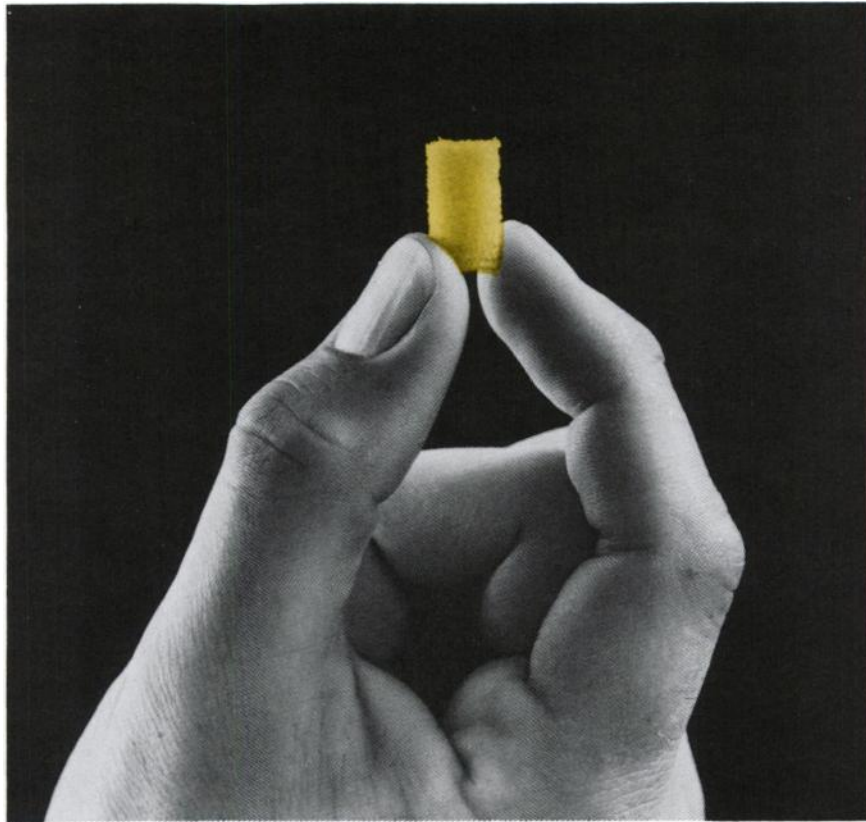


you can "count" on these 2 sponges



904120

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

"The T-3 uptake test was vastly improved by a resin-sponge . . . (Triosorb) . . . which is offered as a replacement for the red cells as well as for the loose granular resin which varies from day to day."³

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

patients show a decrease in serum thyroxine while hyperthyroid patients show an increase. In euthyroidism, interfering conditions cause the T-3 and T-4 to move in opposite directions whereas in hypothyroidism or hyperthyroidism, both tests move in the same direction.

By requesting both Tetrasorb (a direct measure of thyroid activity) and Triosorb (an indirect measure of thyroid activity) for his patient, the physician can make his diagnosis with increased confidence.

3. Manfredi, O. L., et al., J. Nuclear Med., 7:72, 1966.



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TRIOSORB[®]-131 TRIOSORB-125 T-3 Diagnostic Kit

If you suspect thyroid dysfunction,



904119

"No single laboratory test of thyroid function is diagnostically perfect for all patients."¹

That's why Abbott offers both a T-3 test (Triosorb) and a T-4 test (Tetrasorb).

"The serum T4, being completely specific, comes closest to the ideal test and is better correlated with clinical status than any other routine test. The serum T4 alone is adequate for the vast majority of patients. Because of variations in the T4 binding capacity of the serum proteins in pregnancy, in various disease states, and as a result of certain medications, misleading T4 results may be obtained occasionally."¹

"Fortunately, the generally available *resin up-*

take of ¹³¹I-triiodothyronine (Triosorb test) is a useful procedure to complement the serum thyroxine determination, particularly when values of the latter do not seem consistent with the clinical picture."²

"In summary, our experience with the serum T4 in the past three years has proven it a completely specific and highly accurate diagnostic test. Diagnostic errors are relatively easily detected if a T3 Resin test is used concurrently. We now use the T4 instead of the PBI as the routine screening test of thyroid function."¹

1. Gold, A., *Appl. Ther.*, 9:599, 1967.

2. Editorial, *Canad. Med. Assn. J.*, 97:32, 1967.



TETRASORBTM-125
T-4 Diagnostic Kit

TM—Trademark

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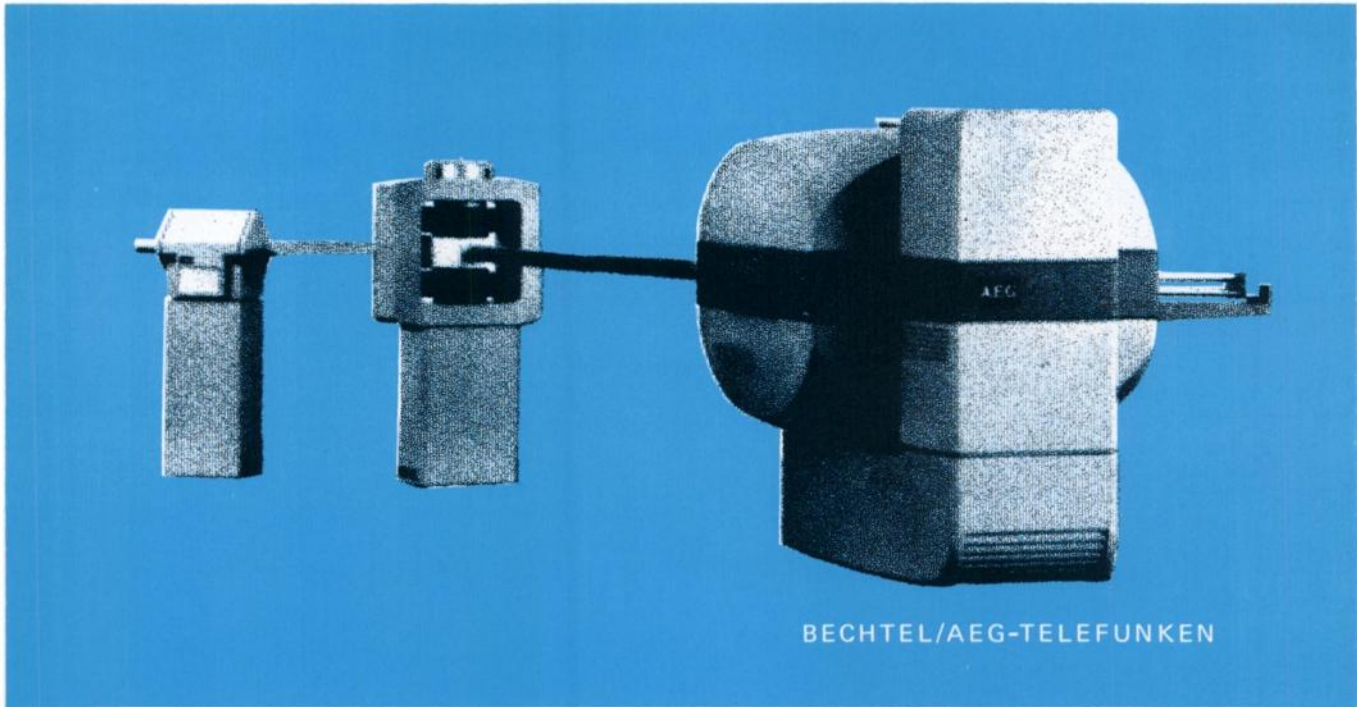
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 Height 7'-0"
 Total Weight 33 Short Tons
 Connected Power 150 KVA

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		INTERNAL BEAM		EXTERNAL BEAM	
Particles		Energy [MeV]	Intensity [μ A]	Energy [MeV]	Intensity [μ A]
Protons		1 — 22	1000	22	100
Deuterons		0.5 — 11	1000	11	100
He ⁴		1 — 22	50(100)	22	25(50)
He ³		3 — 29	50(100)	29	25(50)

*Variable energy version is also available

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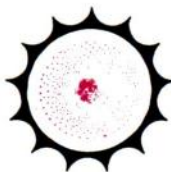
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Its worth looking into

- Highly useful in regional ventilation studies.
- Aid in differential diagnosis between pulmonary embolism and chronic obstructive pulmonary disease.
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- Provided in varying amounts of radioactivity from 100-500 mCi per cylinder in breathing air.



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Nuclear Products Division
announces the

XENON TRANSFER VESSEL

(patent pending)



Here is a completely new, fully tested device for in-laboratory transfer of Xenon-133 gas from a sealed ampule into saline solution. Developed and now introduced after over a year of comprehensive clinical use, this revolutionary new Transfer Vessel combines economy, safety and simplicity of operation into a lab unit that takes up less than 2 square feet of space. Check these features against your own requirements:

ECONOMY — Laboratory conversion of ^{133}Xe into saline solution can be accomplished for less than 15 cents per millicurie. Eighty (80) percent of the ^{133}Xe is available for usage.

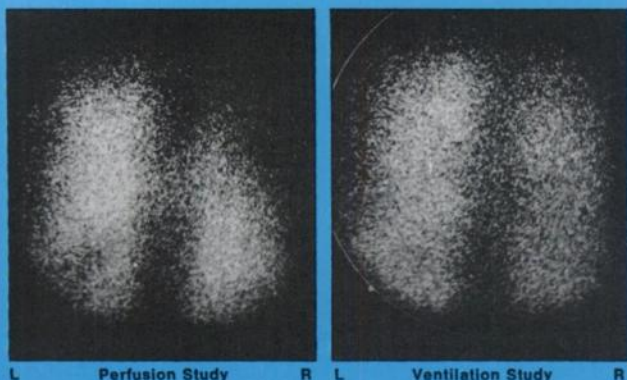
SAFETY — Maximum shielding insures a negligible radiation hazard to laboratory personnel. The device results in less than 2 mR/hr exposure and no extra ventilation precautions

are necessary. The vessel also provides a safe and convenient means of storage.

SIMPLICITY — A few convenient operational steps release a Curie (or more) of Xenon-133 from a specially designed and sealed glass ampule into saline solution. Dosages are easily drawn off by the attached syringe.

CONCENTRATION — Initial concentrations as high as fifteen millicuries per cubic centimeter are achieved. Greater concentrations are possible using a multiple Curie ampule.

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Xenon-133 in saline solution provides a method for a regional ventilation-perfusion study and is in a convenient form for both inhalation and injection techniques. The perfusion study scintiphotogram shows the filling defect in the base of the left lung and a decrease in perfusion in the right upper lung field. The ventilation study indicates some ventilatory imbalance. Localized defects shown in the perfusion study are indicative of pulmonary emboli.



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Xenon-133 is supplied by the Radiopharmaceutical Division of NMC Corp. in specially designed glass ampules containing 1 (or more) Curie of ^{133}Xe , for \$90 per Curie. The 5.27 day physical half-life allows for realistic delivery and storage and greatly facilitates your planning schedule. This radioactive gas may be administered only by physicians licensed to dispense Xenon-133. License information may be obtained from Nuclear Medical Computer Corp. together with a descriptive brochure on the Xenon Transfer Vessel. Merely fill in the coupon or write on your institution letterhead.

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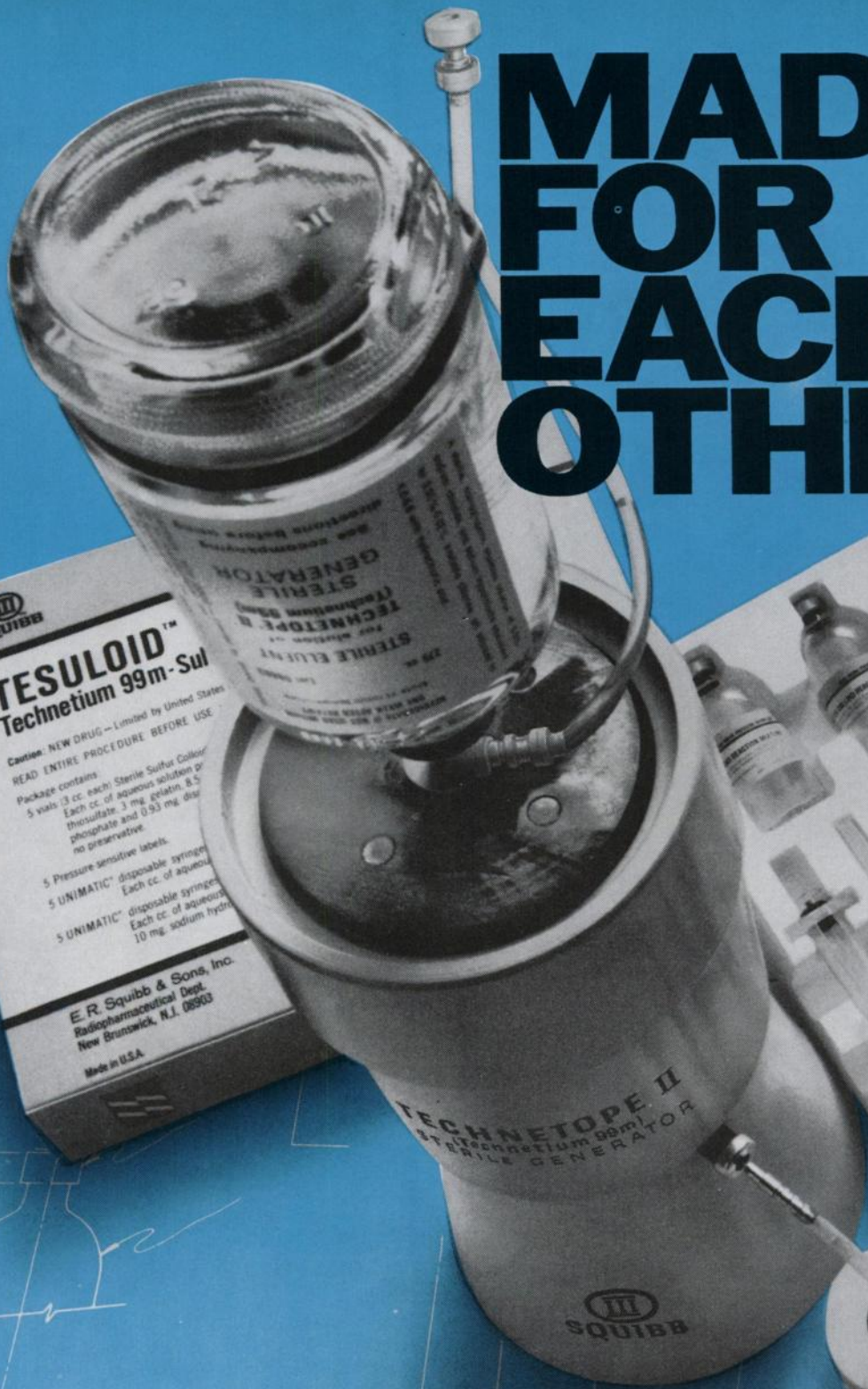
Technetium 99m-Sul

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Package contains
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Each cc. of aqueous solution of
thiosulfate, 3 mg. gelatin, 8.5
phosphate and 0.93 mg. dis-
no preservative.

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5 UNIMATIC™ disposable syringes
Each cc. of aqueous
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10 mg. sodium hydroxide

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**the generator for preparing
a sterile, non-pyrogenic
supply of technetium 99m**



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KIT

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preparing technetium 99m-sulfur
colloid in minutes, as you need it**



**perfect combination for making
^{99m}Tc-S colloid "when you need it"
for liver and spleen scanning**

Units designed to complement each other are more likely to produce a better end product. When the Technetope II eluate (with its low concentration of polyvalent cations) is utilized in the Tesuloid Kit, the result is a ^{99m}Tc-S colloid which is well suited for liver and spleen scanning.

Other sources of technetium having a higher concentration of polyvalent cations may produce an unsuitable non-colloid preparation, evidenced by a flocculent precipitate.

Thus, the Technetope II Generator and the Tesuloid Kit provide the perfect combination that gives reproducible results time after time.

See next page for brief summary.

MADE FOR YOUR INDEPENDENCE

now you can make your own ^{99m}Tc -sulfur colloid when you want it...

- utilize ^{99m}Tc eluate from your Technetope II (Technetium 99m) Sterile Generator
- make as many doses as you want when you want

with ease, convenience, and economy...

- keep dollar loss from product decay to a minimum
- store kit anywhere—it's not radioactive

for liver and spleen scanning

- on the basis of 350 case reports from 11 investigators,¹ the technetium-sulfur colloid prepared in this manner was found to be highly satisfactory, and produced liver and spleen scans of good diagnostic value
- no side effects or adverse reactions occurred in any of the cases reported; there was no evidence of pyrogenic or other reactions

the colloid contains no dextran . . . no rhenium nor other added cation material

Reference: 1. Unpublished data on file at The Squibb Institute for Medical Research.

TECHNETOPE II (TECHNETIUM 99m) STERILE GENERATOR provides a means of obtaining a sterile, non-pyrogenic supply of Technetium 99m (^{99m}Tc), a versatile scanning agent that can be administered intravenously or orally. ^{99m}Tc , the short-lived daughter ($T_{1/2} = 6$ hours) of Molybdenum 99 (^{99}Mo , $T_{1/2} = 67$ hours), is obtained from the generator by periodic elution. The amount (in millicuries) of ^{99m}Tc obtained in the initial elution will depend on the original potency of the generator, while the activity obtained from subsequent elutions will depend on the time interval between elutions.

Warning: 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. The radiation field surrounding an unshielded column is quite high. Solutions of ^{99m}Tc 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 II.

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, the elution tube, the evacuated collecting vial, and both rubber closures in the generator column should be swabbed with a suitable germicide before entry. All entries into the generator column must be made aseptically. 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 the ^{99m}Tc must be sterile.

Do not administer material eluted from the generator if there is any evidence of foreign matter.

Contraindications: Radiopharmaceuticals should not be administered to pregnant women or patients under 18 unless the indications are very exceptional. Since Technetium may be excreted in human milk, it should not be administered to nursing mothers.

TESULOID (TECHNETIUM 99m -SULFUR COLLOID) KIT contains 5 vials (3 cc. each) Sterile Sulfur Colloid Reaction Mixture, 5 Unimatic® Disposable Syringes (2 cc. each) containing Sterile 0.25N Hydrochloric Acid Solution (Syringe A), and 5 Unimatic Disposable Syringes (2 cc. each) containing Sterile Buffer Solution (Syringe B). Each cc. of the Sterile Colloid Reaction Mixture provides 4 mg. sodium thiosulfate, 3 mg. gelatin, 8.5 mg. potassium phosphate, and 0.93 mg. disodium edetate. Each cc. in Syringe A provides 9 mg. hydrochloric acid. Each cc. in Syringe B provides 35 mg. sodium biphosphate and 10 mg. sodium hydroxide.

Warnings: The contents of the syringes (A and B) are intended only for use in the preparation of the ^{99m}Tc -S colloid and are **NOT** to be directly injected into a patient.

As with all radiopharmaceuticals, ^{99m}Tc -S colloid should not be administered to women who are pregnant or who may become pregnant, during lactation, or to patients under the age of 18 years unless the indications are exceptional and the need for the agent outweighs the possible potential risk from the radiation exposure involved. It should be noted that although radiopharmaceuticals are not generally used in individuals under 18, procedures using such agents are occasionally necessary in young patients. Because of the low internal radiation dosage of ^{99m}Tc -S colloid, it should be used in preference to other agents when the liver or spleen scans are necessary.

Formula feeding should be substituted for breast feeding if the agent must be administered to the mother during lactation.

Radiopharmaceuticals should be used only by physicians who are qualified by specific training in the use and safe handling of radioisotopes and whose experience and training have been approved by an individual agency or institution already licensed in the use of radioisotopes.

Note: The Tesuloid Kit is not radioactive. However, after the eluted ^{99m}Tc is added, adequate shielding of the resulting preparation should be maintained.

Precautions: As in the use of any other radioactive material, care should be taken to insure minimum radiation exposure to the patient as well as to all personnel directly or indirectly involved with the patient.

Note: The Tesuloid Kit was designed to be used with the sodium pertechnetate eluate obtained from a Technetope II (Technetium 99m) Sterile Generator. The low concentration of polyvalent cations in the Technetope II eluate results in a ^{99m}Tc -S colloid which is suitable for liver-spleen scanning. Use of other sources of sodium pertechnetate having a higher concentration of polyvalent cations may produce an unsuitable ^{99m}Tc -S preparation which is not a colloid; this is evidenced by the formation of a flocculent precipitate. If such a precipitate occurs, the preparation should not be used. It is, therefore, recommended that only Technetope II be used as the source of sodium pertechnetate with Tesuloid unless the user has demonstrated that other sources of ^{99m}Tc are consistently compatible and meet the standards of Technetope II.

For further information, contact your Squibb Representative or the Manager of Customer Service, E. R. Squibb & Sons, Div. of Nuclear Med., Georges Rd., New Brunswick, New Jersey 08903.

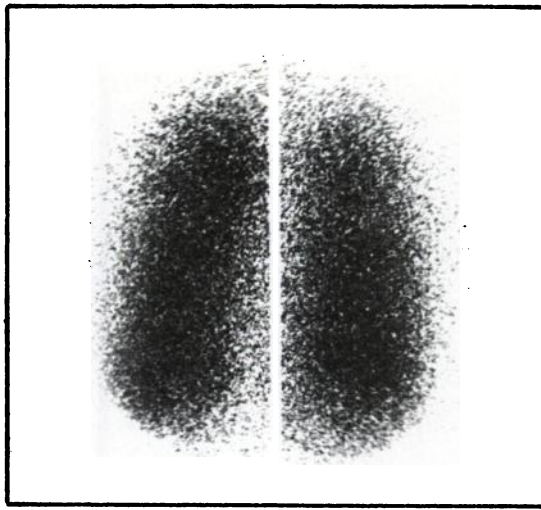


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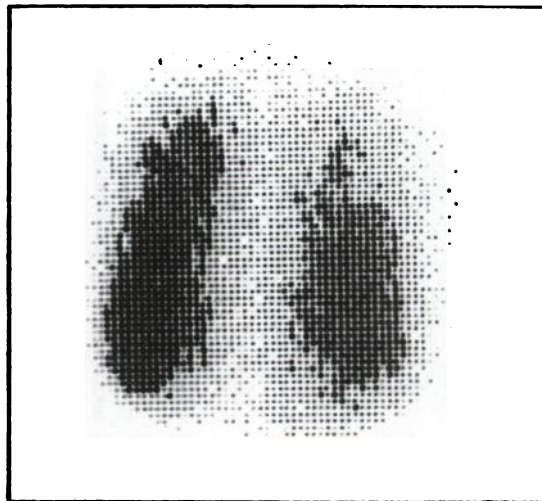


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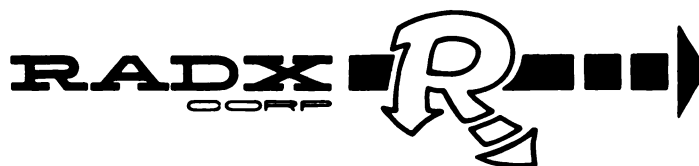
MARK IV ANALOG **ISOTOPE DOSECALIBRATOR**

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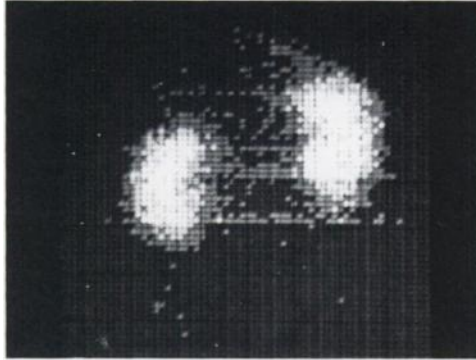
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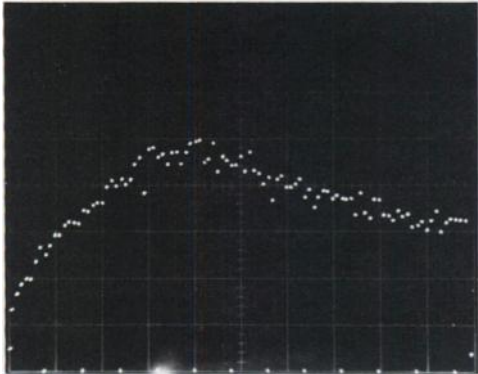
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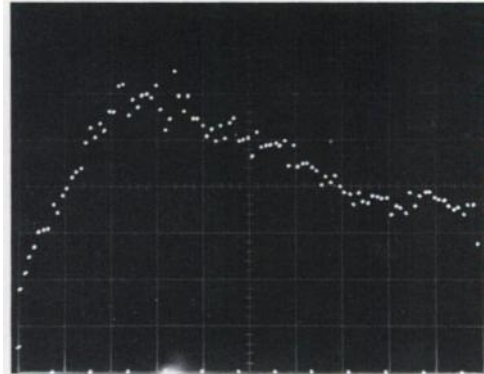
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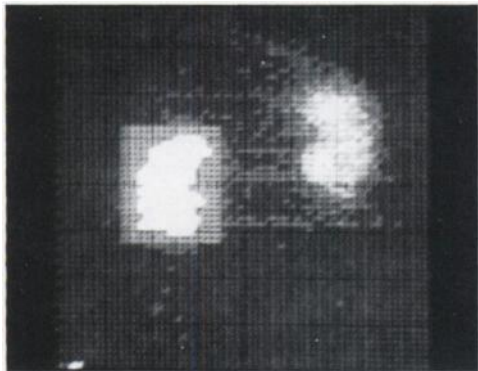
Addition of 20 sequential frames to produce reference picture of both kidneys to define area of interest.



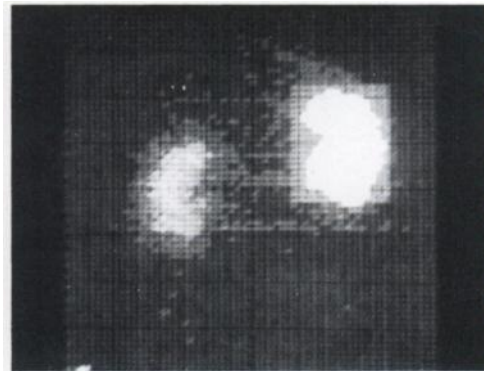
Left kidney function curve.



Right kidney function curve.



Area of interest, left kidney.



Area of interest, right kidney.

Renogram: 300 μ Ci 131 I, 12 second frames, 100 frame study.

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 Renogram.



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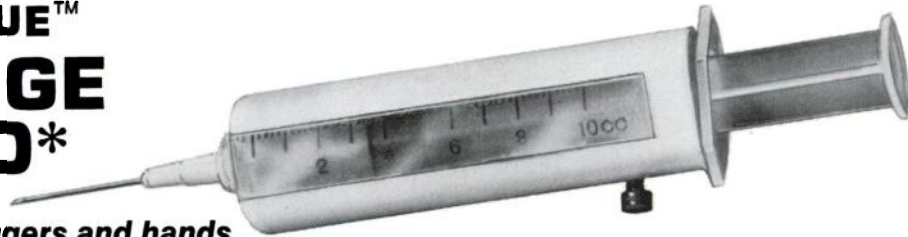
(We wouldn't settle for less. Why should you?)



Please speak to your local Picker technical representative for the complete story.
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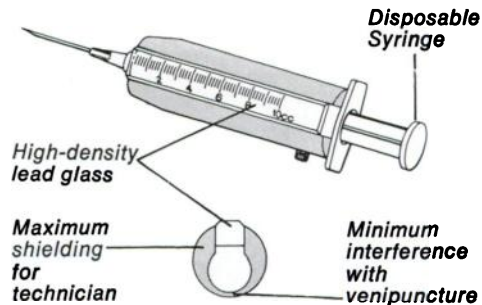
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Protects your fingers and hands from radioactive doses administered by syringe

- Reduces Tc-99m exposure by factor of 50.
- Maximum shielding for technicians. Tapered lead wall assures minimum interference with venipuncture.
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"Gamma Vue" Syringe Shields reduce the radiation hazard from syringes containing millicurie quantities of radioisotopes. Though designed for use with Technetium-99m, they have sufficient lead thickness to reduce the ionizing radiation from other isotopes to tolerable limits. For example, where 8 mc of Tc-99m would normally expose the fingers to a 5 R/hr hazard, the "Gamma Vue" reduces this by a

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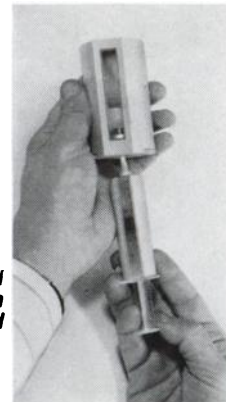
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Capacity	1 cc <i>Tuberculin</i>	2½ cc	5 cc	10 cc	20 cc
Weight	3 oz.	4 oz.	5 oz.	9 oz.	13 oz.
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*Vial Shield
In use with
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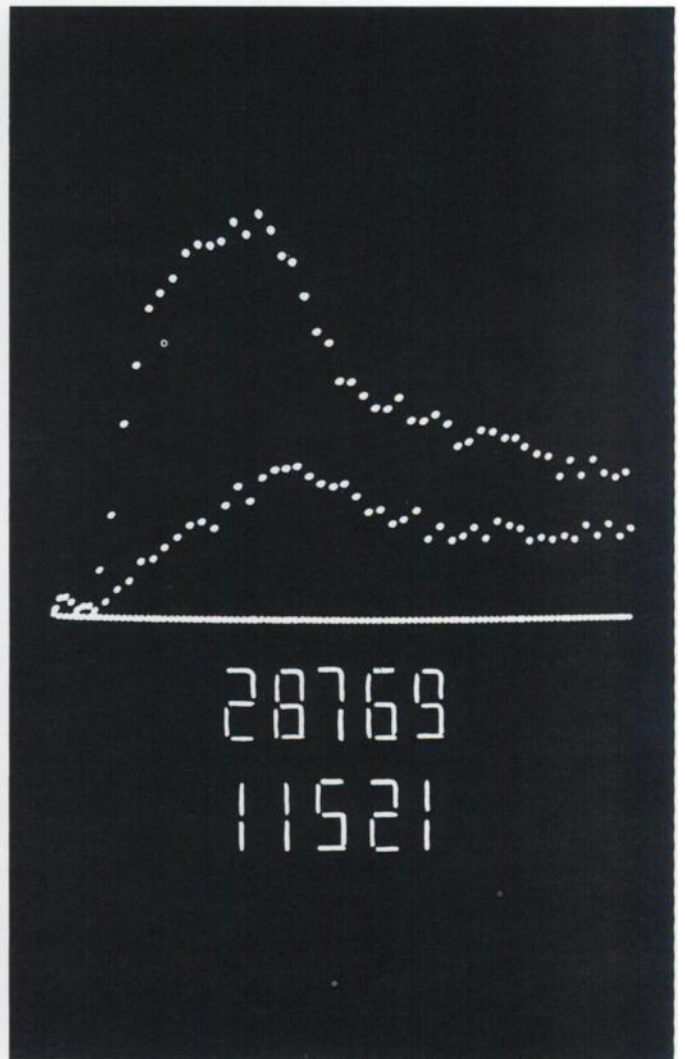
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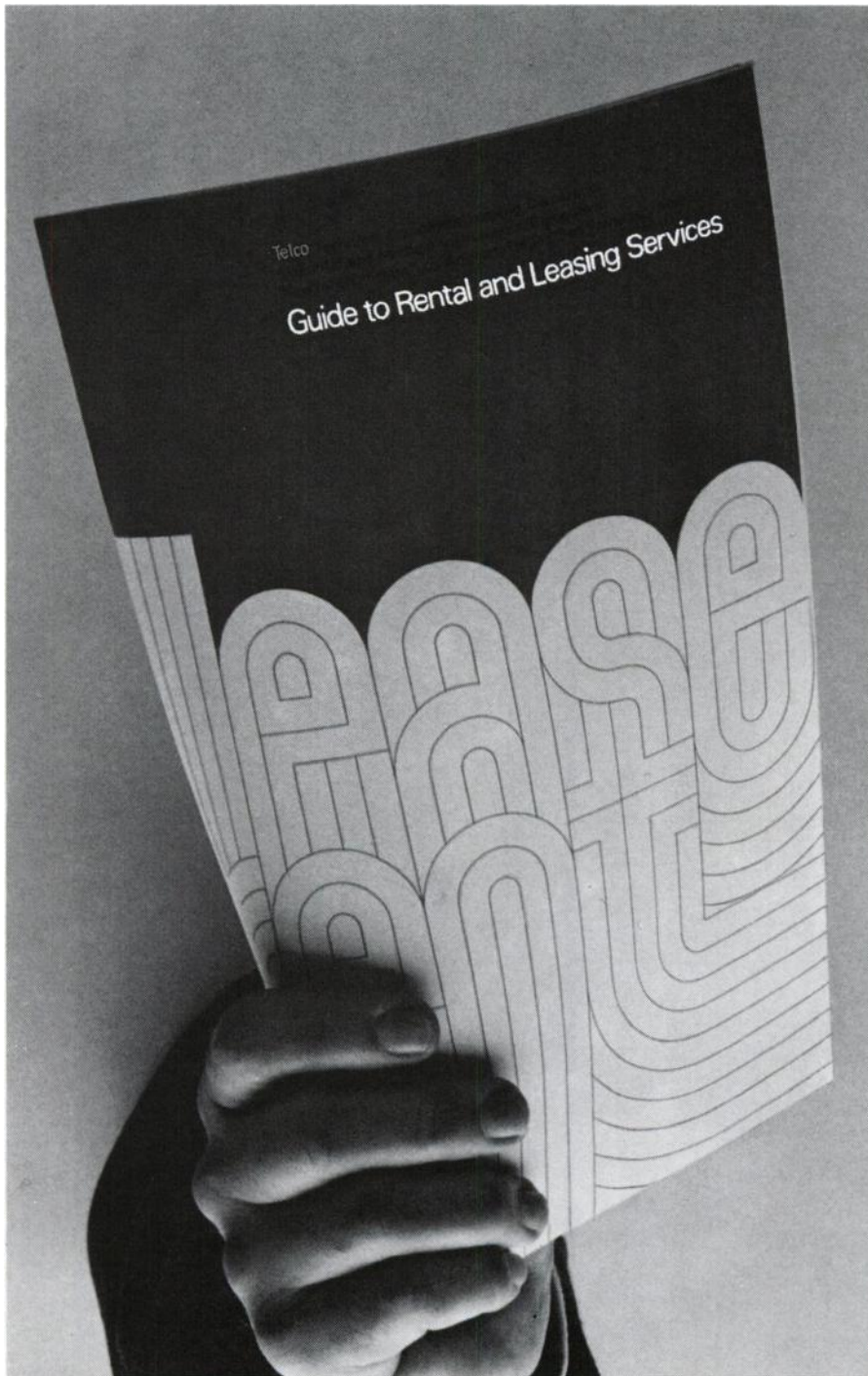


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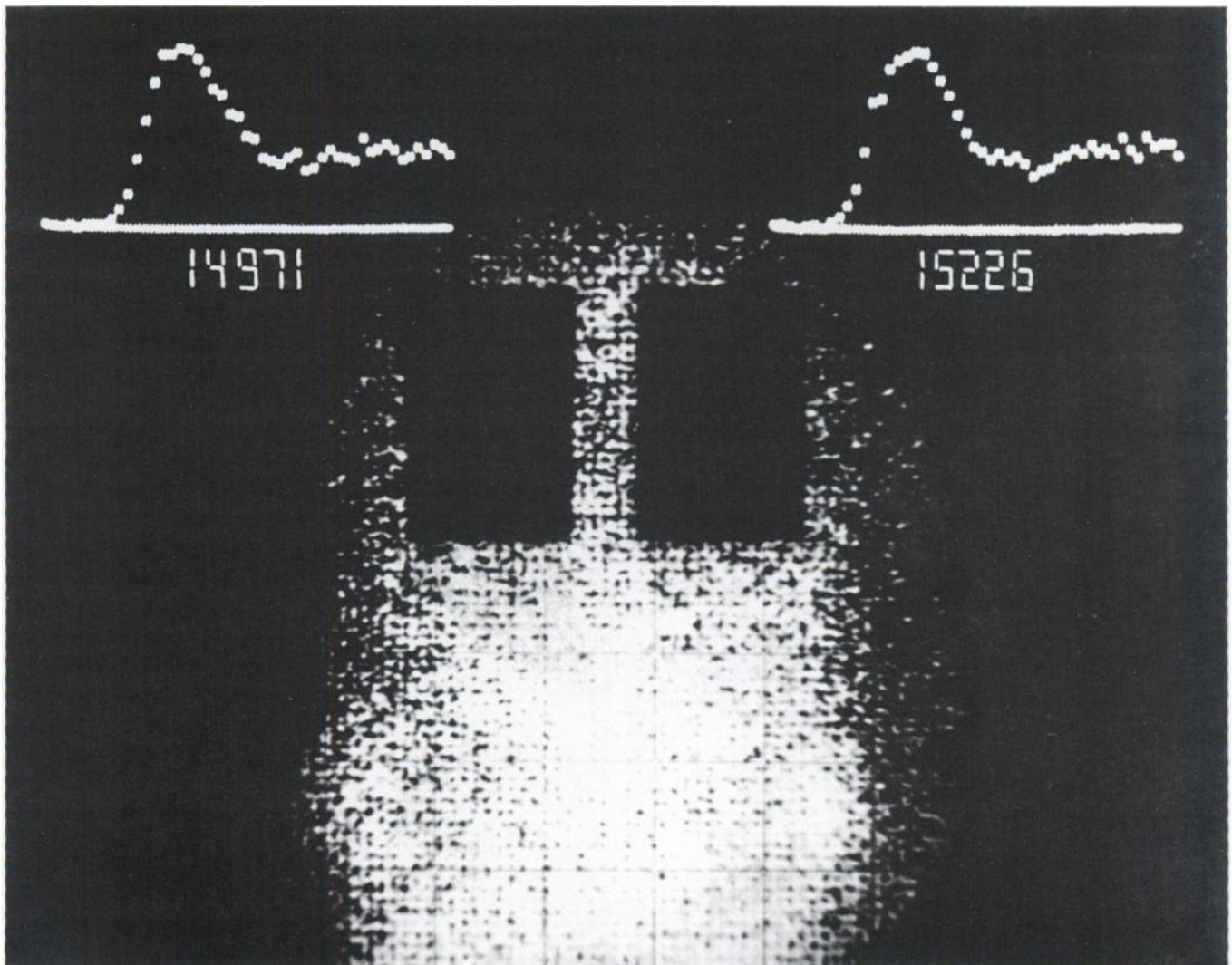
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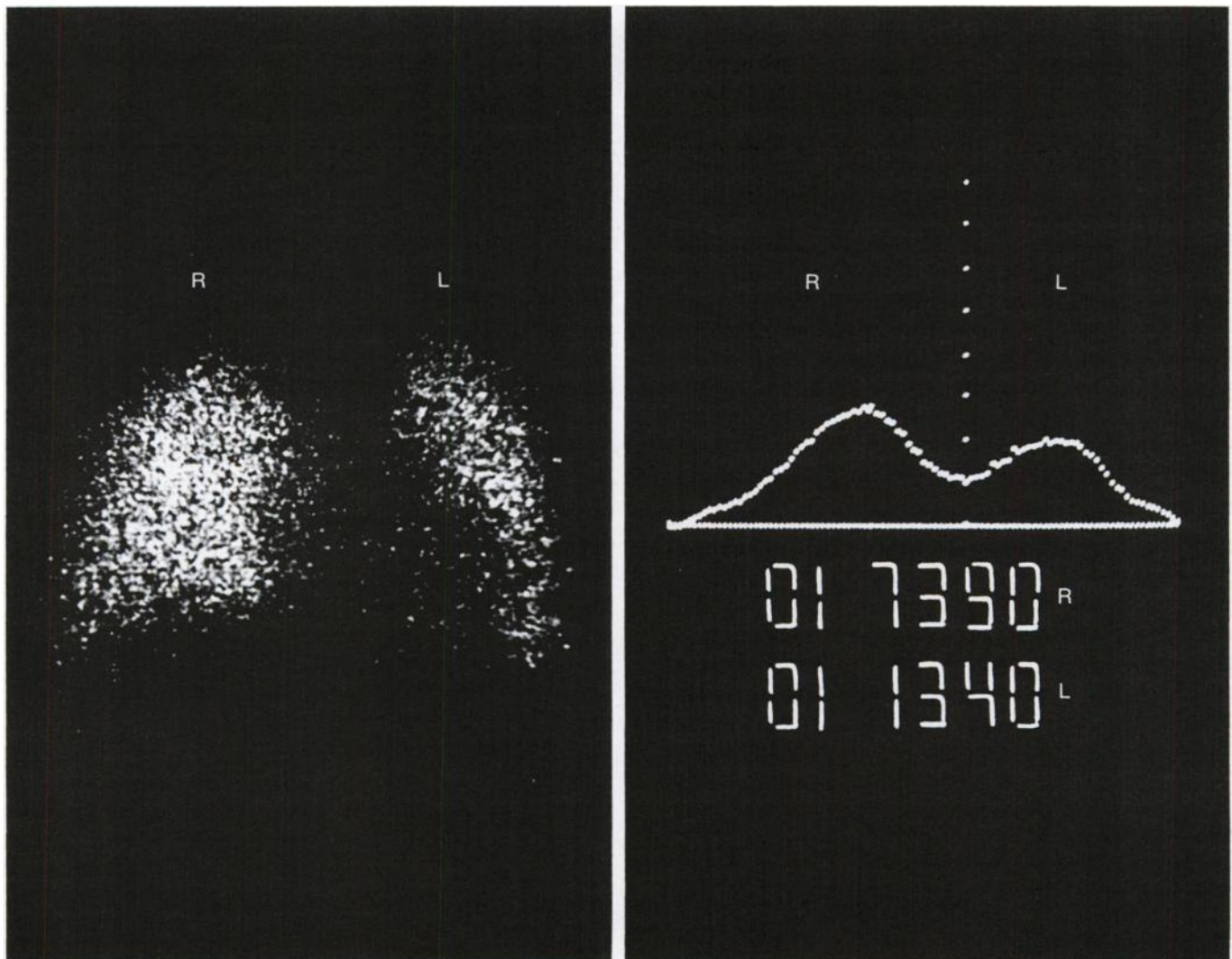
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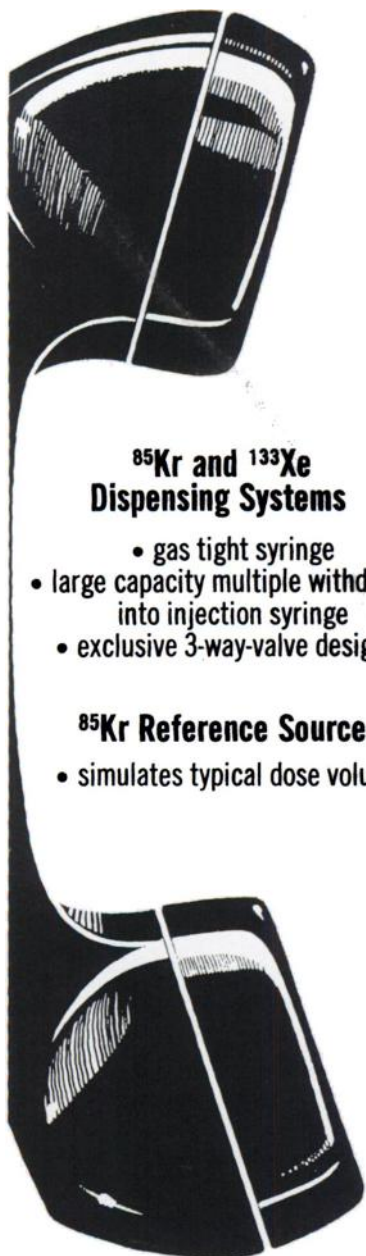
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(3.) You are no longer forced to lose activity over weekends since we calibrate on a daily basis.

(4.) Finally, if you suddenly find that you've underestimated your need, a fill-in order from us will be at the specified activity level on the day desired. It will not be a package that has lost part of its gratuitous activity.

So Picker-Hoechst now invites you to join us in our campaign to “Help Stamp Out the Gratuitous Override.” Write for your membership button and literature. Thank you. Write: Radiopharmaceutical Department, Picker Nuclear, 1273 Mamaroneck Avenue, White Plains, N.Y. 10605.

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If lung scanning interests you, consider MAA I131.

The MAA I 131 Story

The Use: Scintillation scanning of the lungs for information on pulmonary vasculature is a valuable complement to other diagnostic procedures for the detection (early) of pulmonary emboli, lung malignancy, and other pulmonary disorders.

The Procedure: Briefly, after blocking the thyroid with an iodine preparation, macroaggregated albumin I 131 is injected intravenously and the lung scanned shortly thereafter. (For actual use information, consult the detailed package insert and applicable literature.)

The Mechanism of Action: The blood stream rapidly delivers the macroaggregates to the lung wherever pulmonary blood flow is unimpaired. Mechanical entrapment of the aggregates in the lung capillary beds permits visualization of normal pulmonary vasculature. Subsequent splitting of the large aggregates yields particles sufficiently small to leave the capillary bed and enter the blood stream. Liver and spleen reticuloendothelial cells then remove these smaller aggregates, and proteolytic enzymes digest the albumin returning free and protein bound I 131 to the general circulation.

The Advantages of the Method: This is a simple, safe, fast method which provides the information obtained by pulmonary arteriography but without the need for radiopaque material or cardiac catheterization. All evidence to date suggests freedom from cardiovascular, immunologic, and radiation hazard. (Nevertheless, see comments immediately below.)

The Risks of the Method: The thyroid is subject to unnecessary radiation exposure unless blocked with an appropriate iodine preparation. Although macroaggregated albumin I 131 appears to be free of antigenic properties, the possibility of this exists and the usual precautions should be exercised. Although not clinically observed, some investigators have postulated the possibility of untoward hemodynamic effects. (See package insert for further details.)

The Necessary Cautions: As with all radiopharmaceuticals, MAA I 131 should not be administered to pregnant or lactating women, or to persons under 18 years unless the circumstances specifically justify the risk. Radiopharmaceuticals should be used only by physicians familiar with the procedures, precautions, and equipment.

If MAA I 131 interests you, consider the new Macro/Stat 131.

The Macro/Stat™ 131 Story

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4. With Macro/Stat 131 you get (and pay for) precisely the activity you order. No more. No less. Write for details on this new calibration program and its implications.

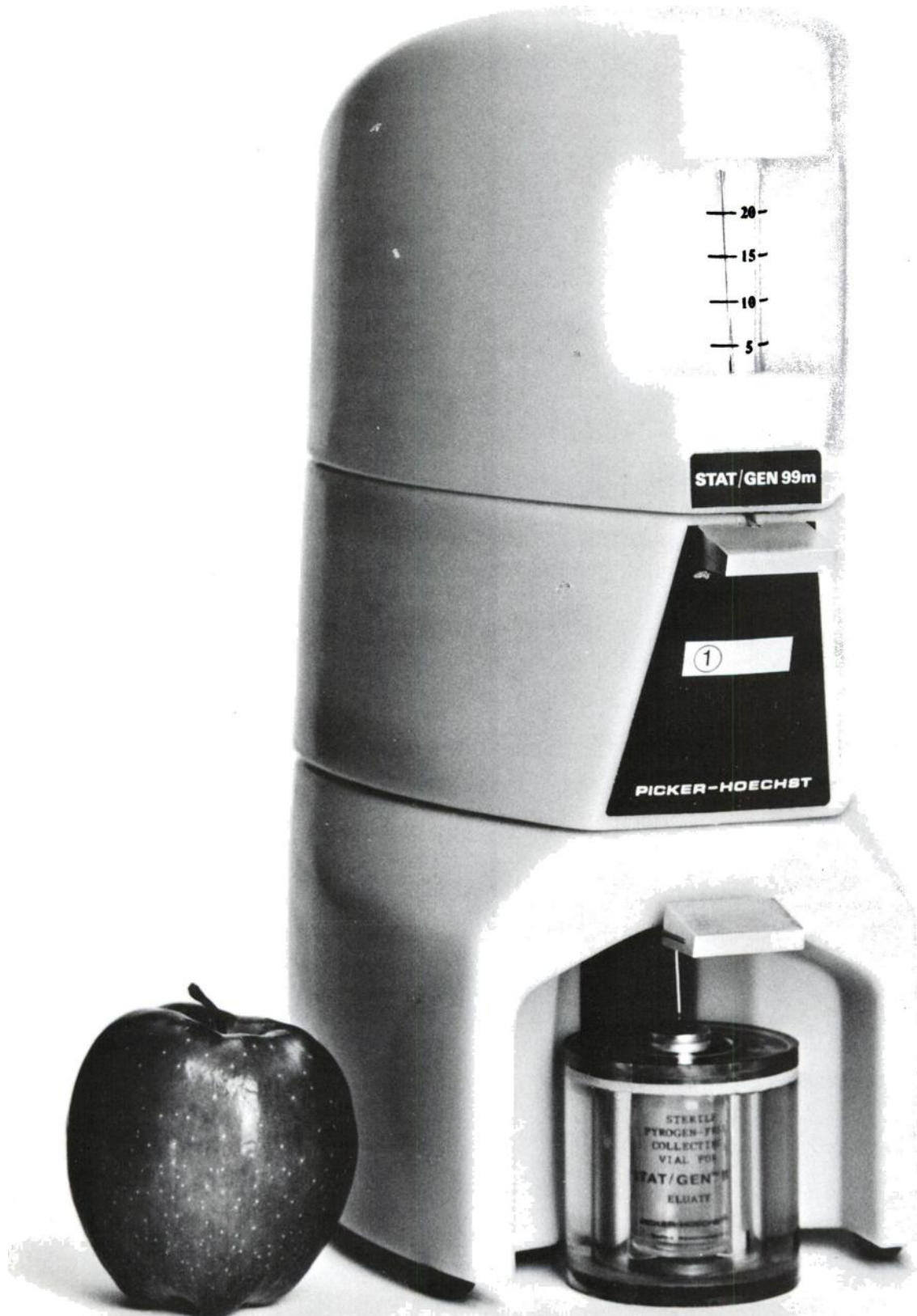
The Company: Picker-Hoechst was recently formed by Picker Nuclear (the world's largest manufacturer of nuclear medicine instrumentation) and American Hoechst Corporation (a subsidiary of Farbwerke

Hoechst AG, the leading manufacturer of radiopharmaceuticals on the European continent). Picker-Hoechst products are marketed in the U.S. by the Radiopharmaceutical Department of Picker Nuclear.

The Final Comment: For further details on Macro/Stat 131 write Radiopharmaceutical Department, Picker Nuclear, 1273 Mamaroneck Avenue, White Plains, N.Y. 10605.

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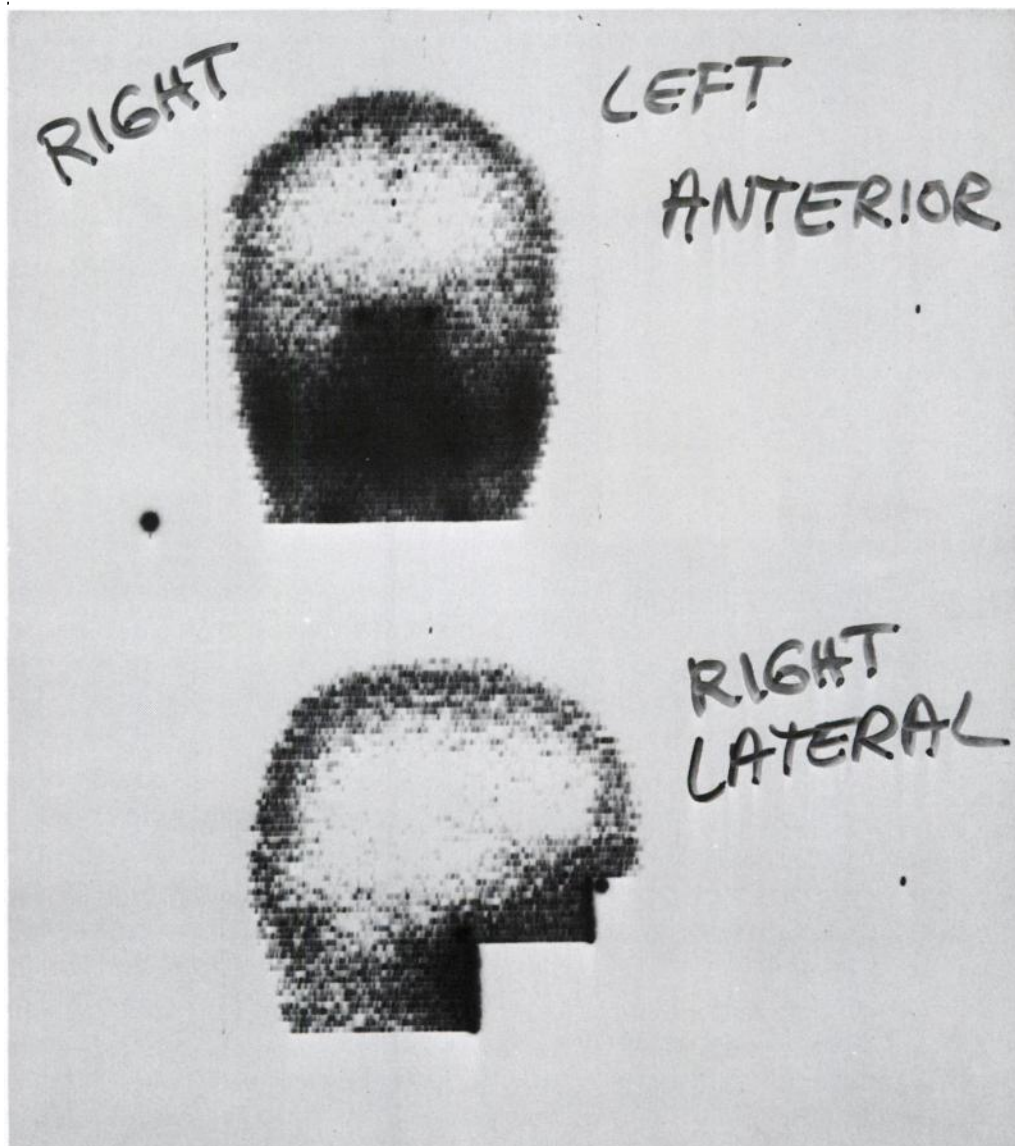
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Enough. If you're now curious about the complete story, we suggest: write Radiopharmaceutical Department, Picker Nuclear, 1273 Mamaroneck Avenue, White Plains, New York 10605.

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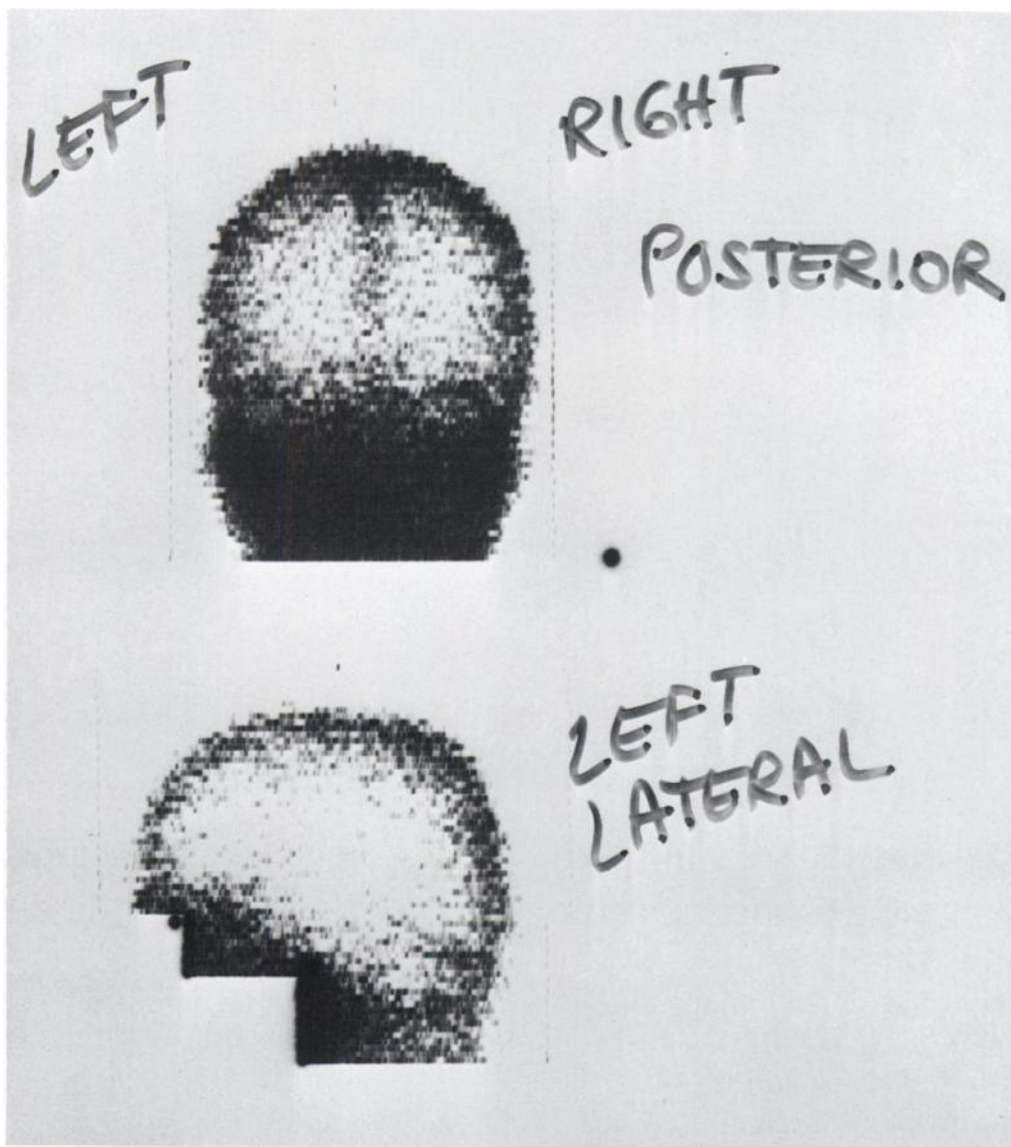
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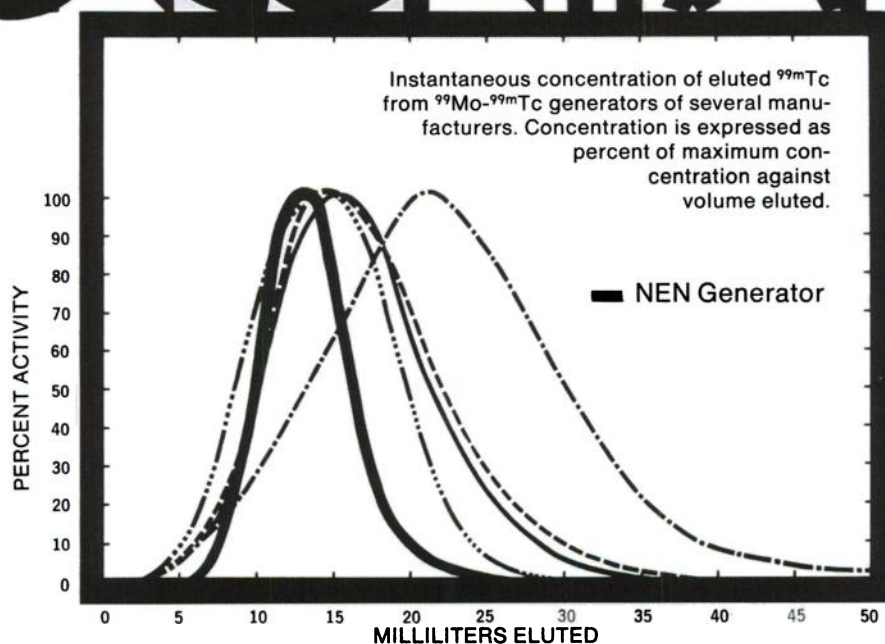
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*Roger D. Tippetts and Gordon N. Kenney, "Elution Parameters of the ⁹⁹Mo-^{99m}Tc Generator," *Journal of Nuclear Medicine*, Vol. 10, No. 8, August, 1969.

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* Henry N. Wagner, Jr., M.D., ConJoint Meeting, Southern & Northern Chapters, Society of Nuclear Medicine, July 19, 1969

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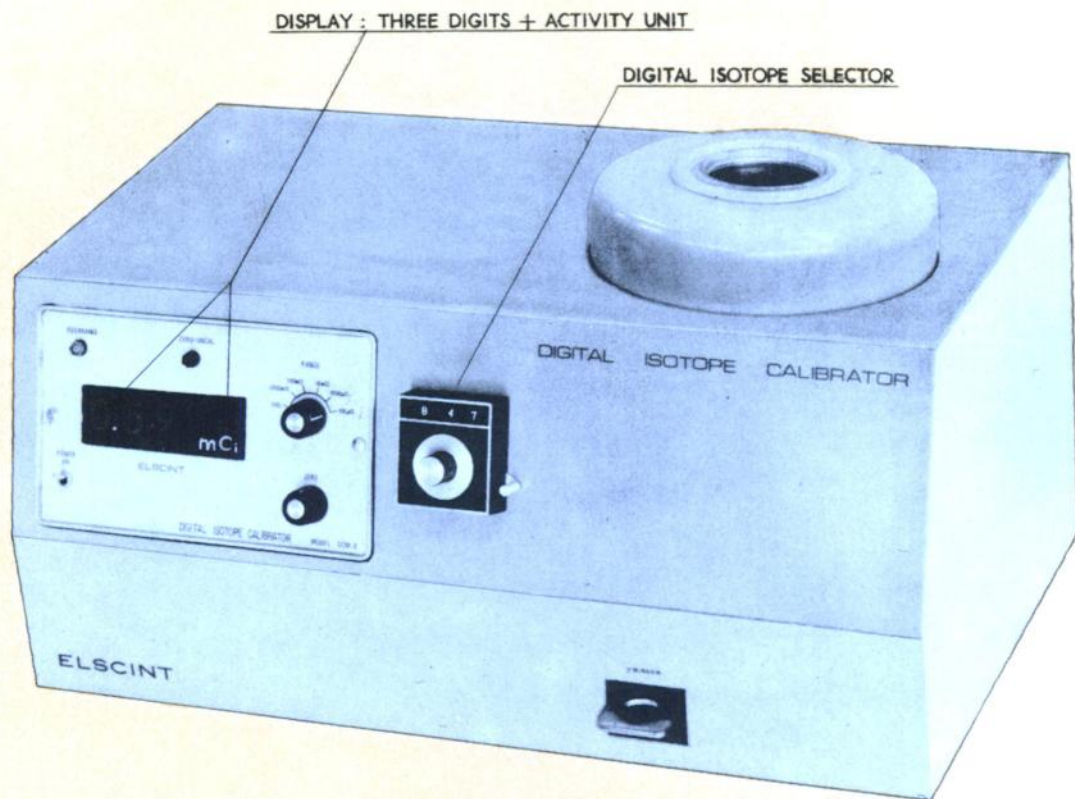
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Macroscan-131 is aseptically prepared and non-pyrogenic. It is ready to use and should not be heated prior to use.

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

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

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

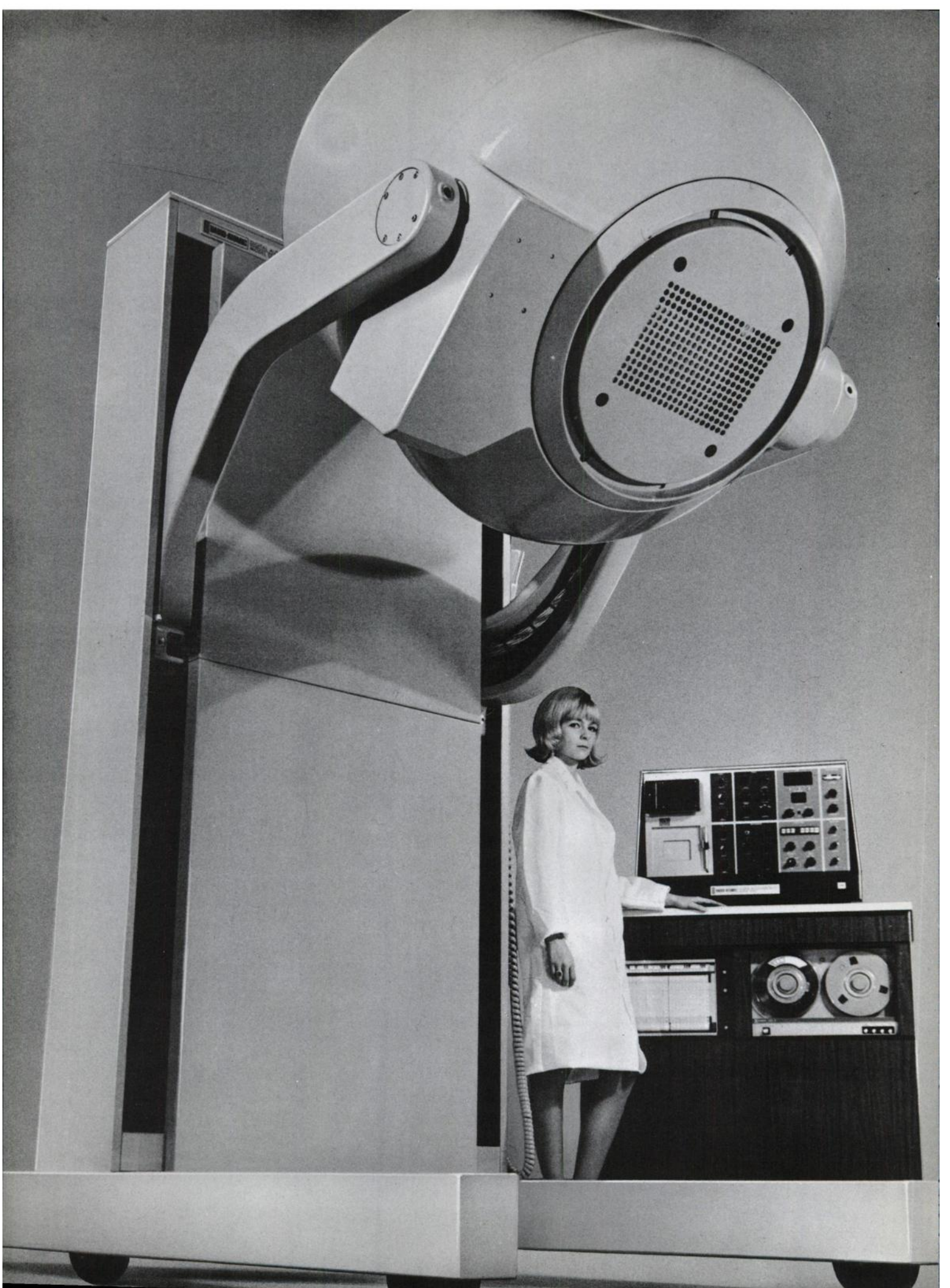


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P.M.—If it's a pulmonary problem, think Macroscan-131.

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

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