**Supplemental Digital Content 5: Study methodological characteristics and results for the association between muscular endurance and MSK-I in females.**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Author, Country, Population** | **Quality** | **Sample Size** | **Follow-Up** | **MSK-I Type** | **Fitness Test** | **Strength of Association** | | | | | | |
| **Crude Association** | | | **Association with Adjustments** | | | **Direction of Association** |
| **Push-Ups** |  |  |  |  |  |  | | |  | | |  |
| Finestone et al. (14),  Israel, Army (BCT) | Poor | 81 | 16 wk | Overuse  (Stress Fx) | PU  until failure | NS | | | NS | | | ≠ |
| Allison et al. (1),  USA, Army (BCT) | Poor | 416 | 9 wk | Overuse | 1-min  PU | NSa | | | No data provided | | | ≠ |
| Knapik et al. (35),  USA, Army (BCT) | Poor | 898 | 9 wk | A/T & O | 1-min  PU | ***Lowest quartile:***  RR=1.48 (1.14-1.93, *p˂*0.01) | | | -- | | | + |
| Jones et al. (28),  USA, Army (BCT) | Poor | 138 | 8 wk | A/T & O | 2-min  PU | NS | | | -- | | | ≠ |
| Knapik et al. (31),  USA, Army (BCT) | Fair | 299 | 8 wk | A/T & O | 2-min  PU | NS | | | NS | | | ≠ |
| Knapik et al. (37),  USA, Army | Fair | 39 | 1 year | A/T & O | 2-min  PU | NS | | | NS | | | ≠ |
|  |  |  |  |  |  |
| **Sit-Ups** |  |  |  |  |  |  |  |  | |  |  | |
| Finestone et al. (14),  Israel, Army (BCT) | Poor | 81 | 16 wk | Overuse  (Stress Fx) | SU  until failure | NS | | | NS | | | ≠ |
| Allison et al. (1),  USA, Army (BCT) | Poor | 416 | 9 wk | Overuse | 1-min  SU | NS | | | NS | | | ≠ |
| Knapik et al. (35),  USA, Army (BCT) | Poor | 898 | 9 wk | A/T & O | 1-min  SU | ***Lowest 2 quartiles:***  RR=1.56 (1.19-2.04, *p˂*0.01)  RR = 1.36 (1.04-1.78, *p=*0.03) | | | -- | | | + |
| Jones et al. (28),  USA, Army (BCT) | Poor | 163 | 8 wk | A/T & O | 2-min  SU | NS | | | -- | | | ≠ |
| Knapik et al. (31),  USA, Army (BCT) | Fair | 299 | 8 wk | A/T & O | 2-min  SU | NS | | | NS | | | ≠ |
| Knapik et al. (37),  USA, Army | Fair | 42 | 1 year | A/T & O | 2-min  SU | NS | | | NS | | | ≠ |

BCT=Basic Combat Training, A/T & O=Acute/Traumatic and Overuse, PU=Push-Up, SU=Sit-Up, RR=Risk Ratio, HR=Hazard Ratio, OR=Odds Ratio, NS=Non-Significant

aOR calculated from 2x2 table.

++, Significant multivariate association between low ME/MS and increased MSK-I risk

+, Significant univariate association between low levels of ME/MS and increased MSK-I risk

- -,Significant multivariate association between high levels of ME/MS and increased MSK-I risk

- ,Significant univariate association between high levels of ME/MS and increased MSK-I risk

≠, No significant association