Reference	Subjects/Duration	Results
Adiputra et al., 1996 (1)	N=60, 0% F, 17-19 years, Duration: 8 weeks	↑ VO _{2max} 15.3%
McManus et al., 1997 (2)	N=30, 100% F, 9.6 years, Duration: 8 weeks	Cycle Group: ↑ VO _{2peak} 9%, Sprint Group: ↑8%
Welsman et al., 1997 (3)	N=51, 100% F, 9-10 years, Duration: 8 weeks	VO _{2peak} did not significantly ↑
Ewart et al., 1998 (4)	N=88, 100% F, 70% AA, Duration: 18 weeks	Exercise Group ↑ CRF 11% compared to Control
Gutin et al., 2002 (5)	N=80, 68% F, 13-16 years, 69% AA Lifestyle Education + Training vs. Lifestyle Education alone, Duration: 8 months	Lifestyle Education + Training ↑ VO _{2max} significantly more than Lifestyle Education
Mandigout et al., 2002 (6) Group Randomized Trial	N=84, 47% F, 10-11 years, Duration: 13 weeks	M: ↑ VO _{2max} 5.1%, F: ↑ VO _{2max} 8.6%
Obert et al., 2003 (7) Group Randomized Trial	N=35, 49% F, 10-11 years, Duration: 13 weeks	M: ↑ VO _{2max} 15%, F: ↑ VO _{2max} 8%
Crews et al., 2004 (8)	N=66, 50% F, 3rd-5th grade, 100% Hispanic	Exercise Group ↑ CRF 16% compared to Control
Baquet et al., 2004 (9) Group Randomized Trial	N=100, 54% F, 8-11 years, Duration: 7 weeks	High-intensity Group improved run by 5.4%

Table G9.A2. Cardiorespiratory Fitness, Experimental Studies. Part 1. Randomized Controlled Trials

↑, increase; AA, African American; CRF, cardiorespiratory fitness; F, female; M, male; N, number

Table G9.A2. Cardiorespiratory Fitness, Experimental Studies. Part 2. Non-Randomized Controlled Trials

Reference	Subjects/Duration	Results
Gutin et al., 1996 (10)	N=22, 100% F, 7-11 years, AA, Duration: 10 weeks	Exercise Group improved HR by 5%
Williford et al., 1996 (11)	N=17, 0% F, 11-13 years, 100% AA, Duration: 15 weeks	Exercise Group ↑ VO _{2max} by 10.3% compared to Control
Stoedefalke et al., 2000 (12)	N=34, 100% F, 13-14 years, Duration: 20 weeks	No effect
Baquet et al., 2001 (13)	N=551, 47% F, 11-16 years, Duration: 10 weeks	Exercise Group improved 7-minute run by 7.6%
Baquet et al., 2002 (14)	N=53, 57% F, 9.7±0.8 years, Duration: 7 weeks	High-intensity Group ↑ CRF 8.2%
Tolfrey et al., 2004 (15)	N=36, 44% F, 10.6±0.6 years, Duration: 12 weeks	VO _{2peak} ↑ in Low Training Group, not in Moderate Training Group
Annesi et al., 2005 (16)	N=570, 40% F, 5-12 years, >95% AA, Duration: 12 weeks	CRF ↑ 8%
Schneider et al., 2007 (17)	N=122, 100% F, 10th-11th, Duration: 1 year	Exercise Group ↑ VO _{2peak} by 4%

↑, increase; >, greater than; AA, African American; CRF, cardiorespiratory fitness; F, female; HR, heart rate; N, number

Reference	Subjects/Duration	Results
Nassis et al., 2005 (18)	N=19, 100% F, 9-15 years, Duration: 12 weeks	↑ CRF 18.8%
Klijn et al., 2007 (19)	N=15, 100% F, 14.7±2.1 years, Duration: 12 weeks	↑ VO _{2peak} 17.5%

Table G9.A2. Cardiorespiratory Fitness, Experimental Studies. Part 3. Before-and-After Studies (i.e., No Control Group)

↑, increase; AA, African American; CRF, cardiorespiratory fitness; F, female; N, number

Table G9.A2. Cardiorespiratory Fitness, Experimental Studies. Part 4. Time Series

Reference	Subjects/Duration	Results
Rowland & Boyajian 1995 (20)	N=37, 65% F, 10-13 years, Duration: 12 weeks	↑ VO _{2max} 6.5% (M: ↑ 7.4%, F: ↑ 6.3%)
Rowland et al., 1996 (21)	N=31, 65% F, 10-12 years, 94% white, Duration: 13 weeks	↑ VO _{2max} 5.4% (M: ↑ 6.2%, F: ↑ 5.0%)

 $\uparrow,$ increase; F, female; M, male; N, number

Reference List

- 1. Adiputra N, Alex P, Sutjana DP, Tirtayasa K, Manuaba A. Balinese dance exercises improve the maximum aerobic capacity. J.Hum.Ergol.(Tokyo) 1996 Jun;25(1):25-9.
- 2. McManus AM, Armstrong N, Williams CA. Effect of training on the aerobic power and anaerobic performance of prepubertal girls. Acta Paediatr. 1997 May;86(5):456-9.
- 3. Welsman JR, Armstrong N, Withers S. Responses of young girls to two modes of aerobic training. Br.J.Sports Med. 1997 Jun;31(2):139-42.
- 4. Ewart CK, Young DR, Hagberg JM. Effects of school-based aerobic exercise on blood pressure in adolescent girls at risk for hypertension. Am.J.Public Health 1998 Jun;88(6):949-51.
- 5. Gutin B, Barbeau P, Owens S, Lemmon CR, Bauman M, Allison J, Kang HS, Litaker MS. Effects of exercise intensity on cardiovascular fitness, total body composition, and visceral adiposity of obese adolescents. Am.J.Clin.Nutr. 2002 May;75(5):818-26.
- 6. Mandigout S, Melin A, Fauchier L, N'Guyen LD, Courteix D, Obert P. Physical training increases heart rate variability in healthy prepubertal children. Eur.J.Clin.Invest 2002 Jul;32(7):479-87.
- 7. Obert P, Mandigouts S, Nottin S, Vinet A, N'Guyen LD, Lecoq AM. Cardiovascular responses to endurance training in children: effect of gender. Eur.J.Clin.Invest 2003 Mar;33(3):199-208.

- 8. Crews DJ, Lochbaum MR, Landers DM. Aerobic physical activity effects on psychological well-being in low-income Hispanic children. Percept.Mot.Skills 2004 Feb;98(1):319-24.
- 9. Baquet G, Guinhouya C, Dupont G, Nourry C, Berthoin S. Effects of a short-term interval training program on physical fitness in prepubertal children. J.Strength.Cond.Res. 2004 Nov;18(4):708-13.
- 10. Gutin B, Cucuzzo N, Islam S, Smith C, Stachura ME. Physical training, lifestyle education, and coronary risk factors in obese girls. Med.Sci.Sports Exerc. 1996 Jan;28(1):19-23.
- Williford HN, Blessing DL, Scharff-Olson M, Brown J. Injury rates and physiological changes associated with lateral motion training in females. Int.J.Sports Med. 1996 Aug;17(6):452-7.
- 12. Stoedefalke K, Armstrong N, Kirby BJ, Welsman JR. Effect of training on peak oxygen uptake and blood lipids in 13 to 14-year-old girls. Acta Paediatr. 2000 Nov;89(11):1290-4.
- 13. Baquet G, Berthoin S, Gerbeaux M, van PE. High-intensity aerobic training during a 10 week one-hour physical education cycle: effects on physical fitness of adolescents aged 11 to 16. Int.J.Sports Med. 2001 May;22(4):295-300.
- 14. Baquet G, Berthoin S, Dupont G, Blondel N, Fabre C, van PE. Effects of high intensity intermittent training on peak VO(2) in prepubertal children. Int.J.Sports Med. 2002 Aug;23(6):439-44.
- 15. Tolfrey K, Jones AM, Campbell IG. Lipid-lipoproteins in children: an exercise doseresponse study. Med.Sci.Sports Exerc. 2004 Mar;36(3):418-27.
- Annesi JJ, Westcott WL, Faigenbaum AD, Unruh JL. Effects of a 12-week physical activity protocol delivered by YMCA after-school counselors (Youth Fit for Life) on fitness and self-efficacy changes in 5-12-year-old boys and girls. Res.Q.Exerc.Sport 2005 Dec;76(4):468-76.
- Schneider M, Dunton GF, Bassin S, Graham DJ, Eliakim AF, Cooper DM. Impact of a school-based physical activity intervention on fitness and bone in adolescent females. J.Phys.Act.Health 2007 Jan;4(1):17-29.
- Nassis GP, Papantakou K, Skenderi K, Triandafillopoulou M, Kavouras SA, Yannakoulia M, Chrousos GP, Sidossis LS. Aerobic exercise training improves insulin sensitivity without changes in body weight, body fat, adiponectin, and inflammatory markers in overweight and obese girls. Metabolism 2005 Nov;54(11):1472-9.
- 19. Klijn PH, van der Baan-Slootweg OH, van Stel HF. Aerobic exercise in adolescents with obesity: preliminary evaluation of a modular training program and the modified shuttle test. BMC.Pediatr. 2007;7:19.
- 20. Rowland TW, Boyajian A. Aerobic response to endurance exercise training in children. Pediatrics 1995 Oct;96(4 Pt 1):654-8.

21. Rowland TW, Martel L, Vanderburgh P, Manos T, Charkoudian N. The influence of short-term aerobic training on blood lipids in healthy 10-12 year old children. Int.J.Sports Med. 1996 Oct;17(7):487-92.