


Strength and Endurance Assessment Chart– CT011

Description ♦ This chart sets out the standardised procedures for assessing an individuals strength and endurance. Three tests are used; Grip Strength , Abdominal Local Muscular Endurance, and Push Ups to test upper body strength endurance. Comparison score tables are given for each test. This is one of 8 charts which make up the Health / Fitness Assessment Protocols which are a must have for any fitness instructor or personal trainer.

Details 1. Dimension: A3 Size

Image



Strength and Endurance Assessment

Local Muscle Strength - Grip Strength
Equipment - Hand grip dynamometer.

- Grip strength is one of the fundamental determinants of hand function and measures the strength of the muscles in the forearm involved in finger flexion.

Age group	Sex	Range 10cm			Range 20cm			% of 1RM
		Min.	Max.	Mean (SD)	Min.	Max.	Mean (SD)	
10-19 years	Male	12.7	43.0	22.0(11.1)	15.0	52.0	33.0(17.1)	31
	Female	11.1	33.0	21.0(10.1)	13.0	42.0	27.0(13.0)	26
20-29 years	Male	15.0	55.0	31.0(17.1)	19.0	65.0	41.0(22.0)	36
	Female	13.0	45.0	28.0(14.0)	17.0	55.0	35.0(18.0)	30
30-39 years	Male	17.0	65.0	40.0(20.0)	23.0	75.0	50.0(25.0)	40
	Female	15.0	55.0	35.0(18.0)	20.0	65.0	40.0(20.0)	33
40-49 years	Male	15.0	55.0	34.0(17.0)	19.0	65.0	41.0(21.0)	33
	Female	13.0	45.0	30.0(15.0)	17.0	55.0	35.0(17.0)	28
50-59 years	Male	13.0	45.0	30.0(15.0)	17.0	55.0	35.0(17.0)	28
	Female	11.0	35.0	25.0(12.0)	15.0	45.0	30.0(15.0)	23
60-69 years	Male	11.0	40.0	25.0(12.0)	15.0	50.0	30.0(15.0)	23
	Female	9.0	30.0	20.0(10.0)	13.0	40.0	25.0(12.0)	19
70-79 years	Male	9.0	30.0	20.0(10.0)	13.0	40.0	25.0(12.0)	19
	Female	7.0	25.0	18.0(9.0)	11.0	35.0	22.0(11.0)	16
80-89 years	Male	7.0	25.0	18.0(9.0)	11.0	35.0	22.0(11.0)	16
	Female	5.0	20.0	15.0(8.0)	9.0	30.0	18.0(9.0)	13

Protocol

- The handgrip size should be adjusted to a comfortable position for each person such that the second joint of the forefinger is bent at a right angle to the middle grip bar.
- Stand erect, with elbow joint fully extended and forearms and wrists in neutral position with the dynamometer dial facing away from the body.
- Squeeze the handle as hard as possible, hold in place for about 5 seconds and record the peak value. Repeat 3 times.
- Measure the grip strength of the dominant and non-dominant hands.

Local Muscle Endurance
Local muscle endurance refers to the ability of a muscle group to perform repeated contractions against a moderate level of resistance (body weight) over a period of time.

Abdominal Strength Test
Equipment - Mat, Marking Rod

Protocol

- Subject lies on their back, knees bent, feet hip width apart with arms straight and by their sides, fingers straight.
- Place rod on ground approximately 8cm away from the longest finger tip of each hand.
- Tester must stabilize the rod by standing on it.
- Lift shoulders and chest off the ground, keeping arms straight and on the ground to touch the rod for each Curl - Up.
- Return to start position between each repetition.
- Test score is the number of recorded touches of the rod in one minute.
- Keep lower back flat on floor during each repetition.
- The movement should be controlled, not jerking and the breathing kept rhythmic.

Press - Ups
A measure of upper body strength and endurance.

Protocol

Normal Position

- Subject lies on stomach, feet approximately six inches apart and hands beside shoulders.
- Push up from the floor to straighten arms keeping upper body and back straight throughout the exercise. Look at the floor slightly in front of the hands.
- Lower the body to touch chest onto Testers fist.

Modified Position

- Test score is the number of press-ups completed in sixty seconds.
- Wider arm position will increase the work done by the chest muscles.
- Breathe rhythmically during each press-up.
- Subject keeps knees rather than feet on the ground.

Subject scores can be used for monitoring progress over time. ie. no norms given as each individual acts as their own base line.