Medi+Physics
Kidney Scintigraphin*
puts mercury back in the thermometer.

The above study is an example of renal images that you can expect with Kidney Scintigraphin™.

Kidney Scintigraphin™ (2,3 dimercaptosuccinic acid) is a new investigational radiopharmaceutical developed by Medi+Physics. The biodistribution is similar to chlormerodrin.

For information on the clinical use and licensure of Medi+Physics Kidney Scintigraphin™, call toll free (800) 227-0483 or in California (800) 772-2446.


* An Investigational New Drug.

medi+physics
These cyclotron produced products are now available daily, Monday thru Friday from Medi+Physics. For further information, please contact the Medi+Physics Laboratory nearest you. In San Francisco our main office is at 5855 Christie Ave., Emeryville, California (415) 658-2184. In Los Angeles phone (213) 245-5751, in Chicago (312) 671-5444, or in New York/New Jersey (201) 757-0500.
The Raytheon/ICN GammaSet 500 adds a major new dimension to automatic gamma counters: The unique Programmable Sample Cassette. Each 10-sample cassette can be easily programmed for automatic selection of counting parameters and user identification. The cassette can be coded for preset time, preset count, background subtract, and isotope selection on the 4-mode, dual scaler. The cassette concept also makes system loading and unloading considerably faster.

And there are other key reasons why the GammaSet 500 is more than just a sample changer: Contamination-proof "Set and Forget" Operation. Sample counting/changing operation—including shut-off—is completely automatic and under full protection of the transparent cover. The foldaway electronics drawer, when closed, keeps controls from being changed accidentally. Data is recorded by printing lister, teletypewriter or punched paper tape.

Multi-User Capability. Rapid loading, 500 sample capacity accommodates many different users with various test requirements. Cassettes can be loaded in random order and interrupted at any time for manual counting.

In virtually any gamma counting application the GammaSet 500 will give new operating convenience, versatility and economy. For full details, write Raytheon Company, Medical Electronics, 40 Second Avenue, Waltham, Mass. 02154. (617) 890-3240.
Get the inside story.

Name: __________________________
Affiliation: ______________________
Address: _________________________
_______________________________
Zip: _____________________________

New England Nuclear
Radiopharmaceutical Division
Atomlight Place, North Billerica, Mass. 01862
Telephone (617) 667-9531

Technetium-99m Stannous Polyphosphate Kit

Canada: NEN Canada Ltd., Dorval, Quebec, Tel: (514) 636-4971, Telex: 05-821808
Europe: NEN Chemicals GmbH, D6072 Dreieichenhain, Siemenstrasse 1, Germany. Tel: Langen (06103) 85035
We changed our name from Nuclear-Chicago to Searle Radiographics. We have also strengthened our organization so that we can offer more comprehensive service devoted to the field of diagnostic imaging. Our primary concern, however, remains unchanged. We want you to have the best possible equipment for this very vital procedure, because the patient is our ultimate concern as well as yours.

Saying that we do more gamma imaging than anyone in the world may sound boastful, but it happens to be true. Pho/Gamma is the instrument of choice in well over 70% of the hospitals and laboratories utilizing this type of diagnostic tool ... and for very good reason: The importance of the procedure is only surpassed by the quality of the system. And the quality of our system is quite simply unsurpassed. Pho/Gamma and Searle Radiographics means gamma imaging. Need we say more?

Searle Radiographics Inc.
(Formerly Nuclear-Chicago)
Subsidiary of G. D. Searle & Co.
2000 Nuclear Drive
Des Plaines, Illinois 60018

CM-319
Indium-113 m-Generator

easy — rapid — safe —
only 5 ml eluatvolume —
high activity concentrations
of 20 - 40 mCi/ml
Why Pay Less?

Because it's just good business to keep the costs of xenon-133 studies to a minimum. And that's where the DX-133 Disposable administration and collection system comes in. This inexpensive device is used to administer the Xenon-133 and to collect the expired gas. Made entirely of plastic, the DX-133 is used for 1 patient only, and then discarded. No need to sterilize. The price is only $9.95, with quantity discounts available.

Why Pay More?

ATOMIC DEVELOPMENT CORP.

7 FAIRCHILD COURT ▪ PLAINVIEW, NEW YORK 11803 ▪ (516) 433-8010
You'll find it easy to prepare technetium-99m sulfur colloid in your own laboratory... whenever you need it. This 5-unit kit was designed to help you—to make the procedure as reliable as possible—to provide you with a finished product having consistently high quality.

The Mallinckrodt/Nuclear TechneColl™ Kit offers exclusive convenience in use:
- Dispenser package makes the preparation units readily available.
- Viewing aperture shows when it's time to reorder.
- Each of the 5 preparation units is complete and self-contained, to eliminate possible mixing of components.
- Unique two-compartment syringes permit separate storage of reagents for maximum stability.
- Mallinckrodt/Nuclear's formulation allows use of the kit with any commercially available generator.

Try this convenient kit now in your own laboratory (subject to necessary licensing). Ask your Mallinckrodt representative for a demonstration.
This is the simplest way to computerize your scintillation camera

Nuclear Data's Med Stor™
Nuclear Data’s new MED STOR™ is a moderately priced computerized image storage and processing system that can be used with any scintillation camera. MED STOR provides computer controlled acquisition of static and dynamic function data, selection of up to four regions of interest, and simultaneous generation of up to four time/activity histograms. It also provides variable image framing rates, high speed list mode acquisition, file and display of patient and study data, static image display selections of 64x64, 128x128, or even 256x256 data points, and almost instant data storage and retrieval by high density magnetic computer tape. This latter capability permits playback of an image in seconds regardless of the real time required for the camera to produce the image.

Though MED STOR is a real computerized system, you don’t have to be a programmer or computer expert to use it fully. MED STOR has complete built-in software and operates totally by simple understandable pushbuttons. And, because MED STOR is a true computerized system, it represents only the beginning of your department’s image processing and storage capability. MED STOR readily upgrades at any time to the advanced and programmable MED II image storage and processing system.

Important questions to consider before you computerize your scintillation camera.

(1) Which is the only company that actually makes its own scintillation cameras and medical computers? (Nuclear Data)

(2) Who is the most experienced producer of computerized image storage and processing systems in the world? (Nuclear Data)

(3) Which company has the most such systems in routine clinical use? (Nuclear Data)

(4) What one computerized image storage and processing system has done away with the typewriter keyboard and is operated totally by simple pushbuttons? (Med Stor)

(5) What company has the most experience in interfacing computers with cameras? (Nuclear Data)

(6) Which modestly-priced image storage and processing system is a real computer and not just a hard-wired multichannel analyzer? (Med Stor)

(7) Which company can be described in these words: "...the most sophisticated developer of software in this field who has been doing it for a longer time than anyone else and who has more clinical software than anyone else in this field..."? (Nuclear Data)

(8) Which computerized image storage and processing system can actually be mastered in about two hours? (Med Stor)

(9) Which computerized image storage and processing system can be readily and most inexpensively upgraded to Nuclear Data’s advanced MED II? (Med Stor)

(10) Who has an active user’s group that exchanges and develops clinical software? (Nuclear Data)

(11) Which computerized image storage and processing system has been successfully interfaced with every major scintillation camera? (Med Stor)

(12) Which computerized image storage and processing system is accompanied by a Nuclear medical computer application specialist? (Med Stor)

These are some important reasons for computerizing your scintillation camera with MED STOR. There are more in store. To learn about them, write to the Nuclear Data office nearest you.

NUCLEAR DATA INC.
A lot of nuclear medicine computers can give you the standard operations. Thresholding, Image smoothing, Crystal non-uniformity correction. Profile slices. Dynamic function curves. But that's just routine with Gamma-11.

What happens when you want to find out something special? On most systems, things get horribly complicated.

With Gamma-11, you just use FOCAL-PLUS and do a bit of programming.

That's what FOCAL-PLUS was designed to do. Give you the language to develop your own studies, whatever they may be.

FOCAL is not one of those mind-bending languages. It's commonly used as a "beginners" language. But now it's been tailored especially for nuclear medicine. It's highly interactive. You can step up to the scope and mark off the areas you want to work on. It can handle large matrices (128 x 128). Yet it lets you work on individual elements so that you can do things like functional imaging.

And FOCAL-PLUS has many special functions to make programming go faster, like single-command references to collected images or curves.

Buy a Gamma-11 Nuclear Medicine Computer and you get not only FOCAL-PLUS, but also access to over 200 FOCAL programs that have already been developed.

And, of course, you get Digital Equipment Corporation. And Digital's huge service organization. More people have opted for Digital than for any other nuclear medicine computer supplier... and Digital has produced more than half the minicomputers across the world.

removes radioactivity from lab ware and isotope laboratory surfaces

ISOCLEAN SPRAY-FOAM
NEW
SPRAY CAN FORM
for Spot Decontamination of Hot-Lab Surfaces

Another fine Isolab Product

ISOCLEAN CONCENTRATE
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The Proven Decontaminant
The Leading Formulation for Safely Solubilizing Nuclidic Activity

Order directly from Isolab or through any local supplier
Resolution

"We will provide the diagnostician with the finest image available through the science of nuclear medicine."

Be it further resolved that we will provide:

Outstanding uniformity—as illustrated in our available literature,
Speed—of up to 100K counts/second, permitting standard studies in less time, and making fast dynamic studies a standard practice.
Ease of operation—with two speed detector motion, both conventional and express. And with manual or pushbutton isotope selection. Permitting entire studies to be conducted from the hand control, without leaving the patient's side.
Economy—through reduced set up time, and reduced study time. And photomultiplier tube gain may be balanced by your technologist, economizing in service time.
Complete Information—to help you make an intelligent decision.
Write for our Series 110 Radioisotope Camera brochure, and our Systems Resolution Product Bulletin. And visit an installation. Which we'll arrange for you.

The Superior Radioisotope Camera.

Signed and Sealed in this year 1974.

ohio-nuclear, inc.

6000 COCHRAN ROAD • SOLON, OHIO 44139
PHONE (216) 246-8500 • TWX NO. 810-427-2696
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A better way to clean up the leftovers.

Lift them off with Count-Off™ radioactivity decontaminant. Get rid of radioactive residues, such as carbon-14, tritium, phosphorus-32, iron-59, and iodine-131. Remove ordinary nuisances such as greases, fatty and amino acids, protein complexes, Canada balsam, dried blood and serum, and polymer films.

Count-Off is an economical and extremely effective decontaminant—more so than chromic acid. Normal dilution of the liquid concentrate is 2%. Also available as an aerosol spray for cleaning rough surfaces and hard-to-reach spots, and as a foam hand cleaner.

Count-Off is safe to the skin, will not produce toxic gases from substrates containing radioactive materials such as carbon-14 and iodine-131.

New England Nuclear
575 Albany Street, Boston, Mass. 02118
Customer Service 617-482-9595

Canada: NEN Canada Ltd., Dorval, Quebec.
Tel. (514) 696-9571, Telex. 95-82196
Europe: NEN Chemicals GmbH, D-6572 Dreieichenhain,
Siemensstrasse 1, Germany, Tel. Langen (06103) 85035
Over 25 years ago LKB was designing and building instruments for nuclear research. In fact, one of the earliest instruments developed for advanced work in the nuclear field was LKB's 200 million electron-volt synchrocyclotron, installed at Uppsala University in 1947. Since that time LKB has always been in the forefront with equipment for tracing and counting radioactive isotopes in the clinical field. Some of the LKB innovations of earlier years: whole-body scanners for radioactive tracing in human patients; beta-comparators; scalers, counters and automatic sample-changers; and radio-chromatogram scanners. This wealth of nuclear experience stands behind the current range of LKB-Wallac Gamma and Liquid Scintillation Counters.
Better Brain Scans

Ours is the only freeze-dried DTPA. It keeps longer without refrigeration. Requires no dilution. Has no adverse effects on blood calcium (we use monocalcium-trisodium salt, not the usual pentasodium salt).

No need to administer blocking agent, yet uptake by the thyroid, salivary glands and choroid plexus is negligible. Greater concentration in the brain. Better, more clearly defined scans.

Try a six-pack
Simple-to-use, reliable and already accepted for better kidney scans, our DTPA is worth trying.

CIS Radiopharmaceuticals, Inc.
5 DeANGELO DRIVE/BEDFORD, MA. 01730/Tel. (617) 275-7120
ALBUMIN MICROSPHERES (HUMAN) FROM THE 3M BRAND ALBUMIN MICROSPHERE 99mTc-LABELING KIT

FOR ROUTINE USE, NO LONGER INVESTIGATIONAL.
FOR
CONSISTENT
LUNG IMAGES
day after day after day after day!
USE 99mTc ALBUMIN
MICROSPHERES

● Uniform Shape and Size
  Perfectly spherical, the 3M Albumin Microspheres are uniformly sized to 15-30 microns in diameter. This uniformity, coupled with an extremely low tendency to agglomerate, results in truer images of lung perfusion. The result — no hot spots or extra-lung activity.

● Integral, yet Biodegradable
  Each Albumin Microsphere is a single homogeneous sphere of albumin — they won’t disintegrate in the vial or syringe. Yet, microspheres readily clear from the lung. Pulmonary clearance half-times are long enough for multiple view imaging but are still short enough to allow daily imaging, if required. Microscopic analysis of lung tissue in the mouse showed 99 percent of the administered microspheres were gone after 29 hours.¹

● Eliminate Interference from "Free" Technetium
  "Free" isotope need no longer interfere with the scan. The unique filter construction of the Microsphere Labeling Vial allows the free isotope to be removed, leaving just labeled microspheres for suspension.

● Stable Kit
  Currently the expiration date of each kit is 6 months after the date of manufacture. You can stock the kit and have it available for immediate use. Even a department doing a moderate amount of lung imaging can take advantage of quantity discounts.

● Each Lot FDA Approved
  Thoroughly tested by 3M, each lot is checked by the Bureau of Biologics, FDA, and approved for shipment. This provides a double-check of sterility, lack of pyrogens, and all the important performance parameters of the kit.

INDICATIONS Scintillation imaging of the lungs with 99mTc-Labeled Albumin Microspheres is indicated as an adjunct to other diagnostic procedures whenever information about pulmonary circulation is desired.

CONTRAINDICATIONS The safety of Albumin Microspheres in patients with a known right-to-left cardiac shunt has not been established and its use in such patients is contraindicated.

SIDE EFFECTS Although no anaphylactoid reactions have been reported in patients following the administration of Albumin Microspheres, the possibility should be considered that hypersensitivity reactions may occur rarely in patients who receive additional doses of the Microspheres.

HOW SUPPLIED Each kit contains five labeling units. Each labeling unit contains one day’s supply of Albumin Microspheres (5mg — enough for 5 to 7 patients) plus all the reagents necessary to attach technetium to the microspheres.

For detailed information about Microspheres and the 3M Brand Albumin Microsphere 99mTc-Labeling Kit, write: Nuclear Products for Medicine, 3M Company, 3M Center, St. Paul, Minnesota 55101, or phone TOLL FREE (800) 328-1671.

¹ Data on file at the 3M Company and the Bureau of Biologics.
From the number one calibrator manufacturer...
Capintec.

Radio-Pharmaceutical CXC-9 Dose Computer incorporating “Built-In Tc99m Memory”
(When used with any Dose Calibrator)

UPGRADE YOUR PRESENT CALIBRATOR
The stand-alone CXC-9 Dose Computer provides the complete analytical work-up for Radio-Pharmaceutical dose management required by the exacting standards of Nuclear Medicine.

SIMPLE TO OPERATE...JUST DIAL IN THREE NUMBERS:
Total dose from your present Calibrator (or recall Tc-99m value from memory); stock volume, and the required dose.....
The CXC-9 Dose Computer instantly displays the exact volume of dose for patient administration.

SAVE TIME AND ELIMINATE COMPUTATIONAL ERRORS
The CXC-9 Computer is programmed to provide the information that you need...rapidly and quietly. Its control panel is designed for operator use...to human engineering standards. A “BY-THE NUMBERS” step by step computational procedure is so straightforward that operator or slide rule errors are virtually eliminated.

REDUCE OPERATOR EXPOSURE.
The CXC-9 computes patient dose correctly the first time and every time that it is used. Consequently, the handling of radioactive material, either in stock bottle or syringe, is kept to a minimum with a corresponding reduction in exposure.

write for details

Capintec, Inc.
63 E. Sandford Blvd., Mt. Vernon, N.Y. 10550
Telephone: (914) 664-6600
Electrolysis Kit for Labeling
Human Serum Albumin with $^{99mTc}$

Contents:
- 1 sterile reaction vial
- 1 sterile zirconium electrode assembly
- 1 sterile syringe containing buffer solution

Human serum albumin not supplied.

Power supply available from NEN.

Further information requested. Please send to the following address:

Name __________________________
Affiliation ______________________
Address __________________________
__________________________ Zip __________

New England Nuclear
Radiopharmaceutical Division
Atomlight Place, North Billerica, Mass. 01862
Telephone (617) 667-9531

Canada: NEN Canada Ltd., Dorval, Quebec, Tel: (514) 636-4971,
Telex: 2621808
Europe: NEN Chemicals GmbH, D6072 Dreieichenhain,
Siemenenstrasse 1, Germany, Tel: Langen (06103) 8353
Synchronizers stop motion.
The point of any exposure synchronizer is to prevent image blurring due to motion, so that live pictures (nuclear, x-ray, ultrasonic) come out as sharp as test patterns.

Sometimes, where you stop is as important as stopping.
Sometimes it isn't enough just to stop motion — one must be able to stop it at chosen, physiologically-significant times, so that specific phases of an organ's motion can be singled out for unblurred study. And since the "right" time to stop may vary from beat to beat and breath to breath, that's where physiological synchronization (and Brattle) comes in: the "right" times must be derived from the patient (not from pre-set knobs) and the synchronizer must track the patient's irregular functions and adapt to him, since the patient can't adapt to it. There's much more to this; read on.

If you can do hearts, you can do anything.
We can do hearts.
Take heart pictures, for instance. (We do lungs and livers, too, but we are very proud of our heart pictures. If you send us the coupon below, we'll show you spectacular pictures made routinely by clinical technologists at hospitals such as Mass. General and Johns Hopkins.) So, take heart pictures, for instance.

Suppose you want to see the inner outline of the left ventricle first at peak systole, then at peak diastole. Since it will take several hundred heart cycles to accumulate enough exposure for a good nuclear picture, and since heart rate is likely to vary in those 3 to 5 minutes, a true synchronizer (e.g., Brattle) must track the patient's heart, beat by beat, and for each cycle recompute a timing for the exposure gate that is most likely to catch the heart at peak systole.

To do this, the Ashman-Hull table relating heart rate and Q-T intervals was built into the Brattle, and it works. We can show you.

But wait! What's a heart without breath?
A heart without breath gating is a blur, because the shape and orientation of the heart changes somewhat with breathing. So respiration, too, must be tracked, and simultaneously, to gate exposure properly. Then, when you see a picture, you know which of the four combinations of systole/diastole, inspiration/expiration you are seeing.

Tracking breath is no breeze when it's done properly. Breathing depth often varies rapidly all over the lot, so that "inspiration" and "expiration" are relative, not absolute or constant, states. That's why click-click, bang-bang chest expansion transducers are not much help (besides being awkward). Brattle synchronizers have built-in plethysmographs. We track peak breathing excursions and adapt to changes in the peaks by continuously recomputing from measurements the thresholds that define "inspiration" and "expiration" (the crossings of which operate the exposure gate).
All this sounds complicated, but it isn't.

Not for the user. For him it's very simple because it's all automatic. In Brattle synchronizers, a single pair of disposable axillary electrodes yields both the ecg signal, to track heart, and the plethysmograph signal, to track breathing. Apply them as you would ecg electrodes, push some buttons, and there you are.

It's inexpensive, but it's all there, in one small box.
The Brattle synchronizers are self-contained. You don't have to borrow an ecg signal from a borrowed ecg machine. Nor do you have to borrow a cardiologist to tell your technologist where to set systole delay knobs. On the clinical Brattle there aren't any knobs — all the information is inside (see Ashman-Hull, above). Your technologist merely chooses among buttons marked SYSTOLE/DIASTOLE, INSPIRATION/EXPIRATION and our instrument takes it from there. Automatically.

Seeing is believing.
There's another button, labelled RECORDER-ON. If you press it, the Brattle produces an ecg tracing marked up with the exposure-gate times. So when your pictures and the tracing are delivered to the client physician, he can verify that he can believe what he sees.

What's the next step?
Write us. Or call. We'll send you clinical and technical data on true synchronization, and the name and phone of our man in your area (37 states so far, and growing). He can show you sample clinical pictures and give you a demo.
CRT CAMERAS ARE DECEPTIVE

Not really. The deception lies in the simple seeming task of photographing the oscilloscope. The photographic results must serve the diagnostician. The quality of what he holds before the light determines the quality of his evaluation. That is what makes the hard copy and the camera system that produces it of such critical importance. No one system is appropriate for everyone. NM departments differ in needs. So do the diagnosticians differ in their personal requirements. And camera systems produce different hard copy. If oscilloscope photography is deceptively simple, so also is choosing the camera equipment for your department. Appropriate hard copy is a serious enough problem to deserve the serious attention of one company. Dunn Instruments.

Help from Dunn Instruments is not like taking help from strangers. We know the entire scintillation process and have developed many instruments that serve nuclear medicine. We even offer our own Model 750 Multi-Format Camera System. Let us help you solve your hard copy problems. All CRT cameras have their virtues. Their limitations may not be obvious. For your own needs you should consider such factors as true image size, film contrast and grey scale latitudes, the difficulties of large group viewing, film cost, availability and storage problems, and camera maintenance. There's also good photography. Nobody likes to look at bad pictures, particularly the referring physicians on your staff.

The innovative Model 750 Multi-Format Camera System combines the reliability of a non-mechanized camera with the versatility of electronic programming to give you unique clinical benefits. The 750 produces images of the size of your choice on the film of
your choice. It's versatile and flexible means of producing high quality transparency scintiphotos on X-ray film, a widely accepted medium for diagnostic imaging. Of course, the 750 may not solve your needs. Whatever they are, let Dunn Instruments help you define and solve them. We're in this together, you know.

**Dunn Instruments Inc.**

1280 Columbus Avenue
San Francisco, Ca. 94133
(415) 776-7033
Micromedic Systems has successfully adapted the majority of available RIA reagents to instrumentation. Now, in another major step, we offer:

**RIA reagent kits**

of exacting standards, developed by a leading university research center. All kits are $^{125}$I-labelled, double antibody, utilizing a standard buffer from assay to assay. Protocols are matched to the system's performance and standards of the instruments below.

**Automated pipetting station**, allied to the RIA rack, assures hands off RIA all through the system...no individual tube handling, no massive micropipetting, no deviations in volume and dilution. Flexible through-put: handles small or large numbers of tubes with equal ease, all with reproducibility of 0.5% C.V. or better.

The RIA rack...heart of hands off, precise-reaction, total system RIA offered only by Micromedic Systems...samples prepared, incubated, centrifuged and counted, all in the same rack, all without handling or misnumbering.
Incubation and separation. Incubation in air or water is achieved, again without tube-handling: samples remain securely in place in RIA rack. Centrifugation is speeded as well: rack fits popular refrigerated centrifuge heads. Centrifuged samples decanted directly from the rack with exclusive decanting clamp.

Automatic gamma counting system uses standard RIA racks, completes error-free sequence of hands off RIA. The equivalent of three separate counting systems: each of 3 assay lots can be independently programmed, even for isotope selection. This economical time-sharing means multi-user access, permits sharing of capital cost.

Automatic mode may be interrupted for manual counting with no loss of index... greater assurance for your stats.

This total system RIA family can deliver the greatest RIA precision and reproducibility available. Write us for full details.

Data reduction is straightforward: gamma counts are presented in standard Teletype™ form, adaptable through standard ASCII punched tape to any offline computer, such as the lab processor or central institutional processor. Rely on Micromedic Systems' extensive experience: let us recommend the data reduction process best suited to your individual needs.

MICROMEDIC SYSTEMS, Inc.
Rohm and Haas Building, Independence Mall West
Philadelphia, Penna. 19105
(Phone: 215-592-3582)

☐ Please send me an RIA rack.
☐ I would like to know more about the RIA total system.

Name ____________________________ Organization ____________________________

Address ____________________________ _______________________________________

City ____________________________ State ____________ Zip Code ____________

Phone: Area Code ____________ Number ____________________________

JNM
From one simple test, two important results.

New Thyopac-5 is the first screening test which enables pathologists to perform a normalized thyroxine ratio (NTR) and a total thyroxine assay (T4) in the same vial. It thus separates simply, rapidly and precisely those patients with definite thyroid abnormalities from those with no dysfunction. After screening, Thyopac-3 and Thyopac-4 can be used to provide a more detailed diagnostic picture. In patients with normal thyroid function, Thyopac-5 automatically corrects for abnormal binding capacity, whether caused by unrelated clinical conditions such as pregnancy, hypoproteinaemia, or by medication such as oral contraceptives.

Full details available on request.

Thyopac®-5
A logical extension to thyroid function testing

The Radiochemical Centre
Amersham
RADIOIMMUNOASSAY …IS FOR EVERYBODY

Curtis Nuclear Corporation's RIA diagnostic test kits are ideal for Pediatrics (HGH, Vitamin B12) to Geriatrics (Digoxin, Insulin, Vitamin B12). Micro sera sampling plus a highly specific polymerized protein antibody run at room temperature, reduces total test time without altering the precision, specificity, accuracy or reproducibility of the test.

Curtis instruments, pipettes and lyophilized serum standards further insure reliable test results.

Regardless of the family needs, Curtis has radioimmunoassay diagnostic test kits for the assessment of hematological and hormonal problems.

Curtis Nuclear Corporation
1948 East Forty-Sixth Street, Los Angeles, California 90058 Telephone (213) 232-3531
Three Westchester Plaza, Elmsford, New York 10523 Telephone (914) 592-4060
Follicle Stimulating Hormone
Luteinizing Hormone

Two New Members of the Growing Family of Radioiodinated Protein and Polypeptide Hormones from Cambridge Nuclear.

Growth Hormone .......... Iodine-125
Insulin .................. Iodine-125
Gastrin .................. Iodine-125
Follicle Stimulating Hormone .... Iodine-125
Luteinizing Hormone .......... Iodine-125
Thyroid Stimulating Hormone .... Iodine-125
Angiotensin I ............ Iodine-125
Glucagon ................. Iodine-125
### Specific Properties and Characteristics

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<th>Follicle Stimulating Hormone</th>
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<th>Thyroid Stimulating Hormone</th>
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### Pricing and Production Schedule

#### IODINE-125

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<th>Growth Hormone</th>
<th>Insulin</th>
<th>Gastrin</th>
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<th>Luteinizing Hormone</th>
<th>Thyroid Stimulating Hormone</th>
<th>Angiotensin</th>
<th>Glucagon</th>
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<td>2 &amp; 30</td>
<td>2 &amp; 30</td>
<td>2 &amp; 30</td>
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<tr>
<td>August</td>
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<td>27</td>
<td>27</td>
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<td>6</td>
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#### PRICES

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Growth Hormone</th>
<th>Insulin</th>
<th>Gastrin</th>
<th>Follicle Stimulating Hormone</th>
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<th>Angiotensin</th>
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<tr>
<td>$25\mu$Ci</td>
<td>$75.$</td>
<td>$75.$</td>
<td>$85.$</td>
<td>$90.$</td>
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<td>$90.$</td>
<td>$75.$</td>
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<tr>
<td>$50\mu$Ci</td>
<td>100.</td>
<td>100.</td>
<td>115.</td>
<td>125.</td>
<td>125.</td>
<td>125.</td>
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<tr>
<td>$100\mu$Ci</td>
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<td>150.</td>
<td>200.</td>
<td>200.</td>
<td>200.</td>
<td>125.</td>
<td>125.</td>
</tr>
</tbody>
</table>

Quantities greater than 100$\mu$Ci will be quoted upon request.
All products are calibrated for Friday of the production week.
Write for our complete 1974 Production Schedule.

---

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The Respiratory Gate is designed to minimize respiration motion artifacts in gamma and ultrasound imaging, particularly in liver and lung studies. When used with a gamma camera, the system operates without attaching any sensors to the patient. Unique circuitry allows direct sensing of organ motion by using the split crystal mode or areas of interest of the gamma camera. Thus, the motion of the organ itself is sensed, rather than indirectly through monitoring of respiration.

Respiratory Gate

The Cardiac Gate and the Respiratory Gate can be combined to provide both cardiac and respiratory gating. When used with our Multi-Imager System all selectable states of the cardiac and respiratory cycles can be recorded simultaneously using multiple frame formats. Thus, both end-systolic and end-diastolic images, and both inspiration plateau and expiration plateau images can be recorded simultaneously using a two frame format. If both cardiac gating and respiratory gating is selected, a four frame format simultaneously records all four possible combinations: end-systole/inspiration plateau, end-systole/expiration plateau, end-diastole/inspiration plateau, and end-diastole/expiration plateau.

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0.16 MG STANNOUS CHLORIDE)

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NON-TARGET RATIO

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- High labeling efficiency
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Professional Services Division
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Cincinnati, Ohio 45201

or call:
Mr. Arnold P. Austin
Technical Manager
(513) 977-8547
DESCRIPTION
Each vial of OSTEOSCAN contains 5.9 mg disodium etidronate and 0.16 mg stannous chloride as active ingredients. Upon addition of ADDITIVE-FREE \(^{99m}\)Tc-pertechnetate, these ingredients combine with \(^{99m}\)Tc to form a stable soluble complex.

ACTIONS (CLINICAL PHARMACOLOGY)
When injected intravenously, \(^{99m}\)Tc-labeled OSTEOSCAN has a specific affinity for areas of altered osteogenesis. Areas of bone which are undergoing neoplastic invasion often have an unusually high turnover rate which may be imaged with \(^{99m}\)Tc-labeled OSTEOSCAN. Three hours after intravenous injection of 1 ml \(^{99m}\)Tc-labeled OSTEOSCAN, an estimated 40-50% of the injected dose has been taken up by the skeleton. At this time approximately 50% has been excreted in the urine and 5% remains in the blood. A small amount is retained by the soft tissue. The level of \(^{99m}\)Tc-labeled OSTEOSCAN excreted in the feces is below the level detectable by routine laboratory techniques.

INDICATIONS
OSTEOSCAN is a skeletal imaging agent used to demonstrate areas of altered osteogenesis.

CONTRAINDICATIONS
None.

WARNINGS
This radiopharmaceutical should not be administered to patients who are pregnant or lactating unless the information to be gained outweighs the potential hazards. Ideally, examinations using radiopharmaceuticals, especially those elective in nature, of a woman of childbearing capability should be performed during the first few (approximately 10) days following the onset of menses. Radiochemicals should be used only by physicians who are qualified by specific training in the use and handling of radionuclides produced by nuclear reactor or particle accelerator and whose experience and training have been approved by the appropriate government agency authorized to license the use of radionuclides. The \(^{99m}\)Tc-generator should be tested routinely for molybdenum breakthrough and aluminum. If either is detected, the eluate should not be used.

PRECAUTIONS
Both prior to and following \(^{99m}\)Tc-labeled OSTEOSCAN administration, patients should be encouraged to ingest fluids. Patients should void as often as possible after the \(^{99m}\)Tc-labeled OSTEOSCAN injection to minimize background interference from accumulation in the bladder and unnecessary exposure to radiation. As in the use of any other radioactive material, care should be taken to insure minimum radiation exposure to the patient, consistent with proper patient management, and to insure minimum radiation exposure to occupational workers.

ADVERSE REACTIONS
None.

DOSE AND ADMINISTRATION
The recommended adult dose of \(^{99m}\)Tc-labeled OSTEOSCAN is 1 ml with a total activity range of 10-15 mCi. \(^{99m}\)Tc-labeled OSTEOSCAN should be given intravenously by slow injection over a period of 30 seconds within three (3) hours after its preparation. Optimum scanning time is 3-4 hours postinjection. The patient dose should be measured by a suitable radiometric activity calibration system immediately prior to administration.

PHYSICAL CHARACTERISTICS
Technetium-99m decays by isomeric transition with a physical half-life of 6 hours. Photons that are useful for imaging studies are listed in Table 1.

PROCTER & GAMBLE
OSTEOSCAN (5.9 MG DISODIUM ETIDRONATE 0.16MG STANNOUS CHLORIDE) SKELETAL IMAGING AGENT

Table I. Principal Radiation Emission Data
<table>
<thead>
<tr>
<th>Radiation Mean %</th>
<th>Mean Energy (keV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M int. con. electron, (\gamma)</td>
<td>88.6</td>
</tr>
<tr>
<td>Gamma-2</td>
<td>88.3</td>
</tr>
<tr>
<td>K int. con. electron, (\gamma)</td>
<td>8.8</td>
</tr>
<tr>
<td>L int. con. electron, (\gamma)</td>
<td>1.1</td>
</tr>
<tr>
<td>Gamma-3</td>
<td>0.3</td>
</tr>
<tr>
<td>K int. con. electron, (\gamma)</td>
<td>0.96</td>
</tr>
<tr>
<td>Ka X-rays</td>
<td>6.5</td>
</tr>
</tbody>
</table>

\(^1\)Dillman, L.T., Radionucleide Decay Schemes and Nuclear Parameters for Use in Radiation-Dose Estimation, Supplement No. 2, MIRD pamphlet No. 4, J. Nucl. Med., p.22, 1969. The specific gamma ray constant for \(^{99m}\)Tc is 0.72 R/mCi-hr at 1 cm. The half-value layer is 4 mm of Pb.

To correct for physical decay of this radionuclide, the fractions that remain at selected intervals after the time of calibration are shown in Table II.

Table II. Physical Decay Chart; \(^{99m}\)Tc, half-life 6 hours
<table>
<thead>
<tr>
<th>Hours</th>
<th>Fraction Remaining</th>
<th>Hours</th>
<th>Fraction Remaining</th>
</tr>
</thead>
<tbody>
<tr>
<td>-5</td>
<td>1.779</td>
<td>5</td>
<td>.562</td>
</tr>
<tr>
<td>-4</td>
<td>1.587</td>
<td>6</td>
<td>.500</td>
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<tr>
<td>-3</td>
<td>1.414</td>
<td>7</td>
<td>.446</td>
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<tr>
<td>-2</td>
<td>1.128</td>
<td>9</td>
<td>.397</td>
</tr>
<tr>
<td>-1</td>
<td>1.122</td>
<td>11</td>
<td>.354</td>
</tr>
<tr>
<td>0*</td>
<td>1.000</td>
<td>10</td>
<td>.315</td>
</tr>
<tr>
<td>1</td>
<td>.891</td>
<td>11</td>
<td>.281</td>
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<td>2</td>
<td>.794</td>
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<td>.707</td>
<td>18</td>
<td>.125</td>
</tr>
<tr>
<td>4</td>
<td>.630</td>
<td>24</td>
<td>.063</td>
</tr>
</tbody>
</table>

*Calibration time

RADIATION DOSIMETRY
The estimated absorbed radiation doses to an average patient (70 kg) from an intravenous injection of a maximum dose of 15 millicuries of \(^{99m}\)Tc-labeled OSTEOSCAN are shown in Table III. For comparison, the estimated radiation doses from a maximum dose of 4 millicuries of \(^{18}\)F used as a bone imaging agent are also included.

Table III. Radiation Doses
<table>
<thead>
<tr>
<th>Tissues</th>
<th>Absorbed Radiation Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>(^{99m})Tc-OSTEOSCAN</td>
<td>18F (rads/15 mCi)</td>
</tr>
<tr>
<td>Skeleton</td>
<td>0.59</td>
</tr>
<tr>
<td>Tests</td>
<td>0.32</td>
</tr>
<tr>
<td>Ovaries</td>
<td>0.33</td>
</tr>
<tr>
<td>Total Body</td>
<td>0.13</td>
</tr>
<tr>
<td>Bladder</td>
<td>8.4</td>
</tr>
<tr>
<td>Bone Marrow</td>
<td>0.14</td>
</tr>
</tbody>
</table>

*Local dose may be a factor of 10 or more greater.


HOW SUPPLIED
The OSTEOSCAN kit contains five (5) vials. Each vial contains 5.9 mg disodium etidronate and 0.16 mg stannous chloride as active ingredients. The contents of each vial are prepared by appropriate manufacturing procedures to be sterile and pyrogen-free.

PREPARATION FOR USE
The following aseptic procedure should be followed in the preparation of the \(^{99m}\)Tc-labeled OSTEOSCAN skeletal imaging agent:

STEP 1. Remove central metal disc of the OSTEOSCAN vial and swab the top of the vial with alcohol to sterilize the surface of the closure.

STEP 2. Place the OSTEOSCAN vial in a radiation shield. In a sterile syringe, collect 5 ml of sterile pyrogen-free \(^{99m}\)Tc-pertechnetate from an additive-free \(^{99m}\)Tc-pertechnetate source which has been checked for molybdenum breakthrough. Check the activity of the \(^{99m}\)Tc-pertechnetate to avoid exceeding 50-75 mCi/5 ml. If the activity exceeds this level, dilute with ADDITIVE-FREE sterile saline only such that a 5 ml portion will contain the 50-75 mCi activity.

STEP 3. Add the \(^{99m}\)Tc-pertechnetate to the vial. After adding the \(^{99m}\)Tc-pertechnetate to the vial, withdraw an equivalent amount of air to equalize the pressure inside the vial to prevent spray contamination. CAUTION: DO NOT USE \(^{99m}\)Tc-PERTECHNETATE WHICH CONTAINS AN OXIDIZING AGENT. INTRODUCTION OF AN OXIDANT MAY RESULT IN A SOLUTION UNSUITABLE FOR SKELETAL IMAGING. Commercial sources of \(^{99m}\)Tc-pertechnetate that have been used in clinical trials with OSTEOSCAN include the New England Nuclear Technetium-99m Generator, the Mallinckrodt Technetium-99m Generator, the Squibb Hi-Con Generator, Medipr-Physics Instant Technetium, and Cambridge Nuclear Instant Technetium.

STEP 4. Shake the vial well for three (3) minutes to assure complete dissolution of the contents. Minimal exposure can be obtained by use of either an ultrasonic agitator or mechanical shaker.

STEP 5. Record the time and date of preparation and the activity of the \(^{99m}\)Tc-labeled OSTEOSCAN on the radiation shield label contained in the kit and affix this label to the shield.

STEP 6. Use within three (3) hours of preparation. Discard excess material.
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The Cardiac Gate accessory records both end-systolic and end-diastolic images simultaneously, using a two frame format. The Multi-Imager System alternates exposures between the two frames synchronous with the patient's cardiac cycle. The Cardiac Gate is a complete ECG instrument, including a heated stylus strip chart recorder that records both the cardiogram and the exposure gates.

The Respiratory Gate accessory records both inspiration plateau and expiration plateau images simultaneously, using a two frame format. The Multi-Imager System alternates exposures between the two frames synchronous with the motion of the organ being imaged. The Respiratory Gate operates without attaching any sensors to the patient. Either the gamma camera split crystal mode or areas of interest are used to sense organ motion.

Cardiac and respiratory gating can be combined to simultaneously record in a four frame format all four possible combinations: end-systole/inspiration plateau, end-systole/expiration plateau, end-diastole/inspiration plateau, and end-diastole/expiration plateau.

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Why? Schwarz/Mann concludes that the enzymatic activity measured at pH 5.5 is not attributable solely to renin. It could be caused by pepsin and other acid proteases which might be present in the plasma.

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(1) Kotchen et al; J. Clin. Endocr. and Metab. 36, 5, 804 (1973)
(2) Sealy et al; Kidney International 1:240 (1972)
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The Searle Analytic 1285 Radioassay System is backed by the world's largest team of nuclear instrument service men. Searle Analytic (formerly Nuclear-Chicago) is the world's most experienced manufacturer of automatic gamma counting equipment, with more systems in use than any other manufacturer.

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An imaging system is no better than its weakest link, which up to now has been the interface between the display scope, lens, and film.

The new Searle Radiographics Microdot™ Imager provides a new dimension and convenience to Pho/Gamma® scintiphography. Now you can put up to 80 static or cine sequential Pho/Gamma images on one film and maintain the same fidelity of a single image!

You simply select the film size most suitable for each study and you can choose: one single view dual intensity whole body image; side by side anterior and posterior whole body images; life size images (with 11" x 14" film); single large images on 8" x 10" and 5" x 7" film; sixteen or nine 2¼" images, or six 1¼" images; and eighty, forty-two, or fifteen 1" images.

In addition, the Microdot offers:

- A revolutionary new display scope with the highest resolution and uniformity available.
- Specially designed compensating lens.
- Constant focus and no astigmatism regardless of dot intensity and location.
- Absolute exposure control.
- Totally electronic image positioning.
- Fifteen selectable imaging formats.
- Automatic interlocks for trouble-free operation.
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Des Plaines, Illinois 60018

CM-338
For more than three years, the Surprenant/Douglas Automated Ventilation Module (AVM-3) has been simplifying radioxenon ventilation studies of all kinds.

The AVM-3 allows you to perform Single Breath (tidal volume or vital capacity), Rebreathe and Washout studies — singly or in the combination of your choice — using just one operator. All without patient co-operation. All with consistently reproducible results. (Single breath studies may be made at any lung volume.)

In addition, since the geometric factors for AVM-3 controlled ventilation studies can be made nearly identical to perfusion studies, easy and meaningful regional V/Q comparisons are permitted.

The AVM-3 system is linked directly to your scintillation camera by remote control and automatically initiates all scintiphoto exposures at precise predetermined intervals. As a result, the only functions of the operator are to select the desired study sequence, push the start button and then collect camera data.

The AVM-3 system, with protective lead-shielding, is enclosed in a single case mounted on an overbed table for use on patients in either sitting or supine positions.

Also available is the RGD-700 Radiogas Dispenser. The RGD-700 crushes and stores curie ampules of Xenon-133 in its 35 ml. tank handle and allows you to withdraw single doses as needed. The savings which result from purchasing Xenon-133 in curie ampules as opposed to single doses at a volume of 20 studies per month, for example, are enough to pay for the RGD-700 after the first 10 procedures.

The super versatile AVM-3 and the money-saving RGD-700, just two of the ways in which we're working to make your job a little easier.

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scanning, the unit permits studies with the patient upright; also permits vertex views of the brain with the patient reclining normally.

**Videodisplay Processor**

All scans produced with the Maxiscan unit can be viewed using standard film photorecording, or with GE's optional Videodisplay Processing unit. The VDP displays and quantifies patient count information in black and white or in fully functional color. Images, displayed on the unit's video monitor and produced from count information stored in the electronic memory, can be manipulated to enhance desired details. This aids interpretation and diagnosis. Enhanced VDP data can also be played back to the scanner and photorecorded on film. Scans, recorded on cassette tape, permit off-line playback and use in teaching. Count information from any scanner or camera can also be transmitted from one VDP to another over regular telephone lines.

**Versatile information and procedural capability proven by in-hospital scanning performance**

More usable diagnostic information, obtained with reduced procedural set-up time and less opportunity for technic error throughout, is marking the in-hospital performance of the Maxiscan™ two-probe whole body scanner.

This is true across the performance range of the unit: Whole body scans, single organ studies, scan minification, multiple scans on a single film, vertex views of the brain, a choice of image display with scans in black and white or full color, and more.

For skeletal surveys, the Maxiscan unit covers a full 24 x 80 inches. Saves time. Makes sure no ankles or elbows are cut off the image, even with taller and wider patients. The minified image permits location and diagnosis of bone metastases, with whole body reference.

For single organ examinations, images may be viewed full size, or minified 2:1, 3:1, 4:1 or 5:1. Up to four scans can be displayed on one film, with precise quadrant placement and no image overlap. Provides better patient throughput while maintaining diagnostic quality images.

For all procedures, the unit's two probes, top and bottom, cover the patient's isoresponse curve without turning him over. And, collimators can be interchanged in seconds. For optional vertical plane
Sliderule calculations have been replaced by the flip of a switch. That easily, the General Electric Digital Dose Computer — working in concert with the Digital Dose Calibrator — displays activity, plus assay volume, computed concentration, the patient’s dose and the computed volume (dosage) required.

The procedure is performed by, first, placing the radioisotope in the Calibrator at the beginning of the day or after milking the generator. The Dose Computer then measures the activity and computes the concentration. Its run-down memory continually updates the Tc-99m concentration as it decays.

Calculations may also be performed on other radioisotopes without disturbing the stored information for the Tc-99m. The volume required for any patient dose is available whenever needed. And, this performance speed and accuracy are combined with integral safety features. After the once daily assay, the radioisotope is returned to shielded storage. The concentration of Tc-99m is entered into the run-down memory of the Dose Computer, which is programmed for a 6.0 hour half-life. With ±5% accuracy maintained throughout 12 hours (2 half-lives).

The non-invasive Bone Mineral Analyzer available from General Electric precisely measures changes and losses in bone mineral content and bone width. Permits studies at various stages of disease progress, to help project the likelihood of fracture and aid development of treatment programs.

This proven performance capability is provided by (1) a scanner which automatically transports a closely collimated beam of mono-energetic gamma rays (125I) across the forearm in a programmed pattern; and, (2) a mini-computer which utilizes the generated data to calculate the mineral content and bone width, and digitally displays the measurements. This data can then be related to normal and specific patient populations.

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MEDICAL INSTRUMENTATION
The Central Chapter of the Society of Nuclear Medicine will sponsor a 2-day symposium on "The Lung" on Saturday and Sunday, March 23 and 24, 1974, at the Sheraton O'Hare Motor Hotel, 6810 N. Manheim Road, Rosemont, Illinois 60018 (10 minutes by limousine from the airport). Invited and selected papers will cover the clinical application of established and investigative techniques in pulmonary disease diagnosis including pulmonary embolism, obstructive lung diseases, and lung imaging in the pediatric patient.

For further information please contact:
Bryan R. Westerman, Ph.D., Department of Nuclear Medicine, Northwestern Memorial Hospital, Fairbank and Superior Streets, Chicago, Illinois 60611. Telephone (312) 649-3000.

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Ah, but what did we leave out? Functionally, nothing. We simply designed out the older technology, both electronic and mechanical, that tends to weigh more and bulk larger. And the newer technology, with its lesser weight and size, is often more reliable. And that's a nice bonus.

What else does Radicamera offer? A full capability camera with resolution as good as the best (really), and operating ease that defies comparison. You can actually position it with one finger and, with the appropriate accessory, move it easily to the patient that can't be moved easily. The innovative design yields a more compact unit that occupies less of your ever-evaporating space. In toto, a superbly designed instrument that is easy to live with and yields diagnostic data second to none.

Finally, we should also mention the following: newer technology not only tends to diminish size and weight. It shrinks cost (and hence, price) too. Check it out.

So, if you're looking at cameras, consider this: we want you to speak to Radicamera users because you really ought to hear our story from someone else, too.

Contact us for names and for Radicamera literature.

A word about Med II™

Very revealing fact: Med II is the world's best selling image processing system. And although we're happiest when its coupled to our Radicamera, candor forces us to reveal that it also functions beautifully with those other cameras. This very flexible system does everything a computerized image processing system should do. Things like correcting for non-uniformities, curve smoothing and fitting for cardiac output studies, ejection fraction and xenon ventilation/perfusion computations, acquiring and storing dynamic data from 12 regions of interest to produce 12 curves simultaneously, and much more. And its ready-to-use, conversational and upgradeable software makes it ideal for both routine and investigative dynamic function work. Once again, we invite discussion with current Med II users.

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But in a sense, the development of Tc99m MAA is just one more example of our ongoing commitment.

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“DIRECT SERVICE IS MORE IMPORTANT THAN DIRECT SALES.” Quote. Joe Teague, President, Ohio-Nuclear. Want proof? Last year, one of our sales territories was without a salesman for about six months. Yet sales continued, over projected quota. Why? Our Field Engineers were there, on the job. We figure those potential customers knew they could get service, knew the equipment was right for them, and decided we would somehow get the orders processed and the equipment installed. Which we did.

Finally, we’re COMMITTED to service, wherever we sell. And we live up to that commitment, day after day, before and after that occasional breakdown that plagues any piece of sophisticated equipment. Ask our users. Or ask us, about service agreements. Details and cost vary with type and model of equipment. Write us for full information. We’ll be here — this year, next year, and the year after.
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Isotope — 4mCi 99mTc Sulfur Colloid
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Abnormal Brain Scan — right lat. view (CVA)
Study Time — 80 sec.
Isotope — 12mCi 99mTc
Total Counts — 806,899

Abnormal Liver Scan — ant. view
Study Time — 320 sec.
Isotope — 2mCi 99mTc
Total Counts — 445,502

Brain-Bone Scan — left lat. view
(abnormal foci in the convexity and orbit)
Study Time — 240 sec.
Isotope — 6mCiTc Polyphosphate
Total Counts — 222,926

Normal Thoracic and Lumbar Spine Scan
— post. view
Study Time — 480 sec.
Isotope — 6mCiTc Polyphosphate
Total Counts — 1,000,733

**Dynamics**

Normal Cerebral Blood Flow — post. view
Accumulation Interval — 0.5 sec.
Display Interval — 1.5 sec.
Peak Counts per sec. — 26,210
Isotope — 15mCi 99mTcO₄²⁻

Normal Cardiac Blood Flow — ant. view
Accumulation Interval — 0.1 sec.
Display Interval — 1.0 sec.
Peak Counts per sec. — 78,147
Isotope — 15mCi 99mTcO₄²⁻

Normal Left Ventricular Quantitative
Histogram
Each double vertical line represents a 1.0 sec. time interval.
The entire histogram is 10.0 sec. long and consists of 100, 0.1 sec. count accumulations. This area-of-interest histogram took less than 1.0 min. to produce from end-of-study.
Note — definition of sinus rhythm of left heart.

**Performance**

These curves provide a useful calibration of System Seventy. The observed count rate for 15 mCi of 99mTc for the 1.0, 1.5, and 2.5-inch thick collimators is 230,000, 150,000, and 45,000 cps respectively.

The count-rate curve obtained from a mono-crystal camera using the high-resolution collimator shows an efficiency about equal to that of the 2.5-inch thick collimator at low count rates and exhibited a saturation rate of about 40,000 cps. The same saturation rate has also been observed with the other collimators available for this type of system.

The efficiencies of the parallel-hole collimators are such that the saturation rate of 230,000 cps is observed with 15, 45, and 190 mCi of 99mTc with the 1.0, 1.5, and 2.5-inch thick collimators respectively.
System Seventy
or...

(how the unique combination of a programmed computer and a matrix detector allow you to practice the NOW and FUTURE art of nuclear medicine consistently, simply and reproducibly.)

Diagnostic Superiority
That's what you're really looking for. We routinely obtain 3-4mm. static resolution scans — regardless of energy. Dynamic studies can now be accomplished at high frame rates with count/unit time accumulations (at low dose rates) that are not achievable on any other gamma camera, and the results can be displayed or printed-out in histogram or numerical form within seconds of the end-of-study. That's diagnostic superiority!

Operation Simplicity
Our unique "back-lit" front panel reduces each operation to a logical-computer assisted-series of steps. Select the mode; i.e. Static/Dynamic, and only those buttons or controls necessary to complete the study will be illuminated. That's operation simplicity!

New Standard!
The New Standard in diagnostic nuclear medicine. The only words that can describe a camera that is easy to use, delivers the greatest patient throughput, and provides the most technically superior diagnostic data while doing it.

No ONE of these terms really describes SYSTEM SEVENTY.

SYSTEM SEVENTY offers the highest spatial resolution, and that's why our static images are the best. This means that you can choose to increase patient throughput by selecting the best clinical measurement which optimizes spatial resolution and efficiency.

The system's high count rate capability (>200,000 cps) enhances the time resolution of dynamic studies which is a scientific necessity to achieve diagnostically meaningful evaluations of physiological time parameters. Stop thinking about the eventual possibility of more meaningful dynamic procedures and do them now, with SYSTEM SEVENTY.

And, the operational functions we've wired into the system and the software support we provide leave very little for you or your technician/operators to learn in putting SYSTEM SEVENTY to work and realizing the technically superior results.

So, looking back on them, certainly ALL of those terms apply, though no one of them really does SYSTEM SEVENTY justice.
Here’s a better way to look into a problem.

Imagination has kept Searle Radiographics number one in gamma imaging, with developments such as Whole Body Scintiscan™. Scintiscan allows you to image the entire body for bone studies or single organ studies as you prefer. Number of scans required, termination point, and electronic aperture settings are all monitored electronically, insuring the uniformity of the complete scan.

On a scanning table monitored to travel within ±1% of the speed you select, the patient is only ½” from the highly sensitive Pho/Gamma detector. The resultant images may be viewed on standard X-ray or Polaroid films making comparisons of bone surveys with roentgenographic studies easier to visualize.

Operation of the Scintiscan system is easy also. If scan input does not agree with the patient positioning, a warning system relays the inconsistency to the technologist who may terminate the scan or reposition the patient.

Rigid standards of excellence made us number one in gamma imaging. Imagination keeps us there.

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