minimum uptake value, defined as the mean value minus twice the standard deviations.

In ten normal patients, examined at rest and after exercise, the normal values turned out to be higher after exercise (*3*). For this state, we found the following normal minimum values (mean ± 1 s.d.):

1. Antero-lateral wall (A-P proj.): 85.5 ± 4.2 (%).
2. Lateral wall (indicated as posterolateral segment [25° LAO] in [*1*]) (30° LAO proj.): 85.1 ± 4.4 (%).
3. Anterior wall (90° left lat. proj.): 84.1 ± 4.7 (%).
4. Posterior wall (90° left lat. proj.): 84.3 ± 3.7 (%).

This indicates that relative myocardial Tl-201 uptake, measured after exercise, must be considered subnormal, if the values (mean minus 2 s.d.) are less than

1. 77.1% in the antero-lateral wall,
2. 76.3% in the lateral wall (indicated as posterolateral segment [25° LAO] in [*1*]),
3. 74.7% in the anterior wall and
4. 76.9% in the posterior wall.

These limiting values are very close to the value of 75.0%, uniformly used by Lenaers et al. (*1*) for all segments of the left ventricle, but they are not uniform. The use of a uniform normal value for all left-ventricular segments is therefore risky. This is additionally emphasized by the fact that minimum Tl-201 uptakes in both normal myocardium and CAD are sometimes (in 18% of our 50 patients) very close (±2.0%) to these limits. Since number of false positives and false negatives evaluated for each segment depends by definition on the individual normal value, these small but obvious differences in normal values play an important role.

UDALRICH BUELL
BODO E. STRAUER
JOCHEN WITTE
University of Munich
Federal Republic of Germany

REFERENCES

1. LENAERS A, BLOCK P, THIEL E, et al: Segmental analysis of Tl-201 stress myocardial scintigraphy. *J Nucl Med* 18: 509–516, 1977

2. BUELL U, NIENDORF HP, STRAUER BE, et al: Evaluation of myocardial function with the ^{201}Thallium scintimetry in various diseases of the heart. A correlative study based on 100 patients. *Europ J Nucl Med* 1: 125–136, 1976

3. BUELL U, STRAUER BE, BUERGER S, et al: Effects of physical stress and pharmacologically induced coronary dilation on myocardial and non-myocardial ^{201}Thallium-uptake. *Europ J Nucl Med*: in press

Reply

In our paper "Segmental analysis of Tl-201 stress myocardial scintigraphy" (*1*), we do not present a method for the quantitation of Tl-201 myocardial uptake. Our approach is display-oriented and tends to produce pictures allowing direct visual analysis and easier identification of normal and abnormal myocardial uptake. Thus, our method is somewhat different from the analyzing procedure of Buell and coworkers, who use tables of more than 200 digits for the quantitation of Tl-201 myocardial and mediastinal uptake at rest (*2*).

To classify Tl-201 myocardial uptake as normal and abnormal in our work, the level corresponding to 75% of maximal myocardial uptake has been chosen as the lower normal limit, because other levels produced more frequent false-positive or false-negative results. We are pleased to read that Buell and coworkers have found very similar values by a statistical approach in a study to be published (*3*).

Of course, the very small difference between their values and ours needs further confirmation before it can be considered significant.

ANDRÉ LENAERS
PIERRE BLOCK
EDDY VAN THIEL
MONIQUE LEBEDELLE
PAUL BECQUEVORT
FRANÇOIS ERBSMANN
ANDRÉ M. ERMANS
Saint-Pierre Hospital and Free University of Brussels
Brussels, Belgium

REFERENCES

1. LENAERS A, BLOCK P, VAN THIEL E, et al: Segmental analysis of Tl-201 stress myocardial scintigraphy. *J Nucl Med* 18: 509–516, 1977

2. BUELL U, NIENDORF HP, STRAUER BE, et al: Evaluation of myocardial function with the ^{201}Thallium scintimetry in various diseases of the heart. A correlative study based on 100 patients. *Europ J Nucl Med* 1: 125–136, 1976

3. BUELL U, STRAUER BE, BUERGER S, et al: Effects of physical stress and pharmacologically induced coronary dilation on myocardial and non-myocardial ^{201}Thallium-uptake. *Europ J Nucl Med*: in press

The Scintigraphic Investigation of Sacroiliac Disease: Influence of Age on the Uptake Ratio between Sacroiliac and Os Sacrum

We are currently evaluating various bone-to-bone and joint-to-bone ratios in patients with both normal and diseased skeletal states, using Tc-99m pyrophosphate and Tc-99m methylene diphosphonate and the region-of-interest technique and focussing our interest on the correlation of the ratio value with the age of the patients (*1,2*). The sacroiliac joint/os sacrum ratio, computed 2 to 3 hr after injection, turned out to decrease systematically with increasing age. In the group of patients 21 to 30 years of age this ratio was 1.20 ± 0.19 (2 s.d.); in the group aged 71 to 80 yr it turned out to be 1.04 ± 0.18 ($p < 0.0025$). This was found for both of the bone-seeking radiopharmaceuticals without any significant difference. A similar decrease was computed for the os sacrum/femoral diaphysis ratio.

It is necessary to include these findings in a staging of sacroiliac disease done by determination of joint and bone uptakes (*3*), since the uptakes in both the sacroiliac joints and the os sacrum (cancellous bone) decrease with advancing age, the latter less than the former (*2*).

UDALRICH BUELL
University of Munich
Federal Republic of Germany

REFERENCES

1. BUELL U, PFEIFER JP, NIENDORF HP, et al: A computer assisted comparison of ^{99m}Tc-methylene-diphosphonate and ^{99m}Tc-pyrophosphate bone imaging. *Brit J Radiol* 50: 623–636, 1977

2. BUELL U, SCHUSTER H, PFEIFER JP, et al: Bone-to-bone, joint-to-bone and joint-to-joint ratios in normal and

diseased skeletal state using region-of-interest technique and bone-seeking radiopharmaceuticals. *Nucl Med* 16: 104–112, 1977

3. LENTLE BC, RUSSELL AS, PERCY JS, et al: The scintigraphic investigation of sacroiliac disease. *J Nucl Med* 18: 529–533, 1977

Reply

Dr. Buell's comments are indeed pertinent.

Suspecting that there might be an age-dependent factor, we selected a group in an appropriate age range (20–45 yr) as controls. We did analyze the data from this group for an age effect and found a trend like that reported by Dr. Buell. Perhaps because of smaller numbers and the shorter range this trend proved not to be significant ($p > 0.01$).

Any technique such as the one we described must be subject to a number of variables, as is demonstrated by the range of observations in each of the groups we have reported. The trend described by Dr. Buell does, however, run counter to the effect of disease which increases rather than decreases the ratio. Thus the general validity of our observations is not in question, and we continue to find the technique of value in clinical practice.

Dr. Buell's observations reinforce the point that we made —we hope strongly enough—that in any quantitative technique there will be a need to determine the normal range for a particular laboratory, adjusted, as we now learn, for variables such as patient age.

B. C. LENTLE
A. S. RUSSELL
J. S. PERCY
F. I. JACKSON
Dr. W. W. Cross Cancer Hospital
Edmonton, Alberta, Canada

STATEMENT OF OWNERSHIP, MANAGEMENT, AND CIRCULATION

1. Title of Publication: Journal of Nuclear Medicine.

1A. Publication Number: 281560.

2. Date of filing: November 3, 1977.

3. Frequency of issue: Monthly.

3A. Number of issues published annually: Twelve.

3B. Annual subscription price: $50 in U.S.A.

4. Location of known office of publication: 475 Park Ave. South, New York, NY 10016.

5. Location of the headquarters or general business offices of the publishers: 475 Park Ave. South, New York, NY 10016.

6. Names and addresses of publisher, editor, and managing editor: Publisher—Society of Nuclear Medicine, 475 Park Ave. South, New York, NY 10016; Editor—Frank H. DeLand, M.D., University of Kentucky Medical Center, Lexington, KY 40506; Managing Editor—James E. Swan, Society of Nuclear Medicine, 475 Park Ave. South, New York, NY 10016.

7. Owner: Society of Nuclear Medicine, 475 Park Ave. South, New York, NY 10016. The Journal of Nuclear Medicine is the official publication of the Society of Nuclear Medicine, which is a nonprofit corporation. There are no stockholders.

8. Known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities: None.

9. The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes have not changed during the preceding 12 months.

10. Extent and nature of circulation: (A) Total number of copies printed: average during preceding 12 months—13,939; actual copies printed in October 1977—15,455. (B) Paid circulation: Sales through dealers and carriers, street vendors, and counter sales—none. Mail subscriptions: average—12,814; actual copies in October 1977—13,295. (C) Total paid circulation: average—12,814; actual copies in October 1977—13,295. (D) Free distribution by mail, carrier, or other means: samples, complimentary, and other free copies: average—374; actual copies in October 1977—1,005. (E) Total distribution: average—13,188; actual copies in October 1977—14,300. (F) Copies not distributed: office use, left over, unaccounted for, spoiled after printing: average—748; actual copies in October 1977—1,155. Returns from news agents—none. (G) Total: average—13,939; actual copies in October 1977—15,455.

11. I certify that the statements made by me are correct and complete: (signed) James E. Swan, Managing Editor.

12. In accordance with the provisions of the statute, I hereby request permission to mail the publication named in Item 1 at the phased postage rates presently authorized by 39 U.S.C. 3626: (signed) James E. Swan, Managing Editor.