

Special Olympics FUNfitness

FUNfitness: Learn how to Organize, Promote and Present



Updated: September 2020

Olympics Athletes can choose to participate in the Healthy Athletes program, but it is okay for athletes to choose not to participate in all or portions of each discipline.

HAS FORMS

All of the data obtained from each of the screening tests and all of the responses to the questions are to be entered onto a Healthy Athletes Screening (HAS) form for the FUNfitness screening protocol. The current version of this FUNfitness form may be found on the Special Olympics website at: <u>https://resources.specialolympics.org/health/healthy-athletes-system</u>

Please check the date at the lower left corner of the form to ensure that you are using the most current version of the HAS form. The current HAS form is dated "May 2020". There may be previous versions of the form in circulation or in previous editions of this manual, so <u>please use the</u> <u>most current version of the form</u>. The HAS form is occasionally updated so check that you are using the most recent form.

All persons entering data on the form must write legibly, and provide documentation as described in this measurement protocol. For some tests (hamstring, calf, anterior hip, shoulder flexibility) a "+" or "-" sign is required. Make sure the proper use of these signs occurs by all persons conducting the screening.

Programs are encouraged to migrate to the new tablet data entry method instead of paper forms. Interested Programs can contact <u>healthdata@specialolympics.org</u> to start the transition process. Information about this process can be found at <u>https://resources.specialolympics.org/health/healthy-athletes-system</u>

SCREENING PROCEDURES AND HAS FORM DOCUMENTATION

Athlete Information

First Name	Last Name	HAS ID

At the top of the form indicate first and last name of the athlete.

<u>HAS ID</u>: this is a unique identification number assigned to each Special Olympics athlete. If the athlete has used the open MRS, they will have a HAS number. Some states and countries have prepopulated their HAS forms and created unique HAS numbers for their athletes, but not all. If the athlete does not have a HAS number, leave this field blank.

Date	O Male	O Female	DoB	Age	(years) O Not sure		
Event	Location		O Athlete O Unified partner	Sport			
Delegation			SO Program				
Cell phone number	Cell phone number Number is O Athlete's O Parent's / Guardian 's						
Providing a phone number is optional. It will be used to send a text reminder if any follow up is recommended after							
screening							

Date: Enter date of the event or screening.

<u>Male/Female:</u> Indicate the gender of the SO athlete. (Male/Female).

DOB: Enter the athletes Date of Birth, ask the athlete, family member or coach.

• Date of birth is preferable to age, but if DOB is unknown, age will allow the computer to create a proxy DOB

<u>Age:</u> Enter the age of the athlete, ask athlete "how old are you?" <u>Event:</u> Enter the type of event that the screening is being held at.

Location: State, province, and country.

<u>Athlete / Unified Partner:</u> Indicate whether the person being screened is an SO athlete or whether the person is an individual without a disability participating on a unified team. Sport: What sport(s) does the athlete participate in.

Delegation: Indicate home location of the athlete.

<u>SO Program:</u> Country or state of the SO program organizing the event.

Uses Wheelchair:	O Yes O No	Altitude (m). Check
Uses Assistive Device:	O Yes O No	one:
Wears Splint or Brace:	O Yes O No	O 0 to 1,500
	Hand-Wrist Elbow Shoulder	O 1,501 to 3,000
	🗆 Knee 🛛 Hip 🗆 Back 🛛	O >3,000
	Foot/Ankle	

Assistive Devices: Indicate whether the SO athlete uses a wheelchair, walker, cane,

<u>Splint or Brace:</u> Indicate whether the SO athlete uses braces or other assistive devices, and where.

<u>Altitude:</u> For the Aerobic Fitness test, we use pulse oximeters which measure oxygen saturation of the blood. These readings may be affected by altitude and may be somewhat different for those populations, so we request that you identify the altitude of the location where the event is taking place. Most locations will be below 1,500 meters and will not affect the oxygen saturation results.

Disease, Injuries or Recent Falls

Any diseases or injuries that may affect screening results?

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Please check all that apply:
□ Problems with breathing or lungs
                                       Problems with heart
                                                              □ Problems with circulation □ Skin problems
□ Pain: □ Yes □ No If yes, where do you have pain? (check all that apply)
                 □ Foot or Ankle □ Knee □ Hand or Wrist
                                                          □ Elbow □ Shoulder □ Head
                                                                                           □ Back
                                                                                                      □ Neck
□ Joint Injury: □ Yes □ No If yes, what part of your body? (check all that apply)
                □ Foot or Ankle □ Knee □ Hand or Wrist □ Elbow □ Shoulder □ Head
                                                                                           □ Back
                                                                                                     □ Neck
□ Muscle Injury: □ Yes □ No If yes, what part of your body? (check all that apply)
                 □ Back or Pelvis □ Foot
                                         🗆 Lea
                                                     Hand
                                                              🗆 Arm
                                                                          □ Shoulder or Scapula
                                                                                                  □ Neck
□ NONE OF THE ABOVE
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Have you fallen in your home in the past year?

Yes
No

Ask the athlete if they are currently experiencing any pain, injuries, joint sprains or muscle strains or skin problems. Furthermore, ask the athlete if they have fallen in their home in the last year. Coaches and parents can be consulted if needed.

Flexibility

Ask the athlete if they do stretching exercises at home or as part of exercise. Ask them to identify how often they do these stretching exercises.

Do you stretch routinely?

O Several times each day O Once each day O Occasionally, but not every day

O Could not elicit response: O Refused to respond O Unable to respond

O No regular stretching

O Unable to understand

Hamstring Flexibility: Supine (Passive) Knee Extenstion

Athlete Testing Position

- Athlete is positioned supine on a table or mat. •
- Hip and knee of the side to be measured should be flexed to 90 degrees.
- Athlete, physical therapist assistant (PTA) or student maintains hip position at 90 degrees flexion.

Physical Therapist (PT) Position

- PT stands beside the leg to be measured with eyes level with the leg.
- PTA or student stands on the opposite side to assist with passive knee extension.

Goniometer Alignment

- Align the proximal arm of the goniometer with the lateral midline of the femur, using the greater trochanter as a reference.
- Align the distal arm of the goniometer with the lateral midline of the fibula, using the lateral malleolus as a reference.
- Center the fulcrum of the goniometer over the lateral femoral epicondyle.

Measurement

- Athlete (or PTA/student) is instructed to hold the thigh in 90 degrees of flexion and relax the lower leg.
- Ankle should remain in neutral or plantarflexion.
- PT passively straightens the knee as far as possible without pain.

Recording

- Measure the angle between the thigh and leg at the knee (popliteal angle).
- If the knee goes fully straight, record the final value as 0 degrees.
- If the knee does not go straight, *record the value as negative* (e.g., -40).
- If the knee goes beyond the fully straight position into hyperextension, *record the value as positive* (e.g., +5 degrees).
- Repeat the measurement on both sides.

Education

A recording of -15 degrees to -90 degrees or more, or asymmetry may indicate need for education.

HAMSTRING - supine (passive) knee extension						
Leftdegrees Rightdegrees						
Note positive (+) or negative (-) degrees						
Unable to test because athlete: O Refused to perform O Unable to perform O Unable to understand	☐ Education Between -90 and -16° or asymmetry					





Calf Flexibility: Supine (Passive) Ankle Dorsiflexion

Athlete Testing Position

• Position the athlete supine on a table or mat.

• Position the hip and knee on the side to be measured in as much extension as possible. Physical Therapist (PT) Position

- PT is seated or squats on the side to be measured with eyes level with the leg.
- PTA or student is positioned by the foot to assist with recording.

Goniometer Alignment

- Align the proximal arm of the goniometer with the lateral midline of the fibula, using the fibular head as a reference.
- Align the distal arm of the goniometer with the 5th metatarsal parallel to lateral midline 5th metatarsal.
- Center the fulcrum of the goniometer on lateral side of ankle joint as it settles to adjust to the alignment of the arms of the goniometer.

<u>Measurement</u>

- Athlete is instructed to relax the foot and ankle.
- Knee should remain in extension during the measurement.
- PT should passively dorsiflex the ankle (grasp and pull down on the heel while pushing up on the foot with the forearm).
- Repeat the measurement on both sides.

Recording

- Measure the angle between the leg and the foot. Neutral position (0 degrees) is a right angle between leg and foot.
- Record the actual angle in relation to the neutral position.
- If the athlete cannot reach neutral position (0 degrees) and remains in a plantarflexed position, *record the angle as negative (e.g., 10 degrees).*
- If the athlete goes beyond neutral into dorsiflexion, *record as positive (e.g., +10 degrees)*.
- If athlete only reaches neutral, *record as 0 degrees*.
- Repeat the measurement on both sides.

Education

- Flexibility of less than +5 degrees, including any negative numbers (e.g., -10 degrees), or asymmetry indicate need for education.
- Example: Athlete relaxes, and PT is able to move the ankle to 10 degrees beyond neutral. The recording is noted as +10 degrees dorsiflexion. No Education is required.

CALF - supine (passive) ankle dorsiflexion						
Leftdegree	s Right	degrees				
Note positive (+) or ne	Note positive (+) or negative (-) degrees					
Unable to test be O Refused to performed	cause athlete: m O Unable to perform O	Unable to understand	Education Less than 5° or asymmetry			





Anterior Hip Flexibility: (Modified) Thomas Test

Athlete Testing Position

- Athlete is positioned supine on a table or mat.
- Both hips should be flexed to 90 degrees.
- PT supports hip to be measured.
- Athlete, PTA or student maintains the opposite hip in 90 degrees flexion.

Physical Therapist Position

- PT stands on the side to be measured.
- PT supports the leg with one arm and places the other hand on the anterior crest of the pelvis.
- PTA or student stands on the opposite side and supports the opposite leg with the hip in 90°

Goniometer Alignment

- Align the proximal arm of the goniometer with the lateral midline of the pelvis aiming at the axilla.
- Align the distal arm of the goniometer with the lateral midline of the femur as a reference.
- Center the fulcrum of the goniometer over the lateral aspect of the hip joint, using the greater trochanter as a reference.

<u>Measurement</u>

- PT flexes the hips until low back is flat on table (approximately 90°).
- Athlete or assistant holds one hip in this flexed position.
- PT positions one arm around leg to be measured, and the other hand on the anterior superior part of the pelvis.
- Athlete is instructed to "relax and let me lower your leg." Leg not being measured must remain flexed during test.
- PT lowers the leg passively until the pelvis begins to rotate forward under the hand.
- PT may want to move the leg up and down to feel the rotation of the pelvis or change in pressure under the low back. Keep a hand beneath the lower back to ensure that it remains flattened.

<u>Recording</u>

- The point at which the pelvis moves forward is the end of the test.
- At this point, the angle between the pelvis and thigh is measured.
- If the thigh lowers to the table surface, the result is recorded as 0 degrees.
- If the thigh does not reach the table, *the angle is recorded as negative (*e.g., -25 degrees.

Education

- Flexibility of -10 degrees or more or asymmetry indicate need for education.
- Example: PT moves the leg from the 90-degree position to 50 degrees. Record -40 degrees, as participant lacks 40 degrees of full extension (0 degrees). Education is required.

ANTERIOR HIP: Modified Thomas Test							
Left	degrees	Right	degrees				
Note positive	Note positive (+) or negative (-) degrees						
□ Unable to test because athlete: □ Education							
O Refused	i to perform O Un	able to perform	O Unable to understand	Between -90 and -11° or asymmetry			



Functional Shoulder Rotation: Modified Apley's Test

Athlete Testing Position

- Athlete stands or sits in a chair. If standing, provide a chair or other support for the athlete to hold on to. (Athlete may also sit in a wheelchair.)
- Athlete is instructed to reach one arm behind the head and down the back, while the other arm reaches behind the hip and up the back.

Physical Therapist Position

- PT demonstrates the test.
- PT then stands behind the athlete.
- PTA or student stands in front of the athlete for safety.

<u>Measurement</u>

- PT demonstrates the test position.
- Athlete is instructed to "try to touch your index fingers together," (one arm is in flexion/abduction/lateral rotation; the other is in extension/adduction/ medial rotation).
- The measurement is the distance in centimeters between the index fingers.

Recording

- Use a tape measure to measure the distance between the index fingers in **centimeters**.
- Determine the side being recorded by the arm on top (i.e., left arm on top = left; right arm on top = right).
- If the fingertips touch, record the distance as 0 cm.
- If the fingertips cannot touch, *record the separation as negative* (e.g., -15.2 centimeters).
- If the fingers overlap, *record the overlap as positive* (e.g., + 2.5 centimeters).
- Symmetry occurs if each arm reaches equally toward the middle (approximately T7) or at the level of the inferior angle of the scapula.
- Asymmetry occurs if the arms do not approach the midline evenly (i.e., one arm is more flexible and overreaches the midline, or is less flexible and cannot approximate the midline).
- Repeat on both sides and record on the score sheet.

<u>Education</u>

• Recordings of -16 centimeters to -50 cm. (or more) (e.g., -18 cm.) or asymmetry indicate need for Education.

SHOULDER: Modified Apley's Test					
Leftcentimeters Rightcentimeters					
Note positive (+) or negative (-) centimeters					
Unable to test because athlete:	Education				
O Refused to perform O Unable to perform O Unable to understand	Between -90 and -16cm or				
	asymmetry				



Strength

Ask the athlete if they do exercises to improve strength at home or as part of exercise, and ask them to identify how often they do these exercises. Furthermore, ask if these exercises are part of Special Olympics related activities.

On average, (Physical activ	how many ities for mus	days a weel scle strength	c do you do include lifting	physical a g weights,	activities using elast	f or muscle ic bands, pu	strength? sh-ups or s	sit-ups)
O No days	O 1 day	O 2 days O	3 days O	4 days	O 5 days	O 6 days	O Every	day
How much of O None O Could not el O Refused t O Unable to	f this stren O Some icit response o respond respond	gth activity O Most e:	is related to O A	o Special (Olympics t	training, pr	actice, or	competition?
O Unable to (understand							

Timed Sit-to-Stand Test

The Timed Sit-to-Stand Test is a simple method to quantify functional lower extremity muscle strength (hip and knee extension). The test requires the athletes to complete 10 full stands from a seated positon, as quickly as possible, without the use of the arms.

Mode of Administration

- Have athlete sit on a firm, straight-backed chair.
- Use pieces of hard foam or wood to adjust the height of the chair seat and/or to position the feet flat on the floor, as necessary, to maintain a position with the hips and knees at a 90-degree angle.
- Have the athlete positon their arms by their sides, with the elbows flexed at 90-degrees. Arms should remain in this position for the entire test.
- Athlete is instructed to "stand from sitting, then sit down again, without using your arms. Repeat this 10 times, as quickly as possible."
- PT demonstrates the test.
- PT tells the athlete to start with a "ready, set, go."
- PT, PTA or student stands beside the athlete in case the athlete loses his/her balance during the task.

Scoring

- PT or PTA starts a stopwatch or timer when he/she says "go."
- Timer continues until the athlete sits down from the 10th stand.
- Record the time to perform the task in seconds.

Education

• Time greater than 20 seconds, or inability to do 10 stands, indicates need for Education.

LOWER EXTREMITY: Timed Sit-to-Stand Test (Functional Leg St	trength) T	ime: seconds
Unable to test because athlete:	🗆 🗆 Educatio	on
O Refused to perform O Unable to perform O Unable to understand	> 20 seconds	



Partial Sit-Up Test

The Partial Sit-Up Test is a simple method to quantify abdominal muscle strength/ endurance. The test requires the athlete to complete 25 sit-ups within one (1) minute from a supine position.

Mode of Administration

- Participant is positioned supine on mat. If athlete cannot get on the mat, the test can be carefully done on a sturdy table.
- Athlete's legs are flexed to 90 degrees hips/90 degrees knees and placed on a chair or stool.
- PT uses pieces of hard foam or wood to adjust the height of the stool if necessary.
- Athlete arms are positioned straight out in front of the chest with the elbows extended. Arms remain in this position for the entire test.
- Athlete is instructed to "lift your head and slowly sit up until you touch the target, then slowly lower back down again. Repeat this until I tell you to stop. We want you to do as many as you can in one minute".
- Goal is to have athlete do a partial sit-up, defined as sitting up until the base of the scapula clears the floor or table, then returning the back and head to the floor.
- PT must verify that the scapula has lifted off the mat.
- Do a practice sit-up to determine how high the athlete needs to sit up to clear the scapula, then put a target at the position.
- PT demonstrates the test.
- PT coaches the athlete to begin when he/she says "ready, set, go."
- PT sits near the athlete to encourage the athlete to continue the task correctly.

Scoring

- PT or PTA starts a stopwatch or timer when he/she says "ready, set, go."
- Timer continues until one minute has elapsed or until the athlete does 25 sit-ups correctly.
- The number of sit-ups completed is recorded.
- The athlete can stop to rest momentarily, then begin again.
- If the athlete cannot continue for one full minute, the number of sit-ups completed is recorded.

<u>Education</u>

• The inability to do 25 sit-ups indicates need for Education.

ABDOMINAL MUSCLES: Partial Sit-Up Test	Number of Sit-Ups:
Unable to test because athlete:	Education
O Refused to perform O Unable to perform O Unable to understand	< 25 in one minute



Hand Grip Test

The Hand-Grip Test is a standardized method of assessing strength of the hand and forearm muscles, and has been correlated to upper extremity function. The test involves completing three (3) grips on each side and recording the best value.

Mode of Administration

- PT uses an adjustable hand-grip dynamometer.
- PT indicates the dominant hand on the form (hand used for eating or writing).
- PT explains to the athlete that the athlete is not to move the rest of the body while squeezing
- The athlete gets three (3) tries to squeeze as hard as possible.
- PT has the athlete sit up straight in a straight-backed chair or wheelchair for the test
- PT demonstrates to athlete that he/she must keep the arm and hand at the side with the elbow bent to 90 degrees while squeezing.
- PT sets the dial to zero.
- PT coaches the athlete to begin when he/she says "ready, set, go."
- PT instructs the athlete to do one strong squeeze ("as hard as possible") for six seconds, then to let go.
- PT resets the dial to zero for the next trial.
- Each squeeze is followed by a test on the opposite side so the tested side can rest.

<u>Scoring</u>

- Record the results from each trial in kilograms.
- Accept the highest squeeze as the final result
- Record the greatest grip in the space indicated on form.
- Compare the result for each side with the standardized 10th percentile norms for age and sex. See the chart on the following page for the hand grip norms by age.

Education

• A result below the 10th percentile of normal for age and sex may indicate the need for education.

FOREARM AND HAND MUSCLES: Hand Grip Test	Dominant Hand: O Left O Right
LEFT Trial 1kg. 2kg. 3kg.	RIGHT Trial 1kg. 2kg. 3kg.
Unable to test because athlete: O Refused to perform O Unable to perform O Unable to	o understand See Reference Sheet



	Μ	ales		Females			
Age	One	Hand	Both Hands	Age	One	Hand	Both Hands
10	5.5		11.0	10	5.0		10.0
11	8	.0	16.0	11	6	.0	12.0
12	11	.5	23.0	12	9	.0	18.0
13	14	4.0	28.0	13	13	3.0	26.0
14	19	9.5	39.0	14	13	8.5	27.0
15	27	7.5	55.0	15	15	5.5	31.0
16	34	1.0	68.0	16	16	5.5	33.0
17	35	5.0	70.0	17	15	5.5	31.0
18	40).5	81.0	18	15.5		31.0
19	42	2.0	84.0	19	18.0		36.0
	Right	Left	Both Hands		Right	Left	Both Hands
20-24	44.5	40.8	85.3	20-24	21.8	18.6	40.4
25-29	42.6	39.0	81.6	25-29	20.9	17.7	38.6
30-34	40.8	37.2	78.0	30-34	20.4	17.2	37.6
35-39	39.0	35.4	74.4	35-39	19.5	16.3	35.8
40-44	36.3	33.6	69.9	40-44	18.6	15.9	34.5
45-49	34.5	31.3	65.8	45-49	18.1	15.0	33.1
50-54	32.7	29.5	62.1	50-54	17.2	14.5	31.8
55-59	30.8	27.7	58.5	55-59	16.8	13.6	30.4
60-64	28.6	25.4	54.0	60-64	15.9	13.2	29.0
65-69	26.8	23.6	50.3	65-69	15.0	12.2	27.2
70-74	24.5	21.8	46.3	70-74	14.5	11.8	26.3
75-79	22.7	20.0	42.6	75-79	13.6	10.9	24.5
80-84	20.9	18.1	39.0	80-84	13.2	10.4	23.6

Hand Grip Strength 10th Percentile Cut-offs By Age All Measures in Kilograms (kgs)

Seated Push-Up Test

The Seated Push-Up Test is a method of assessing strength of the triceps, shoulder and scapular muscles. The test involves pushing the body up out of a seated position, holding, and slowly lowering it back to sitting.

Mode of Administration

- PT positions the athlete on the floor (if the athlete uses a wheelchair he or she can push up on the armrests).
- PT places the athletes' knees out straight with heels resting on the floor or table.
- PT or PTA must guard the push-up blocks to prevent them from tipping.
- PT instructs the athlete to push his/her body up from floor until the elbows are straight, hold for 20 seconds, then slowly lower back into the seat.
- Athlete can practice prior to the test.
- PT coaches the athlete to begin when he/she says "ready, set, go."

<u>Scoring</u>

- PT times with a stopwatch the number of seconds that the athlete can hold in the push-up position.
- Record the number of seconds held on the score sheet.

Education

• An athlete who cannot hold for at least 5 seconds, twice, needs Education.

UPPER EXTREMITY: Seated Push-Up Test (Functional Strength)	Push-Up Hold:seconds
Unable to test because athlete:	Education
O Refused to perform O Unable to perform O Unable to understand	< 5 seconds



Balance

Tandem Stance – Eyes Open

The Tandem Stance Test, with eyes open, is a method to quantify postural steadiness and balance when the base of support in the medial/lateral direction is narrow with the assistance of visual cues. The test requires the athlete to stand with one leg placed directly in front of the other leg, heel touching toes with the eyes open. Balance must be maintained as long as possible up to 30 seconds and is performed with each side as the front foot. **If athlete cannot assume tandem position, then regress to a "modified tandem position" for test completion.**

Mode of Administration

- Athlete stands with feet shoulder width apart.
- Place a chair within arm's reach for security.
- The athlete is instructed to place hands on hips.
- Athlete is instructed to "slowly place one foot in front of the other with heel touching toes. I will time you until you lose your balance"
- PT demonstrates the test.
- PT stands in front of athlete to encourage the athlete to continue without fear of falling.
 PTA or student stands behind athlete for safety.
 Semi-tandem
 Tandem
- PT coaches athlete with a "ready, set, now place one foot in front of the other". PT is permitted to assist the athlete into the position or athlete can use chair to assist into position but then needs to release contact for timing.
- Timing begins when athlete is in position without UE assist and continues until athlete loses balance (maximum time = 30 seconds).
- Test is now repeated on the other side, with the opposite foot placed in front.

Scoring

- PT or PTA starts a stopwatch timer when athlete is in position.
- Timer continues until balance is lost.
- The time completed before loss of balance (up to 30 seconds) is recorded.

Education

• Stance time of less than 20 seconds, or asymmetry might indicate need for Education.

Tandem (T) or Modified (M) Stance Test – Circle Test Performed	d	Left:	sec.	Right:	sec.
Unable to test because athlete:		🗆 Edu	cation	_	
O Refused to perform O Unable to perform O Unable to understand	If s	tance < 2	20 secor	nds	

Single Leg Stance – Eyes Open

The Single Leg Stance Test with eyes open is a simple method to quantify balance with the assistance of visual cues. The test requires the athlete to stand on one leg with the eyes open. Balance must be maintained as long as possible.

Mode of Administration

- Athlete stands on both legs with feet shoulder width apart.
- Athlete is placed within arms' reach of a chair for security.
- The athlete is instructed to place hands on hips.
- Athlete is instructed to "slowly lift one leg and balance. I will time you until you lose your balance."
- PT demonstrates the test.
- PT stands in front of athlete to encourage the athlete to continue without fear of falling. PTA or student stands behind athlete for safety.
- PT coaches athlete with a "ready, set, now stand on one leg."

Scoring

- PT or PTA starts a stopwatch timer when he/she says "ready, set, now stand on one leg."
- Timer continues until balance is lost, or foot of the flexed leg touches the ground.
- The time completed before loss of balance (up to 20 seconds) is recorded.

Education

• Stance time of less than 20 seconds, or asymmetry might indicate need for Education.

Single Leg Stance – Eyes Open		Left:	sec.	Right:	sec.
Unable to test because athlete:		🗆 Edu	cation		
O Refused to perform O Unable to perform O Unable to understand	If s	tance < 2	20 secor	nds	

Single Leg Stance – Eyes Closed

The Single Leg Stance Test with eyes closed is a simple method to quantify balance without the assistance of visual cues. The test requires the participant to stand on one leg, with eyes closed or wearing a blindfold. Balance must be maintained as long as possible.

Mode of Administration

- Athlete stands on both legs with feet shoulder width apart.
- Athlete is placed within arms' reach of a chair for security.
- The athlete is instructed to place hands on hips.
- Athlete is instructed to "slowly lift one leg, then close your eyes and balance. I will time you until you lose your balance."
- A blindfold may be used if the athlete is unable to maintain his/her eyes shut, and only if the athlete agrees to be blindfolded.
- PT demonstrates the test.
- PT stands in front of athlete to encourage the athlete to continue without fear of falling. PTA or student stands behind athlete for safety.



- PT coaches athlete with a "ready, set, stand on one leg, now close your eyes."
- Test continues until athlete loses balance, or puts the other foot down (maximum time = 20 seconds).

<u>Scoring</u>

- PT or PTA starts a stopwatch timer when he/she says "ready, set, stand on one leg, now close your eyes."
- Timer continues until balance is lost, or foot of the flexed leg touches the ground.
- The time completed before loss of balance (up to 10 seconds) is recorded.

<u>Education</u>

• Stance time of less than 10 seconds, or asymmetry might indicate need for Education.

Single Leg Stance – Eyes Closed		Left:	sec.	Right:	sec.
Unable to test because athlete:		🗆 Edu	cation		
O Refused to perform O Unable to perform O Unable to understand	If st	tance < 1	10 secor	nds	

Timed Up and Go (TUG) Test

The Timed Up and Go (TUG) is a test of dynamic balance and position change. The test requires the stand from sitting, walk at normal pace for 10 ft., turn, return to chair, turn and sit. Balance must be maintained and test completed in 12 seconds or less.

Mode of Administration

- The athlete is instructed to sit on a standard hardback chair without arms.
- The athlete wears regular footwear and can use a walking aid if needed.
- The test sequence is explained to the athlete: stand, walk at normal pace to line, turn, walk back to chair, turn and sit.
- PT demonstrates the test.
- PT stands by the athlete to encourage the athlete to continue the test without fear of falling
- PT coaches athlete with a "ready, set, go".
- Test begins when athlete begins to stand from the chair, and ends when athlete sits back down in chair, or when athlete declines to continue test.

Scoring

- PT or PTA starts a stopwatch timer when athlete begins to stand.
- Timer continues until athlete sits down again in the chair, or declines to continue.
- The time to complete the stand, walk 3 meters, turn, walk back 3 meters, turn, sit is recorded.

Education

• TUG time of greater than 12 seconds might indicate need for Education.



Timed Up and Go (TUG) Test	Time to Perform Test:	seconds
Unable to test because athlete: O Refused to perform O Unable to perform O Unable to understand	□ Education I If time > 12 seconds	

Seated Forward Functional Reach Test

The Seated Forward Functional Reach Test is a simple method to quantify balance that allows use of visual cues, but perturbs body position. The test requires the athlete to reach forward beyond the length of his/her arm without loss of balance. The preferred position for this test is standing, but it can also be done sitting. **This test is to be used only with those participants who are non-ambulatory.**

Mode of Administration

- PT attaches a meter stick or tape measure to a wall or partition, horizontal to the floor at the shoulder level of the athlete.
- Participant stands on two legs, positioned shoulder width apart.
- Test can be done seated if the athlete cannot stand.
- Athlete is placed within arms' reach of a chair for security.
- Arms are positioned at the sides. One arm remains relaxed in this position for the entire test.
- Athlete is requested to lift the arm closest to the ruler or tape measure to 90 degrees forward flexion and extend fingers.
- PT demonstrates the test.
- PT stands in front of athlete to encourage the athlete to continue without fear of falling. The athlete is told to keep his feet still or not move his feet. PT can place a line or pieced of tape on the floor to indicate where the toes must stay.
- PTA or student stands next to athlete for safety.
- PT puts a clipboard at the end of the athlete's longest fingertip to record the starting position.
- PT coaches athlete with a "ready, set, reach as far forward as you can without losing your balance."
- PT uses the clipboard to record the final position of the fingers.

<u>Scoring</u>

- PT, PTA or student stands at the end of the athlete's fingers.
- Record the starting position with the use of a clipboard on the ruler at the end of the longest finger.
- After the athlete bends forward, use the clipboard to record the centimeter measurement at the end of the longest fingertip as the athlete reaches without loss of balance. Record reach on both sides.
- Athletes may not lean against the wall or the ruler during the test.

<u>Education</u>

• Reach of fewer than 20 centimeters, or asymmetry may indicate need for Education.

Seated Forward Functional Reach	Le	eft:	cm.	Right:	cm.
Unable to test because athlete:		🗆 Educ	ation		
O Refused to perform O Unable to perform O Unable to understand I	[f reac	ch is <	20 cent	timeters	

Seated Lateral Functional Reach Test

The Seated Lateral Functional Reach Test is a simple method to quantify balance that allows use of visual cues but perturbs body position. The test requires the athlete to reach laterally beyond the length of his/her arm without loss of balance. The test has been validated in both standing and sitting. **This test is to be used only with those participants who are non-ambulatory.**

Mode of Administration

- PT attaches a meter stick or tape measure to a wall or partition, horizontal to the floor at the shoulder level of the athlete.
- Participant sits in chair or wheelchair, back of the chair toward wall as close as possible.
- Arms are positioned at the sides. One arm remains relaxed in this position for the entire test.
- Athlete is requested to lift the arm to 90 degrees abduction and extend fingers.
- PT demonstrates the test.
- PT stands in front of athlete to encourage the athlete to continue without fear of falling.
- PTA or student stands next to athlete for safety.
- PT puts a clipboard at the end of the athlete's longest fingertip to record the starting position.
- PT coaches athlete with a "ready, set, reach as far to the side as you can without losing your balance.
- PT uses the clipboard to record the final position of the fingers.

<u>Scoring</u>

- PT, PTA or student stands at the end of the athlete's fingers.
- Record the starting position with the use of a clipboard on the ruler at the end of the longest finger.
- After the athlete bends lateral, use the clipboard to record the centimeter measurement at the end of the longest fingertip as the athlete reaches without loss of balance. Record reach on both sides.
- Athletes may not lean against the wall or the ruler during the test.

Education

• Reach of fewer than 16 centimeters, or asymmetry may indicate need for Education.

Seated Lateral Functional Reach	Left:cm.	Right:cm.
Unable to test because athlete: O Refused to perform O Unable to perform O Unable to understand I	□ Education f reach is < 16 cer	ntimeters

Aerobic Fitness

Ask the athlete if they do any physical activity at home or as part of exercise, and ask them to identify how often they do these activities. Also ask if these exercises are part of Special Olympics related activities. If they reply that they have no regular program, ask them to identify the reasons why.

On average, how many days a week do you do some physical activity?								
O No days	O 1 day	O 2 days	O 3 days	O 4 days	O 5 days	O 6 days	O Every day	
On average	On average, how many days a week is your physical activity at a moderate level?							
(<u>Moderate</u> m	eans working	g hard enoug	h to make yo	ur heart beat fas	ter and possil	oly begin to sw	eat. Examples:	
fast walk, sw	imming, bicy	cling, runnin/	g).					
O No days	O 1 day	O 2 days	O 3 days	O 4 days	O 5 days	O 6 days	O Every day	
How much o	of this mode	erate physic	al activity is	s related to Spe	ecial Olympic	s?		
O None	0 Some	e O	Most	O All				
O Could not e	elicit respons	se:						
O Refused	to respond							
O Unable t	to respond							
O Unable t	to understan	d						
If you have no regular physical activity program, please tell us why? Check all that apply:								
O No availab	le exercise fa	acilities	O No trai	nsportation	O N	o money		
O No internet	t		O No fitn	ess person to he	elp me 🛛 O N	lot safe		
O Physically	unable		O No one	to exercise with	O N	o equipment o	r clothes	

Aerobic Test

Aerobic tests the ability to walk, wheel or step for a period of time with undue fatigue. These are submaximal tests that assess cardiovascular and pulmonary efficiency.

Measurement of Heart Rate

Heart rate is the number of heartbeats in a period of time, usually beats per minute (BPM). The resting

heart rate, or rate at rest or not having recently exerted, is a basic indicator of aerobic fitness level. We have utilized several methods of obtaining heart rate and some are either inconsistent or inaccurate.

The preferred method is the use of a pulse oximeter on the fingertip, and we are encouraging all programs to gradually switch to the use of the pulse oximeter. If no other options are available, the original manual method is available, but not very accurate (if possible use a stethoscope to measure HR). The current HAS form asks you to indicate which type of measurement was utilized so we can compare like data.

Using a Pulse Oximeter

The pulse oximeter measures both heart rate and oxygen saturation (O² Sat), the measure of how much oxygen the blood is carrying as a percentage of the maximum it could carry (100%). We are recording both values on the HAS form.

Because altitude can affect O² Sat by decresing the amount of available oxygen per volume of air and lowering the oxygen supply, it is important to record the altitude of an event so you can accurately assess the O² Sat reading. The HAS form has a record of altitude on the first page. The ranges of altitude are quite broad (0-1,500 meters, 1,501-3,000 meters and > 3,000 meters). Most events will occur below 1,500 meters. Altitudes for any location can be found online at: <u>https://whatismyelevation.com/</u>

Pulse oximetry is the fastest and most accurate method for obtaining a heart rate. When using the pulse oximeter, it is important to make sure the finger is clean, dry and warm, preferably with no nail polish. The finger, usually the ring or index, must be inserted into the probe or sensor. In a few seconds, the results will be on display. Oxygen saturation is read in percentage with the normal value range from 95 to 100 %. Hypoxemia is suspected once the values fall below 90% (refer to the Decision Tree at the end of this chapter for guidelines related to O² Sat readings and testing or referral). The probe must be cleaned by wiping the inner portion with isopropyl alcohol between athletes.

Manual Pulse

This method records the pulse, a tactile palpation of heartbeat on an artery. You should take the athlete's pulse after he/she has been quietly seated for two (2) minutes and record the number as beats per minute. Alternatively, using a stethoscope to listen to the heartbeat at the chest may be preferable. Taking the athlete pulse manually is a less desirable method of obtaining HR. However, if there is not a pulse oximeter or other device available, you may need to take a pulse. For test consistency and athlete privacy, use the wrist. When taking the pulse of another person, do not use your thumb. Place your first two fingers on the radial artery just below the base of the thumb on the inside of the wrist and just above the tendons running up the wrist. Move your fingers around until you feel a steady pulse.

Pre-Exercise Heart Rate (HR)

To get the pre-exercise heart rate, obtain the athlete's heart rate use the pulse oximeter or by taking their pulse after he/she has been quietly seated for two (2) minutes, and record the number as beats per minute (BPM). Record on the form which device you used to measure heart rate. **Note: heart rate too high to complete the test**. If the pre-exercise HR is over 100 BPM, do not proceed with the Step Test or Wheel Test. You may want to let the athlete rest a little longer and take their HR again to see if it is below 100 BPM.

Test Preparation

To obtain good results, have the athlete do the following:

- Wear loose-fitting, comfortable shoes.
- Wear athlete shoes with rubber soles.
- Preferable, not consume caffeine or chocolate, or smoke one hour before testing.
- Not eat for one hour before testing.
- Do not drink a glass of water immediately before the test.

Two-Minute Step Test

The Two-Minute Step Test is for athletes who can walk functionally.

Mode of Administration

- PT records pre-exercise heart rate and oxygen saturation with the athlete seated before the test.
- Stand the athlete next to a wall (not leaning on the wall).
- Mark the minimum stepping height for the athlete).
 - Run a tape measure from the iliac crest to the mid-patella.
 - Mark the midway point between the hip and knee on the tape.
- Transfer the mark on the tape to the wall.
- PT instructs athlete to bring each knee alternately up to the tape.
- PT coaches athlete to begin on "ready, set, go."
- Athlete is encouraged to step as quickly as possible without jogging or running.
- PT clicks tally counter each time the athlete's right foot hits the ground.
- PT requests athlete to step for a maximum of two minutes.
- PT records immediate post-exercise heart rate with the athlete seated after the test.
- Leave the stopwatch running at the end of the test.
- PT records post-exercise heart rate with the athlete seated two minutes after the end of the test.

<u>Scoring</u>

- Heart Rate
 - Pre-Exercise HR and O² Saturation reading:
 - Recorded with athlete seated just prior to the test and recorded on the HAS form.
 - Post-Exercise HR and O² Saturation reading:
 - Recorded immediately at the end of the two-minute step test and recorded on the HAS form.
 - 2 Minutes Post Exercise HR and O² Saturation reading:
 - Recorded at two minutes after the two-minute step test has ended again and recorded on the HAS form.
- Steps
 - PT records the number of times that the athlete steps with the right foot.
 - PT can make these adaptations as needed:
 - If athlete cannot bring either knee to the correct height from the start, continue the test.
 - If athlete has poor balance, he/she can hold on during the test.

Five-Minute Wheel Test

The Five-Minute Wheel Test is for athletes who use a wheelchair.

Mode of Administration

- PT marks off a known distance (at least 50 feet or 15.2 meters) in an oval for a test space or uses a track of known length.
- PT records athlete's pre-exercise resting heart rate in a seated position before the test.
- PT coaches athlete to begin on "ready, set, go."
- PT has athlete wheel for one minute to learn the test, then return to start line and rest for three to five minutes.
- PT requests athlete to wheel as quickly as possible for maximum of five minutes.
- PT can tell the athlete when each minute has elapsed or how many minutes to go when each minute has elapsed.
- PT encourages athlete as he/she wheels.
- PT records immediate post-exercise heart rate and oxygen saturation reading, and the 2 minute post exercise heart rate and oxygen saturation reading.

<u>Scoring</u>

Heart Rate

- Pre-Exercise HR and O² Saturation reading:
 - Recorded with athlete seated just prior to the test and recorded on the HAS form.
- Post-Exercise HR and O² Saturation reading:
 - Recorded immediately at the end of the five-minute wheel test and recorded on the HAS form.
- 2 Minutes Post Exercise HR and O² Saturation reading:
 - Recorded at two minutes after the five-minute wheel test has ended again and recorded on the HAS form.
- Distance
 - Record the distance covered in meters.

now is no being measure		O Puise Oximeter					
Heart Rate (beats/min):	Pre-Exercise Heart Rate:	End Exercise Heart Rate:	2-Minutes After Heart Rate:				
O ² Saturation (%):	O ² Saturation (%):	O ² Saturation (%):	O ² Saturation (%):				
O Two-Minute Step Test Number of Steps:Steps							
O Five-Minute Wheel Test Number of Steps:Steps							
O Refused to perform O	Education						

Iow is HR being Measured O Manual (Pulse) O Pulse Oximeter

Education

After you perform the test or measurement on each athlete, record this measurement in the appropriate area on the form. On the basis of your professional knowledge of what is within the appropriate range for the age and participation level of each athlete, you may recommend education by checking the Education box beside the specific test. Suggested cutoffs for when to