Med-Fit Tech Assistant

Medical-Fitness Assessment - Learning Module #8

Muscle Fitness

Part A

Part A: Leg Muscle Fitness

Learning Objective:
- Properly conduct the Squat Test
- Calculate the Leg Fitness Score

The Squat Test for Leg Muscle Fitness is a 3-minute AMRAP (as many reps as possible) during which the participant tries to perform as many squats as possible (to the best of his/her ability) until the time runs out.

The squat exercise mainly targets the Gluteus Maximus and the Quadriceps Femoris muscles.

Know how to do a Squat.
- Watch the YouTube video linked to this Module at the OptiHealth Institute website.

Squat Instructions:
- Shoulder-width stance
- Knees in line with toes
- Lumbar curve maintained (by keeping the chest up)
- Hips descend back and down
- Raising the arms as the hips go down may help maintain balance
- Hips descend lower than knees
- Heels down
- Complete at full hip and knee extension

Test Instructions:
- Make sure the participant has a firm, level surface with plenty of space.
- Demonstrate how to perform a squat by doing several of them, but pausing to explain the body movements.
- Have the participant perform a squat to the best of his/her ability.
- The participant should lower his/her hips only as low as it is comfortable for them and still be able to stand back up.
- Explain that they can stop and rest if needed, but if they do, the clock keeps running.
- Instruct the participant that when they are told the 3 minutes has expired, they should "note the rep count," but they should not stop or sit down, but rather, they should "walk around" for a few minutes as their leg muscles relax and their heart rate recovers.
- Let the participant practice a few squats as a warm-up.
- Explain that you will start the clock when he/she is ready to start the test.

Test Protocol:
- Stand several feet away from the participant so that you can observe the complete squat movement.
- Confirm that the participant understands the squat movement and the test procedure.
- After the participant has warmed up, ask him/her to indicate when he/she is ready to begin.
- Start a hand-held 3-minute timer when the participant begins doing his/her first squat.
- Count out loud each completed Squat at the standing position.
- Observe the participant at all times and check their body movements.
- Especially note the depth of their hips in relation to their knees.

- Do not inform the participant how much time is remaining on the clock.
- At the end of the last squat at the 3-minute mark, say out loud: "Stop."
- Record the total number of completed Squats during the 3-minute test.

Scoring the Test Result:
- Divide the total number of Squats by 120 and then multiply that number by 100.
- Round off to the nearest 0.1 decimal point.
- Example: Total Reps = 94 squats.   (94 / 120) x 100 = 78.3 (Raw Rep Score)
- **Grade** the participants ability to perform the standard squat:
- -- A = Lowered their hips consistently to flex their knees 90 or more degrees. (Thighs parallel or beyond to the floor.)
- -- B = Lowered their hips more consistently to flex their knees less than 90, but more than 60 degrees.
- -- C = Lowered their hips more consistently to flex their knees less than 60, but more than 45 degrees.
- -- D = Lowered their hips more consistently to flex their knees 45 degrees or less.
- **Adjust** the participant's Raw Rep Score by their Grade to get their Leg Fitness Score:
- -- A: Raw Rep Score = Leg Fitness Score (no grade adjustment)
- -- B: Raw Rep Score - 10% = Leg Fitness Score
- -- C: Raw Rep Score - 25% = Leg Fitness Score
- -- D: Raw Rep Score - 50% = Leg Fitness Score
- Example: 78.3 Raw Fitness Score with a C Grade = 78.3 - 25% (78.3 x 0.25 = 19.6) = 78.3 - 19.6 = 58.7 Leg Fitness Score

Leg Fitness Score Interpretation:

- A Leg Fitness Score of 100 (or more) indicates a Very High Fitness Level
- Scores above 100 are admirable, but they do not necessarily confer a health or longevity benefit.
- Since the fitness test is sub-maximal, scores above 120 are not necessarily comparable.
- A Leg Fitness Score below 100 indicates "room for improvement," depending on the age of the participant.

Score Interpretation

Score	Fitness Level
100+	Very High
80-99	High
60-79	Average
40-59	Low
20-39	Poor
0-19	Critical

Note: An "average" fitness level among an unfit and unhealthy population that is at increased risk for sedentary-related chronic disease resulting in premature disability and death is not satisfactory.