

1 **Supplementary materials**

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3 **Table S1. Frailty Screening Questionnaire (FSQ) items based on modified Fried**

4 **Criteria**

Item	CHS Component Component	FSQ	FSQ Definition
1	Slowness	Slowness	Have difficulty in walking 250 meters.
2	Weakness	Weakness	Have difficulty in lifting or carrying something weighing 5 kilograms.
3	Inactivity	Inactivity	Exercise <3 hours / week.
4	Exhaustion	Exhaustion	Everything I did was an effort OR I could not get "going".

5 Abbreviation: CHS, cardiovascular health study.

6 **Table S2. Demographic characteristics of the frailty status in different sex according**  
 7 **to the FSQ**

	Male		Female	
	Prefrail, n (%)	Frail, n (%)	Prefrail, n (%)	Frail, n (%)
<b>Living area</b>				
Urban	68(17.6)	21(5.4)**	113(27.0)	28(6.7)**
Rural	170(37.8)	40(8.9)	209(44.5)	105(22.3)
<b>Age (ys)</b>				
60-69	49(21.6)	6(2.6)**	71(29.2)	11(4.5)**
70-79	112(27.0)	24(5.8)	172(38.9)	53(12.0)
≥80	77(39.7)	31(16.0)	79(38.9)	69(34.0)

8 \*\* $P < 0.01$ .

9 Abbreviation: FSQ, frailty screening questionnaire in Beijing Longitudinal Study of Aging.

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**Table S3. The prevalence of frailty in different chronic diseases according to the FSQ**

	Total	Robust, n (%)	Prefrail, n (%)	Frail, n (%)
<b>Chronic disease**</b>	1724			
Yes	1517	821(54.1)	511(33.7)	185(12.2)
No	207	149(72.0)	49(23.7)	9(4.3)
<b>Hypertension*</b>	1715			
Yes	1056	575(54.5)	345(32.7)	136(12.9)
No	659	392(59.5)	209(31.7)	58(8.8)
<b>CHD**</b>	1724			
Yes	432	190(44.0)	168(38.9)	74(17.1)
No	1292	780(60.4)	392(30.3)	120(9.3)
<b>Diabetes</b>	1724			
Yes	131	80(61.1)	37(28.2)	14(10.7)
No	1593	890(55.9)	523(32.8)	180(11.3)
<b>Stroke**</b>	1724			
Yes	226	93(41.2)	77(34.1)	56(24.8)
No	1498	877(58.5)	483(32.2)	138(9.2)
<b>Dementia**</b>	1724			
Yes	90	8(8.8)	41(45.6)	41(45.6)
No	1634	962(58.9)	519(31.8)	153(9.4)
<b>Depression**</b>	1710			
Yes	254	34(13.4)	140(55.1)	80(31.5)
No	1456	933(64.1)	411(28.2)	112(7.7)
<b>Respiratory disease</b>	1724			
Yes	212	105(49.5)	79(37.3)	28(13.2)
No	1512	865(57.2)	481(31.8)	166(11.0)
<b>Digestive disease*</b>	1724			
Yes	186	86(46.2)	72(38.7)	28(15.1)
No	1538	884(57.5)	488(31.7)	166(10.8)
<b>Urinary disease</b>	1724			
Yes	176	109(61.9)	49(27.8)	18(10.2)
No	1548	861(55.6)	511(33.0)	176(11.4)
<b>Osteoarthritis**</b>	1724			
Yes	398	192(48.2)	150(37.7)	56(14.1)
No	1326	778(58.7)	410(30.9)	138(10.4)
<b>ENT disease*</b>	1724			
Yes	343	174(50.7)	118(34.4)	51(14.9)
No	1381	796(57.6)	442(32.0)	143(10.4)

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\*\* $P < 0.01$ . \* $P < 0.05$ .

Abbreviations: FSQ, frailty screening questionnaire in Beijing Longitudinal Study of Aging; CHD, coronary heart disease; ENT, ear, nose, throat.

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**Table S4. Prevalence of each frailty component according to FSQ**

	Total, n (%)	Male, n (%)	Female, n (%)
All sample	1724	836	888
<b>Components</b>			
Slowness**	263(15.3)	95(11.4)	168(18.9)
Weakness**	328(19.0)	103(12.3)	225(25.3)
Inactivity**	397(23.0)	153(18.3)	244(27.5)
Exhaustion**	377(21.9)	147(17.6)	230(25.9)
<b>Number of components**</b>			
0	970(56.3)	537(64.2)	433(48.8)
1	395(22.9)	174(20.8)	221(24.9)
2	165(9.6)	64(7.7)	101(11.4)
3	136(7.9)	48(5.7)	88(9.9)
4	58(3.4)	13(1.6)	45(5.1)

16 \*\* $P < 0.01$ .

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**Table S5. The effect of FSQ components on 8-year mortality by sex**

	Total, n (%)	Male, n (%)	Female, n (%)
All sample	573	303	270
<b>Components</b>			
Slowness			
No	404(27.7)	232(31.3)	172(23.9)
Yes	169(64.3)**	71(74.7)**	98(58.3)**
Weakness			
No	383(24.7)	237(32.3)	146(22.0)
Yes	190(57.9)**	66(64.1)**	124(55.1)**
Inactivity			
No	378(28.5)	219(32.1)	159(24.7)
Yes	195(49.1)**	84(54.9)**	111(45.5)**
Exhaustion			
No	403(29.9)	230(33.4)	173(26.3)
Yes	170(45.1)**	73(49.7)**	97(42.2)**
<b>FSQ</b>			
Robust	224(23.1)	146(27.2)	78(18.0)
Prefrail	226(40.4)	113(47.5)	113(35.1)
Frail	123(63.4)**	44(72.1)**	79(59.4)**

18 \*\* $P < 0.01$ .19 Abbreviations: FSQ, frailty screening questionnaire in Beijing Longitudinal Study of  
20 Aging.

**Table S6. The effect of FSQ components on 8-year mortality by age**

	60-69, n (%)	70-79, n (%)	≥80, n (%)
All sample	61	263	249
<b>Components</b>			
Slowness			
No	48(10.8)	206(27.5)	150(56.0)
Yes	13(52.0)**	57(52.3)**	99(76.7)**
Weakness			
No	51(11.5)	199(27.8)	133(56.1)
Yes	10(35.7)**	64(45.7)**	116(72.5)**
Inactivity			
No	49(12.3)	186(27.5)	143(57.2)
Yes	12(17.1)	77(42.8)**	106(72.1)**
Exhaustion			
No	44(11.0)	189(28.4)	170(60.1)
Yes	17(23.9)**	74(38.5)**	79(69.3)
<b>FSQ</b>			
Robust	34(10.2)	120(24.2)	70(49.6)
Prefail	19(15.8)	105(37.0)	102(65.4)
Frail	8(47.1)**	38(49.4)**	77(77.0)**

22 \*\* $P < 0.01$ .23 Abbreviations: CHS, cardiovascular health study; FSQ, frailty screening questionnaire in  
24 Beijing Longitudinal Study of Aging.

**Table S7 Comparisons of frailty instruments based on Fried phenotype and self-reported instruments**

Category	Instrument	Population		Frailty components			Simple to apply				Primary use		Validity		C p
		Origin	Cross-culture	Physical function	Cognition	Social function	Time (<5 min)	Special equipment	Assessor training	Data CGA	Frailty risk factor	Frailty biomarker	Large sample (>1000)	Agreement with criteria	
<b>Instruments based on Fried phenotype</b>	<b>CHS</b>	USA	√	√	×	×	×	√	√	×	√	√	√	-	
	<b>SOF</b>	USA	√	√	×	×	√	×	×	×	√	Unknown	√	Unknown	
	<b>FRAIL</b>	USA	√	√	×	×	√	×	×	√	√	√	√	Unknown	
<b>Self-reported Instrument</b>	<b>GFST</b>	France	Unknown	√	√	√	×	×	√	×	Unknown	Unknown	×	√	U
	<b>SPQ</b>	Canada	×	√	√	√	√	×	×	×	Unknown	Unknown	×	Unknown	U
	<b>TFI</b>	Netherlands	Unknown	√	×	√	×	×	×	√	√	Unknown	×	Unknown	
	<b>PRISMA-7</b>	Canada	√	√	×	√	×	×	×	×	Unknown	Unknown	×	√	U
	<b>GFI</b>	Netherlands	Unknown	√	√	√	×	×	×	×	Unknown	Unknown	×	√	U
	<b>FiND</b>	France	Unknown	√	×	×	√	×	×	√	Unknown	Unknown	×	√	U
	<b>MCPS</b>	Italy	Unknown	√	√	√	×	×	×	×	Unknown	Unknown	×	Unknown	U
	<b>BRHS</b>	UK	Unknown	√	×	×	√	×	×	Unknown	Unknown	Unknown	√	√	
<b>PLFI</b>	USA	Unknown	√	×	×	√	×	×	Unknown	√	Unknown	√	Unknown		

	<b>sWHI</b>	USA	Unknown	√	×	×	√	×	×	Unknown	Unknown	Unknown	√	√
	<b>FSQ</b>	China	Unknown	√	×	×	√	×	×	√	√	Unknown	√	Unknown

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29 Abbreviations: CHS, cardiovascular health study; SOF, study of osteoporotic fracture; FRAIL, Fatigue, Resistance, Ambulation, Illness and Loss of weight index; GFST, G erontop ole  
30 frailty screening tool; SPQ, Sherbrooke postal questionnaire; PRISMA-7, Program on research for integrating services for the maintenance of autonomy-7; TFI, Tilburg Frailty  
31 Indicator; FiND, Frail Non-Disabled instrument; MCPS, Marigliano-Cacciafesta polypathology scale; BRHS, self-reported information on the Fried frailty components in British  
32 Regional Heart Study; PLFI, Paulson-Lichtenberg Frailty Index; sWHI, simplified Women’s Health Initiative; FSQ, frailty screening questionnaire in Beijing Longitudinal Study of  
33 Aging.

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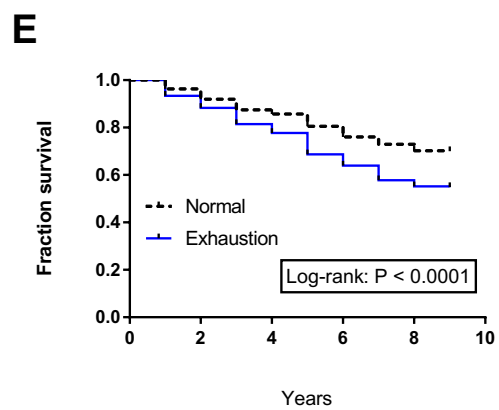
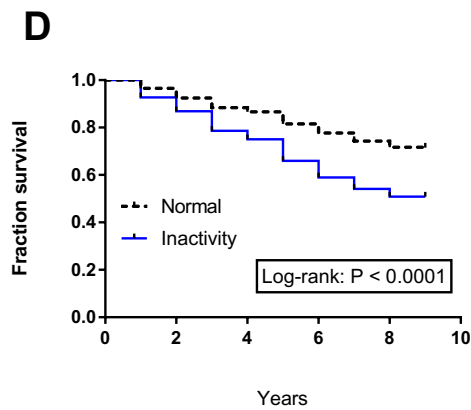
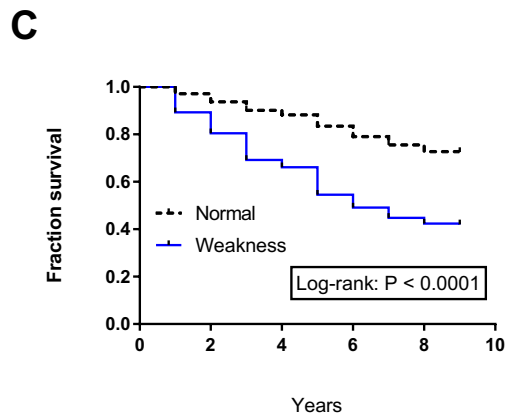
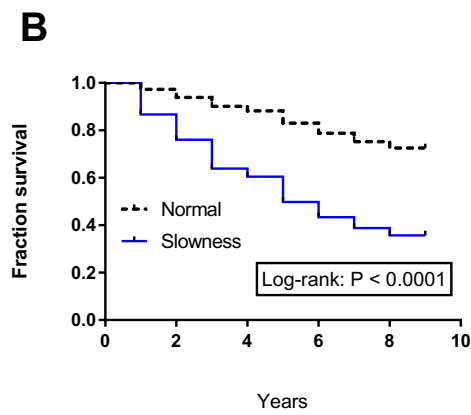
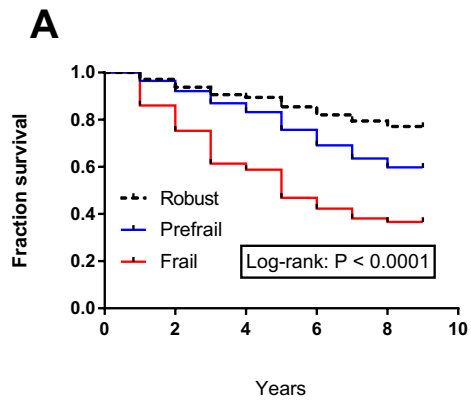
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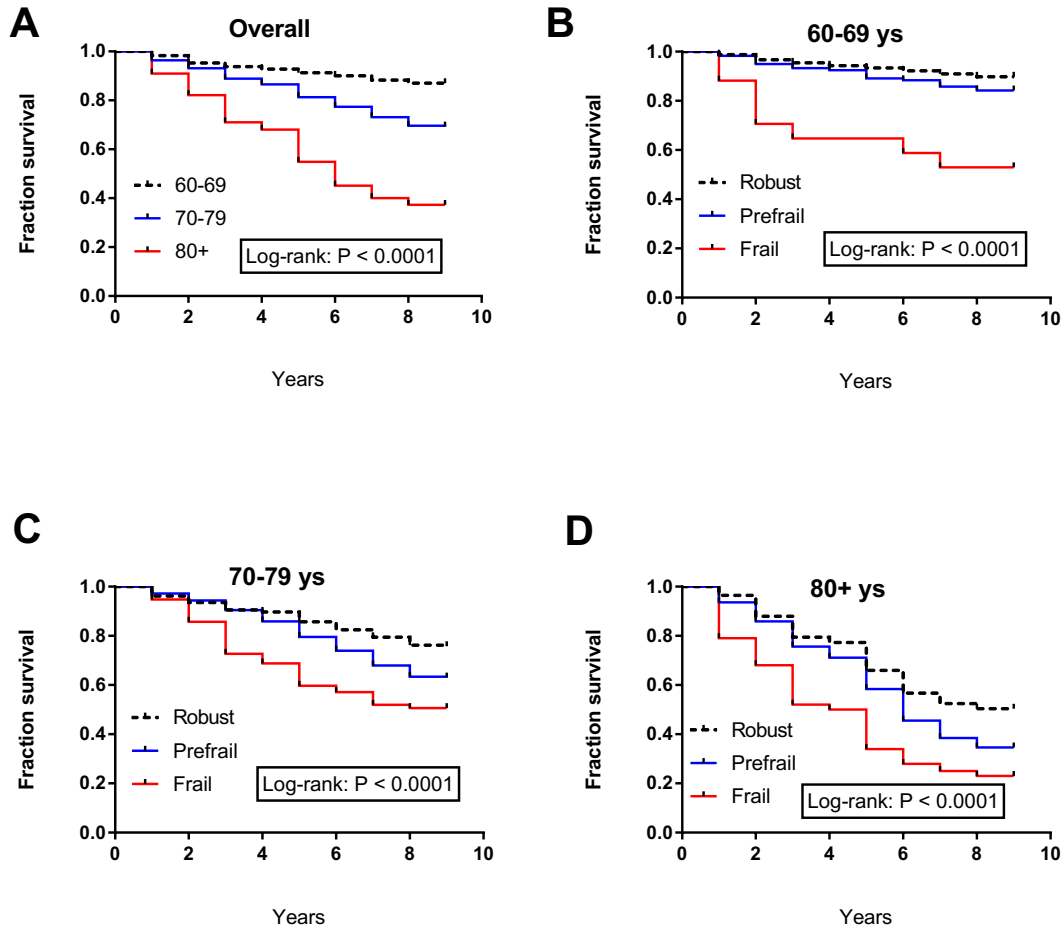
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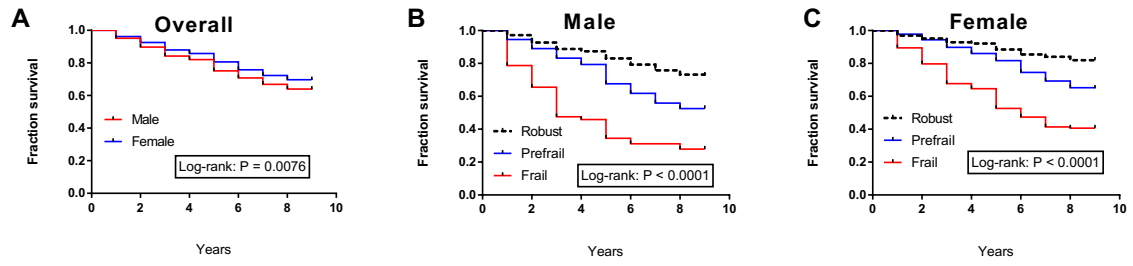




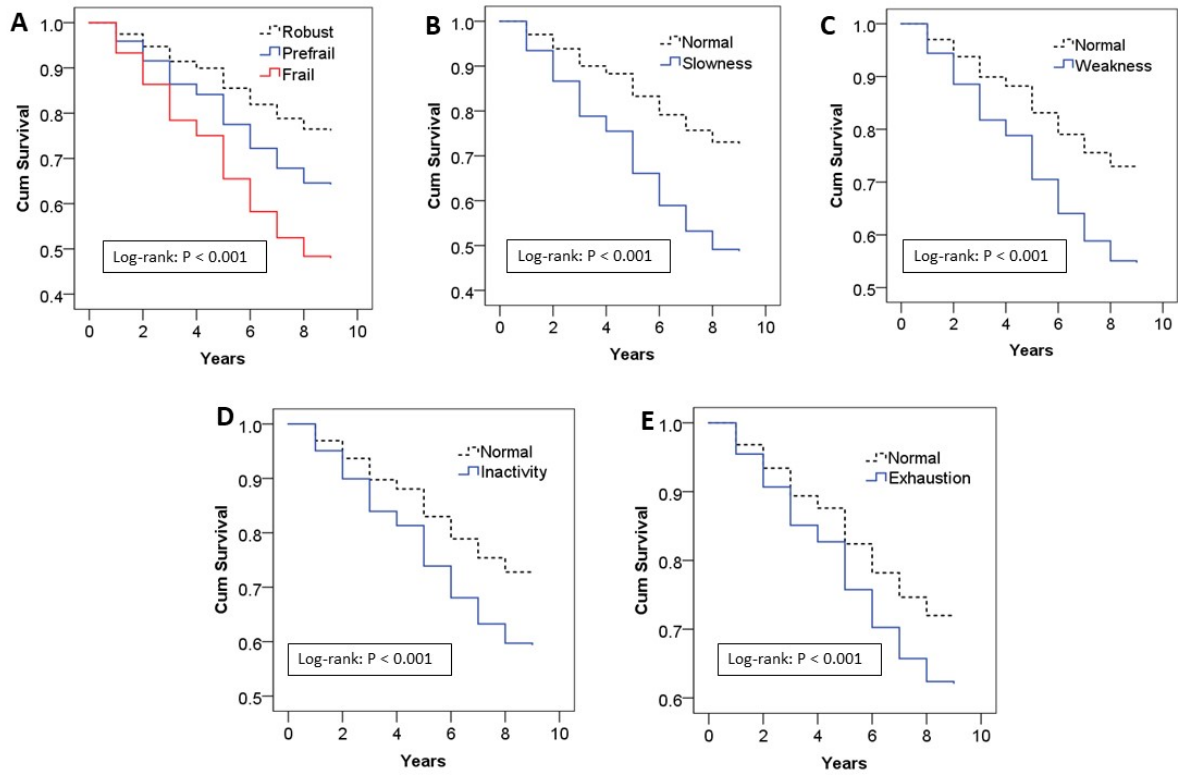
**Figure S1. Survival curve for frailty and each component.**



**Figure S2. Kaplan-Meier curves for the proportional survival of people with different frail status in different age group.**



**Figure S3. Kaplan-Meier curves for the proportional survival of people with different frail status in different sex group.**



**Figure S4. Survival curve for frailty status and each component adjusts for age and sex.**