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| **Study****Supplementary Table 4. Assessment method and outcomes of individual studies assessing body composition, muscle strength and physical function** | **Outcome measures** | **Significant effect** |
| Abe et al., 2016 | Muscle strengthPhysical function | HGS, right hand10 metre walk time | MCT, HGS, p<0.01MCT, 10 metre walk time, p<0.05 |
| Aleman-Mateo et al., 2012 | Body compositionMuscle strength | DEXA HGS  | HGS, p=0.06 |
| Aquiliani et al., 2008 | Muscle strengthPhysical function | Cycle ergometer power output 6 minute walk distance  | Cycle ergometer, p<0.016 minute walk distance, p<0.01 |
| Bakhitiari et al., 2012 | Body composition | BIA  | Soy, BIA p<0.05 |
| Bauer et al., 2015 | Muscle strengthPhysical function | HGS, both hands SPPB | NS |
| Björkman et al., 2012 | Body compositionMuscle strengthPhysical function | BIA HGS, non-specified hand MDS ADL  | NS |
| Bonnefoy et al., 2003 | Body compositionPhysical function | TBW 6 metre walk time  | NS |
| Bonnefoy et al., 2010 | Body composition | TBW  | NS |
| Bouillanne et al., 2013 | Body compositionMuscle strengthPhysical function | DEXA, BIA HGS, non-specified hand Katz ADL  | DEXA, p=0.01 |
| Cameron et al., 2011 | Muscle strengthPhysical function | HGS, dominant hand Barthel Index  | NS |
| Chapman et al., 2009 | Body compositionMuscle strengthPhysical function | DEXA HGS, non-specified hand 15 foot walk time  | HGS, p=0.029 |
| Collins et al., 2005 | Physical function | SF-12 PCS  | NS |
| Dal Negro et al., 2010 | Body compositionPhysical function | BIA Physical activity per week  | BIA, p=0.05Physical activity, p<0.01 |
| Dal Negro et al., 2012 | Body compositionMuscle strengthPhysical function | BIA HGS, non-specified hand Physical activity per week  | BIA, p=0.04HGS, p<0.01Physical activity, p<0.01 |
| Dangour et al., 2011 | Physical function | TUG  | NS |
| Dreyer et al., 2013 | Muscle strengthPhysical function | Quadriceps strength, operated leg Pedometer data  | NS |
| Espaulella et al., 2000 | Physical function | Barthel Index  | NS |
| Fiatarone et al., 1994 | Muscle strengthPhysical function | Hip and knee ES, both legs Usual gait velocity  | NS |
| Gariballa and Forster, 2007 | Physical function | SF-36 PCS  | NR  |
| Kim et al., 2012 | Body compositionMuscle strengthPhysical function | BIA Knee ES, non-specified leg Usual gait velocity  | NS/NR |
| Kim and Lee, 2013 | Muscle strengthPhysical function | HGS, non-specified hand SPPB  | SPPB, p=0.04 |
| Lauque et al., 2000 | Muscle strength | HGS, non-specified hand  | NS |
| Lauque et al., 2004 | Body compositionPhysical function | DEXA Katz ADL  | NS/NR |
| Leenders et al., 2011 | Body compositionMuscle strength | DEXA Quadriceps strength, both legs  | NS |
| McMurdo et al., 2009 | Muscle strengthPhysical function | HGS, non-dominant hand Accelerometer data  | HGS, p<0.01Accelerometry, p=0.02 |
| Miller et al., 2006 | Muscle strengthPhysical function | Quadriceps strength, injured leg SF-12 PCS  | NS |
| Myint et al., 2013 | Muscle strengthPhysical function | HGS, dominant hand Elderly Mobility Score  | NS |
| Ng et al., 2015 | Muscle strengthPhysical function | Knee ES, dominant leg Maximal gait speed  | NR |
| Payette et al., 2002 | Muscle strengthPhysical function | HGS, both hands TUG  | NS |
| Persson et al., 2007 | Muscle strengthPhysical function | HGS, dominant hand SF-36 PCS  | NS |
| Rondanelli et al., 2011 | Muscle strengthPhysical function | HGS, ‘best’ hand Barthel Index  | HGS, p<0.01Barthel Index, p=0.04 |
| Rosendahl et al., 2006 | Muscle strengthPhysical function | Hip and knee ES, both legs Usual gait velocity  | NS |
| Schurch et al., 1998 | Muscle strengthPhysical function | Biceps strength, dominant arm Katz ADL  | NS |
| Smoliner et al., 2008 | Body compositionMuscle strengthPhysical function | BIA HGS, non-dominant hand SF-36 PCS  | NS |
| Sugawara et al., 2012 | Body compositionMuscle strengthPhysical function | Anthropometry Quadriceps strength 6 minute walk distance  | Quadriceps strength, p<0.016 minute walk distance, p=0.01  |
| Tieland et al., 2012 | Body compositionMuscle strengthPhysical function | DEXA HGS, both hands SPPB  | SPPB, p=0.02 |
| Volkert et al., 1996 | Physical function | Barthel Index  | IG compliers, Barthel Index, p<0.05 |
| Yamada et al., 2015 | Body compositionPhysical function | BIA Physical activity per day  | BIA, p<0.001 |
| Zak et al. 2009 | Muscle strengthPhysical function | Hip and knee ES, both legs 6 minute walk distance  | NS |

ADL: activities of daily living; BIA: body impedance analysis; DEXA: dual-energy X-ray absorptiometry; ES: extensor strength; HGS: handgrip strength; MCT: medium chain triglycerides; NR: not reported; PCS: physical component score; SF-12: Short Form-12 Health Survey; SF-36: Short Form-36 Health Survey; SPPB: Short Physical Performance Battery; TBW: total body water; TUG: timed up-and-go.