



APPENDIX "B" PHYSICAL FITNESS REQUIREMENTS

PROTOCOL FOR ANAEROBIC POWER TESTING

300 Meter Run Test Purpose

Measure of anaerobic power. This test is recommended as part of the public safety fitness assessment battery.

Equipment

400 meter running track, or any measured 300 meter flat surface that provides good traction, running shoes. Irregular surfaces such as loose gravel are not acceptable.

Procedures

1. As with all physical tests, medical screening should precede testing.
2. As with all physical tests, warm up and stretching should precede testing.
3. If using a 400 meter track, client runs 3/4 of 1 lap (inside lane) at maximal level of effort. Time used to complete distance is recorded in seconds. Consult norms to determine fitness category.
4. Client should walk for 3-5 minutes immediately following test to cool down. This is an important safety consideration.

Percentil	Males				Females			
	20-29	30-39	40-49	50-59	20-29	30-39	40-49	50-59
99th	42.6	42.0	47.0	52.0	54.0	55.0	65.0	NA
95th	46.0	46.1	52.0	58.0	54.3	56.5	65.0	
90th	48.0	49.0	55.0	61.0	56.0	60.0	66.0	
85th	49.0	50.0	56.0	63.0	58.0	63.5	68.2	
80th	50.3	51.0	57.0	66.4	58.3	66.0	72.0	
75th	51.0	52.0	60.0	68.0	59.7	66.5	72.0	
70th	52.0	53.0	61.0	70.0	60.0	68.0	75.3	
65th	53.5	54.0	62.0	72.0	61.0	69.9	78.7	
60th	54.0	55.0	64.0	74.0	61.0	71.0	79.0	
55th	55.0	56.0	66.0	77.4	62.7	72.0	80.5	
50th	56.0	57.0	67.6	80.0	64.0	74.0	86.0	
45th	57.5	58.0	70.0	82.6	68.5	75.5	91.7	
40th	59.0	58.9	72.0	83.2	71.0	79.0	94.0	
35th	60.0	61.0	74.8	85.0	74.5	80.5	101.8	
30th	62.1	63.0	77.0	87.0	75.0	82.0	106.7	
25th	64.0	65.0	81.0	89.0	76.0	85.5	109.3	
20th	66.0	68.0	83.0	95.0	78.0	86.0	110.0	
15th	69.0	70.0	86.0	99.0	88.0	93.5	116.0	
10th	73.4	74.9	90.0	101.6	97.0	100.0	121.5	
5th	81.3	80.9	104.0	112.0	106.7	114.0	125.0	
1st	95.1	113.9	143.0	184.0	120.0	210.0	125.0	

Note: These norms are based on a small sample of police officers (n=500) and should be used cautiously.



CARDIORESPIRATORY FITNESS TESTS

Males

%	Age 20-29				Age 30-39				
	Balke Treadmill (time)	Max V _O ₂ (ml/kg/min)	12 min. Run (miles)	1.5 Mile Run (time)	Balke Treadmill (time)	Max V _O ₂ (ml/kg/min)	12 min. Run (miles)	1.5 Mile Run (time)	
99	32:00	61.2	2.02	8:22	30:00	58.3	1.94	8:49	
95	28:31	56.2	1.88	9:10	27:11	54.3	1.82	9:31	S
90	27:00	54.0	1.81	9:34	26:00	52.5	1.77	9:52	High
85	26:00	52.5	1.77	9:52	24:45	50.7	1.72	10:14	Mid
80	25:00	51.1	1.73	10:08	23:30	48.9	1.67	10:38	Low
75	23:40	49.2	1.68	10:34	22:30	47.5	1.63	10:59	
70	23:00	48.2	1.65	10:49	22:00	46.8	1.61	11:09	
65	22:00	46.8	1.61	11:09	21:00	45.3	1.57	11:34	
60	21:15	45.7	1.58	11:27	20:20	44.4	1.55	11:49	G
55	21:00	45.3	1.57	11:34	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	19:26	43.1	1.51	12:11	18:15	41.4	1.46	12:44	
40	18:50	42.2	1.49	12:29	18:00	41.0	1.45	12:53	F
35	18:00	41.0	1.45	12:53	17:00	39.5	1.41	13:25	
30	17:30	40.3	1.43	13:08	16:15	38.5	1.38	13:48	
25	17:00	39.5	1.41	13:25	15:40	37.6	1.36	14:10	
20	16:00	38.1	1.37	13:58	15:00	36.7	1.33	14:33	P
15	15:00	36.7	1.33	14:33	14:00	35.2	1.29	15:14	
10	14:00	35.2	1.29	15:14	13:00	33.8	1.25	15:56	
5	12:00	32.3	1.21	16:46	11:10	31.1	1.18	17:30	
1	8:00	26.6	1.05	20:55	8:00	26.6	1.05	20:55	VI

n = 2,606

n = 13,158

Total n = 15,764

**CARDIORESPIRATORY FITNESS TESTS****Males**Age
40-49Age
50-59

%	Balke Treadmill (time)	Max VO ₂ (ml/kg/min)	12 min. Run (miles)	1.5 Mile Run (time)	Balke Treadmill (time)	Max VO ₂ (ml/kg/min)	12 min. Run (miles)	1.5 Mile Run (time)
99	29:06	57.0	1.90	9:02	27:15	54.3	1.82	9:34
95	26:16	52.9	1.79	9:47	24:00	49.7	1.69	10:27
90	25:00	51.1	1.73	10:09	22:00	46.8	1.61	11:09
85	23:14	48.5	1.66	10:44	20:31	44.6	1.55	11:45
80	22:00	46.8	1.61	11:09	19:35	43.3	1.52	12:08
75	21:02	45.4	1.58	11:32	18:32	41.8	1.47	12:37
70	20:15	44.2	1.54	11:52	18:00	41.0	1.45	12:53
65	20:00	43.9	1.53	11:58	17:00	39.5	1.41	13:25
60	19:00	42.4	1.49	12:25	16:10	38.3	1.38	13:53
55	18:02	41.0	1.45	12:53	16:00	38.1	1.37	13:58
50	17:34	40.4	1.44	13:05	15:02	36.7	1.33	14:33
45	17:00	39.5	1.41	13:25	14:56	36.6	1.33	14:35
40	16:12	38.4	1.38	13:50	14:00	35.2	1.29	15:14
35	15:38	37.6	1.36	14:10	13:05	33.9	1.26	15:53
30	15:00	36.7	1.33	14:33	12:38	33.2	1.24	16:16
25	14:20	35.7	1.31	15:00	12:00	32.3	1.21	16:46
20	13:35	34.6	1.28	15:32	11:10	31.1	1.18	17:30
15	12:45	33.4	1.24	16:09	10:15	29.8	1.14	18:22
10	11:40	31.8	1.20	17:04	9:15	28.4	1.10	19:24
5	10:00	29.4	1.13	18:39	7:30	25.8	1.03	21:40
1	7:00	25.1	1.01	22:22	4:20	21.3	0.90	27:08

n = 16,534

n = 9,102

Total n = 25,636



CARDIORESPIRATORY FITNESS TESTS

Males

%	Age 60-69				Age 70-79			
	Balke Treadmill (time)	Max VO ₂ , (ml/kg/mi n)	12 min. Run (miles)	1.5 Mile Run (time)	Balke Treadmill (time)	Max ^{VO} ₂ (ml/kg/mi n)	12 min. Run (miles)	1.5 Mile Run (time)
99	25:02	51.1	1.74	10:09	24:00	49.7	1.69	10:27
95	21:33	46.1	1.60	11:20	19:00	42.4	1.49	12:25 S
90	19:30	43.2	1.51	12:10	17:00	39.5	1.41	13:25
85	18:00	41.0	1.45	12:53	16:00	38.1	1.37	13:57
80	17:00	39.5	1.41	13:25	14:34	36.0	1.32	14:52 E
75	16:00	38.1	1.37	13:58	13:25	34.4	1.27	15:38
70	15:00	36.7	1.33	14:33	12:27	33.0	1.23	16:22
65	14:30	35.9	1.31	14:55	12:00	32.3	1.21	16:46
60	13:51	35.0	1.29	15:20	11:00	30.9	1.17	17:37 G
55	13:04	33.9	1.26	15:53	10:30	30.2	1.15	18:05
50	12:30	33.1	1.23	16:19	10:00	29.4	1.13	18:39
45	12:00	32.3	1.21	16:46	9:20	28.5	1.11	19:19
40	11:21	31.4	1.19	17:19	9:00	28.0	1.09	19:43 F
35	10:49	30.6	1.17	17:49	8:21	27.1	1.07	20:28
30	10:00	29.4	1.13	18:39	7:38	26.0	1.04	21:28
25	9:29	28.7	1.11	19:10	7:00	25.1	1.01	22:22
20	8:37	27.4	1.08	20:13	6:00	23.7	0.97	23:55 P
15	7:33	25.9	1.03	21:34	5:00	22.2	0.93	25:49
10	6:20	24.1	0.99	23:27	4:00	20.8	0.89	27:55
5	4:55	22.1	0.93	25:58	3:00	19.3	0.85	30:34
1	2:29	18.6	0.83	31:59	2:00	17.9	0.81	33:30 VP

n = 2,682

n = 467

Total n = 3,149



FLEXIBILITY
Sit and Reach

Males

AGE

	<20	20-29	30-39	40-49	50-59	60+
99	> 23.4	>23.0	>22.0	>21.3	>20.5	>20.0
95	23.4	23.0	22.0	21.3	20.5	20.0
90	22.6	21.8	21.0	20.0	19.0	19.0
85	22.4	21.0	20.0	19.3	18.3	18.0
80	21.7	20.5	19.5	18.5	17.5	17.3
75	21.4	20.0	19.0	18.0	17.0	16.5
70	20.7	19.5	18.5	17.5	16.5	15.5
65	19.8	19.0	18.0	17.0	16.0	15.0
60	19.0	18.5	17.5	16.3	15.5	14.5
55	18.7	18.0	17.0	16.0	15.0	14.0
50	18.0	17.5	16.5	15.3	14.5	13.5
45	17.3	17.0	16.0	15.0	14.0	13.0
40	16.5	16.5	15.5	14.3	13.3	12.5
35	16.0	16.0	15.0	14.0	12.5	12.0
30	15.5	15.5	14.5	13.3	12.0	11.3
25	14.1	15.0	13.8	12.5	11.2	10.5
20	13.2	14.4	13.0	12.0	10.5	10.0
15	11.9	13.5	12.0	11.0	9.7	9.0
10	10.5	12.3	11.0	10.0	8.5	8.0
5	9.4	10.5	9.3	8.3	7.0	5.8
1	<9.4	<10.5	<9.3	<8.3	<7.0	<5.8
n	56	422	1,906	2,090	1,278	344

Total n = 6,096



DYNAMIC STRENGTH
1 Minute Sit Up

Males

AGE

%	<20	20-29	30-39	40-49	50-59	60+
99	>62.0	>55.0	>51.0	>47.0	>43.0	>39.0
95	62.0	55.0	51.0	47.0	43.0	39.0
90	55.0	52.0	48.0	43.0	39.0	35.0
85	53.0	49.0	45.0	40.0	36.0	31.0
80	51.0	47.0	43.0	39.0	35.0	30.0
75	50.0	46.0	42.0	37.0	33.0	28.0
70	48.0	45.0	41.0	36.0	31.0	26.0
65	48.0	44.0	40.0	35.0	30.0	24.0
60	47.0	42.0	39.0	34.0	28.0	22.0
55	46.0	41.0	37.0	32.0	27.0	21.0
50	45.0	40.0	36.0	31.0	26.0	20.0
45	42.0	39.0	36.0	30.0	25.0	19.0
40	41.0	38.0	35.0	29.0	24.0	19.0
35	39.0	37.0	33.0	28.0	22.0	18.0
30	38.0	35.0	32.0	27.0	21.0	17.0
25	37.0	35.0	31.0	26.0	20.0	16.0
20	36.0	33.0	30.0	24.0	19.0	15.0
15	34.0	32.0	28.0	22.0	17.0	13.0
10	33.0	30.0	26.0	22.0	15.0	10.0
5	27.0	27.0	23.0	17.0	12.0	7.0
1	<27.0	<27.0	<23.0	<17.0	<12.0	<7.0
n	46	312	1,431	1,558	919	205

Total n = 4,471



DYNAMIC STRENGTH

Push Up

Males

AGE

%	20-29	30-39	40-49	50-59	60+	
99	100	86	64	51	39	
95	62	52	40	39	28	S
90	57	46	36	30	26	
85	51	41	34	28	24	
80	47	39	30	25	23	E
75	44	36	29	24	22	
70	41	34	26	21	21	
65	39	31	25	20	20	
60	37	30	24	19	18	G
55	35	29	22	17	16	
50	33	27	21	15	15	
45	31	25	19	14	12	
40	29	24	18	13	10	F
35	27	21	16	11	9	
30	26	20	15	10	8	
25	24	19	13	9.5	7	
20	22	17	11	9	6	P
15	19	15	10	7	5	
10	18	13	9	6	4	
5	13	9	5	3	2	VP
n	1,045	790	364	172	26	

Total n = 2,397



Cardiorespiratory Fitness Tests

Females

Age

Age

20-29

30-39

%	Balke Treadmill (time)	Max $\dot{V}O_2$ (ml/kg/min)	12 min. Run (miles)	1.5 Mile Run (time)	Balke Treadmill (time)	Max $\dot{V}O_2$ (ml/kg/min)	12 min. Run (miles)	1.5 Mile Run (time)
99	27:43	55.0	1.84	9:23	26:00	52.5	1.77	9:52
95	24:24	50.2	1.71	10:20	22:06	46.9	1.62	11:08
90	22:30	47.5	1.63	10:59	20:34	44.7	1.56	11:43
85	21:00	45.3	1.57	11:34	19:03	42.5	1.50	12:23
80	20:04	44.0	1.54	11:56	18:00	41.0	1.45	12:53
75	19:42	43.4	1.52	12:07	17:30	40.3	1.43	13:08
70	18:06	41.1	1.46	12:51	16:30	38.8	1.39	13:41
65	17:45	40.6	1.44	13:01	16:00	38.1	1.37	13:58
60	17:00	39.5	1.41	13:25	15:02	36.7	1.33	14:33
55	16:00	38.1	1.37	13:58	15:00	36.7	1.33	14:33
50	15:30	37.4	1.35	14:15	14:00	35.2	1.29	15:14
45	15:00	36.7	1.33	14:33	13:30	34.5	1.27	15:35
40	14:11	35.5	1.30	15:05	13:00	33.8	1.25	15:56
35	13:36	34.6	1.27	15:32	12:03	32.4	1.21	16:43
30	13:00	33.8	1.25	15:56	12:00	32.3	1.21	16:46
25	12:04	32.4	1.22	16:43	11:00	30.9	1.17	17:38
20	11:30	31.6	1.19	17:11	10:20	29.9	1.15	18:18
15	10:42	30.5	1.16	17:53	9:39	28.9	1.12	19:01
10	10:00	29.4	1.13	18:39	8:36	27.4	1.08	20:13
5	7:54	26.4	1.05	21:05	7:16	25.5	1.02	21:57
1	5:14	22.6	0.94	25:17	5:20	22.7	0.94	25:10

n = 1,350

n = 4,394

Total n = 5,744



Cardiorespiratory Fitness Tests

Females

Age

Age

40-49

50-59

%	Balke Treadmill (time)	Max VO ₂ , (ml/kg/min)	12 min. Run (miles)	1.5 Mile Run (time)	Balke Treadmill (time)	Max ^V O ₂ (ml/kg/min)	12 min. Run (miles)	1.5 Mile Run (time)
99	25:00	51.1	1.74	10:09	21:00	45.3	1.57	11:34
95	20:56	45.2	1.57	11:35	17:16	39.9	1.42	13:16
90	19:00	42.4	1.49	12:25	16:00	38.1	1.37	13:58
85	17:20	40.0	1.43	13:14	15:00	36.7	1.33	14:33
80	16:34	38.9	1.40	13:38	14:00	35.2	1.29	15:14
75	16:00	38.1	1.37	13:58	13:15	34.1	1.26	15:47
70	15:00	36.7	1.33	14:33	12:23	32.9	1.23	16:26
65	14:14	35.6	1.30	15:03	12:00	32.3	1.21	16:46
60	13:56	35.1	1.29	15:17	11:23	31.4	1.19	17:19
55	13:02	33.8	1.25	15:56	11:00	30.9	1.17	17:38
50	12:39	33.3	1.24	16:13	10:30	30.2	1.15	18:05
45	12:00	32.3	1.21	16:46	10:00	29.4	1.13	18:39
40	11:30	31.6	1.19	17:11	9:30	28.7	1.11	19:10
35	11:00	30.9	1.17	17:38	9:00	28.0	1.09	19:43
30	10:10	29.7	1.14	18:26	8:30	27.3	1.07	20:17
25	10:00	29.4	1.13	18:39	8:00	26.6	1.05	20:55
20	9:00	28.0	1.09	19:43	7:15	25.5	1.02	21:57
15	8:07	26.7	1.06	20:49	6:40	24.6	1.00	22:53
10	7:21	25.6	1.03	21:52	6:00	23.7	0.97	23:55
5	6:17	24.1	0.98	23:27	4:48	21.9	0.92	26:15
1	4:00	20.8	0.89	27:55	3:00	19.3	0.85	30:34

n = 4,834

n = 3,103

Total n = 7,937



CARDIORESPIRATORY FITNESS TESTS

Females

	Age 60-69				Age 70-79			
	Balke Treadmill (time)	Max V ⁰ ₂ (ml/kg/min)	12 min. Run (miles)	1.5 Mile Run (time)	Balke Treadmill (time)	Max VO ₂ (ml/kg/min)	12 min. Run (miles)	1.5 Mile Run (time)
%								
99	19:00	42.4	1.49	12:25	19:00	42.4	1.49	12:25
95	15:09	36.9	1.34	14:28	15:00	36.7	1.33	14:33
90	13:33	34.6	1.27	15:32	12:50	33.5	1.25	16:06
85	12:28	33.0	1.23	16:22	11:46	32.0	1.20	16:57
80	12:00	32.3	1.21	16:46	10:30	30.2	1.15	18:05
75	11:04	31.0	1.18	17:34	10:00	29.4	1.13	18:39
70	10:30	30.2	1.15	18:05	9:15	28.4	1.10	19:24
65	10:00	29.4	1.13	18:39	8:43	27.6	1.08	20:02
60	9:44	29.1	1.12	18:52	8:00	26.6	1.05	20:54
55	9:11	28.3	1.10	19:29	7:37	26.0	1.04	21:45
50	8:40	27.5	1.08	20:08	7:00	25.1	1.01	22:22
45	8:15	26.9	1.06	20:38	6:39	24.6	1.00	22:54
40	8:00	26.6	1.05	20:55	6:05	23.8	0.98	23:47
35	7:14	25.4	1.02	22:03	5:28	22.9	0.95	24:54
30	6:52	24.9	1.01	22:34	5:00	22.2	0.93	25:49
25	6:21	24.2	0.99	23:20	4:45	21.9	0.92	26:15
20	6:00	23.7	0.97	23:55	4:16	21.2	0.90	27:17
15	5:25	22.8	0.95	25:02	4:00	20.8	0.89	27:55
10	4:40	21.7	0.92	26:32	3:00	19.3	0.85	30:34
5	3:30	20.1	0.87	29:06	2:00	17.9	0.81	33:32
1	2:10	18.1	0.82	33:05	1:00	16.4	0.77	37:26

n = 1,088

n = 209

Total n = 1,297



FLEXIBILITY - SIT AND REACH

Females

AGE

%	<20	20-29	30-39	40-49	50-59	60+
99	>24.3	>24.5	>24.0	>22.8	>23.0	>23.0
95	24.3	24.5	24.0	22.8	23.0	23.0
90	24.3	23.8	22.5	21.5	21.5	21.8
85	22.5	23.0	22.0	21.3	21.0	19.5
80	22.5	22.5	21.5	20.5	20.3	19.0
75	22.3	22.0	21.0	20.0	20.0	18.0
70	22.0	21.5	20.5	19.8	19.3	17.5
65	21.8	21.0	20.3	19.1	19.0	17.5
60	21.5	20.5	20.0	19.0	18.5	17.0
55	21.3	20.3	19.5	18.5	18.0	17.0
50	21.0	20.0	19.0	18.0	17.9	16.4
45	20.5	19.5	18.5	18.0	17.0	16.1
40	20.5	19.3	18.3	17.3	16.8	15.5
35	20.0	19.0	17.8	17.0	16.0	15.2
30	19.5	18.3	17.3	16.5	15.5	14.4
25	19.0	17.8	16.8	16.0	15.3	13.6
20	18.5	17.0	16.5	15.0	14.8	13.0
15	17.8	16.4	15.5	14.0	14.0	11.5
10	14.5	15.4	14.4	13.0	13.0	11.5
5	14.5	14.1	12.0	10.5	12.3	9.2
1	<14.5	<14.1	<12.0	<10.5	<12.3	<9.2
n	19	183	376	332	192	44

Total n = 1,146



**DYNAMIC STRENGTH 1 Minute Sit
Up**

Females

AGE

%	<20	20-29	30-39	40-49	50-59	60+
99	>55.0	>51.0	>42.0	>38.0	>30.0	>28.0
95	55.0	51.0	42.0	38.0	30.0	28.0
90	54.0	49.0	40.0	34.0	29.0	26.0
85	49.0	45.0	38.0	32.0	25.0	20.0
80	46.0	44.0	35.0	29.0	24.0	17.0
75	40.0	42.0	33.0	28.0	22.0	15.0
70	38.0	41.0	32.0	27.0	22.0	12.0
65	37.0	39.0	30.0	25.0	21.0	12.0
60	36.0	38.0	29.0	24.0	20.0	11.0
55	35.0	37.0	28.0	23.0	19.0	10.0
50	34.0	35.0	27.0	22.0	17.0	8.0
45	34.0	34.0	26.0	21.0	16.0	8.0
40	32.0	32.0	25.0	20.0	14.0	6.0
35	30.0	31.0	24.0	19.0	12.0	5.0
30	29.0	30.0	22.0	17.0	12.0	4.0
25	29.0	28.0	21.0	16.0	11.0	4.0
20	28.0	24.0	20.0	14.0	10.0	3.0
15	27.0	23.0	18.0	13.0	7.0	2.0
10	25.0	21.0	15.0	10.0	6.0	1.0
5	25.0	18.0	11.0	7.0	5.0	0.0
1	<25.0	<18.0	< 11.0	< 7.0	<5.0	0.0
n	15	144	289	249	137	26

Total n = 860



DYNAMIC STRENGTH

Full Body Push Up*

Females

AGE

%	20-29	30-39	40-49	
99	53.0	48.0	23.0	
95	42.0	39.5	20.0	S
90	37.0	33.0	18.0	
85	33.0	26.0	17.0	
80	28.0	23.0	15.0	E
75	27.0	19.0	15.0	
70	24.0	18.0	14.0	
65	23.0	16.0	13.0	
60	21.0	15.0	13.0	C
55	19.0	14.0	11.0	
50	18.0	14.0	11.0	
45	17.0	13.0	10.0	
40	15.0	11.0	9.0	F
35	14.0	10.0	8.0	
30	13.0	9.0	7.0	
25	11.0	9.0	7.0	
20	10.0	8.0	6.0	P
15	9.0	6.5	5.0	
10	8.0	6.0	4.0	
5	6.0	4.0	1.0	
1	3.0	1.0	0.0	V P

* Full body push ups are generally used by law enforcement and public safety organizations. These norms are based on >1000 female U.S. Army soldiers who were tested in the 1990's by the U.S. Army.

*Variations or updates to the cooper clinic may be considered for recognition on a case by case basis upon the majority approval of the City of Jonesboro's Public Safety Committee or other entity so designated by the Mayor and City Council of the City of Jonesboro.

* Participants shall be tested twice each year and no supplemental pay shall be awarded until passage of the tests at the appropriate level and failure of one or both test each year shall be due cause to revoke the incentive or reduce it to the proper level.

