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2Information for Physicians—Irradiation-Related Thyroid Cancer, prepared by the Division of Cancer Control and Rehabilitation National Cancer Institute. DHEW Publication No. (NIH) 77-1120, p. 13.

For complete prescribing information consult package insert, a summary of which follows:

SODIUM IODIDE I 123
CAPSULES AND SOLUTION FOR ORAL ADMINISTRATION

DESCRIPTION: Sodium iodide I 123 for diagnostic use is supplied as capsules and in vials as an aqueous solution for oral administration. At calibration time, each capsule has an activity of 100 microcuries and each vial contains solution with a total specific concentration of two millicuries per ml.

INDICATIONS: Sodium iodide I 123 is indicated for use in the diagnosis of thyroid function and imaging.

CONTRAINDICATIONS: None known.

WARNINGS: This radiopharmaceutical should not be administered to children or to patients who are pregnant or to nursing mothers unless the information to be gained outweighs the potential hazards. Ideally, examinations using radiopharmaceuticals, especially those effective in nature, in women of childbearing capability should be performed during the first few (approximately 10) days following the onset of menses. However, when studies of thyroid function are clinically indicated for members of these special population groups, use of I 123 would be preferable to use of I 131 in order to minimize radiation dosage.

Adequate reproduction studies have not been performed in animals to determine whether this drug affects fertility in males or females, has teratogenic potential, or has other adverse effects on the fetus. Sodium iodide I 123 should be used in pregnant women only when clearly needed.

PRECAUTIONS: Sodium iodide I 123, as well as other radioactive drugs, must be handled with care. Appropriate safety measures should be used to minimize radiation exposure to clinical personnel. Care should also be taken to minimize radiation exposure to the patient consistent with proper patient management. The prescribed sodium iodide I 123 dose should be administered as soon as practicable in order to minimize the fraction of radiation exposure due to relative increase of radionuclidic contaminants with time. The uptake of I 123 may be decreased by recent administration of iodinated contrast materials, by intake of stable iodine in any form, or by thyroid, anti-thyroid, and certain other drugs. Accordingly, the patient should be questioned carefully regarding diet, previous medication, and procedures involving radiographic contrast media.

ADVERSE REACTIONS: There were nine adverse reactions reported in a series of 1,393 administrations. None of these were attributed to I 123. Five adverse reactions, consisting of gastric upset and vomiting, were attributed to a filler in the capsule. Two cases of headache and one case of nausea and weakness were attributed to the fasting state. One case of garlic odor on the breath was presumed to be attributable to the presence of tellurium.

DOSE AND ADMINISTRATION: The recommended oral dose range for diagnostic studies of thyroid function in the average adult patient (70 kg) is from 100 to 400 microcuries. The patient dose should be measured by a suitable radioactivity calibration system immediately prior to administration. Concentration of I 123 in the thyroid gland should be measured in accordance with standardized procedures.

SPECIAL CONSIDERATION: Radiopharmaceuticals should be used only by physicians who are qualified by training and experience in the safe use and handling of radionuclides and whose experience and training have been approved by the appropriate government agency authorized to license the use of radionuclides.

HOW SUPPLIED: Sodium iodide I 123 for oral administration is supplied in aqueous solution in glass vials of 1mCi and in capsules of 100 μCi.
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- A Clinical Casebook: Bone Imaging in Orthopedic Medicine
- Diagnosing Pulmonary Embolism
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- Xenon concentration meter
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4. The Nuclear Pacific Radiation Shielding Eyeglasses have set the industry standard for quality, comfort, and protection. They meet FDA impact test requirements and provide two to three times the protection of a standard lead apron.
5. The Vial Shields accommodate 5ml to 30ml vials and have easy loading access. With 360 degrees of visibility and 10-40 HVL for 99mTc, their quality is unsurpassed.
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7. Hi-D® Lead Glass Bricks mounted in steel frames provide non-fogging visibility and high shielding capabilities.
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Xenon Xe 133-V.S.S.
Xenon Xe 133
Ventilation Study System

Please see complete Package Insert before prescribing; a Brief Summary is included on the following page.
The Complete System for the Study of Pulmonary Ventilation

- Single dose system.
- Simplicity of system allows for ease of administration.
- No dilution or transfer of xenon gas required.
- No expensive delivery system required.
- Reduces radiation exposure to patient and technologist.
- Eliminates risk of cross infection as may occur when reusable apparatus is employed.
- Available for daily use in most cities.
- Auxiliary lead shield and xenon valve available as accessories.

DESCRIPTION: The Xenon Xe 133-Ventilation Study System consists of a sealed frangible capsule containing 10 millicuries ±20% of Xenon Xe 133 gas at calibration time and date with less than 1% carrier xenon in air.

INDICATIONS AND USAGE: Study of pulmonary ventilation.

WARNINGS: Xenon Xe 133 should not be administered to children or to patients who are pregnant, or to nursing mothers unless the benefits to be gained outweigh 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.

Adequate reproduction studies have not been performed in animals to determine whether this drug affects fertility in males or females, has teratogenic potential, or has other adverse effects on the fetus. There are no well-controlled studies in pregnant women which allow any conclusions as to the safety of Xenon Xe 133 for the fetus. Xenon Xe 133 should be used in pregnant women only when clearly needed.

PRECAUTIONS: Xenon Xe 133 gas, as well as other radioactive drugs, must be handled with care and appropriate safety measures should be used to minimize radiation exposure to clinical personnel and to patients consistent with proper patient management.

Exhaled Xenon Xe 133 gas should be controlled in a manner that is in compliance with the appropriate regulations of the government agency authorized to license the use of radionuclides.

Xenon Xe 133 gas delivery systems, i.e., respirators or spirometers, and associated tubing assemblies must be leak-proof to avoid loss of radioactivity into the laboratory environs not specifically protected by exhaust systems.

Xenon Xe 133 adheres to some plastics and rubber and should not be allowed to stand in tubing or respirator containers for such unrecognized loss of radioactivity from the dose for administration may render the study non-diagnostic.

ADVERSE REACTIONS: Adverse reactions specifically attributable to Xenon Xe 133 have not been reported.

DOSAGE AND ADMINISTRATION: The recommended activity range for pulmonary ventilation studies in the average patient (70 kg) is 2 to 20 millicuries (0.03 to 0.3 millicuries/kg).

HOW SUPPLIED: Each Ventilation Study System (V.S.S.) contains Xenon Xe 133 in a sealed frangible capsule containing 10 millicuries ±20% at calibration time and date stated on the label.

The sealed capsule is enclosed in a metal valve-shield which is sealed with a plastic shrink-band to prevent accidental loss of xenon during shipping. A key is provided to remove the end plugs of the valve-shield and to turn the valve fitting which breaks the sealed capsule of Xenon Xe 133. The V.S.S. also includes a disposable filter/mouthpiece assembly and a breathing-collection bag with an attached CO2 absorber canister.

For complete information consult the package insert, a summary of which follows:

Xenon Xe 133-V.S.S. (Xenon Xe 133) Ventilation Study System

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P.O. Box 19164 Houston, TX 77024
Andreas R. Grüntzig
Richard K. Myler
Simon H. Stertzer

Three leaders in angioplasty discuss patient evaluation, technique, and diagnostic philosophies in an important new monograph. Available without charge from New England Nuclear.
As a practicing clinician, you've probably observed with growing interest the new diagnostic and therapeutic techniques for evaluating and managing your coronary artery disease patients. Two of the newest techniques entering routine clinical use hold great promise because they are relatively noninvasive: thallium-201 myocardial perfusion imaging, and percutaneous transluminal coronary angioplasty. Not surprisingly, the thallium-201 study has become a vital tool both in evaluation and followup of all patients being considered for angioplasty.

Contents:

Historical notes
Andreas R. Grüntzig, MD
University Hospital
Zurich, Switzerland

"Intraoperative experience demonstrated that coronary artery atheroma could be successfully compressed in the living human, and that disruption of the plaque produced no emboli."

Clinical indications and considerations
Richard K. Myler, MD
University of California,
San Francisco Medical School

"Patients whose coronary artery disease responds to transluminal angioplasty typically present with severe angina... of recent onset... that has proved refractory to medical therapy."

A clinical primer on technique
Simon H. Stertzler, MD
Lenox Hill Hospital
New York, New York

"Whether the brachial or femoral approach is used for the arteriography depends on the approach to be used for the angioplasty procedure and on the personal preference of the physician."

Case report: Post-MI angioplasty

Histories:
EF is a 39-year-old sales executive with a 25-year history of insulin-dependent diabetes, presented with exertional angina 6 months after an anterior-wall myocardial infarction.

Diagnostic findings:
An exercise thallium study showed moderate exercise perfusion deficits in septal and infero-lateral regions. Coronary angiography under nitroglycerin coverage revealed complete occlusion of the left anterior descending artery, and 90% stenosis of the dominant right coronary artery. Ventriculography demonstrated a 52% ejection fraction.

The patient was scheduled for PTCA to dilate his RCA lesion.

Post-PTCA findings:
A postangioplasty thallium study showed improved perfusion in the formerly ischemic regions, particularly at the apex. Angiography documented absence of obstruction at the site of the former lesion. Repeat ventriculography showed marked improvement in ejection fraction, from 37% to 73%, as a result of enhanced myocardial perfusion. Two years after angioplasty, the patient remains free of ischemic symptoms, and periodic repeat exercise thallium studies have shown continued improvement in regional perfusion patterns.

Richard K. Myler, MD
Thallous Chloride
TI 201

FOR DIAGNOSTIC USE

DESCRIPTION: Thallous Chloride TI 201 is supplied in isotonic solution as a sterile, non-
pyrogenic diagnostic radiopharmaceutical for intravenous administration. The aqueous solution
at calibration time contains 1mCi/ml Thallous Chloride TI 201, adjusted to pH 4.5-4.6 by the addition of hydrochloric acid and/or sodium hydroxide solution. It is made iso-
tonic with 0.9% sodium chloride and is preserved with 0.9% benzyl alcohol. Thallium TI 201 has a half-life of 73.1 hours and is cyclo-
tron-produced. It is essentially carrier-free and contains less than 0.25% lead Pb 203 and less than 1.9% Thallium TI 202.

PHYSICAL CHARACTERISTICS
Thallium TI 201 decays by electron capture to Mercury Hg 201 with a physical half-life of 73.1 hours. Photons that are useful for detection and imaging are listed in Table 1. The lower energy X-rays obtained from the mercury Hg 201 daughter of TI 201 are recommend-
med for myocardial imaging, because the mean % disintegration at 68-80.3 keV is much higher than the combination of gamma-4 and gamma-6 mean % disintegration.

Table 1. Principal Radiation Emission Data

<table>
<thead>
<tr>
<th>Radiation</th>
<th>% Disintegration</th>
<th>Energy (keV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gamma-4</td>
<td>107</td>
<td>665-1253</td>
</tr>
<tr>
<td>Gamma-6</td>
<td>201</td>
<td>24-52</td>
</tr>
<tr>
<td>Mercury X-rays</td>
<td>94.5</td>
<td>68-80.3</td>
</tr>
</tbody>
</table>

Maximum Value: Nuclear Data Project (BNL, January 1977)

The specific gamma ray constant for Thallium TI 201 is 4.7mCi-hr/g. From Table 2, the first half-
valves of TI 201 in 1.2 hours and in 0.51 hours. The range of values for the relative attenuation of the radiation emitted by this radionuclide that results from the use of various thicknesses of lead (Pb) is shown in Table 3. For example, the use of 3.3 mm of lead will decrease the external radiation exposure by a factor of about 10,000.

Table 2. Radiation Attenuation by Leaed Shielding

<table>
<thead>
<tr>
<th>Lead Thickness (mm)</th>
<th>Coefficient of Attenuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.006</td>
<td>1.00</td>
</tr>
<tr>
<td>0.12</td>
<td>0.51</td>
</tr>
<tr>
<td>0.51</td>
<td>0.25</td>
</tr>
<tr>
<td>1.01</td>
<td>0.12</td>
</tr>
<tr>
<td>2.01</td>
<td>0.07</td>
</tr>
<tr>
<td>3.3</td>
<td>0.01</td>
</tr>
</tbody>
</table>

To correct for physical decay of this radio-
nuclide, the fractions that remain at selected intervals before and after calibration are shown in Table 3.

Table 3. Thallium TI 201 Decay Chart; Half Life 73.1 Hours

<table>
<thead>
<tr>
<th>Time (Hours)</th>
<th>TI 201 Remaining</th>
<th>Coil Hg 201 Remaining</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>0.12</td>
<td>0.51</td>
<td>0.51</td>
<td>1.00</td>
</tr>
<tr>
<td>1.2</td>
<td>0.25</td>
<td>0.25</td>
<td>1.00</td>
</tr>
<tr>
<td>5.1</td>
<td>0.12</td>
<td>0.12</td>
<td>1.00</td>
</tr>
<tr>
<td>10</td>
<td>0.07</td>
<td>0.07</td>
<td>1.00</td>
</tr>
<tr>
<td>3.3</td>
<td>0.01</td>
<td>0.01</td>
<td>1.00</td>
</tr>
</tbody>
</table>

To correct for the decay and attenuation of this radionuclide, the fraction that remains after calibration is shown in Table 4.

Table 4. Radiation Dosages of Thallium TI 201: Applied Dose/Laid (Thallous Chloride) Radii 1.5mCi

<table>
<thead>
<tr>
<th>Organ</th>
<th>Dose (mCi)</th>
<th>Radiation Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart</td>
<td>0.51</td>
<td>0.51 mCi</td>
</tr>
<tr>
<td>Small Intestines</td>
<td>0.07</td>
<td>0.07 mCi</td>
</tr>
<tr>
<td>Kidney</td>
<td>0.12</td>
<td>0.12 mCi</td>
</tr>
<tr>
<td>Liver</td>
<td>0.07</td>
<td>0.07 mCi</td>
</tr>
<tr>
<td>Red Marrow</td>
<td>0.12</td>
<td>0.12 mCi</td>
</tr>
<tr>
<td>Ovaries</td>
<td>0.08</td>
<td>0.08 mCi</td>
</tr>
<tr>
<td>Testes</td>
<td>0.09</td>
<td>0.09 mCi</td>
</tr>
<tr>
<td>Thyroid</td>
<td>0.12</td>
<td>0.12 mCi</td>
</tr>
<tr>
<td>Total Body</td>
<td>0.28</td>
<td>0.28 mCi</td>
</tr>
</tbody>
</table>

Values stated include a maximum correction of 10% to the radiation doses from TI 201 due to the radionuclide Pb 203 and TI 202.

Now supplied: Thallous Chloride TI 201 for intravenous administration is supplied as a sterile, non-
pyrogenic solution containing at calibration time, 1mCi/ml Thallous Chloride TI 201, 9mg/ml sodium chloride, and 9mg/ml of benzyl alcohol. The pH is adjusted to between 4.3-6.5 with hydrochloric acid and/or sodium hydroxide solution. Vials are available in the following quantities of radioactivity: 1.5, 3.0, 4.5, 6.0 and 9.0 millicuries of Thallous TI 201.

The contents of the unit are radioactive and handling precautions must be maintained.

Catalog Number N82-427

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TechneScan® PYP® Technetium Tc99m Pyrophosphate Kit...the only pyrophosphate kit indicated for gated cardiac blood pool imaging.

Mallinckrodt's TechneScan PYP is the only pyrophosphate kit available that gives you the additional diagnostic capability of an advanced method for the dynamic assessment of cardiac function.

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For technical assistance it's 800-325-3811
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See brief summary on following page.

THE

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COMMITMENT

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BRIEF SUMMARY

CLINICAL PHARMACOLOGY

When injected intravenously TechneScan PYP Tc 99m has a specific affinity for areas of altered osteogenesis. It is also concentrated in the injured myocardium, primarily in areas of irreversibly damaged myocardial cells.

One to two hours after intravenous injection of TechneScan PYP Tc 99m, an estimated 40 to 50 percent of the injected dose has been taken up by the skeleton and approximately 0.01 to 0.02 percent per gram of acutely infarcted myocardium. Within a period of one hour, 10 to 11 percent remains in the vascular system, declining to approximately 2 to 3 percent twenty-four hours post injection. The primary urinary excretion was observed to be about 40 percent of the administered dose after 24 hours.

TechneScan PYP also has an affinity for red blood cells. When administered 30 minutes prior to the intravenous administration of sodium pertechnetate Tc 99m approximately 76 percent of the injected activity remains in the blood pool providing excellent images of the cardiac chambers.

INDICATIONS AND USAGE

TechneScan PYP Tc 99m is a skeletal imaging agent used to demonstrate areas of altered osteogenesis, and a cardiac imaging agent used as an adjunct in the diagnosis of acute myocardial infarction.

As an adjunct in the diagnosis of confirmed myocardial infarction (ECG and serum enzymes positive), the incidence of false negative images has been found to be 6 percent. False negative images can also occur if made too early in the evolutionary phase of the infarct or too late in the resolution phase. In a limited study involving 22 patients in whom the ECG was positive and serum enzymes questionable or negative, but in whom the final diagnosis of acute myocardial infarction was made, the incidence of false negative images was 23 percent. The incidence of false positive images has been found to be 7 to 9 percent. False positive images have also been reported following coronary bypass graft surgery, unstable angina pectoris, old myocardial infarcts, and in cardiac contusions.

TechneScan PYP is a blood pool imaging agent which may be used for gated cardiac blood pool imaging. When administered intravenously 30 minutes prior to the intravenous administration of sodium pertechnetate Tc 99m approximately 76 percent of the injected activity remains in the blood pool.

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 menstruation.

Warning: Preliminary reports indicate impairment of brain scans using pertechnetate Tc-99m which have been preceded by bone scan. The impairment may result in false positives or false negatives. It is recommended, where feasible, that brain scans precede bone imaging procedures.

Radiopharmaceuticals should be used only by physicians who are qualified by specific training in the safe 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 TechneScan PYP Kit must be maintained at refrigerator temperature until use.

The contents of the TechneScan PYP reaction vial are intended for use in the preparation of Technetium Tc 99m Stannous Pyrophosphate. TechneScan PYP may also be reconstituted with sterile, pyrogen-free normal saline containing no preservatives and injected intravenously prior to the administration of sodium pertechnetate Tc 99m.

Sodium pertechnetate Tc-99m solutions containing an oxidizing agent are not suitable for use with the TechneScan PYP Kit.

The contents of the kit are not radioactive. However, after the sodium pertechnetate Tc-99m is added, adequate shielding of the final preparation must be maintained.

TechneScan PYP Tc 99m should not be used more than six hours after preparation.

PRECAUTIONS

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.

Bone Imaging

Both prior to and following TechneScan PYP Tc 99m administration, patients should be encouraged to drink fluids. Patients should void as often as possible after the TechneScan PYP Tc 99m injection to minimize background interference from accumulation in the bladder and unnecessary exposure to radiation.

Cardiac Imaging

Patient's cardiac condition should be stable before beginning the cardiac imaging procedure.

If not contraindicated by the cardiac status, patients should be encouraged to ingest fluids and to void frequently in order to reduce unnecessary radiation exposure. Interference from chest wall lesions such as breast tumors and healing rib fractures can be minimized by employing the three recommended projections.

Blood Pool Imaging

TechneScan PYP should be injected by direct venipuncture. Heparinized catheter systems should be avoided.

ADVERSE REACTIONS

None.

HOW SUPPLIED

Catalog Number—094  
TechneScan PYP Technetium Tc-99m Pyrophosphate Kit.

Kit Contains:

1. Stannous Pyrophosphate Reaction Vials (lyophilized) for the preparation of Technetium Tc-99mStannous Pyrophosphate.

   Reaction Vial Contains:

   12.0 mg sodium pyrophosphate and 3.4 mg stannous chloride (lyophilized). Hydrochloric acid is added for pH adjustment prior to lyophilization.

2. Radioassay Information String Tags.

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The picture on your left does not provide adequate resolution for cardiac work. The picture on the right is more than adequate!

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There is a double standard in HCG RIA. The World Health Organization established the 1st International Reference Preparation (1st IRP) 75/537 specifically for use in immunoassay. It is the purest HCG standard available. However, most radioimmunoassay kits are calibrated against the earlier WHO standard for bioassay, the 2nd International Standard (2nd IS). Hence, the double standard. Eventually, all HCG RIA Kits will be calibrated against the 1st IRP.

We use the purest standard. Clinical Assays' GammaDab® β-HCG RIA Kit is calibrated against the 1st IRP. Consequently, the kit reports about twice as many milliInternational Units as will kits calibrated against the earlier standard. For instance, if our kit reports that a sample contains 200 mIU/ml, a kit calibrated against the 2nd IS will report only half that amount of HCG, or about 100 mIU/ml.

Don't be misled by the numbers. Kits calibrated against the old standard are really less sensitive than they appear. For example, a claim of 5 mIU/ml sensitivity translates into about 10 mIU/ml sensitivity, according to the 1st IRP. And a pregnancy screening procedure that supposedly picks up positives at 30 mIU/ml actually only detects positives above 60 mIU/ml.

We're twice as sensitive as we look. The sensitivity of the GammaDab β-HCG RIA Kit is 2 mIU/ml in terms of the 1st IRP (1 mIU/ml in terms of the 2nd IS). The cut-off for our screening procedure is 25 mIU/ml, or 12.5 mIU/ml according to the old standard. This lower cut-off level can be significant when early pregnancy detection is vital, as in cases of suspected ectopic pregnancy or threatened abortion.

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SPECIFICATIONS:

Performance Characteristics

Intrinsic Spatial Resolution (FWHM): based on Slot Widths of 1mm:
- Gallium 300 KeV, 5.6mm
- Technetium 140 KeV, 5.8mm

Bar Phantom:
- Technetium 140 KeV, 3mm

Uniformity (20% Window):
- Measured by sampling all pixels in a 128 x 128 matrix using a sampling area of approx. 2.5cm² and comparing against a flat field reference. Uncorrected, ±10% measured over 40cm F.O.V., corrected, ±4% measured over 36cm F.O.V. Uniformity correction circuit can be turned on and off by the operator.

Uniformity Gradient:
- Uncorrected, 4% RMS over 40cm F.O.V. Corrected, 2% RMS over 40cm F.O.V.

Count Rate: (Counts per second)
- Using 67 Ga with 3 PHA @ 50%:
  - ≥200,000 (67 Ga) 50% Window,
  - ≥160,000 (Tc140m) 50% Window,
  - ≥125,000 (Tc140m) 20% Window.

Energy Resolution:
- Technetium 140 KeV, 12.5%
- Energy Range: 50-560 KeV

Detection System

Field of View (F.O.V.):
- Maximum, 41cm

Crystal Size: 51cm Diameter by 1.27cm thick NaI (TI)

PMT's: 61 2.5" (6.35cm) Diameter Bialkali photomultiplier tubes

Bowl Dimensions: 28¼" (71.8cm) Diameter, 16" (41cm) High

Shielding: ¾" (1.9cm) Lead

Mechanical Positioning

Vertical: Upper Limit 152cm
- Lower Limit (at face) 46cm, Speeds — 15 rpm and 30 rpm

Bowl Rotation: 90° Clockwise, 105° Counterclockwise, Speeds — ½ rpm and 1 rpm

Yoke Rotation: ±90° from Horizontal, Speeds — ½ rpm and 1 rpm

Hand Control

Connection to Camera: 15' (4.6m) Flexible Cable

Numeric Display: 6-Digit LED

Control Functions: Positioning Controls — Vertical Drive — Bowl Rotation — Yoke Rotation

Register Set: Count — Time — Count/Time

Display Controls: Allows selection of preset conditions or display of live status of count rate, total count or elapsed time

Operating Controls: Image Recording — START — STOP — RESET — ERASE P-SCOPE

Physical Characteristics (Camera Only)

- Height: 85" (216cm)
- Width: 40" (102cm) at base
- Depth: 42" (107cm) base, 47" (119cm) bowl extension from wall
- Weight: 2500 pounds (1136 kilograms)

Environmental

- Normal Operating Temperature: 50°F to 80°F (10°C to 26°C)
- Electrical Requirements
  - 115V ±10%, 60Hz
  - 220V ±10%, 50Hz
  - 240V ±10%, 50Hz

SERVICE:

Unless otherwise stated, MEDX LF sixty one systems delivered in the Continental United States include, without additional charge, a full one-year service contract. The service contract commences with installation of the system — not with shipment, as most other warranties. In addition to covering parts, labor and travel, the contract includes semi-annual maintenance checks. Service is provided by highly trained direct service personnel and by independent service agents located throughout the United States. Service for overseas accounts is by special arrangement.

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Above—Diffuse metastatic disease throughout torso and limbs.

Above—Subdural hematoma on left, seen in 76-year-old male with 20 mCi D.T.P.A.

Below—Hepatoma in 31-year-old female with 3.5 mCi Tc\textsuperscript{99m} Sulfur Colloid.
SPECIFICATIONS:
Performance Characteristics
Intrinsic Spatial Resolution (FWHM): based on Slot Widths of 1mm:
- Gallium 300 KeV, 5.6mm
- Technetium 140 KeV, 5.8mm
Bar Phantom:
- Technetium 140 KeV, 3mm
Uniformity (20% Window):
- Measured by sampling all pixels in a 128 x 128 matrix using a sampling area of approx. 2.5cm² and comparing against a flat field reference. Uncorrected, ±10% measured over 40cm F.O.V., corrected, ±4% measured over 36cm F.O.V. Uniformity correction circuit can be turned on and off by the operator.
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Using 67 Ga with 3 PHA @ 50%:
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Shielding: ¼" (1.9cm) Lead
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Lower Limit (at face) 46cm,
Speeds — 15 rpm and 30 rpm
Bowl Rotation: 90° Clockwise,
105° Counterclockwise, Speeds — ½ rpm and 1 rpm
Yoke Rotation: ±90° from Horizontal, Speeds — ½ rpm and 1 rpm
Hand Control
Connection to Camera: 15'
(4.6m) Flexible Cable
Numeric Display: 6-Digit LED
Control Functions: Positioning Controls — Vertical Drive — Bowl Rotation — Yoke Rotation
Register Set: Count — Time — Count/Time
Display Controls: Allows selection of preset conditions or display of live status of count rate, total count or elapsed time
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Unless otherwise stated, MEDX LF sixty one systems delivered in the Continental United States include, without additional charge, a full one-year service contract. The service contract commences with installation of the system — not with shipment, as most other warranties. In addition to covering parts, labor and travel, the contract includes semi-annual maintenance checks. Service is provided by highly trained direct service personnel and by independent service agents located throughout the United States. Service for overseas accounts is by special arrangement.

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The Arecibo Observatory in Puerto Rico houses the world’s largest radio telescope dish. One thousand feet across, this ultrasophisticated instrument will soon be used by NASA to scan the heavens for faint radio waves which could indicate intelligent life in distant galaxies.

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Please refer to the brief prescribing information on the following page.
AN-MDP® (Technetium Tc 99m Medronate Kit)

For complete prescribing information, consult the package insert, a summary of which follows.

INDICATIONS AND USEAGE. Technetium Tc 99m Medronate may be used as a bone imaging agent to delineate areas of altered osteogenesis.

CONTRAINDICATIONS. None known.

WARNINGS. This class of compounds is known to complex cations such as calcium. Particular caution should be used with patients who have, or may be predisposed to hypocalcemia (i.e., alkalosis).

PRECAUTIONS. Contents of the vial are intended only for use in the preparation of Technetium Tc 99m Medronate and are NOT to be administered directly to the patient. Technetium Tc 99m Medronate, as well as other radiactive drugs, must be handled with care, and appropriate safety measures should be used to minimize radiation exposure to the patients consistent with proper patient management.

To minimize radiation dose to the bladder, the patients should be encouraged to drink fluids and to void immediately before the examination and as often thereafter as possible for the next 4–6 hours.

Technetium Tc 99m Medronate should be formulated within six (6) hours prior to clinical use. Optimal imaging results are obtained 1–4 hours after administration.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term animal studies have been performed to evaluate carcinogenic potential or whether Technetium Tc 99m Medronate affects fertility in males and females.

Pregnancy Category C: Animal reproductive studies have not been conducted on Technetium Tc 99m Medronate. It is also not known whether Technetium Tc 99m Medronate can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. Technetium Tc 99m Medronate should be given to a pregnant woman only if clearly needed. 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 menstrual bleeding.

Nursing Mothers: Technetium Tc 99m Medronate is excreted in human milk during lactation, therefore, formula feedings should be substituted for breast feedings.

Pediatric Use: Safety and effectiveness in children have not been established.

Radiopharmaceuticals should be used only by physicians who are qualified by training and experience in the safe use and handling of radionuclides and whose experience and training have been approved by the appropriate government agency authorized to license the use of radionuclides.

ADVERSE REACTIONS. No adverse reactions specifically attributable to the use of Technetium Tc 99m Medronate have been reported.

DOSEAGE AND ADMINISTRATION. The suggested dose range for i.v. administration, after reconstitution with oxidant-free sodium pertechnetate Tc 99m injection, to be employed in the average patient (70 kg) is: 60 mCi (2.25 GBq).

Bone imaging 10–20 millicuries, Technetium Tc 99m Medronate. Scanning is optimal at 4–6 hours post-injection. The patient dose should be measured by a suitable radioactivity calibration system immediately prior to administration.

HOW SUPPLIED. The AN-MDP® Technetium Tc 99m Medronate Kit is supplied either as a set of 5 or 30 sterile and pyrogen-free vials. Each nitrogen-flushed vial contains: pertechnetate 10 mg, stannous chloride (minimum): 0.51 mg maximum total stannous and stannic chloride 1.01 mg. The pH is adjusted with HCl or NaOH solutions prior to lyophilization. Included in each 5-vial kit is one package insert and 10 radiation labels. Included in each 30-vial kit is one package insert and 60 radiation labels. Refrigeration is not necessary. Technetium Tc 99m Medronate Kits contain no preservative. Vials are sealed under nitrogen air or oxygen is harmful to the contents of the vials and the vials should not be vented.

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During radionuclide ventriculography of the cardiac blood pool in the modified left anterior oblique (MLAO) view, EDC's slant hole collimator permits placement of the detector flat against the patient's chest because of the holes' 30° caudal angulation. The improved outcome, demonstrated by the above ungated cardiac images of a patient with aortic stenosis and left ventricular hypertrophy, includes:

- Complete resolution and separation of left ventricle and atrium.
- Viewing of ventricular septum normal to its longitudinal axis, with no foreshortening.
- Effective separation between the cardiac apex and base, as well as between distributions of the left anterior descending and left circumflex arteries.

A study by Dr. J. Anthony Parker,* Harvard Medical School, found that radionuclide ventriculography with the EDC 30° slant hole collimator provides "an accurate measure of ejection fraction at equilibrium and a qualitative assessment of regional changes in ventricular volume."

Refined resolution of the cardiac apex is obtained in the RAO view.

Other applications of the slant hole collimator include imaging of the spleen and posterior cranial fossa.

The EDC slant hole can be mounted on any commercial Anger scintillation camera. Rotatability of the slant hole inserts facilitates correct positioning. Computed tomography is made possible via indexing of the collimator with detents at up to 24 angles.

Other collimators available from EDC: Seven Pinhole, Bifocal Diverging, Div/Con, Parallel Hole.

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**Improve your image with a different slant.**

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- Parallel hole collimator
- Slant hole collimator
Our 125I Methotrexate Radioimmunoassay Kit provides a rapid, simple method with an unsurpassed level of sensitivity and specificity.

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Select the proven DBI 125I MTX-RIA kit to monitor the circulating methotrexate levels in serum, plasma, cerebral spinal fluid or urine.

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<table>
<thead>
<tr>
<th></th>
<th>DBI RADIOIMMUNOASSAY</th>
<th>IMMUNOENZYME ASSAY</th>
</tr>
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<tbody>
<tr>
<td>STAT INCUBATION:</td>
<td>15 minutes at 37°C</td>
<td>1 minute</td>
</tr>
<tr>
<td>SENSITIVITY:</td>
<td>0.0004 μM (700 times more sensitive)</td>
<td>0.3 μM</td>
</tr>
<tr>
<td>EXOGENOUS INTERFERENCE:</td>
<td>None</td>
<td>Lypemic Icterus Hemolysis</td>
</tr>
<tr>
<td>STANDARDS SUPPLIED:</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>PRICE:</td>
<td>*57½ cents per tube</td>
<td>$1.86 per tube</td>
</tr>
</tbody>
</table>

*In units of 200

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The ONLY instrument that integrates $^{133}$Xe concentrations (MPC • HRS) for a full week, as required by NRC and Agreement States.¹

Chart recorder option permits continuous hard-copy recording of xenon levels.

- Audible and visual alarms alert you BEFORE a hazardous xenon concentration is reached.
- Monitors and displays $^{133}$Xe concentration exiting from gas trap to indicate when filter needs replacement.

¹The Code of Federal Regulations® clearly limits the permissible $^{133}$Xe exposure to 1 MPC for 40 hours per week for 13 weeks. The data is continuously updated and displayed by the “XenoGard.”

80% OF USERS FOUND XENON IN ROOM AIR

80% of a sample of XenoGard™ owners reported finding xenon gas releases of which they were previously unaware. Discovery of varying xenon concentrations during “routine” ventilation studies had been virtually impossible to detect prior to using the “XenoGard” Monitor.

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Carle Place, N.Y. 11514
(516) 741-6360

TM Victoreen Inc.  *Patent Pending
Diagnosis: arteriovenous malformation

Imaging information:
- Instrument: Ohio Nuclear Series 100 Gamma Camera
- Dose: 15 mCi GLUCOSCAN
- Scan time: 90 minutes postinjection
- Counts: 400 K

Please see following page for brief prescribing information.
GLUCOSCAN™ 
Technetium Tc 99m Glucopaste Sodium Kit

**INDICATIONS AND USAGE:** Technetium Tc 99m Glucopaste Sodium is used for brain imaging.

Technetium Tc 99m Glucopaste Sodium is indicated for renal perfusion imaging as an aid in the diagnosis, localization, and evaluation of kidney disease. It may provide useful information about renal size, shape, and position and may delineate lesions affecting renal blood flow.

**CONTRAINDICATIONS:** None known.

**WARNINGS:** The contents of the GLUCOSCAN kit are intended only for use in the preparation of Technetium Tc 99m Glucopaste Sodium and are NOT to be directly administered to the patient.

Iodine examinations using radiopharmaceuticals—especially those elective in nature—of a woman of childbearing capability should be performed during the first ten days following the onset of the menses. Dehydration and/or patient positioning may result in failure to visualize urinary excretory structures in the presence of normal function. Adequate patient fluid intake and repositioning may reduce the incidence of such false positive studies.

**PRECAUTIONS:** Technetium Tc 99m Glucopaste Sodium, as well as every radiopharmaceutical, must be handled with care. Once sodium pertechnetate Tc 99m is added to the kit, appropriate safety measures should be used to minimize external radiation exposure to clinical personnel. Care should also be taken to minimize radiation exposure to patients in a manner consistent with proper patient management. The Technetium Tc 99m labeling reaction involved in preparing Technetium Tc 99m Glucopaste Sodium depends on the maintenance of pH in the divalent state. Any oxidant present in the sodium pertechnetate Tc 99m employed may adversely affect the quality of the prepared agent. Thus, sodium pertechnetate Tc 99m containing oxidants should not be used without first demonstrating that it does not affect the properties of the resulting agent. The use of bacteriostatic sodium chloride as a diluent for sodium pertechnetate Tc 99m may adversely affect the biologic distribution of the prepared agent, and its use is not recommended.

No long term animal studies have been performed to evaluate carcinogenic potential. Adequate reproduction studies have not been performed in animals to determine whether this drug affects fertility in males or females, has teratogenic potential, or has other adverse effects on the fetus. Technetium Tc 99m Glucopaste Sodium should be used in pregnant women only when clearly needed. It is not known whether this drug is excreted in human milk. As a general rule, nursing should not be undertaken when a patient is administered radiopharmaceutical material.

Safety and effectiveness in children have not been established.

**ADVERSE REACTIONS:** Although infrequent, erythema has been reported in association with the use of Technetium Tc 99m Glucopaste Sodium.

**DOSAGE AND ADMINISTRATION:** The recommended dose for the average (70kg) adult patient is 10-20 millicuries for both renal and brain imaging. Technetium Tc 99m Glucopaste Sodium is intended for intravenous administration only.

Technetium Tc 99m Glucopaste Sodium should be used within six hours after aseptic reconstitution with sodium pertechnetate Tc 99m. For optimal results, this time should be minimized. The reaction vial contains no bacteriostat.

Optimal results for both renal and brain imaging are obtained one hour after administration. Studies have shown that although optimal target-to-background ratios for brain lesions are obtained at two hours post-injection, there is no improvement in diagnostic efficacy after one hour.

Radiochemicals should be used by persons with specific training in the safe use and handling of radionuclides produced by nuclear reactor or particle accelerator and whose experience and training have been approved by the appropriate governmental agencies authorized to license the use of radionuclides.

The components of the New England Nuclear GLUCOSCAN Kit are supplied sterile and non-pyrogenic. Aseptic procedures normally employed in making additions and withdrawals from sterile, non-pyrogenic containers should be used during addition of pertechnetate solution and the withdrawal of doses for patient administration.

**HOW SUPPLIED:** NEN's GLUCOSCAN Technetium Tc 99m Glucopaste Sodium Kit is supplied as a set of five or thirty vials, sterile and non-pyrogenic. Each vial contains in lyophilized form:

- Glucopaste Sodium – 200mg
- Maximum Tn — 0.07mg
- Staminox Chloride (min.) – 0.06mg

Prior to lyophilization the pH is adjusted with hydrochloric acid and/or sodium hydroxide solution. Store at room temperature (15-30°C). Included in each five vial kit is one package insert and six radiation labels. Included in each thirty vial kit is one package insert and thirty-six radiation labels.

The contents of the kit vials are not radioactive; however, after reconstitution with sodium pertechnetate Tc 99m the contents are radioactive and adequate shielding and handling precautions must be maintained.

This reagent kit is approved for use by persons licensed by the U.S. Nuclear Regulatory Commission pursuant to Section 35.14 and 35.100 Group III of CFR or under equivalent licenses of Agreement States.

Catalog Number NRP-180 (5 vial kit)
Catalog Number NRP-180C (30 vial kit)

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**Gallium Citrate Ga67**

**INDICATIONS AND USAGE:** Gallium Citrate Ga-67 may be useful in demonstrating the presence and extent of the following malignancies: Hodgkin's disease, lymphomas and bronchogenic carcinoma. Positive Ga-67 uptake in the absence of prior symptoms warrants follow-up as an indication of a potential disease.

Gallium Citrate Ga 67 may be useful as an aid in detecting some acute inflammatory lesions.

**CONTRAINDICATIONS:** None known.

**WARNINGS:** Gallium Citrate Ga 67 should not be administered to children or to patients who are pregnant or to nursing mothers unless the information to be gained outweighs the potential hazards. Ideally, examinations using radiopharmaceuticals should be performed in a manner consistent with proper patient management.

An abnormal gallium concentration usually implies the existence of underlying pathology, but further diagnostic studies should be done to distinguish benign from malignant lesions. Gallium Citrate Ga 67 is intended for use as an adjunct in the diagnosis of certain neoplasms. Certain pathologic conditions may yield up to 40% false negative gallium studies. Therefore, a negative study cannot be definitively interpreted as ruling out the presence of disease.

Lymphocytic lymphoma frequently does not accumulate Gallium Ga 67 sufficiently for unequivocal imaging, and the use of gallium with this histologic type of lymphoma is not recommended at this time.

Gallium Citrate Ga 67, as well as other radioactive drugs, must be handled with care and appropriate safety measures should be used to minimize external radiation exposure to clinical personnel. Also, care should be taken to minimize radiation exposure to patients consistent with proper patient management. No long term animal studies have been performed to evaluate carcinogenic potential.

Adequate reproduction studies have not been performed in animals to determine whether this drug affects fertility in males or females, has teratogenic potential, or has other adverse effects on the fetus. Gallium Citrate Ga 67 should be used in pregnant women only when clearly needed.

Gallium Citrate Ga 67 has been found to accumulate in breast milk and should not be used in nursing mothers.

Safety and effectiveness in children have not been established.

Gallium Ga 67 localization cannot differentiate between tumor and acute inflammation; and other diagnostic studies must be added to define the underlying pathology.

The expiration date of the drug is seven days after the date of calibration.

**ADVERSE REACTIONS:** Severe itching, erythema and rash were observed in one patient of 300 studied.

**DOSAGE AND ADMINISTRATION:** The recommended adult (70kg) dose of Gallium Citrate Ga 67 is 2-5mCi. Gallium Citrate Ga 67 is intended for intravenous administration only.

Approximately 10% of the administered dose is excreted in the feces during the first week after injection. Daily laxatives and/or enemas are recommended from the day of injection until the final images are obtained in order to cleanse the bowel of radioactive material and minimize the possibility of false positive studies.

Studies indicate the optimal tumor to background concentration of ratios are obtained about 48 hours post injection. However, considerable inter-patient variability may occur in individuals, and acceptable images may be obtained as early as 6 hours and as late as 120 hours after injection.

The patient dose should be measured by a suitable radioactivity calibration system immediately prior to administration.

Radiochemicals should be used by persons who are qualified by specific training in the safe use and handling of radionuclides produced by nuclear reactor or particle accelerator and whose experience and training have been approved by the appropriate governmental agencies authorized to license the use of radionuclides.

**HOW SUPPLIED:** Gallium Citrate Ga 67 is supplied sterile and non-pyrogenic for intravenous use. Each ml contains 2mCi of Gallium Citrate Ga 67 on the calibration date, as a complex formed from 99m gallium chloride Ga 67, 2mg of sodium citrate·6.8mg sodium chloride, and 0.9% benzyl alcohol w/v as preservative.

The pH is adjusted to between 4.5-7.5 with hydrochloric acid and/or sodium hydroxide solution.

Vials are available from 3mCi to 18mCi in increments of 3mCi on calibration date.

The contents of the vials are radioactive and adequate shielding and handling precautions must be maintained.

Catalog Number NRP-121 (December 1979)
Abscess

Diagnosis: intranephric abscess

Imaging information:
Instrument: Cleon 760 Whole Body Imager
Scan time: 48 hours postinjection
Speed: 5 cm/min

Dose: 5 mCi Gallium Citrate Ga 67

Gallium Citrate Ga 67

Please see preceding page for brief prescribing information.
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BOOKS FROM SNM

NUCLEAR MEDICINE REVIEW SYLLABUS, Peter T. Kirchner, M.D., Editor

Designed to help physicians bring themselves up to date in all areas of clinical practice in nuclear medicine, this brand new, 619 page book provides a through update on methodological advances that have occurred in nuclear medicine since the early 1970's.

The Nuclear Medicine Review Syllabus has chapter titles: Radiopharmacology; Instrumentation; Radiation Effects and Radiation Protection; Cardiovascular; Central Nervous System; Endocrinology; Gastroenterology; Genito-Urinary System; Hematology-Oncology; Pulmonary; Radiosay; and Skeletal System.

The clear prose of each of the book's 12 chapters describes advances and outlines current practice, with a detailed bibliography at the end of each chapter serving as a guide to additional information. A 32-page index makes the Nuclear Medicine Review Syllabus' wealth of information instantly accessible. Individuals seeking a vehicle for final review prior to taking a certification (or recertification) examination will find the Nuclear Medicine Review Syllabus particularly valuable.

Soft cover, 619 pages. $30.00 plus $2.50 postage and handling.


This 867 page, copiously illustrated, large format volume has chapters titled: Quality Control; Organic Radiopharmaceuticals; Inorganic Radiopharmaceuticals; Functional Imaging; Radiomunoassay; Oncology; Hematology; Pharmacokinetics; Renal; Cardiopulmonary System; RES/ Blood; Skeletal; Thyroid; Pancreas; Prostate; and Adrenals; and Radio-nucleide Production. For each of these chapter, Radiopharmaceuticals II has an introductory paper summarizing the state of the science in the field. The introductory papers are supplemented by papers describing current research. Also included in the book are papers from a panel discussion entitled "International Regulatory Affairs Relating to Pharmaceuticals," and excerpts from the keynote address given by former AEC Chairman and now Governor of the State of Washington, Dixie Lee Ray.

Soft cover, 867 pages. $40.00 plus $2.50 postage and handling.

RADIOPHARMACEUTICALS, Gopal Subramanian, Ph.D. et al, Editors.

Hardcover, 555 pages. $30.00 plus $2.50 postage and handling.

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Technetium Tc 99m Generator

New England Nuclear®
One day test for Vitamin B<sub>12</sub> malabsorption

Conveniently packaged in 2-test or 5-test kits

DICOPAC
Co 58 Standard Solution
0.016 μCi/ml on 28 April

Canadian Lic. No. 128
Lot No.

DICOPAC®

Oral Cyanocobalamin Co 58, Oral Cyanocobalamin Co 57 Bound to Human Gastric Juice, Cyanocobalamin I.M. Injection

INDICATIONS
Dicopac Kit consisting of cyanocobalamin Co 58 and cyanocobalamin Co 57 combined with human intrinsic factor is used to assess vitamin B<sub>12</sub> absorption in the diagnosis of malabsorption due to the lack of intrinsic factor, e.g. Addisonian (pernicious) anemia, and as a diagnostic adjunct in other defects of intestinal absorption.

CONTRAINDICATIONS - None.

WARNINGS
This radiopharmaceutical should not be administered to patients who are pregnant or during lactation unless the information to be gained outweighs the potential hazards.

As in the use of any other radioactive material, care should be taken to assure minimum radiation exposure to the patient, consistent with proper patient management, and to assure minimum radiation exposure to occupational workers.

The test should not be started within 24 hours of a therapeutic dose (1000 μg) of vitamin B<sub>12</sub>, or within 24 hours of a loading dose of vitamin B<sub>12</sub> given for the Schilling test. If bone marrow examinations are to be done, they should precede the administration of this test, as the flushing parenteral dose of vitamin B<sub>12</sub> may alter the bone marrow picture.

ADVERSE REACTIONS - None.
Meet the people behind the person behind the badge.

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I'm a custom-designed automated reader. You can count on me to give the fastest, most meticulous readings in the radiation dosimetry industry.

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Technetium Tc 99m Medronate Kit

BRIEF SUMMARY OF PRESCRIBING INFORMATION

indications and usage
Technetium Tc 99m Medronate may be used as a bone imaging agent to delineate areas of altered osteogenesis.

contraindications
None known.

warnings
This class of compound is known to complex cations such as calcium. Particular caution should be used with patients who have, or who may be predisposed to, hypocalcemia (i.e., alkalosis).

This radiopharmaceutical drug product should not be administered to children, to pregnant women, or to nursing mothers, unless the expected benefit to be gained outweighs the potential risk.

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.

precautions

general
Technetium Tc 99m Medronate as well as other radioactive drugs, must be handled with care and appropriate safety measures should be used to minimize radiation exposure to clinical personnel. Also, care should be taken to minimize radiation exposure to the patients consistent with proper patient management.

To minimize radiation dose to the bladder, the patient should be encouraged to void when the examination is completed and as often thereafter as possible for the next 4-6 hours.

This preparation contains no bacteriostatic preservative. Technetium Tc 99m Medronate should be formulated within six (6) hours prior to clinical use.

pregnancy category C
Adequate reproductive studies have not been performed in animals to determine whether this drug affects fertility in males or females, has teratogenic potential, or has other adverse effects on the fetus. Technetium Tc 99m Medronate should be used in pregnant women only when clearly needed.

nursing mothers
It is not known whether this drug is excreted in human milk. As a general rule nursing should not be undertaken while a patient is on the drug since many drugs are excreted in human milk.

pediatric use
Safety and effectiveness in children have not been established.

adverse reactions
No adverse reactions specifically attributable to the use of Technetium Tc 99m Medronate have been reported.

how supplied
Union Carbide's Technetium Tc 99m Medronate Kit is supplied as a sterile, pyrogen-free kit containing 5 vials.

Each 10 ml vial contains 10 mg medronic acid, 0.17 mg (minimum) stannous chloride (maximum stannous and stannic chloride 0.29 mg), and 2 mg ascorbic acid. The pH has been adjusted to 4-8 with either HCl or NaOH prior to lyophilization. Following lyophilization, the vials are sealed under a nitrogen atmosphere.

Product #17500502. Multidose vial shield with cap and retainer ring available separately.

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NUCLEAR MEDICINE MEDICINE PHYSICIAN. The Washington, DC Veterans Administration Hospital is offering a 1-year A.M.A. approved fellowship in nuclear medicine with emphasis on clinical nuclear medicine. The applicant must be an M.D. with postgraduate training in medicine and/or radiation therapy. Send application to: Frank A. McGee, M.D., Chief, Nuclear Medicine Service, 11001 New York Avenue, Silver Spring, MD 20910.

NUCLEAR MEDICINE MEDICINE PHYSICIAN. The New York Presbyterian Hospital is seeking a full time nuclear medicine physician with clinical and research experience. Must have a comprehensive background in cancer and non-cancer imaging procedures. The position requires an M.D. or Ph.D. and eligibility for New York State licensure. Send complete CV to: Scott E. Goldsmith, M.D., Director, Nuclear Medicine Service, 1234 West 168th Street, New York, NY 10032.

NUCLEAR MEDICINE MEDICINE PHYSICIAN. The University of California, Davis Medical Center is offering a 1-year A.M.A. approved fellowship in nuclear medicine with emphasis on clinical nuclear medicine. The applicant must be an M.D. with postgraduate training in medicine and/or radiation therapy. Send application to: Frank A. McGee, M.D., Chief, Nuclear Medicine Service, 11001 New York Avenue, Silver Spring, MD 20910.
with at least 12 semester hours of nuclear medicine courses. They must be registered Nuclear Medicine Technologists or certified by the Society of Nuclear Medicine. Starting salary ranges from $15,193 to $16,826 based on years of experience. Fringe benefits include regular pay increases, nine paid holidays, 13 days sick leave each year (with unlimited accrual), 13-26 days annual vacation, civil service retirement, low-cost life and health insurance. Must be a U.S. citizen; an Equal Opportunity Employer; for information contact: Juan J. Touya, M.D., Chief, Nuclear Medicine, Veterans Administration Medical Center, 2615 E. Clinton Avenue, Fresno, CA 93703; Phone: (209) 225-6100, ext. 237.

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<th>Approximate Availability Date</th>
<th>Approximate Total Activity at Time of Dispatch</th>
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<tr>
<td>4401L-G Iodine-131</td>
<td>February, 1981</td>
<td>100 μCi</td>
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<tr>
<td>4412L-F Molybdenum-99</td>
<td>March, 1981</td>
<td>200 μCi</td>
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<tr>
<td>4415L-E Xenon-133</td>
<td>April, 1981</td>
<td>4 mCi</td>
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<tr>
<td>4404L-D Thallium-201</td>
<td>June, 1981</td>
<td>200 μCi</td>
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<tr>
<td>4400L-D Chromium-51</td>
<td>July, 1981</td>
<td>150 μCi</td>
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These SRM’s will consist of the radionuclide and carrier in approximately 5 grams of solution in a flame-sealed borosilicate-glass ampoule, except 4415L-E, which will consist of xenon-133 and inactive xenon, unpressurized, in a Pyrex ampoule having a volume of about 5 ml, a length of 4.5 cm, a diameter of 1.5 cm, and wall thickness of approximately 0.13 cm.

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