**Supplemental Material: Does a cancer diagnosis in mid-to-later-life modify racial disparities in memory aging?**

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**Full model specification to assess racial disparities in memory aging and the impact of a cancer diagnosis on memory aging:**

For person *i* at time *j*, this model took on the following specification:

Memoryij = β0 + β1 agej + β2 age2j + β3 cancer\_diagnosis + β4cancer\_nowj + β5 time\_to\_diagnosis (zero for time after cancer) + β6 time\_since\_diagnosis (zero for time before cancer) + β7 age\_at\_cancer\_diagnosis + β8 race + β9 race\*agej + β10 race\*age\_at\_cancer\_diagnosis + β11 race\*cancer\_diagnosis + β12 race\*cancer\_now + β13 race\*time\_to\_diagnosis + β14 race\*time\_since\_diagnosis + ∑βk covariates

Where β0 represents memory function at age 75 for a White, cancer-free participant in the reference categories of covariates, β1 and β2 represent the linear and quadratic effects of increasing age on memory function for a White, cancer-free participant (SD units/decade of age), β3 represents the mean difference in memory function immediately prior to cancer diagnosis for White participants with versus without a cancer diagnosis (SD units), β4 represents the acute change in memory function for White participants following an incident cancer diagnosis (SD units), β5 represents the difference in memory aging slope for White participants with cancer, in the pre-cancer period (SD units/decade of aging), β6 represents the difference in memory aging slope for White participants with cancer, in the post-cancer period (SD units/decade of aging), β7 represents the effect of age at cancer diagnosis on memory function for White participants, β8 represents the difference in memory function at age 75 for a Black cancer-free participant versus White cancer-free participant in the reference categories of covariates, and β9 through β14 represent the differences for Black/AA participants for all age and cancer variables.

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| **Supplemental Table 1.** Mean and median baseline memory function and pre-cancer diagnosis memory function and trajectories among individuals diagnosed with cancer, by post-diagnosis attrition status and race, US Health and Retirement Study, 1998-2016 |
| Memory characteristic | White participants with cancer(n=2,762) | Black participants with cancer(n=454) |
| Retained in study post-diagnosis | Retained in study post-diagnosis |
| Yes(2,176; 79%) | No(586; 21%) | Yes(338; 74%) | No(116; 26%) |
| Baseline (1998) memory function |  |  |  |  |
|  Mean (SD) | 0.25 (0.70) | -0.035 (0.88) | -0.58 (0.88) | -0.083 (0.98) |
|  Median (IQR) | 0.41 (0.027, 0.65) | 0.22 (-0.44, 0.55) | -0.35 (-0.90, -0.025) | -0.66 (-1.44, -0.14) |
| Mean pre-diagnosis memory functiona |  |  |  |  |
|  Mean (SD) | -0.25 (0.82) | -0.34 (0.92) | -1.12 (0.97) | -1.23 (1.07) |
|  Median (IQR) | -0.019 (-0.67, 0.34) | -0.083 (-0.81, 0.32) | -0.79 (-1.63, -0.44) | -0.94 (-2.01, -0.34) |
| Pre-diagnosis memory trajectoryb |  |  |  |  |
|  Mean (SD) | 0.0097 (0.21) | 0.013 (-0.069, 0.12) | 0.017 (0.20) | -0.048 (0.26) |
|  Median (IQR) | -0.036 (0.26) | -0.004 (-0.15, 0.12) | 0.019 (-0.07, 0.12) | -0.02 (-0.16, 0.11) |
| aWithin-person mean of all pre-diagnosis memory function observationsbBest unbiased linear prediction (BLUP) from multivariable linear mixed effects model |