

90° Push-Up

⇒ *Recommended*

The 90° push-up to an elbow angle of 90° is the recommended test for upper body strength and endurance. Test administration requires little or no equipment; multiple students may be tested at one time, and few zero scores result. This test also teaches students an activity that can be used throughout life as a conditioning activity as well as in self-testing.

The 90° push-up has generally been shown to produce consistent scores but reliability depends on how it is administered. Lower values have been reported for elementary aged students using partners to count the repetitions. Objectivity, or the ability of different observers to attain the same results, is a factor in this item because of the necessity of judging the 90° angle. Scores from student partners are consistently higher than adult counts because students tend to simply count each attempted 90° push-up and not evaluate whether it was done correctly. As with several of the other neuromuscular fitness items, determining the accuracy of the 90° push-up as a test of upper body strength and endurance is made difficult by the lack of an agreed upon criterion measure. Specific validation data are available for the 90° push-up in only two studies conducted on college age students. Validity coefficients against a 1-RM bench press were the highest when the criterion test was the number of repetitions (endurance) at an absolute, but sex-specific, load.

Before test day, students should be allowed to practice doing 90° push-ups and watching their partner do them. Teachers should make a concerted effort during these practice sessions to correct students who are not achieving the 90° angle. In this manner all students will gain greater skill in knowing what 90° “feels like” and “looks like.”

Test Objective

To complete as many 90° push-ups as possible at a rhythmic pace. This test item is used for males and females.

Equipment and Facilities

The only equipment necessary is an audiotape with the recorded cadence. The correct cadence is 20 90° push-ups per minute (1 90° push-up every

3 seconds). The PACER test CD or tape contains a recorded 90° push-up cadence. The 90° push-up may be performed on a mat. Squares of cardboard of anything else that has a 90° angle may assist students in judging 90°.

Test Instructions

The students should be paired; one will perform the test while the other counts 90° push-ups and watches to see that the student being tested bends the elbow to 90° with the upper arm parallel to the floor.

The student being tested assumes a prone position on the mat with hands placed under or slightly wider than the shoulders, fingers stretched out, legs straight and slightly apart, and toes tucked under. The student pushes up off the mat with the arms until arms are straight, keeping the legs and back straight. The back should be kept in a straight line from head to toes throughout the test (photo 7.7). The student then lowers the body using the arms until the elbows bend at a 90° angle and the upper arms are parallel to the floor (photo 7.8). This movement is repeated as many times as possible. The student should push up and continue the movement until the arms are straight on each repetition. The rhythm should be approximately 20 90° push-ups per minute or 1 90° push-up every 3 seconds.



PHOTO 7.7 Starting position for the 90° push-up test.

(continued)



PHOTO 7.8 Student in the “down” position for the 90° push-up test.

When to Stop

Students are stopped when the second form correction (mistake) is made. Only one form correction is allowed.

Form Corrections

- Stopping to rest or not maintaining a rhythmic pace
- Not achieving a 90° angle with the elbow on each repetition

- Not maintaining correct body position with a straight back
- Not extending arms fully

Scoring

The score is the number of 90° push-ups performed. For ease in administration, it is permissible to count the first incorrect 90° push-up. It is important to be consistent with all of the students and classes when determining if you will count the first incorrect push-up.

Suggestions for Test Administration

- Test should be terminated if the student appears to be in extreme discomfort or pain.
- Cadence should be called or played on a prerecorded tape or CD.
- Males and females follow the same protocol.
- Find a short cone or other piece of pliable equipment that could be placed under the student’s chest. The student must lower to the equipment in order for the 90° push-up to count. The size and height of the equipment that is used may vary depending on the age and size of your students.
- It may be helpful to make a recording with a voice-over that counts the number of 90° push-ups for the students (record the teacher counting over the cadence CD).