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, 2017  Duff, 2018  Dalgas, 2009/2010  Callesen, 2019  Tollar, 2020  **2MWT**  3 (N=153)  Kjolhede, 2016  Kalron, 2017  Dodd, 2011  **10MWT**  2 (N= 132)  Fox, 2016  Dalgas, 2009/2010  **MSWS-12**  3 (N=165)  Kalron, 2017  Fox, 2016  Callesen, 2019  **25FWT**  2 (N=65)  Kjolhede, 2016  Callesen, 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, 2016  Dalgas, 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, 2018  Bulguroglu, 2017  Kalron, 2017  **SSST**  2 (N=65)  Marandi, 2013a/b  Callesen, 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, 2018  Bulguroglu, 2017  Dalgas, 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, 2018  Bulguroglu, 2017  Dalgas, 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, 2017  Fox, 2016  **FABS**  1 (N=30)  Duff, 2018  **BBS**  2 (N=71)  Kalron, 2017  Tollar, 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