Fitness Reference Booklet

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PERSONAL INFORMATION

HEART RATE (normal resting)

Newborn infants	100 to 160 beats per minute
Children 1 to 10 years	70 to 120 beats per minute
Children over 10 and adults	60 to 100 beats per minute
Well-trained athletes	40 to 60 beats per minute

Adapted from MEDLINEPlus Medical Encyclopedia Website (2004)

BLOOD PRESSURE (resting)

Adults (>18 years)

	Normal	Prehypertention	Hypertention
SYSTOLIC	<120	120-139	≥140
DIASTOLIC	< 80	80-89	≥ 90

CHOLESTEROL (>20 years)

	Total	LDL	HDL
Desirable	<200 mg/dl	< 130	> 45
Borderline	200-239	139-159	40-45
Undesirable	≥ 240	≥160	< 40

Adapted from Mayo Clinic (2005)

Youth (normal ranges for ages 12-18 years)

	12-15 yrs.	16-18 yrs.
SYSTOLIC	≤126	≤ 132
DIASTOLIC	≤ 78	≤ 82

Adapted from American Heart Association (2004)

BODY MASS INDEX TABLE

BMI	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**
Height (Inches)	**Body Weight (pounds)**																
60	97	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179
61	100	106	111	116	122	127	132	137	143	148	153	158	164	169	174	180	185
62	104	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191
63	107	113	118	124	130	135	141	146	152	158	163	169	175	180	186	191	197
64	110	116	122	128	134	140	145	151	157	163	169	174	180	186	192	197	204
65	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210
66	118	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216
67	121	127	134	140	146	153	159	166	172	178	185	191	198	204	211	217	223
68	125	131	138	144	151	158	164	171	177	184	190	197	203	210	216	223	230
69	128	135	142	149	155	162	169	176	182	189	196	203	209	216	223	230	236
70	132	139	146	153	160	167	174	181	188	195	202	209	216	222	229	236	243
71	136	143	150	157	165	172	179	186	193	200	208	215	222	229	236	243	250
72	140	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258

Adapted from National Heart, Lung and Blood Institute (NIH) Website.

BMI Categories:

Underweight = < 18.5
Normal Weight = 18.5 – 24.9
Overweight = 25 – 29.9
Obesity = 30 or greater

Adapted from National Heart, Lung and Blood Institute (NIH) Website.

AEROBIC FITNESS

PACER

	14-years old		15-years old		16-years old		17-years old	
	Males	**Females**	**Males**	**Females**	**Males**	**Females**	**Males**	**Females**
High Performance	61-80	33-44	65-85	38-50	70-90	43-56	74-94	50-61
Good Fitness	41-60	18-32	46-64	23-37	52-69	28-42	57-73	34-49
Marginal Fitness	36-40	16-17	41-45	21-22	47-51	25-27	52-56	30-33
Low Fitness	<35	<15	<40	<20	<46	<24	<51	<29

Adapted from Corbin & Lindsey (2005) p. 123

12-MINUTE RUN TEST

Male							Female					
	20-29	30-39	40-49	50-59	60 +			20-29	30-39	40-49	50-59	60 +
Excellent	≥ 1.65	≥ 1.61	≥ 1.54	≥ 1.45	≥1.37		**Excellent**	≥ 1.45	≥1.38	≥ 1.32	≥ 1.21	≥ 1.18
Good	1.54 – 1.64	1.49 – 1.60	1.42 – 1.53	1.33 – 1.44	1.24 – 1.36		**Good**	1.33 – 1.44	1.27 – 1.37	1.21 – 1.31	1.13 – 1.20	1.07 - 1.17
Fair	1.45 – 1.53	1.39 – 1.48	1.33 – 1.41	1.25 – 1.32	1.15 – 1.23		**Fair**	1.25 – 1.32	1.21 – 1.26	1.13 – 1.20	1.06 – 1.12	0.99 – 1.06
Poor	≤ 1.44	≤ 1.38	≤ 1.32	≤ 1.24	≤ 1.14		**Poor**	≤ 1.24	≤ 1.20	≤ 1.12	≤ 1.05	≤ 0.98

Adapted from Cooper Institute for Aerobic Research, Dallas, TX. (1998) p. 104-106 and 113-115

COOPER ONE MILE WALK

	MEN UNDER 40	MEN OVER 40	WOMEN UNDER 40	WOMEN OVER 40
EXCELLENT	13:00 or less	14:00 or less	13:30 or less	14:30 or less
GOOD	13:01-15:30	14:01-16:30	13:31-16:00	14:31-17:00
AVERAGE	15:31-18:00	16:31-19:00	16:01-18:30	17:01-19:30
BELOW AVERAGE	18:01-19:30	19:01-21:30	18:31-20:00	19:31-22:00
LOW	19:31 or more	21:31 or more	20:01 or more	22:01 or more

Walking Handbook, Susan Johnson, Ed.D. (1997) The Cooper Institute for Aerobics Research, Dallas, TX. (1997) in The Cooper Institute for Aerobics Research, Dallas, TX (1998) p.90

MUSCULAR STRENGTH

GRIP STRENGTH

	Below 15 years old		15-17 years old	
	Males	Females	**Males**	**Females**
Good Fitness	191+	121+	226+	136+
Marginal Fitness	158-190	99-120	191-225	114-135
Low Fitness	<157	<98	<190	<113

Adapted from Corbin & Lindsey (2005) p.184

GRIP STRENGTH NORMS & PERCENTILES BY AGE GROUPS & GENDER

(For combined right and left hand grip strength in pounds)

AGE (yrs)	**20 -29**		**30-39**		**40-49**		**50-59**		**60-69**	
GENDER	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
Excellent	≥ 254	≥ 154	≥ 254	≥ 157	≥ 238	≥ 152	≥ 222	≥ 135	≥ 220	≥119
Very Good	229-253	139-153	229-253	139-156	214-237	135-151	203-221	119-134	201-219	106-118
Good	210-228	128-138	210-228	128-138	194-213	119-134	185-202	108-118	185-200	99-105
Fair	185-209	115-127	185-209	112-127	176-193	108-118	168-184	99-107	161-184	90-98
Needs Improvement	≤ 184	≤ 114	≤ 184	≤ 111	≤ 175	≤ 107	≤ 167	≤ 98	≤ 160	≤ 89

Adapted from The Canadian Physical Activity, Fitness & Lifestyle Approach: CSEP-Health & Fitness Program's Health-Related Appraisal and Counseling Strategy, (3rd Edition) © 2003.

PREDICTED 1-REP MAX BASED ON REPETITIONS-TO-FATIGUE

Weight lifted	**REPETITIONS**					
	5	**6**	**7**	**8**	**9**	**10**
100	112	116	120	124	129	133
105	118	122	126	130	135	140
110	124	128	132	137	141	147
115	129	134	138	143	148	153
120	135	139	144	149	154	160
125	141	145	150	155	161	167
130	146	151	158	161	167	173
135	152	157	162	168	174	180
140	157	163	168	174	180	187
145	163	168	174	180	186	193
150	169	174	180	186	193	200

Weight lifted	**REPETITIONS**					
	5	**6**	**7**	**8**	**9**	**10**
155	174	180	186	192	199	207
160	180	186	192	199	206	213
165	186	192	198	205	212	220
170	191	197	204	211	219	227
175	197	203	210	217	225	233
180	202	209	216	223	231	240
185	208	215	222	230	238	247
190	214	221	228	236	244	253
195	219	226	234	242	251	260
200	225	232	240	248	257	267

Adapted from Corbin & Lindsey (2005) p. 182

Formula for Bench Press Weight Ratio
weight pushed in lbs.
÷
body weight in lbs.

RATING CHART: ARM PRESS (1RM)

	<15 years		15-17 years		>18 years	
	Males	Females	Males	Females	Males	Females
Good fitness	.80+	.60+	1.00+	.70+	1.10+	.85+
Marginal fitness	.67-.79	.50-.99	.75-.99	.60-.69	.80-1.09	.67-.84
Low fitness	<.66	<.49	<.74	<.59	<.79	<.66

Adapted from Corbin & Lindsay (2005) p.184

Adapted from The Cooper Institute for Aerobics Research, Dallas TX. (1998) p.111

1-REPITITION MAXIMUM BENCH PRESS FOR MALES

	20-29	**30-30**	**40-49**	**50-59**	**60 +**
EXCELLENT	≥1.32	≥ 1.12	≥1.00	≥ .90	≥ .82
GOOD	1.14 – 1.31	.98 – 1.11	.88 -- .99	.79 – .89	.72 -- .81
FAIR	.99 – 1.13	.88 -- .97	.80 -- .87	.71 -- .78	.66 -- .71
POOR	≤ .98	≤ .87	≤ .79	≤ .70	≤ .65

MUSCULAR ENDURANCE

PUSH-UP (total number)

	14 Years Old		15 Years Old		16 Years Old	
	Males	**Females**	**Males**	**Females**	**Males**	**Females**
High Performance	31+	16+	36+	16+	36+	16+
Good Fitness	14 – 30	7 - 15	16 -35	7 - 15	18 - 35	7-15
Marginal Fitness	12 – 13	6	14 - 15	6	16 - 17	6
Low Fitness	- 11	- 5	- 13	- 5	- 15	-5

Adapted from Corbin & Lindsey (2005) p. 31

FULL BODY PUSH-UP (number per minute)

	MALES							FEMALES		
	20-29	**30-39**	**40-49**	**50-59**	**60+**			**20-29**	**30-39**	**40-49**
EXCELLENT	≥ 47	≥ 39	≥ 30	≥ 25	≥ 23		**EXCELLENT**	≥ 28	≥ 23	≥ 15
GOOD	37 - 46	30 – 38	24 - 29	19 - 24	18 - 22		**GOOD**	21 - 27	15 - 22	13 - 14
FAIR	29 - 36	24 – 29	18 - 23	13 - 18	10 - 17		**FAIR**	15 - 20	11 - 14	9 - 12
POOR	≤ 28	≤ 23	≤ 17	≤ 12	≤ 9		**POOR**	≥ 14	≥10	≥ 8

Adapted from The Cooper Institute for Aerobics Research, Dallas TX. (1998) pp.110 & 120.

CURL-UP (total number)

	14 Years Old		15 – 18 Years	
	Males	**Females**	**Males**	**Females**
High Performance	46+	33+	48+	36+
Good Fitness	24-45	18-32	24-47	18-35
Marginal Fitness	20-23	15-17	20-23	15-17
Low Fitness	-19	-14	-19	-14

Adapted from Corbin & Lindsey (2005) p.30

CURL-UP NORMS (number per minute)

AGE	18-29		30-39		40-49		50-59		60+	
SEX	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE
ADVANCED	> 45	>50	>40	>45	>35	>40	>30	>35	>25	>30
INTERMEDIATE	25-45	30-50	20-40	22-45	18-35	21-40	12-30	18-35	11-25	15-30
BEGINNER	< 25	<30	<20	<22	<18	<21	<12	<18	<11	<15

Adapted from The Cooper Institute for Aerobics Research, Dallas TX. (1998) p.95

FLEXIBILITY

TRUNK LIFT (inches)

High Performance	11-12
Good Fitness	9-10
Marginal Fitness	7-8
Low Fitness	≤ 6

Adapted from Corbin & Lindsey (2005) p. 122

BACKSAVER SIT AND REACH (inches)

	13 – 14 Years Old		**15 – 18 Years**	
	Male	**Female**	**Male**	**Female**
High Performance	10+	12+	10+	14+
Good Fitness	8-9	10-11	8-9	12-13
Marginal Fitness	6-7	8-9	6-7	10-11
Low Fitness	-5	-7	-5	-9

Adapted from Corbin & Lindsey (2005) p. 82

SIT AND REACH (inches)

MALES							**FEMALES**					
	20-29	**30-39**	**40-49**	**50-59**	**60+**			**20-29**	**30-39**	**40-49**	**50-59**	**60+**
EXCELLENT	≥ 20.5	≥ 19.5	≥ 18.5	≥ 17.5	≥17.3		**EXCELLENT**	≥ 22.5	≥ 21.5	≥ 20.5	≥ 20.3	≥ 19.0
GOOD	18.5 – 20.4	17.5 – 19.4	16.3 – 18.4	15.5 – 17.4	14.5 – 17.2		**GOOD**	20.5 – 22.4	20.0 - 21.4	19.0– 20.4	18.5 – 20.2	17.0 – 18.9
FAIR	16.5 – 18.4	15.5 – 17.4	14.3 – 16.2	13.3 – 15.4	12.5 – 14.4		**FAIR**	19.3 – 20.4	18.3 – 19.9	17.3 – 18.9	16.8 – 18.4	15.5 – 16.9
POOR	≤ 16.4	≤ 15.4	≤ 14.2	≤ 13.2	≤ 12.4		**POOR**	≤ 19.2	≤ 18.2	≤ 17.2	≤ 16.7	≤ 15.4

Adapted from *The Cooper Institute for Aerobics Research*, Dallas TX. (1998) p. 108 & p. 117

Note: There is some feeling that flexibility should not decrease with age if regular range of motion exercise is sustained.

BODY COMPOSITION

SKINFOLD MEASUREMENT

FITNESS RATING	**% FAT**	
	MALES	**FEMALES**
Too Little Fat	<6	<12
High Performance	6 – 9.9	12 – 14.9
Good	10 – 19.9	15 – 24.9
Marginal	20 – 24.9	25 – 29.9
Too Much fat	25+	30+

Corbin & Lindsey (2005) p.227

WAIST-TO-HIP RATIO

	MALES	**FEMALES**
Good Health Zone	<.90	<.80