

SUPPLEMENTARY MATERIALS

Supplementary Table 1. Missing Data Frequencies.

	Frequency	Percent
Ethnicity	288	81.6
KSQ libido	105	29.7
GPPAQ physical activity index	84	23.8
KSQ urinary frequency	56	15.9
KSQ loss of muscle strength	53	15.0
KSQ loss of appetite	48	13.6
KSQ restless legs	43	12.2
KSQ poor concentration	43	12.2
KSQ itching	41	11.6
KSQ cramp/muscle stiffness	40	11.3
KSQ breathlessness	39	11.0
KSQ feeling cold	38	10.8
KSQ sleep disturbance	33	9.3
Albumin	27	7.6
KSQ tiredness	24	6.8
KSQ bone/joint pain	22	6.2
Haemoglobin	22	6.2
SF-12 MCS score	21	5.9
SF-12 PCS score	21	5.9
SF-12 vitality score	21	5.9
Self-reported slow walking pace	15	4.2
eGFR	15	4.2
Age	14	4.0
Self-reported lung or breathing problem	13	3.7
SF-12 physical functioning score	11	3.1
Self-reported mental health problem	11	3.1
Self-reported Joint, bone or muscle problem	11	3.1
Self-reported blood vessel or circulatory problem	11	3.1
Self-reported heart problem	11	3.1
Self-reported Liver problem	10	2.8
Self-reported stroke	10	2.8
Educational qualification	9	2.5
Self-reported diabetes	9	2.5
Smoking history	6	1.7
Sex	5	1.4
DASI Score	3	0.8

GPPAQ, General Practice Activity Questionnaire. KSQ, Kidney Symptom Questionnaire. SF-12, Short Form-12.

MCS, Mental Component Summary. PCS, Physical Component Summary. eGFR, estimated Glomerular

Filtration Rate. DASI, Duke Activity Status Index.

Supplementary Table 2. Complete Cases: Participant Baseline Demographic and Clinical Characteristics.

	Non-Frail	Frail	Unadjusted P Value
Age (years), mean (SD), NF n=72, F n=178	70.0 (10.4)	77.7 (8.9)	<0.001
Female, n (%), NF n=74, F n=180	40 (54)	100 (56)	0.83
Current or ex-smoker, n (%), NF n=74, F n=180	30 (41)	101 (56)	0.02
University/college qualification, n (%), NF n=74, F n=176	27 (36)	46 (26)	0.10
Self-reported health problems, n (%)			
- Diabetes, NF n=74, F n=178	8 (11)	33 (19)	0.13
- Heart, NF n=74, F n=178	9 (12)	61 (34)	<0.001
- Stroke, NF n=74, F n=178	3 (4)	21 (12)	0.06
- Blood vessels or circulation, NF n=74, F n=177	13 (18)	53 (30)	0.04
- Lung or breathing, NF n=73, F n=178	11 (15)	51 (29)	0.02
- Liver, NF n=74, F n=178	6 (8)	10 (6)	0.57
- Joints, bones or muscles, NF n=74, F n=177	31 (42)	128 (72)	<0.001
- Mental health, NF n=74, F n=177	13 (14)	27 (15)	0.72
Chronic kidney disease stage, n (%), NF n=74, F n=170			
- CKD G2	8 (11)	15 (9)	0.63
- CKD G3a	50 (68)	87 (51)	0.02
- CKD G3b	15 (20)	53 (31)	0.08
- CKD G4	1 (1)	15 (9)	0.045
Laboratory Variables, mean (SD)			
- eGFR (mL/min/1.73m ²), NF n=74, F n=170	50.5 (8.4)	45.5 (11.3)	<0.001
- Haemoglobin (g/L), NF n=72, F n=167	137.0 (21.1)	131.0 (16.5)	0.02
- Albumin (g/L), NF n=70, F n=165	42.2 (4.8)	39.1 (5.5)	<0.001
Frailty Components, n (%), NF n=75, F n=180			
- Weakness/slowness	3 (4)	136 (76)	<0.001
- Exhaustion	22 (29)	164 (91)	<0.001
- Low physical activity	29 (39)	164 (91)	<0.001
Slow walking pace, n (%), NF n=75, F n=179	3 (4)	99 (55)	<0.001
Estimated VO ₂ Peak, mean (SD), NF n=75, F n=180	33.9 (6.0)	21.7 (9.1)	<0.001
Total symptoms, mean (SD), NF n=59, F n=118	6.2 (2.8)	9.1 (2.2)	<0.001
Total symptom score, mean (SD), NF n=59, F n=118	12.7 (7.3)	23.9 (9.1)	<0.001
SF-12 PCS, mean (SD), NF n=75, F n=179	52.6 (5.6)	37.4 (10.9)	<0.001
SF-12 MCS, mean (SD), NF n=75, F n=179	53.9 (6.0)	50.1 (10.0)	<0.001

Data presented as mean (SD) or frequencies (%). NF, Non-Frail. F, Frail. VO₂ Peak, (peak oxygen uptake). SF-12, Short Form-12.

Supplementary Table 3. Complete Cases: Symptoms Experienced Frequently by Non-Frail and Frail Participants.

	Non-Frail	Frail	Unadjusted P Value	Difference in Frail vs. Non-Frail (%)
Loss of muscle strength, n (%), NF n=70, F n= 158	8 (11)	81 (51)	<0.001	↑40
Bone/joint pain, n (%), NF n=74, F n=174	24 (32)	117 (67)	<0.001	↑35
Breathlessness, n (%), NF n=70, F n=166	6 (9)	66 (40)	<0.001	↑31
Feeling cold, n (%), NF n=70, F n=169	11 (16)	78 (46)	<0.001	↑30
Tiredness, n (%), NF n=72, F n=172	23 (32)	103 (60)	<0.001	↑28
Cramp/muscle stiffness, n (%), NF n=69, F n=167	10 (14)	67 (40)	<0.001	↑26
Sleep disturbance, n (%), NF n=72, F n=169	19 (26)	81 (48)	0.002	↑22
Itching, n (%), NF n=71, F n=165	13 (18)	63 (38)	0.003	↑20
Poor concentration, n (%), NF n=71, F n=163	4 (6)	38 (23)	0.001	↑17
Urinary frequency, n (%), NF n=66, F n=156	30 (45)	94 (60)	0.04	↑15
Loss of appetite, n (%), NF n= 72, F n=159	2 (3)	19 (12)	0.03	↑9
Restless legs, n (%), NF n=72, F n=162	12 (17)	37 (23)	0.28	↑6

Data presented as frequencies (%). NF, Non-Frail. F, Frail.

Supplementary Table 4. Complete Cases: Association Between Frailty, Symptom-Burden and Health-Related Quality of Life.

	Unstandardised β Coefficient	SE	Standardised β Coefficient	Unadjusted P Value
KSQ total frequency score				
- Frailty	10.40	1.48	0.49	<0.001
- Age	-0.05	0.07	-0.05	0.52
- Female	5.58	1.40	0.28	<0.001
- eGFR	-0.24	0.06	-0.26	<0.001
- Haemoglobin	0.08	0.04	0.14	0.05
SF-12 PCS score				
- Frailty	-13.61	1.49	-0.52	<0.001
- Age	-0.12	0.07	-0.10	0.08
- Female	-2.29	1.36	-0.09	0.09
- eGFR	0.21	0.06	0.19	0.001
- Haemoglobin	-0.04	0.04	-0.07	0.25
SF-12 MCS score				
- Frailty	-5.24	1.40	-0.26	<0.001
- Age	0.19	0.07	0.21	0.005
- Female	-3.29	1.27	-0.18	0.01
- eGFR	0.07	0.06	0.08	0.27
- Haemoglobin	0.01	0.04	0.02	0.81

KSQ, Kidney Symptom Questionnaire. SF-12, Short Form-12.

Supplementary Table 5. Complete Cases: Association Between Frailty and Symptoms**Frequently Experienced.**

	SE	Unadjusted P Value	Odds Ratio	95% CI
Itching				
- Frailty	0.41	0.006	3.06	1.37-6.84
- Age	0.02	0.78	1.00	0.96-1.03
- Female	0.34	0.01	0.43	0.22-0.83
- eGFR	0.02	0.60	0.99	0.96-1.02
- Haemoglobin	0.01	0.28	0.99	0.97-1.01
Sleep disturbance				
- Frailty	0.36	0.002	3.00	1.47-6.09
- Age	0.02	0.25	0.98	0.95-1.01
- Female	0.32	0.005	2.45	1.31-4.61
- eGFR	0.02	0.38	0.99	0.96-1.02
- Haemoglobin	0.01	0.15	1.02	1.00-1.03
Loss of appetite				
- Frailty	0.83	0.31	2.33	0.46-11.85
- Age	0.03	0.10	1.06	0.99-1.13
- Female	0.53	0.25	1.85	0.65-5.26
- eGFR	0.02	0.06	0.96	0.91-1.00
- Haemoglobin	0.01	0.31	0.99	0.96-1.01
Tiredness				
- Frailty	0.36	<0.001	3.97	1.97-8.00
- Age	0.02	0.02	0.96	0.93-1.00
- Female	0.32	0.03	2.02	1.09-3.74
- eGFR	0.02	0.12	0.98	0.95-1.01
- Haemoglobin	0.01	1.00	1.00	0.98-1.02
Bone/joint pain				
- Frailty	0.34	<0.001	3.96	2.02-7.74
- Age	0.02	0.68	1.01	0.98-1.04
- Female	0.32	0.14	1.60	0.86-2.99
- eGFR	0.02	0.23	0.98	0.95-1.01
- Haemoglobin	0.01	0.51	0.99	0.98-1.01
Poor concentration				
- Frailty	0.59	0.004	5.64	1.76-18.09
- Age	0.02	0.44	0.98	0.94-1.03
- Female	0.42	0.12	1.95	0.85-4.45
- eGFR	0.02	0.20	0.98	0.94-1.01
- Haemoglobin	0.01	0.08	1.03	1.00-1.05
Loss of muscle strength				
- Frailty	0.45	<0.001	5.87	2.45-14.06
- Age	0.02	0.25	1.02	0.99-1.06
- Female	0.34	0.61	1.19	0.61-2.32
- eGFR	0.02	0.01	0.96	0.93-0.99
- Haemoglobin	0.01	0.24	1.01	0.99-1.03
Breathlessness				
- Frailty	0.49	<0.001	6.09	2.33-15.94
- Age	0.02	0.60	1.01	0.97-1.05
- Female	0.34	0.77	1.10	0.57-2.14
- eGFR	0.02	0.68	0.99	0.96-1.02
- Haemoglobin	0.01	0.07	0.98	0.97-1.00

Supplementary Table 5. *Continued.*

	SE	Unadjusted P Value	Odds Ratio	95% CI
<i>Cramp/muscle stiffness</i>				
- Frailty	0.42	0.001	4.02	1.77-9.14
- Age	0.02	0.96	1.00	0.97-1.03
- Female	0.34	0.11	1.71	0.89-3.30
- eGFR	0.02	0.14	0.98	0.95-1.01
- Haemoglobin	0.01	0.08	1.02	1.00-1.04
<i>Restless legs</i>				
- <i>Model P Value 0.63</i>	-	-	-	-
<i>Feeling cold</i>				
- Frailty	0.42	<0.001	4.60	2.03-10.43
- Age	0.02	0.44	0.99	0.96-1.02
- Female	0.32	0.40	1.31	0.70-2.47
- eGFR	0.02	0.10	0.98	0.95-1.01
- Haemoglobin	0.01	0.94	1.00	0.98-1.02
<i>Urinary frequency</i>				
- <i>Model P Value 0.20</i>	-	-	-	-