

## Muscle Strength and Endurance

### Push Up Test

**Overview:** Muscular endurance is the ability of a muscle group to perform repeated contractions over an extended period of time. Muscular endurance may be assessed based on the the number of repetitions for a calisthenic type exercise.

#### **Purpose:**

The purpose is to assess upper body muscular endurance and assess progress of an exercise program. So, if you can go more push ups after a month of training, your program is working to build strength.

#### **Procedure:**

The test is how many push ups you can do before you reach failure. Note that men are in a straight leg position and women are modified with knees on the mat. Elbows must reach a ninety degree bend then return to straight elbows. The chart below represents the norms by age and gender. (M=Male, F=Female).

Age	15-19	20-29	30-39	40-49	50-59	60-69
Excellent	M > 39 F > 33	M > 36 F > 30	M > 30 F > 27	M > 22 F > 24	M > 21 F > 21	M > 18 F > 17
Above Average	M 29-38 F 25-32	M 29-35 F 21-29	M 22-29 F 20-26	M 17-21 F 15-23	M 13-20 F 11-20	M 11-17 F 12-16
Average	M 23-28 F 18-24	M 22-28 F 15-20	M 17-21 F 13-19	M 13-16 F 11-14	M 10-12 F 7-10	M 8-10 F 5-11
Below Average	M 18-22 F 12-17	M 17-21 F 10-14	M 12-16 F 8-12	M 10-12 F 5-10	M 7-9 F 2-6	M 8-7 F 1-4
Poor	M < 17 F < 11	M < 16 F < 9	M < 11 F < 7	M < 9 F < 4	M < 6 F < 1	M < 4 F < 1

## Partial Curl Up Test

**Overview:** Abdominal muscular endurance is necessary to promote proper postural alignment and help with the prevention and management of low back pain and injuries.

**Purpose:** To assess the abdominal strength and endurance, which is important in back support and core stability, and assess program progress.

**Procedure:** The starting position is lying on the back with knees bent and feet on the ground. Arms are extended and rested on the thighs. The movement is a curl up at the abdominals in a slow, controlled movement until the shoulders come off the mat 2 inches, then back down to the starting position. One complete curl up every three seconds (one and a half second up, one and a half seconds down) without pausing until fatigue.

**Scoring:** Norms and classification are as follows:

Norms for Partial Curl Up Test						
	Men			Women		
Age	< 35	35-44	> 45	< 35	35-44	>45
Number of Repetitions Completed						
Excellent	60	50	40	50	40	30
Good	45	40	25	40	25	15
Average	30	25	15	25	15	10
Poor	15	10	5	10	6	4



Move On