

COMPOSITION OF WEIGHT CHANGE ASSESSED USING LEG-TO-LEG BIOIMPEDANCE (BIA) SYSTEM

M. Punyanitya, C. Nuñez, F. Rubiano & S.B Heymsfield

Obesity Research Center, St. Luke's/Roosevelt Hospital, Columbia University, NY, NY 10025.

First presented at FASEB, 1999 Conference. "Poster"

Research reprinted by permission. ©1999 by C. Nuñez..

Practical Implications:

- The results support the field use of the Tanita leg-to-leg BIA system for estimating changes in fat mass as it is simple to use, requires minimal training and provides body composition estimates comparable to DXA.
- There were significant correlations between change in fat mass for DXA and BIA ($r=0.86$ $p<0.001$). BIA assessed changes in fatness more accurately than skinfold measurements (SF and DXA $r=0.73$, $p<0.001$).

ABSTRACT

Objective: Body composition changes that occur as a result of weight loss provide important information on the efficacy of diet and/or exercise interventions. Commonly used field methods for monitoring body composition changes include skinfolds (SF) and BIA. Skinfold measurements require technician training and monitoring. Since the leg-to-leg BIA system requires minimal training it may be of practical use in field settings. The purpose of this study was to compare in dieting obese subjects the composition of weight loss estimated by SF, BIA and dual energy x-ray absorptiometry (DXA).

Results: Weight loss for the group was 5.0 ± 3.4 kg. The weight loss as fat (kg) was SF (-3.7 ± 2.4), BIA (-4.0 ± 3.9) and DXA (-4.2 ± 3.0) and these were not significantly different. There were significant correlations between change in fat mass for DXA and SF ($r=0.73$, $p<0.001$, $SEE=2.06$ kg) and DXA and BIA ($r=0.86$, $p<0.001$, $SEE=1.51$ kg). These results support the field use of BIA for estimating changes in fat mass as it is simple to use, requires minimal training and provides body composition estimates comparable to DXA.

Design: There were 65 obese subjects (BMI, $X\pm SD$, 31.5 ± 3.1 kg/m²) who completed 16 weeks of weight loss treatment.

TANITA®

TANITA Corporation of America, Inc.

2625 S. Clearbrook Dr.,
Arlington Heights, IL 60005 U.S.A.
Toll Free: 1-800-TANITA-8
Phone: +1-847-640-9241
Fax: +1-847-640-9261
Web: <http://www.tanita.com>
E-mail: 4health@interaccess.com

55239910

TANITA Corporation of Japan

14-2, 1-Chome, Maeno-Cho,
Itabashi-Ku Tokyo, Japan 174-8630
Phone: +81-3-3968-2123 Fax: +81-3-3967-3766
Web: <http://www.tanita.co.jp>

TANITA Health Equipment H.K. LTD.

Unit 301-303, Wing On Plaza, 3/F, 62 Mody Rd.,
Tsimshatsui East, Kowloon, Hong Kong
Phone: +852-2838-7111 Fax: +852-2838-8667

TANITA France

Villa Labrouste, 68 Boulevard Bourdon,
92200 Neuilly-Sur-Seine, France
Phone: +33-1-55-24-99-99 Fax: +33-1-55-24-98-68

TANITA Europe GmbH

Dresdener Strasse 25,
71065 Sindelfingen, Germany
Phone: +49-7031-6189-6 Fax: +49-7031-6189-71

TANITA UK LTD.

The Barn, Philpots Close, Yiewsley,
West Drayton, Middlesex, Great Britain, UB7 7RY
Phone: +44-1895-438577 Fax: +44-1895-438511

TANITA International

The Barn, Philpots Close, Yiewsley,
West Drayton, Middlesex, Great Britain, UB7 7RY
Phone: +44-1895-438588 Fax: +44-1895-438522