

USTA
Fitness Testing
Protocol

USTA FITNESS TESTING PROTOCOL

* Indicates that exercise is part of the Level II test and special equipment is needed

I. Cardiovascular

A. Resting Heart Rate

1. Have your athletes take their resting heart rate upon awakening in the morning, before getting out of bed.
2. Take the pulse for **30 seconds** and multiply the score by two.

B. Blood Pressure*

1. Measurement taken for both arms while the athlete is resting.

II. Flexibility

A. Sit and Reach

1. The athlete is seated with knees extended and legs flat against the floor. Knees are held to make sure they don't come off the floor.
2. Have the athlete lean forward with arms extended and measure the distance from the fingertips to the toes. Hands are placed next to each other, with index fingers touching.
3. If the athlete does not reach his/her toes, the figure is expressed **negatively in inches**.
4. If the athlete reaches past his/her toes, the figure is expressed **positively in inches**.

B. Hamstrings*

1. the athlete is supine on table, with pelvis stabilized and the knee straight. The leg is raised until tightness is felt in back of leg.
2. Angle at the hip is measured in degrees by a goniometer.

C. Shoulder Rotation*

1. the athlete is supine on table, and the scapula is stabilized and the elbow bent at right angle. Shoulder is rotated internally and externally from a neutral position.
2. Angle of rotation of the arm is measured in degrees by goniometer.

III. Strength and Endurance

A. Sit-ups

1. the athlete is positioned on his/her back with hips flexed to 45 degrees and knees flexed to 90 degrees.
2. the feet are held stationary by one of the examiners. The examiner should place a knee between the person's feet.
3. the hands are placed across the body, against the body.
4. the athlete performs as many sit-ups as possible in a **60 second** period.
5. to count as a complete sit-up, the elbows must touch the thighs, the shoulder blades must touch the mat, and the hips are not allowed to leave the mat.

Important Note: *Athletes with any history of low back pain or problems with low back should not perform this test.*

B. Push-ups

1. the athlete is positioned prone with hands shoulder width apart and the weight of the lower body on the toes.
2. The athlete starts with arms extended and the head, shoulders, back, hip, knees, and feet in a straight line.
3. the number of push-ups the athlete can perform in a **60 second** period or to failure is recorded.
4. To count as a complete push-up, the upper arm must reach parallel to the floor or below, the arms must be completely extended, and the straight body alignment must be maintained.

C. Grip Strength *

1. A Lafayette grip strength dynamometer is used to measure the dominant and non-dominant handgrip strength.
2. the arm must be straight at the elbow and held down at the athlete's side
3. the result should be expressed in **kilograms**.
4. each athlete gets two trials. The better of the two trials is recorded.

IV. Power

A. Vertical Jump

1. Have the athlete stand facing a wall and touch as high as possible. Both arms should be extended with hands next to each other and index fingers touching.
2. Mark the spot.
3. Extend a yardstick up the wall from the highest reach of the athlete's fingertips and attach it to the wall.
4. Athlete puts chalk on fingers before the jump.
5. Instruct the athlete to turn sideways and jump with his/her legs together (without a running start), reaching as high as he/she can on the yardstick. Athlete may bend knees, but may not take a step.
6. the difference between the standing reach and the highest point of the jump is the athlete's score.
7. It is recommended that the recorder stand on a chair or ladder.

B. Medicine Ball Chest Pass *

1. The athlete sits 6 inches away from a wall, with his/her shoulders touching the wall, holding a **4 pound** medicine ball.
 2. from chest height, the ball is pushed with both hands.
 3. the distance between the wall and the spot where the ball lands is measured.
 4. Proper angle of throw should be about **45 degrees**.
 5. each athlete gets one (1) practice trial.
 6. Record the better of two (2) trials.
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V. Body Composition *

1. Body Composition is appraised by the skin fold procedure, using calipers.
2. Two measurements are taken at each of the six sites, all on the right side of the body.
3. the average number of the two measurements is recorded.
4. the sites are: Triceps, subscapular, mid-axillary, suprailiac, abdominal, and anterior thigh.
5. the result will be expressed as the sum of the measurements.

VI. Agility and Speed

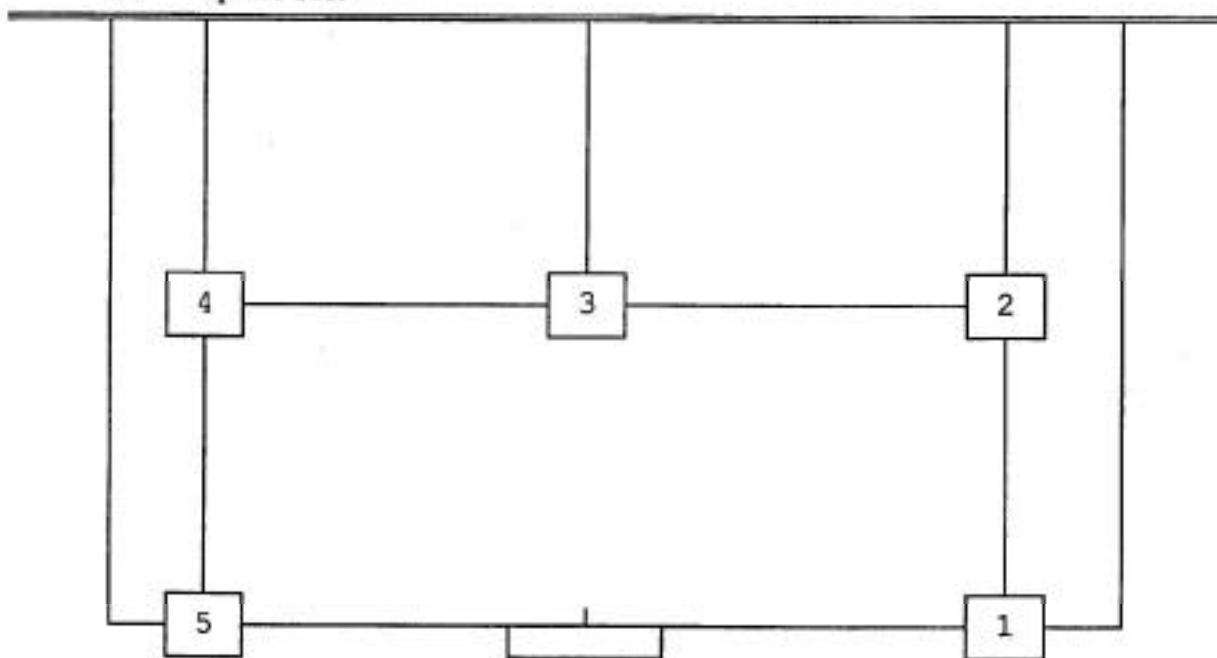
A. Hexagon Test

1. Using masking tape, mark a **twenty-four inch** per side hexagon on the floor with angles of **120 degrees**.
2. Have the athlete stand in the middle of the hexagon facing forward, as he/she must for the duration of the test.
3. he/she begins by jumping forward over the tape with both feet and immediately back into the hexagon when the command "Ready-Go" is given.
4. Then, continuing to face forward, he/she jumps over the next side and back to the middle for three full revolutions.
5. this pattern will be continued by jumping over all six sides and back to the middle for three full revolutions.
6. When the feet enter the hexagon after three (3) full revolutions, the clock should be stopped and the time recorded.
7. each athlete gets one practice trial.
8. the test will be taken two (2) times, and the fastest time will be recorded using a stopwatch.
9. 0.5 second penalty to be given for each line touch or 1.0 second penalty for failure to follow proper sequence.

B. 20-Yard Dash

1. Mark off **20 yards** on a tennis court using masking tape. The distance from one baseline to the opposite service line is exactly **20 yards**.
2. the recorder will stand at the finish line with his/her arm in the air. At the of drop of the hand and the command "Ready-Go", the recorder will start the stopwatch and the athlete will start running.
3. Using a stopwatch, record the fastest time of three trials.

C. Spider Test



1. Using masking tape, Mark off a **12-inch by 18-inch** rectangle behind the middle of the baseline using the baseline as one of the sides.
2. Position five balls on the court: one ball on each of the corners where the baseline and singles sideline meet; one ball on each of the sides where singles sideline and service line meet; one ball on the T.
3. Starting at the middle of the baseline, each ball has to be retrieved and placed in the rectangle, one ball at a time in a counterclockwise direction.
4. Remove each ball after it is placed in the rectangle to prevent the athlete from stepping on it.
5. The time will be recorded using a stopwatch after the command "Ready-Go" is given.
6. As soon as the last ball is placed in the rectangle, the time is stopped.
7. The athlete has three trials. The best of the three trials is recorded.

D. Sideways Shuffle

1. Start on centerline at "T", with one foot on either side of the line, facing the net.
2. While still facing the net, the athlete shuffles along the service line, touches the doubles sideline, then shuffles to the opposite doubles sideline, and continues back to the center. A crossover step is not allowed.
3. The time will be recorded using a stopwatch after the command "Ready-Go" is given.
4. The best time of two (2) trials is recorded.

VII. Aerobic Capacity

A. 1-1/2 mile run

1. At the command "Ready-Go", the athletes run 1-1/2 miles on a level 440 yard track (6 laps).
2. Cinder or Tartan tracks are recommended.
3. A practice run, on a different day, is recommended if time permits.
4. This test should be performed on a different day from all other fitness tests.

FITNESS TESTING PROTOCOL REFERENCE GUIDE

The following tests comprise the Fitness Testing Protocol

Indicates that special equipment is needed

Type of Test	Name of Test
Cardiovascular	Resting Heart Rate Blood Pressure *
Flexibility	Sit and Reach Hamstrings * - left and right Shoulder Rotation * - internal and external
Strength and Endurance	Sit-ups in 1 minute Push-ups in 1 minute Grip Strength *
Power	Vertical Jump Medicine Ball Chest Pass *
Body Composition	Triceps, Subscapular, Mid-Axillary * Suprailiac, Abdominal, Anterior Thigh
Agility and Speed	20-Yard Dash Spider Test Sideways Shuffle Hexagon Test
Aerobic Capacity	1 1/2 Mile Run

Schedule of Stations

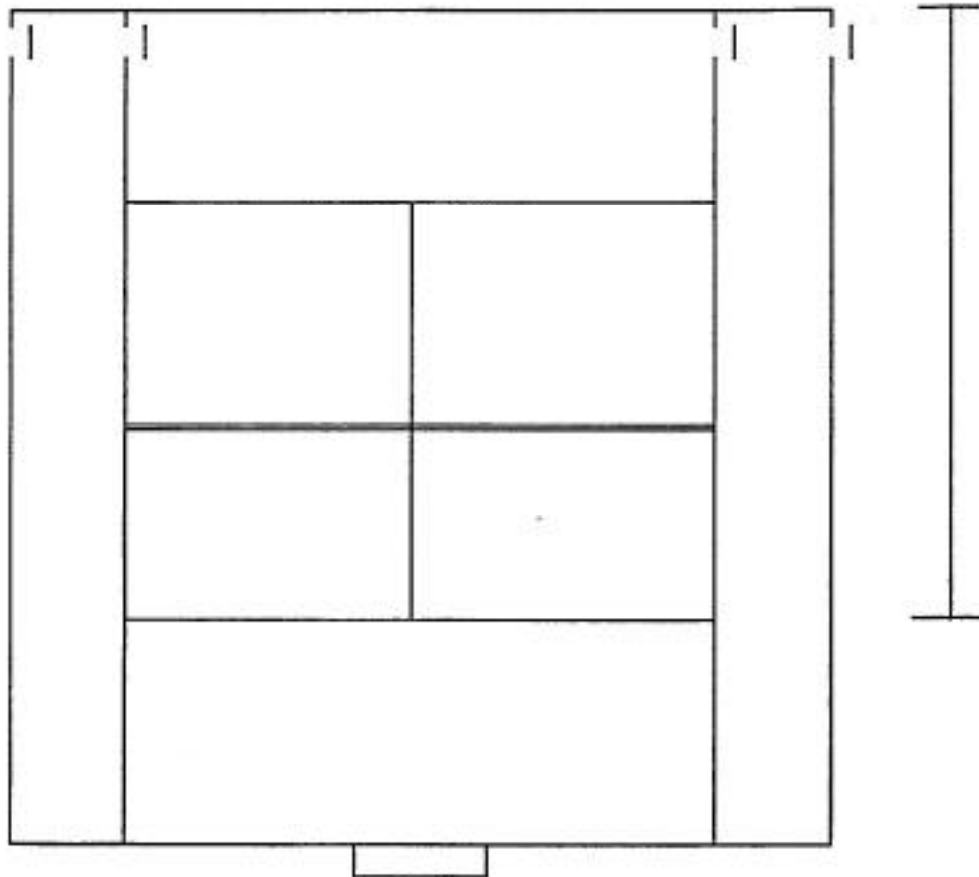
Level 1

WALL/FENCE

Station I
Hexagon Test

Station II
Vertical
Jump

Station III
20-Yard Dash



Station VI
Sit & Reach
Sit-Ups
Push-Ups

Station VII
Spider Run
Sideways Shuffle

Constructing the Sit and Reach Box

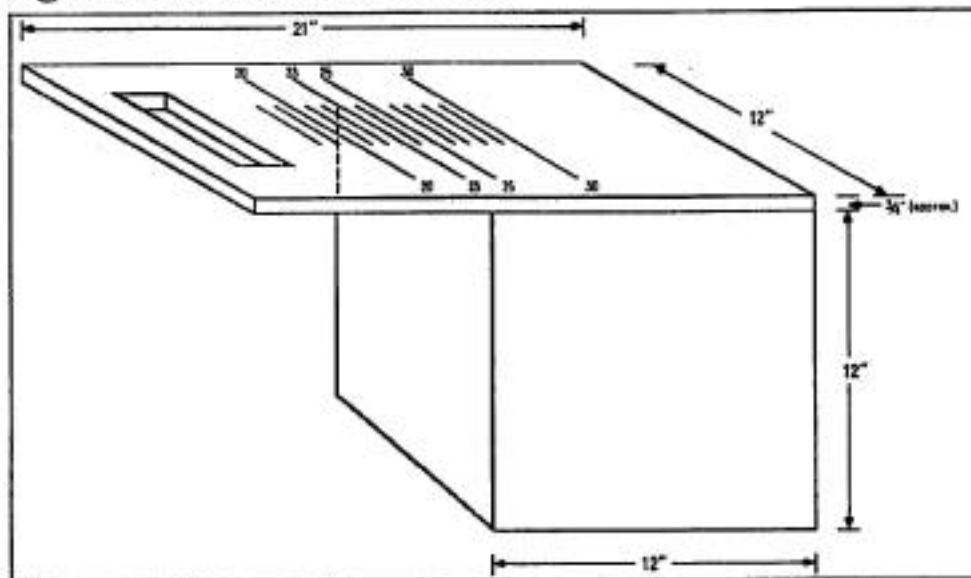


Figure 1 Sit and Reach Box

1. Using any sturdy wood or comparable construction material (3/4 inch plywood or comparable construction material is recommended), cut the following pieces:

4 pieces-12 in. x 12 in.
1 piece-12 in. x 21 in.

2. Assemble the pieces using nails or screws and wood glue.
3. Inscribe the top panel with one-centimeter graduations. It is crucial that the 0 centimeter line is exactly in line with the vertical plane against which the subject's feet will be placed.
4. Cover the apparatus with two coats of polyurethane sealer or shellac.
5. For convenience, a handle can be made by cutting a 1 in. x 3 in. hole in the top panel.
6. The measuring scale should extend from about -6 to +12 inches.

USTA FITNESS TESTING SCORECARD



Name:		Birthdate:	
Height:	Weight:	Dominant Hand:	

FITNESS TEST	TRIAL 1	TRIAL 2	TRIAL 3
FLEXIBILITY			
Sit & Reach (inches)			
Shoulder Rotation (degrees)			
Dominant Internal			
Dominant External			
Non-Dominant Internal			
Non-Dominant External			
Hamstring			
Left			
Right			
STRENGTH & ENDURANCE			
Grip Strength (kg.)			
Dominant			
Non-Dominant			
Sit-ups (1 minute)			
Push-ups (1 minute)			
POWER			
Vertical Jump (ft. in.) reach:			
Reverse Toss (ft. in.)			
Forehand Toss (ft. in.)			
Backhand Toss (ft. in.)			
Overhead Toss (ft. in.)			
AGILITY AND SPEED			
Hexagon Test (sec.)			
Sideways Shuffle (sec.)			
Spider Test (sec.)			
20-yard dash (sec.)			
Fastex (sec.)			
BODY COMPOSITION			
Thigh (male/female)			
Mid-Axillary (m)			
Abdomen (m)			
Suprailliac (f)			
Triceps (f)			
AEROBIC CAPACITY			
1.5 Mile Run (min:sec)			
Treadmill (sec.)			

"x" & UNDER "gender" USTA FITNESS TESTING SCORECARD



Name:	Birthdate:
Height:	Weight:
	Dominant Hand:

FITNESS TEST	TRIAL 1	TRIAL 2	Notes
INJURY PREVENTION			
Single Leg Squat			
Single Leg Stance			
Leg Lowering Test			
Sit and Reach (inches)			
Shoulder Rotation (degrees)			
Dominant Internal			
Dominant External			
Non-Dominant Internal			
Non-Dominant External			
PERFORMANCE			
20-yard dash (sec)			
Spider Test (sec)			
Dot Drill Test (sec.)			
Single Leg			
Double Leg			
1.5 Mile Run (min:sec)			
Vertical Jump (feet, inches)			2 Arm Reach:
Sit-Ups (# in 1 minute)			
Seated Medicine Ball Chest Pass (feet, inches)			

**“x” & UNDER “gender”
USTA FITNESS TESTING SCORECARD**



Name:	Birthdate:
Height:	Weight:
	Dominant Hand:

FITNESS TEST	TRIAL 1	TRIAL 2	Notes
INJURY PREVENTION			
Single Leg Squat			
Single Leg Stance			
Leg Lowering Test			
Sit and Reach (inches)			
Shoulder Rotation (degrees)			
Dominant Internal			
Dominant External			
Non-Dominant Internal			
Non-Dominant External			
PERFORMANCE			
20-yard dash (sec)			
Spider Test (sec)			
Dot Drill Test (sec.)			
Single Leg			
Double Leg			
1.5 Mile Run (min:sec)			
Vertical Jump (feet, inches)			2 Arm Reach:
Sit-Ups (# in 1 minute)			
Seated Medicine Ball Chest Pass (feet, inches)			