# BMI Change Predicts Mortality in Community Living Older Adults

Summary of: Keller, H. H. & Ostbye, T. (2005). Body mass index (BMI), BMI change and mortality in community-dwelling seniors without dementia. *Journal of Nutrition, Health and Aging, 9(6),* 316-320.

## BMI research and older adults

Body mass index (BMI) is used to predict the health status of humans. Canada uses the World Health Organizations (WHO) framework, which measures height and weight to calculate BMI. The current BMI system for determining health risk related to body weight is the same for all adults over the age of 18 years. Research has shown that this BMI classification should be used with caution in aging adults as a healthy weight has been found to be a bit higher in older adults. Previous research is flawed in that does not examine older adults for an extended period of time to measure mortality related to body weight, included unhealthy individuals, and did not control for other confounders.

## What was done?

The Canadian Study of Health and Aging (CSHA) was a large national study that started in 1991 and included over 10,000 Canadians over 65. Most had dementia; however some did not have cognitive impairments. Almost 3,000 participated in a clinical assessment which included measuring weight and height (CSHA1). Almost all (90%) of these participants lived in the community; repeat assessments of health were done in 1996 (CSHA2) and in 2001 (CSHA3). All returning participants were invited to participate in another examination. For this study, information from 539 subjects without dementia in all assessments was used for analysis, including data on their weight and height from CSHA1 and CSHA3, and whether or not they died between CSHA2 and CSHA3. By excluding those who died within the first 5 years of the follow up reduced the chances that their death was because of an existing illness prior to the study. The Canadian and WHO classification for BMI was used, with the normal BMI defined as between 18.5-24.9. Change between CSHA1 and CSHA2 was noted in BMI units. Minimal change was defined as a BMI change being between 0 and <2.0; significant increase ≥ 2; mild decrease -0.1 to <-2.0; and significant decrease ≥ -2. Previous predictors of mortality were also considered which included: smoking, education level, martial status and cognitive impairment (but no dementia).

## What was found?

At baseline, 61% of participants were female and almost 50% of all individuals were widowed or divorced. Approximately half had finished high school and smoked regularly throughout life. More than half (55%) were 75-84 and had no cognitive impairment. More than half had a normal BMI, and less than 4% were underweight. Weight loss was common; 60% of the participants lost weight between CSHA1 and CSHA2. Males above 75 were found to have a higher chance of death. Similarly, a significant decrease in BMI (≥ 2.0 units) was associated with increased mortality over a 5 year period. Only those who were overweight and lost more than 2 units of BMIE between 1991 and 1996 had a decreased chance of death in 2002. This result is similar to previous studies. Participants with cognitive impairment at CSHA2 had an increased likelihood of death than those with no impairment.

## Importance of research

This research used the WHO and Canadian classification for healthy body weights. Unlike prior work this study measured weight and height over a ten year period and controlled for other factors that could influence the occurrence of death.

## Applying what was found

Weight loss that results in a 2 unit change in BMI increases risk for death in all older adults, excepting those who are obese. A higher body weight itself did not predict death. This suggest that loss of weight is more of a problem for older adults than how much they weigh. Future research in determining the rate of weight loss or what type of weight is loss could help better predict how weight loss affects mortality.

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