

WEIGHT LOSS INCREASES AND FAT LOSS DECREASES ALL-CAUSE MORTALITY RATE: RESULTS FROM TWO INDEPENDENT COHORT STUDIES

David B. Allison¹, PhD, Raffaella Zannolli^{1,2}, MD, Myles S. Faith¹, PhD, Moonseong Heo¹, PhD, Angelo Pietrobelli^{1,2}, MD, Theodore B. Vanitallie¹, MD, F. Xavier Pi-Sunyer¹, MD, Steven B. Heymsfield¹, MD

¹Obesity Research Center, St. Luke's/Roosevelt Hospital, Columbia University College of Physicians & Surgeons, New York, New York

²Department of Pediatrics, Policlinico LeScotte, University of Siena, Siena, Italy

³Department of Pediatrics, Scientific Institute H San Raffaele, University of Milan, Milan Italy

First presented at ACSM 46th Annual Meeting, 1999.

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

Practical Implications:

- Weight loss is associated with increased mortality rate and fat loss with decreased mortality rate among individuals that are not severely obese.

ABSTRACT

Objective: In epidemiologic studies, weight loss (WL) is usually associated with increased mortality rate. Contrarily, among obese people, WL reduces other risk factors for disease and death. We hypothesized that this paradox could exist because weight is used as an implicit adiposity index. No study has considered the independent effects of WL and fat loss (FL) on mortality rate. We studied mortality rate as a function of WL and FL.

Design: Analysis of time to death in two prospective population-based cohort studies, the Tecumseh Community Health Study (1,890 subjects; 321 deaths within 16 years of follow-up) and the Framingham Heart Study (2,731 subjects; 507 deaths within 8 years of follow-up), in which weight and fat (via skinfolds) loss were assessable.

Results: In both studies, regardless of the statistical approach, WL was associated with increased and FL with decreased mortality rate ($p < 0.05$). Each standard deviation (SD) of WL (4.6 kg in Tecumseh, 6.7 kg in Framingham) was estimated to increase the hazard rate 29% (95% CI, 14%, 47%) and 39% (95% CI, 25%, 54%), in the two samples respectively. Contrarily, each SD of FL (10.0 mm in tecumseh, 4.8 mm in framingham) was estimated to reduce the hazard rate 15% (95%CI, 4%, 25%) and 17% (95%CI, 8%, 25%) in Tecumseh and Framingham respectively. Generalizability of these results to severely (i.e. $BMI \geq 34$) obese individuals is unclear.

Conclusions: Among individuals that are not severely obese, WL is associated with increased mortality rate and FL with decreased mortality rate.

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