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ABSTRACT FORM

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TITLE: The Estimation of Chest Wall Fat Using Potassium-40 and Biometric Measurements

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Type of Presentation: O or P

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The percentage fat content of the human chest-wall must be known to accurately measure plutonium in the human lung. Correction factors of 100% or more in x-ray detection efficiency are common in a normal population of individuals of differing body composition, and have been determined in the past by means of elaborate and costly ultrasonic measurements of the subject's chest.

Methods using simple Potassium-40 and biometric measurement techniques have been investigated to determine the percentaqe fat content in the human chest-wall. These methods compare favorably with ultrasonic measurements and allow laboratories not possessing ultrasonic equipment to make appropriate corrections for their plutonium lung counters. These methods predict fat content to within 15 absolute percentage points of the "ultrasonic" value.

These new methods for predicting the fat content of the human chest-wall are discussed in detail in this paper and are compared with the conventional ultrasonic measurement technique which has been used in the past.

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