Triosorb®-125 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®-125 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.
The T-7 value completes the thyroid profile.

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.

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.

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His credentials? Over ten years' experience in nuclear medicine, including the teaching of various aspects of the science. Now if all this sounds like our equipment needs the help, it's just not so. The truth is though you didn't order Mike, and you may not even need him at all, we just thought you deserved the extra assurance. Raytheon Company, Medical Electronics, 190 Willow Street, Waltham, Mass. 02154. Telephone: 617-899-5949.
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Telephone (617) 667-9531
Why should you consider an image-data handling system for your nuclear medicine department?

You probably shouldn't! — Unless you agree with the following:

Is it clinically useful?

Inter technique Model 33 Digital Cinescintigraphy Systems, for example, have been operating in clinical laboratories for well over a year. And, as such, both the static- and dynamic-image visualization and manipulation capabilities have been demonstrated to be clinically useful, as concisely illustrated by the static studies below:

But, much of the systems value lies with dynamic study analysis capability. Here, it is possible to record flow-study image data as blocks (similar to frames in cineradiography) on digital tape. The recorded study can be subsequently replayed: as it was originally recorded (similar to a motion picture), with blocks added together to effectively change, in retrospect, the storetime per frame, with all or just selected blocks summed to generate a cumulative image; or as curves of activity vs. time from selected areas of any shape. Of course, the displayed image can be manipulated in the same way as static images.

Clearly, then, this system serves not only as a tool to reduce false positives, but also as a means for earlier detection of abnormalities.

Who would ultimately pay for the cost of a DCS?

Certainly, the patient would bear part of the expense, but it need not be through an increase in the cost of each study. If you now have a gamma camera, consider the number of additional studies you will be able to perform with a gamma camera/DCS combination: For example, consider studies such as cardiac and cerebral flow; dynamic function studies such as ventilation-perfusion and renal uptake. Consider also that you will now be able to perform dual-isotope studies such as pancreas visualization, illustrated above. Further, the ability to resolve fine detail, especially since it is in retrospect, can help to make studies such as placental localization a standard procedure.

So it can be seen that just a few additional studies per week would easily offset the cost of, say, a Model 33 DCS.

But how can this instrument fit into your expanding nuclear medicine department — in fact will it even fit in the room?

This brings up another important consideration. Since all the studies performed on your gamma camera (and, if you wish, your rectilinear scanner as well) can be recorded on digital tape with coding related to patient name, your staff can perform a day’s work more quickly and efficiently. The clinician can then review each case at a time convenient to his schedule and evaluate each study with all the power of image-data manipulation at his disposal. The diagnoses of a day’s studies, then, are obtained with the same degree of efficiency as recording of the studies, but the image-handling time is greatly reduced. In fact, replay can be in as little as about 1/500th the recording time, although 1/20 or 1/30 is more common. Also, Polaroids for the patient’s file can be snapped, when deemed necessary, from selected images without time exposure, rather than taking time exposures of raw data. Certainly this indicates that an increased patient load can be handled, and the daily routine will be smooth and efficient.

But, what about space? Well, if your department has either a Nuclear-Chicago Pho Gamma or a Picker Dynacamera, we can install the camera electronics in the same console as the DCS. The whole system, including camera and operator, will then fit into less than 50 ft.

If you agree (or even if you don’t agree) with these points, come and see for yourself just what a Digital Cinescintigraphy System can do for your nuclear medicine department: we’ll be in booths F61, F62, F68 and F69 in the main exhibit hall (Rex Room) at the Society of Nuclear Medicine Meeting in Los Angeles.

If you would like details in the meantime, please call or write us and we will be happy to provide them.

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See next page for brief summary.
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- 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, nonpyrogenic supply of Technetium 99m (99mTc), a versatile scanning agent that can be administered intravenously or orally. 99mTc, the short-lived daughter (T1/2 = 6 hours) of Molybdenum 99 (99Mo), T1/2 = 67 hours), is obtained from the generator by periodic elution. The amount (in millicuries) of 99mTc 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 99Mo need not be removed from the lead shield at any time. The radiation field surrounding an unshielded column is quite high. Solutions of 99mTc 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 99mTc 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 99mTc-S colloid and are NOT to be directly injected into a patient. As with all radiopharmaceuticals, 99mTc-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 99mTc-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 99mTc 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 assure 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 99mTc-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 99mTc-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 99mTc 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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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.

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Although the immunological properties of serum albumin are believed to be virtually unaltered by the iodination process, there is a possibility that hypersensitivity reactions may occur in patients receiving additional doses a number of weeks after an initial dose. The hypothetical possibility that particles of large size might induce deleterious cardiovascular or cerebrovascular effects, postulated by some investigators, has not been borne out in extensive clinical use with Aggregated Radio-Iodinated \( ^{131}I \) Albumin (Human).

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Certain clinical conditions and treatment with certain drugs can affect the results of thyroid tests so that a euthyroid patient may appear to be hyper- or hypothyroid. When interfering factors are suspected, a "free thyroxine index" which is more representative of true thyroid status, should be calculated from T-3 and T-4 results.

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Isotope: $^{131}$I iodide. Dot scan (left). Photo scan with 61-hole collimator. 0% suppression. Scan time 10 minutes. Broken lines define palpable nodules not evident in scan recordings.

PHO/GAMMA SCINTIPHOTO.
Isotope: $^{131}$I iodide. Pho/Gamma equipped with single-pinhole collimator. Total counts 10,000. Total exposure time 3 minutes, 32 seconds. Cold nodule evident in left lobe (see text).

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Scintiphotography, using ¹³¹I iodide and the Pho/Gamma Scintillation Camera, serves as both a primary diagnostic method and as a supplement to rectilinear scanning in the evaluation of thyroid function.

SETTING-UP. The patient is positioned with his thyroid at the appropriate distance (usually about 3 inches) from the aperture of the Pho/Gamma single-pinhole collimator which is directed at the thyroid isthmus. The patient must be positioned to remain stationary during the exposure.

ISO TOPE AND DOSE. Normally, 50 µCi of ¹³¹I iodide is given orally 6 to 24 hours prior to the study. Smaller doses may be used, depending upon radioiodide uptake. The 24-hour uptake is generally twice the 6-hour uptake and therefore permits data accumulation at double the rate. (Note: Thyroid scintiphotography may also follow oral or intravenous administration of ⁹⁹ᵐTc pertechnetate to yield higher data densities and good images of small nodules.)

DATA ACCUMULATION. With ¹³¹I iodide, small cold nodules located within thyroid lobes may be defined by data densities as low as 5000 counts in the entire scintiphoto. Better resolution is produced in the image by longer counting times to accumulate an increased number of counts. Extended exposure times may also be necessary to obtain thyroid images in children who are given reduced isotope doses.

CASE HISTORY. The clinical illustrations on the facing page are for a patient with the following case history: Female, 53 years old. Scheduled for mitral-valve surgery. Referred for thyroid evaluation because of atrial fibrillation and recent weight loss. Pertinent physical findings limited to a fine tremor and a 60-gram multinodular thyroid gland. Neck radioiodide uptake was 43% at 24 hours and T₃ was 9.4 µgm% (normal maximum 8.2 µgm%). Initially, a rectilinear scan was ordered.

EVALUATION. The rectilinear scan was performed with the focal distance of the collimator carefully adjusted to the level of the thyroid gland. The images thus produced failed to show any clear definition of two discrete palpable nodules, which are shown, as palpated, in outlines superimposed on the images. The Pho/Gamma scintiphoto study was therefore ordered, following the procedure described above. In the scintiphoto obtained from this study, a definite cold nodule is apparent. It is seen as a large area of decreased labelling laterally in the mid-portion of the more actively functioning tissue in the left lobe. Other areas of decreased labelling are seen in both lobes.

CONCLUSIONS. The Pho/Gamma thyroid-imaging technique illustrated here is most often used as a primary diagnostic method for the determination of regional thyroid function. It may be used as a secondary or supplementary method when rectilinear scanning fails to demonstrate the nature of a clearly palpable nodule. In the latter case, the scintiphoto made with the Pho/Gamma single-pinhole collimator often demonstrates cold nodules, even though they are not apparent on the scan. Pho/Gamma imaging generally requires one-third the time of a rectilinear scan of the same area.

Nuclear Reviews

PHO/GAMMA AT WORK: A DISTILLATION. For convenient reference, we offer a new brochure containing both clinical and phantom studies, plus results of the latest advances in scintillation-camera technology. Profusely illustrated. Properly detailed. Write for it.

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We want all Dynacamera 2 users to see what others are doing, and we also want all prospective scintillation camera owners to be fully familiar with the capabilities of this impressive device. Accordingly, fill in the coupon below so that we can fill you in. Or, write Picker Corporation, 333 State Street, North Haven, Connecticut 06473. Thank you.

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DIRECTOR OF NUCLEAR MEDICINE, Edmonton, Alberta. Position available May 1971. Applications are invited for the position of Director, Dept. of Nuclear Medicine, of the Dr. W. W. Cross Cancer Institute. Applicants must be eligible for a comprehensive license from the Atomic Energy Control Board of Canada. This is a clinical position in a cancer institute serving approximately one million persons in the northern half of the Province of Alberta. There is an exceptionally well-equipped scanning laboratory and this is the major function of the department. Unlimited opportunity exists for clinical research and there are limited facilities for basic research. Please direct inquiries to Medical Director, Dr. W. W. Cross Cancer Institute, 11560 University Ave., Edmonton 61, Alberta, Canada.

MCGILL-AFFILIATED NUCLEAR MEDICINE residency. Openings for 1-2 years available on and after July 1, 1971 at Royal Victoria Hospital. Accredited for specialty certification in Quebec, Canada (Royal College) and American Radiology Boards. Foreign graduates must have ECFMG, internship, and general medicine training in accredited hospital. Apply to The Director of Nuclear Medicine, Royal Victoria Hospital, Montreal 112, Quebec.

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For the third year, physicians and scientists concerned with the application of radioactive tracers in medical diagnosis and therapy will gather to review the basic principles and recent advances in the field. The first day will be concerned primarily with fundamentals, while the next four days will cover practical applications of radioactive tracers in clinical medicine. Imaging, dynamic function, and in vitro tests and their relationship to the practice of medicine will be covered by lectures, panel discussions, and presentation of illustrative cases. The material will be of value to physicians preparing for certification examinations in nuclear medicine, as well as for those now devoting their full time to nuclear medicine. Basic scientists will find the course a useful orientation to the clinical uses of radioactive tracers.
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ALEXANDER GOTTSCHALK, M.D., Argonne Cancer Research Hospital, operated by the University of Chicago for the U.S. Atomic Energy Commission.
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- doses prepared in minutes, utilizing 99mTc eluate from your Squibb generator.

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

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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.
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 Tesloid Kit should not be injected directly into a patient.

Usage in pregnancy—These agents should not be administered to women who are pregnant or who may become pregnant and during lactation unless the indications are exceptional and the need for the agent outweighs the possible potential risk from the radiation exposure involved.

Since sodium pertechnetate ⁹⁹mTc may be taken up by the fetus and excreted in 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.

⁹⁹mTc-DTPA, ⁹⁹mTc-S colloid, and sodium pertechnetate ⁹⁹mTc should not be administered to persons less than 18 years of age unless the expected benefit outweighs the hazards. It should be noted that although radiopharmaceuticals are not generally used in individuals under 18, procedures using ⁹⁹mTc-DTPA or ⁹⁹mTc-S colloid are occasionally necessary in such patients. The low internal radiation dosage of ⁹⁹mTc-DTPA makes it a very satisfactory agent when scans of the kidney, brain, or blood vessels are necessary in young patients. The low internal radiation dosage of ⁹⁹mTc-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 use and safe handling of radiopharmaceuticals 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 ⁹⁹Mo need not be removed from the lead shield at any time. There is a high radiation field surrounding an unshielded column. Solutions of sodium pertechnetate ⁹⁹mTc withdrawn from the generator should always be adequately shielded. The early elutions from the generator are highly radioactive. It is important that material obtained from the generator may be intended for intra-venous 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 rubber closures in the generator column, should be swabbed with a suitable germicide before each entry. All entries into the generator column must be made aseptically with sterile needles. Only the eluent provided should be used to elute the generator. Use a fresh milking tube and collecting vial for each elution; sufficient equipment is provided for this purpose. All equipment used to collect or administer sodium pertechnetate ⁹⁹mTc must be sterile. Do not administer material eluted from the generator if there is any evidence of foreign matter.

NOTE: The Renotec Kit and the Tesloid Kit are not radioactive. However, after the eluted ⁹⁹mTc is added, adequate shielding of the resulting preparation should be maintained.

Precautions: When using radioactive material, care should be taken to insure minimum radiation exposure to the patient (i.e., by using the smallest dose of radioactivity consistent with safety and validity of data) as well as to all personnel directly involved with the patient. Before a test is repeated in the same patient, the need should be carefully evaluated; this is especially true in younger patients.

Each elution from Technetope II (Technetium 99m) Sterile Generator should be assayed before use for ⁹⁹mTc activity and for the possible presence of ⁹⁹Mo. Material containing more than 5 microcuries of ⁹⁹Mo per dose of ⁹⁹mTc pertechnetate exceeds Atomic Energy Commission limits and should not be administered. Poor gastrointestinal, absorption of an oral dose of pertechnetate and resultant low blood radioactivity levels have been observed in the postmortem 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 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 ⁹⁹mTc is therefore likely to be abnormal in patients with scalp contusions or acute head injuries. Following a craniotomy, uptake of radioactivity is increased throughout the operative field, usually for only a few weeks but in some instances for prolonged periods. Since cerebral radiographic techniques temporarily affect the blood-brain barrier, brain scanning with sodium pertechnetate ⁹⁹mTc should precede cerebral angiography when possible, or should be postponed for several days thereafter. A negative brain scan does not rule out the possibility of a lesion and should therefore never be considered diagnostically conclusive. Because the normal vascular structures are more apparent on a ⁹⁹mTc pertechnetate scan than on a radiocholoromerodrin scan, and because the choroid plexus may be visible, it is particularly important to recognize the appearance of a normal brain scan when ⁹⁹mTc pertechnetate is used, in order to avoid incorrect interpretation.

NOTE: The Renotec Kit and the Tesloid 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 Tesloid Kit unless the user has demonstrated that other sources of ⁹⁹mTc are consistently compatible and meet the standards of Technetope II.
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Protects your fingers and hands from radioactive doses administered by syringe
- Reduces Tc-99m exposure by factor of 50.
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The new resin particles in our Tresitope Diagnostic Kit provide a more effectual secondary binding site for the T₃ hormone.

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

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

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

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

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

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

SQUIBB
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New Brunswick,
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TRESITOP® DIAGNOSTIC KIT
Resin Uptake Kit with Liothyronine I 125 Buffer Solution
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This portable survey meter is also an area monitor, and it's always ready!

It's the double-duty Nuclear-Chicago LOG-SERIES survey meter. It stands in its charge/alarm base continuously monitoring radiation levels within your laboratory, instantly at hand for routine or emergency surveys.

Be prepared. In case of accidental spills, this single, two-part instrument is always ready with optimally charged batteries for any instantaneous monitoring need.

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There are three LOG-SERIES models to choose from, depending on the kind of sensitivity you need. You also have a choice of charge/alarm bases. Clicker (one click for every radiation event detected) or warbler (pulsating alarm tone at the level you preselect, plus a red warning light).

And remember, our portable LOG-SERIES is also an area monitor. Very practical. Very efficient. And not very expensive. For complete details and specifications, write for our 9100 Series data sheet.

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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
500 µC
57 Co

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 99mTc 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 angiocardiograms 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 99mTc Per tecnetate 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.

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Brain, right lateral view. Standard scintiphoto.

Brain, right lateral views presented simultaneously in a single tomographic scintiphoto. Lesion in right frontal region is delineated best at 2- and 3-inch depths. Surgery revealed well differentiated adenocarcinoma.