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ACSM's Health-Related Physical Fitness Assessment Manual, 5th edition

UPDATE – Pages 151-156, Table 8.9: Fitness Categories for Maximal Aerobic Power for Men and Women by Age updated from 2009 to 2013

TABLE 8.9
Fitness Categories for Maximal Aerobic Power for Men and Women by Age

		Men							
		Age 20–29				Age 30–39			
%		Balke Treadmill (time)	Max O ₂ (mL · kg ⁻¹ · min ⁻¹)	12-Min Run (mi)	1.5-Mi Run (time)	Balke Treadmill (time)	Max O ₂ (mL · kg ⁻¹ · min ⁻¹)	12-Min Run (mi)	1.5-Mi Run (time)
99	Superior	31:30	59.8	1.98	8:35	30:00	58.3	1.93	8:49
95		28:01	55.4	1.86	9:18	27:02	54.0	1.82	9:34
90	Excellent	26:40	53.5	1.80	9:40	25:22	51.6	1.75	10:02
85		25:30	51.8	1.75	10:00	24:12	50.9	1.70	10:24
80		25:00	51.1	1.73	10:09	23:03	48.3	1.66	10:47
75	Good	23:09	48.4	1.66	10:45	22:10	47.0	1.62	11:06
70		22:30	47.5	1.63	10:59	21:30	46.0	1.59	11:22
65		22:00	46.8	1.61	11:10	21:00	45.3	1.57	11:33
60		21:05	45.4	1.58	11:31	20:05	44.0	1.54	11:56
55	Fair	20:30	44.6	1.55	11:45	20:00	43.9	1.53	11:58
50		20:00	43.9	1.53	11:58	19:00	42.4	1.49	12:25
45		19:02	42.5	1.49	12:23	18:05	41.1	1.46	12:50
40		18:30	41.7	1.47	12:38	17:39	40.5	1.44	13:04
35	Poor	18:00	41.0	1.45	12:53	17:00	39.5	1.41	13:24
30		17:15	39.9	1.42	13:16	16:20	38.6	1.39	13:46
25		16:31	38.8	1.39	13:40	15:41	37.6	1.36	14:09
20		15:46	37.8	1.36	14:06	15:00	36.7	1.33	14:34
15	Very poor	15:00	36.7	1.33	14:34	14:01	35.2	1.29	15:13
10		13:31	34.5	1.27	15:35	13:00	33.8	1.25	15:58
5		11:18	31.3	1.18	17:22	11:11	31.1	1.18	17:29
1		7:40	26.1	1.04	21:25	8:00	26.5	1.05	20:58
		n = 2,463				n = 13,308			
Total n = 15,771									

(continued)

TABLE 8.9

Fitness Categories for Maximal Aerobic Power for Men and Women by Age (continued)

		Men							
%		Age 40–49				Age 50–59			
		Balke Treadmill (time)	Max O ₂ (mL · kg ⁻¹ · min ⁻¹)	12-Min Run (mi)	1.5-Mi Run (time)	Balke Treadmill (time)	Max O ₂ (mL · kg ⁻¹ · min ⁻¹)	12-Min Run (mi)	1.5-Mi Run (time)
99	Superior	28:30	56.1	1.87	9:10	27:00	54.0	1.81	9:34
95		26:00	52.5	1.77	9:51	23:31	49.0	1.67	10:38
90	Excellent	24:00	49.7	1.69	10:28	24:56	46.7	1.61	11:11
85		23:00	48.2	1.65	10:48	20:31	44.6	1.55	11:45
80		21:44	46.4	1.60	11:16	19:39	43.4	1.52	12:07
75	Good	20:41	44.9	1.56	11:41	18:36	41.9	1.48	12:36
70		20:01	43.2	1.53	11:58	18:00	41.0	1.45	12:53
65		19:30	43.1	1.51	12:11	17:14	39.9	1.42	13:17
60		19:00	42.4	1.49	12:25	16:45	39.2	1.40	13:32
55	Fair	18:00	41.0	1.45	12:53	16:01	38.1	1.37	13:57
50		17:25	40.1	1.43	13:11	15:29	37.4	1.35	14:16
45		17:00	39.5	1.41	13:24	15:00	36.7	1.33	14:34
40		16:15	38.5	1.38	13:49	14:16	35.6	1.30	15:03
35	Poor	15:45	37.7	1.36	14:07	13:52	35.0	1.29	15:20
30		15:01	36.7	1.33	14:34	13:00	33.8	1.25	15:58
25		14:30	35.9	1.31	14:53	12:30	33.0	1.23	16:21
20		13:48	34.9	1.28	15:22	12:00	32.0	1.21	16:46
15	Very poor	13:00	33.8	1.25	15:58	11:00	30.9	1.17	17:38
10		12:00	32.3	1.21	16:46	10:00	29.4	1.13	18:38
5		10:01	29.5	1.13	18:37	8:20	27.0	1.07	20:53
1		7:01	25.1	1.01	22:20	5:25	22.8	0.95	25:01
			<i>n</i> = 19,566			<i>n</i> = 11,693			
Total <i>n</i> = 31,259									

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Men

%		Age 60–69				Age 70–79			
		Balke Treadmill (time)	Max O ₂ (mL · kg ⁻¹ · min ⁻¹)	12-Min Run (mi)	1.5-Mi Run (time)	Balke Treadmill (time)	Max O ₂ (mL · kg ⁻¹ · min ⁻¹)	12-Min Run (mi)	1.5-Mi Run (time)
99	Superior	25:00	51.1	1.73	10:09	24:00	49.7	1.69	10:28
95		21:18	45.8	1.59	11:26	18:45	42.1	1.48	12:31
90	Excellent	19:08	42.6	1.50	12:21	17:00	39.5	1.41	13:24
85		18:00	41.0	1.45	12:53	16:00	38.1	1.37	13:58
80		17:01	39.6	1.41	13:23	15:00	36.7	1.33	14:34
75	Good	16:07	38.3	1.38	13:53	14:01	35.2	1.29	15:13
70		15:29	37.4	1.35	14:16	13:05	33.9	1.26	15:54
65		15:00	36.7	1.33	14:34	12:33	33.1	1.23	16:19
60		14:14	35.5	1.30	15:04	12:01	32.3	1.21	16:45
55	Fair	13:45	34.9	1.28	15:25	11:26	31.5	1.19	17:15
50		13:02	33.8	1.25	15:56	10:51	30.7	1.17	17:47
45		12:30	33.0	1.23	16:21	10:21	29.9	1.15	18:16
40		12:00	32.3	1.21	16:46	10:00	29.4	1.13	18:38
35	Poor	11:30	31.6	1.19	17:11	9:04	28.1	1.09	19:39
30		11:00	30.9	1.17	17:38	8:52	27.8	1.09	19:53
25		10:05	29.6	1.14	18:32	8:05	26.7	1.06	20:51
20		9:30	28.7	1.11	19:10	7:24	25.7	1.03	21:47
15	Very poor	8:36	27.4	1.08	20:12	6:39	24.6	1.00	22:54
10		7:26	25.7	1.03	21:44	5:30	22.9	0.95	24:52
5		6:00	23.7	0.97	23:58	4:01	20.8	0.89	27:56
1		3:05	19.4	0.85	6:18	2:15	18.2	0.82	32:46
		<i>n</i> = 3,285				<i>n</i> = 467			
Total <i>n</i> = 3,752									

(continued)

TABLE 8.9

Fitness Categories for Maximal Aerobic Power for Men and Women by Age (continued)

		Women								
%		Age 20–29				Age 30–39				
		Balke Treadmill (time)	Max O ₂ (mL · kg ⁻¹ · min ⁻¹)	12-Min Run (mi)	1.5-Mi Run (time)	Balke Treadmill (time)	Max O ₂ (mL · kg ⁻¹ · min ⁻¹)	12-Min Run (mi)	1.5-Mi Run (time)	
99	Superior	27:19	54.4	1.83	9:29	26:00	52.5	1.76	9:51	
95		24:00	49.7	1.69	10:28	22:27	47.4	1.63	11:00	
90	Excellent	22:00	46.8	1.61	11:10	21:00	45.3	1.57	11:33	
85		21:00	45.3	1.57	11:33	20:00	43.9	1.53	11:58	
80		20:01	43.9	1.53	11:58	19:00	42.4	1.49	12:25	
75	Good	19:00	42.4	1.49	12:25	18:00	41.0	1.45	12:53	
70		18:01	41.0	1.45	12:53	17:01	39.6	1.41	13:23	
65		18:00	41.0	1.45	12:53	16:19	38.6	1.39	13:47	
60		17:00	39.5	1.41	13:24	15:49	37.8	1.37	14:04	
55	Fair	16:15	38.5	1.38	13:49	15:18	37.1	1.34	14:25	
50		15:45	37.7	1.36	14:07	15:00	36.7	1.33	14:34	
45		15:01	36.7	1.33	14:34	14:00	35.2	1.29	15:14	
40		14:36	36.0	1.32	14:50	13:26	34.4	1.27	15:38	
35	Poor	14:00	35.2	1.29	15:14	13:00	33.8	1.25	15:58	
30		13:08	34.0	1.26	15:52	12:09	32.5	1.22	16:38	
25		12:24	32.9	1.23	16:26	12:00	32.3	1.21	16:46	
20		12:00	32.3	1.21	16:46	11:00	30.9	1.17	17:38	
15	Very poor	11:00	30.9	1.17	17:49	10:01	29.5	1.13	18:37	
10		10:01	29.5	1.13	18:37	9:01	28.0	1.09	19:43	
5		8:21	27.1	1.07	20:31	7:35	25.9	1.30	21:31	
1		6:00	23.7	0.97	23:58	5:27	22.9	0.95	24:56	
			<i>n</i> = 1,397				<i>n</i> = 4,642			
Total <i>n</i> = 6,039										

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Women

%		Age 40–49				Age 50–59			
		Balke Treadmill (time)	Max O ₂ (mL · kg ⁻¹ · min ⁻¹)	12-Min Run (mi)	1.5-Mi Run (time)	Balke Treadmill (time)	Max O ₂ (mL · kg ⁻¹ · min ⁻¹)	12-Min Run (mi)	1.5-Mi Run (time)
99	Superior	25:00	51.1	1.73	10:09	21:30	46.0	1.59	11:22
95		21:01	45.3	1.57	11:32	18:03	41.1	1.46	12:52
90	Excellent	20:00	43.9	1.53	11:58	17:00	39.5	1.46	13:24
85		18:04	41.1	1.46	12:51	15:29	37.4	1.35	14:16
80		17:05	39.7	1.42	13:22	15:00	36.7	1.33	14:34
75	Good	16:45	39.2	1.40	13:32	14:04	35.3	1.30	15:11
70		16:00	38.1	1.37	13:58	13:30	34.5	1.27	15:35
65		15:03	36.7	1.33	14:32	12:59	33.7	1.25	15:58
60		14:45	36.3	1.32	14:44	12:30	33.0	1.23	16:21
55	Fair	14:01	35.2	1.29	15:13	12:00	32.3	1.21	16:46
50		13:46	34.9	1.28	15:24	11:29	31.6	1.19	17:13
45		13:01	33.8	1.25	15:57	11:01	30.9	1.17	17:38
40		12:30	33.0	1.23	16:21	10:30	20.2	1.15	18:07
35	Poor	12:00	32.3	1.21	16:46	10:01	29.5	1.13	18:37
30		11:18	31.3	1.18	17:22	9:40	29.0	1.12	18:07
25		10:40	30.4	1.16	17:58	9:00	28.0	1.09	19:44
20		10:00	29.4	1.13	18:38	8:20	27.0	1.07	20:32
15	Very poor	9:10	28.2	1.10	19:32	7:35	25.9	1.03	21:31
10		8:08	26.7	1.06	20:47	6:46	24.8	1.00	22:43
5		7:00	25.1	1.01	22:22	5:35	23.1	0.95	24:42
1		5:00	22.2	0.93	25:49	3:43	20.4	0.88	28:39

n = 6,709

n = 4,539

Total n = 11,248

(continued)

TABLE 8.9

Fitness Categories for Maximal Aerobic Power for Men and Women by Age (continued)

		Women							
%		Age 60–69				Age 70–79			
		Balke Treadmill (time)	Max O ₂ (mL · kg ⁻¹ · min ⁻¹)	12-Min Run (mi)	1.5-Mi Run (time)	Balke Treadmill (time)	Max O ₂ (mL · kg ⁻¹ · min ⁻¹)	12-Min Run (mi)	1.5-Mi Run (time)
99	Superior	29:00	43.9	1.53	11:58	20:00	43.9	1.53	11:58
95		15:47	37.8	1.36	14:05	15:01	36.7	1.33	14:35
90	Excellent	14:30	35.9	1.31	14:53	12:30	33.0	1.23	16:21
85		13:31	34.5	1.27	15:35	11:43	31.9	1.20	17:00
80		12:30	33.0	1.23	16:21	11:00	30.9	1.17	17:38
75	Good	12:00	32.3	1.21	16:46	10:23	30.9	1.15	18:14
70		11:19	31.3	1.18	17:21	10:01	29.5	1.13	18:37
65		11:00	30.9	1.17	17:38	10:00	29.4	1.13	18:38
60		10:25	30.0	1.15	18:12	9:05	28.1	1.10	19:38
55	Fair	10:00	29.4	1.13	18:38	8:59	28.0	1.09	19:44
50		9:46	29.1	1.12	18:52	8:37	27.4	1.08	20:11
45		9:16	28.4	1.10	19:25	8:01	26.6	1.05	20:56
40		8:41	27.5	1.08	20:06	7:33	25.9	1.03	21:34
35	Poor	8:09	26.8	1.06	20:46	7:01	25.1	1.01	22:20
30		7:43	26.1	1.04	21:20	6:49	24.8	1.00	22:38
25		7:05	25.2	1.01	22:14	6:29	24.4	0.99	23:10
20		6:45	24.7	1.00	22:44	6:07	23.8	0.98	23:66
15	Very poor	6:15	24.0	0.98	23:32	5:15	22.6	0.94	25:20
10		5:33	23.0	0.95	24:46	4:30	21.5	0.91	26:51
5		4:45	21.9	0.92	26:19	3:15	19.7	0.86	29:51
1		3:07	19.5	0.86	30:13	1:17	16.8	0.78	36:12
		<i>n</i> = 1,313				<i>n</i> = 187			
Total <i>n</i> = 1,500									

Adapted with permission from Physical Fitness Assessments and Norms for Adults and Law Enforcement. The Cooper Institute, Dallas, Texas. 2013. For more information: www.cooperinstitute.org

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