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July 6, 1963

Leo M. Meyer, M.D.  
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Oceanside, New York

Dear Leo,

Shortly after mailing a note to you the other day I looked up some of my old (unpublished) data on blood volume vs. TBW. First of all, it is not the best of logic to estimate blood volume from lean body mass when LBM is in turn estimated from TBW; blood volume from TBW makes more sense. Assuming it does, some of my old data suggest the following formula:

$$RCV = 0.046 \times TBW + 0.124 \quad (\text{liters})$$

This formula is still subject to modification, and there is, of course, a respectable scattering of points about this line for normal subjects.

You might also look up a paper by G.A. Zak and D.D. Earle, "Blood Volume and Body Water in Normal Hospital Subjects," in J. Lab and Clin. Med., 49, 504, 1957. They give a formula for blood volume as:

$$BV = 0.1183 \text{ TBW} - 0.089$$

The results of the tritium assay of your samples are enclosed. We included estimates of fat and LBM but left the job of estimating blood volume to you, feeling that you would enjoy the arithmetic.

The numbers for TBW look reasonable, and if you followed my original directions, they should be reasonable. So far as I can see there are no technical errors in the assays.

If you have any questions, send me a note or phone, but not until after July 15 when I get back from Washington.

Best regards,

William E. Siri

WES:pb