Supplementary Online Content

Mattle M, Chocano-Bedoya PO, Fischbacher M, et al. Association of dance-based mind-motor activities with falls and physical function among healthy older adults: a systematic review and meta-analysis. *JAMA Netw Open*. 2020;3(9):e2017688.
doi:10.1001/jamanetworkopen.2020.17688

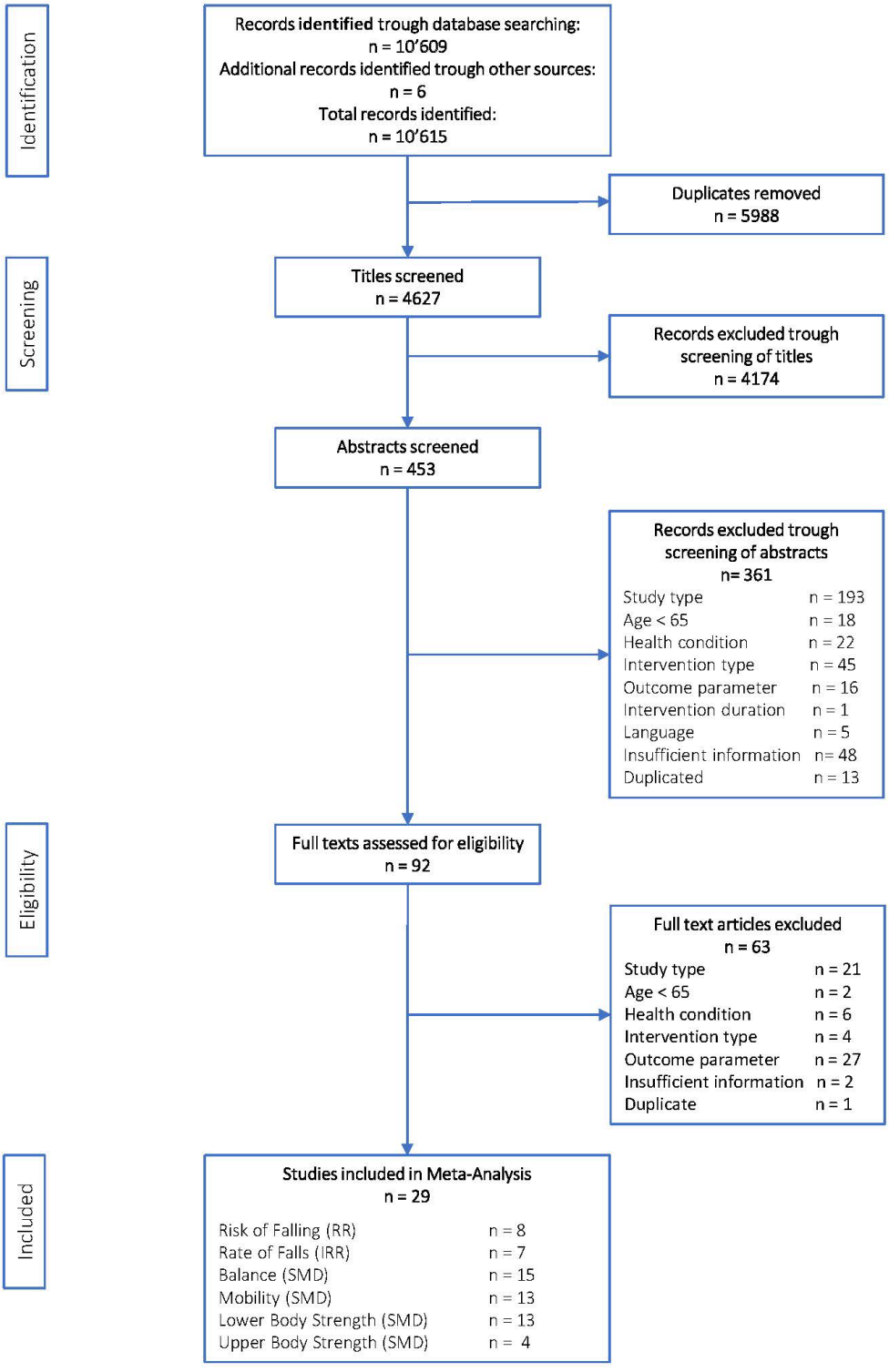
eAppendix. Supplementary Material

This supplementary material has been provided by the authors to give readers additional information about their work.

Search Syntax in PubMed

("Aged"[MeSH] OR older[Title/Abstract] OR
elderly[Title/Abstract] OR senior*[Title/Abstract] OR old-age*[Title/Abstract] OR aged[Title/Abstract])
AND
("Dance Therapy"[MeSH] OR "Dancing"[MeSH] OR "Exercise Movement Techniques"[MeSH] OR
dance* [Title/Abstract] OR dancing[Title/Abstract] OR ballet*[Title/Abstract] OR jazz*[Title/Abstract]
OR hiphop[Title/Abstract] OR salsa*[Title/Abstract] OR zumba*[Title/Abstract] OR
aerobic*[Title/Abstract] OR taiji[Title/Abstract] OR taijiquan[Title/Abstract] OR
"tai chi"[Title/Abstract] OR eurythm*[Title/Abstract])
AND
("Accidental Falls"[MeSH] OR
Falls[Title/Abstract] OR faller* [Title/Abstract] OR falling[Title/Abstract] OR slip*[Title/Abstract] OR
stumble*[Title/Abstract] OR tumble* [Title/Abstract] OR fell[Title/Abstract] OR
balance[Title/Abstract] OR strength[Title/Abstract] OR mobility[Title/Abstract] OR
flexibility[Title/Abstract])

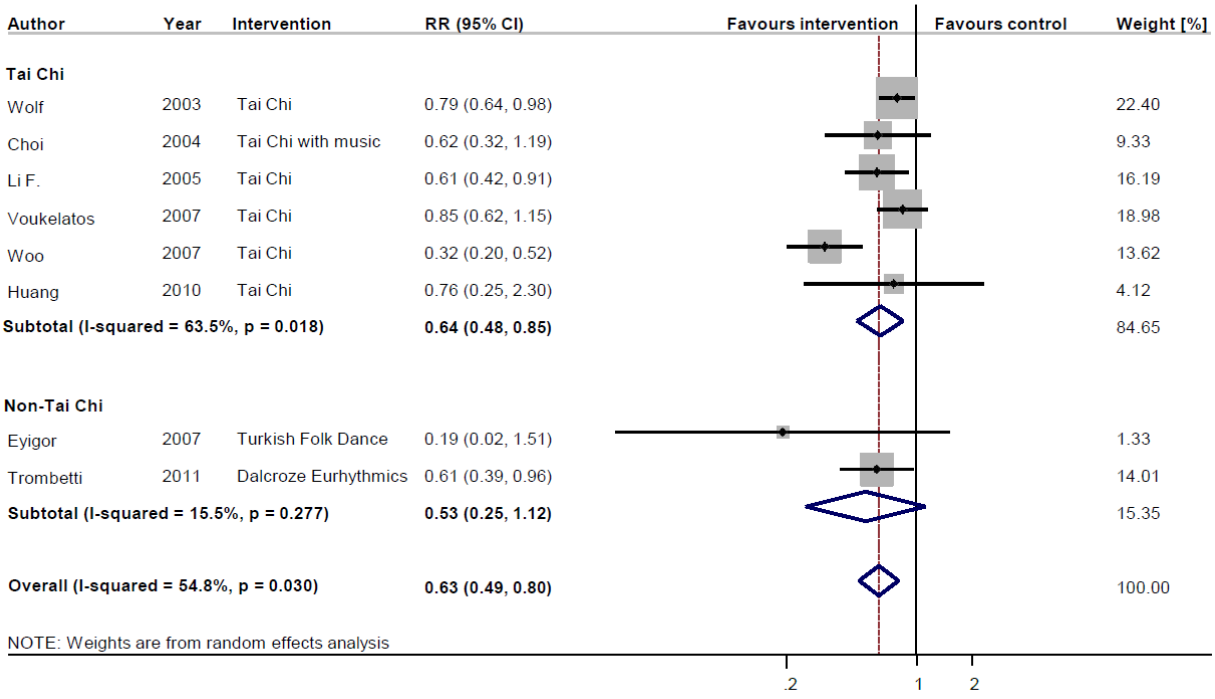
Inclusion flow



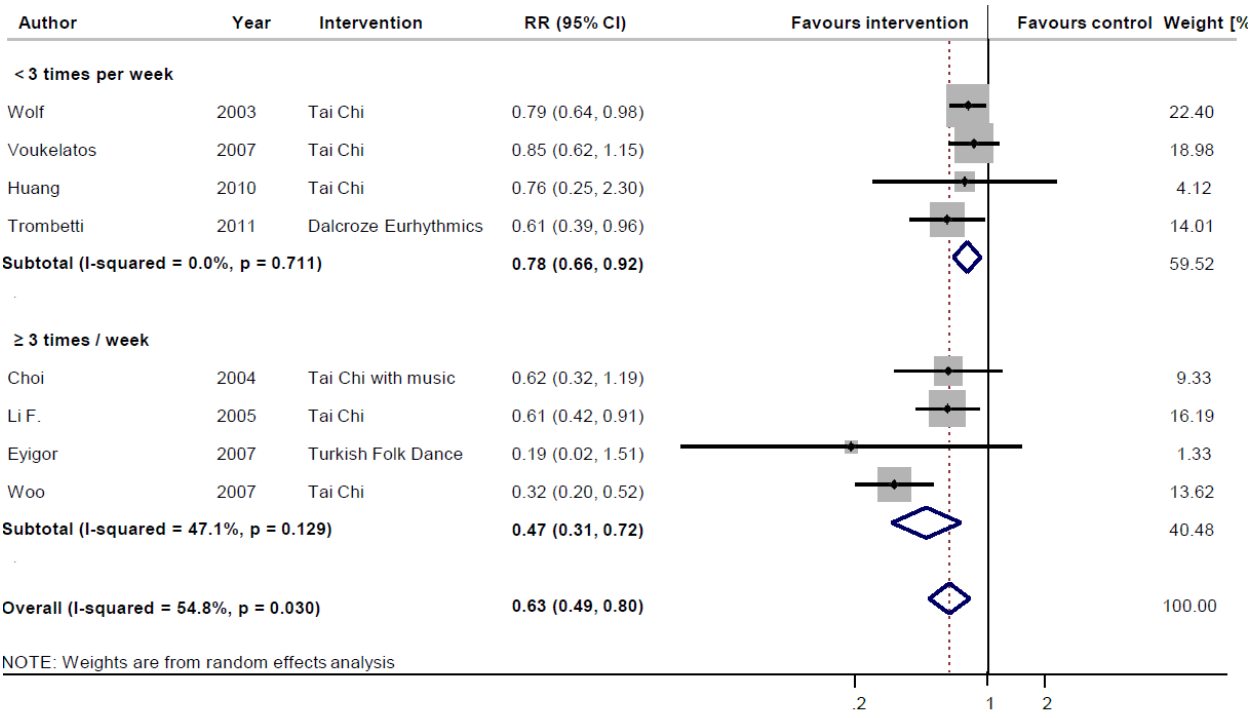
Subgroup Analyses Risk of Falling

Risk of Falling, total N=8 trials	Risk Ratio (95%CI)	I^2
Full	**0.63 (0.49, 0.80)**	**54.8 %**
by intervention type		
Tai Chi	0.64 (0.48, 0.85)	63.5 %
Non-Tai Chi	0.53 (0.26, 1.12)	15.5 %
by intervention frequency		
< 3 times / week	0.78 (0.66, 0.92)	0.0%
≥ 3 times / week	0.48 (0.31, 0.72)	47.1 %
by intervention duration		
> 24 weeks	0.52 (0.21, 1.25)	91.4 %
12 - 24 weeks	0.71 (0.58, 0.86)	0.0%
< 12 weeks	0.19 (0.02, 1.51)	--
by type of dwelling		
community dwelling	0.58 (0.41, 0.82)	60.9 %
living facilities	0.77 (0.63, 0.95)	0.0%
by type of randomization		
participants randomized	0.56 (0.38, 0.82)	68.4 %
cluster randomized	0.77 (0.63, 0.94)	0.0%
by duration of one class		
< 60 min	0.77 (0.63, 0.94)	0.0%
≥ 60 min	0.69 (0.54, 0.89)	19.6 %
Woo et al. do not report time		
by total contact time		
< 90 min	0.73 (0.61, 0.87)	0.0%
≥ 90 min	0.75 (0.55, 1.02)	-25.7 %
Woo et al. do not report duration of classes		

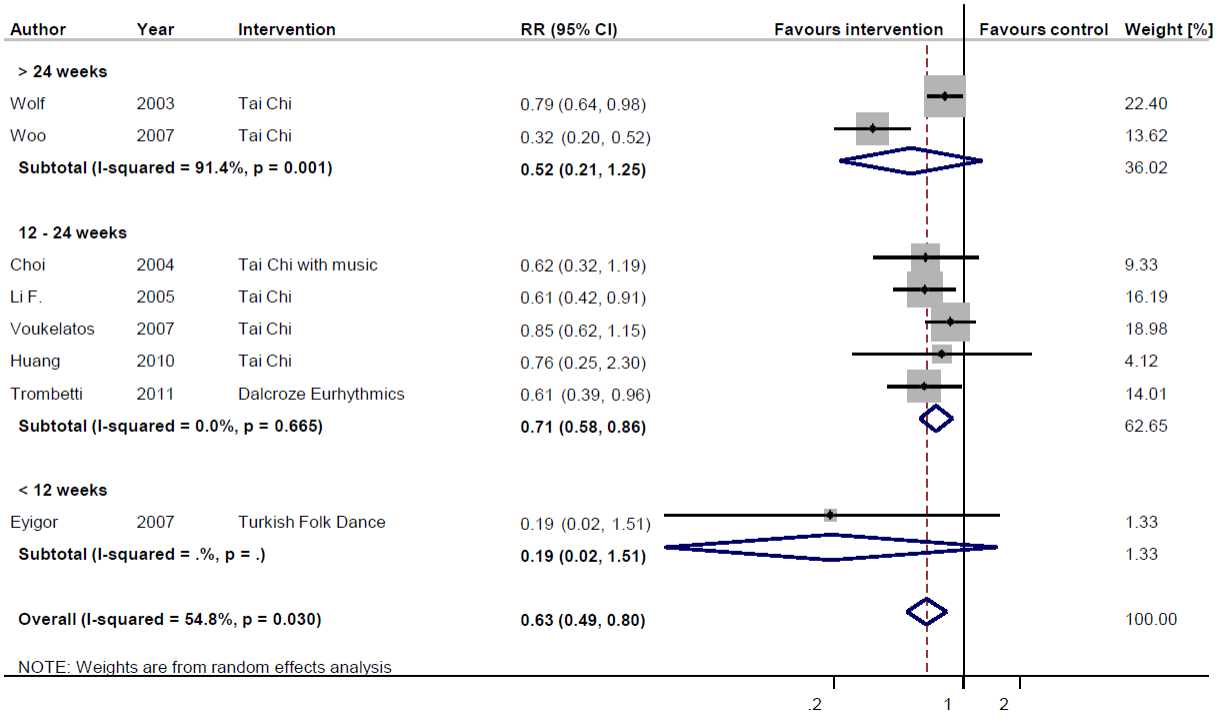
Assciation of dance-based mind-motor activities with risk of falling by intervention type



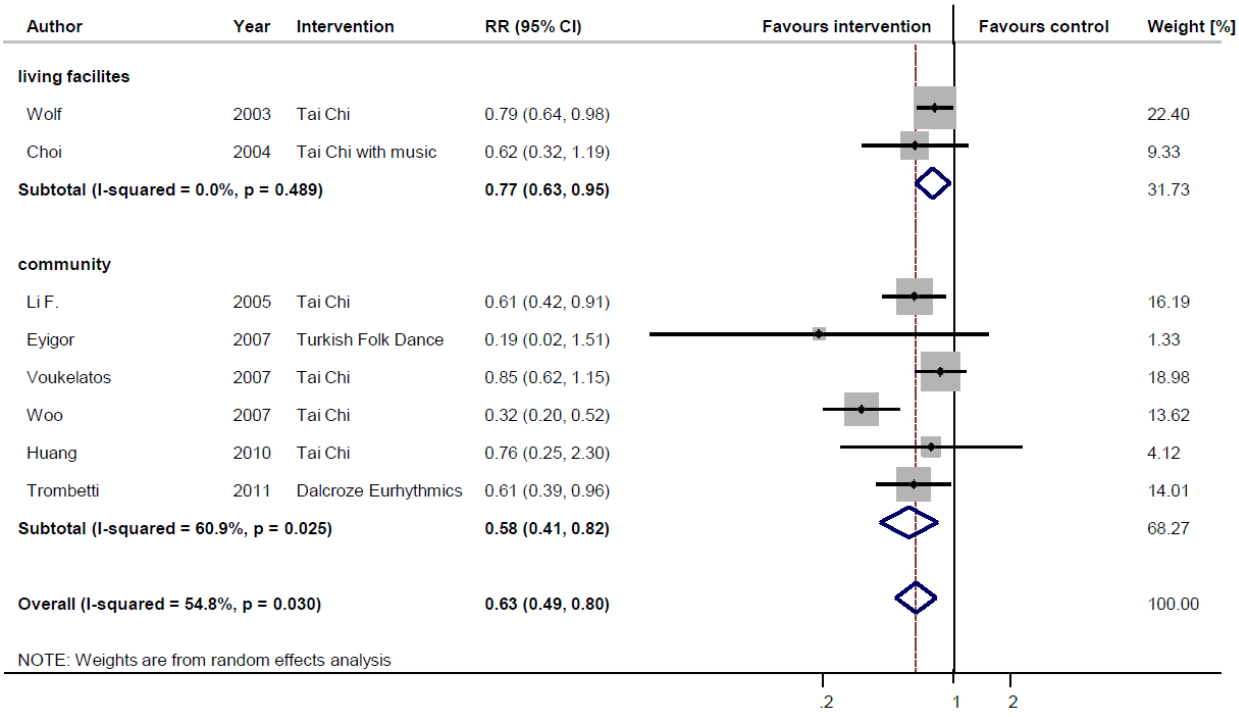
Association of dance-based mind-motor activities with risk of falling by intervention frequency



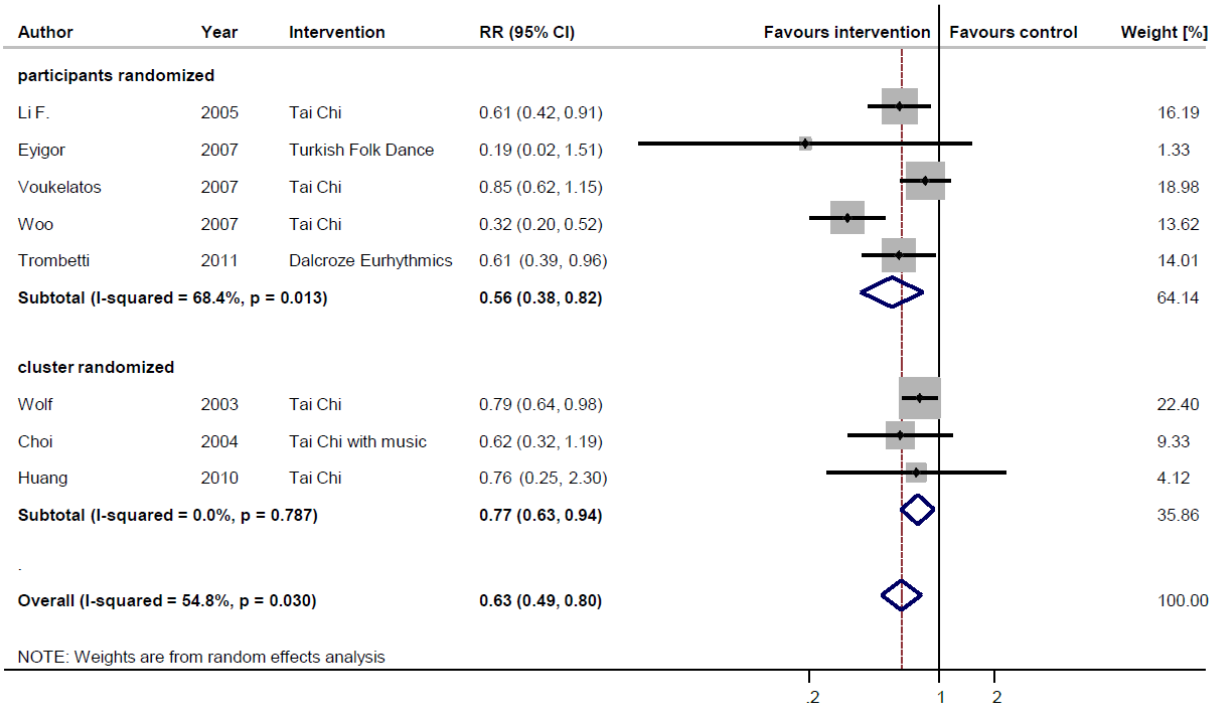
Association of dance-based mind-motor activities with risk of falling by intervention duration



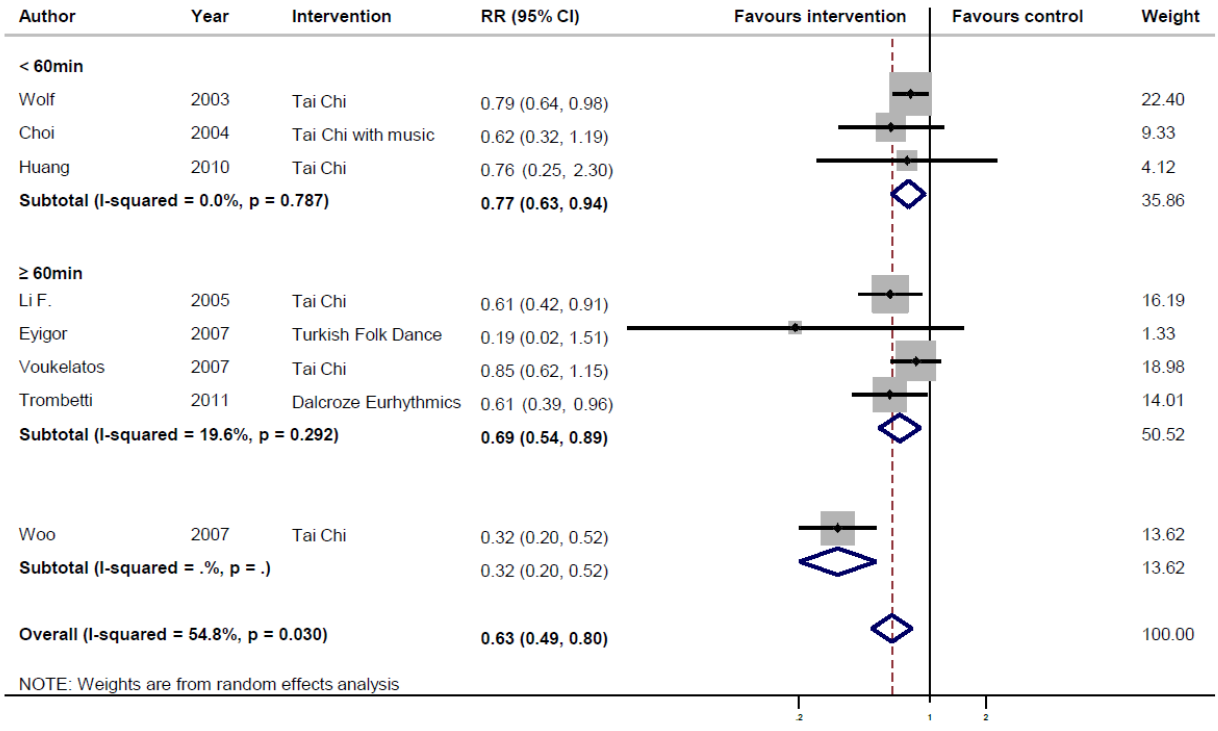
Association of dance-based mind-motor activities with risk of falling by type of dwelling



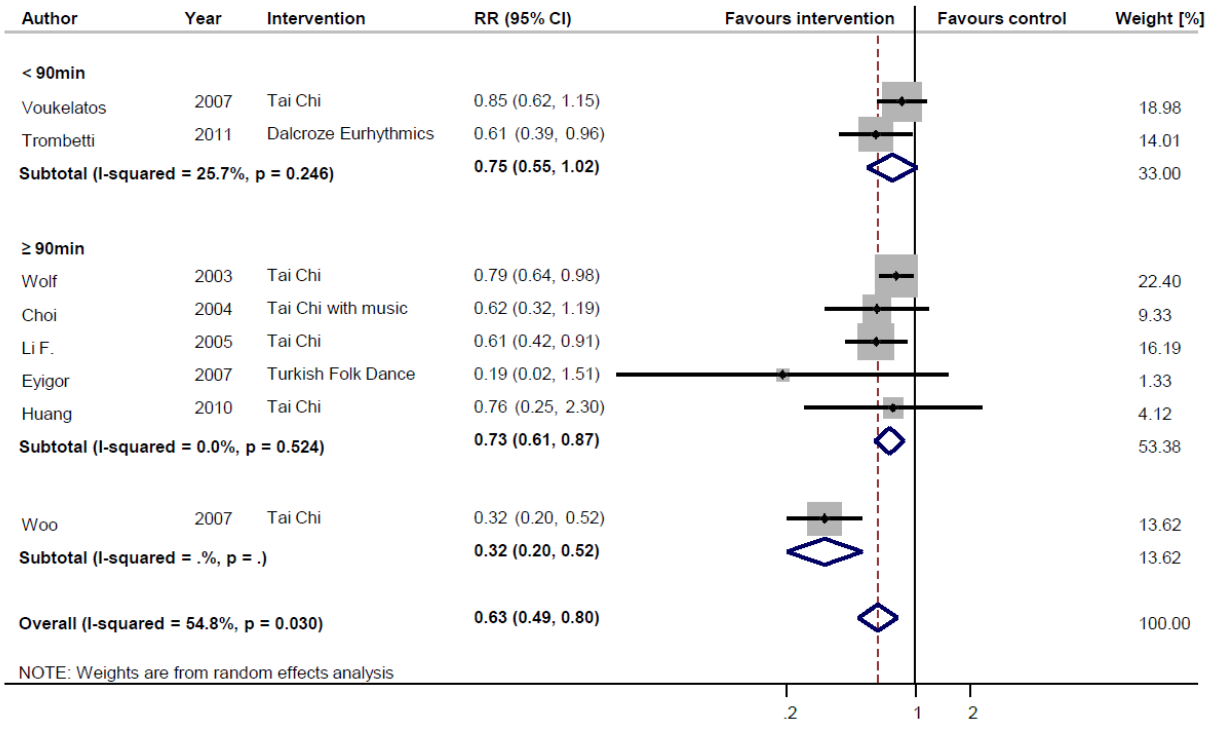
Association of dance-based mind-motor activities with risk of falling by type of randomization



Association of dance-based mind-motor activities with risk of falling by duration of one session

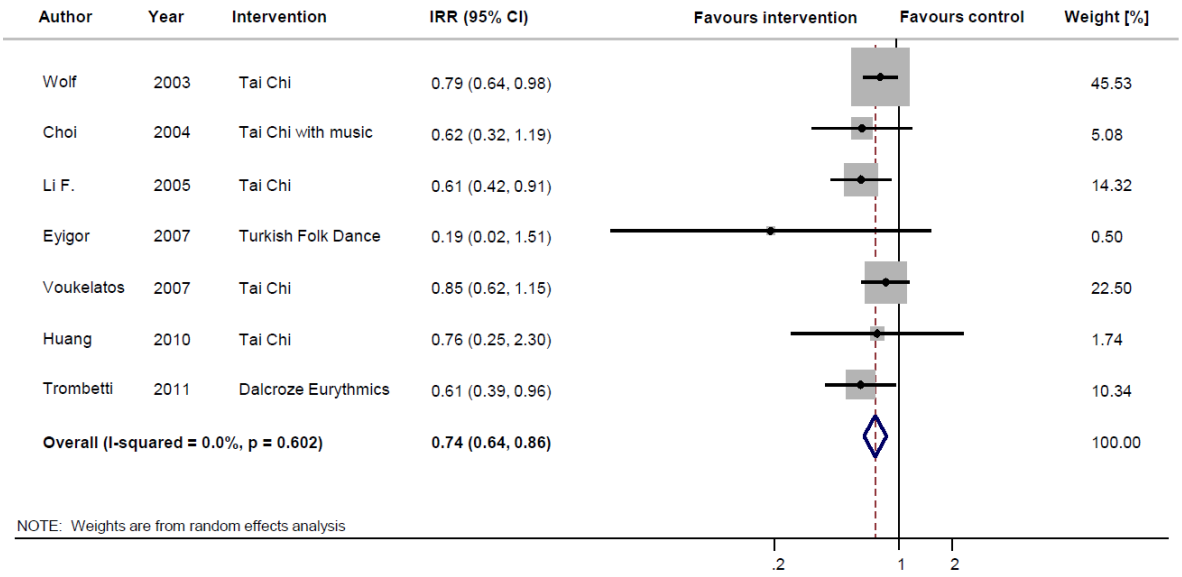


Association of dance-based mind-motor activities with risk of falling by total contact time

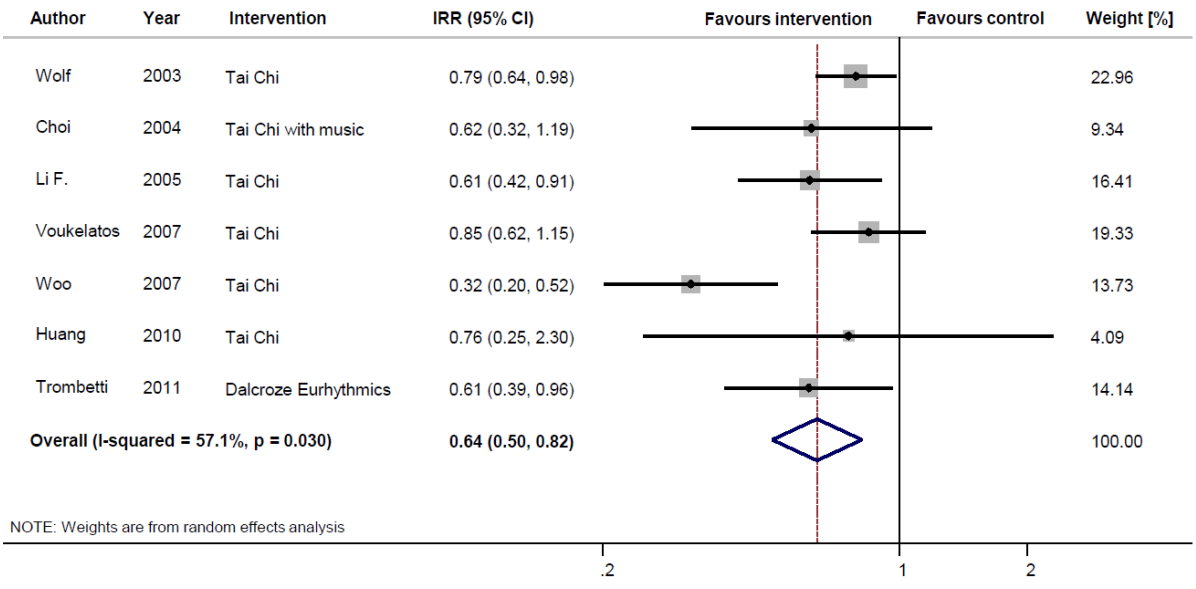


Sensitivity Analyses Risk of Falling

Association of dance-based mind-motor activities with risk of falling
Sensitivity analysis 1: without Woo et al.



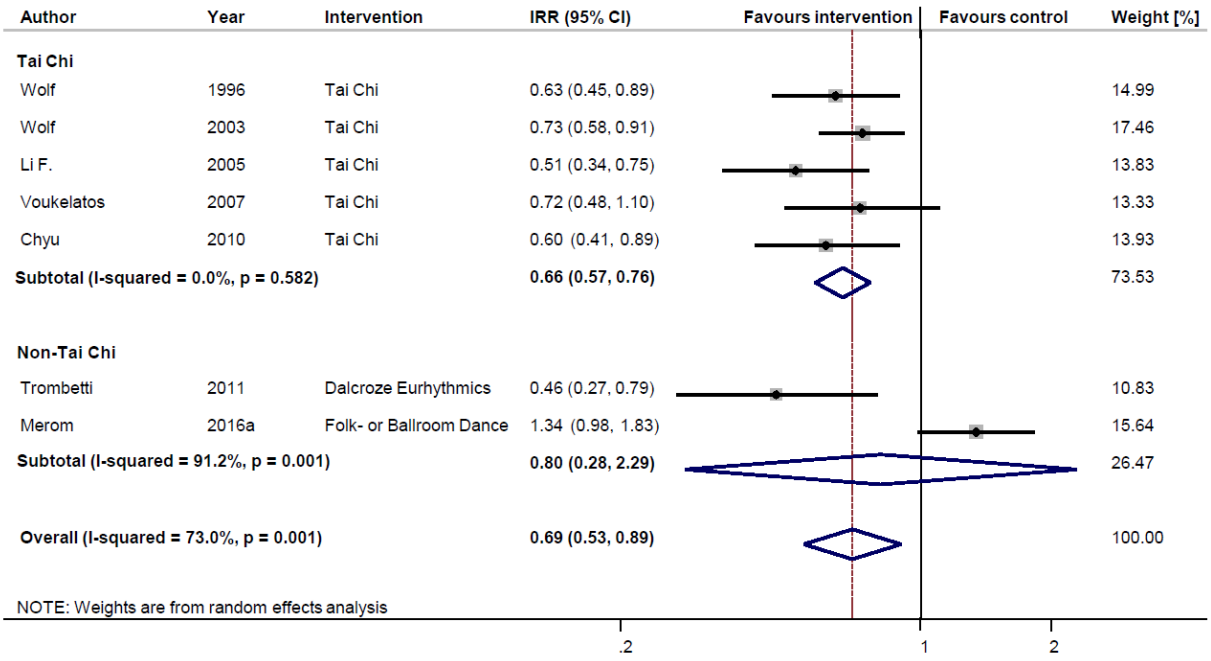
Association of dance-based mind-motor activities with rate of falls
Sensitivity analysis 2: without Eyigor et al.



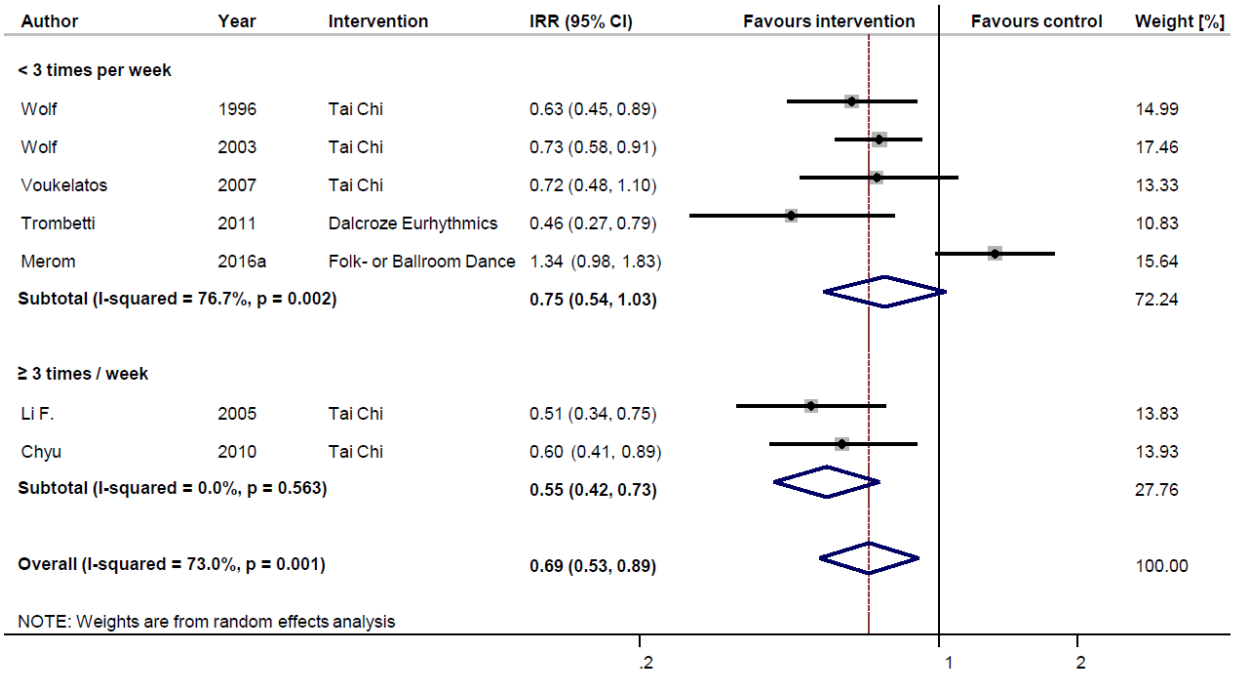
Subgroup Analyses Rate of Falls

Rate of Falls, total N=7 trials	**IRR (95%CI)**	**I^2**
Full	**0.69 (0.53, 0.89)**	**73.0 %**
by intervention type		
Tai Chi	0.64 (0.54, 0.74)	0.0%
Non-Tai Chi	0.88 (0.02, 1.75)	91.7 %
by intervention frequency		
< 3 times / week	0.80 (0.59, 1.01)	68.0 %
≥ 3 times / week	0.55 (0.39, 0.70)	0.0%
by intervention duration		
> 24 weeks	1.00 (0.41, 1.60)	85.4 %
12 - 24 weeks	0.57 (0.47, 0.61)	0.0%
< 12 weeks	--	--
by type of dwelling		
community dwelling	0.65 (0.48, 0.82)	0.0%
institutionalized	1.00 (0.41, 1.60)	85.4 %
by type of randomization		
participants randomized	0.57 (0.47, 0.68)	0.0%
cluster randomized	1.00 (0.41, 1.60)	85.4 %
by duration of one class		
< 60 min	0.63 (0.45, 0.89)	--
≥ 60 min	0.70 (0.52, 0.95)	76.8 %
by total contact time		
< 90 min	0.69 (0.53, 0.89)	73.0 %
≥ 90 min	0.73 (0.53, 1.00)	79.3 %

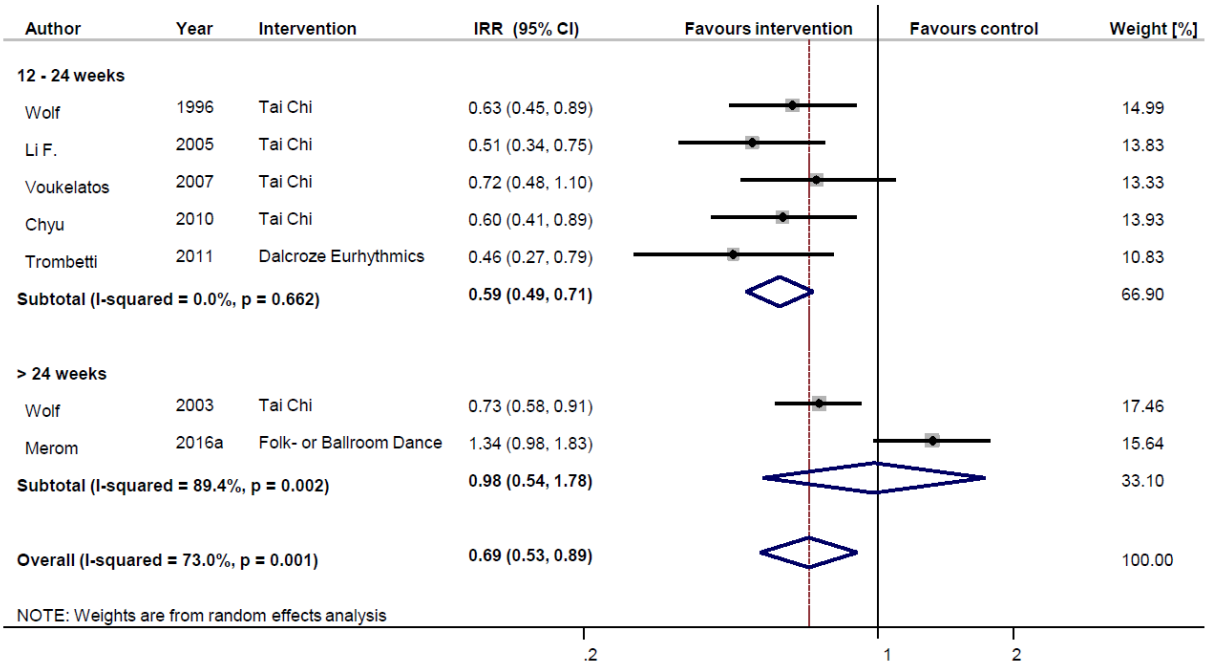
Assciation of dance-based mind-motor activities with rate of falls by intervention type



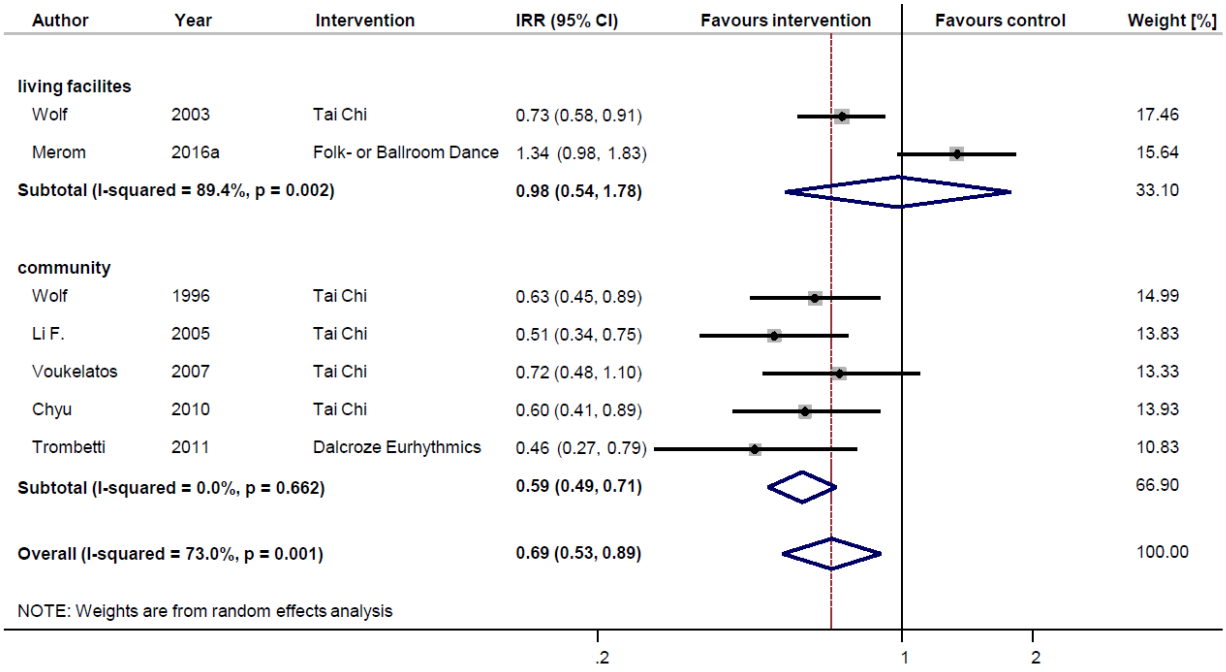
Assciation of dance-based mind-motor activities with rate of falls by intervention frequency



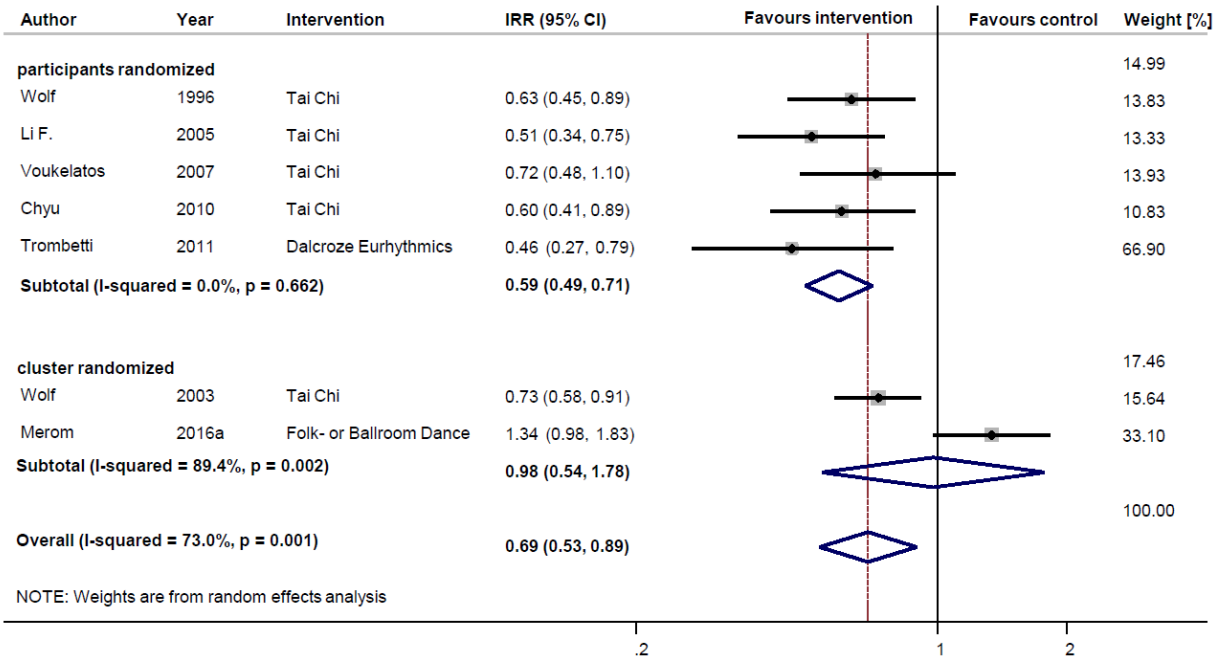
Assciation of dance-based mind-motor activities with rate of falls by intervention duration



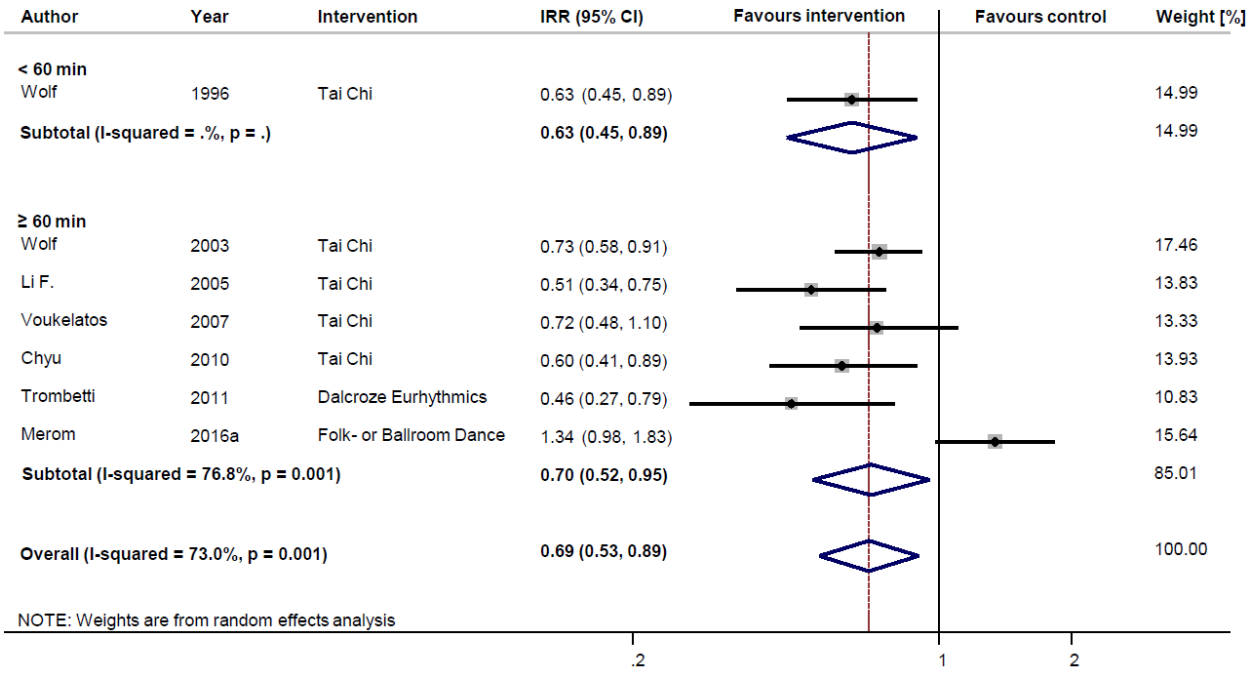
Assciation of dance-based mind-motor activities with rate of falls by type of dwelling



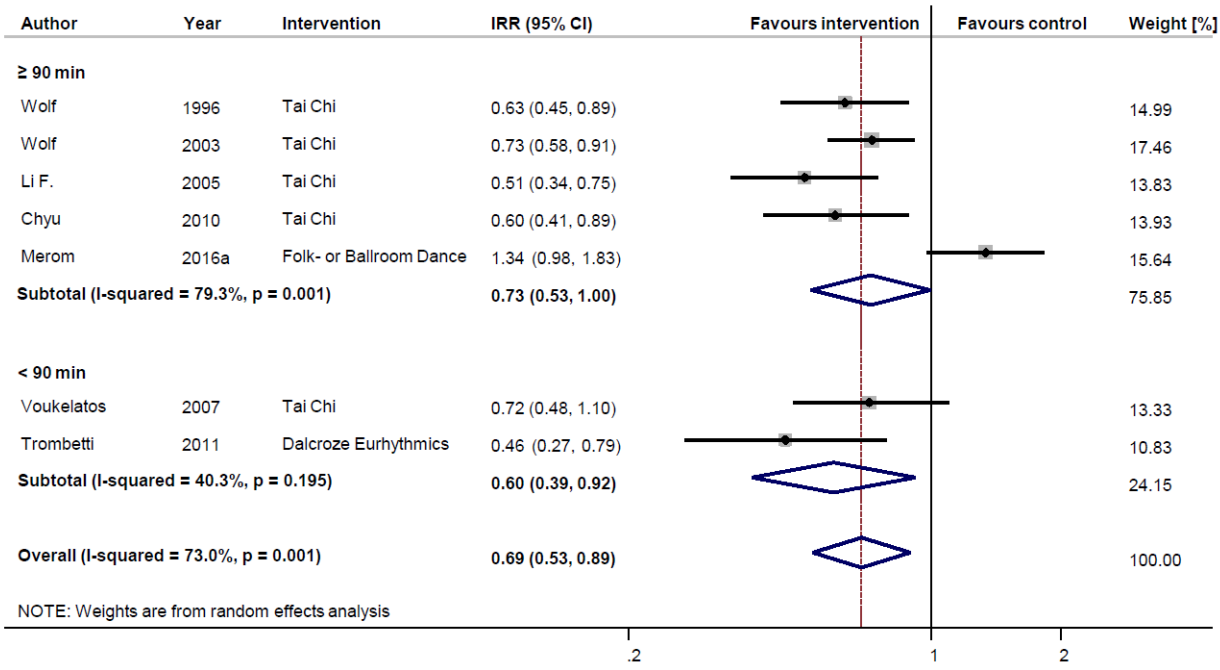
Assciation of dance-based mind-motor activities with rate of falls by type of randomization



Assciation of dance-based mind-motor activities with rate of falls by duration of one class



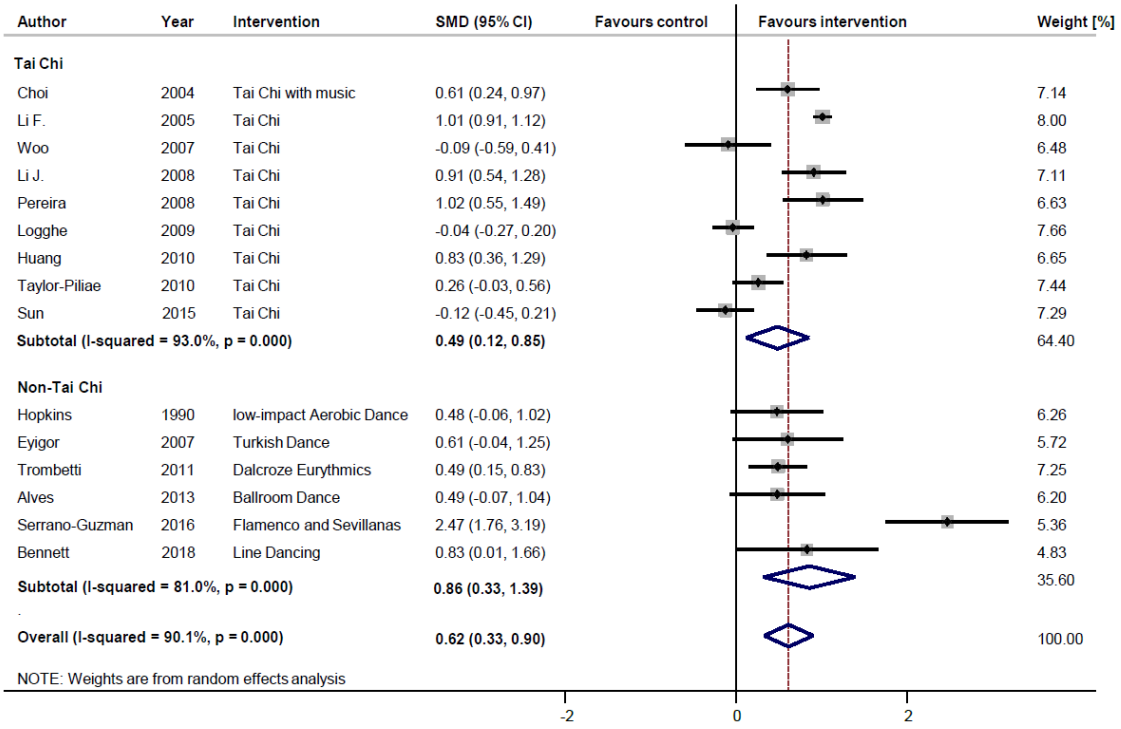
Assciation of dance-based mind-motor activities with rate of falls by total contact time



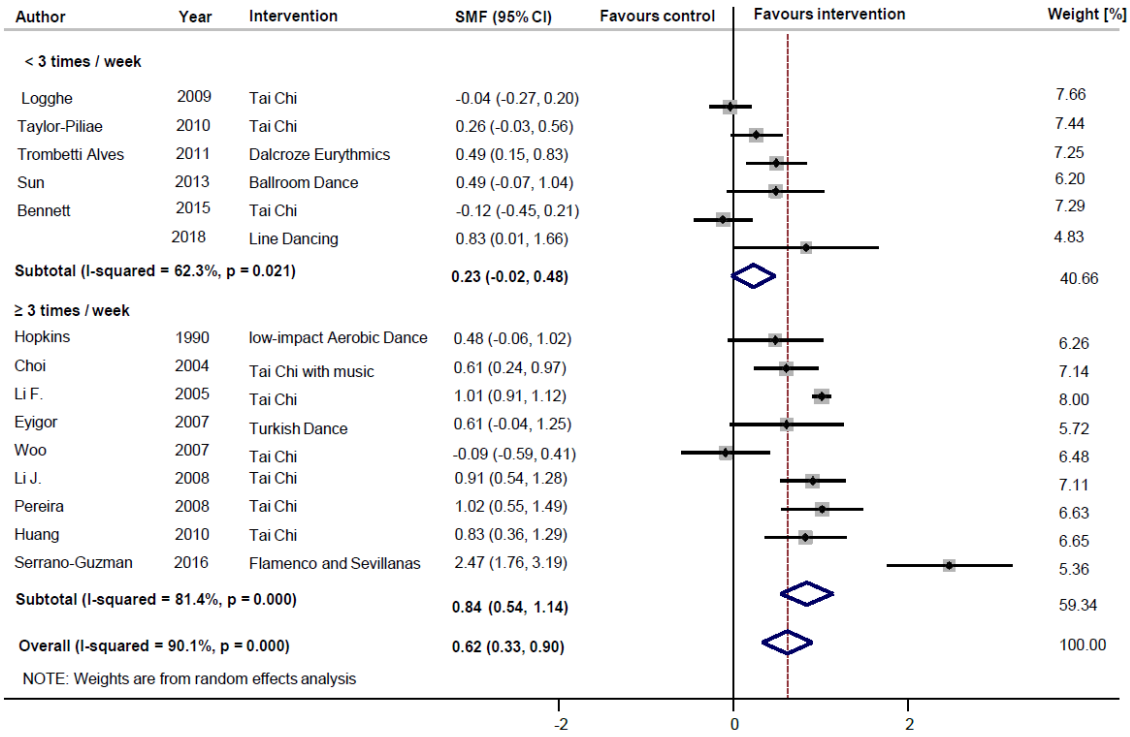
Subgroup Analysis of Secondary Outcomes

Balance (N=15)	**SMD (95%CI)**	**I^2**
Full	**0.62 (0.33, 0.90)**	**90.1%**
by intervention type		
Tai Chi	0.62 (0.33, 0.90)	93.0 %
Non-Tai Chi	0.86 (0.33, 1.39)	81.0 %
by intervention frequency		
< 3 times / week	0.23 (0.02, 0.48)	62.3 %
≥ 3 times / week	0.84 (0.54, 1.14)	81.4 %
by intervention duration		
> 24 weeks	0.23 (0.34, 0.80)	71.7 %
12 - 24 weeks	0.54 (0.21, 0.87)	91.5 %
< 12 weeks	1.31 (0.12, 2.49)	87.4 %
by type of dwelling		
community dwelling	0.62 (0.314, 0.93)	90.8 %
institutionalized	0.61 0.24, 0.97)	--
by type of randomization		
participants randomized	0.61 (0.28, 0.93)	91.4 %
cluster randomized	0.69 (0.40, 0.98)	0.0%
by duration of one class		
< 60 min	0.89 (0.41, 1.36)	85.6 %
≥ 60 min	0.51 (0.10, 0.92)	92.7 %
Woo et al. do not report time		
by total contact time		
< 90 min	0.49 (0.15, 0.83)	--
90 -120 min	0.33 (0.02, 0.64)	76.6 %
≥ 120 min	0.96 (0.64, 1.28)	76.7 %
Woo et al. do not report duration of classes		

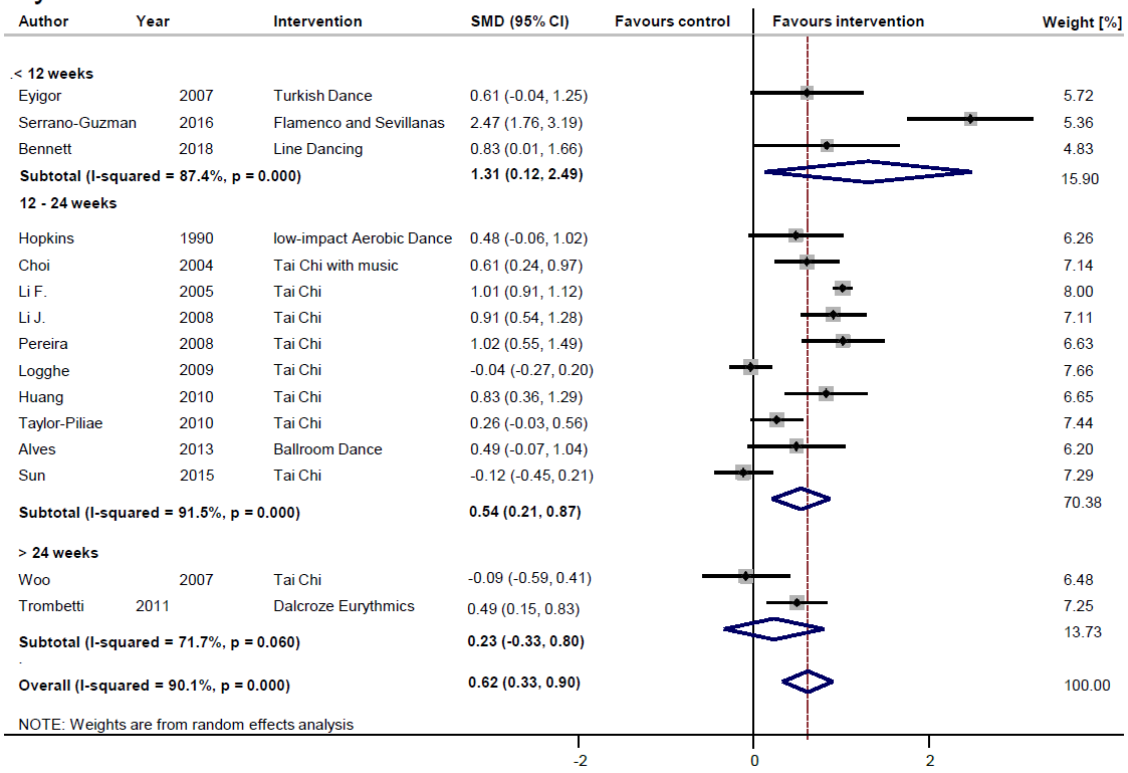
Association of dance-based mind-motor activities with balance by intervention type



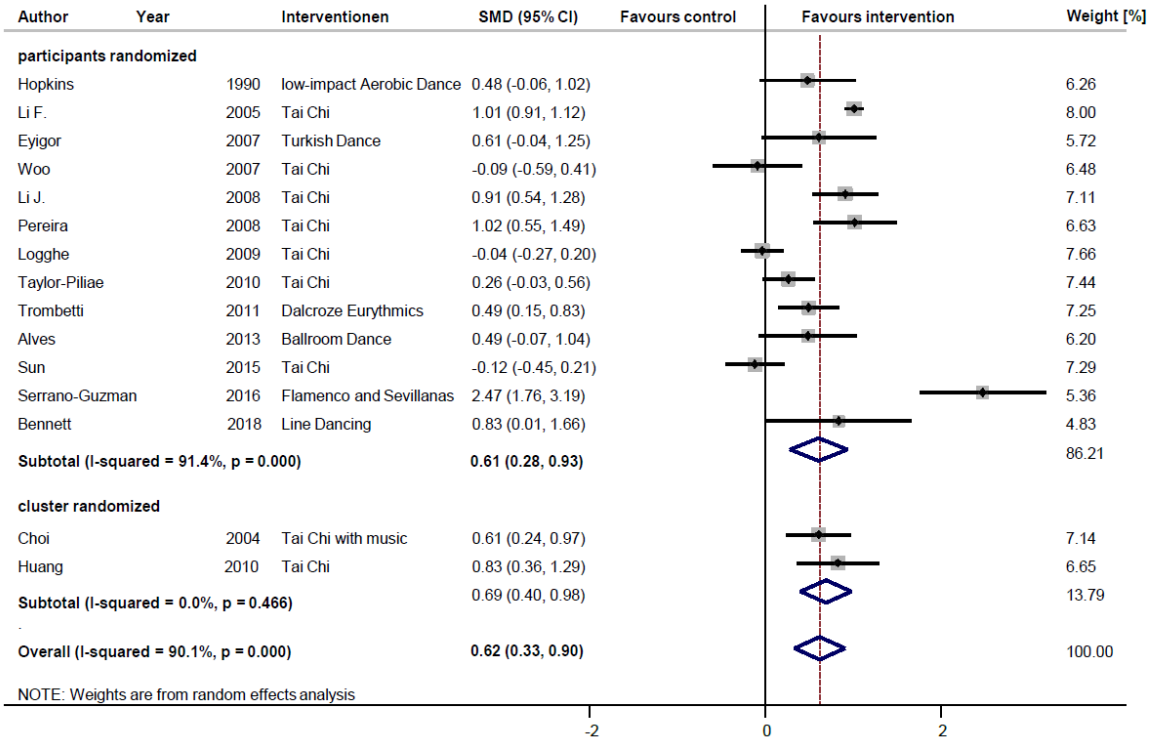
Association of dance-based mind-motor activities with balance by intervention frequency



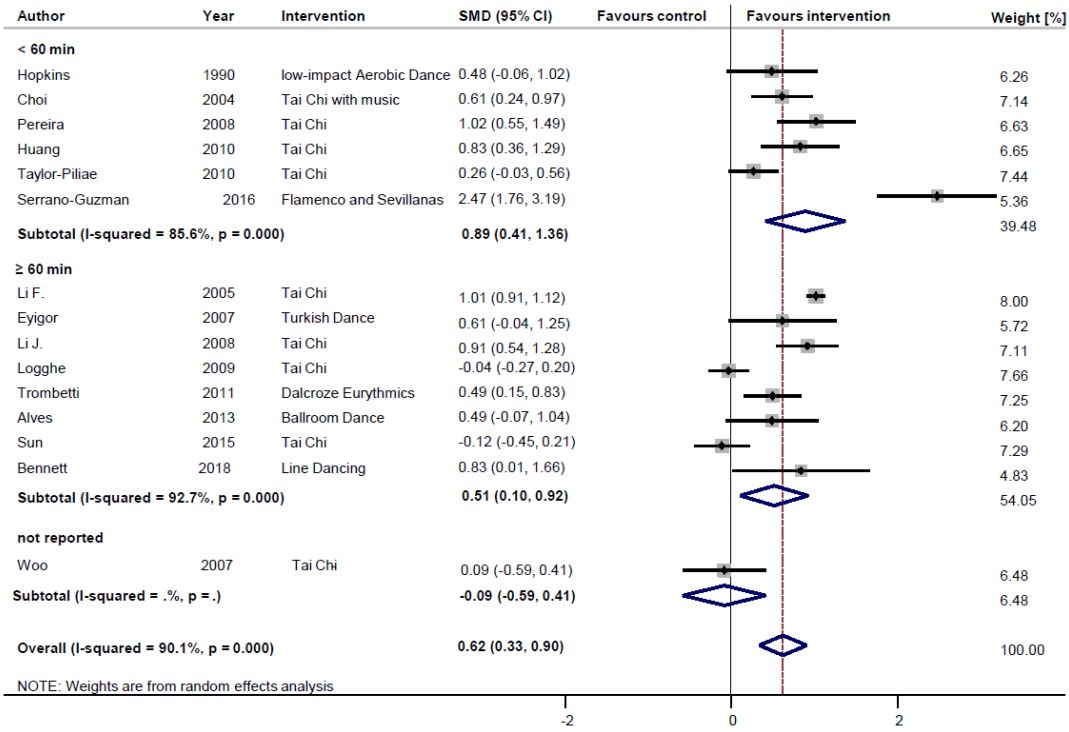
Association of dance-based mind-motor activities with balance by intervention duration



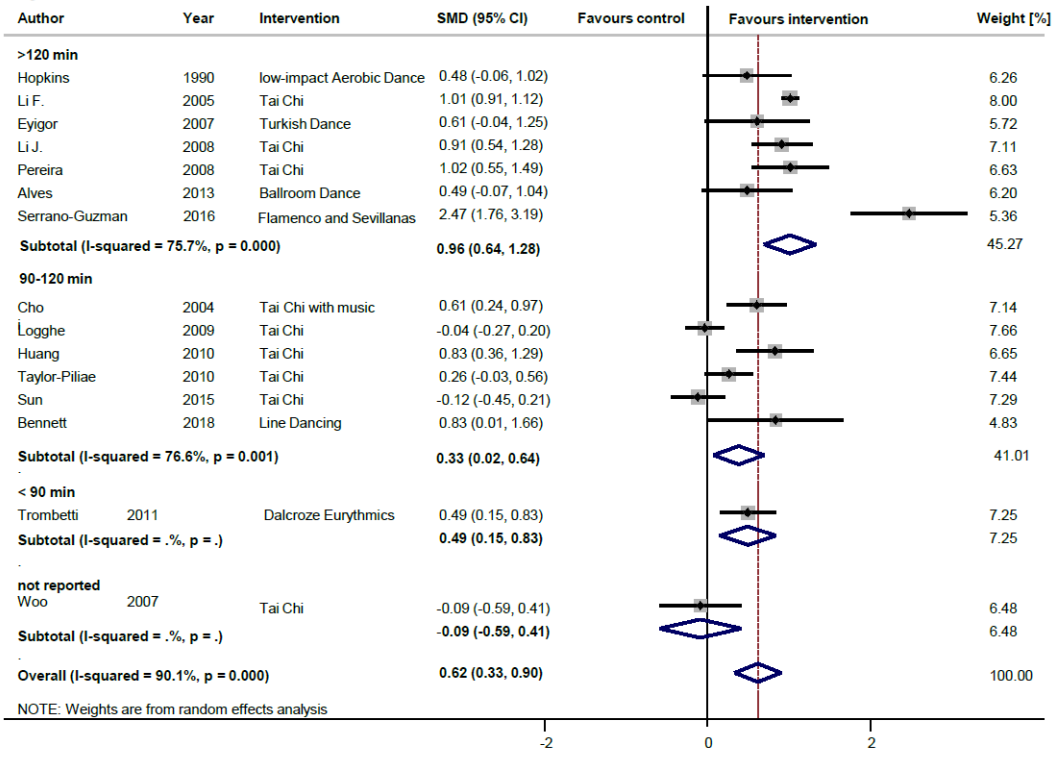
Association of dance-based mind-motor activities with balance by type of randomization



Association of dance-based mind-motor activities with balance by duration of one class

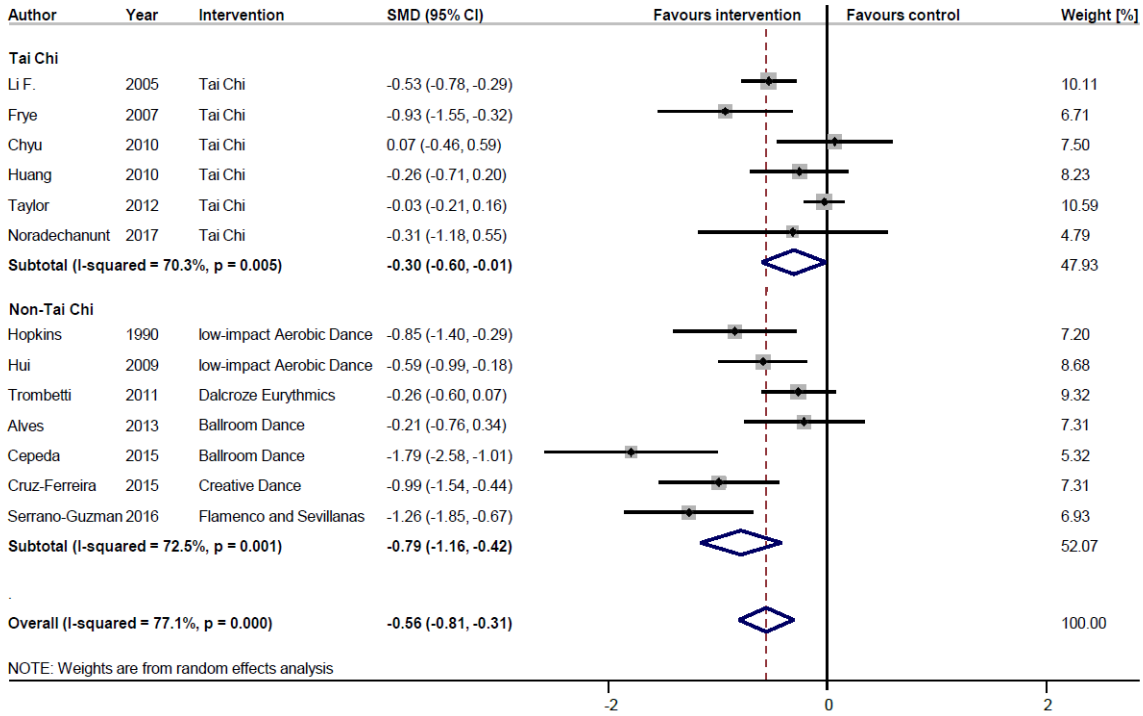


Association of dance-based mind-motor activities with balance by total contact time

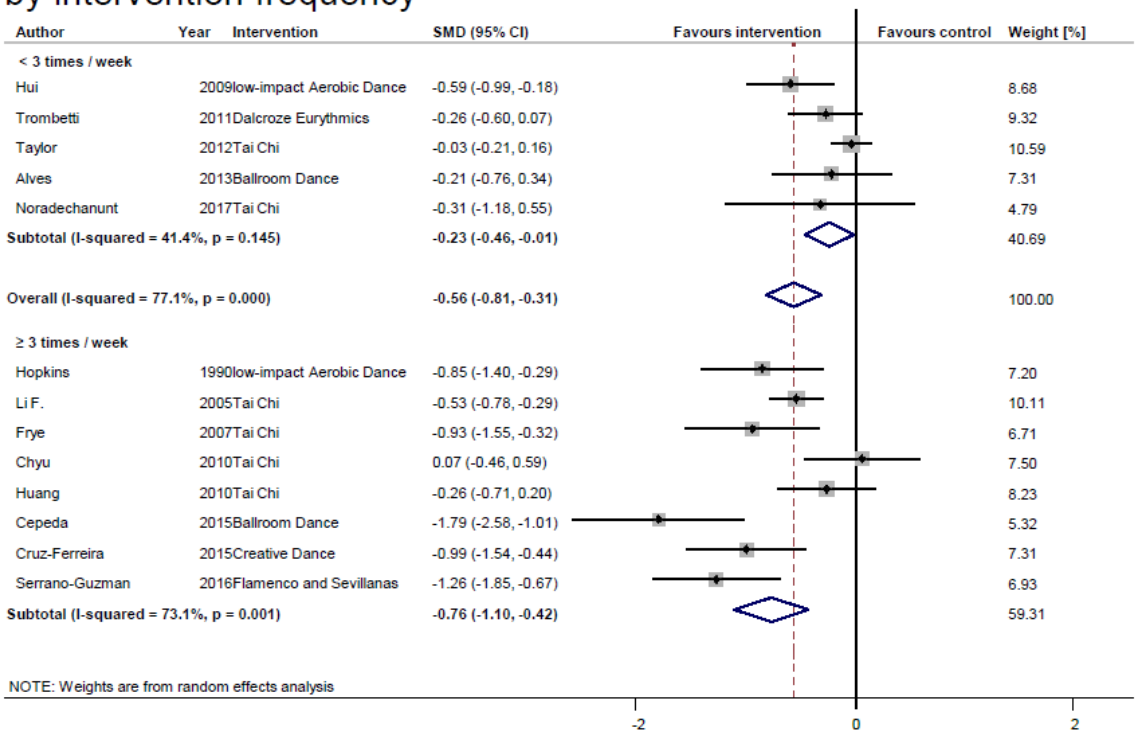


Mobility (N=13)	**SMD (95%CI)**	**I^2**
Full	**-0.56 (-0.81, -0.31)**	**77.1%**
by intervention type		
Tai Chi	-0.31 (0.60, -0.01)	70.3%
Non-Tai Chi	-0.79, (-1.16, -0.42)	72.5%
by intervention frequency		
< 3 times / week	-0.231 (-0.46, -0.01)	41.4%
≥ 3 times / week	-0.762 (-1.10, 0.42)	73.1%
by intervention duration		
> 24 weeks	-0.26 (-0.60, 0.08)	--
12 - 24 weeks	-0.44 (-0.68, -0.20)	69.7%
< 12 weeks	-1.46 (-1.96, -0.96)	10.4%
by type of dwelling		
community dwelling	-0.56 (-0.81, -0.31)	77.1%
institutionalized	--	--
by type of randomization		
participants randomized	-0.59 (-0.89, -0.30)	80.4%
cluster randomized	-0.44 (-0.76, -0.11)	12.6%
by duration of one class		
< 60 min	-0.75 (-1.09, -0.42)	55.0%
≥ 60 min	-0.43 (-0.73, -0.12)	77.9%
by total contact time		
< 90 min	-0.26 (-0.60, 0.07)	--
90-120 min	-0.25 (-0.61, 0.10)	68.8%
> 120 min	-0.73 (-1.05, -0.40)	69.3%

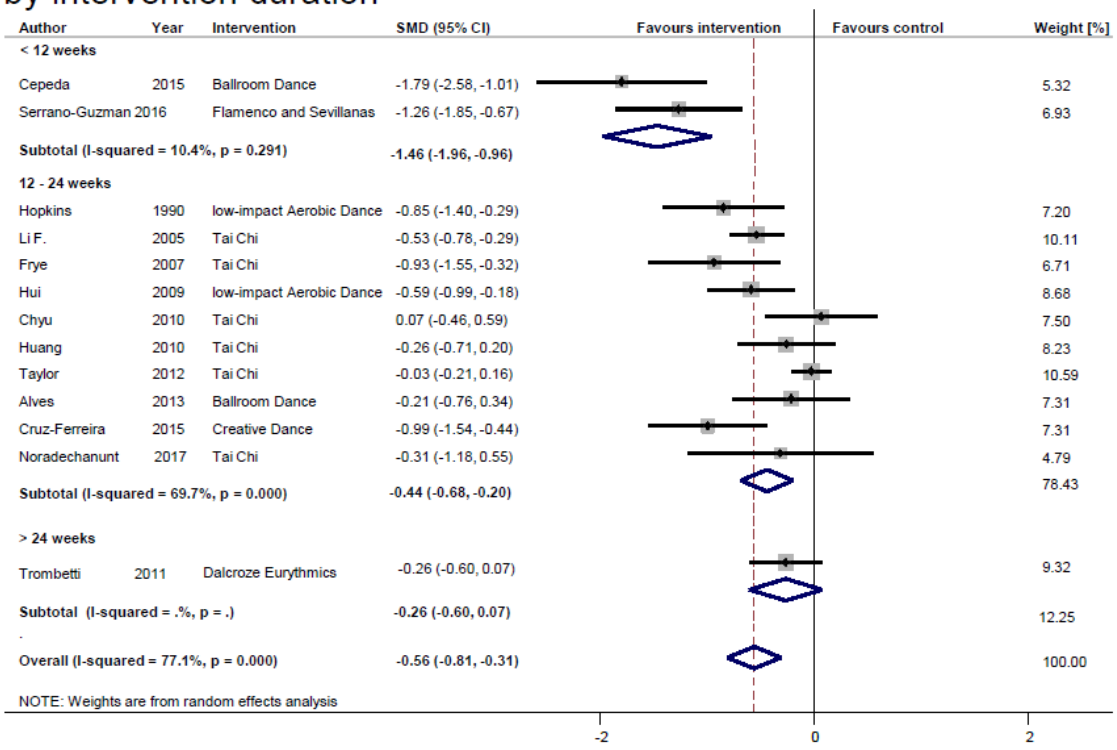
Association of dance-based mind-motor activities with mobility by intervention type



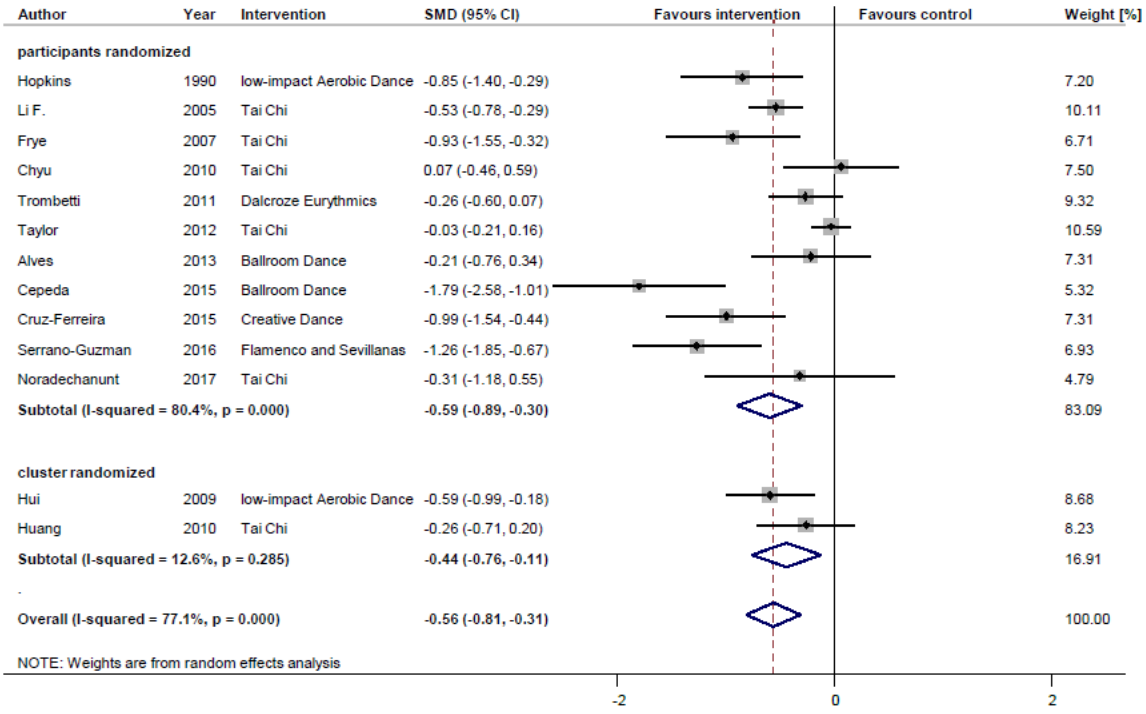
Association of dance-based mind-motor activities with mobility by intervention frequency



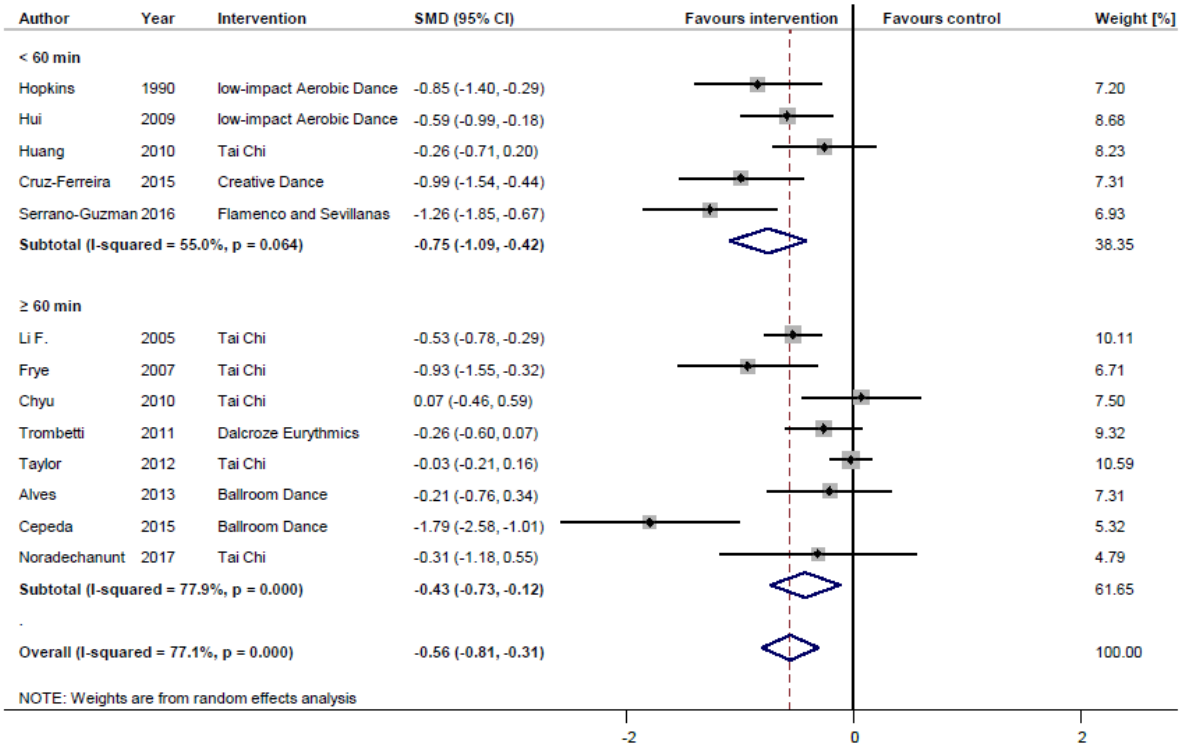
Association of dance-based mind-motor activities with mobility by intervention duration



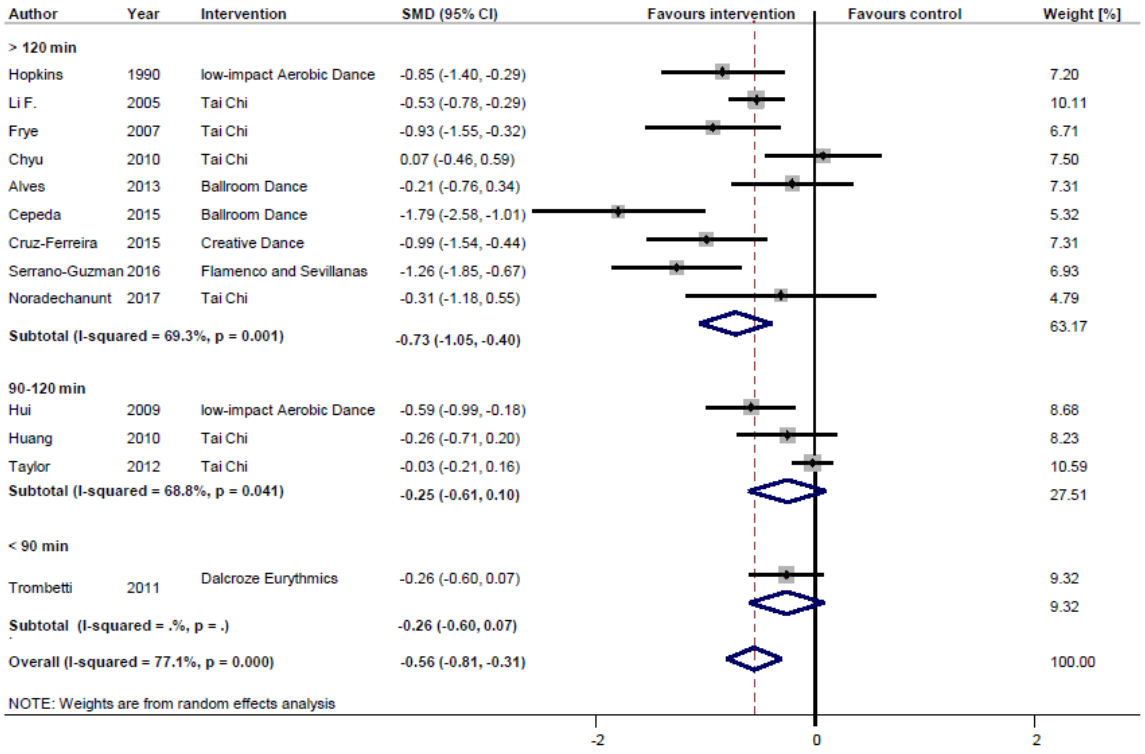
Association of dance-based mind-motor activities with mobility by type of randomization



Association of dance-based mind-motor activities with mobility by duration of one class

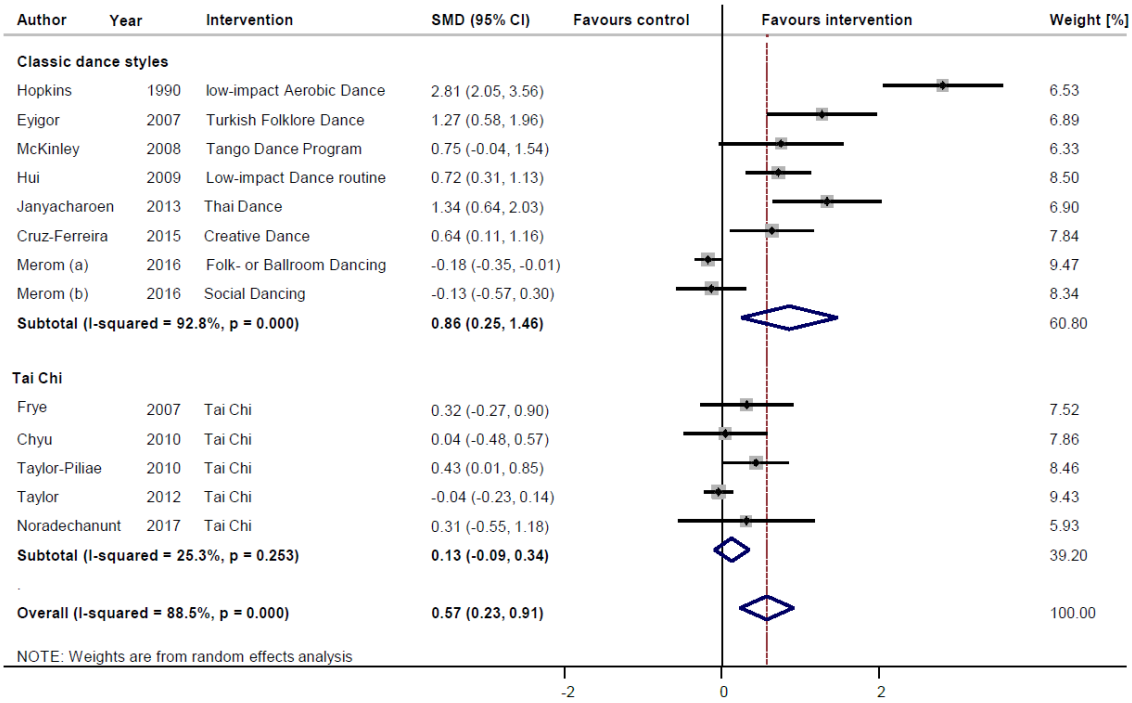


Association of dance-based mind-motor activities with mobility by total contact time

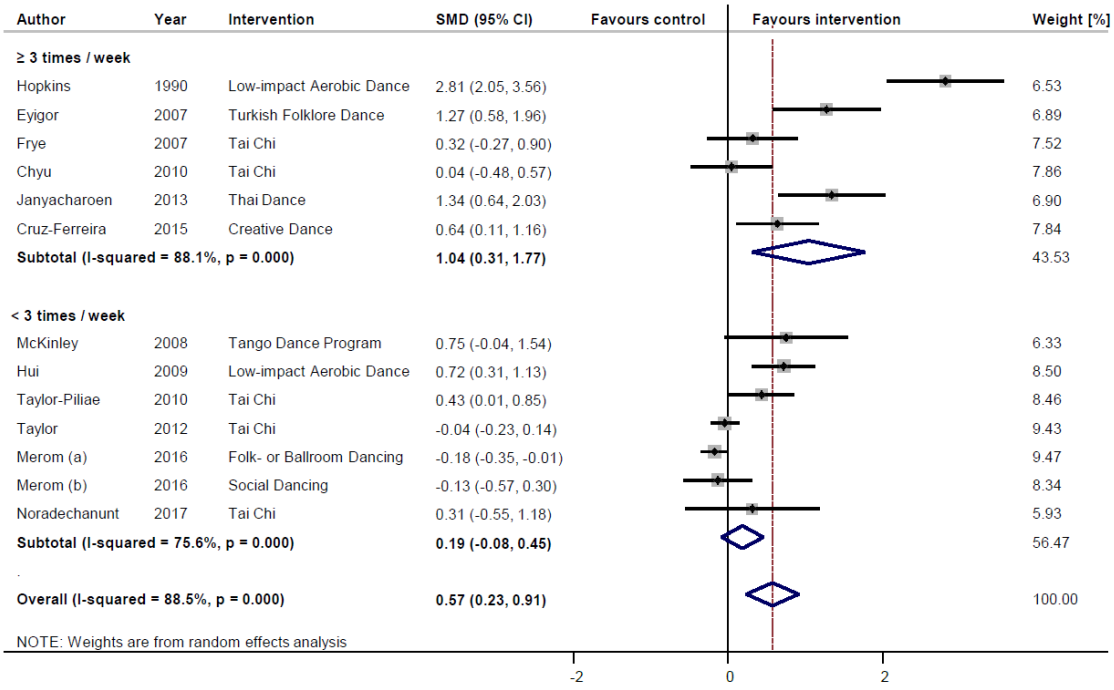


Strength (lower body) (N=13)	SMD (95%CI)	I^2
Full	**0.57 (0.23, 0.91)**	**88.5%**
by intervention type		
Tai Chi	0.13 (-0.09, 0.34)	25.3%
Non-Tai Chi	0.86 (0.25, 1.47)	92.8%
by intervention frequency		
< 3 times / week	0.19 (-0.09, 0.46)	75.6%
≥ 3 times / week	1.04 (0.31, 1.77)	88.1%
by intervention duration		
> 24 weeks	-0.17 (0.33, -0.01)	0.0%
12 - 24 weeks	0.61 (0.13, 1.09)	88.8%
< 12 weeks	1.15 (0.73, 1.57)	0.0%
by type of dwelling		
community dwelling	0.66 (0.27, 1.05)	86.9%
institutionalized	-0.18 (-0.35, -0.01)	--
by type of randomization		
participants randomized	0.66 (0.23, 1.08)	87.4%
cluster randomized	0.25 (0.63, 1.13	93.6%
by duration of one class		
< 60 min	1.13 (0.46, 1.81)	87.7%
≥ 60 min	0.16 (-0.10, 0.41)	68.7%
by total contact time		
90 - 120 min	0.27 (-0.06, 0.61)	85.7%
> 120 min	0.86 (0.21, 1.51)	85.3%

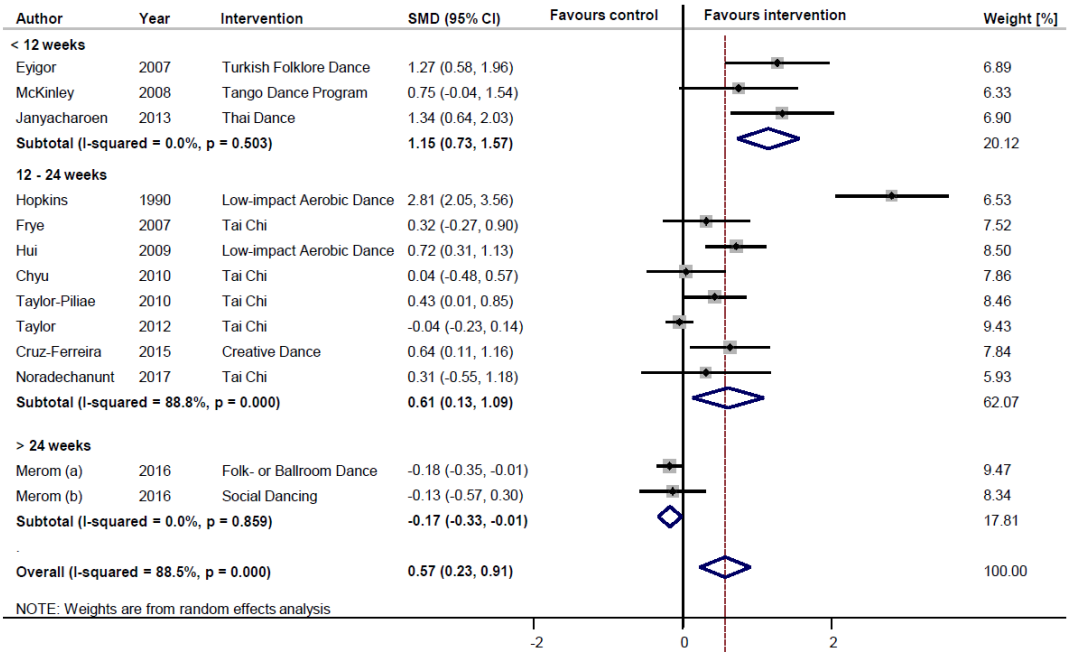
Association of dance-based mind-motor activities with LBS by intervention type



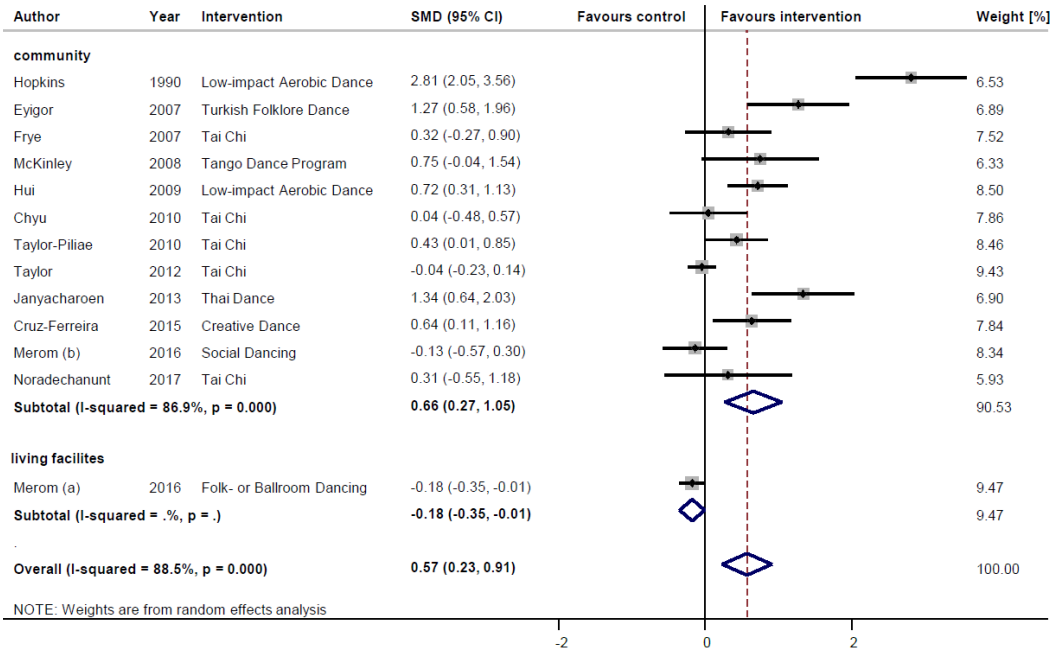
Association of dance-based mind-motor activities with LBS by intervention frequency



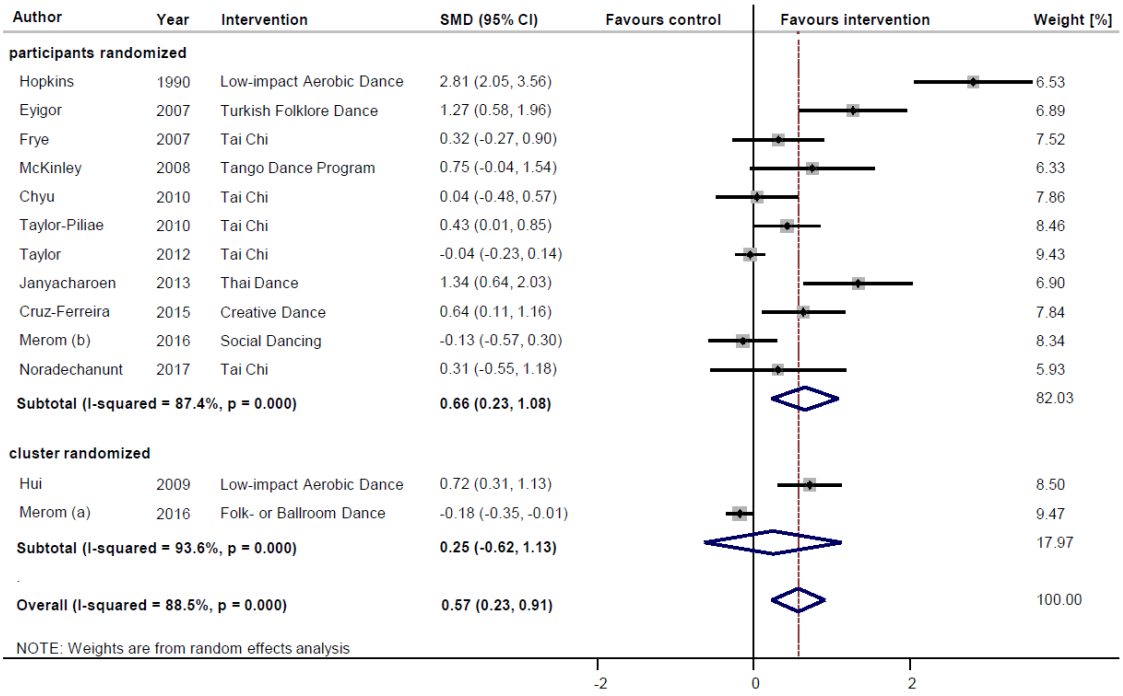
Association of dance-based mind-motor activities with LBS by intervention duration



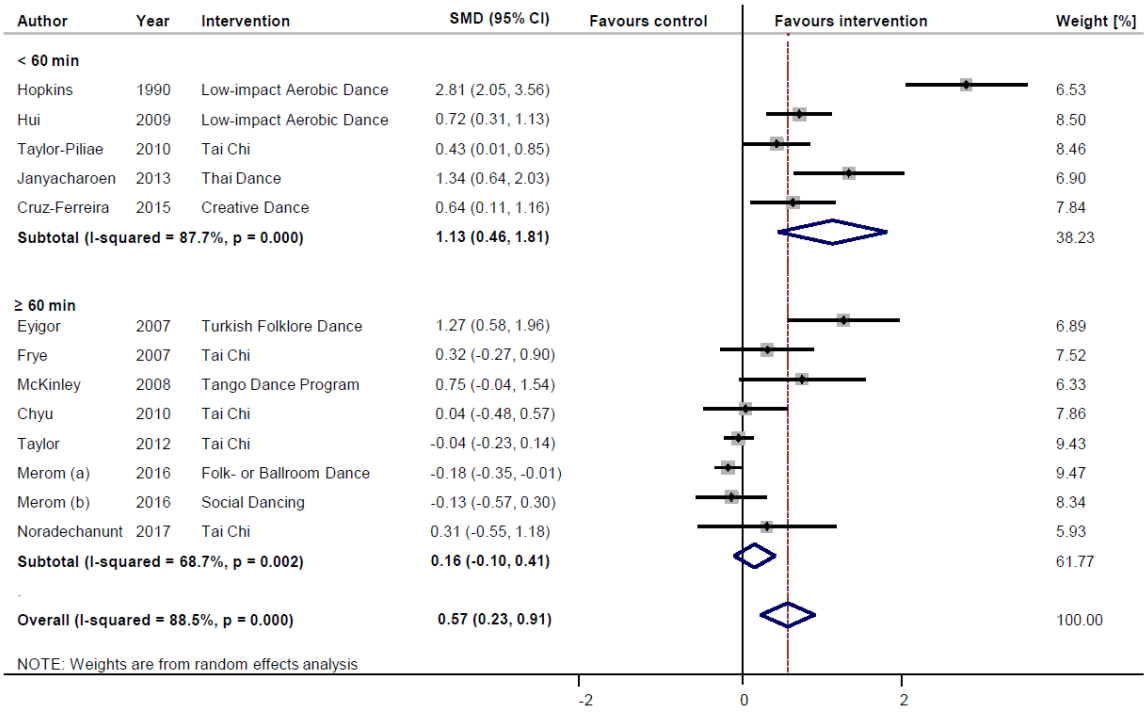
Association of dance-based mind-motor activities with LBS by type of dwelling



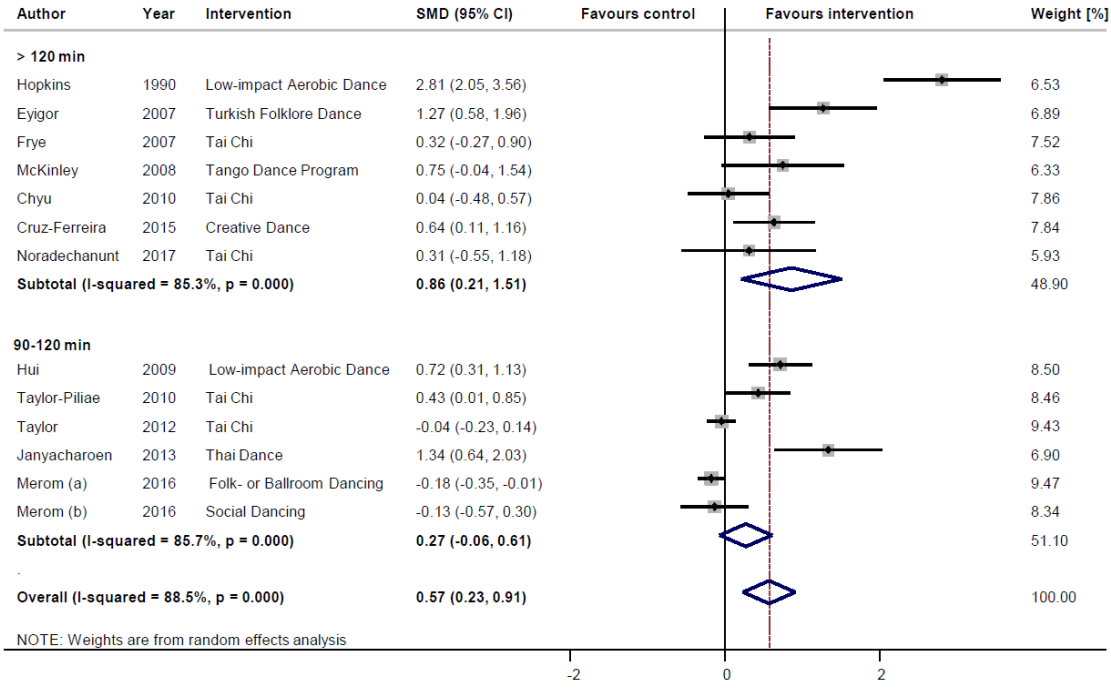
Association of dance-based mind-motor activities with LBS by type of randomization



Association of dance-based mind-motor activities with LBS by duration of one class

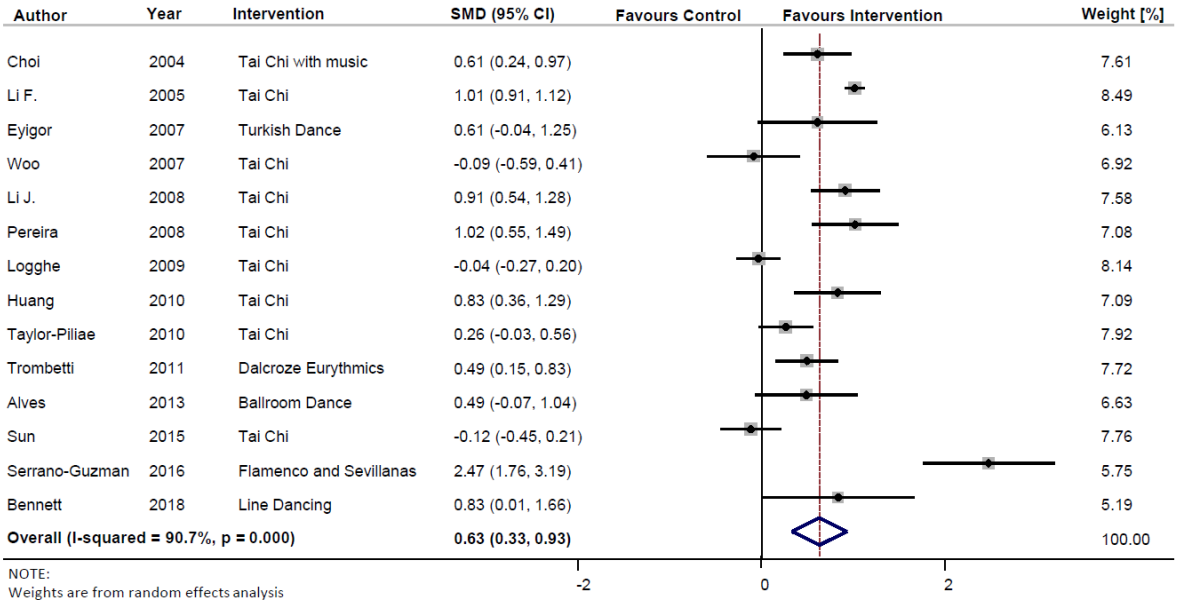


Association of dance-based mind-motor activities with LBS by total contact time



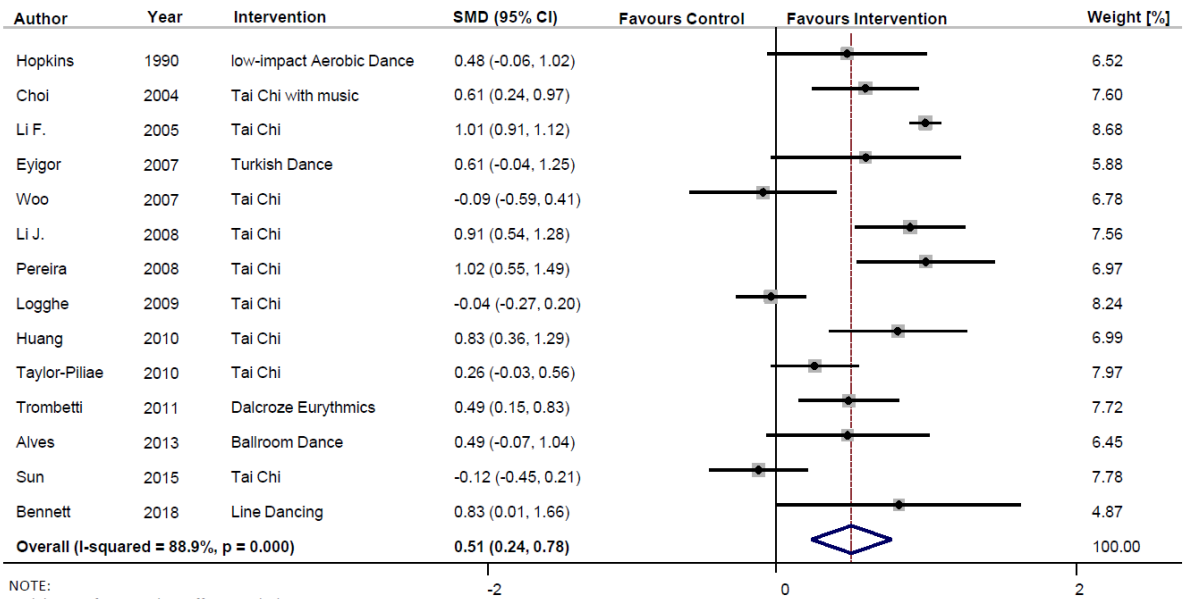
Sensitivity Analyses Secondary Outcomes

Association of dance-based mind-motor activities with balance Sensitivity analysis 1: without Hopkins et al.



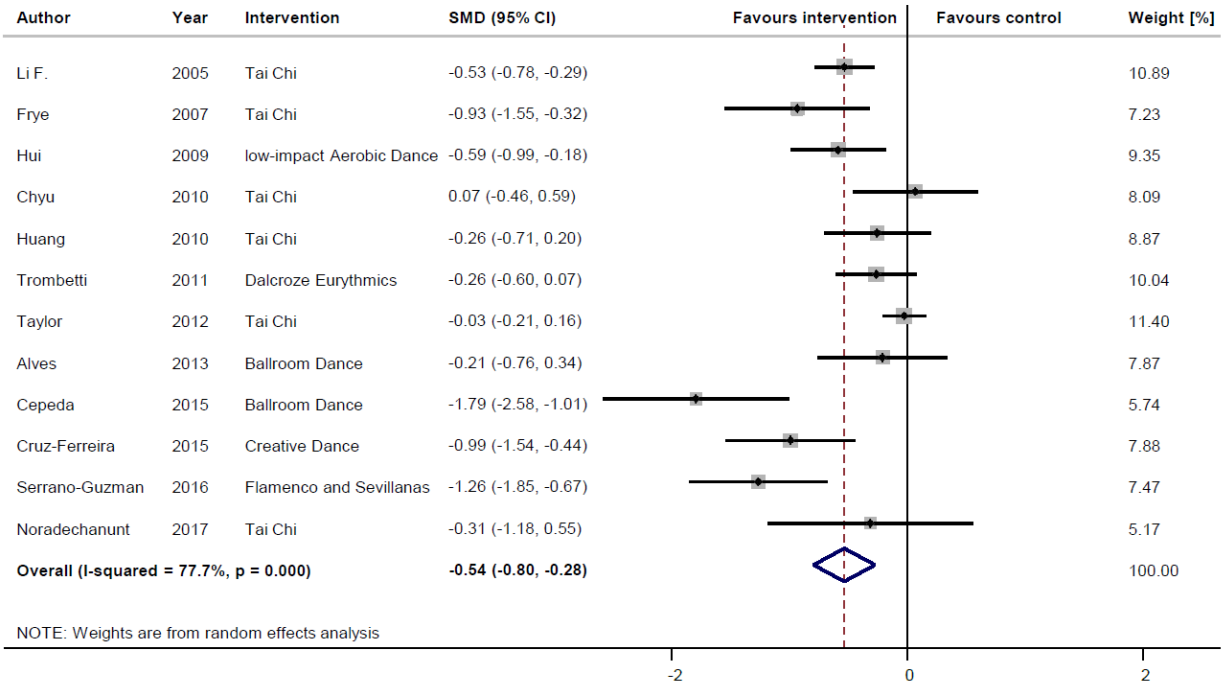
NOTE:
Weights are from random effects analysis
Total sample size by pooling 14 studies, n = 1423
Included assessments are Berg Balance Scale (BBS), One Leg Stand (OLS), and Functional Reach (FR)
Effect sizes are Hedges' *g* standardized mean differences (SMD)

Association of dance-based mind-motor activities with balance Sensitivity analysis 2: without Serrano-Guzmann et al.

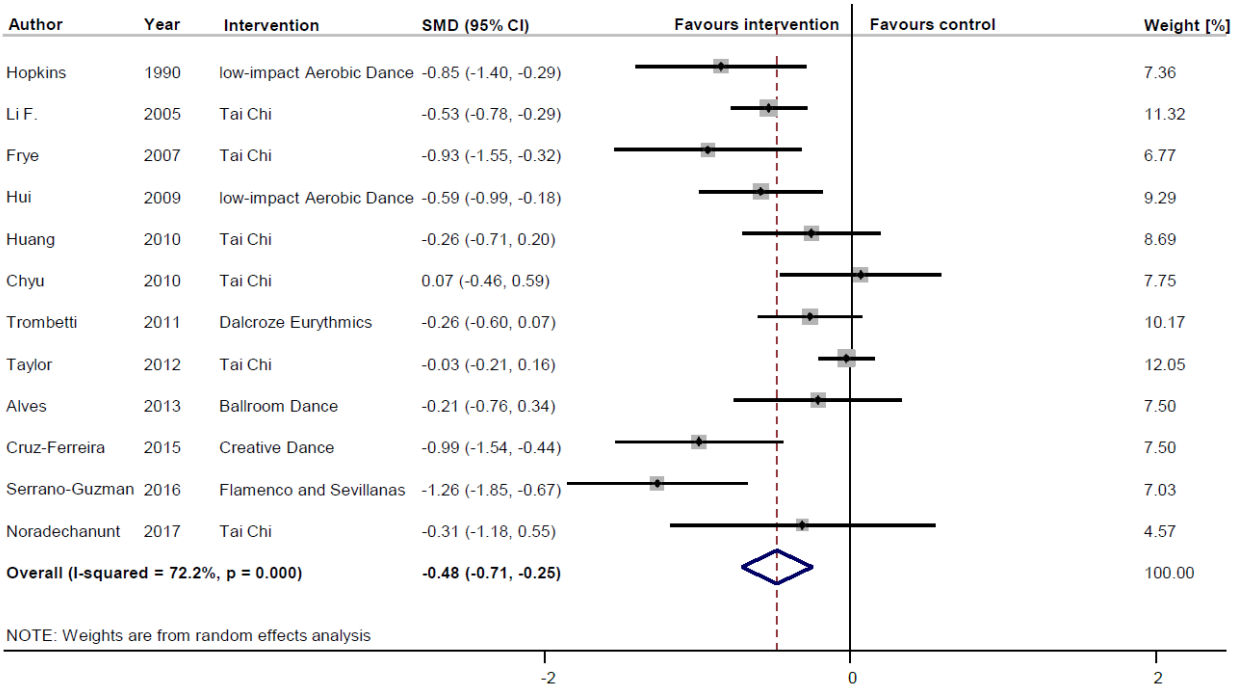


NOTE:
Weights are from random effects analysis
Total sample size by pooling 14 studies, n = 1424
Included assessments are Berg Balance Scale (BBS), One Leg Stand (OLS), and Functional Reach (FR)
Effect sizes are Hedges' *g* standardized mean differences (SMD)

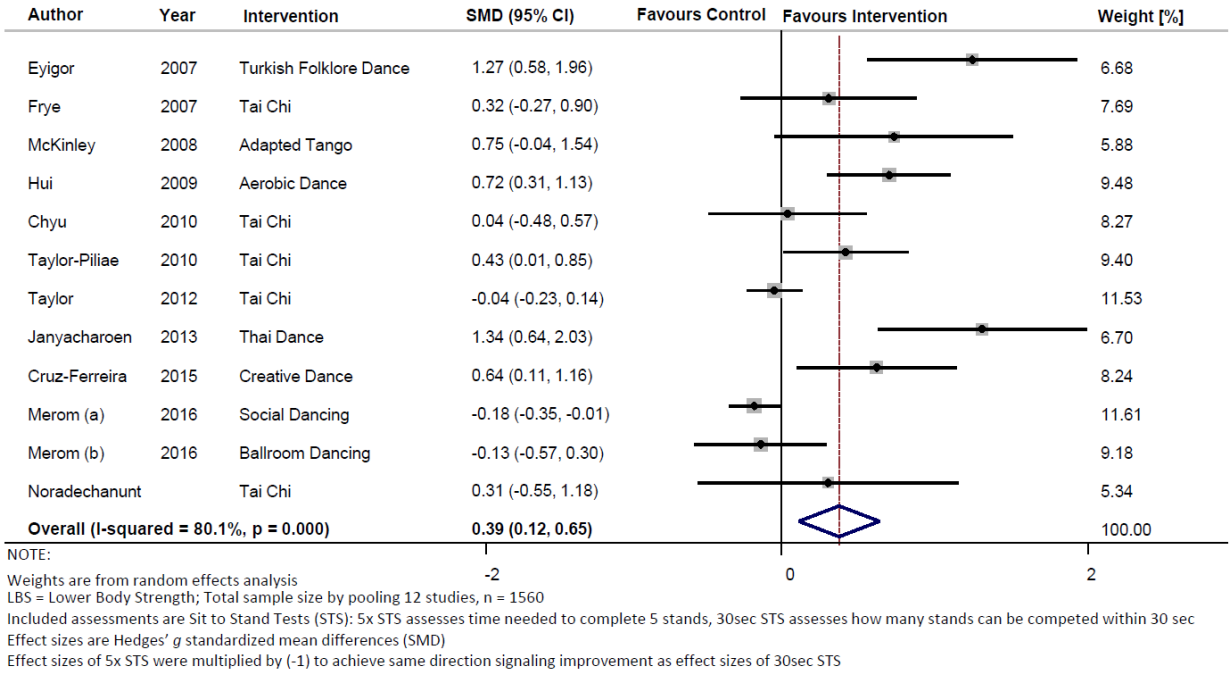
Association of dance-based mind-motor activities with mobility Sensitivity analysis 1: without Hopkins et al.



Association of dance-based mind-motor activities with mobility Sensitivity analysis 2: without Cepeda et al.



Association of dance-based mind-motor activities with LBS Sensitivity analysis 1: without Hopkins et al.



LBS = Lower Body Strength; Total sample size by pooling 12 studies, n = 1560
Included assessments are Sit to Stand Tests (STS): 5x STS assesses time needed to complete 5 stands, 30sec STS assesses how many stands can be competed within 30 sec
Effect sizes are Hedges' *g* standardized mean differences (SMD)
Effect sizes of 5x STS were multiplied by (-1) to achieve same direction signaling improvement as effect sizes of 30sec STS