, University of Wisconsin Medical Center, 1300 University Avenue, Madison, Wisconsin 53706. Telephone number (608) 262-2570.

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POSITIONS WANTED

CLINICAL CHEMIST, A.A.C.C. STATE chairman has interest, training and equipment (automated gamma and liquid scintillation systems) for radioassay in vitro procedures desires association with interested group. Society of Nuclear Medicine, 211 E. 43rd St., N.Y., N.Y. 10017, Box 401.

RADIOPHARMACIST WITH B.S. IN Pharmacy, M.S. and Ph.D. in Bionucleonics, and one year post-doctoral experience in Radiopharmaceutics within Nuclear Medicine, which included twelve weeks training in Radiation Therapy Dosimetry at a cancer institute. Can serve a dual role. Reply to Box 402, Society of Nuclear Medicine, 211 E. 43rd Street, N.Y., N.Y., 10017.

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RESIDENCY AND FELLOWSHIPS IN NUCLEAR MEDICINE AVAILABLE JULY 1, 1971

For information contact:

John A. Burdine, M.D.
Chief, Nuclear Medicine Section
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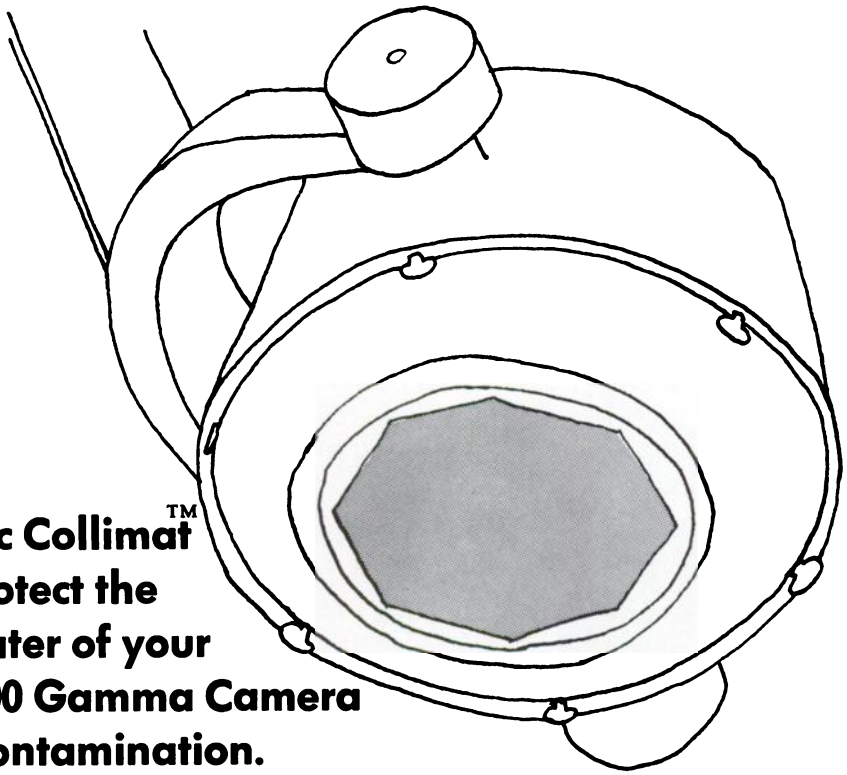

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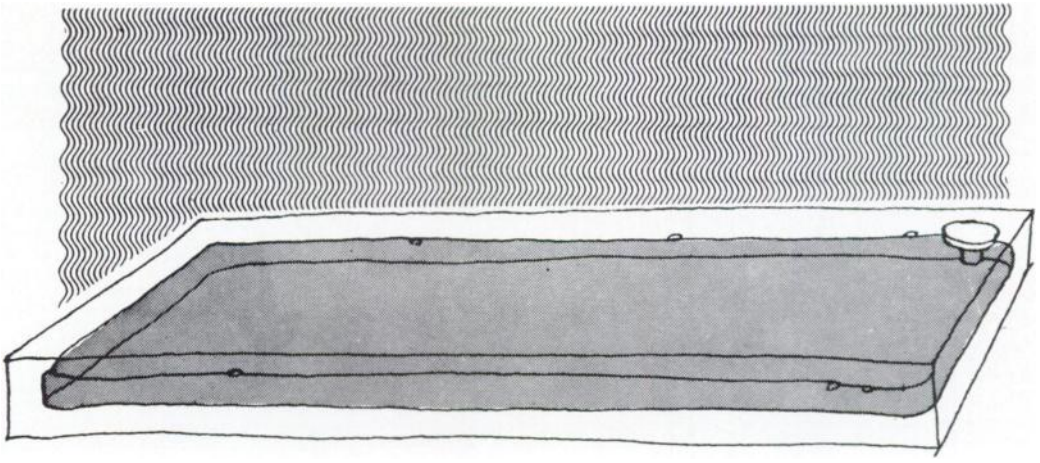

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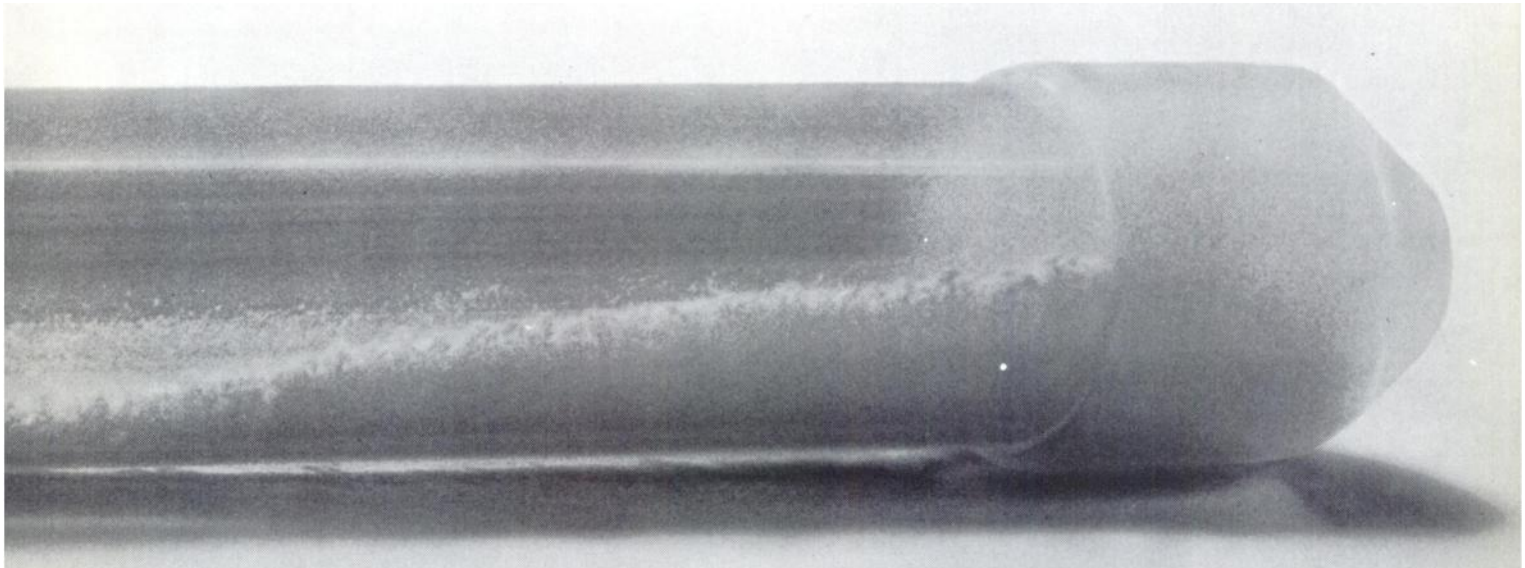

tion, it should not be used as the sole basis for such an evaluation. In any patient, the clinical state is probably the best indication of thyroid status, and *any* laboratory test must be interpreted with caution when test results do not agree with clinical evidence.

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.

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FIRST SCIENTIFIC ASSEMBLY OF THE WORLD FEDERATION OF NUCLEAR MEDICINE AND BIOLOGY

June 26–27, 1971 **Biltmore Hotel** **Los Angeles, Calif.**

ANNOUNCEMENT AND CALL FOR PAPERS

The World Federation of Nuclear Medicine and Biology announces that its First Scientific Assembly will be held on June 26 and 27, 1971, at the Biltmore Hotel in Los Angeles. The Opening Ceremony and Banquet will take place on the evening of June 26th. The Scientific Assembly will take place all day June 27th.

The Scientific Program Committee of the First Scientific Assembly of the World Federation of Nuclear Medicine and Biology welcomes the submission of abstracts.

Abstracts of original contributions in nuclear medicine may be submitted on the same abstract forms used for the Society of Nuclear Medicine. These are available from the Society of Nuclear Medicine, 211 E. 43rd St., New York, N.Y. 10017. Please submit only the original.

Each abstract should contain the name(s) of the author(s), the institution(s) and the mailing address of the authors presenting the paper. Underline the name of the author who will present the paper.

Each abstract should contain the following information in this order:

1. Purpose of the study
2. Methods used
3. Results with pertinent supporting data
4. Conclusions.

Please send the abstracts to:

Ronald G. Evens, M.D.
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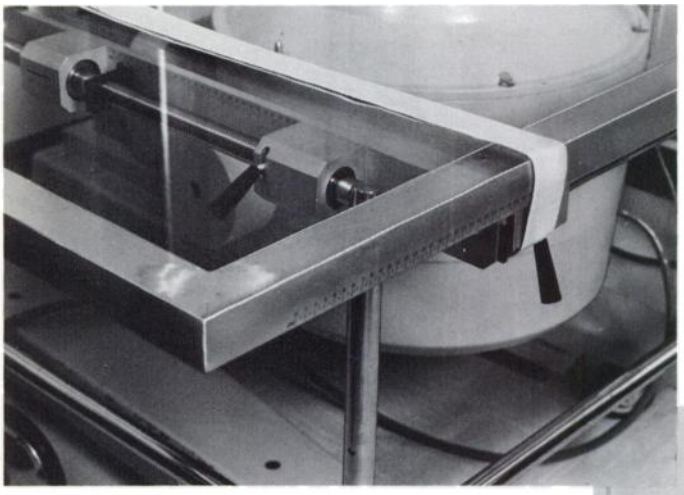
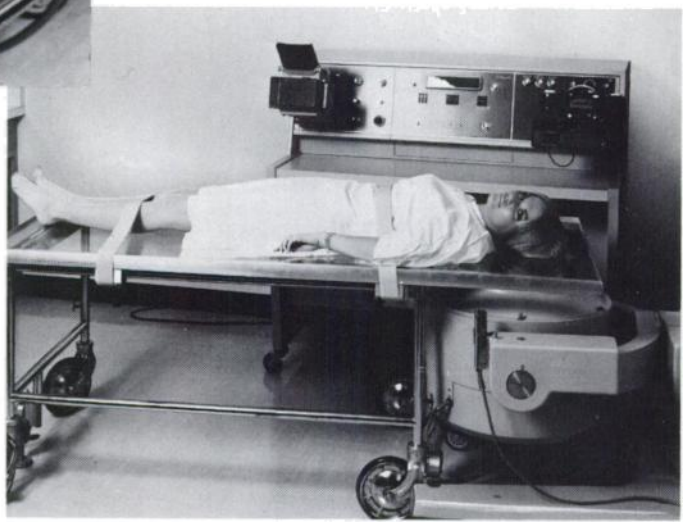
INDEX TO ADVERTISERS

Finally.. THE PGL MODEL 500 A Table for Imaging With a Movable Top



Graduated calibration scale and positive cam locks assures reproducible positioning.

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



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

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PGL

INSTRUMENTS & SERVICES FOR MEDICINE

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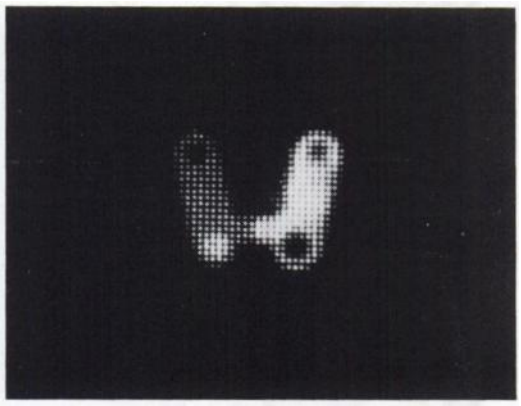
The Baird-Atomic Scintillation Camera: a new kind of image.

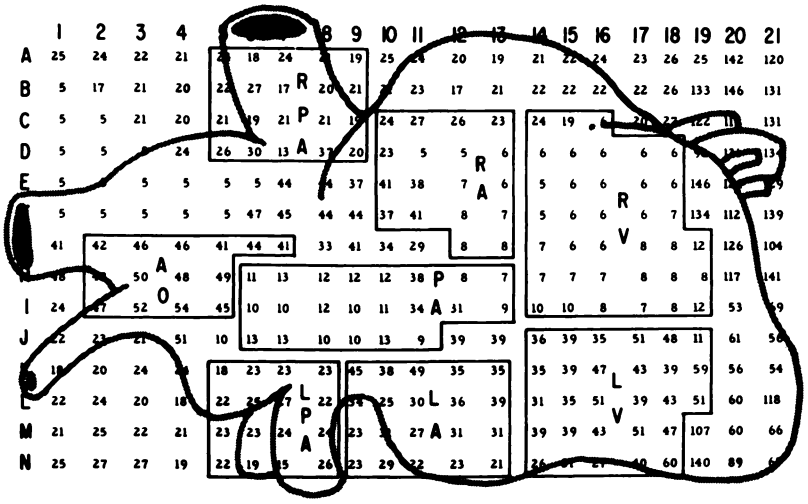
By Johan Govaert and Frank Troiani

The thyroid phantom shown here was made by B/A's new 2.78MM Imager System. This significant increase in resolution, an order of magnitude better, is effected by eliminating the intrinsic resolution of the sodium iodide crystal as a limiting factor on overall system resolution. This makes Baird-Atomic's Autofluoroscope the most valuable Scintillation Camera obtainable.

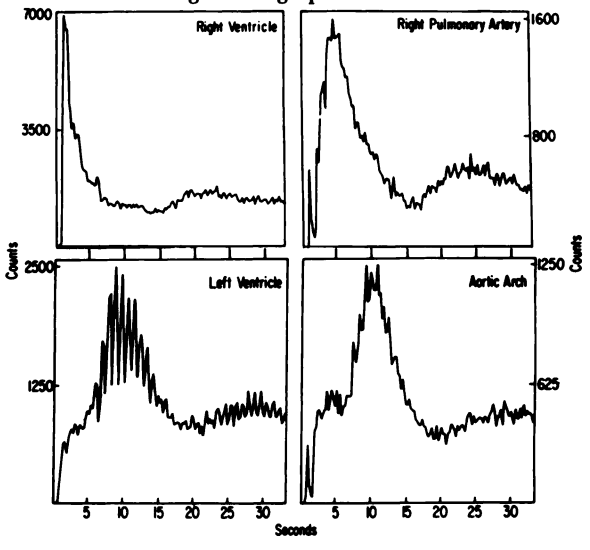


Thyroid Phantom
500μ C
57 Co

RADIONUCLIDE ANGIOCARDIOGRAM TIME OF MAXIMUM COUNT



Radionuclide Angiocardiographs for areas selected.



Notice the thyroid phantom to the left. It says a lot about the Autofluoroscope's new image. Quite frankly, we don't think there's another camera that can get this resolution at all energies. Even large organs can be imaged in this way.

It means that patient data, even large organs, are imaged with resolution of 2-3 millimeters. Even at 16 centimeters from the detector the Autofluoroscope's resolution is less than one centimeter.

It represents, of course, a significant step forward.

Another example: the quantitative angiocardiogram. It utilizes the computer and Baird-Atomic's extensive portfolio of computer programs. (All data has been corrected for detector uniformity and instrument dead-time.)

Time progression of a 10 mCi $99^{m}Tc$ bolus passing through the heart: time units in 0.2 seconds when maximum counts occurred for each element in the matrix over the duration of the study.

To the right of the initial computer print-out are radionuclide angiocardiographs for areas selected. Notice that all pertinent cardiac time parameters are evident from these curves. (Data was accumulated at a rate of 0.2 seconds per frame.)

Now let's look for a moment at another dramatic demonstration of the Autofluoroscope's capabilities: a blood flow study, performed by Dr. Bernard Mongeau, Hotel Dieu de Sherbrooke, Sherbrooke, Canada, and James McCoo, South Chicago Community Hospital.

The study was performed using 10 mc $99^{m}Tc$ Pertecnetate I-V injected as a bolus. The Autofluoroscope accumulated the information at the rate of 1 frame per second. Based on the curve data, the diagnosis was reported as positive with "incomplete obstruction of the left internal carotid (left carotid insufficiency)."

We have used this space to show you the kind of advances that we are building into the Autofluoroscope. To tell you that if you're looking into scintillation cameras, you should have the Autofluoroscope in mind. (Incidentally, the improvements discussed here can be readily installed in existing Autofluoroscopes.)

Naturally, you'll have questions. And also naturally, we have the answers. Abundantly. Write or call.

Baird-Atomic

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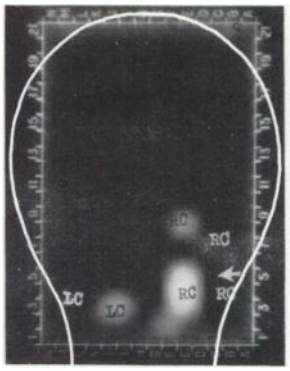
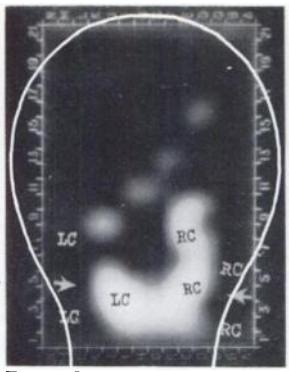
Bedford, Mass. 01730. (617) 276-6208

Baird-Atomic Limited, Braintree, Essex, England. Baird-Atomic (Europe) N.V., The Hague, The Netherlands.

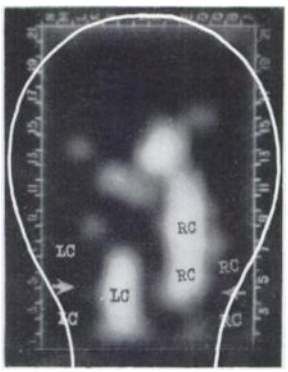
Assessing cerebral "Blood Flow" — using the clinical screening method.



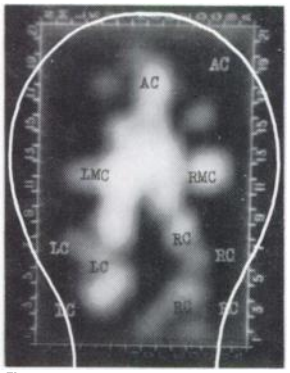
Frame 1



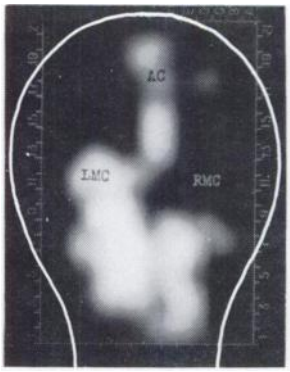
Frame 2
*NOTE: point of obstruction confirmed by angiogram.



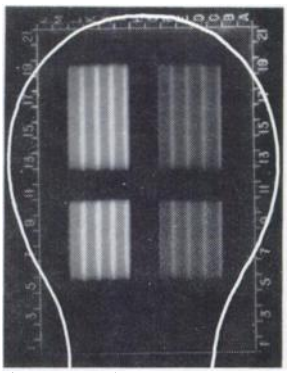
Frame 3



Frame 4



Frame 10

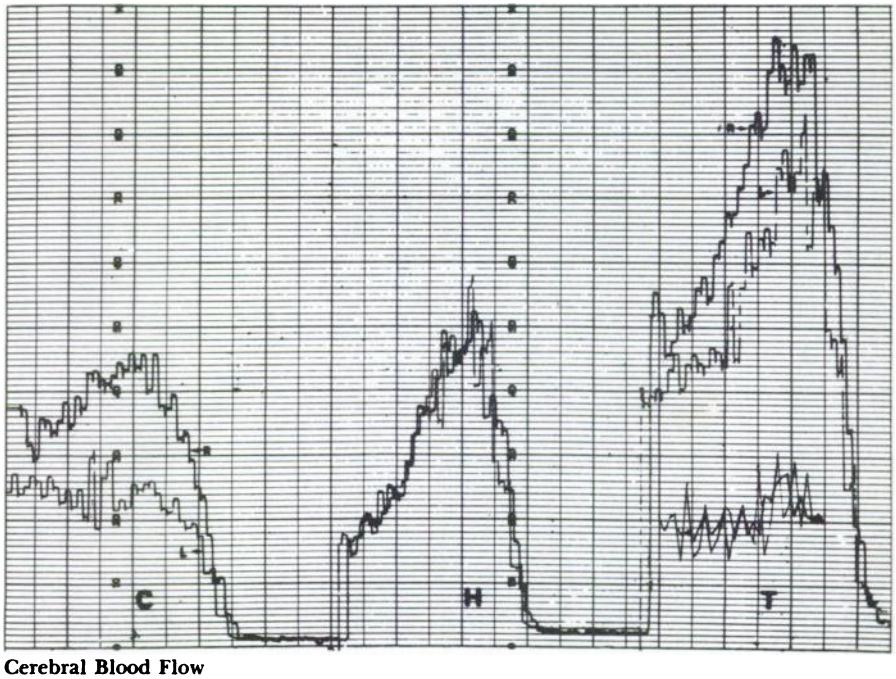


Area Flagging

Legend

AC — Anterior Cerebral
LC — Left Carotid
RC - Right Carotid
LMC — Left Middle Cerebral
RMC — Right Middle Cerebral
W — Circle of Willis

Cerebral Blood Flow Plots — 1000 counts full scale.



Cerebral Blood Flow
Analysis of the curves: parameters used.

1. Peak Activity A. Time from cervical to maximal cerebral perfusion (N: 7-10 sec.; symmetrical within 3 sec.) B. Amplitude height ($\pm$ 2 S.D.)
2. Transit Time is determined by the first derivative method of Oldendorf.
3. Breakdown of Curve showing total blood flow into 2 curves showing: A. Hemispheric Blood Flow — Equal. B. Cervical Blood Flow — Reduced on left side.

Pho/Gamma is now better than ever.

Ask your Nuclear-Chicago sales engineer about the new Pho/Gamma® HP Scintillation Camera . . . about its higher resolution for crisper static studies . . . about its better sensitivity for dynamic function studies.

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