

Standard Grip Strength Evaluation

JAMAR®



Proper Grip Strength Testing Procedures

Have the individual sit with their shoulder adducted and neutrally rotated, elbow flexed at 90°, forearm in neutral position, and wrist between 0° and 30° dorsiflexion and between 0° and 15° ulnar deviation. Set the JAMAR® Hand Dynamometer to the second handle position from the inside. Lightly hold around the readout dial to prevent inadvertent dropping. After the individual is positioned properly, say, "Squeeze as hard as you can . . . harder! . . . harder! . . . relax."¹

Record the scores of three successive trials for each hand tested. The average score of the three trials can be compared with the normative data below, which is in **kilograms**. From a statistical perspective, scores within two standard deviations of the mean are considered within in normal limits. In addition, the individuals' ability to use their hand functionally needs to be considered when interpreting a grip strength performance.



Normative Grip Strength Data ^{2, 3} (KILOGRAMS)

Age	Hand	Males		Females	
		Mean	SD	Mean	SD
6 to 7	R	14.7	2.2	13.0	1.9
	L	13.9	2.4	12.3	1.9
8 to 9	R	19.0	3.3	16.0	3.8
	L	17.7	4.2	15.0	3.1
10 to 11	R	24.4	4.4	22.5	3.7
	L	22.0	4.9	20.5	3.1
12 to 13	R	26.6	7.0	27.1	4.8
	L	25.1	7.7	23.1	5.4
14 to 15	R	35.1	7.0	26.4	5.6
	L	29.2	6.8	22.4	5.4
16 to 17	R	42.6	8.8	30.5	7.5
	L	35.6	18.7	25.8	6.4
18 to 19	R	49.0	11.2	32.5	5.6
	L	42.2	12.6	28.0	5.7
20 to 24	R	54.9	9.3	31.9	6.6
	L	47.4	9.9	27.7	5.9
25 to 29	R	54.7	10.4	33.8	6.3
	L	50.1	7.3	28.8	5.5
30 to 34	R	55.2	10.1	35.7	8.7
	L	50.0	9.8	30.8	8.0
35 to 39	R	54.3	10.9	33.6	4.9
	L	51.2	9.8	30.1	5.3
40 to 44	R	53.0	9.4	31.9	6.1
	L	51.2	8.5	28.3	6.3
45 to 49	R	49.8	10.4	28.2	6.8
	L	45.7	10.3	25.4	5.8
50 to 54	R	51.5	8.2	29.8	5.3
	L	46.2	7.7	26.0	4.9
55 to 59	R	45.9	12.1	26.0	5.7
	L	37.7	10.6	21.5	5.4
60 to 64	R	40.7	9.3	25.0	4.6
	L	34.8	9.2	20.7	4.6
65 to 69	R	41.3	9.3	22.5	4.4
	L	34.8	9.0	18.6	3.7
70 to 74	R	34.2	9.8	22.5	5.3
	L	29.3	8.2	18.8	4.6
75+	R	29.8	9.5	19.3	5.0
	L	24.9	7.7	17.1	4.0

Normative Grip Strength Data 2, 3

1. Mathiowetz, V., Weber, K., Volland, G., & Kashman, N., (1984). Reliability and Validity of Hand Strength Evaluations. *Journal of Hand Surgery*, 9A, 222-226.
2. Mathiowetz, V., Kashman, N., Volland, G., Weber, K., Dowe, M., & Rogers, S. (1985). Grip and Pinch Strength: Normative Data for Adults. *Archives of Physical Medicine and Rehabilitation*, 66(2) 69-74.
3. Mathiowetz, V., Weimer, D.M., & Federman, S.M. (1986). Grip and Pinch Strength: Norms for 6- to 19- Year olds. *American Journal of Occupational Therapy*, 40 (10) 705-711.