

## Pooled mean differences for QOL measures for people with and without frailty

Measure / study	Not frail			Frail			Weight	Mean difference IV, random, 95% CI
	Mean	SD	N	Mean	SD	N		
SF-36 Physical function								
Chang 2012	79.5	19.9	352	54.8	26.2	22	16.7%	24.70 [13.56, 35.84]
Jurschik 2012	68.4	26.3	473	24.3	24.4	50	20.2%	44.10 [36.93, 51.27]
Lenardt 2014	77.5	23.4	164	61.1	27.9	39	18.2%	16.40 [6.94, 25.86]
Lin 2011	83.1	26.5	841	62.7	18.8	92	22.4%	20.40 [16.16, 24.64]
Masel 2009	50.9	31	811	23.3	24.2	20	22.5%	27.60 [23.63, 31.57]
Subtotal (95% CI)			2641			40	100.0%	26.80 [18.47, 35.13]

Heterogeneity:  $\tau^2 = 76.02$ ;  $\chi^2 = 35.83$ ,  $df = 4$  ( $P < 0.00001$ );  $I^2 = 89\%$

Test for overall effect:  $Z = 6.31$  ( $P < 0.00001$ )

SF-36 Role—Physical								
Chang 2012	76.7	39.5	352	45.5	48.6	22	14.5%	31.20 [10.48, 51.92]
Jurschik 2012	82.8	32.5	473	42.4	46.3	50	19.6%	40.40 [27.24, 53.56]
Lenardt 2014	85.2	32.2	164	71.1	41.1	39	19.2%	14.10 [0.29, 27.91]
Lin 2011	88.7	53.5	841	78.2	38	92	22.8%	10.50 [1.93, 19.07]
Masel 2009	62.7	45.8	811	31.4	43.2	20	23.9%	31.30 [24.53, 38.07]
Subtotal (95% CI)			2641			40	100.0%	25.03 [13.19, 36.87]

Heterogeneity:  $\tau^2 = 140.75$ ;  $\chi^2 = 22.32$ ,  $df = 4$  ( $P = 0.0002$ );  $I^2 = 82\%$

Test for overall effect:  $Z = 4.14$  ( $P < 0.0001$ )

SF-36 Bodily pain								
Chang 2012	78.2	21.3	352	59.2	17.4	22	19.2%	19.00 [11.40, 26.60]
Jurschik 2012	40.9	15.8	473	42	19.7	50	20.9%	-1.10 [-6.74, 4.54]
Lenardt 2014	67.4	30.7	164	60.4	30.7	39	16.3%	7.00 [-3.72, 17.72]
Lin 2011	82.4	26.7	841	74.3	19.1	92	21.9%	8.10 [3.80, 12.40]
Masel 2009	68.4	28.7	811	49.7	31	20	21.6%	18.70 [13.97, 23.43]
Subtotal (95% CI)			2641			40	100.0%	10.38 [2.56, 18.20]

Heterogeneity:  $\tau^2 = 67.77$ ;  $\chi^2 = 34.19$ ,  $df = 4$  ( $P < 0.00001$ );  $I^2 = 88\%$

Test for overall effect:  $Z = 2.60$  ( $P = 0.009$ )

SF-36 General health								
Chang 2012	60.2	14.1	352	48.7	18.9	22	19.1%	11.50 [3.47, 19.53]
Jurschik 2012	68.4	26.3	473	24.3	24.4	50	19.5%	44.10 [36.93, 51.27]
Lenardt 2014	73.9	22.6	164	71.4	17	39	19.9%	2.50 [-3.86, 8.86]

Lin 2011	63.8	31.5	841	49.2	22.3	92	20.4%	14.60 [9.57, 19.63]
Masel 2009	61.2	20.1	811	43.5	20.9	20	21.0%	17.70 [14.49, 20.91]
Subtotal (95% CI)			2641			40	100.0%	18.01 [7.17, 28.86]

Heterogeneity:  $\tau^2 = 143.11$ ;  $\chi^2 = 77.70$ ,  $df = 4$  ( $P < 0.00001$ );  $I^2 = 95\%$

Test for overall effect:  $Z = 3.26$  ( $P = 0.001$ )

#### SF-36 Vitality

Chang 2012	71.2	17.9	352	55.9	19.4	22	15.9%	15.30 [6.98, 23.62]
Jurschik 2012	58	17.6	473	40.8	18.5	50	21.2%	17.20 [11.83, 22.57]
Lenardt 2014	78.9	21.4	164	75	24.4	39	15.9%	3.90 [-4.43, 12.23]
Lin 2011	74.9	30.2	841	63.2	21.5	92	22.2%	11.70 [6.86, 16.54]
Masel 2009	64.6	21.7	811	44.6	22.6	20	24.7%	20.00 [16.53, 23.47]
Subtotal (95% CI)			2641			40	100.0%	14.25 [9.17, 19.32]

Heterogeneity:  $\tau^2 = 24.09$ ;  $\chi^2 = 16.46$ ,  $df = 4$  ( $P = 0.002$ );  $I^2 = 76\%$

Test for overall effect:  $Z = 5.50$  ( $P < 0.00001$ )

#### SF-36 Social functioning

Chang 2012	89	14.1	352	67.6	21.7	22	17.7%	21.40 [12.21, 30.59]
Jurschik 2012	87.5	21.3	473	59.6	3.9	50	22.1%	27.90 [25.70, 30.10]
Lenardt 2014	89	25	164	85.6	25.6	39	18.0%	3.40 [-5.50, 12.30]
Lin 2011	93.8	24.2	841	80.2	17.2	92	21.4%	13.60 [9.72, 17.48]
Masel 2009	77.1	28.8	811	47.8	33.8	20	20.8%	29.30 [24.21, 34.39]
Subtotal (95% CI)			2641			40	100.0%	19.57 [11.12, 28.02]

Heterogeneity:  $\tau^2 = 82.91$ ;  $\chi^2 = 64.74$ ,  $df = 4$  ( $P < 0.00001$ );  $I^2 = 94\%$

Test for overall effect:  $Z = 4.54$  ( $P < 0.00001$ )

#### SF-36 Role—Emotional

Chang 2012	89.1	28.7	352	71.2	44	22	16.3%	17.90 [-0.73, 36.53]
Jurschik 2012	87.7	29.8	473	54.4	48.4	50	19.1%	33.30 [19.62, 46.98]
Lenardt 2014	88.4	30.9	164	81.1	36.5	39	19.8%	7.30 [-5.09, 19.69]
Lin 2011	90.9	44.2	841	85.9	31.5	92	22.4%	5.00 [-2.10, 12.10]
Masel 2009	83.5	35.9	811	52.8	48.3	20	22.4%	30.70 [23.56, 37.84]
Subtotal (95% CI)			2641			40	100.0%	18.72 [5.35, 32.09]

Heterogeneity:  $\tau^2 = 194.81$ ;  $\chi^2 = 32.73$ ,  $df = 4$  ( $P < 0.00001$ );  $I^2 = 88\%$

Test for overall effect:  $Z = 2.74$  ( $P = 0.006$ )

#### SF-36 Mental health

Chang 2012	79.3	14.4	352	67.5	17.3	22	17.3%	11.80 [4.42, 19.18]
Jurschik 2012	73.9	22.2	473	54.6	29.7	50	15.1%	19.30 [10.83, 27.77]
Lenardt 2014	80.1	21.7	164	76.4	23.4	39	15.9%	3.70 [-4.36, 11.76]
Lin 2011	81	26.5	841	73.7	18.9	92	24.6%	7.30 [3.04, 11.56]

Masel 2009	80.2	18.5	811	66.2	21.4	200	27.1%	14.00 [10.77, 17.23]
Subtotal (95% CI)			2641			403	100.0%	11.13 [6.56, 15.71]

Heterogeneity: Tau<sup>2</sup> = 17.39; Chi<sup>2</sup> = 12.90, df = 4 (P = 0.01); I<sup>2</sup> = 69%

Test for overall effect: Z = 4.77 (P < 0.00001)

#### SF-36 Physical Component Summary

Chang 2012	48.5	8.3	352	39.5	7.8	22	22.5%	9.00 [5.63, 12.37]
Lin 2011	49.3	10.6	841	42.6	7.6	92	38.2%	6.70 [4.99, 8.41]
Masel 2009	38.8	12	811	29.1	9.9	200	39.3%	9.70 [8.10, 11.30]
Subtotal (95% CI)			2004			314	100.0%	8.40 [6.24, 10.55]

Heterogeneity: Tau<sup>2</sup> = 2.40; Chi<sup>2</sup> = 6.45, df = 2 (P = 0.04); I<sup>2</sup> = 69%

Test for overall effect: Z = 7.64 (P < 0.00001)

#### SF-36 Mental Component Summary

Chang 2012	53.6	8.7	352	43.3	12.3	22	26.9%	10.30 [5.08, 15.52]
Lin 2011	55.4	12.4	841	52.6	8.8	92	36.5%	2.80 [0.82, 4.78]
Masel 2009	55.8	9.7	811	46.9	12.7	200	36.7%	8.90 [7.02, 10.78]
Subtotal (95% CI)			2004			314	100.0%	7.05 [2.18, 11.93]

Heterogeneity: Tau<sup>2</sup> = 15.95; Chi<sup>2</sup> = 21.54, df = 2 (P < 0.0001); I<sup>2</sup> = 91%

Test for overall effect: Z = 2.83 (P = 0.005)

#### WHOQOL-BREF Physical

Chang 2016	60.9	13.3	161	43.5	13.5	78	24.4%	17.40 [13.77, 21.03]
Gobbens 2013	79.3	11.4	745	60.1	14.7	286	67.4%	19.20 [17.31, 21.09]
Kanauchi 2008	66.3	13.2	77	51.8	14.7	24	8.2%	14.50 [7.92, 21.08]
Subtotal (95% CI)			983			388	100.0%	18.38 [16.46, 20.30]

Heterogeneity: Tau<sup>2</sup> = 0.49; Chi<sup>2</sup> = 2.30, df = 2 (P = 0.32); I<sup>2</sup> = 13%

Test for overall effect: Z = 18.75 (P < 0.00001)

#### WHOQOL-BREF Psychological

Chang 2016	65.8	10.1	161	48.8	13	78	35.5%	17.00 [13.72, 20.28]
Gobbens 2013	69.1	10.8	745	58.3	11.6	286	41.3%	10.80 [9.25, 12.35]
Kanauchi 2008	65.2	13.4	77	52.7	14.5	24	23.1%	12.50 [5.97, 19.03]
Subtotal (95% CI)			983			388	100.0%	13.40 [8.80, 17.99]

Heterogeneity: Tau<sup>2</sup> = 12.66; Chi<sup>2</sup> = 11.24, df = 2 (P = 0.004); I<sup>2</sup> = 82%

Test for overall effect: Z = 5.72 (P < 0.00001)

#### WHOQOL-BREF Social

Chang 2016	63.8	10.3	161	55.8	10.5	78	39.1%	8.00 [5.18, 10.82]
Gobbens 2013	69.3	14.3	745	56.9	16.1	286	42.2%	12.40 [10.27, 14.53]
Kanauchi 2008	57.3	15.8	77	53.6	17	24	18.7%	3.70 [-3.96, 11.36]
Subtotal (95% CI)			983			388	100.0%	9.06 [4.80, 13.31]

8 %

Heterogeneity:  $\tau^2 = 9.99$ ;  $\chi^2 = 9.10$ ,  $df = 2$  ( $P = 0.01$ );  $I^2 = 78\%$

Test for overall effect:  $Z = 4.17$  ( $P < 0.0001$ )

#### WHOQOL-BREF Environment

Chang 2016	65.6	7.9	161	58	9.5	78	38.7%	7.60 [5.16, 10.04]
Gobbens 2013	76.4	11.1	745	66.1	12.8	28	49.4%	10.30 [8.62, 11.98]
Kanauchi 2008	64.8	9	77	52.1	14.6	24	11.9%	12.70 [6.52, 18.88]
Subtotal (95% CI)			983			38	100.0%	9.54 [7.19, 11.89]
						8		

Heterogeneity:  $\tau^2 = 2.16$ ;  $\chi^2 = 4.22$ ,  $df = 2$  ( $P = 0.12$ );  $I^2 = 53\%$

Test for overall effect:  $Z = 7.96$  ( $P < 0.00001$ )

#### CASP-19 Total

ELSA (Hubbard 2014)	44.6	8.4	2778	33.6	9.5	42	54.9%	11.00 [10.05, 11.95]
Wu 2013	38.3	7	682	34.1	8.9	17	45.1%	4.20 [-0.06, 8.46]
Subtotal (95% CI)			3460			44	100.0%	7.93 [1.30, 14.56]
						5		

Heterogeneity:  $\tau^2 = 20.64$ ;  $\chi^2 = 9.31$ ,  $df = 1$  ( $P = 0.002$ );  $I^2 = 89\%$

Test for overall effect:  $Z = 2.34$  ( $P = 0.02$ )



