Supplementary file S1

Table S1: Included Studies for Absolute $VO_{2max/peak}$ values ($Lmin^{-1}$)

Age		**Age range**	**Body Mass**		**Height**		**BMI**		**VO_{2max}**		**COV**		**Additional Comments**	**Peak (P) or max (M) VO_2**	**Location**	**Reference**
Mean (y)	SD (y)		Mean (kg)	SD (kg)	Mean (cm)	SD (cm)	Mean (kg/m^2)	SD (kg/m^2)	Mean ($Lmin^{-1}$)	SD ($Lmin^{-1}$)	(%)	n				
7.5	0.8	7-12	24.0	2.3	126	6	NP	NP	1.10	0.19	17.3	22	BSA<1.0 m^3	M	USA	Washington et al. (1988) (1)
8	NP	8	32.7	6.6	133	5.0	18.3	2.8	1.44	0.31	21.5		African-American	M	USA	McMurray et al. (2002) (2)
8	NP	8	30.7	6.0	132	6.0	17.5	2.6	1.39	0.23	16.5		Caucasian	M	USA	McMurray et al. (2002) (2)
8.4	1.3	NP	27.0	4.7	128	6.6	NP	NP	1.08	0.24	22.2	13	Normal, untrained sample	P	USA	Sockolov et al. (1977) (3)
8.6	2.0	NP	27.6	6.9	132	11.3	NP	NP	1.10	0.30	27.3	6	VO2max plateau group	M	PR	Rivera-Brown et al. (2001) (4)
8.9	0.6	7-9	30.4	5.2	132	4.7	17.4	2.4	1.47	0.17	11.6	23		M	USA	Turley et al. (1995) (5)
9	NP	9	37.0	10.0	139	7.0	19.0	3.7	1.56	0.35	22.4		African-American	M	USA	McMurray et al. (2002) (2)
9	NP	9	35.0	8.6	137	6.0	18.5	3.5	1.53	0.27	17.6		Caucasian	M	USA	McMurray et al. (2002) (2)
9.1	0.7	7-9	29.5	4.3	134	6.3	16.2	1.50	1.49	0.20	13.4	12	Cycle ergometer v. treadmill study	M	USA	Turley & Wilmore (1997) (6)
9.3	1.5	7-12	32.0	3.0	139	7.0	NP	NP	1.48	0.24	16.2	30	BSA: 1.0-1.19 m^3	M	USA	Washington et al. (1988) (1)
9.3	1.3	NP	36.1	9.1	136	8.9	NP	NP	1.40	0.30	21.4	12	No VO_{2max} plateau	M	PR	Rivera-Brown et al. (2001) (4)
9.4	1.7	7-12	33.2	7.3	139	10.3	NP	NP	1.40	0.25	17.9	32		P	USA	Gilliam et al. (1977) (7)
9.8	0.6	8.2-11.0	34.3	7.8	140	5.5	17.5	3.7	1.20	0.20	16.7	20	VO_{2max} range: 0.6-1.4	M	USA	Swain et al. (2010) (8)
9.8	1.6	8-12	38.0	2.1	143	7.6	NP	NP	1.79	0.21	11.7	12	A priori average VO_{2max}	P	USA	Robertson et al. (2001) (9)
10	NP	10	39.3	9.0	142	7.0	19.3	3.2	1.69	0.29	17.2		African-American	M	USA	McMurray et al. (2002) (2)

10	NP	10	38.2	9.6	141	7.0	19.0	3.8	1.65	0.34	20.6		Caucasian	M	USA	McMurray et al. (2002) (2)
10.0	1.7	8-12	37.3	1.7	143	9.9	NP	NP	2.10	0.17	8.1	12	A priori above average VO_{2max}	P	USA	Robertson et al. (2001) (9)
10.5	1.0	NP	39.9	8.0	143	6.8	NP	NP	1.78	0.25	14.0	11		P	USA	Mahon et al. (2003) (10)
10.5	1.3	NP	37.3	7.3	NP	NP	NP	NP	1.58	0.10	6.3	18		M	USA	Rowland et al. (1993) (11)
10.6	1	NP	38.0	10.0	143	7.0	18.0	3.0	1.86	0.30	16.1	61	Year 1 of a longitudinal study	P	USA	Janz et al. (1998) (12)
10.6	0.2	NP	36.4	1.8	144	20.0	NP	NP	1.80	0.09	5.0	10		M	USA	Del Corral et al. (1994) (13)
10.8	1.0	NP	39.0	11.0	144	7.0	NP	NP	1.86	0.30	16.1	63		M	USA	Janz et al. (2000) (14)
10.9	1.3	NP	37.6	3.4	145	5.0	NP	NP	1.90	0.34	17.9	15		P	USA	Rowland (1997) (15)
10.9	1.1	Total sample only	36.5	8.6	143	7.4	NP	NP	1.48	0.22	14.9	5	ADHD patients	P	USA	Mahon et al. (2008) (16)
10.9	1.1	Total sample only	36.5	8.6	143	7.4	NP	NP	1.62	0.26	16.0	9	ADHD patients	P	USA	Mahon et al. (2008) (16)
11	NP	11	46.2	12.4	149	9.0	20.5	4.0	1.99	0.51	25.6		African-American	M	USA	McMurray et al. (2002) (2)
11	NP	11	44.1	12.6	147	7.0	20.2	4.4	1.77	0.36	20.3		Caucasian	M	USA	McMurray et al. (2002) (2)
7.4	0.3	7	26.3	4.4	126	5.1	NP	NP	1.23	0.28	22.8	18	Test of a field procedure	M	Fra	Van Praagh et al. (1988) (17)
7.7	0.3		27.4	3.4	130	4.4	NP	NP	1.51	0.20	13.2	18		M	Fin	Tompuri et al. (2015) (18)
8.7	NP	8.3-9.8	27.6	3.6	132	6.1	NP	NP	1.46	0.19	13.0	20		M	Swe	Sunnegardh & Bratteby (1987) (19)
9	NP	9	34.0	6.5	140	6.3	17.3	2.5	1.60	0.20	12.5	602	Population-based sample	P	Nor	Kolle et al. (2010) (20)
9	NP	8-10	26.2	2.8	130	4.4	NP	NP	1.31	0.17	13.0	19	Used IBP Handbook (1969)	M	Jap	Ikai & Kitagawa (1972) (21)
9.4	0.3	9-14	31.0	4.5	137	4.8	NP	NP	1.59	0.24	15.1	29	Longitudinal study; 2nd year	M	Nor	Andersen et al. (1976) (22)
9.5	0.3	9	33.4	6.2	139	6.0	17.2	2.4	1.38	0.20	14.5	269	European Youth Heart Study	M	Eur	Ortega et al. (2010) (23)
9.5	0.5	NP	35.3	7.4	142	6.0	NP	NP	1.80	0.30	16.7	177	20% overweight or obese	P	Fin	Agbaje et al. (2019) (24)
9.9	0.4	NP	32.2	3.4	141	4.6	NP	NP	1.49	0.21	14.1	28		M	Nor	Andersen & Ghesquiere (1972) (25)
9.9	0.3	9-10	32.9	5.0	138	6.0	17.1	1.9	1.45	0.25	17.2	53		P	UK	Farr et al. (2019) (26)
9.9	NP	9.5-10.1	35.6	NP	142	11.2	NP	NP	1.83	0.51	27.9	71	Part of the PANIC study	P	Fin	Lintu et al. (2015) (27)

9.9	0.3	NP	32.0	4.0	138	5.0	NP	NP	1.51	0.23	15.2	31		P	UK	McNarry et al. (2015) (28)
10	NP	10	33.3	6.6	139	7.4	NP	NP	1.84	0.31	16.8	20		M	Can	Massicotte et al. (1985) (29)
10	NP	10	NP	NP	NP	NP	NP	NP	1.72	0.27	15.7	26		M	Slo	Dzurenkova et al. (2001) (30)
10	NP	10	NP	NP	NP	NP	NP	NP	1.30	0.20	15.4	15	Rural boys	M	Jap	Yoshizawa (1972) (31)
10.3	0.8	9-12	31.5	3.1	140	5.5	16.0	1.1	1.26	0.18	14.3	20	One obese parent	P	Isr	Weinstein et al. (2004) (32)
10.3	0.8	9-12	32.9	5.4	141	6.2	16.2	1.3	1.25	0.18	14.4	20	Normal-weight parents	P	Isr	Weinstein et al. (2004) (32)
10.3	2.4	NP	34.3	2.2	142	6.2	16.9	1.4	1.50	0.50	33.3	23	Normal-weight boys	P	Can	Peralta-Huertas et al. (2008) (33)
10.4	NP	10	33.9	5.0	141	5.0	NP	NP	2.03	0.30	14.8	31	Year 3 of a longitudinal study	M	Nor	Rutenfranz et al. (1981) (34)
10.5	2.6	NP	51.0	9.0	146	5.2	24.0	3.4	1.80	0.37	20.6	23	Overweight boys	P	Can	Peralta-Huertas et al. (2008) (33)
10.5	0.4	NP	36.3	7.2	140	4.0	NP	NP	1.59	0.20	12.6	15	Control group	P	H-K	McManus (2005) (35)
10.5	NP	10	36.0	NP	NP	NP	NP	NP	1.59	NP		20	VO_{2max} range=1.3-2.0 L/min	M	Nor	Hermansen & Oseid (1971) (36)
10.5	0.5	10-11	37.2	6.6	141	4.7	NP	NP	1.60	0.20	12.5	50	Control group	M	Fra	Mandigout et al. (2001) (37)
10.6	0.3	NP	37.9	5.4	144	4.6	NP	NP	1.80	0.28	15.6	17		M	Fra	Vinet et al. (2003) (38)
10.6	NP	NP	NP	NP	NP	NP	NP	NP	1.66	0.14	8.4	20	Asthmatics (various severity)	M	Swe	Friberg et al. (1989) (39)
10.6	0.3	NP	36.3	6.2	143	7.0	NP	NP	1.71	0.24	14.0	25		P	UK	Fawkner & Armstrong (2004) (40)
10.7	0.4	10-11	37.3	7.5	143	6.1	NP	NP	1.70	0.30	17.6	35	Training group (pre)	M	Fra	Mandigout et al. (2001) (37)
10.7	0.8	NP	30.5	4.2	132	5.8	17.6	2.2	1.30	0.10	7.7	30	Low altitude, low SES	M	Bol	de Jonge et al. (1996) (41)
10.8	0.4	NP	34.9	5.2	146	6.0	NP	NP	1.84	0.24	13.0	45		M	Aut	Gaisl & Buchberger (1980) (42)
10.8	NP	9-10	35.2	5.9	142	6.7	NP	NP	1.72	0.38	22.1	62		M	Can	Cunningham et al. (1984) (43)
10.8	0.5	NP	37.6	7.4	148	7.3	NP	NP	2.00	0.20	10.0	18		M	Can	Docherty & Gaul (1991) (44)
11	NP	10-11	30.8	4.1	135	4.2	NP	NP	1.50	0.26	17.3	18		M	Jap	Ikai & Kitagawa (1972) (21)
8.4	NP	8	27.4	3.9	131	4.5	NP	NP	1.44	0.19	13.2	28	Year 1 of a longitudinal study	M	Nor	Rutenfranz et al. (1981) (34)
8.4	NP	NP	27.4	3.9	131	4.5	NP	NP	1.44	0.19	13.2	29	Part of a longitudinal study	M	Nor	Andersen et al. (1974) (45)
9.9	0.3	9-10	32.9	5.0	1.4	0.1	17.1	1.9	1.5	0.3		53	healthy boys	P	GB	Farr 2019 (26)

10.8	1.7	NP	37.4	12.0	144	11.8	17.5	3	1.89	0.47		18	healthy boys	P	USA	Lu 2019 (46)
7.2	0.6	NP	24.4	3.0	123	5.8	NP	NP	1.19	0.25	21.0	8		M	UK	Davies et al. (1972) (47)
8	NP	8	NP	NP	NP	NP	NP	NP	1.28	0.61	47.7	2		M	Slo	Dzurenkova et al. (2001) (30)
8	NP	7-9	27.2	3.3	131	5.9	NP	NP	1.31	0.19	14.5	12	Inactive; no warmup before testing	M	Isr	Inbar & Bar-Or (1975) (48)
8.7	1.0	NP	31.6	5.7	135	6.0	NP	NP	1.48	0.23	15.5	7		P	Ger	Dunstheimer et al. (2001) (49)
9	NP	9	NP	NP	NP	NP	NP	NP	1.12	0.20	17.9	8	Rural boys	M	Jap	Yoshizawa (1972) (31)
9	NP	9	NP	NP	NP	NP	NP	NP	1.56	0.28	17.9	8		M	Slo	Dzurenkova et al. (2001) (30)
9.5	0.2	9	34.7	6.2	141	6.3	17.4	2.5	1.73	0.28	16.2	10	Test of new VO_{2peak} equation	P	Ice	Arngrímsson et al. (2008) (50)
9.9	1.6	8-12	52.9	13.9	141	11.0	26.1	3.5	1.69	0.26	15.4	7	Obese subjects; pre-exercise program	M	Ita	Lazzer et al. (2008) (51)
10	NP	10	28.6	4.7	135	12.3	NP	NP	1.59	0.23	14.5	4	Twin study; trained (pre)	M	Can	Weber et al. (1976) (52)
10	NP	10	28.6	4.2	135	11.7	NP	NP	1.59	0.13	8.2	4	Twin study; untrained (pre)	M	Can	Weber et al. (1976) (52)
10	NP	10	NP	NP	NP	NP	NP	NP	1.38	0.20	14.5	5	Urban boys	M	Jap	Yoshizawa (1972) (31)
10	NP	10	28.6	4.7	135	12.3	NP	NP	1.58	0.23	14.6	4	Twin Study: Trained pre-study	M	Can	Weber et al. (1976) (52)
10	NP	10	28.6	4.2	135	11.7	NP	NP	1.59	0.13	8.2	4	Twin Study: Untrained pre-study	M	Can	Weber et al. (1976) (52)
10.1	0.5	NP	31.7	2.7	139	4.0	NP	NP	1.41	0.18	12.8	9	Sample by equal LBM	P	UK	Winsley et al. (2009) (53)
10.1	1.8	NP	31.6	5.4	142	8.3	15.5	0.9	1.70	0.50	29.4	9	Normal weight group	P	Aus	Crisp et al. (2012) (54)
10.2	0.4	9-11	32.4	3.5	142	5.1	NP	NP	1.82	0.22	12.1	10	Second experiment	P	Den	Hansen et al. (1989) (55)
10.2	NP	10	28.7	3.0	132	2.2	NP	NP	1.10	0.17	15.5	8		M	Jap	Yamaji & Miyashita (1977) (56)
10.3	0.5	NP	32.2	5.4	142	9.5	NP	NP	1.62	NP		10	Controls for a training experiment (pre)	P	UK	Tolfrey et al. (1998) (57)
10.3	0.2	8-12	NP	NP	NP	NP	NP	NP	1.79	0.10	5.6	16	Trained: test of exercise-induced hypoxia	M	Fra	Nourry et al. (2004) (58)

10.3	0.1	10-11	38.9	5.6	145	4.0	NP	NP	1.38	0.17	12.3	10	Interval training group (pre-training)	P	H-K	McManus (2005) (35)
10.3	0.1	NP	32.4	3.5	142	5.1	NP	NP	1.82	0.22	12.1	10	Second experiment	P	Den	Hansen et al. (1989) (55)
10.3	NP	NP	33.2	5.7	143	7.8	NP	NP	1.61	0.19	11.8	14		P	Den	Andersen et al. (1974) (45)
10.4	0.4	NP	35.9	7.3	140	4.0	NP	NP	1.65	0.16	9.7	10	Continuous training group (pre-training)	P	H-K	McManus (2005) (35)
10.5	0.3	10-11	36.3	7.9	144	7.1	NP	NP	1.64	0.20	12.2	9	First experiment	M	Den	Hansen et al. (1989) (55)
10.6	0.9	NP	34.7	6.9	143	7.1	NP	NP	1.60	NP		12	Training group (pre-experiment)	P	UK	Tolfrey et al. (1998) (57)
10.7	0.3	10-11	35.8	5.7	143	6.0	NP	NP	1.61	0.23	14.3	9		P	UK	Welsman et al. (2005) (59)
10.7	0.9	NP	35.7	6.6	147	8.4	NP	NP	1.70	0.28	16.5	9		P	Bel	Vandekerckhove et al. (2016) (60)
10.7	NP	NP	47.9	13.8	148	9.1	21.7	4.7	1.70	0.50	29.4	9	Overweight group	P	Aus	Crisp et al. (2012) (61)
10.7	2.1	7-10	42.0	15.0	147	8.0	NP	NP	2.28	0.13	5.7	12	Undergoing leukemia treatment	P	Pol	Kowaluk & Wojniewski (2020) (62)
10.8	0.7	NP	35.3	11.0	140	9.4	NP	NP	1.63	0.39	23.9	9		M	UK	Davies et al. (1972) (47)
11	NP	10-11	33.4	7.2	143	8.4	16.3	2.3	2.00	0.20	10.0	12	Normal hearing boys	M	Pol	Zebrowska & Zwierzchowska (2009) (63)
8.4	NP	7-9	27.2	3.3	131	5.9	NP	NP	1.38	0.20	14.5	12	Non-active in sports	M	Isr	Inbar & Bar-Or (1975) (48)

(Y=years, VO_{2max}=maximal oxygen consumption, NP=not provided, BSA=body surface area, LBM=lean body mass, Fra=France, Fin=Finland, Swe=Sweden, Nor=Norway, Jap=Japan, Eur=Europe, Can=Canada, Slo=Slovenia, Isr=Israel, PR=Puerto Rico, H-K=Hong Kong, Bol=Bolivia, Aut=Austria, Ice=Iceland, Ita=Italy, Aus=Australia, Den=Denmark, Bel=Belgium)

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