Run Time Chart For Minimized Health Risk

Run time chart for Finsbury Park, London. First 1,92 km on The Parkrun Course.

Run time	Test value (VO_2ml/kgxmin)	
6 min 30 sec	72	
7 min 00 sec	66	
7 min 30 sec	61	
8 min 00 sec	57	
8 min 30 sec	53	
8 min 52 sec	50	
9 min 39 sec	45	
10 min 48 sec	39	
11 min 44 sec	35	(<35 increased health risk at the age of 35-65)
13 min 50 sec	28	(<28 increased risk for cardio vascular disease)
15 min 52 sec	23	(<23 extremely high risk for cardio vascular disease
17 min 23 sec	20	

Age		Desired test value and running time
10 - 13	-	44 – running time 9 min 50 sec
14 - 16	-	46 – running time 9 min 29 sec
17 - 29	-	48 – running time 9 min 10 sec
30 - 39	-	44 – running time 9 min 50 sec
40 - 49	-	41 – running time 10 min 24 sec
50 - 59	-	37 – running time 11 min 15 sec
60 - 65	-	35 – running time 11 min 44 sec

The aim with this poster is to show that everyone needs to establish a training regime, with cardiovascular training about 3 times a week, 20-40 min each time. This habit is then likely to be stable while the training response decrease with age, minus 0,365 ml/kgxmin every year (Shvartz 1990). The aim is to always have a test value above 35 during the middle age and thus avoid unnecessary health risk, **but it is never too late to start**! The minimum value of 35 is scientifically well documented, see below. Therefore a 29 year old individual with 36 years left to the 65:th birthday must have a testvalue of **35+(36*0,365) ≈ 48.** These running times match both men and women with similar lifestyles and stress in both professional and private life. The exception is a woman with 20 kg overweight, but not a waist circumference over 88 cm. She can instead look at the time 14 min as a limit. The reason is that fatty tissue located in the buttocks and thighs is not normally metabolically active (as all know who tried to get rid of it) and thereby not at all dangerous in the same way as fatty tissue around the waist, “beer belly”, which is relatively easy to get rid of. The running times are, in addition to fitness, affected by knowledge of the specific track, running economy, motivation and environmental factors. The running times in this test are based on speeds from the Cooper test formula. Cooper test has good correlation (r = 0.897) with the real test value, but actually requires a completely flat smooth circular orbit and a test person who is normally physically active and used to maximum effort. The assessment is that this 1920 meter trail corresponds to a 2035 m flat circular track. If you are older than 35 and not a runner, please check with your GP before any running tests!

References in selection: Blair, S, et al, Physical Fitness and All-Cause Mortality, JAMA, November 1989-Vol 262, No 17, sid 2395-2401. Shvartz, E, Reibold, RC, ”Aerobic Fitness Norms for Males and Females aged 6 to 75 Years: A Review”, Aviat. Space Environ. Med 1990; 61:3-11. Ekblom, B, et al, Secular trends of physical fitness in Swedish adults, Scand J of Med. & Science in sports 2007.

For more references or calculations, please contact, stefan@ekodemos.se
Stefan Lundström april 2010. Do you want this poster as a pdf (for free) – check www.ekodemos.se

Cardio Fitness– interpretation (VO^2ml/kgxmin)

< 35 **There is normally a health risk linked to this level of cardio fitness.** Ref: Blair, Gibbons et al 1985/1995

20-22 Seek medical advice in order to evaluate your poor level of cardio fitness. About 3 out of 10 people with this value never live to celebrate their 65th birthday. If this test is accurate on your health, there is a severe health risk (cardiovascular disease) linked to your level of cardio fitness.

23-27 Seek medical advice in order to evaluate your poor level of cardio fitness. If this test is accurate on you, there is about twice the risk of cardiovascular disease linked to your cardio fitness. Seek medical advice and also advice from a personal trainer / health coach.

28-34 If this test is accurate on you, your fitness level puts you in high risk for developing diabetes, metabolic syndrome and colon cancer. Seek medical advice or advice from a personal trainer / health coach.

≥ 35 **There is normally no health risk linked to this level of cardio fitness.** Ref: FM HK 19710:66880 + open sources

35 Minimal value for most people. In general no increased risk of illness linked to cardio fitness. You could probably run 2 km in 12 minutes or jog 10 km in about 1h 8 min.

42 Lowest demand in Swedish armed forces (staff-functions). 2 km at 400m track in 10 min, 10 km run in about 60 min

45 Minimum value to start Police- or Coastguard training in Sweden. You could probably run 10 km in about 56 min. **All labour work with constant moderate strain (1,25 liter/min x 1000 / 70 kg / 0,40 = 45).**

50 Demand on fire fighters in the largest cities in Sweden. You could probably run 10 km in about 50 min.

56 NHL hockey players have about 56 (due to heavy muscles). You could probably run 10 km in about 44 min. Demand for special units in the Swedish armed forces, 2 km at 400m track in 8 min.

60-65 Football players (Premier league class).

70-77 Female top athletes in endurance sports. Norwegian skier Bente Skari had 77 as a 26 year old top performer!

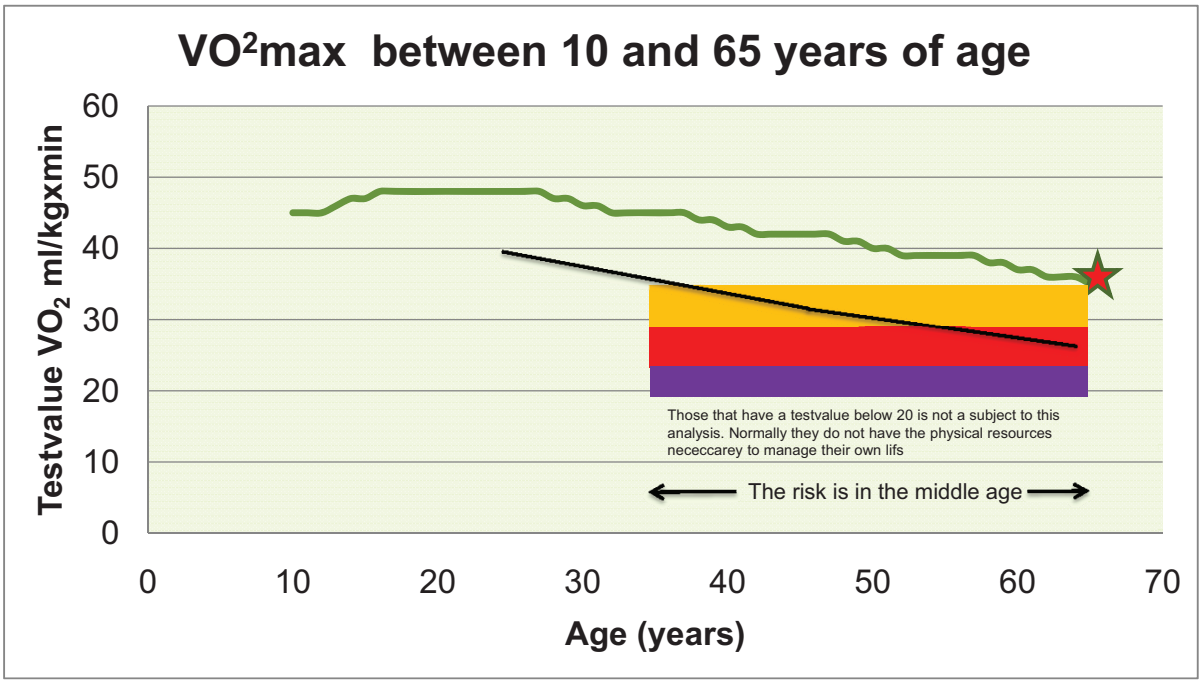
80-92 Male top athletes in endurance sports

96 The highest known value for a human being, Norwegian skier Björn Dählie, 30 years old, 1997.

180 Average horse.

240 Alaskan Husky, sled dogs in competition shape – fastest animal on land for long distances.

Exception: The test that you have done may not work for you! In all tests there are confounding factors and individuals may get too high or too low value, therefore please discuss your test result with a physician! Test value also acts badly as a predictor for health risk for those with an overweight, up to about 20 kg, placed in the typical female positions (rear and thigh). This obesity is usually not very metabolically active and lowers the test value without the specific health risk.



Green line = Exercise about 30 min x 3 times/week in order to stay on the safe side of 35

Black thin line = Real development (Swedish population in average). Ekblom (2007)

Yellow zone = 28 - 35 – Increased health risks (diabetes, metabolic syndrome, colon cancer)

Red zone = 23 - 28 – Increased health risk for cardio vascular disease

Violet zone = 20 - 23 – In this zone, extremely high risk for cardio vascular disease

★ = The goal is to never fall below 35 ml/kgxmin during the middleage!