

Supplementary Table 1. SPIRIT outcome schedule

Phenotyping variables	BEHAVIORAL WHEEL FRAMEWORK								MEASUREMENTS							
	Context				Skill		Drives		Cross sectional				Longitudinal			
									Self reporting		Clinical Assessment		Ecological momentary assessment		Time Series Data	
	Physical	Urban	Al	Political	Social	Motor	C	Reflective	M	TP	M	TP	M	TP	M	TP
Age	x								GQ	T0						
Gender	x								GQ	T0						
Marital Status		x							GQ	T0						
Retirement			x						GQ	T0						
Education		x							GQ	T0						
Living arrangement		x							GQ	T0						
Income			x						GQ	T0						
Driving status						x			GQ	T0						
Urbanisation		x		x					GQ	T0						
Living status			x						GQ	T0						

Access to facilities			x	x					GQ	T0			X	TR		
Smoking	x	x							GQ	T0						
Mobility issues						x			GQ	T0						
Self rated health	x								GQ	T0			X	TR		
Participation/volunteering		x							GQ	T0						
Pain	x								NRS	T0			X	TR		
QoL	x	x	x	x					WHOQoL	T0			X	TR		
Depression					x				Geriatric Depression Scale	T0						
Stress					x				Perceived Stress Scale	T0			X	TR	Garmin	TC
Cognitive characteristics					x				Cognitive Flexibility Inventory	T0	Reaction time + Impulse control	T0				

Subjective wellbeing					x				Satisfaction with Life Scale (Diener)	T0			X	TR		
Anxiety					x				GAS - 10	T0			X	TR		
PA	x					x			IPAQ	T0 T1/2 T2			X	TR	Garmin	TC
Steps						x									Garmin	TC
Calories						x									Garmin	TC
HR						x									Garmin	TC
Number of Floors						x									Garmin	TC
MVPA						x									Garmin	TC
Cardiometabolic outcome						x					6MWT	T0			Garmin	TC
Blood Pressure						x					BP	T0			Garmin	
Body Battery						x									Garmin	TC
Sleep						x			Geriatric Sleep Questionnaire (GSQ-6)	T0			X	TR	Garmin	TC

Muscle strength						x				Grip Force (hand held) - Q - strength	T0				
Weight						x				scale	T0				
Height						x				Stadio measure	T0				
Abdominical Circumferenc e						x				Tape measure	T0				
Flexibility						x				Hamstrings-stretch	T0				
Balance						x				Kinvent	T0				
Emotional loneliness						x			De Jong Gierveld Loneliness scale	T0		X	TR		
Social identity and role								x	Exercise Identity scale	T0		X	TR		
Self efficacy								x	SCI Exercise Self-Efficacy	T0		X	TR		

									Scale (ESES)							
Motivation PA							x		Exercise Motivations Inventory (EMI-2)	T0			X	TR		

*T0 = baseline level, TR = random time TC= continuous monitoring