Clinical observations in total body DXA: technical aspects of positioning and analysis.

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Abstract
Total body (TB) dual-energy X-ray absorptiometry (DXA) can assess regional body composition, which may necessitate greater attention to patient positioning and analysis than required for whole body assessment. This report describes technical challenges experienced in performing TB DXA, explores the frequency with which autoanalysis inaccuracies occur, assesses their effect on regional body composition results, and describes a uniform clinical approach for TB DXA positioning and analysis. Patient positioning followed manufacturer recommendations with additional facility-imposed procedures. On visual inspection, it was apparent that automated analysis often did not meet manufacturer guidelines, thus requiring manual alteration. To explore the frequency with which manual adjustments were needed, and the impact on results, TB scans were obtained in 20 men and 20 women aged 18-93 yr. The head line was altered in 98%, one or both shoulder lines in 93%, and the lateral hip boundary in 40%. Manual and automated TB analyses were highly correlated (r²=0.98-1.00). However, regional result correlation was less robust, that is, automated and manual appendicular lean mass differed by more than our least significant change in 33%. In conclusion, manual correction of automated TB DXA scan analysis is often needed. Such alterations do not affect TB measures but may affect regional body composition results.

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