

# Meta-analysis: Dose-response relationship in Treadmill Training

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# 1 Results

## 1.1 Treadmill vs Other

### 1.1.1 Walking Endurance

#### 1.1.1.1 Intensity

	SMD	95%-CI	%W(random)	Intensity
Aguiar 2020	0.6923	[-0.1731; 1.5577]	6.0	LOW:HIGH
Brauer 2022	0.1479	[-0.2299; 0.5257]	10.1	LOW:MODERATE
Combs-Miller 2014	-0.0884	[-0.9654; 0.7887]	5.9	MODERATE:MODERATE
Gama 2017	0.0273	[-0.8085; 0.8631]	6.2	LOW:LOW
Hornby 2019i	1.0296	[ 0.4975; 1.5616]	8.7	LOW:HIGH
Hornby 2019ii	0.9491	[ 0.4124; 1.4857]	8.6	LOW:HIGH
Kang 2012i	0.1116	[-0.7657; 0.9890]	5.9	LOW:MODERATE
Kang 2012ii	1.0323	[ 0.0867; 1.9778]	5.4	LOW:MODERATE
MacKay-Lyons 2013	0.6377	[ 0.0372; 1.2382]	8.1	LOW:MODERATE
Macko 2005	1.5392	[ 0.8639; 2.2145]	7.4	LOW:HIGH
Nave 2019	0.1880	[-0.1237; 0.4996]	10.6	LOW:MODERATE
Park 2013i	-0.2891	[-1.1712; 0.5930]	5.9	LOW:LOW
Park 2013ii	0.0852	[-0.7918; 0.9622]	5.9	LOW:LOW
Park 2015	0.9514	[-0.0104; 1.9131]	5.3	LOW:LOW

Number of studies: k = 14

Number of observations: o = 642

	SMD	95%-CI	t	p-value
Random effects model	0.5118	[0.2036; 0.8199]	3.59	0.0033

Quantifying heterogeneity:

$\tau^2 = 0.1929$  [0.0277; 0.6167];  $\tau = 0.4392$  [0.1664; 0.7853]

$I^2 = 60.1\%$  [28.3%; 77.8%];  $H = 1.58$  [1.18; 2.12]

Quantifying residual heterogeneity:

$\tau^2 = 0.1115$ ;  $\tau = 0.3339$ ;  $I^2 = 11.1\%$  [0.0%; 51.3%];  $H = 1.06$  [1.00; 1.43]

Test of heterogeneity:

Q d.f. p-value

32.58 13 0.0020

Results for subgroups (random effects model):

	k	SMD	95%-CI	$\tau^2$	$\tau$	Q
Intensity = LOW:LOW	4	0.1698	[-0.6468; 0.9864]	0.1115	0.3339	3.72
Intensity = MODERATE:MODERATE	1	-0.0884	[-1.1827; 1.0059]	0.1115	0.3339	0.00
Intensity = LOW:MODERATE	5	0.3530	[-0.0773; 0.7833]	0.1115	0.3339	4.73
Intensity = LOW:HIGH	4	1.0667	[ 0.5401; 1.5933]	0.1115	0.3339	2.80
$I^2$						
Intensity = LOW:LOW	19.4%					
Intensity = MODERATE:MODERATE	--					
Intensity = LOW:MODERATE	15.4%					
Intensity = LOW:HIGH	0.0%					

Test for subgroup differences (random effects model):

	Q	d.f.	p-value
Between groups	14.78	3	0.0020
Within groups	11.25	10	0.3381

Details on meta-analytical method:

- Inverse variance method
- Sidik-Jonkman estimator for  $\tau^2$   
(assuming common  $\tau^2$  in subgroups)
- Q-Profile method for confidence interval of  $\tau^2$  and  $\tau$
- Hartung-Knapp adjustment for random effects model (df = 13)
- Hedges' g (bias corrected standardised mean difference; using exact formulae)

## 1.1.1.2 Amount

Warning: Redundant predictors dropped from the model.

	SMD	95%-CI	%W(random)	amount.mins.delta.f
Aguiar 2020	0.6923	[-0.1731; 1.5577]	6.0	Equal
Brauer 2022	0.1479	[-0.2299; 0.5257]	10.1	Equal
Combs-Miller 2014	-0.0884	[-0.9654; 0.7887]	5.9	Equal
Gama 2017	0.0273	[-0.8085; 0.8631]	6.2	Equal
Hornby 2019i	1.0296	[ 0.4975; 1.5616]	8.7	Lower
Hornby 2019ii	0.9491	[ 0.4124; 1.4857]	8.6	Lower
Kang 2012i	0.1116	[-0.7657; 0.9890]	5.9	Equal
Kang 2012ii	1.0323	[ 0.0867; 1.9778]	5.4	Equal
MacKay-Lyons 2013	0.6377	[ 0.0372; 1.2382]	8.1	Equal
Macko 2005	1.5392	[ 0.8639; 2.2145]	7.4	Equal
Nave 2019	0.1880	[-0.1237; 0.4996]	10.6	Equal
Park 2013i	-0.2891	[-1.1712; 0.5930]	5.9	Equal
Park 2013ii	0.0852	[-0.7918; 0.9622]	5.9	Equal
Park 2015	0.9514	[-0.0104; 1.9131]	5.3	Equal

Number of studies: k = 14

Number of observations: o = 642

	SMD	95%-CI	t	p-value
Random effects model	0.5118	[0.2036; 0.8199]	3.59	0.0033

Quantifying heterogeneity:

$\tau^2 = 0.1929$  [0.0277; 0.6167];  $\tau = 0.4392$  [0.1664; 0.7853]

$I^2 = 60.1\%$  [28.3%; 77.8%];  $H = 1.58$  [1.18; 2.12]

Quantifying residual heterogeneity:

$\tau^2 = 0.1729$ ;  $\tau = 0.4158$ ;  $I^2 = 48.4\%$  [2.0%; 72.8%];  $H = 1.39$  [1.01; 1.92]

Test of heterogeneity:

Q d.f. p-value  
32.58 13 0.0020

Results for subgroups (random effects model):

	k	SMD	95%-CI	$\tau^2$	$\tau$	Q
amount.mins.delta.f = Lower	2	0.9894	[0.4781; 1.5007]	0.1729	0.4158	0.04
amount.mins.delta.f = Equal	12	0.4106	[0.0719; 0.7492]	0.1729	0.4158	23.21
	$I^2$					
amount.mins.delta.f = Lower	0.0%					
amount.mins.delta.f = Equal	52.6%					

Test for subgroup differences (random effects model):

	Q	d.f.	p-value
Between groups	13.25	1	0.0003
Within groups	23.25	12	0.0257

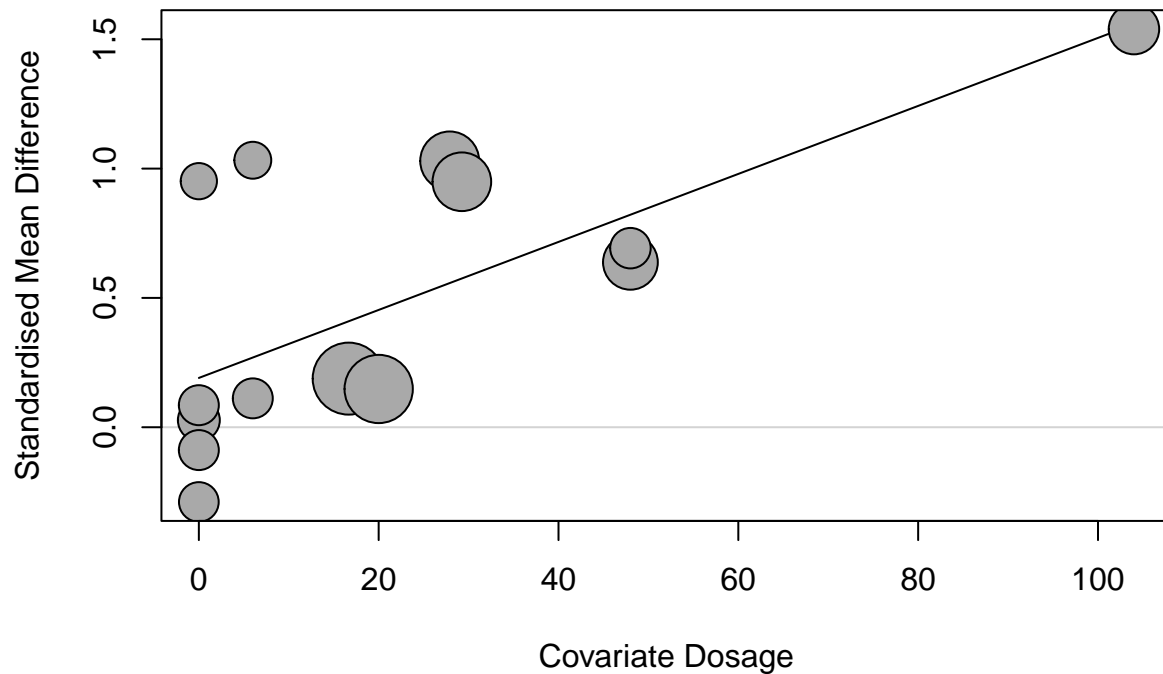
Details on meta-analytical method:

- Inverse variance method
- Sidik-Jonkman estimator for  $\tau^2$   
(assuming common  $\tau^2$  in subgroups)

- Q-Profile method for confidence interval of  $\tau^2$  and  $\tau$
- Hartung-Knapp adjustment for random effects model ( $df = 13$ )
- Hedges'  $g$  (bias corrected standardised mean difference; using exact formulae)

## 1.1.1.3 Dosage

```
##
## Mixed-Effects Model (k = 14; tau^2 estimator: SJ)
##
## tau^2 (estimated amount of residual heterogeneity):      0.1070 (SE = 0.0668)
## tau (square root of estimated tau^2 value):            0.3271
## I^2 (residual heterogeneity / unaccounted variability): 52.26%
## H^2 (unaccounted variability / sampling variability):    2.09
## R^2 (amount of heterogeneity accounted for):            44.53%
##
## Test for Residual Heterogeneity:
## QE(df = 12) = 16.0665, p-val = 0.1882
##
## Test of Moderators (coefficient 2):
## F(df1 = 1, df2 = 12) = 11.9581, p-val = 0.0047
##
## Model Results:
##
##      estimate      se    tval  df    pval   ci.lb   ci.ub
## intrcpt    0.1906  0.1392  1.3690  12  0.1961  -0.1127  0.4938
## Dosage     0.0131  0.0038  3.4580  12  0.0047   0.0049  0.0214  **
##
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```



## 1.1.2 Walking Speed

## 1.1.2.1 Intensity

Warning in metacont(Exp.post.n, Exp.post.minus.pre.mean.sel,  
Exp.post.minus.pre.sd.sel, : Note, studies with non-positive values for sd.e or  
sd.c get no weight in meta-analysis.

	SMD	95%-CI	%W(random)	Intensity
Aguiar 2020	-0.3501	[-1.1935; 0.4933]	5.8	LOW:HIGH
Brauer 2022	0.1931	[-0.1851; 0.5712]	10.6	LOW:MODERATE
Combs-Miller 2014	-0.2282	[-1.1082; 0.6518]	5.5	MODERATE:MODERATE
Eich 2004	0.9756	[ 0.3867; 1.5646]	8.2	LOW:HIGH
Gama 2017	-0.0314	[-0.7723; 0.7094]	6.6	LOW:LOW
Kang 2012i	0.0000	[-0.8765; 0.8765]	5.5	LOW:MODERATE
Kang 2012iii	1.2113	[ 0.2410; 2.1817]	4.9	LOW:MODERATE
Kim & Yim 2017	0.7699	[ 0.0113; 1.5286]	6.5	LOW:LOW
Laufer 2001	0.3926	[-0.4009; 1.1860]	6.2	LOW:LOW
MacKay-Lyons 2013	0.3830	[-0.2073; 0.9733]	8.1	LOW:MODERATE
Nave 2019	0.2013	[-0.0984; 0.5010]	11.5	LOW:MODERATE
Park 2013i	NA		0.0	LOW:LOW
Park 2013iii	0.0000	[-0.8765; 0.8765]	5.5	LOW:LOW
Pohl 2002	1.0978	[ 0.4285; 1.7671]	7.3	LOW:HIGH
Pohl 2002	0.4060	[-0.2208; 1.0328]	7.8	LOW:HIGH

Number of studies: k = 14

Number of observations: o = 659

	SMD	95%-CI	t	p-value
Random effects model	0.3647	[0.0996; 0.6298]	2.97	0.0108

Quantifying heterogeneity:

$\tau^2 = 0.1394$  [0.0000; 0.4592];  $\tau = 0.3734$  [0.0000; 0.6776]

$I^2 = 39.5\%$  [0.0%; 67.9%];  $H = 1.29$  [1.00; 1.76]

Quantifying residual heterogeneity:

$\tau^2 = 0.1495$ ;  $\tau = 0.3866$ ;  $I^2 = 37.8\%$  [0.0%; 69.4%];  $H = 1.27$  [1.00; 1.81]

Test of heterogeneity:

Q d.f. p-value  
21.50 13 0.0636

Results for subgroups (random effects model):

	k	SMD	95%-CI	$\tau^2$	$\tau$	Q
Intensity = LOW:LOW	4	0.2901	[-0.3166; 0.8968]	0.1495	0.3866	2.74
Intensity = MODERATE:MODERATE	1	-0.2282	[-1.3895; 0.9331]	0.1495	0.3866	0.00
Intensity = LOW:MODERATE	5	0.3315	[-0.1497; 0.8128]	0.1495	0.3866	4.46
Intensity = LOW:HIGH	4	0.5885	[-0.4063; 1.5832]	0.1495	0.3866	8.87
	$I^2$					
Intensity = LOW:LOW	0.0%					
Intensity = MODERATE:MODERATE	--					
Intensity = LOW:MODERATE	10.4%					
Intensity = LOW:HIGH	66.2%					

Test for subgroup differences (random effects model):

	Q	d.f.	p-value
Between groups	1.62	3	0.6560
Within groups	16.08	10	0.0973

Details on meta-analytical method:

- Inverse variance method
- Sidik-Jonkman estimator for  $\tau^2$   
(assuming common  $\tau^2$  in subgroups)
- Q-Profile method for confidence interval of  $\tau^2$  and  $\tau$
- Hartung-Knapp adjustment for random effects model (df = 13)
- Hedges' g (bias corrected standardised mean difference; using exact formulae)



## 1.1.2.2 Amount

	SMD	95%-CI	%W(random)	amount.mins.delta.f
Aguiar 2020	-0.3501	[-1.1935; 0.4933]	5.8	Equal
Brauer 2022	0.1931	[-0.1851; 0.5712]	10.6	Equal
Combs-Miller 2014	-0.2282	[-1.1082; 0.6518]	5.5	Equal
Eich 2004	0.9756	[ 0.3867; 1.5646]	8.2	Equal
Gama 2017	-0.0314	[-0.7723; 0.7094]	6.6	Equal
Kang 2012i	0.0000	[-0.8765; 0.8765]	5.5	Equal
Kang 2012iii	1.2113	[ 0.2410; 2.1817]	4.9	Equal
Kim & Yim 2017	0.7699	[ 0.0113; 1.5286]	6.5	Higher
Laufer 2001	0.3926	[-0.4009; 1.1860]	6.2	Equal
MacKay-Lyons 2013	0.3830	[-0.2073; 0.9733]	8.1	Equal
Nave 2019	0.2013	[-0.0984; 0.5010]	11.5	Equal
Park 2013i	NA		0.0	Equal
Park 2013iii	0.0000	[-0.8765; 0.8765]	5.5	Equal
Pohl 2002	1.0978	[ 0.4285; 1.7671]	7.3	Lower
Pohl 2002	0.4060	[-0.2208; 1.0328]	7.8	Lower

Number of studies: k = 14

Number of observations: o = 659

	SMD	95%-CI	t	p-value
Random effects model	0.3647	[0.0996; 0.6298]	2.97	0.0108

Quantifying heterogeneity:

$\tau^2 = 0.1394$  [0.0000; 0.4592];  $\tau = 0.3734$  [0.0000; 0.6776]

$I^2 = 39.5\%$  [0.0%; 67.9%];  $H = 1.29$  [1.00; 1.76]

Quantifying residual heterogeneity:

$\tau^2 = 0.1307$ ;  $\tau = 0.3616$ ;  $I^2 = 33.5\%$  [0.0%; 66.5%];  $H = 1.23$  [1.00; 1.73]

Test of heterogeneity:

Q	d.f.	p-value
21.50	13	0.0636

Results for subgroups (random effects model):

	k	SMD	95%-CI	$\tau^2$	$\tau$	Q
amount.mins.delta.f = Lower	2	0.7416	[-3.6513; 5.1345]	0.1307	0.3616	2.19
amount.mins.delta.f = Equal	11	0.2590	[-0.0342; 0.5522]	0.1307	0.3616	14.37
amount.mins.delta.f = Higher	1	0.7699	[-0.2682; 1.8081]	0.1307	0.3616	0.00
	$I^2$					
amount.mins.delta.f = Lower	54.3%					
amount.mins.delta.f = Equal	30.4%					
amount.mins.delta.f = Higher	--					

Test for subgroup differences (random effects model):

	Q	d.f.	p-value
Between groups	2.39	2	0.3033
Within groups	16.55	11	0.1219

Details on meta-analytical method:

- Inverse variance method
- Sidik-Jonkman estimator for  $\tau^2$

- (assuming common  $\tau^2$  in subgroups)
- Q-Profile method for confidence interval of  $\tau^2$  and  $\tau$
  - Hartung-Knapp adjustment for random effects model (df = 13)
  - Hedges' g (bias corrected standardised mean difference; using exact formulae)

## 1.1.2.3 Dosage

Warning: 1 study with NAs omitted from model fitting.

Mixed-Effects Model (k = 14; tau<sup>2</sup> estimator: SJ)

tau<sup>2</sup> (estimated amount of residual heterogeneity): 0.1436 (SE = 0.0707)  
 tau (square root of estimated tau<sup>2</sup> value): 0.3789  
 I<sup>2</sup> (residual heterogeneity / unaccounted variability): 59.73%  
 H<sup>2</sup> (unaccounted variability / sampling variability): 2.48  
 R<sup>2</sup> (amount of heterogeneity accounted for): 0.00%

Test for Residual Heterogeneity:

QE(df = 12) = 19.3736, p-val = 0.0799

Test of Moderators (coefficient 2):

F(df1 = 1, df2 = 12) = 0.7110, p-val = 0.4156

Model Results:

	estimate	se	tval	df	pval	ci.lb	ci.ub
intrcpt	0.2544	0.1804	1.4099	12	0.1840	-0.1387	0.6475
Dosage	0.0055	0.0065	0.8432	12	0.4156	-0.0087	0.0197

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Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

## 1.2 Treadmill vs Treadmill

### 1.2.1 Walking Endurance

#### 1.2.1.1 Intensity

	SMD	95%-CI	%W(random)	Intensity
Ada 2013	0.5730	[ 0.0837; 1.0622]	14.9	MODERATE:MODERATE
Alipsatici 2020	0.3188	[-0.4274; 1.0650]	12.9	MODERATE:HIGH
An 2020	2.2640	[ 1.4084; 3.1197]	12.0	MODERATE:MODERATE
Broderick 2019	0.0347	[-0.6810; 0.7504]	13.2	LOW:LOW
Kim & Kang 2018	0.8451	[ 0.0520; 1.6381]	12.5	MODERATE:MODERATE
Kim & Kim 2018a	1.0860	[ 0.1989; 1.9731]	11.8	MODERATE:MODERATE
Krzisnik 2021	-0.3841	[-1.2291; 0.4609]	12.1	LOW:LOW
Munari 2018	0.4607	[-0.5714; 1.4927]	10.6	LOW:HIGH

Number of studies: k = 8

Number of observations: o = 248

	SMD	95%-CI	t	p-value
Random effects model	0.6393	[-0.0164; 1.2950]	2.31	0.0545

Quantifying heterogeneity:

$\tau^2 = 0.4754$  [0.0937; 2.4389];  $\tau = 0.6895$  [0.3060; 1.5617]

$I^2 = 71.2\%$  [40.5%; 86.0%];  $H = 1.86$  [1.30; 2.68]

Quantifying residual heterogeneity:

$\tau^2 = 0.3413$ ;  $\tau = 0.5842$ ;  $I^2 = 66.7\%$  [13.5%; 87.2%];  $H = 1.73$  [1.08; 2.80]

Test of heterogeneity:

Q	d.f.	p-value
24.28	7	0.0010

Results for subgroups (random effects model):

	k	SMD	95%-CI	$\tau^2$	$\tau$	Q
Intensity = LOW:LOW	2	-0.1637	[-2.8208; 2.4934]	0.3413	0.5842	0.55
Intensity = MODERATE:MODERATE	4	1.1431	[-0.0334; 2.3197]	0.3413	0.5842	11.48
Intensity = LOW:HIGH	1	0.4607	[-1.0809; 2.0023]	0.3413	0.5842	0.00
Intensity = MODERATE:HIGH	1	0.3188	[-1.0480; 1.6856]	0.3413	0.5842	0.00
	$I^2$					
Intensity = LOW:LOW	0.0%					
Intensity = MODERATE:MODERATE	73.9%					
Intensity = LOW:HIGH	--					
Intensity = MODERATE:HIGH	--					

Test for subgroup differences (random effects model):

	Q	d.f.	p-value
Between groups	9.66	3	0.0217
Within groups	12.03	4	0.0172

Details on meta-analytical method:

- Inverse variance method
- Sidik-Jonkman estimator for  $\tau^2$   
(assuming common  $\tau^2$  in subgroups)

- Q-Profile method for confidence interval of  $\tau^2$  and  $\tau$
- Hartung-Knapp adjustment for random effects model ( $df = 7$ )
- Hedges'  $g$  (bias corrected standardised mean difference; using exact formulae)

## 1.2.1.2 Amount

	SMD	95%-CI	%W(random)	amount.mins.delta.f
Ada 2013	0.5730	[ 0.0837; 1.0622]	14.9	Higher
Alipsatici 2020	0.3188	[-0.4274; 1.0650]	12.9	Equal
An 2020	2.2640	[ 1.4084; 3.1197]	12.0	Equal
Broderick 2019	0.0347	[-0.6810; 0.7504]	13.2	Equal
Kim & Kang 2018	0.8451	[ 0.0520; 1.6381]	12.5	Equal
Kim & Kim 2018a	1.0860	[ 0.1989; 1.9731]	11.8	Equal
Krzisnik 2021	-0.3841	[-1.2291; 0.4609]	12.1	Equal
Munari 2018	0.4607	[-0.5714; 1.4927]	10.6	Equal

Number of studies: k = 8

Number of observations: o = 248

	SMD	95%-CI	t	p-value
Random effects model	0.6393	[-0.0164; 1.2950]	2.31	0.0545

Quantifying heterogeneity:

$\tau^2 = 0.4754$  [0.0937; 2.4389];  $\tau = 0.6895$  [0.3060; 1.5617]

$I^2 = 71.2\%$  [40.5%; 86.0%];  $H = 1.86$  [1.30; 2.68]

Quantifying residual heterogeneity:

$\tau^2 = 0.5539$ ;  $\tau = 0.7442$ ;  $I^2 = 75.3\%$  [47.6%; 88.3%];  $H = 2.01$  [1.38; 2.93]

Test of heterogeneity:

Q	d.f.	p-value
24.28	7	0.0010

Results for subgroups (random effects model):

	k	SMD	95%-CI	$\tau^2$	$\tau$	Q
amount.mins.delta.f = Equal	7	0.6521	[-0.1420; 1.4461]	0.5539	0.7442	24.26
amount.mins.delta.f = Higher	1	0.5730	[-0.9656; 2.1115]	0.5539	0.7442	0.00
	$I^2$					
amount.mins.delta.f = Equal	75.3%					
amount.mins.delta.f = Higher	--					

Test for subgroup differences (random effects model):

	Q	d.f.	p-value
Between groups	0.01	1	0.9258
Within groups	24.26	6	0.0005

Details on meta-analytical method:

- Inverse variance method
- Sidik-Jonkman estimator for  $\tau^2$   
(assuming common  $\tau^2$  in subgroups)
- Q-Profile method for confidence interval of  $\tau^2$  and  $\tau$
- Hartung-Knapp adjustment for random effects model (df = 7)
- Hedges' g (bias corrected standardised mean difference; using exact formulae)

## 1.2.1.3 Dosage

Mixed-Effects Model (k = 8; tau<sup>2</sup> estimator: SJ)

tau<sup>2</sup> (estimated amount of residual heterogeneity): 0.5377 (SE = 0.3125)  
 tau (square root of estimated tau<sup>2</sup> value): 0.7333  
 I<sup>2</sup> (residual heterogeneity / unaccounted variability): 78.71%  
 H<sup>2</sup> (unaccounted variability / sampling variability): 4.70  
 R<sup>2</sup> (amount of heterogeneity accounted for): 0.00%

Test for Residual Heterogeneity:  
 QE(df = 6) = 23.7011, p-val = 0.0006

Test of Moderators (coefficient 2):  
 F(df1 = 1, df2 = 6) = 0.1895, p-val = 0.6786

Model Results:

	estimate	se	tval	df	pval	ci.lb	ci.ub
intrcpt	0.7272	0.3565	2.0397	6	0.0875	-0.1452	1.5996
Dosage	-0.0060	0.0138	-0.4353	6	0.6786	-0.0397	0.0277

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

## 1.2.2 Walking Speed

### 1.2.2.1 Intensity

	SMD	95%-CI	%W(random)	Intensity
Ada 2013	0.3827	[-0.1009; 0.8663]	12.7	MODERATE:MODERATE
Alipsatici 2020	0.6910	[-0.0749; 1.4569]	8.9	MODERATE:HIGH
An 2020	1.0238	[ 0.3243; 1.7232]	9.7	MODERATE:MODERATE
Broderick 2019	0.0449	[-0.6708; 0.7607]	9.5	LOW:LOW
Druzicki 2018	1.1273	[ 0.3494; 1.9052]	8.7	LOW:LOW
Kim & Kang 2018	0.9783	[ 0.1727; 1.7838]	8.4	MODERATE:MODERATE
Kim & Kim 2018a	0.9646	[ 0.0916; 1.8376]	7.7	MODERATE:MODERATE
Kim & Kim 2018b	1.5920	[ 0.6922; 2.4918]	7.4	LOW:LOW
Krzisnik 2021	-0.0819	[-0.9180; 0.7543]	8.1	LOW:LOW
Munari 2018	0.5922	[-0.4512; 1.6356]	6.2	LOW:HIGH
Park & Chung 2018i	1.4671	[ 0.4270; 2.5072]	6.2	LOW:LOW
Park & Chung 2018ii	0.9262	[-0.0637; 1.9160]	6.6	LOW:LOW

Number of studies: k = 12

Number of observations: o = 341

	SMD	95%-CI	t	p-value
Random effects model	0.7682	[0.4460; 1.0905]	5.25	0.0003

Quantifying heterogeneity:

$\tau^2 = 0.1499$  [0.0000; 0.5726];  $\tau = 0.3871$  [0.0000; 0.7567]

$I^2 = 35.7\%$  [0.0%; 67.5%];  $H = 1.25$  [1.00; 1.76]

Quantifying residual heterogeneity:

$\tau^2 = 0.2031$ ;  $\tau = 0.4507$ ;  $I^2 = 53.0\%$  [0.1%; 77.9%];  $H = 1.46$  [1.00; 2.13]

Test of heterogeneity:

Q d.f. p-value  
17.11 11 0.1046

Results for subgroups (random effects model):

	k	SMD	95%-CI	$\tau^2$	$\tau$	Q
Intensity = LOW:LOW	6	0.7959	[ 0.0405; 1.5514]	0.2031	0.4507	13.74
Intensity = MODERATE:MODERATE	4	0.7988	[ 0.2778; 1.3198]	0.2031	0.4507	3.29
Intensity = LOW:HIGH	1	0.5922	[-0.7749; 1.9593]	0.2031	0.4507	0.00
Intensity = MODERATE:HIGH	1	0.6910	[-0.4781; 1.8602]	0.2031	0.4507	0.00
	$I^2$					
Intensity = LOW:LOW	63.6%					
Intensity = MODERATE:MODERATE	8.7%					
Intensity = LOW:HIGH	--					
Intensity = MODERATE:HIGH	--					

Test for subgroup differences (random effects model):

	Q	d.f.	p-value
Between groups	0.11	3	0.9906
Within groups	17.03	8	0.0298

Details on meta-analytical method:

- Inverse variance method



- Sidik-Jonkman estimator for  $\tau^2$   
(assuming common  $\tau^2$  in subgroups)
- Q-Profile method for confidence interval of  $\tau^2$  and  $\tau$
- Hartung-Knapp adjustment for random effects model ( $df = 11$ )
- Hedges'  $g$  (bias corrected standardised mean difference; using exact formulae)

## 1.2.2.2 Amount

	SMD	95%-CI	%W(random)	amount.mins.delta.f
Ada 2013	0.3827	[-0.1009; 0.8663]	12.7	Higher
Alipsatici 2020	0.6910	[-0.0749; 1.4569]	8.9	Equal
An 2020	1.0238	[ 0.3243; 1.7232]	9.7	Equal
Broderick 2019	0.0449	[-0.6708; 0.7607]	9.5	Equal
Druzicki 2018	1.1273	[ 0.3494; 1.9052]	8.7	Equal
Kim & Kang 2018	0.9783	[ 0.1727; 1.7838]	8.4	Equal
Kim & Kim 2018a	0.9646	[ 0.0916; 1.8376]	7.7	Equal
Kim & Kim 2018b	1.5920	[ 0.6922; 2.4918]	7.4	Equal
Krzisnik 2021	-0.0819	[-0.9180; 0.7543]	8.1	Equal
Munari 2018	0.5922	[-0.4512; 1.6356]	6.2	Equal
Park & Chung 2018i	1.4671	[ 0.4270; 2.5072]	6.2	Equal
Park & Chung 2018ii	0.9262	[-0.0637; 1.9160]	6.6	Equal

Number of studies: k = 12

Number of observations: o = 341

	SMD	95%-CI	t	p-value
Random effects model	0.7682	[0.4460; 1.0905]	5.25	0.0003

Quantifying heterogeneity:

$\tau^2 = 0.1499$  [0.0000; 0.5726];  $\tau = 0.3871$  [0.0000; 0.7567]

$I^2 = 35.7\%$  [0.0%; 67.5%];  $H = 1.25$  [1.00; 1.76]

Quantifying residual heterogeneity:

$\tau^2 = 0.1508$ ;  $\tau = 0.3883$ ;  $I^2 = 32.4\%$  [0.0%; 66.8%];  $H = 1.22$  [1.00; 1.73]

Test of heterogeneity:

Q d.f. p-value  
17.11 11 0.1046

Results for subgroups (random effects model):

	k	SMD	95%-CI	$\tau^2$	$\tau$	Q
amount.mins.delta.f = Equal	11	0.8244	[ 0.4755; 1.1734]	0.1508	0.3883	14.79
amount.mins.delta.f = Higher	1	0.3827	[-0.5190; 1.2844]	0.1508	0.3883	0.00
		$I^2$				
amount.mins.delta.f = Equal	32.4%					
amount.mins.delta.f = Higher	--					

Test for subgroup differences (random effects model):

	Q	d.f.	p-value
Between groups	0.83	1	0.3634
Within groups	14.79	10	0.1398

Details on meta-analytical method:

- Inverse variance method
- Sidik-Jonkman estimator for  $\tau^2$   
(assuming common  $\tau^2$  in subgroups)
- Q-Profile method for confidence interval of  $\tau^2$  and  $\tau$
- Hartung-Knapp adjustment for random effects model (df = 11)
- Hedges' g (bias corrected standardised mean difference; using exact formulae)

## 1.2.2.3 Dosage

Mixed-Effects Model (k = 12; tau<sup>2</sup> estimator: SJ)

tau<sup>2</sup> (estimated amount of residual heterogeneity): 0.1556 (SE = 0.0854)  
 tau (square root of estimated tau<sup>2</sup> value): 0.3944  
 I<sup>2</sup> (residual heterogeneity / unaccounted variability): 49.31%  
 H<sup>2</sup> (unaccounted variability / sampling variability): 1.97  
 R<sup>2</sup> (amount of heterogeneity accounted for): 0.00%

Test for Residual Heterogeneity:  
 QE(df = 10) = 15.8672, p-val = 0.1035

Test of Moderators (coefficient 2):  
 F(df1 = 1, df2 = 10) = 0.6067, p-val = 0.4541

Model Results:

	estimate	se	tval	df	pval	ci.lb	ci.ub	
intrcpt	0.8318	0.1695	4.9067	10	0.0006	0.4541	1.2096	***
Dosage	-0.0064	0.0082	-0.7789	10	0.4541	-0.0248	0.0119	

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Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

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