**Table S1.** Eligibility criteria in BIOSPHERE.

|  |  |
| --- | --- |
| **PF&S** | **nonPF&S** |
| **Inclusion criteria** |
| Men and women aged ≥70 years | Men and women aged ≥70 years  |
| SPPB score between 3 (included) and 9 (included) | SPPB score >9  |
| Sedentary lifestyle | Sedentary lifestyle |
| Low muscle mass according to the cut-points indicated by the FNIH sarcopenia project \* | Normal muscle mass according to the FNIH sarcopenia project |
| Ability to complete the 400-metre walk test within 15 minutes without sitting, use of any assistive device or help of another person  | Ability to complete the 400-metre walk test within 15 minutes without sitting, use of any assistive device or help of another person |
| **Permanent exclusion criteria for both cases and controls** |
| Inability or unwillingness to provide informed consent |
| Nursing home residence |
| Current diagnosis of schizophrenia, other psychotic or bipolar disorder |
| Consumption of more than 14 alcoholic drinks per week |
| Self-reported inability to walk across a room |
| Difficulty communicating with the study personnel due to speech, language, or hearing problems |
| MMSE <24 |
| Severe arthritis (e.g., awaiting joint replacement) that would interfere with the ability to perform physical performance testing |
| Cancer requiring treatment in the past three years, except for non-melanoma skin cancers or cancers that have an excellent prognosis (e.g., early stage breast or prostate cancer) |
| Lung disease requiring regular use of corticosteroids or supplemental oxygen |
| Severe cardiovascular disease (including NYHA class III or IV congestive heart failure, clinically significant valvular disease, history of cardiac arrest, presence of an implantable defibrillator, or uncontrolled angina) |
| Parkinson’s disease or other progressive neurological disorder |
| Renal disease requiring dialysis |
| Chest pain, severe shortness of breath, or occurrence of any other safety concerns during the 400-metre walk test |
| Other medical, psychiatric, or behavioural factors that in the investigator's judgment may interfere with study participation |
| Other illnesses of such severity that life expectancy is less than 12 months |
| **Temporary exclusion criteria for both cases and controls** \*\* |
| Uncontrolled hypertension (systolic blood pressure >200 mmHg, or diastolic blood pressure >110 mmHg) |
| Uncontrolled diabetes with recent weight loss, diabetic coma, or frequent hypoglycaemia |
| Stroke, hip fracture, hip or knee replacement, or spinal surgery in the past six months |
| Serious conduction disorder (e.g., third-degree heart block) |
| Uncontrolled arrhythmias, new Q waves within the past six months or ST-segment depression (>3mm) on the ECG |
| Myocardial infarction, major heart surgery (i.e., valve replacement or bypass surgery) in prior six months |
| Deep vein thrombosis or pulmonary embolism in the past six months |

\* Low muscle mass was defined as a crude appendicular lean mass (ALM) <19.75 kg in men and <15.02 kg in women or as an ALM-to-body mass index ratio <0.789 in men and <0.512 in women.

\*\* Participants who were excluded for one or more of the temporary medical conditions listed above could be rescreened after a period considered clinically appropriate by the study physician.

*Abbreviations*: FNIH, Foundation for the National Institutes of Health; MMSE, Mini Mental State Examination; NYHA, New York Heart Association; nonPF&S. non physically frail, non sarcopenic; PF&S, physical frailty and sarcopenia; SPPB, short physical performance battery.