SUPPLEMENTAL MATERIAL: CHANGE IN DISABILITY-FREE LIFE EXPECTANCY FOR AMERICANS 70 YEARS OLD AND OLDER

We impute a health state for those who have a "terminal" missing value. The reason we impute is that "terminal" missing values are not likely to be random but rather represent the selectivity of attrition, and attrition is likely to have an important effect on estimates of life expectancy. When a case ends in a missing value—which can mean that after the first interview, a person was missing at all interviews or only at the last interview (and is not known to be deceased)—we impute a state based on observed data with similar prior disability patterns. A total of 877 cases are imputed in LSOA I and 1,642 in LSOA II.

Because we have a National Death Index (NDI) match for the LSOA I, we assume that we know the vital status of LSOA I subjects and do not impute missing cases to death, but we impute alive subjects to one of the three levels of disability. Because we do not have an NDI match for LSOA II that can be used with IMacH, we impute deaths as well as disability state for those in LSOA II for whom vital status was unknown (N = 334). Vital status was reported for most deceased respondents by survivors. Among those with unknown vital status, a final status was assigned based on the probability of transition to any of the given disability levels or death. A total of 53 cases are imputed to death. Among those missing information on disability status but known to be alive, one of the three disability states is imputed.

We provide an example of the imputations for the 1984 data. The states at each wave for the LSOA I are 1 = nondisabled; 2 = IADL disabled; 3 = ADL disabled; 4 = deceased; and 5 = missing. The effect of imputation for people who are recorded as nondisabled at the first three waves and who have unknown status at the last wave is shown in Supplement Table 1. The cases in the red block are redistributed using the distributions in the preceding set of yellow cases. For the 1984 cohort, imputations have little effect when compared with no imputation. Not imputing for 1994 has a larger effect because of the imputation to death and the greater number of cases imputed.

Supplement Table 1. Effect of Imputation for Those Nondisabled at Waves 1–3 and Unknown Status at the Last Wave

	Before	After	
Disability Code	Frequency	Distribution of Known Cases	Frequency
1111	1,655	0.88	1,818
1112	120	0.06	131
1113	100	0.05	108
1114	182		182
1115	182		

We also tested the effect of what we call "minimal" imputation: imputing only for those who have one observation and no closed interval because without a closed interval, these people will not be entered into the calculations. The minimal imputation method imputes functional status only for those who lack a closed interval (i.e., for LSOA I codes of 1555, 2555, and 3555 at the four waves). This involves the imputation of 293 cases in LSOA I and 810 cases in LSOA II.

The results are shown in Supplement Table 2. Life expectancies using minimal imputations are very similar to those resulting from all imputations.

Supplement Table 2. The Effect of Imputation Using Two Methods of Imputation Compared With No Imputation

	Total Life Expectancy		Disability-Free Life Expectancy		IADL-Disabled Life Expectancy		ADL-Disabled Life Expectancy	
Age	1984	1994	1984	1994	1984	1994	1984	1994
All Imputations	13.7	14.3	10.9	11.6	1.3	1.2	1.5	1.5
Confidence Interval	13.4–14.0	14.0–14.6	10.6–11.2	11.3–11.8	1.2–1.4	1.1–1.3	1.4–1.6	1.4–1.7
Minimal Imputations	13.7	14.2	10.8	11.6	1.3	1.1	1.5	1.4
Confidence Interval	13.4–13.9	13.8–14.5	10.5–11.2	11.3–11.8	1.2–1.4	1.1–1.2	1.4–1.6	1.3–1.6
No Imputations	13.7	13.4	10.8	11.1	1.3	1.0	1.5	1.2
Confidence Interval	13.4–13.9	13.1–13.7	10.5–11.2	10.8–11.4	1.2–1.4	1.0–1.1	1.4–1.6	1.1–1.4