LOW-COST PRECISION LINEAR SCANNING TABLE

The usefulness of the whole-body linear scan has been shown in a variety of clinical conditions (*1*). There are several factors, however, that preclude the acquisition of equipment for this purpose in the small or moderately sized nuclear medicine service. These are: frequency of use, space limitations and budgetary limitations. Since all these factors usually add to a small priority rating, many facilities deny themselves this useful technique in nuclear medicine. In order not to deny ourselves this useful technique, we have designed a low-cost, compact, multipurpose linear scanning table that serves as an examining and/or rectilinear scanning table as required.

Materials, design, and labor estimates for the construction of this type of table are

Table:	Wooden examining table with 5-in. swivel-lok casters.
Drive train:	1/50 h.p. Gear reducation motor 100 rpm (or zero max motor M-3)
	Zero max speed control—JK-1
	Rampe 20:1 gear box (or zero max S-7)
	Boston gears H-2424 and H-2472
	5-in. rubber tire wheel
Mounting for drive train:	Iron plate 12 × 18 × ⅜ in.
	Angle iron 1½ × 1½ × 3/16 × 45 in.
	2½ × ⅔ × 3/16 × 38 in.
	2¾ × 2¾ × 3/16 × 8in.
Turnbuckle:	¾-in. thread

All drive components are mounted as dictated by coupling requirements on the iron plate. The two gears listed end the drive train, the larger of the two being attached directly to the drive wheel. This driving assembly is hinged from a support constructed of angle iron extending down from the center of the table. Suspension and/or extension to floor contact is achieved at the opposite end of the drive assembly by mounting the positioning turnbuckle directly over the drive wheel and fastening its other end to the bottom of the table top.

All materials used to construct this table excluding the table itself were purchased locally at a cost of $290.00. We have estimated that labor costs required for their assembly as described above would be approximately $100.00.

We use this table for a multitude of routine procedures in the isotope laboratory where a simple gurney-type table suffices. As required, we convert it for use as a transport system for linear scanning with three simple adjustments that require at most 1 min. These are: (1) engaging the drive wheel with two or three turns of the turnbuckle, (2) locking the two rear casters on the table and (3) connecting the power cord. With the drive system composed of the components described above, scanning speeds between 1 in. and 1 ft/min may be conveniently and reproducibly selected after a simple calibration of the zero max speed-control lever.

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THE DISTRIBUTION AND CONCENTRATION OF ^{75}Se-SELENOMETHIONINE IN MAN

Although the clinical use of ^{75}Se-selenomethionine has increased constantly throughout the last several years, little, if any, information is available on its distribution and concentration in man. It would appear that such information should be published as soon as it is available. Data on three patients, all males, who died of carcinoma of the colon, bronchiogenic carcinoma and hepatoma, 3 hr, 3 days and 52 days, respectively, after the administration of 250 μCi ^{75}Se-selenomethionine, are presented in Table 1. The figures shown represent percentage of the administered dose per 100 gm of tissue wet weight and the total percent-dose in the organ. Wherever possible the whole organ was weighed. The weight of the other organs (marked by *) was estimated.

Obviously, no final conclusions can be drawn on the basis of these data, but some preliminary ob-

TABLE 1. TISSUE CONCENTRATION AND DISTRIBUTION OF ^{75}Se-SELENOMETHIONINE IN MAN (3 CASES)

	3 hr—Ca colon		3 days—Bronch. Ca		52 days—Hepatoma	
	% dose/ 100 gm	Total % dose	% dose/ 100 gm	Total % dose	% dose/ 100 gm	Total % dose
Brain			0.22	3.00		
Thyroid	0.34	0.04	0.50	0.10		
Myocardium	0.30	1.36	0.24	1.00		
Pericardium*	0.16	0.12	0.25	0.20		
Lung: normal tissue	0.50	2.30	0.34	11.20		
Lung: metastases	0.48					
Lung: primary tumor			0.38	2.10		
Aorta*			0.13	0.13		
Diaphragm: normal tissue*	0.36	0.82	0.15	0.30		
Diaphragm: metastases	0.54					
Intestines and stomach*	0.40	7.00	0.36	6.40		
Liver: normal tissue	1.75	40.00	1.62	28.40	0.32	7.70
Liver: metastases	0.48					
Liver: primary tumor					0.29	
Spleen	0.70	1.00	0.90	0.90	0.22	1.30
Metastatic lymph node			0.33	0.10		
Pancreas: normal tissue	1.35	1.85	1.13	0.90	0.08	0.97
Pancreas: metastases	0.20					
Gallbladder*	0.45	0.10	0.70	0.14		
Bile			0.70			
Colon: normal tissue	0.22					
Colon: primary tumor	0.40					
Kidneys	1.10	3.20	1.80	6.30	0.40	1.0
Urinary bladder	0.12	0.18	0.20	0.30		
Testes	0.26	0.08	0.25	0.10		
Adrenal glands	0.80	0.15	0.67	0.10		
Prostate			0.40	0.10		
Skin*			0.09	5.50		
Skeletal muscle*			0.06	18.00		
Bone*			0.04	2.80		
Blood*			0.22	11.00		

* Denotes that weight of organ was estimated.

servations of these results indicate that at 3 hr after the intravenous administration of ^{75}Se-selenomethionine, the highest concentration is in liver not involved with tumor, while at 3 and 52 days the kidney concentration is the highest. The pancreas concentration appears to decrease at a much higher rate than that of most other organs. In hepatoma the tumor concentration and normal liver tissue concentration is about the same (52 days), while metastatic tissue in the liver (3 hr) concentrates significantly less than normal liver tissue. These observations have also been confirmed by *in vivo* counting (*1*). In bronchiogenic carcinoma (3 days), the lung, tumor and metastatic lymph nodes appear to concentrate the radiopharmaceutical equally. Myrocardial tissue concentrates ^{75}Se-selenomethionine four times better than skeletal muscle, which may explain why it is possible to visualize the heart muscle using this labeled agent (*1–4*).

In conclusion, the authors believe that valuable information on the fate of ^{75}Se-selenomethionine in humans may be obtained from data such as those presented here and urge that such data, if available, should be published by other groups. Ultimately, all the information should be consolidated for a thorough evaluation of the radiopharmacodynamics of ^{75}Se-selenomethionine in man.

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