

Appendix 2: Supplementary information on the categorization of aging phenotypes

- *Assessment of nonfatal and fatal cardiovascular events and noncardiovascular death.*¹ In brief, coronary artery disease status was based on clinically verified events, including myocardial infarction² and definite angina.³ Stroke was assessed using a self-reported measure of physician diagnosis. Follow-up for mortality was performed through the national mortality register kept by the National Health Services Central Registry, using the NHS identification number assigned to each British citizen. The International Classification of Diseases, Ninth Revision (ICD-9), and 10th Revision (ICD-10) codes were used to define cardiovascular-related mortality (ICD-9 codes 390.0–458.9, ICD-10 codes I00–I99). Noncardiovascular-related mortality included all remaining deaths not classified as cardiovascular disease.
- *Criteria for successful aging.*¹
 - (1) No history of the following chronic diseases: cancer (assessed from National Cancer Registry), coronary artery disease, stroke, diabetes (determined by self-report of doctor diagnosis, use of anti-diabetic medication or result of oral glucose tolerance test [fasting glucose level ≥ 7.0 mmol/L, 2-h post-load glucose level ≥ 11.1 mmol/L]).⁴
 - (2) Good cognitive, physical, respiratory and cardiovascular functioning and absence of disability. All functional measures were assessed by a trained nurse using standard protocols and have been detailed previously.¹ Cognitive functioning was assessed using a score of global cognition calculated from 5 cognitive tests; physical functioning using walking speed over an 8-foot walking course;⁵ respiratory function using forced expiratory volume in 1 second/height squared (L/m²);⁶ and cardiovascular function using systolic blood pressure (average of 2 measurements in sitting position after a 5-minute rest using the sphygmomanometer OMRON HEM 907, Omron, Milton Keynes, UK). Poor functioning was defined as scores in the worst sex- and age-standardized quintile. Participants having difficulties with one or more activities assessed using instrumental and basic activities of daily living questionnaire^{7,8} were categorized as disabled.
 - (3) Good mental health defined as a score greater than 42 on the mental health component summary scale of the Short Form General Health Survey.⁹

References

1. Sabia S, Singh-Manoux A, Hagger-Johnson G, et al. Influence of individual and combined healthy behaviours on successful aging. *CMAJ* 2012;184:1985-92.
2. Tunstall-Pedoe H, Kuulasmaa K, Amouyel P, et al. Myocardial infarction and coronary deaths in the World Health Organization MONICA Project. Registration procedures, event rates, and case-fatality rates in 38 populations from 21 countries in four continents. *Circulation* 1994;90:583-612.
3. Rose GA, Blackburn H, Gillum RF, et al. *Cardiovascular survey methods*. 2nd ed. Geneva (Switzerland): World Health Organization; 1982.
4. Alberti KG, Zimmet PZ. Definition, diagnosis and classification of diabetes mellitus and its complications. Part 1: Diagnosis and classification of diabetes mellitus provisional report of a WHO consultation. *Diabet Med* 1998;15:539-53.
5. Guralnik JM, Simonsick EM, Ferrucci L, et al. A short physical performance battery assessing lower extremity function: association with self-reported disability and prediction of mortality and nursing home admission. *J Gerontol* 1994;49:M85-94.
6. Hayes D Jr, Kraman SS. The physiologic basis of spirometry. *Respir Care* 2009;54:1717-26.
7. Lawton MP, Brody EM. Assessment of older people: self-maintaining and instrumental activities of daily living. *Gerontologist* 1969;9:179-86.
8. Katz S, Downs TD, Cash HR, et al. Progress in development of the index of ADL. *Gerontologist* 1970;10:20-30.
9. Ware JE Jr, Sherbourne CD. The MOS 36-item short-form health survey (SF-36). I. Conceptual framework and item selection. *Med Care* 1992;30:473-83.