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Dr. Henry Blackburn Professor and Director University of Minnesota School of Public Health Laboratory of Physiological Hygiene Stadium Gate 27 Minneapolis, Minnesota 55455

## Dear Henry:

Thanks very much for the manuscripts and your recent correspondence. John Ross is away and I am unable to find a reprint of his article on the left heart dimension. However, a description of the technique follows: two 10 X 2 mm x-ray markers are placed on the patient's chest, one in the midline over the jugular notch, the other over the xiphoid process. X-ray films are obtained with the patient supine and with A-P exposure synchronized with the use of the ECG at end diastole (.04 seconds after the onset of the QRS). On the x-ray film, a line is drawn connecting the two markers. A second vertical line is made intersecting that point on the left heart boarder which is furthest from the initial line. The longest horizontal line connecting these two lines serves as the left heart dimension, expressed as  $mm/M^2$  BSA (normal mean = 44; S.D. = 4.1; we are currently using a mean +1 S.D. as the upper limit of normal). This approach markedly reduces variation due to rotation or scoliosis.

The manuscript incorporating this revised technique is in press in the J. Applied Physiol. I am sorry that a preprint is not available now but if you need more information I can ask for one from John when he returns in the later part of August.

It was delightful to meet you and I appreciate your preprints. As you probably know, I will be visiting again on the tenth of August and we may get a chance to talk. Best regards.

Burton E. Sobel, M.D. Associate Professor of Medicine