

Table S1. Summary of literature on selective fast-twitch size alterations in young healthy individuals.

Reference	Subject Population	Training Stimulus	Sex (n)	Age (y)	MHC Ila CSA (%Δ)	Duration	Rate (%Δ/week)	Muscle	Method
<u>Resistance Training</u>									
Hakkinen 1981 (17)	Recreational	Con/Ecc	M (14)	20-30	↑ 13.5% ^a	8 wks ^b	↑ 1.7%	VL	H
Houston 1983 (25)	Recreational	Con/Ecc	M (6)	20±1	↑ 21.0%	10 wks	↑ 2.1%	VL	H
Hakkinen 1985 (16)	Recreational	Con/Ecc	M (11)	20-32	↑ 28.8% ^a	24 wks	↑ 1.2%	VL	H
Tesch 1987 (38)	Recreational	Con/Ecc/Ecc and Explosive	M (11, 10)	26±4, 27±3	↑ 28.9%, 12.8%	24 wks	↑ 1.2%, 0.5%	VL	H
Alway 1989 (2)	Untrained	Isometric	M (7)	25±3	↑ 50.0%	16 wks	↑ 3.1%	LG	H
Alway 1990 (3)	Untrained	Isometric	M (6)	27±3	↑ 30.0%	16 wks	↑ 1.9%	LG	H
Staron 1991 (37)	Untrained	High-Intensity Retraining	F (7)	21±1	↑ 18.0%	6 wks	↑ 3.0%	VL	H
Hather 1991 (20)	Recreational	High-Volume Concentric	M (10)	33±1	↑ 27.0%	19 wks	↑ 1.4%	VL	H
Hickson 1994 (21)	Recreational	Con/Ecc	M (5) + F (5)	29±1	↑ 19.0%	16 wks	↑ 1.2%	VL	H
Hortobagyi 1996 (22)	Untrained	Eccentric Overload	M (7)	20±1	↑ 37.8%	12 wks	↑ 3.2%	VL	H
Volek 1999 (40)	Trained	Con/Ecc	M (9)	25±6	↑ 5.9%	12 wks	↑ 0.5%	VL	H
Andersen 2000 (4)	Untrained	Con/Ecc	M (9)	27±3	↑ 18.6%	12 wks	↑ 1.6%	VL	H
Aagaard 2001 (1)	Untrained	Con/Ecc	M (11)	27±5	↑ 18.4	12 wks	↑ 1.5%	VL	H
Harber 2004 (18)	Untrained	Circuit Training	M (8)	24±2	↑ 21.2%	10 wks	↑ 2.1%	VL	H
Cribb 2006 (11)	Recreational Bodybuilders	Con/Ecc with PRO/CP	M (8)	21±3	↑ 25.0%	10 wks	↑ 2.5%	VL	H
Woolstenhulme 2006 (41)	Untrained	Con/Ecc	M (6)	21±4	↑ 15.1%	4 wks (8 wks total)	↑ 3.8%	VL	H
Cribb 2007 (12)	Recreational Bodybuilders	Con/Ecc with CHO	M (7)	24±7	↑ 4.8%	10 wks	↑ 0.5%	VL	H
Hartman 2007 (19)	Untrained	Con/Ecc with CHO	M (19)	18-30	↑ 11.8%	12 wks	↑ 1.0%	VL	H
Raue 2009 (34)	Untrained	Con/Ecc	F (9)	21±2	↑ 28.0%	12 wks	↑ 2.3%	VL	SFD
Clafin 2011 (10)	Untrained	Con/Ecc and High Velocity	M (15) + F (18)	25±--	↑ 8.3%	14 wks	↑ 0.6%	VL	SFD
Farup 2012 (13)	Untrained	Con/Ecc	M (18)	23±1	↑ 22.0%	10 wks	↑ 2.2%	VL	H
Schuenke 2012 (36)	Untrained	Low Velocity Con/Ecc	F (10)	19±1	↑ 13.0%	6 wks	↑ 2.2%	VL	H
<u>Aerobic Training</u>									
Andersen 1977 (5)	Untrained	Cycling	M (5)	20-23	↑ 16.8%	8 wks	↑ 2.1%	VL	H
Houston 1979 (24)	Trained	Run Training After Detraining	M (3)	33±3	↑ 32.4% ^{cd}	15 d	↑ 15.1%	LG	H
Bangsbo 1988 (6)	Semi-Pro Soccer Players	General Conditioning After Detraining	M (4)	23±--	↑ 16.3% ^d	4 wks	↑ 4.1%	LG	H
Mizuno 1990 (31)	Trained	X-Country Skiing at Altitude	M (10)	22±--	↑ 4.3%	2 wks	↑ 2.2%	TB	H

Table S1 (continued). Summary of literature on selective fast-twitch size alterations in young healthy individuals.

Reference	Subject Population	Training Stimulus	Sex (n)	Age (y)	MHC IIa CSA (%Δ)	Duration	Rate (%Δ/week)	Muscle	Method
<u>Combined Training</u>									
Kraemer 1995 (27)	Recreational	Con/Ecc + Running	M (9)	23±4	↑ 20.1%	12 wks	↑ 1.7%	VL	H
Bell 2000 (7)	Recreational	Con/Ecc + Cycling	M (8) + F (5)	22±3	↑ 13.8%	12 wks	↑ 1.2%	VL	H
Chilibeck 2002 (9)	Untrained	Con/Ecc + Cycling	M (5) + F (5)	24±3	↑ 17.6% ^a	12 wks	↑ 1.5%	VL	H
McCarthy 2002 (30)	Untrained	Con/Ecc + Cycling	M (10)	27±2	↑ 27.8%	10 wks	↑ 2.8%	VL	H
Putman 2004 (33)	---	Con/Ecc + Cycling	[M + F] (10)	22±--	↑ 18.0%	12 wks	↑ 1.5%	VL	H
Lundberg 2013 (29)	Recreational	Con/Ecc + Cycling	M (10)	25±4	↑ 18.8%	5 wks	↑ 3.4%	VL	H
<u>Intensified Training</u>									
Fitts 1989 (14)	Trained	Swimming	M (12)	19±--	↓ 32.6%	10 d	↓ 22.8%	Deltoid	SFD
Kohn 2011 (26)	Trained	Running	M (18)	---	↓ 17.0% ^e	6 wks	↓ 2.8%	VL	H
<u>Taper</u>									
Trappe 2000 (39)	Trained	Swimming	M (6)	20±1	↑ 24.0%	3 wks	↑ 8.0%	Deltoid	SFD
Neary 2003 (32)	Trained	Cycling	M (22)	25±6	↑ 14.2%	7 d	↑ 14.2%	VL	H
Luden 2010 (28)	Trained	Running	M (7)	20±1	↑ 15.0%	3 wks	↑ 5.0%	LG	SFD
<u>Detraining</u>									
Houston 1979 (24)	Trained	Running	M (3)	33±3	↑ 24.3% ^c	15 d	↑ 11.3%	LG	H
Schantz 1983 (35)	Recreational	Weighted Skiing	M (6)	25±--	↓ 20.0%	27 wks	↓ 0.7%	TB	H
Bangsbo 1988 (6)	Semi-Pro Soccer Players	General Conditioning	M (4)	23±--	↓ 14.1%	3 wks	↓ 4.7%	LG	H
Hortobagyi 1993 (23)	Football Players	Power Activity	M (12)	24±1	↓ 6.4%	2 wks	↓ 3.2%	VL	H
Billeter 2003 (8)	Olympic Champion Shot Putter	Power Activity	M (1)	32	↓ 24.5% ^c	3 yrs	---	VL	H
Gjovaag 2008 (15)	Untrained	Con/Ecc	M (12) + F (20)	22±1	↓ 10.1% ^f	8 wks	↓ 1.3%	TB	H

^a=Estimated from figure, ^b=of a 16 wk study, ^c=Non-statistical due to low *n* but larger than slow-twitch Δ, ^d=Compared to trained baseline, ^e=P=0.06, ^f=Compared to post-training, CON/ECC=Concentric and Eccentric Resistance Training, VL=Vastus Lateralis, LG=Lateral Gastrocnemius, TB=Triceps Brachii, H=Histochemistry, SFD=Single Fiber Diameter, PRO/CP=Protein/Creatine Supplementation, CHO=Carbohydrate Supplementation

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