

Supplementary Table 1. Baseline characteristics of Health ABC participants, subdivided by sex

| Characteristics | Total (N=2815) | Men (n=1366) | Women (n=1449) | Comparing Men vs. Women |
|--|-------------------|-----------------|-------------------|-------------------------|
| Age, y (Mean ± SD) | 73.6 ± 2.9 | 73.7 ± 2.8 | 73.5 ± 2.9 | p=0.01 |
| Black (N,%) | 1137 (40.4) | 492 (36.0) | 645 (44.5) | p<0.0001 |
| Pittsburgh (N,%) | 1384 (49.2) | 675 (49.4) | 709 (48.9) | p=0.80 |
| Smoking (N,%) never | 1245 (44.2) | 412 (30.2) | 833 (57.5) | p<0.0001 |
| Former | 1289 (45.8) | 810 (59.5) | 479 (33.1) | |
| Current | 281 (10.0) | 144 (10.5) | 137 (9.5) | |
| Alcohol, more than 1 drink/day (N,%) | 204 (7.3) | 153 (11.2) | 51 (3.5) | p<0.0001 |
| Education (N,%) less than high school | 684 (24.3) | 362 (26.5) | 322 (22.2) | p<0.0001 |
| high school | 904 (32.1) | 349 (25.6) | 555 (38.3) | |
| post-secondary | 1227 (43.6) | 655 (48.0) | 572 (39.5) | |
| Incident Heart Failure (N,%) | 111 (3.9) | 52 (3.8) | 59 (3.8) | p=0.72 |
| Incident HF _r EF (N,%) | 54 (48.7) | 28 (53.9) | 26 (44.1) | p=0.30 |
| Incident HF _p EF (N,%) | 34 (30.6) | 14 (26.9) | 20 (33.9) | p=0.43 |
| Incident HF of Unknown Type (N,%) | 23 (20.7) | 10 (19.2) | 13 (22.0) | p=0.53 |
| Hypertension (N,%) | 1215 (43.2) | 521 (38.1) | 694 (47.9) | p<0.0001 |
| Coronary Heart Disease (N,%) | 480 (17.1) | 305 (22.3) | 175 (12.1) | p<0.0001 |
| Stroke (N,%) | 196 (7.0) | 87 (6.4) | 109 (7.5) | p=0.23 |
| COPD (N,%) | 315 (11.2) | 152 (11.1) | 163 (11.3) | p=0.92 |
| CKD (N,%) | 807 (28.7) | 401 (29.4) | 406 (28.0) | p=0.43 |
| Diabetes (N,%) | 497 (17.7) | 286 (20.9) | 211 (14.6) | p<0.0001 |
| Depression (N,%) | 156 (5.5) | 59 (4.3) | 97 (6.7) | p=0.006 |
| MMSE<80 (N,%) | 277 (9.8) | 162 (11.9) | 115 (7.9) | p=0.0005 |
| No comorbid disease (N,%) | 733 (26.0) | 345 (25.3) | 388 (26.8) | p=0.36 |
| Multimorbidity (Mean ± SD) number of conditions | 1.40 ± 1.19 | 1.44 ± 1.20 | 1.36 ± 1.17 | p=0.06 |
| Physical Activity, kcal/week (Mean ± SD) | 4099.6 ± 3390.4 | 4306.7 ± 3890.9 | 3904.3 ± 2826.4 | p=0.53 |

HF—heart failure; HF_rEF—heart failure with reduced ejection fraction; HF_pEF—heart failure with preserved ejection fraction; COPD—chronic obstructive pulmonary disease; MMSE—Mini Mental Status Exam

Supplementary Table 2: Annual DXA Changes over time associated with Incident HF, subdivided by HF type and sex

| | HFrEF | | | | HFpEF | | | |
|------------------------------------|-------------------|----------|------------------|----------|------------------|----------|-------------------|----------|
| | Model 1* | | Model 2† | | Model 1* | | Model 2† | |
| | Beta (SE) | P-value‡ | Beta (SE) | P-value‡ | Beta (SE) | P-value‡ | Beta (SE) | P-value‡ |
| DXA Indices[§] | | | | | | | | |
| MEN | | | | | | | | |
| • Total Mass Change, g | -698.1 (318.4) | P<.05 | - | - | -7.0 (410.7) | NS | - | - |
| • Lean Mass Change, g | -337.2 (153.0) | P<.05 | -110.0 (98.2) | NS | -72.4 (201.0) | NS | -46.8 (134.8) | NS |
| • Appendicular Lean Mass Change, g | -231.0 (82.0) | P<.05 | -115.3 (60.7) | NS | -59.4 (108.4) | NS | -44.7 (83.0) | NS |
| • Fat Mass Change, g | -345.2 (220.2) | NS | 65.8 (114.4) | NS | 40.0 (283.6) | NS | 151.3 (156.7) | NS |
| • Percent Fat Mass Change, % | -0.24 (0.18) | NS | 0.03 (0.12) | NS | 0.07 (0.23) | NS | 0.15 (0.16) | NS |
| WOMEN | | | | | | | | |
| • Total Mass Change, g | -859.9 (352.0) | P<.05 | - | - | 680.0 (362.8) | NS | - | - |
| • Lean Mass Change, g | -311.6 (137.7) | P<.05 | 10.8 (93.5) | NS | 14.8 (145.7) | NS | -108.4 (101.8) | NS |
| • Appendicular Lean Mass Change, g | -182.1 (73.0) | P<.05 | 1.2 (54.7) | NS | 25.3 (77.6) | NS | -2.1 (59.4) | NS |
| • Fat Mass Change, g | -593.6 (267.6) | P<.05 | -15.7 (134.5) | NS | 565.6 (274.9) | P<.05 | 241.4 (146.3) | NS |
| • Percent Fat Mass Change, % | -0.55 (0.21) | P<.05 | -0.19 (0.14) | NS | 0.47 (0.21) | P<.05 | 0.32 (0.15) | P<.05 |

DXA-Dual X-Ray Absorptiometry; HFrEF-heart failure with reduced ejection fraction; HFpEF-heart failure with preserved ejection fraction

* adjusted for age, race, site, baseline: smoking, alcohol consumption, education, BMI, hypertension, coronary heart disease, stroke, chronic obstructive pulmonary disease, diabetes, chronic kidney dysfunction, depression, low Teng mini mental score and physical activity main effects and time interactions in mixed models

† Model 2 – Model 1 additionally adjusted for annualized rate of change in total body mass

‡ Given the small numbers of HF subtypes within each sex, P value dichotomized to <.05 vs not significant (NS)

§ Random Slopes and Intercepts Mixed Model with total, lean, or fat mass or percent fat by time interaction as outcome

Time is from the first HF hospitalization in the incident HF group

DXA measurements were assessed at baseline and repeated annually for 5 years. Starting DXA values for controls was study entry and the DXA immediately prior to HF for cases. Each subsequent DXA was used to calculate rate of change. Time 0 for controls was study entry and time 0 in cases was the date of first HF hospitalization, which accounts for differences in the time between the HF event and subsequent DXAs.