

Supplementary Material – S3

Table 2. Descriptive characteristics of all included studies in the review, including world region, dance genres and dance levels, number of participants of each sex (and their age), types of sessions in which training load was collected, and which training load tools were used to report dancers' training load (including training volume, training intensity, or both). Reported countries were categorized by world region, while dance genres and dance levels were categorized as per Supplementary Material S2. Session types reflect those reported by a study, for which they collected training load. Training load tools used are summarized by the three most common tools, and 'Other' which includes perceived exertion, accelerometers, inertial measurement units, blood lactate, and video analysis. Studies reporting multiple groups of participants within the same dance genre and level (i.e., two groups of professional ballet dancers) were clustered and a summed number of participants (by sex where reported) and weighted mean age was tabulated.

Study Reference	World Region	Dance Genre Categories	Dance Level Categories	Number of Participants			Age (years)			Session Type	Training Load Tools			
				Male	Female	Total	Male	Female	Combined		Hours	Heart Rate	VO2	Other
Akella et al. 1991[1]	North America	Ballet	NR	0	54	54		M: 20.85 SD: 4.41 R: 13-31		NR	X			
Alan Galanti et al. 1993[2]	North America	Jazz	Recreational	0	8	8		M: 21 SD: 3.4 R: 17-26		Rehearsal, Performance	X	X		
Allen et al. 2012[3]	Europe	Ballet	Professional	25	27	52	M: 23 SD: 5	M: 25 SD: 6		Class, Rehearsal, Performance	X			
Allen et al. 2013[4]	Europe	Ballet	Professional	80	83	163	M: 23.7*	M: 25.3*		Class, Rehearsal, Performance	X			
Aujla et al. 2015[5]	Europe	Ballet, Cultural, Contemporary, Combined	NR	0	270	270		M: 14.23 SD: 2.03 R: 10-18		NR	X			
Ávila-Carvalho et al. 2022[6]	Europe	Ballet	NR	5	19	24			M: 12.7*	NR	X			
Bacchi et al. 2013[7]	Europe	Ballet	Professional	0	92	92		M: 18 SD: 2.8 R: 14-23		Class	X			
			Recreational	0	93	93		M: 17.9 SD: 2.9 R: 14-23						

Acronyms: NR = not reported, M = mean, SD = standard deviation, R = range, MD = median, CI = confidence interval, SEM = standard error of mean, SE = standard error, * = weighted mean age

Study Reference	World Region	Dance Genre Categories	Dance Level Categories	Number of Participants			Age (years)			Session Type	Training Load Tools			
				Male	Female	Total	Male	Female	Combined		Hours	Heart Rate	VO2	Other
Baillie et al. 2007[8]	Europe	Cultural	Competitive	0	9	9		M: 14.2 SD: 1.47		Class, Rehearsal, Performance		X		X
Bennell et al. 2001[9]	Australia/Oceania	Ballet, Tap, Contemporary, Modern, Other, Combined	Recreational	0	53	53		M: 10.7 SD: 0.8 R: 8-11		NR	X			
Blanksby & Reidy, 1988[10]	Australia/Oceania	Dancesport	Competitive	10	10	20	M: 23.2 SD: 6.3	M: 21.8 SD: 6.0		Performance		X		
Boeding et al. 2019[11]	Europe	Contemporary	Professional	11	10	21	M: 24.9 SD: 1.5	M: 27.5 SD: 2.27		Class, Rehearsal, Performance				X
Bria et al. 2011[12]	Europe	Dancesport	Competitive	12	12	24	M: 20.3*	M: 20.8* SD: 2.9		Performance, NR	X	X	X	X
Bronner & Wood, 2017[13]	Europe	Modern	Professional	17	18	35			M: 29.06 SD: 5.57 R: 20-41	Class, Rehearsal, Performance	X			
Bronner et al. 2003[14]	North America	Modern	Professional	21	21	42			M: 25.6* R: 19-40	Class, Rehearsal, Performance	X			
Bronner et al. 2016[15]	North America	Modern	Professional			98			NR	Class, Rehearsal, Performance	X			
			Pre-professional			479			NR	Class, Rehearsal, Performance				
Bronner, 2021[16]	North America	Modern	Pre-professional	40	140	180	M: 18.28 SD: 1.04	M: 18.1 SD: 0.53		Class, Rehearsal, Performance	X			
Brown et al. 2020[17]	North America	Ballet, Modern, Combined	University	0	17	17		M: 19.6 SD: 1.6		Class, Rehearsal	X			
Buchanan et al. 1992[18]	Australia/Oceania	Ballet	NR	0	34	34		M: 15.4 SD: 0.4		Class		X		
Burzynska et al. 2017[19]	North America	NR	University	0	20	20		R: 18-33		NR	X			
Butulis et al. 2021[20]	North America	Jazz, Contemporary, Cultural, Other, Combined	Competitive	0	134	134		R: 12-35		NR	X			
Cahalan et al. 2018[21]	Europe	Cultural	University	1	20	21			M: 21.5 SD: 1.7		X			

2

Acronyms: NR = not reported, M = mean, SD = standard deviation, R = range, MD = median, CI = confidence interval, SEM = standard error of mean, SE = standard error, * = weighted mean age

Study Reference	World Region	Dance Genre Categories	Dance Level Categories	Number of Participants			Age (years)			Session Type	Training Load Tools			
				Male	Female	Total	Male	Female	Combined		Hours	Heart Rate	VO2	Other
		Contemporary		1	28	29			M: 21 SD: 3.1	Class, Rehearsal, Performance				
Cahalan et al. 2019[22]	Europe	Cultural	Competitive	4	33	37			R: 13-17	NR	X			
Cain et al. 2015[23]	North America	NR	Recreational	0	264	264		M: 10.0*		Class	X			X
Caine et al. 2016[24]	North America	Ballet	Pre-professional	27	44	71	M: 17.37 95%CI: 16.07- 18.67	M: 16.41 95%CI: 15.69- 17.12		Class, Rehearsal, Performance, NR	X			
Cale'-Benzoor et al. 1992[25]	North America	Ballet	Professional	6	17	23	M: 27.83	M: 22.5*		NR	X			
Chatfield et al. 1990[26]	North America	Ballet, Jazz, Modern, Combined	Recreational			25			M: 24.0*	Class, Rehearsal, Performance	X			
			Competitive			8		M: 31.5 SD: 4.44						
Chen et al. 2006[27]	Asia	Modern	University	0	16	16		M: 19.7 SD: 0.11		Class	X	X		
Chia, 2017[28]	Asia	Ballet, Contemporary, Dancesport, Jazz, Street dance, Cultural, Other, Combined	Professional, Unclear, Combined	0	365	365		M: 25.4 CI: 24.4- 26.4		Class, Rehearsal, Performance	X			
Cho et al. 2009[29]	Asia	Street dance	Professional	23	0	23	M: 24.57 SD: 3.57			NR	X			
			Recreational	19	0	19	M: 19.53 SD: 2.59							
Cofré-Fernández et al. 2021[30]	South America	Jazz, Street dance, Combined	Competitive	0	14	14		R: 12-20		NR	X			
Cohen et al. 1980[31]	North America	Ballet	Professional	15	15	30	M: 24.3 SD: 3.7	M: 23.3 SD: 3.9		Class, Rehearsal, Performance	X			
Cohen et al. 1982[32]	North America	Ballet	Professional	4	6	10			M: 23.7 R: 20-30	Class	X	X	X	

3

Acronyms: NR = not reported, M = mean, SD = standard deviation, R = range, MD = median, CI = confidence interval, SEM = standard error of mean, SE = standard error, * = weighted mean age

Study Reference	World Region	Dance Genre Categories	Dance Level Categories	Number of Participants			Age (years)			Session Type	Training Load Tools			
				Male	Female	Total	Male	Female	Combined		Hours	Heart Rate	VO2	Other
Cohen et al. 1982[33]	North America	Ballet	Professional	6	7	13	M: 25.2 SD: 3.1	M: 24.3 SD: 3.6		Class, Performance		X		
Coogan et al. 2020[34]	North America	Modern	University	9	34	43			M: 18.3 SD: 0.7	Class, Rehearsal, Performance	X			
Coogan et al. 2021[35]	North America	Modern	University	26	188	214			R: 18-22	Class, Rehearsal, Performance	X			
Da Silva et al. 2015[36]	South America	Ballet	Pre-professional	0	24	24		M: 13.2 SD: 1.4 R: 12-15		NR	X			X
Dahlström, 1997[37]	Europe	Ballet, Modern, Jazz, Contemporary, Combined	University	0	11	11		M: 24 SD: 2 R: 21-27		Class	X	X		X
Dahlström et al. 1996[38]	Europe	Ballet, Contemporary, Jazz, Modern, Combined	Competitive	0	16	16		M: 23 SD: 2		NR, Class	X	X		X
Dang et al. 2020[39]	Europe	Cultural	Professional	56	113	169	M: 19 SD: 6.75	M: 19.6 SD: 6.30		Class, Rehearsal, Performance	X			
de-la-Cruz-Torres et al. 2020[40]	Europe	Ballet	Pre-professional	0	84	84		M: 17.0* SD: 4.50		NR	X			
de-la-Cruz-Torres et al. 2020[41]	Europe	Ballet	Pre-professional	0	29	29		M: 17 R: 15-28		NR	X			
Di Blasio et al. 2009[42]	Europe	Cultural	Recreational	12	12	24	M: 34.48 SD: 8.81	M: 33.37 SD: 11.18		Class	X	X		X
DiPasquale, 2018[43]	North America	Modern, Ballet, Combined	University	2	20	22			M: 20.3*	Class, Rehearsal	X			
Domene & Easton, 2014[44]	Europe	Cultural	Recreational	8	14	22	M: 35 SD: 5	M: 36 SD: 12		Performance	X	X	X	X
D'Ottavio et al. 2016[45]	Europe	Dancesport	Professional	6	3	12	M: 25.5*	M: 24.0*		Performance	X		X	X
Ducher et al. 2011[46]	Australia/Oceania	Ballet	Pre-professional	16	0	16	M: 16 SEM: 0.7			NR	X			

4

Acronyms: NR = not reported, M = mean, SD = standard deviation, R = range, MD = median, CI = confidence interval, SEM = standard error of mean, SE = standard error, * = weighted mean age

Study Reference	World Region	Dance Genre Categories	Dance Level Categories	Number of Participants			Age (years)			Session Type	Training Load Tools			
				Male	Female	Total	Male	Female	Combined		Hours	Heart Rate	VO2	Other
Dušek, 2001[47]	Europe	Ballet	Pre-professional	0	10	10	R: 10.6-19.6			NR	X			
Echegoyen et al. 2010[48]	North America	Cultural, Modern, Combined	NR			444			M: 23.1 SD: 3.04	Class, Rehearsal	X			
Edmonds et al. 2018[49]	North America	Ballet, Modern, Tap, Contemporary, Combined	University	0	29	29		M: 20 SD: 1.1		Class, Rehearsal, Performance	X			
Ekegren et al. 2014[50]	Europe	Ballet	Pre-professional	112	154	266			M: 17.2 SD: 1.21 R: 15-23	Class, Rehearsal, Performance	X			
Emerenziani et al. 2013[51]	Europe	Cultural	Recreational	10	10	20	M: 36 SD: 8	M: 38 SD: 6		Class	X	X		
Escobar Álvarez et al. 2020[52]	Europe	Ballet	Professional	0	41	41		M: 18.94 SD: 1.32		Class, Rehearsal	X			
Escobar Álvarez et al. 2020[53]	Europe	Ballet	Professional	0	46	46		M: 18.9 SD: 1.1		NR	X			
Fogelholm et al. 1996[54]	Europe	Ballet	Pre-professional, Professional, Combined	0	24	24		M: 23.3 SD: 4.8 R: 16-42		NR	X			
Fostervold Mathisen et al. 2022[55]	Europe	Jazz, Contemporary, Combined	University	14	110	124	M: 21.5 95%CI: 20.3-22.7	M: 20.6 95%CI: 20.2-20.8		NR	X			
Fuller et al. 2020[56]	Australia/Oceania	Ballet, Contemporary, Combined	Pre-professional	1	16	17			M: 20.7 SD: 1.32 R: 19-25	Class, Rehearsal, Performance	X			
Gallotta et al. 2011[57]	Europe	Modern, Jazz, Combined	Recreational	0	44	44		R: 11-12		Class				X
Glance et al. 2006[58]	North America	Ballet	Pre-professional, Professional, Combined	0	18	18		M: 23.0*		NR	X			

Acronyms: NR = not reported, M = mean, SD = standard deviation, R = range, MD = median, CI = confidence interval, SEM = standard error of mean, SE = standard error, * = weighted mean age

Study Reference	World Region	Dance Genre Categories	Dance Level Categories	Number of Participants			Age (years)			Session Type	Training Load Tools			
				Male	Female	Total	Male	Female	Combined		Hours	Heart Rate	VO2	Other
Gorwa et al. 2019[59]	Europe	Ballet	Professional	22	22	44	M: 26.4 SD: 5.9	M: 24.9 SD: 5.3		NR	X			
Gorwa et al. 2021[60]	Europe	Ballet	Professional	22	22	44	M: 25 SD: 5	M: 26 SD: 6		NR	X			
Grochowska-Niedworok et al. 2018[61]	Europe	Ballet	Pre-professional	0	150	150		M: 13 SD: 2.5 R: 10-18		NR	X			
Groer & Fallon, 1993[62]	North America	Ballet	Professional	13	23	36	M: 28.1	M: 22.4		NR	X			
Guidetti et al. 2007[63]	Europe	Ballet	NR	0	39	39		M: 14.1* R: 13-16		Class	X		X	X
Guidetti et al. 2015[64]	Europe	Cultural	Recreational	10	10	20	M: 36.3 SD: 7.7	M: 38.1 SD: 6.1		Class	X	X		X
Hafiz et al. 2016[65]	Australia/Oceania	Ballet	Professional, University, Combined	0	80	80		M: 19.6*		Class, NR	X			
Hamilton et al. 2006[66]	Australia/Oceania	Ballet	Pre-professional	0	64	64		M: 18.16 SD: 1.80 R: 11-14		NR	X			
Hirsch et al. 2003[67]	North America	Ballet	University	3	11	14	M: 22.3 SD: 1.2 R: 21-23	M: 20.2 SD: 1.1 R: 19-22		NR	X			
Jeffries et al. 2017[68]	Australia/Oceania	Ballet, Contemporary, Combined	Competitive	5	11	16	M: 18.8 SD: 2.4	M: 19 SD: 2		Class, Rehearsal	X	X		X
Jeffries et al. 2020[69]	Australia/Oceania	Ballet, Contemporary, Combined	Professional	7	9	16	M: 27.6 SD: 5.5 R: 19-34	M: 24.9 SD: 4.7 R: 18-32		Class, Rehearsal, Performance	X			X
Joka et al. 2015[70]	Europe	Street dance	Competitive	46	16	62	M: 26 SD: 7 R: 13-43	M: 27 SD: 5 R: 20-34		NR	X			
Junck et al. 2017[71]	North America	Ballet, Contemporary, Modern, Jazz, Combined	Professional, Recreational, Unclear, Combined	34	130	164			M: 35 R: 15-77	NR	X			
Kadel et al. 1992[72]	North America	Ballet	Professional	0	54	54		M: 20.3*		NR	X			

Acronyms: NR = not reported, M = mean, SD = standard deviation, R = range, MD = median, CI = confidence interval, SEM = standard error of mean, SE = standard error, * = weighted mean age

Study Reference	World Region	Dance Genre Categories	Dance Level Categories	Number of Participants			Age (years)			Session Type	Training Load Tools		
				Male	Female	Total	Male	Female	Combined		Hours	Heart Rate	VO2
Kattenstroth et al. 2011[73]	Europe	Dancesport	Competitive	6	5	11			M: 71.18 SD: 1.13	NR	X		
Kaufmann et al. 2021[74]	Australia/Oceania, Europe, South America, North America, Asia, Middle East, Sub-Saharan Africa	Ballet	Pre-professional, Professional, Competitive, Combined	33	156	189	M: 27.2 SD: 7.47	M: 26.6 SD: 7.96		NR	X		
Kauther et al. 2009[75]	Europe	Street dance	Competitive, Professional, Combined			144			M: 21.7 R: 11-46	NR	X		
Kawalek & Gobet, 2022[76]	Europe	Contemporary	Professional	9	11	20	M: 25.6 SD: 3.3 R: 13	M: 25.6 SD: 3.3 R: 13		Rehearsal, NR	X		
			Competitive	15	13	28	M: 21 SD: 1.8 R: 9	M: 21 SD: 1.8 R: 9					
Kenny et al. 2018[77]	North America	Ballet	Pre-professional	8	77	85			MD: 15 R: 11-19	Class, Rehearsal, Performance	X		
		Contemporary		2	58	60			MD: 19 R: 17-30				
Kilicarslan et al. 2007[78]	Middle East	Ballet	Pre-professional, Professional, Combined	0	22	22		M: 29.8 SD: 3		NR	X		
Kim et al. 2020[79]	Asia	Ballet	Recreational	0	18	18		M: 40.9*		NR	X		
Kish et al. 2003[80]	North America	Ballet, Jazz, Tap, Combined	Recreational	6	167	173			M: 15.5 R: 8-18	Class, Rehearsal, Performance	X		
KJonova & KJonovs, 2010[81]	Europe	Dancesport	Competitive	12	12	24	M: 20.5 SD: 2.11	M: 20.3 SD: 3.33		Class		X	

7

Acronyms: NR = not reported, M = mean, SD = standard deviation, R = range, MD = median, CI = confidence interval, SEM = standard error of mean, SE = standard error, * = weighted mean age

Study Reference	World Region	Dance Genre Categories	Dance Level Categories	Number of Participants			Age (years)			Session Type	Training Load Tools			
				Male	Female	Total	Male	Female	Combined		Hours	Heart Rate	VO2	Other
Koch et al. 2020[82]	Europe	Dancesport	Competitive	27	27	54	R: 20-78	R: 20-78		Performance		X		X
Kozai et al. 2020[83]	Europe	Ballet	Professional	25	23	48	M: 25.5*	M: 27.2*		Class, Rehearsal	X			X
Kujala et al. 1997[84]	Europe	Ballet	NR	0	18	18		M: 11.8 R: 10.7-13.3		NR	X			
Łagowska, 2014[85]	Europe	Ballet	NR	0	29	29		M: 17.5*		NR	X			
Łagowska et al. 2014[86]	Europe	Ballet	Pre-professional	0	21	21		M: 17.1 SD: 0.9		NR	X			
Łagowska & Kapczuk, 2016[87]	Europe	Ballet	Unclear	0	21	21		M: 17.1 SD: 0.9		NR	X			
Lankford et al. 2014[88]	North America	Dancesport	Recreational	12	12	24	M: 23 SD: 1	M: 21 SD: 3		Performance			X	X
Lavoie & Lebe-Neron, 1982[89]	North America	Jazz	Recreational	0	8	8		M: 24.7 SE: 1.6		Class	X	X		
Lee et al. 2017[90]	Australia/Oceania	Ballet, Modern, Combined	Pre-professional	25	40	65	M: 18.57 SD: 1.72 R: 16-24	M: 17.78 SD: 1.18 R: 16-20		NR	X			
Li & Yao, 2005[91]	Asia	Dancesport	University			116			M: 19.7	Class		X		
Liiv et al. 2013[92]	Europe	Dancesport	Professional	8	8	16	M: 26.5 SD: 5.5	M: 26.4 SD: 8.5		Performance			X	X
Liiv et al. 2014[93]	Europe	Dancesport	Competitive	30	30	60	M: 22.8*	M: 22.0*		Performance, NR	X			X
Longworth et al. 2014[94]	Australia/Oceania	Ballet	NR	0	30	30		M: 12 SD: 2.6 R: 9-16		NR, Class	X			
Lopez Castillo et al. 2015[95]	North America	Ballet, Jazz, Street dance, Cultural, Tap, Combined	Recreational	28	263	291			M: 10.4 SD: 3.2 R: 5-18	Class	X			
Luke et al. 2002[96]	North America	Ballet, Modern, Combined	Pre-professional	5	34	39			M: 15.8 SD: 1.1 R: 14-18	NR	X			

8

Acronyms: NR = not reported, M = mean, SD = standard deviation, R = range, MD = median, CI = confidence interval, SEM = standard error of mean, SE = standard error, * = weighted mean age

Study Reference	World Region	Dance Genre Categories	Dance Level Categories	Number of Participants			Age (years)			Session Type	Training Load Tools			
				Male	Female	Total	Male	Female	Combined		Hours	Heart Rate	VO2	Other
Mailuhu et al. 2021[97]	Europe	Contemporary	Pre-professional	27	64	91			M: 19.2 SD: 1.5	NR	X			
Massidda et al. 2011[98]	Europe	Dancesport	Competitive	5	5	10	M: 20 SD: 1.3	M: 18.6 SD: 2.1		Performance	X			X
Matthews et al. 2006[99]	Australia/Oceania	Ballet, Jazz, Tap, Modern, Combined	Recreational	0	82	82		R: 8-14		NR	X			
Matthews et al. 2006[100]	Australia/Oceania	Ballet	NR	0	82	82		R: 8-11		NR	X			
Mattiussi et al. 2021[101]	Europe	Ballet	Professional	57	66	123	M: 27.9 SD: 8.5	M: 28 SD: 8.3		Class, Rehearsal, Performance	X			
Mayers et al. 2003[102]	North America	Tap, Ballet, Combined	Competitive	14	90	104	M: 34 SD: 16	M: 33 SD: 14		Class, Rehearsal	X			
McBride & Bronner, 2022[103]	North America	Modern	Professional	21	21	42	M: 26 SD: 5 R: 18-42	M: 27 SD: 6 R: 19-52		NR	X			
McGuinness & Doody, 2006[104]	North America, Europe, Australia/Oceania	Cultural	Competitive	17	142	159			M: 17.8 SD: 2.9 R: 15-27	Class	X			
McMahon et al. 2021[105]	Australia/Oceania	Ballet	Pre-professional	0	30	30		M: 18.23 SD: 1.72 R: 16-21		NR	X			
Miletic et al. 2009[106]	Europe	Dancesport, Other, Combined	Competitive	0	96	96		M: 13.8 R: 12-16		NR	X			
Miletic et al. 2011[107]	Europe	Dancesport	Competitive	37	49	86	M: 19.1*	M: 18.2*		NR	X			

Acronyms: NR = not reported, M = mean, SD = standard deviation, R = range, MD = median, CI = confidence interval, SEM = standard error of mean, SE = standard error, * = weighted mean age

Study Reference	World Region	Dance Genre Categories	Dance Level Categories	Number of Participants			Age (years)			Session Type	Training Load Tools				
				Male	Female	Total	Male	Female	Combined		Hours	Heart Rate	VO2	Other	
Miletic et al. 2015[108]	South America, Australia/Oceania, Europe, North America, Middle East, Sub-Saharan Africa, Asia, Antarctica	Dancesport	Competitive	200	0	200	R: 15-25+			NR	X				
Miletic et al. 2015[109]	South America, Australia/Oceania, Europe, North America, Middle East, Asia, Sub-Saharan Africa	Dancesport	Competitive	0	173	173	M: 24 R: 15-38			NR	X				
Mistiaen et al. 2012[110]	Europe	NR	Pre-professional	2	38	40	M: 20.3 SD: 2.4 R: 17-26			Class	X				
Mittleman et al. 1992[111]	North America	Ballet, Modern, Jazz, Tap, Combined	University	0	13	13	M: 19.7 SD: 1.0			NR	X				
Nawrocka et al. 2017[112]	Europe	Other	Recreational	0	37	37	M: 26.4*			Class	X				
			Competitive	0	15	15	M: 26.27 SD: 6.47								
Nicholas et al. 2019[113]	Australia/Oceania	Other	Competitive	0	14	14	M: 33.3 SD: 6.1 R: 23-47			Class	X	X	X	X	X

10

Acronyms: NR = not reported, M = mean, SD = standard deviation, R = range, MD = median, CI = confidence interval, SEM = standard error of mean, SE = standard error, * = weighted mean age

Study Reference	World Region	Dance Genre Categories	Dance Level Categories	Number of Participants			Age (years)			Session Type	Training Load Tools				
				Male	Female	Total	Male	Female	Combined		Hours	Heart Rate	VO2	Other	
Noble & Howley, 1979[114]	North America	Tap	Recreational	0	15	15		R: 17-26		Rehearsal			X		
Noon et al. 2010[115]	North America	Cultural	Recreational	0	138	138		M: 14.0* R: 8-23		Class	X				
			Competitive	0	69	69		M: 12.7 R: 8-20							
Nougues et al. 2022[116]	Europe	Ballet	Competitive	0	1	1		M: 11		NR	X				
Nunes et al. 2002[117]	North America	Ballet, Tap, Jazz, Modern	Recreational	0	31	31		R: 8-20		NR	X				
Ojofeitimi & Bronner, 2011[118]	North America	Modern	Professional	21	21	42			M: 25.9*	Class, Rehearsal, Performance	X				
Oliveira et al. 2010[119]	South America	Tap	Recreational	0	8	8		M: 19.6 SD: 2.4		Rehearsal	X	X	X	X	
O'Neill et al. 2011[120]	North America	Ballet, Jazz, Contemporary, Tap, Street dance, Cultural, Dancesport, Combined	Recreational, Competitive, Combined	0	134	134		M: 14.6 SD: 1.9 R: 11-18		Class, Rehearsal	X				X
O'Neill et al. 2012[121]	North America	Ballet, Jazz, Tap, Combined	Competitive	0	137	137		M: 14.6 SD: 2.0 R: 11-18		Class, Rehearsal	X				X
Padfield et al. 1993[122]	North America	Ballet, Modern, Combined	Recreational	0	16	16		M: 12 SD: 1.1		NR	X				
			Competitive	0	24	24		M: 13.1 SD: 1.4							
Panhale et al. 2020[123]	Asia	Cultural	University, Professional, Combined	0	40	40		R: 18-30		NR	X				
Pasulka et al. 2017[124]	North America	NR	NR	0	20	20		M: 14.3 SD: 1.8		NR	X				
Pate et al. 2010[125]	North America	NR	NR	0	259	259		M: 13.3*		Class	X				

Acronyms: NR = not reported, M = mean, SD = standard deviation, R = range, MD = median, CI = confidence interval, SEM = standard error of mean, SE = standard error, * = weighted mean age

Study Reference	World Region	Dance Genre Categories	Dance Level Categories	Number of Participants			Age (years)			Session Type	Training Load Tools			
				Male	Female	Total	Male	Female	Combined		Hours	Heart Rate	VO2	Other
Pedersen & Wilmerding, 1998[126]	North America	Cultural	Unclear			30			M: 26.53 SD: 4.08 R: 21-35	Class, Rehearsal, Performance	X			
			Professional			30			M: 36.27 SD: 11.09 R: 18-70					
Pedersen et al. 2001[127]	North America	Cultural	Professional	4	7	11			M: 28.45 R: 24-44	Class, Rehearsal	X			
Pekkarinen et al. 1989[128]	Europe	Ballet	NR	27	0	27	R: 9-16			NR	X			
Pellicciari et al. 2016[129]	Europe	Dancesport	NR	154	152	306			M: 25.5*	NR	X			
Peltonen et al. 1997[130]	Europe	NR	NR	0	18	18		M: 14.8 SD: 0.6		NR	X			
Pigeon et al. 1997[131]	Europe	Ballet	University	0	97	97		M: 12.6 SD: 1.5 R: 10.2-15.2		NR	X			
Pilch et al. 2017[132]	Europe	Dancesport	NR	6	6	12	M: 22.5 SD: 2.07	M: 21 SD: 1.89		Performance	X	X	X	X
Premelč et al. 2019[133]	Europe	Dancesport	Competitive	56	41	97			MD: 20 R: 12-53	Class, Rehearsal, Performance	X			
Ramel & Moritz, 1994[134]	Europe	Ballet	Professional			128	M: 28 R: 17-47	M: 27 R: 18-43		NR	X			
Ramkumar et al. 2016[135]	North America	Ballet	Professional	72	81	153			M: 27	Rehearsal	X			
Redding et al. 2004[136]	Europe	Modern	Professional	7	12	19	M: 25 SD: 4.4	M: 25 SD: 4.0		Class		X		
Riding McCabe et al. 2014[137]	Europe, North America	Dancesport	Professional, Unclear, Combined	43	56	99	M: 32 SD: 15.5	M: 31 SD: 12.2		Class, Rehearsal, Performance	X			
						1714			NR					
Rimmer et al. 1994[138]	North America	Ballet, Modern, Combined	University	3	8	11	M: 22.8 SD: 1.5	M: 21.2 SD: 2.0		Class, Rehearsal	X	X		
Rodrigues-Krause et al. 2014[139]	South America	Ballet	Competitive	0	12	12		M: 20.5 SD: 3.2		Class, Rehearsal	X	X	X	X

12

Acronyms: NR = not reported, M = mean, SD = standard deviation, R = range, MD = median, CI = confidence interval, SEM = standard error of mean, SE = standard error, * = weighted mean age

Study Reference	World Region	Dance Genre Categories	Dance Level Categories	Number of Participants			Age (years)			Session Type	Training Load Tools			
				Male	Female	Total	Male	Female	Combined		Hours	Heart Rate	VO2	Other
Rodrigues-Krause et al. 2018[140]	South America	Ballet	Recreational	0	10	10		M: 66 SD: 5 R: 60-75		Class	X	X	X	X
Roussel et al. 2013[141]	Europe	Ballet, Contemporary, Combined	Pre-professional	2	38	40			M: 20.3 SD: 2.4 R: 17-26	Class	X			
Rovisco Branquinho & Páscoa Pinheiro, 2022[142]	Europe	Ballet	Recreational	0	1	1		M: 18		NR	X			
Salmon et al. 2020[143]	Europe	Other	NR	0	4	4		M: 14 SD: 1.87 R: 12-16		Class, Performance	X	X		X
Sanders et al. 2021[144]	North America	Ballet, Modern	University	0	17	17		M: 19.9 SD: 1.3		Class	X	X		
Schantz & Astrand, 1984[145]	Europe	Ballet	Professional	11	13	25	M: 28.5*	M: 26.4*		Class, Rehearsal, NR	X	X	X	X
				1	1	2	NR	NR		Performance		X		
Schmitt et al. 2005[146]	Europe	Ballet, Modern, Combined	Professional	11	31	42	M: 18.5 SD: 1.8 R: 17-23	M: 17.6 SD: 2.1 R: 14-23		Class, Rehearsal	X			
Scialom et al. 2006[147]	South America	Ballet	Professional	12	12	12			NR	Class, Rehearsal	X			
Seliger et al. 1970[148]	Europe	Ballet	Professional	3	3	6	M: 30.9 SD: 8.4	M: 35.1 SD: 12.0		Performance	X	X		
Shah et al. 2005[149]	North America	Ballet	NR	0	1	1		M: 16		Class	X			
Shah et al. 2012[150]	North America	Modern	Professional	49	135	184			M: 30.1 SD: 7.3 R: 18-55	Class, Rehearsal	X			
Shaw et al. 2020[151]	Europe	Ballet	Professional	13	9	22	M: 25.5 SD: 5.3	M: 25.2 SD: 4.4		Class, Rehearsal	X	X		X
Shybut et al. 2008[152]	North America	Cultural	NR	0	1	1		M: 12		Class, Rehearsal, Performance	X			
Smith et al. 1994[153]	North America	Ballet, Jazz, Combined	Competitive	0	10	10		M: 19.3 SD: 1.1		Class, Rehearsal	X			X

13

Acronyms: NR = not reported, M = mean, SD = standard deviation, R = range, MD = median, CI = confidence interval, SEM = standard error of mean, SE = standard error, * = weighted mean age

Study Reference	World Region	Dance Genre Categories	Dance Level Categories	Number of Participants			Age (years)			Session Type	Training Load Tools			
				Male	Female	Total	Male	Female	Combined		Hours	Heart Rate	VO2	Other
Soares Campoy et al. 2011[154]	South America	Ballet	NR	258			M: 18.4*			Class, Rehearsal, Performance	X			
		Jazz, Contemporary, Combined		115			M: 18.3*							
		Street dance		77			M: 18.9*							
		Tap, Cultural, Combined		50			M: 17.6*							
Staal et al. 2018[155]	Europe	Ballet	Professional	20	20	20	M: 24.5 R: 21-28.5	M: 25.1 SD: 4.8 R: 19-35		NR	X			
Steinberg et al. 2011[156]	Middle East	Ballet, Modern, Jazz, Combined	Recreational	0	1320	1320	R: 8-16			NR	X			
Steinberg et al. 2011[157]	Middle East	Ballet, Modern, Jazz, Combined	Recreational	0	989	989	R: 8-16			NR	X			
Steinberg et al. 2013[158]	Middle East	Ballet, Modern, Jazz, Combined	Recreational	0	569	569	M: 13.6*			Class	X			
Steinberg et al. 2014[159]	Europe	Ballet, Contemporary, Street dance, Combined	Recreational	218	588	806	M: 14.4 SD: 2.1 R: 8-18			NR	X			
Steinberg et al. 2018[160]	Middle East	Ballet, Modern, Contemporary, Combined	Pre-professional	0	118	118	M: 13.3*			NR	X			
Steinberg et al. 2020[161]	Middle East	NR	NR	0	132	132	M: 13.1*			NR	X			
Stracciolini et al. 2017[162]	North America	NR	NR	10	105	115	M: 14.8 SD: 1.1 R: 12-17			NR	X			
Stracciolini et al. 2017[163]	North America	NR	NR	0	105	105	M: 14.8 SD: 1.1 R: 12-17			NR	X			
Stubbe et al. 2022[164]	Europe	Ballet, Contemporary	Pre-professional	7	9	16	M: 18.67 SD: 1.12	M: 18.89 SD: 0.93		Class, Rehearsal	X	X	X	

14

Acronyms: NR = not reported, M = mean, SD = standard deviation, R = range, MD = median, CI = confidence interval, SEM = standard error of mean, SE = standard error, * = weighted mean age

Study Reference	World Region	Dance Genre Categories	Dance Level Categories	Number of Participants			Age (years)			Session Type	Training Load Tools			
				Male	Female	Total	Male	Female	Combined		Hours	Heart Rate	VO2	Other
Surgenor & Wyon, 2019[165]	Asia	Ballet, Contemporary, Combined	Professional	4	6	10	M: 20 SD: 1.16	M: 20 SD: 0.52		Class, Rehearsal		X		X
Swain et al. 2018[166]	Australia/Oceania	Ballet, Contemporary, Combined	Pre-professional, Professional, Combined	19	100	119	M: 17.1 SD: 3.7	M: 17.9 SD: 2.7		NR	X			
Szopa et al. 2022[167]	Europe	Other	Recreational, Competitive, Combined	0	320	320		M: 26 R: 24.6-27.4		NR	X			
Tekin, 2022[168]	Middle East	Modern	University	18	20	38	M: 24.5 SD: 2.4 R: 22-30	M: 23.3 SD: 3.6 R: 20-33		NR	X			
Tjukov et al. 2020[169]	Europe	Street dance	NR	79	67	146	M: 22.9 SD: 5.8	M: 20 SD: 4.2		NR	X			
To et al. 1995[170]	Asia	Ballet, Modern, Cultural, Combined	University, NR	0	70	70		M: 21.03 SD: 3.55		NR	X			
To et al. 2000[171]	Asia	Ballet, Cultural, Modern, Combined	University	0	50	50		M: 18.9*		NR	X			
Tsiouti & Wyon, 2021[172]	Europe, North America, Asia, Sub-Saharan Africa, Australia/Oceania	Street dance	Recreational, Professional, Combined	85	48	320			M: 26 SD: 5.9 R: 18-46	NR	X			
Twitchett et al. 2009[173]	Europe	Ballet	Professional	24	24	48	NR	NR		Performance				X
Twitchett et al. 2010[174]	Europe	Ballet	Professional	0	51	51		M: 27.8*		Class, Rehearsal				X
Vaczi et al. 2016[175]	Europe	Dancesport	Competitive	10	10	20	M: 24.8 SD: 7.4	M: 20.5 SD: 4.1		Performance	X	X		
Valentino et al. 2001[176]	Europe	Ballet	NR	0	20	20		M: 21.5 SD: 3.7		NR	X			
van Winden et al. 2019[177]	Europe	Contemporary	University	44	90	134			M: 19.4 SD: 1.5	NR	X			

15

Acronyms: NR = not reported, M = mean, SD = standard deviation, R = range, MD = median, CI = confidence interval, SEM = standard error of mean, SE = standard error, * = weighted mean age

Study Reference	World Region	Dance Genre Categories	Dance Level Categories	Number of Participants			Age (years)			Session Type	Training Load Tools				
				Male	Female	Total	Male	Female	Combined		Hours	Heart Rate	VO2	Other	
van Winden et al. 2020[178]	Europe	Contemporary	University	28	71	99			M: 19.2 SD: 1.5	NR	X				
Vassallo et al. 2018[179]	Australia/Oceania	Ballet, Contemporary, Other, Combined	Professional	0	94	94		M: 28.3*		Class, Rehearsal, Performance	X				
Verulava et al. 2021[180]	Europe	Ballet	Professional	2	8	10			M: 23.4 SD: 3.5 R: 20-27	Class, Rehearsal	X				
Volkova et al. 2020[181]	North America	Ballet, Contemporary, Jazz, Cultural, Combined	Pre-professional	0	15	15		M: 13.9 SD: 1.6		Class	X	X		X	
Wanke et al. 2020[182]	North America	Dancesport	Combined, Competitive Recreational	31	40	71	M: 25.9 SD: 7.2	M: 22.7 SD: 4.6		Class, Rehearsal, Performance	X				
Warren, 1980[183]	North America	Ballet	Pre-professional	0	90	90		R: 8-17		NR	X				
Watkins et al. 1989[184]	North America	Ballet	Pre-professional	14	179	193	M: 16.5 SD: 2.0	M: 15.0*							
			University	0	58	58		M: 19.8 SD: 1.6		Class, Rehearsal	X				
			Professional	50	49	99	M: 25.1 SD: 4.6	M: 23.2 SD: 4.1							
Weigert & Erickson, 2007[185]	North America	Modern	University	0	30	30		M: 20.4 SD: 1.8 R: 18-26		NR	X				
Weiss et al. 2008[186]	North America	Modern, Jazz, Ballet, Tap, Street dance	Professional	46	130	176	M: 30.7 SD: 7.7 MD: 29	M: 29.8 SD: 7.1 MD: 28		Class, Rehearsal	X				
Wilmerding et al. 2002[187]	North America	Ballet, Modern, Jazz, Tap, Combined	Pre-professional			397			M: 15.95 SD: 1.60 R: 11-20	NR	X				
Witkoś & Wróbel, 2019[188]	Europe	Dancesport	Competitive	0	233	233		M: 22.1 SD: 4.9		Class	X				

16

Acronyms: NR = not reported, M = mean, SD = standard deviation, R = range, MD = median, CI = confidence interval, SEM = standard error of mean, SE = standard error, * = weighted mean age

Study Reference	World Region	Dance Genre Categories	Dance Level Categories	Number of Participants			Age (years)			Session Type	Training Load Tools			
				Male	Female	Total	Male	Female	Combined		Hours	Heart Rate	VO2	Other
Wyon et al. 2002[189]	Europe	Modern	University	0	10	10		M: 22 SD: 4.0		Class	X	X		
			Pre-professional	3	4	7		M: 22 SD: 4.0						
			Professional	4	6	10		M: 23 SD: 4.0						
Wyon et al. 2004[190]	Europe	Modern	Professional	40	40	80	M: 22 SD: 3.7	M: 22 SD: 3.7		Class, Rehearsal, Performance	X	X		
Wyon et al. 2011[191]	Europe, North America	Ballet	Professional	24	24	48	NR	NR		Class	X			X
		Contemporary		21	24	45	NR	NR						
Wyon et al. 2018[192]	Europe	Street dance	Competitive	8	9	17	M: 23 SD: 4.2	M: 20 SD: 6		Performance	X	X	X	
Yannakoulia et al. 2004[193]	Europe	NR	Professional	0	37	37		M: 20.7 SD: 1.8 R: 18-26		Class, Rehearsal, Performance	X			
Yin et al. 2019[194]	North America	Ballet, Modern, Jazz, Cultural, Combined	NR	3	55	58		M: 15.21 SD: 1.14 R: 12-17		Class	X			
Young & Paul, 2002[195]	Europe	Cultural	Competitive			33			M: 18.2*	NR	X			
Yung et al. 2005[196]	Asia	NR	NR	10	0	10	M: 20.6 SD: 0.7 R: 18-22			NR	X			
Zagorc et al. 1999[197]	Europe	Dancesport	Competitive	3	3	6			R: 16-19	Performance		X		
Zajenkowski et al. 2015[198]	Europe	Dancesport	Recreational	17	15	32			M: 27.97 SD: 3.39 MD: 28	Class	X			
			Competitive	23	15	38		M: 20.61 SD: 2.40 MD: 20						
			Competitive	19	16	35		M: 20.26 SD: 2.92 MD: 19						
Zanchini & Malaguti, 2014[199]	Europe	Dancesport	Competitive	5	5	10	M: 25.2 SD: 3.4	M: 23.7 SD: 3.9		Class				X

17

Acronyms: NR = not reported, M = mean, SD = standard deviation, R = range, MD = median, CI = confidence interval, SEM = standard error of mean, SE = standard error, * = weighted mean age

References

- [1] Akella P, Warren MP, Jonnavithula S, Brooks-Gunn J. Scoliosis in ballet dancers. *Med Probl Perform Art* 1991;84–6.
- [2] Alan Galanti ML, Holland GJ, Shafranski P, Loy SF, Vincent WJ, Heng MK. Physiological Effects of Training for a Jazz Dance Performance. *J Strength Cond Res* 1993;7:206.
[https://doi.org/10.1519/1533-4287\(1993\)007<0206:PEOTFA>2.3.CO;2](https://doi.org/10.1519/1533-4287(1993)007<0206:PEOTFA>2.3.CO;2).
- [3] Allen N, Nevill A, Brooks J, Koutedakis Y, Wyon M. Ballet Injuries: Injury Incidence and Severity Over 1 Year. *J Orthop Sports Phys Ther* 2012;42:781-A1.
<https://doi.org/10.2519/jospt.2012.3893>.
- [4] Allen N, Nevill AM, Brooks JHM, Koutedakis Y, Wyon MA. The Effect of a Comprehensive Injury Audit Program on Injury Incidence in Ballet: A 3-Year Prospective Study. *Clin J Sport Med* 2013;23:373–8. <https://doi.org/10.1097/JSM.0b013e3182887f32>.
- [5] Aujla IJ, Nordin-Bates SM, Redding E. Multidisciplinary predictors of adherence to contemporary dance training: findings from the UK Centres for Advanced Training. *J Sports Sci* 2015;33:1564–73. <https://doi.org/10.1080/02640414.2014.996183>.
- [6] Ávila-Carvalho L, Conceição F, Escobar-Álvarez JA, Gondra B, Leite I, Rama L. The Effect of 16 Weeks of Lower-Limb Strength Training in Jumping Performance of Ballet Dancers. *Front Physiol* 2022;12:774327. <https://doi.org/10.3389/fphys.2021.774327>.
- [7] Bacchi E, Spiazzi G, Zandrini G, Bonin C, Moghetti P. Low body weight and menstrual dysfunction are common findings in both elite and amateur ballet dancers. *J Endocrinol Invest* 2013;36.
<https://doi.org/10.3275/8645>.

- [8] Baillie Y, Wyon M, Head A. Highland Dance: Heart-Rate and Blood Lactate Differences Between Competition and Class. *Int J Sports Physiol Perform* 2007;2:371–6.
<https://doi.org/10.1123/ijsp.2.4.371>.
- [9] Bennell KL. Changes in hip and ankle range of motion and hip muscle strength in 8-11 year old novice female ballet dancers and controls: a 12 month follow up study. *Br J Sports Med* 2001;35:54–9. <https://doi.org/10.1136/bjsem.35.1.54>.
- [10] Blanksby BA, Reidy PW. Heart rate and estimated energy expenditure during ballroom dancing. *Br J Sports Med* 1988;22:57–60. <https://doi.org/10.1136/bjsem.22.2.57>.
- [11] Boeding JR, Visser E, Meuffels DE, de Vos R-J. Is Training Load Associated with Symptoms of Overuse Injury in Dancers? A Prospective Observational Study. *J Dance Med Sci* 2019;23:11–6.
<https://doi.org/10.12678/1089-313X.23.1.11>.
- [12] Bria S, Bianco M, Galvani C, Palmieri V, Zeppilli P, Faina M. Physiological characteristics of elite sport-dancers. *J Sports Med Phys Fitness* 2011;51:194–203.
- [13] Bronner S, Wood L. Impact of touring, performance schedule, and definitions on 1-year injury rates in a modern dance company. *J Sports Sci* 2017;35:2093–104.
<https://doi.org/10.1080/02640414.2016.1255772>.
- [14] Bronner S, Ojofeitimi S, Rose D. Injuries in a Modern Dance Company: Effect of Comprehensive Management on Injury Incidence and Time Loss. *Am J Sports Med* 2003;31:365–73.
<https://doi.org/10.1177/03635465030310030701>.
- [15] Bronner S, Codman E, Hash-Campbell D, Ojofeitimi S. Differences in Preseason Aerobic Fitness Screening in Professional and Pre-professional Modern Dancers. *J Dance Med Sci* 2016;20:11–22.
<https://doi.org/10.12678/1089-313X.20.1.11>.

- [16] Bronner S. Injury Characteristics in Pre-Professional Modern Dancers - Prospective Study of Differences Due to Sex, Training Year, and External Causal Mechanisms. *J Dance Med Sci* 2021;25:117–30. <https://doi.org/10.12678/1089-313X.061521g>.
- [17] Brown AF, Brooks SJ, Smith SR, Stephens JM, Lotstein AK, Skiles CM, et al. Female Collegiate Dancers Body Composition, Macronutrient and Micronutrient Intake Over Two Academic Years: A Longitudinal Analysis. *J Funct Morphol Kinesiol* 2020;5:17. <https://doi.org/10.3390/jfmk5010017>.
- [18] Buchanan A, White SW, Walters WA, Redman S, Quail A, Cottee DB, et al. Teenage ballet dancers as a model of the female athlete: Sensitivity of endocrine control of the menstrual cycle to exercise. *Aust J Sci Med Sport* 1992;63–7.
- [19] Burzynska AZ, Finc K, Taylor BK, Knecht AM, Kramer AF. The Dancing Brain: Structural and Functional Signatures of Expert Dance Training. *Front Hum Neurosci* 2017;11:566. <https://doi.org/10.3389/fnhum.2017.00566>.
- [20] Butulis MN, Fedor BJ, McGaver RS, Giveans MR. Is Matching Exercise Intensity to Heart Rate Variability a Key to Effective Conditioning for Dancers? A Prospective Randomized Controlled Trial. *J Dance Med Sci* 2021;25:96–104. <https://doi.org/10.12678/1089-313X.061521d>.
- [21] Cahalan R, Kearney P, Ni Bhriain O, Redding E, Quin E, McLaughlin LC, et al. Dance exposure, wellbeing and injury in collegiate Irish and contemporary dancers: A prospective study. *Phys Ther Sport* 2018;34:77–83. <https://doi.org/10.1016/j.ptsp.2018.09.006>.
- [22] Cahalan R, Bargary N, O’Sullivan K. Dance exposure, general health, sleep and injury in elite adolescent Irish dancers: A prospective study. *Phys Ther Sport* 2019;40:153–9. <https://doi.org/10.1016/j.ptsp.2019.09.008>.
- [23] Cain KL, Gavand KA, Conway TL, Peck E, Bracy NL, Bonilla E, et al. Physical Activity in Youth Dance Classes. *Pediatrics* 2015;135:1066–73. <https://doi.org/10.1542/peds.2014-2415>.

- [24] Caine D, Bergeron G, Goodwin BJ, Thomas J, Caine CG, Steinfeld S, et al. A Survey of Injuries Affecting Pre-Professional Ballet Dancers. *J Dance Med Sci* 2016;20:115–26.
<https://doi.org/10.12678/1089-313X.20.3.115>.
- [25] Cale'-Benzoor M, Albert M, Crodin A, Woodruff LD. Isokinetic Trunk Muscle Performance Characteristics of Classical Ballet Dancers. *J Orthop Sports Phys Ther* 1992;15:99–106.
<https://doi.org/10.2519/jospt.1992.15.2.99>.
- [26] Chatfield SJ, Byrnes WC, Lally DA, Rowe SE. Cross-Sectional Physiologic Profiling of Modern Dancers. *Dance Res J* 1990;22:13. <https://doi.org/10.2307/1477737>.
- [27] Chen S-Y, Chen S-M, Chang W-H, Lai C-H, Chen M-C, Chou C-H, et al. Effect of 2-month detraining on body composition and insulin sensitivity in young female dancers. *Int J Obes* 2006;30:40–4.
<https://doi.org/10.1038/sj.ijo.0803073>.
- [28] Chia JK. Survey Study on the Injury Patterns, Dance Practices and Health Seeking Behaviour amongst Dancers in Singapore. *Ann Acad Med Singapore* 2017;46:76–8.
- [29] Cho CH, Song KS, Min BW, Lee SM, Chang HW, Eum DS. Musculoskeletal injuries in break-dancers. *Injury* 2009;40:1207–11. <https://doi.org/10.1016/j.injury.2009.05.019>.
- [30] Cofré-Fernández V, Burgos-Estrada N, Meneses-Hermosilla V, Ramirez-Campillo R, Keogh JW, Gajardo-Burgos R. Effects of a specific injury prevention neuromuscular training program for young female dancers. A randomized-controlled trial. *Res Sports Med* 2021:1–11.
<https://doi.org/10.1080/15438627.2021.1943388>.
- [31] Cohen JL, Gupta PK, Lichstein E, Chadda KD. The heart of a dancer: Noninvasive cardiac evaluation of professional ballet dancers. *Am J Cardiol* 1980;45:959–65.
[https://doi.org/10.1016/0002-9149\(80\)90163-0](https://doi.org/10.1016/0002-9149(80)90163-0).

- [32] Cohen JL, Segal KR, Witriol I, McArdle WD. Cardiorespiratory responses to ballet exercise and the VO₂max of elite ballet dancers. *Med Sci Sports Exerc* 1982;14:212–7.
- [33] Cohen JL, Segal KR, McArdle WD. Heart Rate Response to Ballet Stage Performance. *Phys Sportsmed* 1982;10:120–33. <https://doi.org/10.1080/00913847.1982.11947374>.
- [34] Coogan SM, Schock CS, Hansen-Honeycutt J, Caswell S, Cortes N, Ambegaonkar JP. Functional Movement Screen™(FMS™) scores do not predict overall or lower extremity injury risk in collegiate dancers. *Int J Sports Phys Ther* 2020;15:1029–35. <https://doi.org/10.26603/ijsp20201029>.
- [35] Coogan SM, Hansen-Honeycutt J, Fauntroy V, Ambegaonkar JP. Upper-Body Strength Endurance and Power Norms in Healthy Collegiate Dancers: A 10-year Prospective Study. *J Strength Cond Res* 2021; Publish Ahead of Print. <https://doi.org/10.1519/JSC.0000000000004016>.
- [36] da Silva CC, Goldberg TBL, Soares-Caldeira LF, Oliveira R dos S, de Paula Ramos S, Nakamura FY. The Effects of 17 Weeks of Ballet Training on the Autonomic Modulation, Hormonal and General Biochemical Profile of Female Adolescents. *J Hum Kinet* 2015;47:61–71. <https://doi.org/10.1515/hukin-2015-0062>.
- [37] Dahlström M. Physical effort during dance training: a comparison between teachers and students. *Journal of Dance Medicine and Science* 1997;1:143–8.
- [38] Dahlström M, Inasio J, Jansson E, Kailser L. Physical fitness and physical effort in dancers: a comparison of four major dance styles. *Impulse* 1996;4:193–209.
- [39] Dang Y, Koutedakis Y, Wyon M. Fit to Dance Survey: Elements of Lifestyle and Injury Incidence in Chinese Dancers. *Med Probl Perform Art* 2020;35:10–8. <https://doi.org/10.21091/mppa.2020.1002>.

- [40] De-la-Cruz-Torres B, Barrera-García-Martín I, Almazán-Polo J, Jaén-Crespo G, Romero-Morales C. Ultrasound imaging evaluation of structural and textural features in asymptomatic achilles tendons in pre-professional dancers: A cross-sectional study. *Phys Ther Sport* 2020;44:85–91. <https://doi.org/10.1016/j.ptsp.2020.05.008>.
- [41] de-la-Cruz-Torres B, Barrera-García-Martín I, Cueva-Reguera M de la, Bravo-Aguilar M, Abuin-Porras V, Romero-Morales C. Ultrasound imaging features of the Achilles tendon in dancers. Is there a correlation between the imaging and clinical findings? A cross-sectional study. *Phys Ther Sport* 2020;43:181–7. <https://doi.org/10.1016/j.ptsp.2020.03.004>.
- [42] Di Blasio A, De Sanctis M, Gallina S, Ripari P. Are physiological characteristics of Caribbean dance useful for health? *J Sports Med Phys Fitness* 2009;49:30–4.
- [43] DiPasquale S. Dance Exposure Tracking in a Liberal Arts Collegiate Dance Department: A Call for Dancer Health Through Periodization. *J Dance Educ* 2018;18:154–63. <https://doi.org/10.1080/15290824.2018.1383610>.
- [44] Domene PA, Easton C. Combined Triaxial Accelerometry and Heart Rate Telemetry for the Physiological Characterization of Latin Dance in Non-Professional Adults. *J Dance Med Sci* 2014;18:29–36. <https://doi.org/10.12678/1089-313X.18.1.29>.
- [45] D’Ottavio S, Lunetta L, Angioi M, Ruscello B, Buglione A. Energy Expenditure in Professional DanceSport. *J Dance Med Sci* 2016;20:168–73. <https://doi.org/10.12678/1089-313X.20.4.168>.
- [46] Ducher G, Kukuljan S, Hill B, Garnham AP, Nowson CA, Kimlin MG, et al. Vitamin D status and musculoskeletal health in adolescent male ballet dancers a pilot study. *J Dance Med Sci Off Publ Int Assoc Dance Med Sci* 2011;15:99–107.
- [47] Dusek T. Influence of high intensity training on menstrual cycle disorders in athletes. *Croat Med J* 2001;42:79–82.

- [48] Echegoyen S, Acuña E, Rodríguez C. Injuries in Students of Three Different Dance Techniques. *Med Probl Perform Art* 2010;25:72–4. <https://doi.org/10.21091/mppa.2010.2014>.
- [49] Edmonds R, Wood M, Fehling P, DiPasquale S. The Impact of a Ballet and Modern Dance Performance on Heart Rate Variability in Collegiate Dancers. *Sports* 2018;7:3. <https://doi.org/10.3390/sports7010003>.
- [50] Ekegren CL, Quedsted R, Brodrick A. Injuries in pre-professional ballet dancers: Incidence, characteristics and consequences. *J Sci Med Sport* 2014;17:271–5. <https://doi.org/10.1016/j.jsams.2013.07.013>.
- [51] Emerenziani G, Guidetti L, Gallotta M, Franciosi E, Buzzachera C, Baldari C. Exercise Intensity and Gender Difference of 3 Different Salsa Dancing Conditions. *Int J Sports Med* 2013;34:330–5. <https://doi.org/10.1055/s-0032-1323722>.
- [52] Escobar Álvarez JA, Reyes PJ, Pérez Sousa MÁ, Conceição F, Fuentes García JP. Analysis of the Force-Velocity Profile in Female Ballet Dancers. *J Dance Med Sci* 2020;24:59–65. <https://doi.org/10.12678/1089-313X.24.2.59>.
- [53] Escobar Álvarez JA, Fuentes García JP, Da Conceição FA, Jiménez-Reyes P. Individualized Training Based on Force–Velocity Profiling During Jumping in Ballet Dancers. *Int J Sports Physiol Perform* 2020;15:788–94. <https://doi.org/10.1123/ijsp.2019-0492>.
- [54] Fogelholm M, Lichtenbelt WVM, Ottenheijm R, Westerterp K. Amenorrhea in ballet dancers in the Netherlands. *Med Sci Sports Exerc* 1996;28:545–50. <https://doi.org/10.1097/00005768-199605000-00002>.
- [55] Fostervold Mathisen TF, Sundgot-Borgen C, Anstensrud B, Sundgot-Borgen J. Mental health, eating behaviour and injuries in professional dance students. *Res Dance Educ* 2022;23:108–25. <https://doi.org/10.1080/14647893.2021.1993171>.

- [56] Fuller M, Moyle GM, Minett GM. Injuries across a pre-professional ballet and contemporary dance tertiary training program: A retrospective cohort study. *J Sci Med Sport* 2020;23:1166–71. <https://doi.org/10.1016/j.jsams.2020.06.012>.
- [57] Gallotta MC, Guidetti L, Emerenziani GP, Franciosi E, Baldari C. Does living setting influence training adaptations in young girls? *Scand J Med Sci Sports* 2011;21:324–9. <https://doi.org/10.1111/j.1600-0838.2009.01009.x>.
- [58] Glace B, Kremenic I, Liederbach M. Energy Conservation in Amenorrhoeic Ballet Dancers. *Med Probl Perform Art* 2006;21:97–104. <https://doi.org/10.21091/mppa.2006.3021>.
- [59] Gorwa J, Zieliński J, Wolański W, Michnik R, Larysz D, Dworak LB, et al. Decreased Bone Mineral Density in Forearm vs Loaded Skeletal Sites in Professional Ballet Dancers. *Med Probl Perform Art* 2019;34:25–32. <https://doi.org/10.21091/mppa.2019.1006>.
- [60] Gorwa J, Michnik R, Nowakowska-Lipiec K. In Pursuit of the Perfect Dancer's Ballet Foot. The Footprint, Stabilometric, Pedobarographic Parameters of Professional Ballet Dancers. *Biology* 2021;10:435. <https://doi.org/10.3390/biology10050435>.
- [61] Grochowska-Niedworok E, Kardas M, Fatyga E, Piórkowska-Staniek K, Muc-Wierzgoń M, Kokot T. Study of top ballet school students revealed large deficiencies in their body weight and body fat. *Acta Paediatr* 2018;107:1077–82. <https://doi.org/10.1111/apa.14208>.
- [62] Groer S, Fallon LF. Supplemental conditioning among ballet dancers: preliminary findings. *Med Probl Perform Art* 1993;8:25–8.
- [63] Guidetti L, Gallotta M, Emerenziani G, Baldari C. Exercise Intensities during a Ballet Lesson in Female Adolescents with Different Technical Ability. *Int J Sports Med* 2007;28:736–42. <https://doi.org/10.1055/s-2007-964909>.

- [64] Guidetti L, Buzzachera CF, Emerenziani GP, Meucci M, Saavedra F, Gallotta MC, et al. Psychophysiological Responses to Salsa Dance. *PLOS ONE* 2015;10:e0121465. <https://doi.org/10.1371/journal.pone.0121465>.
- [65] Hafiz E, Hiller CE, Nicholson LL, Nightingale EJ, Grimaldi A, Refshauge KM. Femoral Shaft Torsion in Injured and Uninjured Ballet Dancers and Its Association with Other Hip Measures: A Cross-sectional Study. *J Dance Med Sci* 2016;20:3–10. <https://doi.org/10.12678/1089-313X.20.1.3>.
- [66] Hamilton D, Aronsen P, Løken JH, Berg IM, Skotheim R, Hopper D, et al. Dance training intensity at 11-14 years is associated with femoral torsion in classical ballet dancers. *Br J Sports Med* 2006;40:299–303. <https://doi.org/10.1136/bjsem.2005.020941>.
- [67] Hirsch NM, Eisenmann JC, Moore SJ, Winnail SD, Stalder MA. Energy balance and physical activity patterns in university ballet dancers. *J Dance Med Sci* 2003;7:73–9.
- [68] Jeffries AC, Wallace L, Coutts AJ. Quantifying Training Loads in Contemporary Dance. *Int J Sports Physiol Perform* 2017;12:796–802. <https://doi.org/10.1123/ijsp.2016-0159>.
- [69] Jeffries AC, Wallace L, Coutts AJ, Cohen AM, McCall A, Impellizzeri FM. Injury, illness, and training load in a professional contemporary dance company: a prospective study. *J Athl Train* 2020;55:967–76. <https://doi.org/10.4085/1062-6050-477-19>.
- [70] Joka T, Clarke ND, Cohen DD, Delextrat A. Etiology of musculoskeletal injuries in amateur breakdancers. *J Sports Med Phys Fitness* 2015;55:1174–83.
- [71] Junck E, Richardson M, Dilgen F, Liederbach M. A Retrospective Assessment of Return to Function in Dance After Physical Therapy for Common Dance Injuries. *J Dance Med Sci* 2017;21:156–67. <https://doi.org/10.12678/1089-313X.21.4.156>.
- [72] Kadel NJ, Teitz CC, Kronmal RA. Stress fractures in ballet dancers. *Am J Sports Med* 1992;20:445–9. <https://doi.org/10.1177/036354659202000414>.

- [73] Kattenstroth J-C, Kalisch T, Kolankowska I, Dinse HR. Balance, Sensorimotor, and Cognitive Performance in Long-Year Expert Senior Ballroom Dancers. *J Aging Res* 2011;2011:1–10. <https://doi.org/10.4061/2011/176709>.
- [74] Kaufmann J-E, Nelissen RG, Appleton PR, Gademan MG. Perceptions of Motivational Climate and Association with Musculoskeletal Injuries in Ballet Dancers. *Med Probl Perform Art* 2021;36:187–98. <https://doi.org/10.21091/mppa.2021.3021>.
- [75] Kauther MD, Wedemeyer C, Wegner A, Kauther KM, von Knoch M. Breakdance Injuries and Overuse Syndromes in Amateurs and Professionals. *Am J Sports Med* 2009;37:797–802. <https://doi.org/10.1177/0363546508328120>.
- [76] Kawalek JC, Gobet F. Expertise in Contemporary Dance: The Roles of Cognition, Talent, and Deliberate Practice. *J Dance Educ* 2022:1–14. <https://doi.org/10.1080/15290824.2021.1988089>.
- [77] Kenny SJ, Palacios-Derflingher L, Whittaker JL, Emery CA. The influence of injury definition on injury burden in preprofessional ballet and contemporary dancers. *J Orthop Sports Phys Ther* 2018;48:185–93. <https://doi.org/10.2519/jospt.2018.7542>.
- [78] Kilicarslan A, Isildak M, Guven GS, Oz SG, Hasbay A, Karabulut E, et al. The Influence of Ballet Training on Bone Mass in Turkish Ballet Dancers. *The Endocrinologist* 2007;17:85–8. <https://doi.org/10.1097/01.ten.0000261476.65045.cd>.
- [79] Kim G, Ogawa T, Sekiguchi H, Nakazawa K. Acquisition and maintenance of motor memory through specific motor practice over the long term as revealed by stretch reflex responses in older ballet dancers. *Physiol Rep* 2020;8. <https://doi.org/10.14814/phy2.14335>.
- [80] Kish RL, Plastino JG, Martyn-Stevens B. A Young Dancer Survey. *Med Probl Perform Art* 2003;18:161–5. <https://doi.org/10.21091/mppa.2003.4029>.

- [81] Klonova A, Klonovs J. Heart rate and energy consumption during standard sport dancing. *LASE J Sport Sci* 2010;1:48–52.
- [82] Koch A, Schmidt B, Weisser B, Kähler W, Grams B, Klapa S. Senior competitive ballroom dancers underestimate their exertion in final rounds training. *Dtsch Z Für Sportmed J Sports Med* 2020;71:104–10. <https://doi.org/10.5960/dzsm.2020.429>.
- [83] Kozai AC, Twitchett E, Morgan S, Wyon MA. Workload Intensity and Rest Periods in Professional Ballet: Connotations for Injury. *Int J Sports Med* 2020;41:373–9. <https://doi.org/10.1055/a-1083-6539>.
- [84] Kujala U, Oksanen A, Taimela S, Salminen J. Training does not increase maximal lumbar extension in healthy adolescents. *Clin Biomech* 1997;12:181–4. [https://doi.org/10.1016/S0268-0033\(97\)00078-8](https://doi.org/10.1016/S0268-0033(97)00078-8).
- [85] Łagowska K. Dietary restraints in relation to nutrient intake and morphological parameters in young ballet dancers. *Med Sport* 2014;18:141–6.
- [86] Łagowska K, Kapczuk K, Jeszka J. Nine-month nutritional intervention improves restoration of menses in young female athletes and ballet dancers. *J Int Soc Sports Nutr* 2014;11:52. <https://doi.org/10.1186/s12970-014-0052-9>.
- [87] Łagowska K, Kapczuk K. Testosterone concentrations in female athletes and ballet dancers with menstrual disorders. *Eur J Sport Sci* 2016;16:490–7. <https://doi.org/10.1080/17461391.2015.1034786>.
- [88] Lankford DE, Bennion TW, King J, Hessing N, Lee L, Heil DP. The Energy Expenditure of Recreational Ballroom Dance. *Int J Exerc Sci* 2014;7:228–35.
- [89] Lavoie JM, Lebe-Neron RM. Physiological effects of training in professional and recreational jazz dancers. *J Sports Med* 1982:231–63.

- [90] Lee L, Reid D, Cadwell J, Palmer P. Injury incidence, dance exposure and the use of the movement competency screen (MCS) to identify variables associated with injury in full-time pre-professional dancers. *Int J Sports Phys Ther* 2017;12:352–70.
- [91] Li X, Yao X. Effect of dance-sport on physical-psychological health of university students. *Chin J Tissue Eng Res* 2005;53:190–2.
- [92] Liiv H, Jürimäe T, Klonova A, Cicchella A. Performance and Recovery: Stress Profiles in Professional Ballroom Dancers. *Med Probl Perform Art* 2013;28:65–9.
<https://doi.org/10.21091/mppa.2013.2012>.
- [93] Liiv H, Jürimäe T, Mäestu J, Purge P, Hannus A, Jürimäe J. Physiological characteristics of elite dancers of different dance styles. *Eur J Sport Sci* 2014;14:S429–36.
<https://doi.org/10.1080/17461391.2012.711861>.
- [94] Longworth B, Fary R, Hopper D. Prevalence and Predictors of Adolescent Idiopathic Scoliosis in Adolescent Ballet Dancers. *Arch Phys Med Rehabil* 2014;95:1725–30.
<https://doi.org/10.1016/j.apmr.2014.02.027>.
- [95] Lopez Castillo MA, Carlson JA, Cain KL, Bonilla EA, Chuang E, Elder JP, et al. Dance Class Structure Affects Youth Physical Activity and Sedentary Behavior: A Study of Seven Dance Types. *Res Q Exerc Sport* 2015;86:225–32. <https://doi.org/10.1080/02701367.2015.1014084>.
- [96] Luke AC, Kinney SA, D’Hemecourt PA, Baum J, Owen M, Micheli LJ. Determinants of Injuries in Young Dancers. *Med Probl Perform Art* 2002;17:105–12.
<https://doi.org/10.21091/mppa.2002.3016>.
- [97] Mailuhu AKE, van Rijn RM, Stubbe JH, Bierma-Zeinstra SMA, van Middelkoop M. Incidence and prediction of ankle injury risk: a prospective cohort study on 91 contemporary preprofessional

- dancers. *BMJ Open Sport Exerc Med* 2021;7:e001060. <https://doi.org/10.1136/bmjsem-2021-001060>.
- [98] Massidda M, Cugusi L, Ibba M, Tradori I, Calò CM. Energy Expenditure during Competitive Latin American Dancing Simulation. *Med Probl Perform Art* 2011;26:206–10. <https://doi.org/10.21091/mppa.2011.4033>.
- [99] Matthews BL, Bennell KL, McKay HA, Khan KM, Baxter-Jones ADG, Mirwald RL, et al. Dancing for bone health: a 3-year longitudinal study of bone mineral accrual across puberty in female non-elite dancers and controls. *Osteoporos Int* 2006;17:1043–54. <https://doi.org/10.1007/s00198-006-0093-2>.
- [100] Matthews BL, Bennell KL, McKay HA, Khan KM, Baxter-Jones ADG, Mirwald RL, et al. The influence of dance training on growth and maturation of young females: A mixed longitudinal study. *Ann Hum Biol* 2006;33:342–56. <https://doi.org/10.1080/03014460600635951>.
- [101] Mattiussi AM, Shaw JW, Williams S, Price PD, Brown DD, Cohen DD, et al. Injury epidemiology in professional ballet: a five-season prospective study of 1596 medical attention injuries and 543 time-loss injuries. *Br J Sports Med* 2021;55:843–50. <https://doi.org/10.1136/bjsports-2020-103817>.
- [102] Mayers L, Judelson D, Bronner S. The prevalence of injury among tap dancers. *J Dance Med Sci* 2003;7:121–5.
- [103] McBride C, Bronner S. Injury characteristics in professional modern dancers: A 15-year analysis of work-related injury rates and patterns. *J Sports Sci* 2022;40:821–37. <https://doi.org/10.1080/02640414.2021.2021030>.
- [104] McGuinness D, Doody C. The injuries of competitive Irish dancers. *J Dance Med Sci* 2006;10:35–9.

- [105] McMahon E, Pope R, Freire K. Relationships Between Lateral Limb Bias, Turnout, and Lower Limb Injury in a Female Pre-Professional Ballet Dancer Population. *J Dance Med Sci* 2021;25:139–46. <https://doi.org/10.12678/1089-313X.061521i>.
- [106] Miletic A, Kostic R, Bozanic A, Miletic D. Pain Status Monitoring in Adolescent Dancers. *Med Probl Perform Art* 2009;24:119–23. <https://doi.org/10.21091/mppa.2009.3026>.
- [107] Miletic A, Kostic R, Miletic D. Pain Prevalence among Competitive International Dancers. *Int J Athl Ther Train* 2011;16:13–6. <https://doi.org/10.1123/ijatt.16.1.13>.
- [108] Miletic D, Miletic A, Milavic B. Age-related progressive increase of lower back pain among male dance sport competitors. *J Back Musculoskelet Rehabil* 2015;28:551–60. <https://doi.org/10.3233/BMR-140555>.
- [109] Miletic D, Miletic A, Lujan IK, Kezic A, Erceg M. Health Care Related Problems Among Female Sport Dancers. *Int J Athl Ther Train* 2015;20:57–62. <https://doi.org/10.1123/ijatt.2014-0021>.
- [110] Mistiaen W, Roussel NA, Vissers D, Daenen L, Truijien S, Nijs J. Effects of Aerobic Endurance, Muscle Strength, and Motor Control Exercise on Physical Fitness and Musculoskeletal Injury Rate in Preprofessional Dancers: An Uncontrolled Trial. *J Manipulative Physiol Ther* 2012;35:381–9. <https://doi.org/10.1016/j.jmpt.2012.04.014>.
- [111] Mittleman KD, Keegan M, Collins CL. Physiological, nutritional, and training profile of university modern dancers. *Med Probl Perform Art* 1992;7:92–6.
- [112] Nawrocka A, Mynarski A, Powerska A, Rozpara M, Garbaciak W. Effects of exercise training experience on hand grip strength, body composition and postural stability in fitness pole dancers. *J Sports Med Phys Fitness* 2017;57:1098–103. <https://doi.org/10.23736/S0022-4707.16.06510-5>.

- [113] Nicholas JC, McDonald KA, Peeling P, Jackson B, Dimmock JA, Alderson JA, et al. Pole Dancing for Fitness: The Physiological and Metabolic Demand of a 60-Minute Class. *J Strength Cond Res* 2019;33:2704–10. <https://doi.org/10.1519/JSC.0000000000002889>.
- [114] Noble RM, Howley ET. The Energy Requirement of Selected Tap Dance Routines. *Res Q Am Alliance Health Phys Educ Recreat Dance* 1979;50:438–42. <https://doi.org/10.1080/00345377.1979.10615631>.
- [115] Noon M, Hoch AZ, McNamara L, Schimke J. Injury Patterns in Female Irish Dancers. *PM&R* 2010;2:1030–4. <https://doi.org/10.1016/j.pmrj.2010.05.013>.
- [116] Nougues P, Le Strat M, Garrigues F, Guellec D, Saraux A, Prado G. A functional and bilateral ischiofemoral impingement with muscular hypertrophy in an 11-year-old dancer. *Joint Bone Spine* 2022;89:105251. <https://doi.org/10.1016/j.jbspin.2021.105251>.
- [117] Nunes NMA, Haddad JJ, Bartlett DJ, Obright KD. Musculoskeletal Injuries Among Young, Recreational, Female Dancers Before and After Dancing in Pointe Shoes: *Pediatr Phys Ther* 2002;14:100–6. <https://doi.org/10.1097/00001577-200214020-00006>.
- [118] Ojofeitimi S, Bronner S. Injuries in a modern dance company effect of comprehensive management on injury incidence and cost. *J Dance Med Sci Off Publ Int Assoc Dance Med Sci* 2011;15:116–22.
- [119] Oliveira S, Simões HG, Moreira SR, Lima RM, Almeida JA, Ribeiro FMR, et al. Physiological Responses to a Tap Dance Choreography: Comparisons with Graded Exercise Test and Prescription Recommendations. *J Strength Cond Res* 2010;24:1954–9. <https://doi.org/10.1519/JSC.0b013e3181ddae99>.
- [120] O'Neill JR, Pate RR, Hooker SP. The contribution of dance to daily physical activity among adolescent girls. *Int J Behav Nutr Phys Act* 2011;8:87. <https://doi.org/10.1186/1479-5868-8-87>.

- [121] O'Neill JR, Pate RR, Beets MW. Physical Activity Levels of Adolescent Girls During Dance Classes. *J Phys Act Health* 2012;9:382–8. <https://doi.org/10.1123/jpah.9.3.382>.
- [122] Padfield JA, Eisenman PA, Luetkemeier MJ, Fitt SS. Physiological Profiles of Performing and Recreational Early Adolescent Female Dancers. *Pediatr Exerc Sci* 1993;5:51–9. <https://doi.org/10.1123/pes.5.1.51>.
- [123] Panhale V, Walankar P, Sridhar A. Analysis of postural risk and pain assessment in bharatanatyam dancers. *Indian J Occup Environ Med* 2020;24:66. https://doi.org/10.4103/ijoem.IJOEM_190_19.
- [124] Pasulka J, Jayanthi N, McCann A, Dugas LR, LaBella C. Specialization patterns across various youth sports and relationship to injury risk. *Phys Sportsmed* 2017;45:344–52. <https://doi.org/10.1080/00913847.2017.1313077>.
- [125] Pate RR, Sallis JF, Ward DS, Stevens J, Dowda M, Welk GJ, et al. Age-Related Changes in Types and Contexts of Physical Activity in Middle School Girls. *Am J Prev Med* 2010;39:433–9. <https://doi.org/10.1016/j.amepre.2010.07.013>.
- [126] Pedersen M, Wilmerding V. Injury profiles of student and professional flamenco dancers. *J Dance Med Sci* 1998;2:108–14.
- [127] Pedersen M, Wilmerding M, Kuhn B, Enciñias-Sandoval E. Energy Requirements of the American Professional Flamenco Dancer. *Med Probl Perform Art* 2001;16:47–52. <https://doi.org/10.21091/mppa.2001.2008>.
- [128] Pekkarinen H, Litmanen H, Mahlamaki S. Physiological profiles of young boys training in ballet. *Br J Sports Med* 1989;23:245–9. <https://doi.org/10.1136/bjsem.23.4.245>.
- [129] Pellicciari L, Piscitelli D, De Vita M, D'Ingianna L, Bacciu S, Perno G, et al. Injuries Among Italian DanceSport Athletes: A Questionnaire Survey. *Med Probl Perform Art* 2016;31:13–7. <https://doi.org/10.21091/mppa.2016.1003>.

- [130] Peltonen JE, Taimela S, Erkintalo M, Salminen JJ, Oksanen A, Kujala UM. Back extensor and psoas muscle cross-sectional area, prior physical training, and trunk muscle strength – a longitudinal study in adolescent girls. *Eur J Appl Physiol* 1997;77:66–71.
<https://doi.org/10.1007/s004210050301>.
- [131] Pigeon P, Oliver I, Charlet JP, Rochiccioli P. Intensive Dance Practice: Repercussions on Growth and Puberty. *Am J Sports Med* 1997;25:243–7. <https://doi.org/10.1177/036354659702500219>.
- [132] Pilch W, Tota Ł, Pokora I, Głowa M, Piotrowska A, Chlipalska O, et al. Energy Expenditure and Lactate Concentration in Sports Dancers in a Simulated Final Round of the Standard Style Competition. *Hum Mov* 2017;18. <https://doi.org/10.1515/humo-2017-0012>.
- [133] Premelč J, Vučković G, James N, Dimitriou L. A Retrospective Investigation on Age and Gender Differences of Injuries in DanceSport. *Int J Environ Res Public Health* 2019;16:4164.
<https://doi.org/10.3390/ijerph16214164>.
- [134] Ramel E, Moritz U. Self-reported musculoskeletal pain and discomfort in professional ballet dancers in Sweden. *Scand J Rehabil Med* 1994;26:11–6.
- [135] Ramkumar PN, Farber J, Arnouk J, Varner KE, Mcculloch PC. Injuries in a Professional Ballet Dance Company: A 10-year Retrospective Study. *J Dance Med Sci* 2016;20:30–7.
<https://doi.org/10.12678/1089-313X.20.1.30>.
- [136] Redding E, Wyon M, Shearman J, Doggart L. Validity of using heart rate as a predictor of oxygen consumption in dance. *J Dance Med Sci* 2004;8:69–72.
- [137] Riding McCabe T, Ambegaonkar JP, Redding E, Wyon M. Fit to Dance Survey: A Comparison with DanceSport Injuries. *Med Probl Perform Art* 2014;29:102–10.
<https://doi.org/10.21091/mppa.2014.2021>.

- [138] Rimmer JH, Jay D, Plowman SA. Physiological characteristics of trained dancers and intensity level of ballet class and rehearsal. *Impulse* 1994;2:97–105.
- [139] Rodrigues-Krause J, Krause M, Cunha G dos S, Perin D, Martins JB, Alberton CL, et al. Ballet dancers cardiorespiratory, oxidative and muscle damage responses to classes and rehearsals. *Eur J Sport Sci* 2014;14:199–208. <https://doi.org/10.1080/17461391.2013.777796>.
- [140] Rodrigues-Krause J, Farinha JB, Ramis TR, Boeno FP, dos Santos GC, Krause M, et al. Cardiorespiratory responses of a dance session designed for older women: A cross sectional study. *Exp Gerontol* 2018;110:139–45. <https://doi.org/10.1016/j.exger.2018.06.003>.
- [141] Roussel N, De Koning M, Schutt A, Mottram S, Truijen S, Nijs J, et al. Motor Control and Low Back Pain in Dancers. *Int J Sports Med* 2013;34:138–43. <https://doi.org/10.1055/s-0032-1321722>.
- [142] Rovisco Branquinho L, Páscoa Pinheiro J. Quadratus Femoris Tendinopathy as an Underreported Cause of Groin Pain: Case Report. *Med Probl Perform Art* 2022;37:67–70. <https://doi.org/10.21091/mppa.2022.1008>.
- [143] Salmon S, Timmons W, Saunders DH. An exploration of heart rate and perceived exertion differences between class and competition in freestyle-disco dance. *Res Dance Educ* 2020;22:88–107. <https://doi.org/10.1080/14647893.2020.1798392>.
- [144] Sanders DJ, Walker AJ, Prior KE, Poyssick AN, Arent SM. Training Demands and Physiological Profile of Cross-Disciplined Collegiate Female Dancers. *J Strength Cond Res* 2021;35:2316–20. <https://doi.org/10.1519/JSC.0000000000003107>.
- [145] Schantz PG, Astrand P-O. Physiological characteristics of classical ballet: *Med Sci Sports Exerc* 1984;16:472–6. <https://doi.org/10.1249/00005768-198410000-00009>.

- [146] Schmitt H, Kuni B, Sabo D. Influence of Professional Dance Training on Peak Torque and Proprioception at the Ankle: *Clin J Sport Med* 2005;15:331–9.
<https://doi.org/10.1097/01.jsm.0000181437.41268.56>.
- [147] Scialom M, Gonçalves A, Padovani CR. Work and Injuries in Dancers: Survey of a Professional Dance Company in Brazil. *Med Probl Perform Art* 2006;21:29–33.
<https://doi.org/10.21091/mppa.2006.1006>.
- [148] Seliger V, Glücksmann J, Pachlopník J, Pachlopníková I. Evaluation of stage artist's activities on basis of telemetrical measurements of heart rates. *Int Z Für Angew Physiol Einschließlich Arbeitsphysiologie* 1970;28:86–104. <https://doi.org/10.1007/BF00698049>.
- [149] Shah S, Luftman J, Vigil DV. Stress Injury of the Talar Dome and Body in a Ballerina. *J Dance Med Sci* 2005;9:91–5.
- [150] Shah S, Weiss DS, Burchette RJ. Injuries in professional modern dancers: incidence, risk factors, and management. *J Dance Med Sci Off Publ Int Assoc Dance Med Sci* 2012;16:17–25.
- [151] Shaw JW, Springham M, Brown DD, Mattiussi AM, Pedlar CR, Tallent J. The Validity of the Session Rating of Perceived Exertion Method for Measuring Internal Training Load in Professional Classical Ballet Dancers. *Front Physiol* 2020;11:480. <https://doi.org/10.3389/fphys.2020.00480>.
- [152] Shybut TB, Rose DJ, Strongwater AM. Second Metatarsal Physeal Arrest in an Adolescent Flamenco Dancer: A Case Report. *Foot Ankle Int* 2008;29:859–62.
<https://doi.org/10.3113/FAI.2008.0859>.
- [153] Smith DL, Fehling PC, Fernandez DG, McArdle C, Burns S, Healy S. Caloric balance in advanced college dancers. *Mpulse Int J Dance Sci Med Educ* 1994;2:176–83.

- [154] Soares Campoy FA, Raquel de Oliveira Coelho L, Bastos FN, Júnior JN, Marques Vanderlei LC, Luiz Monteiro H, et al. Investigation of Risk Factors and Characteristics of Dance Injuries. *Clin J Sport Med* 2011;21:493–8. <https://doi.org/10.1097/JSM.0b013e318230f858>.
- [155] Staal S, Sjödin A, Fahrenholtz I, Bonnesen K, Melin AK. Low RMRratio as a Surrogate Marker for Energy Deficiency, the Choice of Predictive Equation Vital for Correctly Identifying Male and Female Ballet Dancers at Risk. *Int J Sport Nutr Exerc Metab* 2018;28:412–8. <https://doi.org/10.1123/ijsnem.2017-0327>.
- [156] Steinberg N, Siev-Ner I, Peleg S, Dar G, Masharawi Y, Zeev A, et al. Injury patterns in young, non-professional dancers. *J Sports Sci* 2011;29:47–54. <https://doi.org/10.1080/02640414.2010.521167>.
- [157] Steinberg N, Hershkovitz I, Peleg S, Dar G, Masharawi Y, Siev-Ner I. Paratenonitis of the Foot and Ankle in Young Female Dancers. *Foot Ankle Int* 2011;32:1115–21. <https://doi.org/10.3113/FAI.2011.1115>.
- [158] Steinberg N, Siev-Ner I, Peleg S, Dar G, Masharawi Y, Zeev A, et al. Injuries in Female Dancers Aged 8 to 16 Years. *J Athl Train* 2013;48:118–23. <https://doi.org/10.4085/1062-6050-48.1.06>.
- [159] Steinberg N, Aujla I, Zeev A, Redding E. Injuries among Talented Young Dancers: Findings from the UK Centres for Advanced Training. *Int J Sports Med* 2013;35:238–44. <https://doi.org/10.1055/s-0033-1349843>.
- [160] Steinberg N, Tenenbaum S, Stern M, Zeev A, Siev-Ner I. The association between menarche, intensity of training and passive joint ROM in young pre-professional female dancers: A longitudinal follow-up study. *Phys Ther Sport* 2018;32:59–66. <https://doi.org/10.1016/j.ptsp.2018.05.003>.

- [161] Steinberg N, Tenenbaum S, Waddington G, Adams R, Zakin G, Zeev A, et al. Unilateral and bilateral patellofemoral pain in young female dancers: Associated factors. *J Sports Sci* 2020;38:719–30. <https://doi.org/10.1080/02640414.2020.1727822>.
- [162] Stracciolini A, Stein CJ, Kinney S, McCrystal T, Pepin MJ, Meehan III WP. Associations Between Sedentary Behaviors, Sleep Patterns, and BMI in Young Dancers Attending a Summer Intensive Dance Training Program. *J Dance Med Sci* 2017;21:102–8. <https://doi.org/10.12678/1089-313X.21.3.102>.
- [163] Stracciolini A, Quinn BJ, Geminiani E, Kinney S, McCrystal T, Owen M, et al. Body Mass Index and Menstrual Patterns in Dancers. *Clin Pediatr (Phila)* 2017;56:49–54. <https://doi.org/10.1177/0009922816642202>.
- [164] Stubbe JH, Soerel B, Oudejans R, Kegelaers J, van Rijn RM. Quantifying Internal Load in Pre-Professional Contemporary Dancers: The Association Between Objective Heart-Rate Derived Outcome Measures and Subjective Dancers' and Teachers' Perceptions. *J Dance Med Sci* 2022;26:58–64. <https://doi.org/10.12678/1089-313X.031522h>.
- [165] Surgenor B, Wyon M. Measuring Training Load in Dance: The Construct Validity of Session-RPE. *Med Probl Perform Art* 2019;34:1–5. <https://doi.org/10.21091/mppa.2019.1002>.
- [166] Swain CTV, Bradshaw EJ, Whyte DG, Ekegren CL. The prevalence and impact of low back pain in pre-professional and professional dancers: A prospective study. *Phys Ther Sport* 2018;30:8–13. <https://doi.org/10.1016/j.ptsp.2017.10.006>.
- [167] Szopa A, Domagalska-Szopa M, Urbańska A, Grygorowicz M. Factors associated with injury and re-injury occurrence in female pole dancers. *Sci Rep* 2022;12:33. <https://doi.org/10.1038/s41598-021-04000-5>.

- [168] Tekin D. Effect of body size on pulmonary function in male and female dancers. *J Phys Educ Sport* 2020;20:3120–7.
- [169] Tjukov O, Engeroff T, Vogt L, Banzer W, Niederer D. Injury Profile of Hip-Hop Dancers. *J Dance Med Sci* 2020;24:66–72. <https://doi.org/10.12678/1089-313X.24.2.66>.
- [170] To WWK, Wong MWN, Chan KM. The Effect of Dance Training on Menstrual Function in Collegiate Dancing Students. *Aust N Z J Obstet Gynaecol* 1995;35:304–9. <https://doi.org/10.1111/j.1479-828X.1995.tb01988.x>.
- [171] To WWK, Wong MWN, Lam IYL. Hormonal predisposition to menstrual dysfunction in collegiate dance students: Menstrual dysfunction in dance training. *Acta Obstet Gynecol Scand* 2000;79:1117–23. <https://doi.org/10.1034/j.1600-0412.2000.0790121117.x>.
- [172] Tsiouti N, Wyon M. Injury Occurrence in Break Dance: An Online Cross-Sectional Cohort Study of Breakers. *J Dance Med Sci* 2021;25:2–8. <https://doi.org/10.12678/1089-313X.031521a>.
- [173] Twitchett E, Angioi M, Koutedakis Y, Wyon M. Video analysis of classical ballet performance. *J Dance Med Sci Off Publ Int Assoc Dance Med Sci* 2009;13:124–8.
- [174] Twitchett E, Angioi M, Koutedakis Y, Wyon M. The demands of a working day among female professional ballet dancers. *J Dance Med Sci Off Publ Int Assoc Dance Med Sci* 2010;14:127–32.
- [175] Vaczi M, Tekus E, Atlasz T, Cselko A, Pinter G, Balatincz D, et al. Ballroom dancing is more intensive for the female partners due to their unique hold technique. *Physiol Int* 2016;103:392–401. <https://doi.org/10.1556/2060.103.2016.3.11>.
- [176] Valentino R, Savastano S, Tommaselli AP, D'Amore G, Dorato M, Lombardi G. The Influence of Intense Ballet Training on Trabecular Bone Mass, Hormone Status, and Gonadotropin Structure in Young Women. *J Clin Endocrinol Metab* 2001;86:4674–8. <https://doi.org/10.1210/jcem.86.10.7908>.

- [177] van Winden DP, Van Rijn RM, Richardson A, Savelsbergh GJP, Oudejans RRD, Stubbe JH. Detailed injury epidemiology in contemporary dance: a 1-year prospective study of 134 students. *BMJ Open Sport Exerc Med* 2019;5:e000453. <https://doi.org/10.1136/bmjsem-2018-000453>.
- [178] van Winden D, van Rijn RM, Savelsbergh GJP, Oudejans RRD, Stubbe JH. Limited Coping Skills, Young Age, and High BMI Are Risk Factors for Injuries in Contemporary Dance: A 1-Year Prospective Study. *Front Psychol* 2020;11:1452. <https://doi.org/10.3389/fpsyg.2020.01452>.
- [179] Vassallo AJ, Pappas E, Stamatakis E, Hiller CE. Differences in the occurrence and characteristics of injuries between full-time and part-time dancers. *BMJ Open Sport Exerc Med* 2018;4:e000324. <https://doi.org/10.1136/bmjsem-2017-000324>.
- [180] Verulava T, Tvalavadze K, Jorbenadze R. Health problems of professional ballet dancers. *Acta Fac Medicae Naissensis* 2021;38:77–84. <https://doi.org/10.5937/afmnai38-27680>.
- [181] Volkova VG, Black AM, Kenny SJ. Internal training load measures in elite adolescent ballet dancers. *J Dance Med Sci* 2020;24:175–82. <https://doi.org/10.12678/1089-313X.24.4.175>.
- [182] Wanke EM, Haenel J, Groneberg DA. Musculoskeletal Pain in Latin American Formation Dance: Localization, Assessment, and Related Behavior. *J Dance Med Sci* 2020;24:24–32. <https://doi.org/10.12678/1089-313X.24.1.24>.
- [183] Warren MP. The Effects of Exercise on Pubertal Progression and Reproductive Function in Girls. *J Clin Endocrinol Metab* 1980;51:1150–7. <https://doi.org/10.1210/jcem-51-5-1150>.
- [184] Watkins A, Woodhull-McNeal AP, Clarkson PM, Ebbeling C. Lower extremity alignment and injury in young, preprofessional, college, and professional ballet dancers. *Med Probl Perform Art* 1989;4:148–53.

- [185] Weigert BJ, Erickson M. Incidence of Injuries in Female University-Level Modern Dancers and the Effectiveness of a Screening Program in Altering Injury Patterns. *Med Probl Perform Art* 2007;22:52–7. <https://doi.org/10.21091/mppa.2007.2012>.
- [186] Weiss DS, Shah S, Burchette RJ. A profile of the demographics and training characteristics of professional modern dancers. *J Dance Med Sci Off Publ Int Assoc Dance Med Sci* 2008;12:41–6.
- [187] Wilmerding MV, Robson B, Book A. Cigarette Smoking in the Adolescent Dance Population. *Med Probl Perform Art* 2002;17:116–20. <https://doi.org/10.21091/mppa.2002.3018>.
- [188] Witkoś J, Wróbel P. Menstrual disorders in amateur dancers. *BMC Womens Health* 2019;19:87. <https://doi.org/10.1186/s12905-019-0779-1>.
- [189] Wyon M, Head A, Sharp C, Redding E. The cardiorespiratory responses to modern dance classes: differences between university, graduate, and professional classes. *J Dance Med Sci* 2002;6:41–5.
- [190] Wyon MA, Abt G, Redding E, Head A, Sharp NCC. Oxygen Uptake During Modern Dance Class, Rehearsal, and Performance. *J Strength Cond Res* 2004;18:646. <https://doi.org/10.1519/13082.1>.
- [191] Wyon MA, Twitchett E, Angioi M, Clarke F, Metsios G, Koutedakis Y. Time Motion and Video Analysis of Classical Ballet and Contemporary Dance Performance. *Int J Sports Med* 2011;32:851–5. <https://doi.org/10.1055/s-0031-1279718>.
- [192] Wyon MA, Harris J, Adams F, Cloak R, Clarke FA, Bryant J. Cardiorespiratory Profile and Performance Demands of Elite Hip-Hop Dancers: Breaking and New Style. *Med Probl Perform Art* 2018;33:198–204. <https://doi.org/10.21091/mppa.2018.3028>.
- [193] Yannakoulia M, Keramopoulos A, Matalas A-L. Bone Mineral Density in Young Active Females: The Case of Dancers. *Int J Sport Nutr Exerc Metab* 2004;14:285–97. <https://doi.org/10.1123/ijsnem.14.3.285>.

- [194] Yin AX, Geminiani E, Quinn B, Owen M, Kinney S, McCrystal T, et al. The Evaluation of Strength, Flexibility, and Functional Performance in the Adolescent Ballet Dancer During Intensive Dance Training. *PM&R* 2019;11:722–30. <https://doi.org/10.1002/pmrj.12011>.
- [195] Young A, Paul L. Incidence of Achilles tendon injuries in competitive highland dancers. *J Dance Med Sci* 2002;6:46–9.
- [196] Yung PS, Lai YM, Tung HT, Wong CK, Hung VWY, Qin L. Effects of weight bearing and non-weight bearing exercises on bone properties using calcaneal quantitative ultrasound. *Br J Sports Med* 2005;39:547–51. <https://doi.org/10.1136/bjsem.2004.014621>.
- [197] Zagorc M, Karpljuk D, Friedl M. Analysis of functional loads of top sport dancers. *KINEZILOGIJA* 1999;21:240–3.
- [198] Zajenkowski M, Jankowski KS, Kołata D. Let's dance – feel better! Mood changes following dancing in different situations. *Eur J Sport Sci* 2015;15:640–6. <https://doi.org/10.1080/17461391.2014.969324>.
- [199] Zanchini A, Malaguti M. Energy requirements in top-level DanceSport Athletes. *J Hum Sport Exerc* 2014;9:148–56. <https://doi.org/10.4100/jhse.2014.91.15>.