Table H-8. Strength of evidence for Key Question 2: muscle strength exercise for multiple sclerosis

| **Intervention****Category,****Intervention** | **Comparator** | **Outcome** | **Number of Studies (Participants)****Author Year****(See Appendix B for Full Citation)** | **Study Limitations** | **Consistency** | **Precision** | **Reporting Bias** | **Strength of Evidence** | **Findings, Direction and Magnitude of Effect** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Strength Interventions** Muscle Strength Exercise | *Usual care, previous activity level or attention control* | Walking *Immediately Post-treatment*  | **6MWT**5 (N=161)Kalron, 2017Duff, 2018Dalgas, 2009/2010Callesen, 2019Tollar, 2020**2MWT**3 (N=153) Kjolhede, 2016Kalron, 2017Dodd, 2011**10MWT**2 (N= 132)Fox, 2016Dalgas, 2009/2010**MSWS-12**3 (N=165)Kalron, 2017Fox, 2016Callesen, 2019**25FWT**2 (N=65)Kjolhede, 2016Callesen, 2019 | Moderate  | Consistent | Imprecise | Undetected | Low-strength evidence for no clear benefit | **6MWT** p5 trials, MD–12.69 meters, 95% CI –29.45 to 4.07, I2=0%**2MWT**p3 trials, MD –3.3 meters, 95% CI –11.92 to 2.81, I2=0%**10MWT** p3 trials, MD –1.04 seconds, 95% CI –2.48 to 0.69, I2=0% **MSWS-12 (0-100 scale)**–1.36, 95% CI –4.83 to 2.10, I2=26%**25FWT**p2 trials, MD –0.07 m/s, 95% CI –0.19 to 0.05, I2=47% |
| **Strength Interventions** Muscle Strength Exercise | *Usual care, previous activity level or attention control* | Walking *Short term* | **10MWT**2 (N= 132)Fox, 2016Dalgas, 2009/2010 | Moderate | Consistent | Imprecise | Undetected | Low-strength evidence for no clear benefit | **10MWT** p2 trials, MD –1.27, 95% CI –2.75 to 0.22, I2=0% |
| **Strength Interventions** Muscle Strength Exercise | *Usual care, previous activity level or attention control* | Functional capacity *Immediately Post treatment*  | **TUG**3 (N=113)Duff, 2018Bulguroglu, 2017Kalron, 2017**SSST**2 (N=65)Marandi, 2013a/bCallesen, 2019 | Moderate | Consistent | Imprecise | Undetected | Low-strength evidence for no clear benefit | **TUG**MD –1.30 seconds, 95% CI –4.38 to –1.78, I2=0%**SSST**MD –2.88, 95% CI –7.51 to 1.74, I2=95% |
| **Strength Interventions** Muscle Strength Exercise | *Usual care, previous activity level or attention control* | Quality of Life *Immediately Post-treatment* | **MSQol/SF36 MCS**3 (N=100)Duff, 2018Bulguroglu, 2017Dalgas, 2010 | Moderate | Consistent | Imprecise | Undetected | Low-strength evidence for no clear benefit | **MSQol/SF36 MCS** **(0-100 scale)**MD –3.48, 95% CI –6.61 to -0.27, I2=0% |
| **Strength Interventions** Muscle Strength Exercise | *Usual care, previous activity level or attention control* | Quality of Life *Immediately Post-treatment* | **MSQol/SF36 PCS**3 (N=100)Duff, 2018Bulguroglu, 2017Dalgas, 2010 | Moderate | Consistent | Imprecise | Undetected | Low-strength evidence for no clear benefit | **MSQol/SF36 PCS** **(0-100 scale)**MD –2.77, 95% CI –6.88 to 3.12, I2= 34% |
| **Strength Interventions** Muscle Strength Exercise | *Usual care, previous activity level or attention control* | Quality of Life *Immediately Post-treatment* | **EQ5D total**1 (N=26)Tollar, 2020 | Moderate | Consistent | Imprecise | Undetected | Low-strength evidence for no clear benefit | 13.9 (1.44) vs. 13.3 (0.89) (baseline)–0.5 (1.16) vs. 0.0 (1.3) (followup)Difference –0.5, 95% CI –1.5 to 0.5 |
| **Strength Interventions** Muscle Strength Exercise | *Usual care, previous activity level or attention control* | Balance | **ABCS**2 (N=132)Bulguroglu, 2017Fox, 2016**FABS**1 (N=30)Duff, 2018**BBS**2 (N=71)Kalron, 2017Tollar, 2020**6 (N=319)** | Moderate | Consistent | Imprecise | Undetected | Low-strength evidence for no clear benefit | **ABCS (3 trials):**MD –0.30, 95% CI –1.38 to 0.77, I2=27%**FABS (1 study):**MD 0.1, 95% CI –5.43 to 5.63**BBS (2 studies):** –0.93, 95% CI –2.87 to 1.01, I2=14%MD  |

Abbreviations: 6MWT = 6-Minute Walk Test; 10MWT = 10-Meter Walk Test; 25FWT = 25-Feet Walk Test; ABCS = Activities-Specific Balance Confidence Scale; BBB Berg Balance Scale; CI = confidence interval; EQ-5D = EuroQOL-5 Dimension Questionnaire; FABS = Fullerton Advanced Balance Scale; MD = mean difference; CI = confidence interval; MS = multiple sclerosis; MSQoL-MCS = Multiple Sclerosis Quality of Life–54 instrument Mental Component Score; MSQoL-PCS = Multiple Sclerosis Quality of Life–54 instrument Physical Component Score; MSWS-12 = Multiple Sclerosis Walking Scale; NA = not applicable; RCT = randomized controlled trial; SF-36 MCS = Short-Form 36 Mental Component Summary; SF-36 PCS = Short-Form 36 Physical Component Score; SSST = Six Spot Step Test; TUG = Timed Up and Go Test