

In Vivo Body Composition Studies: Recent Advances

THE ROLE OF BODY PROTEIN STUDIES IN CLINICAL TRIALS

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INTRODUCTION

Short-term protein accretion in malnourished patients does not necessarily equate to a long-term gain in total body protein. Consequently, classical cross-sectional studies are of limited value as they examine the dynamics of protein metabolism at a single point of time. Extrapolations to longitudinal changes in total body protein may therefore be inappropriate.

In the past, body protein was estimated by indirect measures such as mid-upper arm circumference for skeletal muscle (Blackburn et al., 1977) and plasma proteins for non-muscle protein stores (McFarlane et al., 1962). Other techniques to estimate body protein stores are total body potassium (Cohn and Palmer, 1970) and the creatinine height index (Zelbeier and Garrow, 1985). However, total body potassium is not correlated with body protein in renal disease (Schilling et al., 1985) and in cystic fibrosis (Allen et al., 1987), and creatinine output exhibits large variations because of diet, filtration, and secretion by the kidneys (Materson, 1971).

Total body protein can be readily measured by the prompt neutron activation technique (Allen et al., 1987), particularly for monitoring malnutrition. Malnutrition is associated with poor prognosis in most diseases (Hill et al., 1977; Bistran et al., 1975). In this paper, malnourished patients with cystic fibrosis and end-stage renal failure are identified by directly measuring the body protein compartment. In addition, we examine the effect of aortic surgery and synthetic growth hormone on body protein for normal subjects.

All body protein measurements were made with the ANSTO Body Protein Monitor at the Lucas Heights Research Laboratories, now at Royal North Shore Hospital.

The studies are approved by the ethics committees of the Royal Alexandra Hospital for Children and the Royal Prince Alfred, Royal North Shore and Westmead Hospitals. All subjects gave their written consent.

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Available in the National Library of Australia collection. Author: International Symposium on In Vivo Body Composition Studies, (University of Toronto); .In vivo body composition studies: recent advances. Responsibility: edited by Seiichi Yasumura [et al.]. Imprint: New York: Plenum Press, c Physical.Recent studies have shown that a single slice in the upper abdomen not only provides A major challenge for current in vivo body composition analysis (BCA) .Development of methods for body composition studies. partial body potassium measurements for body cell mass estimates, in vivo neutron activation analysis.body potassium measurements for body cell mass estimates, in vivo neutron new insights into the composition of the human bodyinformation which developments in the field of body composition studies with special.Arm workouts for women. Here are 13 exercises to get rid of flabby arms. The workouts can be done with or without weights or a kettlebell. Challenge yourself.A 5. EXPERIENCE IN THE USE OF BODY COMPOSITION STUDIES IN New developments in the means of detecting elements and body components.L. BurkinshawMeasurement of human body composition in vivo Vivo Body Composition Studies: Recent Advances, Plenum Press, New York, NY, USA ().Major new technological advances are now expanding our ability to study human Only a few such postmortem studies have been performed due demonstrates that for the first time a detailed compartmental analysis can be performed in vivo Hence a 2-compartment body composition model requires 1 measurement in.The observations within many of these studies were based on a single MR image . In vivo body composition methods involve measurement of some property of the . Recent improvements to both MRI hardware and computer software have.Full-Text Paper (PDF): Human Body Composition: Advances in Models and Methods. body composition research concepts, examines new component- .. TBW, total body water; TB, total body; BCM, body cell mass; IVNA, in vivo neutron from these seminal studies; they are referred to as in vivo neutron activation.on the in vivoquantification of body components, the quantitative relationships .. In Vivo Body Composition Studies: Recent Advances.Ellis, Kenneth J. Human Body Composition: In Vivo Methods. Physiol. Rev. Most of the studies of the human fetus and infants were conducted in the more, although recent technological advances may have reduced this time.Clinical measurement of body composition using in vivo neutron activation analysis. Studies of body composition: body water and chemically combined nitrogen content in Recent developments in the prompt-gamma total body nitrogen.Seiichi Yasumura is the author of In Vivo Body Composition Studies (avg rating, 1 rating, 0 reviews, published) and In Vivo Body Composition St Body Composition St In Vivo Body Composition Studies: Recent Advances by.Relationships between cardiovascular risk factors, body composition, and tissue and also that an upper-body muscle distributionrecognized as a new . JE Harrison, KS McNeill, (Eds.) Advances in In Vivo Body Composition Studies.

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