

## Title: Socio-Demographic Correlates of Life Expected in Degrees of Frailty

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**Objectives:** Our objective in this paper is to examine transitions in frailty and compute life expected across degrees of frailty by socio-demographic characteristics commonly found to distinguish healthy aging. Frailty, defined as the extent to which multidimensional physiological systems are in decline, is an indicator of vulnerability to adverse health outcomes and subsequently predicts healthy aging. Differences in frailty exist by age and sex<sup>1,2</sup>, and a modest literature suggests disparities across social determinants.<sup>3,4</sup> While estimates of life lived in degrees of frailty by demographic and social characteristics can provide information about quality of life for distinct population subgroups, there are very few such studies<sup>5,6</sup> and virtually none that consider a sample generalizable to the U.S. This paper addresses this gap.

**Methods:** Data are from waves 5 to 12 of the Health and Retirement Study 2000 to 2014. N=26,515 aged 55+ are monitored across more than 107,935 biannual transitions. A 59-item frailty index is constructed using the deficit accumulation approach.<sup>7</sup> Individuals are categorized into three degrees of frailty at baseline (non-frail defined as a health deficit in fewer than 10% of items; vulnerable 10% to 25%; frail 25% or greater). Individuals are categorized in one these degrees plus deceased at follow-up. IMACh .99r computes life expected in degrees of frailty by age, sex, marital status, ethnicity, place of residence, level of education, and wealth.

**Results:** Preliminary findings indicate transitions from any baseline to follow-up degree of frailty is possible, with remaining in the baseline state being most likely (70.6%) and the transition from frail to non-frail being infrequent (0.2%). Total life expectancy at age 55 for men is 24.5, divided into 7.9 years of life non-frail, 11.4 vulnerable, and 5.2 frail. For women, life expectancy is 27.6 years, divided into 7.6, 12.0, and 8.0 respectively. More years of life in a higher degree of frailty among women is consistent with other research. Findings presented at REVES will further show transition probabilities and life lived in degrees of frailty by age and the socio-demographic characteristics listed above.

**Conclusion:** Given population aging and increasing longevity, estimations of life expectancy in degrees of frailty is critical for evaluating the current and assessing the future state of public health and establishing who is more and less vulnerable in later life.

**KEYWORDS:** frailty, health expectancy, social determinants, United States

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