A COMPARISON OF BODY COMPOSITION TECHNIQUES.

F. Rubiano, C. Nuñez & S.B. Heymsfield.
Obesity Research Center, St. Luke's /Roosevelt Hospital, Columbia University, NY, NY 10025
Presented as "Poster" at the International Symposium on Invivo Body Composition Studies, 1999, Brookhaven National Laboratory. Research reprinted by permission.

Practical Implications:

- The Tantia TBF 310 yielded the highest correlation with a lower corresponding SEE = 2.74 % as compared to SEE's of 4.40 % and 5.24 % for the BC scale and Futrex, respectively.

ABSTRACT

Objective: There are numerous body composition instruments that provide simple, noninvasive estimates of body composition. A few common field methods include Futrex-5000(A), The Body Comp Scale (American Weights and Measures) and Tanita (TBF-310) instruments. To determine total body composition, the Futrex estimates are based on near-infrared analysis of tissues, while The Body Comp Scale (BC Scale) and TBF-310 instruments use the electrical conductive properties of the arms and legs, respectively. The purpose of the present study was to compare body fat estimates by all three techniques with % fat estimates by dual X-ray absoptiometry (DXA, Lunar DPX) in 21 normal subjects ranging in age (mean ± SD, 53 ± 15 years) and BMI (28.0 ± 4.2 kg/m^2). Pearson correlation coefficients (r) for all methods used in determining % fat estimates are shown in table:

Results: The regression lines were not significantly different from the lines of identity for all three techniques versus DXA fat estimates. The TBF 310, however, yielded the highest correlation with a lower corresponding SEE = 2.74 % as compared to SEE's of 4.40 % and 5.24 % for the BC scale and Futrex, respectively. We conclude that current field methods of body composition differ in accuracy compared to DXA.

	FUTREX %FAT	BC SCALE %FAT	TBF 310 %FAT	DXA %FAT
FUTREX %FAT	--	--	--	--
BC SCALE %FAT	0.684**	--	--	--
TBF 310 %FAT	0.782**	0.952**	--	--
DXA %FAT	0.841**	0.891**	0.959**	--

**p<0.001

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

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