Table A1: Summary of Resistance Training Protocol

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Study** | **Control** | **Intervention** | **Single Session Duration** | **Repetitions** | **Max Strength** | **Frequency** | **# sessions** | **Duration** |
| Baker 2001 | Attention control, 7 home visits and nutritional education | Home based strengthening | Not reported | 2 sets of 12 | highest successful weight was taken as 1 RM. Ideally, the 1 RM was obtained in 6-8 reps | 3x/ week | 48 | 4 months |
| Chaipinyo 2009 | Balance training | ST: isometric knee extension in sitting | Not reported | 30 | contract as hard as they could without pain | 5x/week | 20 | 4 weeks |
| DeVita 2018 | no attention | quad strengthening - leg extension, leg press and forward lunge | 60 mins | 3 sets of 10 | initially 60% 3RM ->2 weeks 70% 3RM then 8 weeks at 85% 3RM | 3x/week | 36 | 12 weeks |
| Ettinger 1997 | aerobic vs health education program | leg extension, leg curl, step up, heel raise, chest fly, upright row, military press, biceps curl, and a pelvic tilt | 60 mins | 2 sets of 12 | 1.1kg -> increased if 2 sets of 10 reps, then 2 sets of 12 reps for 3 days. | 3x/ week | 216 | 18 months |
| Foroughi 2011 | Sham exercise (same exercises, minimal resistance) | HI RT - pneumatic resistance machines knee extension, standing hip abduction and adduction; and bilateral knee flexion, leg press, and plantar-flexion | Not reported | 3 sets of 8 | 80% of 1 RM | 3x/ week | 72 | 6 months |
| Jan 2008 | No intervention | HR vs LR - full knee extension and flexion | 30 mins in HR vs 50 mins in LR | HR 3 sets of 8; LR 10 sets of 15 | 60% of 1RM in HR, 10% of 1RM in LR | 3x/ week | 24 | 8 weeks |
| Jorge 2015 | Waiting list control | Progressive resistance exercise | Not reported | 2 sets of 8 | 2 sets of 8 reps at 50% 1RM -> 2nd set 70% 1RM, load re-eval q2weeks | 2x/ week | 24 | 12 weeks |
| Lin 2009 | control (no exercise) vs seated proprioception training | ST - seated knee concentric/ eccentric quad strengthening | ST - not reported, PR - 20 mins per extremity | 4 sets of 6 | 50% of 1 RM, with a progressive increment of 5% of the original 1-RM every 2 weeks, as long as the increased resistance did not elicit knee pain. | 3x/ week | 24 | 8 weeks |
| McKnight 2010 | self-management/ education vs combined | strength training | Not reported | 2 sets of 6 -> 2 sets of 10 | depended on participants needs | 3x/ week | 312 | 24 months |
| Milesky 2006 | ROM | Strength training leg presses, leg curls, seated chest presses, seated back rows (upper exercises included for balance) | Not reported | 3 sets of 8-10 | 8-12RM | 3x/week to 5x/week @7month | 36 | 15 months |
| Rogers 2012 | vs KBA, KBA + RT, or Control | RT - elastic resistance bands for open chain LE exercises | Not reported | 15 reps | adding greater stretch to band to give greater resistance or by moving up to next strength of resistance band | 3x/week | 24 | 8 weeks |
| Topp 2002 | none | ST - Dynamic group (functional ROM) vs isometric (discrete joint angles) | 30 mins | 1 set of 8 -> 3 sets of 12 | increased resistance using rating of perceived exertion of fatigue after 8 reps | 3x/week | 48 | 16 weeks |

Table A2: The Cochrane Collaboration’s Tool for Assessing Risk of Bias in Randomized Trials

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Author, year (reference)** | **Random Sequence Generation** | **Allocation Concealment** | **Blinding of Participants and personnel** | **Incomplete outcome data** | **Selective reporting** | **other bias** |
| Baker 2001 | - | - | **+** | - | **?** | **?** |
| Chaipinyo 2009 | - | - | **+** | + | **?** | - |
| DeVita 2018 | - | **+** | **?** | - | - | - |
| Ettinger 1997 | - | - | **+** | - | **?** | **?** |
| Foroughi 2011 | - | - | **?** | **+** | - | **?** |
| Jan 2008 | - | **?** | **?** | **+** | **?** | **?** |
| Jorge  2015 | - | - | **+** | - | **?** | **?** |
| Lin 2009 | - | - | **+** | - | **?** | **?** |
| McKnight 2010 | - | - | **+** | - | **?** | **?** |
| Milesky 2006 | **?** | **?** | **?** | - | **?** | **?** |
| Rogers 2012 | - | - | **+** | - | - | - |
| Topp 2002 | - | - | **+** | - | **?** | **?** |

|  |  |
| --- | --- |
| **Key** | |
| **High Risk** | **+** |
| **Low Risk** | **-** |
| **Uncertainty of Risk** | **?** |

Table A3: Function Outcomes Following Resistance Training Protocol

|  |  |  |  |
| --- | --- | --- | --- |
| **Study** | **Functional Outcomes** | **Effect Size** | **Magnitude of Effect** |
| Baker 2001 | WOMAC Pain  WOMAC Physical Function | 1.05  1.03 | Large  Large |
| Chaipinyo 2009 | KOOS strength  KOOS balance  KOOS Pain - strength  KOOS Pain - balance | 0.89  0.45  0.64  0.97 | Large  Small  Medium  Medium |
| DeVita 2018 | WOMAC pain  WOMAC phy fxn | 0.97  1.13 | Large  Large |
| Ettinger 1997 | KPS NA | N/A | N/A |
| Foroughi 2011 | WOMAC Pain  WOMAC Total | 0.62  0.70 | Medium  Medium |
| Jan 2008 | WOMAC Pain High  WOMAC Pain Low  WOMAC Physical Function: high  WOMAC Physical Function low | 1.01  1.00  1.34  1.30 | Large  Large  Large  Large |
| Jorge 2015 | WOMAC Pain EG  WOMAC Physical Function EG | 1.14  1.12 | Large  Large |
| Lin 2009 | WOMAC Pain - Proprioception  WOMAC Pain - Strength WOMAC Physical Function - Proprioception  WOMAC Physical Function - Strength | 1.20 1.39 0.89 1.93 | Large  Large  Large  Large |
| McKnight 2010 | WOMAC Pain - Combo  WOMAC Pain - Strength  WOMAC Pain – SM  WOMAC Disability – Combo  WOMAC Disability Strength WOMAC Disability - SM | 0.70  0.24  0.59  0.43  0.43  0.43 | Medium  Small  Medium  Medium  Small  Small |
| Milesky 2006 | N/A | N/A | N/A |
| Rogers 2012 | WOMAC Pain  WOMAC Physical Function | 1.29  1.34 | Large  Large |
| Topp 2002 | WOMAC Pain - Dynamic  WOMAC Pain - Isometric  WOMAC Functional - Dynamic  WOMAC Functional | 0.53  0.43  0.53  0.20 | Medium  Small  Medium  Small |