

Body Mass Index Guidelines: Corresponding %Fat Standards Based On Three-Country Study.

D. Gallagher*, **S.B. Heymsfield***, **M. Heo***, **S. Jebb****, **P. Murgatroyd****, **Y. Sakamoto*****.

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

**Cambridge University, U.K.,

***Kashiwa Hospital, Jikei Univ., Japan

Presented at the 9th European Congress on Obesity June 1999

Research reprinted by permission. ©1999 by S.B. Heymsfield

Practical Implications:

- See table for proposed healthy body fat ranges.
- This approach and initial findings provide the groundwork for establishing international standards for healthy body fat ranges.

ABSTRACT

Objective: International agencies have now adopted BMI standards for underweight (i.e., <18.5), overweight (≥25), and obesity (≥30). There are no accepted %fat levels corresponding to these ranges despite increasing interest in quantifying body fat.

Design: Body fat was measured in U.S., U.K., & Japan using state-of-the art methods (4-compartment [C] method [measured ³H₂O dilution vol; body density; bone mineral] in 2 countries and DXA in all 3) and %fat prediction equations were developed based on BMI and other independent variables. Subjects were multiethnic healthy adults (n for US, UK, & Japan, 924, 205, & 924) with BMI≤35 ranging in age from 18 - 94 years.

Results: Strong correlations existed between 4-C and DXA %fat for US & UK centers (R²=0.85-0.94, p's<0.001). DXA %fat prediction models at all 3 centers were

similar and included BMI and age as independent variables (R²=0.50-0.81, p's <0.001). There were small between-center differences in predicted %fat (max 3%) that varied with age & gender. The mean predicted %fat for 3 countries is shown in the table. This approach and initial findings provide the groundwork for establishing international standards for healthy body fat ranges.

Mean Predicted % Fat For 3 Countries.

		Females			
		age	20-39	40-59	60-79
BMI	18.5		20.5	21.3	22.1
	25		35.0	35.8	36.6
	30		41.9	42.7	43.5
		Males			
		age	20-39	40-59	60-79
BMI	18.5		8.5	10.2	11.9
	25		21.2	22.9	24.5
	30		27.2	28.9	30.5



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

55579910

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