

**Table G3.A2. Metabolic Syndrome: Fitness Cross-Sectional Studies**

Author, Journal, Year	N	Finding
Wareham et al./ Br. J. Nutr./ 1998 (1)	N=162	Inverse association
Whaley et al./Med. Sci. Sports Exerc./ 1999 (2)	15,534 M 3,898 W	Inverse association
Carroll et al./ Med. Sci. Sports Exerc./ 2000 (3)	N=710	Inverse association
Irwin et al./ Obes. Res./ 2002 (4)	146 W	Inverse association
Kullo et al./Am. J. Cardiol./ 2002 (5)	360 M	Inverse association
Church et al./ Intl J Obes./ 2002 (6)	4,057 M	Inverse association
Carnethon et al./ JAMA/ 2003 (7)	N=4,487	Inverse association
Lakka et al./Med. Sci. Sports Exerc./2003 (8)	1,069 M	Inverse association
Brage et al./Diab Care/ 2004 (9)	179 M 490W	Inverse association
Farrell et al./Obes. Res. /2004 (10)	7,104 W	Inverse association
Aronson et al./ J. Am. Coll. Cardiol./ 2004 (11)	N=1,640	Inverse association
Boule et al./ Can. J. Appl. Physiol./ 2005 (12)	N=357	Inverse association
LaMonte et al./J. Women's Health/ 2005 (13)	135 W	Inverse association
Shaibi et al./Med. Sci. Sports Exerc./ 2005 (14)	N=163	None
Orakzai et al./ Arch. Med. Res./ 2006 (15)	446 M	Inverse association
Liu et al./ Obesity/ 2006 (16)	N=360	Inverse association

M, men; N, number; W, women

## Reference List

1. Wareham NJ, Rennie KL. The assessment of physical activity in individuals and populations: why try to be more precise about how physical activity is assessed? *Int.J.Obes.Relat Metab Disord.* 1998 Aug;22 Suppl 2:S30-S38.
2. Whaley MH, Kampert JB, Kohl HW, III, Blair SN. Physical fitness and clustering of risk factors associated with the metabolic syndrome. *Med.Sci.Sports Exerc.* 1999 Feb;31(2):287-93.
3. Carroll S, Cooke CB, Butterly RJ. Metabolic clustering, physical activity and fitness in nonsmoking, middle-aged men. *Med.Sci.Sports Exerc.* 2000 Dec;32(12):2079-86.
4. Irwin ML, Ainsworth BE, Mayer-Davis EJ, Addy CL, Pate RR, Durstine JL. Physical activity and the metabolic syndrome in a tri-ethnic sample of women. *Obes.Res.* 2002 Oct;10(10):1030-7.
5. Kullo IJ, Hensrud DD, Allison TG. Relation of low cardiorespiratory fitness to the metabolic syndrome in middle-aged men. *Am.J.Cardiol.* 2002 Oct 1;90(7):795-7.

6. Church TS, Finley CE, Earnest CP, Kampert JB, Gibbons LW, Blair SN. Relative associations of fitness and fatness to fibrinogen, white blood cell count, uric acid and metabolic syndrome. *Int.J.Obes.Relat Metab Disord.* 2002 Jun;26(6):805-13.
7. Carnethon MR, Gidding SS, Nehgme R, Sidney S, Jacobs DR, Jr., Liu K. Cardiorespiratory fitness in young adulthood and the development of cardiovascular disease risk factors. *JAMA* 2003 Dec 17;290(23):3092-100.
8. Lakka TA, Laaksonen DE, Lakka HM, Mannikko N, Niskanen LK, Rauramaa R, Salonen JT. Sedentary lifestyle, poor cardiorespiratory fitness, and the metabolic syndrome. *Med.Sci.Sports Exerc.* 2003 Aug;35(8):1279-86.
9. Brage S, Wedderkopp N, Ekelund U, Franks PW, Wareham NJ, Andersen LB, Froberg K. Features of the metabolic syndrome are associated with objectively measured physical activity and fitness in Danish children: the European Youth Heart Study (EYHS). *Diabetes Care* 2004 Sep;27(9):2141-8.
10. Farrell SW, Cheng YJ, Blair SN. Prevalence of the metabolic syndrome across cardiorespiratory fitness levels in women. *Obes.Res.* 2004 May;12(5):824-30.
11. Aronson D, Sella R, Sheikh-Ahmad M, Kerner A, Avizohar O, Rispler S, Bartha P, Markiewicz W, Levy Y, Brook GJ. The association between cardiorespiratory fitness and C-reactive protein in subjects with the metabolic syndrome. *J.Am.Coll.Cardiol.* 2004 Nov 16;44(10):2003-7.
12. Boule NG, Bouchard C, Tremblay A. Physical fitness and the metabolic syndrome in adults from the Quebec Family Study. *Can.J.Appl.Physiol* 2005 Apr;30(2):140-56.
13. LaMonte MJ, Ainsworth BE, Durstine JL. Influence of cardiorespiratory fitness on the association between C-reactive protein and metabolic syndrome prevalence in racially diverse women. *J.Womens Health (Larchmt.)* 2005 Apr;14(3):233-9.
14. Shaibi GQ, Cruz ML, Ball GD, Weigensberg MJ, Kobaissi HA, Salem GJ, Goran MI. Cardiovascular fitness and the metabolic syndrome in overweight latino youths. *Med.Sci.Sports Exerc.* 2005 Jun;37(6):922-8.
15. Orakzai RH, Orakzai SH, Nasir K, Roguin A, Pimentel I, Carvalho JA, Meneghello R, Blumenthal RS, Santos RD. Association of increased cardiorespiratory fitness with low risk for clustering of metabolic syndrome components in asymptomatic men. *Arch.Med.Res.* 2006 May;37(4):522-8.
16. Liu J, Young TK, Zinman B, Harris SB, Connelly PW, Hanley AJ. Lifestyle variables, non-traditional cardiovascular risk factors, and the metabolic syndrome in an Aboriginal Canadian population. *Obesity.(Silver.Spring)* 2006 Mar;14(3):500-8.