SPECIAL OLYMPICS
Youth Fitness Assessment Manual

Special Olympics Health
MADE POSSIBLE BY Golisano FOUNDATION

ACKNOWLEDGEMENTS

The Special Olympics Youth Fitness Assessment Manual was designed for coaches of Special Olympics youth athletes over the age of 8. A literature review was conducted to identify widely used field tests of youth fitness that have established validity and reliability. These assessments were piloted for feasibility by youth sport coaches from Special Olympics Colorado and Special Olympics Ohio. Their feedback was instrumental in determining the final list of tests included in this Manual and developing the corresponding guidance, protocols, and supporting resources.

Host Unified Champion School: Henderson High School – West Chester, Pennsylvania, United States

Special Olympics Pennsylvania athletes and Unified partners:
Bella Te
Brian Dolan
Cash Roak-Chandler
Chase Franks
Copper Downs
Gabe DeFlorio
Jake Brogan
Katie Brennan
Katie Nguyen
Lillian Lasher
Mabel Shiffer
Madeline Lott
Madison Ursillo
Mason Loeffler
Peter Talento
Sophia Czarzasty

Coaches and Staff:
Jaime Wagner, Henderson High School
Rob McMahon, Henderson High School
Calvin Trisolini, Special Olympics Pennsylvania

Special Olympics Health activities are supported by many sources, including in the United States, by Grant Number NU27DD000021 from the Centers for Disease Control and Prevention of the U.S. Department of Health and Human Services, with $18.1M (64%) financed with U.S. federal funds and $10.2M (36%) supported by non-federal sources. These contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention or the Department of Health and Human Services."

TABLE OF CONTENTS

Introduction

- Special Olympics Fitness and Importance of Fitness Assessment 5
- Types of Fitness Tests 6
- Assessment Planning 7
- Next Steps 9

Youth Fitness Testing Protocols

- **Balance**
  - Single Leg Stance 12
- **Cardiovascular Endurance**
  - 6-Minute Walk 13
- **Flexibility**
  - Modified Sit-and-Reach 14
  - Shoulder Flexibility 15
  - Trunk Lift 16
- **Power**
  - Standing Long Jump 17
- **Speed & Agility**
  - 10-Meter Shuttle Run 18
- **Strength** 19
  - Curl-Up 20
  - Hand Grip 21
  - Isometric Push-Up (Plank) 22
  - Timed Sit-to-Stand 23

Results and Applications

- Fitness Assessment Recording Sheet 24
- Athlete Scorecard 25
- Athlete Scorecard Homeplay: Why these Tests are Important 26
- Fitness Results in Coaching Practice 27

Supporting Resources

- Sample Communication: Fitness Assessment Day 30
- Reference Ranges 31
- References 33

INTRODUCTION

INTRODUCTION

SPECIAL OLYMPICS FITNESS

Fitness is the state of optimal health and performance through adequate physical activity, nutrition, and hydration. For our athletes to be fit, they must practice healthy habits year-round and across the lifespan. Special Olympics fitness programming and resources empower athletes and their supporters to take charge of their own health and fitness by providing education, social support, opportunities and tools to track progress.

Physical fitness is a key part of the Special Olympics mission. Good health and physical fitness are essential to sports participation and for overall quality of life. The physical activity components of endurance, strength, flexibility and balance transcend into all sports. Athletes who have higher levels of fitness may outperform their peers by running faster, throwing farther, and jumping higher. Fitter athletes are also at a lower risk of illness and injury, which could limit their participation in practices, competitions, or entire sports seasons. Healthy lifestyle choices in nutrition and hydration also optimize a player's performance.

Special Olympics is committed to providing sports opportunities for people with intellectual disabilities that span from early youth to late adulthood. Fitness can help our athletes reach their personal best each season and continue their journey in Special Olympics sports for their entire lives.

IMPORTANCE OF FITNESS ASSESSMENT

Special Olympics athletes strive toward their personal best in sport and in life. Fitness assessments provide insight into an athlete's strengths and areas of improvement. By conducting simple field tests, coaches, athletes, and families can get a clear picture of each athlete's fitness level so that they can celebrate current abilities and identify areas for growth. These insights can inform practice plans and at-home activities that support each athlete to train smarter, stay healthier, and perform better.

Fitness assessment can be an exciting opportunity for athletes to:

- **Learn more about their bodies,**
- **Recognize their progress, and**
- **Celebrate the results of their hard work.**

When done with encouragement, clarity, and purpose, fitness assessment can be a fun and motivating way to show athletes that they are making measurable progress in a way that impacts both sport performance and overall health.

INTRODUCTION

TYPES OF FITNESS TESTS

There are several components of fitness that contribute to sport performance and can be the focus of training programs. Tests can be categorized by the fitness component that they measure:

- **BALANCE** tests measure the ability to stay upright or maintain control of posture during sports movements. Improved balance means fewer missteps or falls during complicated skills or tasks, which improves success rates of challenging plays and reduces risk of injuries.
  - Single Leg Stance

- **CARDIOVASCULAR ENDURANCE** tests measure the ability to keep moving for long periods of time. Improved endurance might mean an athlete is able to practice with fewer breaks, outrun opponents, and go farther distances. Athletes with improved endurance often make less mistakes when fatigued.
  - 6-Minute Walk

- **FLEXIBILITY** tests measure the ability to move easily through a range of motion. Improved flexibility means it is easier to do sports skills with the correct form. Flexibility also helps prevent injuries.
  - Modified Sit-and-Reach
  - Shoulder Flexibility
  - Trunk Lift

- **POWER** tests measure the ability to move with force. Improved power means more explosive running starts, throws, and jumps.
  - Standing Long Jump

- **SPEED & AGILITY** tests measure the ability to accelerate or move quickly and how well an athlete quickly changes directions while moving. Improved speed & agility makes it easier to respond to moving targets like other players and balls, complete races or escape opponents.
  - 10-Meter Shuttle Run

- **STRENGTH** tests measure the maximum amount of force a muscle group can generate at a given time. Improved strength might mean an athlete is able to jump higher, throw farther, and sprint faster.
  - Curl-Up
  - Hand Grip
  - Isometric Push-Up Hold (Plank)
  - Timed Sit-to-Stand
  - Trunk Lift

INTRODUCTION

ASSESSMENT PLANNING

As you prepare for fitness testing, consider how you can create a positive and meaningful experience for your athletes. Select the tests that are best for your team and organize the session in a way that helps each athlete feel comfortable, confident, and ready to do their best. For example, some athletes may find it motivating to test in a group, while others may do better one-on-one. Most importantly, allow athletes to make the choice whether to participate in the testing or not.

When planning your team's fitness assessments, follow these simple steps:

DETERMINE HOW FREQUENTLY TO ASSESS

Aim to test your athletes **at least twice:**

- **Before** a sport season or fitness program
- **After** the sports season or fitness program to measure progress

If your season or program is longer than 12 weeks, consider testing at the midpoint also. This helps you adjust your training plans based on athlete progress.

SELECT YOUR FITNESS TESTS AND REVIEW THE PROTOCOLS

When selecting your tests, consider:

- Which tests reflect the fitness components most important for my athletes' sport or goals?
- Can I conduct these tests with the time, space, and equipment I have available?
- Am I confident in explaining and scoring these tests fairly and clearly?

Each test has specific steps. Take a few minutes to review the test protocols so that you can administer each test correctly including providing clear instructions and demonstrating how to do each test.

Aim to conduct **five or fewer tests** so athletes stay motivated and engaged. For fitness tests to be accurate and give meaningful results, **athletes must give their best effort.** This can be challenging for youth with intellectual and developmental disabilities (IDD), because hard work can feel uncomfortable or even scary. Some athletes may not recognize what maximum effort feels like and stop early. Coaches can support them by offering practice runs, giving lots of encouragement, and explaining that discomfort is normal and okay.

INTRODUCTION

ASSESSMENT PLANNING CONTINUED

PREPARE FOR THE ASSESSMENT DAY

Share Details: Using the Sample Communication template in the Supporting Resources section, share details about the session with your athletes and their caregivers.

Gather Your Equipment: Review the list of equipment for each test and make sure you have access to the items in working order.

Enlist Support: Support is available to help make your fitness testing session more efficient. You don't have to do it all yourself!

- **Connect with your Special Olympics Program:** they might be able to assist you in identifying additional volunteers, such as students, who can help you.
- **Partner with a Special Olympics Fitness Coach:** fitness professionals may be able to co-lead the assessment days, suggest tests, or help interpret results.

Determine the Schedule and Flow: When planning the Fitness Assessment Day, consider the order of tests and how athletes transition between tests. Ensure there is sufficient time for athletes to rest between tests.

FITNESS ASSESSMENT DAY IS HERE!

Set Athletes Up for Success: Taking time to familiarize athletes with the tests and expectations can ease anxiety, increase confidence, and improve performance.
Follow these steps:

- **Show athletes the testing space and equipment.**
- **Introduce the testers.**
- **Review the order of tests to help athletes prepare for what is ahead.**
- **Try it out!** Each testing protocol includes steps to explain the test purpose, demonstrate the test, and allow athletes to practice.

Encourage Best Effort: To draw out a best effort on the tests, start the session with a few **short "best effort" drills,** like fast feet or jumping on the spot, and say: *Try this as fast as you can! It's okay if you feel your heart beating or muscles working. That means you're doing great!*

Ensure accuracy when you record scores on the Fitness Assessment Recording Sheet. Make sure to set up the equipment carefully and measure and count correctly. Being accurate helps you see how each athlete is improving over time.

INTRODUCTION

NEXT STEPS

After your fitness testing session, review the results with your assistant coaches, as well as with the athletes and their families. Use the Athlete Scorecard and Homeplay activity as resources to help you explain the results and why they are important. Frame all feedback as part of the athlete's journey – not as a pass or fail.

Coaches can:

- Determine team trends (e.g., strong flexibility but low endurance) and adjust training plans.
- Set meaningful team goals, focusing on areas for improvement.
- Guide athletes in understanding their fitness scores and setting personal goals.
- Track progress over time to boost motivation and celebrate improvements. Recognize growth with simple rewards like stickers, certificates, or shout-outs.
- Compare each athlete's fitness assessment results with their most recent FUNfitness screening data to monitor progress and identify areas requiring additional support. The tests included in both the Fitness Assessment Manual and the Special Olympics FUNfitness screening protocol are:
  - Shoulder Flexibility Stretch/Modified Apley Test
  - Modified/V Sit-and-Reach
  - Sit-to-Stand
  - Isometric Push-Up Hold
  - Hand Grip
  - Single Leg Stance

Athletes can:

- See where they've improved and feel proud of their hard work.
- Help athletes identify key focus areas to enhance their sport performance and build everyday strength. Use these insights to design personalized exercise plans that keep them active and engaged throughout the week.
- Set personal goals that are important to them, such as doing more curl-ups or running longer without stopping.
- Stay motivated by tracking their progress and celebrating every step forward!

INTRODUCTION

NEXT STEPS CONTINUED

Parents and Caregivers can:

- Understand how their athletes are developing in ways that affect sport and daily life.
- Celebrate effort and progress at home, even when changes are small.
- Support their athlete's goals with healthy routines, encouragement, and fun physical activities.
- Practice balance, strength, flexibility, and endurance at home together as a family using High 5 for Fitness videos, guides, and cards.
- Work with coaches to promote consistency and a growth mindset.
- Compare each athlete's fitness assessment results with their most recent FUNfitness screening data to monitor progress and identify areas requiring additional support. The tests included in both the Fitness Assessment Manual and the FUNfitness screening protocol are:
    - Shoulder Flexibility Stretch/Modified Apley Test
    - Modified/V Sit-and-Reach
    - Sit-to-Stand
    - Isometric Push-Up Hold
    - Hand Grip
    - Single Leg Stance

TESTING PROTOCOLS

Balance

SINGLE LEG STANCE

The Single Leg Stance test measures static balance and postural control by standing on one foot as long as possible.

SUPPLIES & SETUP

- **Supplies:** Stopwatch
- **Time:** About 1-2 minutes per athlete
- **Space:** Flat, non-slip surface
  - Position the athlete near a stable object, like a wall or chair, for safety. They should not use it for support during the test.

BEFORE THE TEST

- **Explain:** *We're going to see how long you can balance on one leg. The goal is to stay as still as possible, without moving your hands or putting your foot down.*
- **Demonstrate:** Show the athlete the correct form for standing on one leg without holding on.
  - Stand with feet shoulder-width apart and hands on the hips. Stand near something stable just in case.
  - Place one foot against the inside of the opposite knee. If that's too tricky, it's okay to bend the knee and just keep the foot off the ground. Keep the standing leg straight and eyes forward.
- **Practice:** Let the athlete practice the standing position on each leg and hold for a few seconds.

TEST DIRECTIONS

- **Cue Test:** *Lift your foot up and get steady on one leg. I will time how long you can balance without moving. Ready? Go!*
- **Choose a Leg:** Athlete can start with either leg, just be sure to record which one.
- **Start timing** once they are in the correct position and balanced.
- **Encourage and promote imagination** like being a flamingo trying not to fall into the pond. Praise the athlete for staying focused!
- **Stop timing** when the athlete moves their standing foot, their lifted foot touches the ground or loses contact with the knee, their hands come off their hips, or they grab onto something for balance.
- **Record:** Write down the number of seconds and which leg (left or right) the athlete used.
- **Repeat:** Do the test twice, one time on each leg.

MAKE IT FUN

- **Flamingo Contest:** Have a competition among teammates.
- **Balance to the Beat:** Play upbeat music while the athlete is balanced and see how far into a song they go.
- **Balance Badges:** Give out stickers for the longest balance and for good effort.
- **Be Inclusive:** If an athlete can only hold the position briefly, then set a time period (e.g., 30-60 seconds) and count how many times the athlete breaks form or touches their foot down. Challenge the athlete to keep going even after they touch their foot. Count and record the touches and track if there are fewer the next time you test. Be sure to record this adaptation on the score sheet. Or just skip this test.

Cardiovascular Endurance

6-MINUTE WALK

The 6-Minute Walk test measures cardiovascular endurance by walking as far as possible in 6 minutes.

SUPPLIES & SETUP

- **Supplies:** Stopwatch, 2 cones, measuring tape, lap counter (optional, but helpful)
- **Time:** About 10 minutes per athlete
- **Space:** Indoor or outdoor track, long hallway, gym, or field that has a flat surface
  - A 30-meter straight walking course is easiest to mark out and measure (15 meters is acceptable). Mark the starting point with a cone and measure 30 meters and mark the turnaround point.
- **Pacer (optional, highly encouraged):** Using a pacer can help athletes stay motivated, prevent boredom, and maintain a steady pace throughout the test. Consider having a Unified partner serve as the role of pacer.

BEFORE THE TEST

- **Explain:** *This is an endurance test to see how far you can walk in 6 minutes. You will walk as fast as you can, but do not run or jog.*
- **Demonstrate:** Walk 2-3 laps of the course.
  - Walk back and forth between the cones at a brisk pace.
  - Stay close to the cones on the turns and do not slow down.
- **Practice:** Let the athlete walk 1-2 laps and provide guidance on the turns and speed.

TEST DIRECTIONS

- **Cue Test:** *Walk like you are in a hurry and keep going for 6 minutes. Ready? Go!*
- **Encourage:** Cheer on the athlete to keep a brisk walking pace. Lots of cheering is helpful because athletes may lose focus or interest.
- **Use a Pacer:** A teammate or coach can be a pacer and walk a few steps ahead of the athlete and give encouragement throughout the test.
- **Count the number of 30-meter laps.**
- **Give notice with 30 seconds left.**
- **Say STOP** at exactly 6 minutes. The athlete should freeze on the spot.
- **Mark the spot** where the athlete finished and measure the distance from the cone to the stopping point. If you are testing multiple athletes at the same time, you can have them hold an item (e.g., scarf, pen) and place it on the ground to mark where they stop.
- **Calculate:** Walking distance is total number of laps x 30 meters + extra distance after the last full lap.
- **Record:** Write down the distance walked (in meters).

MAKE IT FUN

- **Music:** Play upbeat songs during the walk to keep athletes energized. Have them pick songs!
- **Imagine:** *Pretend your favorite person (superhero, animal, etc.) is in the distance and you are trying to catch up to them.*
- **Milestones:** Cheer when a certain number of laps is achieved.
- **Tokens:** Have athletes collect a coin or "power token" after each lap to stay motivated.

Flexibility

MODIFIED SIT-AND-REACH

The Modified Sit-and-Reach test measures hamstring and lower back flexibility by reaching forward as far as possible with legs straight andfeet flexed.

SUPPLIES & SETUP

- **Supplies:** Measuring tape, floor tape, or chalk, Sit-and-Reach flexibility box (optional)
- **Time:** About 30 seconds per athlete
- **Space:** Flat non-slip surface
  - Create a 24-inch line on the floor using tape, chalk, or use an existing line. This is the baseline.
  - Secure a measuring tape perpendicular to the baseline with the end of the tape at least 10 inches on one side of the baseline. This is the measuring line.
  - The 10-inch mark is the point where the two lines intersect and is considered the zero point.

BEFORE THE TEST

- **Explain:** *This test checks how flexible or 'bendable' your legs and lower back are. You'll sit on the floor and reach forward as far as you can while keeping your legs straight.*
- **Demonstrate:** Show the athlete how to sit and reach forward using the correct form. Do 2-3 slow repetitions.
  - Remove shoes and sit on the floor with legs straight and apart, making a V shape (feet about 12 inches apart). Position heels just behind the baseline. Extend arms forward with one hand on top of the other, palms facing down. Fingers should start on the measuring line between the legs.
  - Keeping legs straight, reach forward slowly as far as possible and slide hands along the measuring line. Hold the farthest reach for 1-2 seconds.
- **Practice:** Let the athlete practice slowly reaching all the way forward 2-3 times. *Give simple tips like keep your legs straight or reach slowly and smoothly, no bouncing.*
- **Caution:** If the athlete is unable to fully straighten their legs or has pain, encourage them to have "soft knees" and have a slight bend. Record this on the score sheet.

TEST DIRECTIONS

- **Cue Test:** *Reach forward slowly as far as you can and hold it. Take a breath in and then reach forward as you breathe out. Keep your legs straight. I will measure how far you go. Ready? Go!*
- The **athlete reaches forward** with both hands along the line, holding the farthest distance.
- **Encourage:** Praise slow movement and straight legs. Cheer them on!
- When they get to their farthest point, **measure the distance** on the line where their fingertips reach.
- **Record:** Write down the distance in inches or centimeters.
  - If the athlete's reach is before the baseline, then record the distance as a negative number.
  - If the reach is past the baseline, record the distance as a positive number.
- **Repeat:** Do the test 3 times with at least 30 seconds of rest between attempts.

MAKE IT FUN

- **Props:** Place something fun like a coin or a prize at the end of the measuring line for athletes to reach for.
- **Visual Cues:** Place star stickers at different distances along the measuring line and call them "stretch stars" to motivate them to reach far.

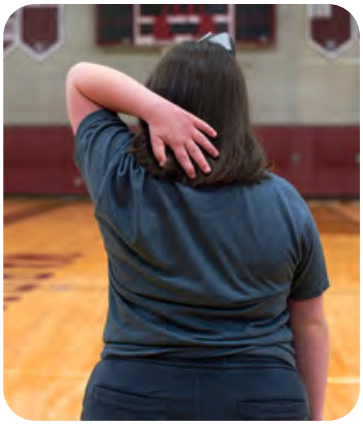
Flexibility

SHOULDER FLEXIBILITY

The Shoulder Flexibility test measures shoulder flexibility by reaching behind the back and trying to touch fingers together.

SUPPLIES & SETUP

- **Supplies:** Ruler or tape measure
- **Time:** About 30 seconds per athlete



BEFORE THE TEST

- **Explain:** *This test checks how flexible your shoulders are. You will try to touch your fingertips together behind your back. One arm goes over the shoulder, the other comes up from below.*
- **Demonstrate:** Show the movement slowly and hold for a few seconds.
  - Stand tall and raise one hand. Bend the elbow so it points upwards and reach the hand down the back. Palm should touch the back so that fingers point down.
  - Reach the other arm behind the lower back. Bend the elbow so that it points downwards. Palm should face away from the back and fingers point up.
  - Get the fingertips of both hands to touch or as close together as possible.
- **Practice:** Let the athlete practice the position two times before taking the test. Gently guide their arms if needed.

TEST DIRECTIONS

- **Cue Test:** *Slowly reach back like you are trying to scratch your back. Try to touch your fingertips, I will measure how close they are. Ready? Go!*
- **Encourage:** Praise good effort and slow movement – this can be challenging for athletes.
- After they begin, the **athlete holds their best** position for 2-3 seconds while you measure.
- Use a ruler or tape measure to **measure the distance** between the tips of the middle fingers.
- **Record:**
  - If the fingertips don't touch, write down the distance in inches or centimeters between them as a negative number.
  - If fingertips touch, then record 0. If fingertips overlap, write down the overlap distance as a positive number.
  - Note which arm was on top (right or left).
- **Repeat:** Test both sides, so each arm is on top and then on bottom.

MAKE IT FUN

- **Challenge:** Make this a fun challenge. *Can you high-five yourself behind your back?*
- **Imagine:** *Your fingers are magnets trying to find each other behind your back.*

Flexibility and Strength

TRUNK LIFT

The Trunk Lift test measures lower back flexibility and strength by raising the upper body off the ground and holding it briefly.

SUPPLIES & SETUP

- **Supplies:** Ruler or measuring tape, mat
- **Time:** About 1 minute per athlete
- **Space:** Flat surface

BEFORE THE TEST

- **Explain:** *This test checks how strong your lower back is. You'll lie on your belly and lift your chest up, and we'll see how high you can go.*
- **Demonstrate:** Show the athlete 1-2 slow repetitions and briefly hold your best trunk lift position, using the correct form.
  - Lie face-down on the mat with legs straight. Arms are straight with hands placed down by the hips.
  - Lift the chest up as high as possible using lower back muscles – no hands! Look straight ahead. Hold the lift for 3-5 seconds.
- **Practice:** Let the athlete practice 2-3 slow trunk lifts.

TEST DIRECTIONS

- **Cue Test:** *Lift your chest up as high as you can and I will measure from your chin to the floor. Ready? Go!*
- **Athlete lifts their upper body** and looks straight ahead, holding their highest position for 3-5 seconds.
- **Encourage:** Praise slow movements and all efforts to lift.
- When they reach their highest point, **measure the distance from their chin to the floor.**
- **Record:** Write down the distance in inches or centimeters from chin to floor.
  - If the athlete cannot lift off the floor at all, record 0 cm or inches.
- **Repeat:** Do the test 3 times with at least 30 seconds of rest between attempts.

MAKE IT FUN

- **Name It:** Give the test a fun name like "Flying Superhero" or "Seal Stretch."
- **Use a Target:** Have something funny placed out in front of the athlete to peek at when they lift such as a teammate making a silly face, a poster, or stuffed animal.

Power

STANDING LONG JUMP

The Standing Long Jump test measures leg power by jumping forward as far as possible using both feet.

SUPPLIES & SETUP

- **Supplies:** Tape measure, floor tape or preexisting line, chalk
- **Time:** About 1 minute per athlete
- **Space:** Flat, non-slip surface
- **Setup:**
  - Mark a takeoff line with floor tape or use a preexisting line to jump from.
  - It is easiest (but not necessary) to measure jump distance if you secure the tape measure to the floor.

BEFORE THE TEST

- **Explain:** *This test checks how strong and powerful your legs are. You will jump forward as far as you can using both feet. It will be like jumping out over a big puddle or an imaginary hole in the ground!*
- **Demonstrate:** Show the athlete 1-2 jumps using the correct form. Focus on jumping forward (far, long) and not upward.
  - Stand with feet shoulder-width apart with toes just behind the takeoff line.
  - Bend the knees and swing the arms to help with forward movement.
  - Jump forward with both feet at the same time and land on both feet together. Keep balanced without falling backward.
- **Practice:** Let the athlete practice 1-2 jumps.

TEST DIRECTIONS

- **Cue Test:** *Push hard with your legs and jump way out keeping your feet together. Freeze like a statue when you land. Ready? Go!*
- **Stand to the side** with the measuring tape ready (if not already secured to the floor).
- **Encourage jumping forward** (instead of upward) can be new and difficult for some athletes.
- **Mark the back of the heel** closest to the start line where the athlete first lands with chalk or tape. Measure the distance from the start line to the heel mark.
- **Record:** Write down the distance in in or cm.
- **Repeat:** Do the test 2-3 times with at least 1 minute of rest between attempts.

MAKE IT FUN

- **Target Zones:** Create visual targets with colored tape at different distances, such as purple (furthest jump distance), green (middle jump distance), and yellow (closest jump distance).
- **Sound Effects:** Play a “whoosh” sound when an athlete jumps.
- **Challenge:** Pair athletes and have them see who can jump the farthest

Speed & Agility

10-METER SHUTTLE RUN

This 10-Meter Shuttle Run test measures running speed and how quickly an athlete can change direction.

SUPPLIES & SETUP

- **Supplies:** Stopwatch, 2 cones or floor tape, measuring tape, 2 small props (blocks, beanbags, balls)
- **Time:** About 5 minutes per athlete
- **Space:** Flat, non-slip surface
- **Setup:**
  - Mark two lines 10-meters apart with cones (or floor tape).
  - Place 2 props on the starting line.

BEFORE THE TEST

- **Explain:** *This is a test to see how fast you can run and change directions. You'll pick up two blocks and run back and forth at top speed.*
- **Demonstrate:** Complete the shuttle run at a slow pace and show the athlete how to pick up and place the props.
  - Start by standing behind the starting line with two props on the line.
  - Pick up one prop, run to the far line, and place the prop down on the line (no throwing).
  - Run back to the start line, pick up the second prop, run to the far line and place it down.
  - Sprint back to the start line.
- **Practice:** Let the athlete walk through the pattern once while practicing picking up and placing the props.

TEST DIRECTIONS

- **Cue Test:** *Run as fast as you can and I will time you. Ready? Go!*
- **Encourage:** Cheer on the athlete to run as fast as possible, make quick turns, and run through the finish.
- **Stop timing** when the athlete crosses the line after placing both blocks.
- **Record:** Write down the time in seconds.
- **Repeat:** Do the test 2 times with at least 3 minutes of rest between attempts.

MAKE IT FUN

- **Props:** Use small stuffed animals, pieces of fruit, or funny objects instead of blocks or beanbags.
- **Name It:** Create a challenge like "Animal Dash" or "Fruit Frenzy" and have athletes use their imagination for moving the objects quickly between the lines.

Strength & Muscular Endurance

CURL-UP

The Curl-Up test measures core strength and muscular endurance by doing as many curl-ups as possible at a steady pace.

SUPPLIES & SETUP

- **Supplies:** Mat
- **Time:** About 1-2 minutes per athlete
- **Space:** Flat surface

BEFORE THE TEST

- **Explain:** *We're going to test how strong your stomach muscles are by doing curl-ups. You'll do as many curl-ups as you can without stopping.*
- **Demonstrate:** Show the correct curl-up form and do a few repetitions at a slow, steady pace.
  - Lie back on the mat with knees bent and feet flat on the ground. Hands rest on the front of the thighs.
  - Slowly lift the shoulders and head while sliding hands up until fingertips touch the knees. Slowly lower back down until the head touches the mat.
- **Practice:** Let the athlete practice 2-3 curl-ups. Give feedback to correct their form.

TEST DIRECTIONS

- **Cue Test:** *Do as many curl-ups as you can in a row using the proper form. I will count how many you do. Ready? Go!*
- The athlete should **keep a steady pace**, about one curl-up every 3 seconds, without stopping or pausing.
- **Count** only the repetitions using **the correct form.**
- **Encourage:** Cheer on the athlete with positive words! Counting out loud can be motivating, too.
- **Stop the test** when the athlete doesn't use the correct curl-up form for two repetitions in a row or when they stop or pause. This could be that their:
  - Shoulders don't come up,
  - Fingertips don't reach the knees,
  - Head doesn't touch the mat,
  - Feet lift off the ground
- **Record:** Write down the total number of curl-ups completed.

MAKE IT FUN

- **Challenge**: Turn it into a friendly challenge between athletes. Who can set the team curl-up record? Try a team challenge and add up the total curl-ups of all athletes for a team tally! Keep track before and after the sport season.
- **Athletes as Counters:** Have athletes or Unified partners count the number of curl-ups completed for each other and provide encouragement.
- **Props**: Place a sticker, soft toy or other object on the athlete's knees for them to reach towards.
- **Be Inclusive:** If an athlete is unable or unwilling to lower onto the floor, have them do a modified curl-up in a seated position. Place palms on the thighs and reach forward to touch the toes, then raise back up to sitting. Be sure to record this adaptation on the score sheet.

Strength

HAND GRIP

The Hand Grip test measures overall muscular strength, especially in the upper body, by squeezing a dynamometer as hard as possible.

SUPPLIES & SETUP

- **Supplies:** Handgrip dynamometer
- **Time:** About 2 minutes per athlete

BEFORE THE TEST

- **Explain:** *This test checks how strong your muscles are. You're going to squeeze the grip strength tool as hard as you can.*
- **Demonstrate:** Show the athlete how to hold and squeeze the dynamometer.
  - Adjust the dynamometer for the athlete so that their fingers wrap around the middle of the handle. Set the dial to zero.
  - The elbow is bent at 90-degrees and the arm should stay close to the side of the body.
- **Practice:** Let the athlete practice with each hand and give feedback to make sure their form is correct.

TEST DIRECTIONS

- **Choose a Hand:** Athlete starts with either hand, just be sure to record which one.
- **Cue Test:** *Squeeze as hard as you can and hold it for 5 seconds! Ready? Go!*
- **Encourage:** Count out loud for 5 seconds. Cheer on the athlete to give their best effort!
- **Record:** Write down the number on the dial and the units (pounds or kilograms), and which hand (left or right) was tested.
- **Reset:** Always reset the dynamometer to zero before the next squeeze.
- **Repeat:** Do the test 2 times on each hand with at least 30 seconds of rest between attempts.

MAKE IT FUN

- **Athlete Support:** Athletes can help reset the dial or encourage their teammates.
- **Imagine:** Encourage athletes to pretend that they are a superhero with “super strength”.
- **Self-Competition:** Athletes can compare the strength of their left and right hands to see which one is stronger. Encourage athletes to beat their score on their second trial.

Strength & Muscular Endurance

ISOMETRIC PUSH-UP (PLANK)

The Isometric Push-Up test measures upper body and core strength and muscular endurance by holding a push-up position as long as possible without moving.

SUPPLIES & SETUP

- **Supplies:** Stopwatch, mat
- **Time:** About 1-2 minutes per athlete
- **Space:** Flat surface

BEFORE THE TEST

- **Explain:** *We're going to see how long you can stay strong like a board in a push-up position. Try not to let your body sink or wiggle.*
- **Demonstrate:** Show the athlete the correct straight form for the pushup and hold for a few seconds.
  - Place hands flat on the ground, under the shoulders, and arms straight. Legs are out straight, and toes are on the ground.
  - From head to heels, keep the body straight and level. **Hips should not drop, and the bottom should not be up.**
- **Practice:** Let the athlete practice the push-up position and hold for a few seconds. Give them feedback like tighten your belly, press through your feet and hands, make your body long and strong.

TEST DIRECTIONS

- **Cue Test:** *I am going to time to see how long you can hold the pushup position. Keep your body tight. Ready? Go!"*
- **Start timing** once they are in the correct position with their body straight.
- **Encourage:** Remind the athlete to breathe while holding the straight position and cheer them on for being so strong and giving a great effort.
  - If the athlete starts to lose form during the test, remind them how to correct it or gently guide them.
- **Stop timing** when the athlete doesn't have the correct form for 5 seconds. This could be that they are:
  - Dropping or lifting their hips,
  - Bending their arms, or
  - Bending their knees down.
- **Record:** Write down the number of seconds that the athlete held the correct position.
- **Repeat:** If the athlete would like multiple attempts, do the test 2 times with at least 3-5 minutes of rest between attempts.

MAKE IT FUN

- **Name It:** Give the test an exciting name like "Plank Push-Up Power Hold" or "Iron Body Challenge."
- **Imagine:** *There is a long line from your heels, up your back to the top of your head.*
- **Be Inclusive:** If an athlete is unable to hold the push-up position at all, have them bend their knees to touch the ground and hold. If an athlete is unable or unwilling to lower onto the floor, have them hold their arms out straight with palms flat like a push-up position (while standing or sitting). Have someone go palm-to-palm with the athlete and put a little pressure so they have to push. Be sure to record this adaptation on the score sheet. Or, just skip this test.

Strength & Muscular Endurance

TIMED SIT-TO-STAND

The Timed Sit-to-Stand test measures lower body muscular strength and endurance by standing up and sitting down 10 times as fast as possible.

SUPPLIES & SETUP

- **Supplies:** Stopwatch, chair (without armrests) or bench
- **Time:** About 1 minute per athlete
- **Space:** Flat, non-slip surface
  - Place chair or bench against a wall for stability, if possible

BEFORE THE TEST

- **Explain:** *We are checking how strong your legs are. You will stand up and sit down 10 times as fast as you can without using your hands.*
- **Demonstrate:** Show the athlete a few repetitions at a medium pace emphasizing full standing and full sitting without using arms to push off.
  - Sit on the chair or bench with feet flat on the ground about hip distance apart
  - Keep arms bent 90 degrees and elbows tucked in.
  - Stand up all the way and then sit back down fully.
- **Practice:** Let the athlete practice 2-3 repetitions of the movements.

TEST DIRECTIONS

- **Cue Test:** *I am going to time to see how fast you can do the sit and stand 10 times. No hands! Ready? Go!*
- **Start timing** when they begin the first standing movement.
- **Encourage:** It helps to count the repetitions out loud and remind to *Stand up tall! and No hands!*
- **Stop timing** when the athlete sits down after the 10th stand.
- **Record:** Write down the number of seconds for the athlete to complete 10 repetitions.
- **Repeat**: Do the test 2 times with at least 1 minute of rest between attempts.

MAKE IT FUN

- **Beat the Clock:** Create a challenge for the second trial to beat your time from the first one.
- **Imagine:** *You are a rocket ship blasting upwards as you stand up, and your legs are gaining power or 'getting energized' as you touch the chair.* Say *Blast up!, Sit down or Power up!, Sit down,* to the athlete as they stand and sit.

RESULTS AND APPLICATIONS

FITNESS ASSESSMENT RECORDING SHEET

Special Olympics Health
MADE POSSIBLE BY Golisano FOUNDATION

Athlete Name: _____ Assessment Date: _____

Test Name	Score				Notes (Adaptations, prompts used, etc.)
Single Leg Stance (sec) Record time that the position is held to the nearest second.	Right	Left			
6-Minute Walk (m) Walking distance is total number of laps x 30 meters + extra distance after the last full lap. Record the distance to the nearest meter.					
Modified Sit-and-Reach (in/cm) (+/-) Record the distance from fingertips to the baseline (negative) or past the baseline (positive) in inches or centimeters. Record "0" If fingertips just touch baseline.	Trial 1	Trial 2	Trial 3		
Shoulder Flexibility (in/cm) Record the distance apart (negative) or overlap of (positive) the tips of middle fingers in inches or centimeters. Record "0" if fingertips just touch together.	Right	Left			
Trunk Lift (in/cm) Write down the distance from chin to floor in inches or centimeters. If the athlete cannot lift off the floor at all, record "0".	Trial 1	Trial 2	Trial 3		
Standing Long Jump (in/cm) Record the distance jumped in inches or centimeters for each trial.	Trial 1	Trial 2			
10-Meter Shuttle Run (sec) Record the time in seconds for each trial.	Trial 1	Trial 2			
Curl-Up (#) Record the total number of curl-ups completed with proper form.					
Hand Grip (lb/kg) Record the score of each trial on the left and ride hands to the nearest pound or kilogram.	Right		Left		
	Trial 1	Trial 2	Trial 1	Trial 2	
Isometric Push-Up Hold (sec) Record the total time that correct position is held to the nearest second.					
Timed Sit-to-Stand (sec) Record the total time to perform the 10 repetitions to the nearest second.					

ATHLETE SCORECARD:

Know your Scores - Own your Fitness

Special Olympics Health
MADE POSSIBLE BY Golisano FOUNDATION

Understand and use your Fitness Assessment results to achieve optimal fitness! Your coach will complete this scorecard with you for you to take home.

Athlete Name: _____ Assessment Date: _____

Test Name	My Best Score	How I feel About it (Circle One)	My Target Score

TIPS FOR IMPROVING FITNESS:

MOVE MORE

Your High 5 for Fitness physical activity goal is to **move 60 minutes or more per day!** Try adding up your activity minutes for one week and see how you compare!

Check out these Special Olympics resources for exercise ideas and inspiration:

- High 5 Exercise Cards and Videos
- Unified Fitness Kits
- School of Strength
- Fitness through Sport Playbook

EAT HEALTHY AND STAY HYDRATED

Good nutrition and hydration will provide you with energy, improve recovery, promote endurance, and support a healthy lifestyle. Aim to drink water every day and eat foods from the 5 food groups!

Check out these resources for nutrition information and inspiration:

- High 5 Guides
- School of Strength: Snack Zone
- Fitness through Sport Playbook

Don't forget to complete a dynamic warm-up and cool-down before and after every single workout, practice or competition!

ATHLETE SCORECARD HOMEPLAY:
Why these Tests are Important

Special Olympics Health
MADE POSSIBLE BY Golisano FOUNDATION

Each sport requires different fitness skills, and each athlete has different interests, strengths and areas for improvement.
Use the list below to see how each fitness test relates to your sport and your daily life.

	What is Helps With	Where I Use this in My Sport	Where I Use this in Daily Life
Balance	Keeping your balance when you move, turn, or land		
Endurance	Having enough energy to keep going during games or practice		
Flexibility	Moving your body in a safe and controlled way		
Speed & Agility	Jumping, pushing, throwing, or staying still without falling		
Strength & Power	Running fast, reacting quickly, and changing direction during games		

RESULTS AND APPLICATIONS

FITNESS RESULTS IN COACHING PRACTICE

Fitness testing is a powerful tool – not just for measuring where athletes are today, but for guiding where they can go next! Once testing is complete, here's how you can make the most of the results:

- **TALK ABOUT THE TESTING WITH YOUR ATHLETES:** Once the testing session is complete, it is a good idea to find out how the athletes felt about it. Here are a few reflection questions that you could use to discuss the session with your athletes.
    - *What was something you were proud of (giving your best effort, cheering on your teammates, setting a new personal record) during the testing?*
    - *What is something you would like to do differently (stay relaxed, hydrate more before testing, pace yourself, ask questions about the instructions) next time?*
- **CELEBRATE STRENGTHS AND SET GOALS:** Highlight what each athlete does well to build confidence, then work together to identify areas for improvement. Use results to create personalized, motivating goals that can be tracked over time.
- **SHARE RESULTS WITH ATHLETES AND MONITOR PROGRESS OVER TIME:** Repeat tests regularly to monitor improvements and adjust training. Even small gains are worth celebrating – they show that the athlete is building fitness and gaining confidence.
- **FOCUS BEYOND THE NUMBERS:** Fitness testing can also be a great way to recognize and encourage:
    - Effort and participation
    - Overcoming anxiety or trying something new
    - Learning the correct technique or how to complete a test

These are all meaningful outcomes—especially for younger athletes—and should be recognized and reinforced just as much as physical scores.

- **USE REFERENCE RANGES CAREFULLY:** Existing fitness norms can provide general reference points, but they may not reflect the diversity of Special Olympics athletes or all ages and ability levels. Avoid using reference ranges to compare athletes to each other or to pressure individuals to meet a specific "standard." Instead, focus on growth from each athlete's own starting point.

RESULTS AND APPLICATIONS

FITNESS RESULTS IN COACHING PRACTICE CONTINUED

- **CREATE YOUR OWN TEAM BENCHMARKS:** Consider building your own team-based benchmarks. Tracking average scores over time gives your group a customized sense of progress and helps guide program planning.

- **EDUCATE ATHLETES & SUPPORTERS:** Help athletes and their supporters understand how improved fitness supports their sport goals – whether it's building strength to throw farther or increasing endurance to stay active longer during competition.

- **CONSULT EXPERTS WHEN NEEDED:** For guidance on interpreting results, setting safe training plans, or tailoring fitness activities to your athletes' needs, consult with:

    - Special Olympics Fitness Coach: a certified fitness or health professional trained to work with Special Olympics athletes

    - Your Special Olympics Program staff. They may be able to connect you with a FUNfitness Clinical Director who can provide additional support

    - Sport-specific resources from Special Olympics or your sport's governing body

FITNESS TESTING IN CONTEXT: THE WHOLE ATHLETE APPROACH

Fitness testing should never be viewed in isolation. An athlete's physical fitness, physical activity levels, fundamental motor skills, and understanding of movement are all interconnected—and each element plays a role in their overall development. These pieces work together to support positive health, skill development, and lifelong participation in sport and daily life.

SUPPORTING RESOURCES

SUPPORTING RESOURCES

SAMPLE COMMUNICATION: FITNESS ASSESSMENT DAY

You are encouraged to share information about your Fitness Assessment Day with athletes and their families in advance. This sample communication is a template for you to use!

Subject: Get Ready to Move — Fitness Assessment Day is Coming!

Hi [Athlete's Name or Team Name],

We're excited to let you know that Fitness Assessment Day is just around the corner! Fitness assessments help us understand athlete's strengths and areas for growth. These insights help celebrate progress and guide training during sports practice, at home, and beyond.

This is your chance to show off your strength, speed, and spirit — and most of all, to have some fun and see how far you've come!

Here's how to get ready:

What to Wear

- Comfortable clothes you can move in
- Running shoes

Before You Arrive

- Be Rested: try not to do any big workouts or games within 2 hours before testing
- Be Hydrated: drink water throughout the day
- Be Fueled: eat a meal or snack so you've got energy to give your best

What to Expect

We'll start with a fun group warm-up, go through a few simple fitness activities, and cheer each other on along the way. Nothing to be nervous about – just come ready to try your best and support your teammates!

A Quick Note to Parents and Caregivers

We would love your help! If you're available to volunteer during the testing session, please let us know. Whether it's helping guide athletes through stations or cheering them on, your support makes a big difference.

Thank you for being part of the team!

See you soon,

SUPPORTING RESOURCES

REFERENCE RANGES

The **Reference Ranges** below are designed to help coaches interpret their athletes' fitness assessment results and effectively tailor sports training. **Each assessment includes two sets of ranges:** one for youth with typical development and one for youth with intellectual and developmental disabilities (IDD). Depending on your athletes' skill levels and performance, you can choose the reference range that best fits your group.

These ranges aren't meant to be rigid standards or norms. Instead, they're flexible references to help identify strengths, monitor progress, and support personalized growth. To spark interest and motivation, we've also included **Creative References** which are ideas to help coaches engage athletes in their results in meaningful and energizing ways.

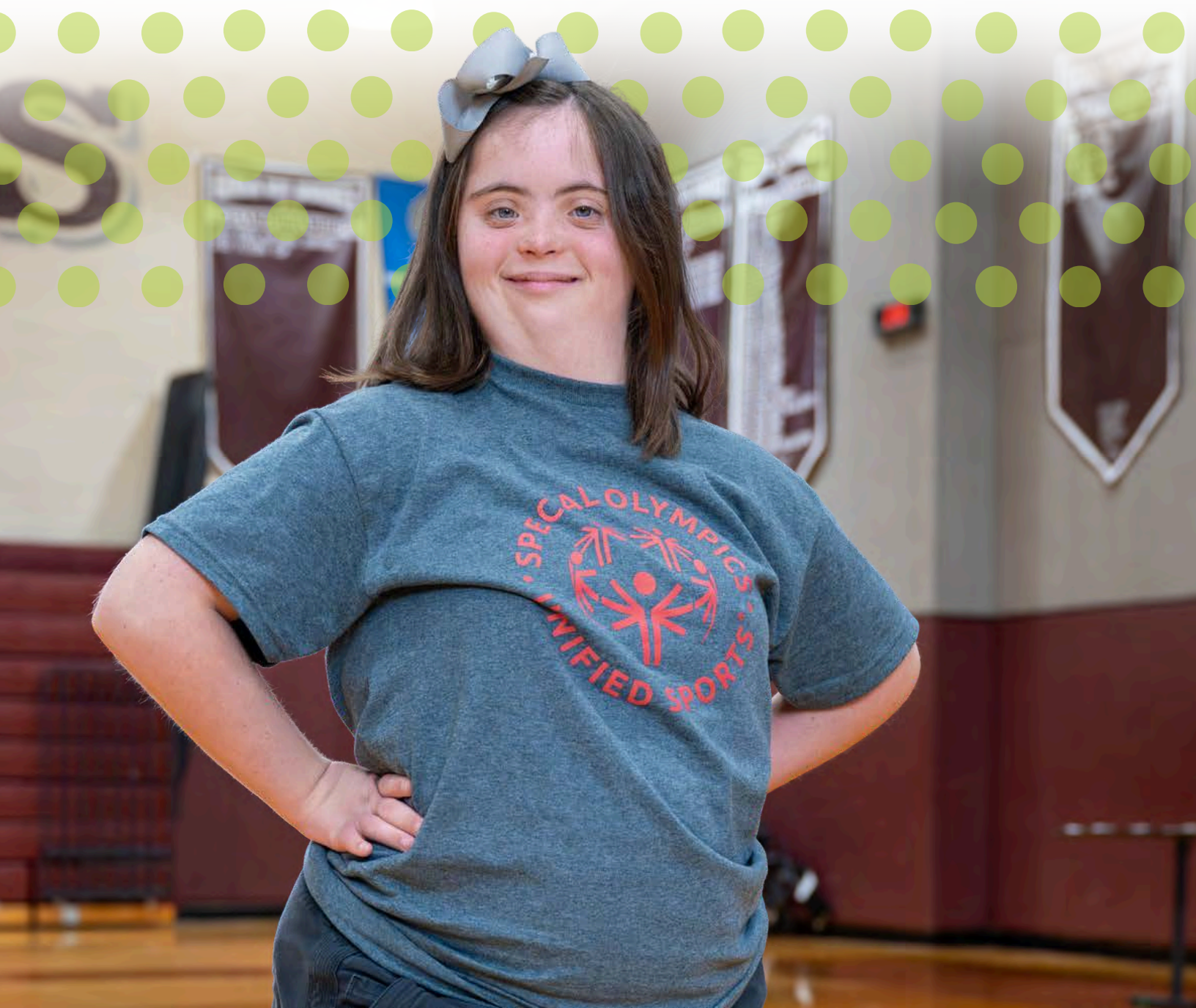
For deeper insights and goal-setting support, coaches are encouraged to connect with a Special Olympics Fitness Coach or a local fitness professional. Keep building confidence, celebrating progress, and making fitness fun for every athlete!

SUPPORTING RESOURCES

Fitness Assessment	Range for Youth with Typical Development	Range for Youth with IDD*	Creative Reference
Single Leg Stance	2 – 120 seconds	15 – 29 seconds	What are some birds that can stand on one leg?
6-Minute Walk	537 – 761 meters or 1762 - 2497 feet	417 – 756 meters or 1368 - 2480 feet	How far can a dog walk in 6 minutes?
Modified Sit-and-Reach	12.7 -18.0 centimeters Or 5 - 7 inches..	No data available	What are the most flexible animals?
Shoulder Flexibility	Low: Fingers are more than 5 cm/2 in apart High: Fingers overlapping	No data available	How do cats squeeze through small spaces?
Trunk Lift	13 - 30 centimeters or 6 -12 inches	No data available	Which animal has the strongest backbone?
Standing Long Jump	100 - 228 centimeters or 39 - 90 inches	82 – 157 centimeters or 32 - 61 inches	What is the world record for standing long jump?
10-Meter Shuttle Run	18.5 - 10.5 seconds	21 – 17.5 seconds	Who is the world's fastest human?
Curl-Up	6 - 47 repetitions	7 – 45 repetitions	
Hand Grip	3.2 - 43.2 kilograms (dominant hand)	11 – 32 kilograms	How strong is the grip of a coconut crab?
Isometric Push-Up Hold	10 - 120 seconds	13 – 39 seconds	What is the world record for plank (isometric push-up hold)
Timed Sit-to-Stand	No data available	No data available	What is the record for sit-to-stand?

*Please note that the values for youth with IDD are based on small samples found in a limited number of published research studies. Values for typical youth are based on the lowest and highest scores recorded from 8-17 year olds of all genders. See references for sources.

REFERENCES



REFERENCES

SINGLE LEG STANCE

A-Z Animals. (n.d.). 6 birds that stand on one leg. https://a-z-animals.com/animals/birds/6-birds-that-stand-on-one-leg/

De Wael, E., van Waelvelde, H., Peersman, W., & De Smet, K. (2019). Development of postural control during single-leg standing in children aged 3–10 years. Gait & Posture, 68, 1–7. https://doi.org/10.1016/j.gaitpost.2018.11.020

Geldhof, E., Cardon, G., De Bourdeaudhuij, I., Danneels, L., Coorevits, P., Vanderstraeten, G., & De Clercq, D. (2006). Static balance norms in children. Research in Developmental Disabilities, 27(3), 363–371. https://doi.org/10.1016/j.ridd.2005.05.002

Lee, K., Lee, M., & Song, C. (2016). Balance training improves postural balance, gait, and functional strength in adolescents with intellectual disabilities: Single-blinded, randomized clinical trial. Disability and Health Journal, 9(3), 416–422. https://doi.org/10.1016/j.dhjo.2016.01.010

Wu, W. L., Yang, Y. F., Chu, I. H., Hsu, H. T., Tsai, F. H., & Liang, J. M. (2017). Effectiveness of a cross-circuit exercise training program in improving the fitness of overweight or obese adolescents with intellectual disability enrolled in special education schools. Research in Developmental Disabilities, 60, 83–95. https://doi.org/10.1016/j.ridd.2016.11.005

6-MINUTE WALK

Bellamy, J., Broderick, C., Hardy, L. L., Simar, D., Puusepp-Benazzouz, H., Ong, N., & Silove, N. (2020). Feasibility of a school-based exercise intervention for children with intellectual disability to reduce cardio-metabolic risk. Journal of Intellectual Disability Research, 64(1), 7–17. https://doi.org/10.1111/jir.12690

Elmahgoub, S. S., Van de Velde, A., Peersman, W., Cambier, D., & Calders, P. (2012). Reproducibility, validity and predictors of six-minute walk test in overweight and obese adolescents with intellectual disability. Disability and Rehabilitation, 34(10), 846–851. https://doi.org/10.3109/09638288.2011.623757

Geiger, R., Strasak, A., Treml, B., Gasser, K., Kleinsasser, A., Fischer, V., Geiger, H., Loeckinger, A., & Stein, J. I. (2007). Reference values for the 6-minute walk test in healthy children and adolescents in Switzerland. BMC Pulmonary Medicine, 7(1), 1–8. https://doi.org/10.1186/1471-2466-7-5

Gracia-Marco, L., Moliner-Urdiales, D., Casajús, J. A., & Vicente-Rodríguez, G. (2024). Reference charts for the six-minute walk test in healthy school-aged children from the city of Zaragoza, Spain. *Apunts Sports Medicine*. https://doi.org/10.1016/j.apunsm.2024.05.002

Kong, Z., Sze, T. M., Yu, J. J., Loprinzi, P. D., Xiao, T., Yeung, A. S., Li, C., Zhang, H., & Zou, L. (2019). Tai Chi as an alternative exercise to improve physical fitness for children and adolescents with intellectual disability. *International Journal of Environmental Research and Public Health, 16*(7), 1152. https://doi.org/10.3390/ijerph16071152

Must, A., Bandini, L. G., Curtin, C., Rancaño, K. M., Eliasziw, M., Tybor, D., & Stanish, H. (2022). A pilot dance intervention to encourage physical activity engagement for adolescent girls with intellectual disabilities. International Journal of Environmental Research and Public Health, 19(8), 4661. https://doi.org/10.3390/ijerph19084661

Rishniw, M., & May, E. R. (2012). Evaluation of the 6-minute walk test in pet dogs. Journal of Veterinary Internal Medicine, 26(1), 93–98. https://doi.org/10.1111/j.1939-1676.2011.00852.x

Shirley Ryan AbilityLab. (n.d.). 6-minute walk test. https://www.sralab.org/rehabilitation-measures/6-minute-walk-test

REFERENCES

Stanish, H. I., & Temple, V. A. (2012). Efficacy of a peer-guided exercise programme for adolescents with intellectual disability. *Journal of Applied Research in Intellectual Disabilities, 25*(4), 319–328. https://doi.org/10.1111/j.1468-3148.2011.00668.x

Wang, A., Bu, D., Yu, S., Sun, Y., Wang, J., Lee, T. C. T., Baker, J. S., & Gao, Y. (2022). Effects of a school-based physical activity intervention for obesity, health-related physical fitness, and blood pressure in children with intellectual disability: A randomized controlled trial. *International Journal of Environmental Research and Public Health, 19*(19), 12015. https://doi.org/10.3390/ijerph191912015

MODIFIED SIT AND REACH

Mekary, R. A., Patey, A. M., Hamid, H., & Matuszek, K. (2023). Assessment of physical tests in 6–11 years old children: Findings from the Play Lifestyle and Activity in Youth (PLAY) Study. Children, 10(2), 165. https://doi.org/10.3390/children10020165

Wildlife Informer. (n.d.). 10 most flexible animals on Earth. https://wildlifeinformer.com/most-flexible-animals/

SHOULDER FLEXIBILITY

Choi, C. Q. (2024, September 18). How do cats squeeze through small spaces? *Live Science*. https://www.livescience.com/how-cats-squeeze-through-small-spaces

Cluett, J. D. (2023). How to perform the Apley scratch test. Verywell Fit. https://www.verywellfit.com/shoulder-flexibility-test-3120278

Cooper Institute. (2010). FitnessGram® test administration manual: Standards for Healthy Fitness Zone. https://www.pcsb.org/cms/lib/FL01903687/Centricity/Domain/2147/819DCEA3C2CD4D599151E76B02698308.pdf

TRUNK LIFT

Baran, F., Aktop, A., Özer, D., Nalbant, S., Ağlamış, E., Barak, S., & Hutzler, Y. (2013). The effects of a Special Olympics Unified Sports soccer training program on anthropometry, physical fitness and skilled performance in Special Olympics soccer athletes and non-disabled partners. Research in Developmental Disabilities, 34(1), 695–709. https://doi.org/10.1016/j.ridd.2012.10.003

Cooper Institute. (2010). FitnessGram® standards for Healthy Fitness Zone. https://www.pcsb.org/cms/lib/FL01903687/Centricity/Domain/2147/819DCEA3C2CD4D599151E76B02698308.pdf

Wu, K. J. (2020, April 30). Hero shrews' extreme, super-strong backbones are the stuff of legends. Smithsonian Magazine. https://www.smithsonianmag.com/smart-news/hero-shrews-extreme-superstrong-backbones-are-stuff-legend-180974778/

STANDING LONG JUMP

Baran, F., Aktop, A., Özer, D., Nalbant, S., Ağlamış, E., Barak, S., & Hutzler, Y. (2013). The effects of a Special Olympics Unified Sports soccer training program on anthropometry, physical fitness and skilled performance in Special Olympics soccer athletes and non-disabled partners. Research in Developmental Disabilities, 34(1), 695–709. https://doi.org/10.1016/j.ridd.2012.10.003

Golubović, Š., Maksimović, J., Golubović, B., & Glumbić, N. (2012). Effects of exercise on physical fitness in children with intellectual disability. Research in Developmental Disabilities, 33(2), 608–614. https://doi.org/10.1016/j.ridd.2011.11.003

REFERENCES

Guinness World Records. (n.d.). Most standing long jumps. https://www.guinnessworldrecords.com/world-records/64803-standing-long-jumps-ath

Pacific Science Center. (2022). Jump for joy activity. https://pacificsciencecenter.org/wp-content/uploads/2022/05/cah-jump-joy.pdf

Salaün, L., & Berthouze-Aranda, S. E. (2012). Physical fitness and fatness in adolescents with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities, 25*(3), 231–239. https://doi.org/10.1111/j.1468-3148.2012.00659.x

Skowronski, W., Horvat, M., Nocera, J., Roswal, G., & Croce, R. (2009). Eurofit special: European Fitness Battery score variation among individuals with intellectual disabilities. *Adapted Physical Activity Quarterly, 26*(1), 54–67. https://doi.org/10.1123/apaq.26.1.54

Tejero-González, C. M., Martínez-Gómez, D., Bayón-Serna, J., Izquierdo-Gómez, R., Castro-Piñero, J., & Veiga, O. L. (2013). Reliability of the ALPHA health-related fitness test battery in adolescents with Down syndrome. *Journal of Strength & Conditioning Research, 27*(11), 3221–3224. https://doi.org/10.1519/JSC.0b013e31828bed4e

Tsiros, M. D., et al. (2020). Percentile values of the standing broad jump in children and adolescents aged 6–18 years old. *BMC Pediatrics, 20*(1), 357. https://doi.org/10.1186/s12887-020-02233-4

10-METER SHUTTLE RUN

Cooper Institute. (2010). FitnessGram® test administration manual: Standards for Healthy Fitness Zone. https://www.pcsb.org/cms/lib/FL01903687/Centricity/Domain/2147/819DCEA3C2CD4D599151E76B02698308.pdf

Encyclopaedia Britannica. (2024). How fast is the world's fastest human? https://www.britannica.com/story/how-fast-is-the-worlds-fastest-human

Farías-Valenzuela, C., Shepherd-Shepherd, C., Ferrero-Hernández, P., López-Sánchez, G. F., Espoz-Lazo, S., Cofré-Bolados, C., del Val-Martín, P., de Victo, E. R., & Ferrari, G. (2024). Five-repetition sit-to-stand test validation in adolescents and adults with intellectual disabilities. Scientific Reports, 14, Article 30355. https://doi.org/10.1038/s41598-024-80662-1

Tejero-González, C. M., Martínez-Gómez, D., Bayón-Serna, J., Izquierdo-Gómez, R., Castro-Piñero, J., & Veiga, O. L. (2013). Reliability of the ALPHA health-related fitness test battery in adolescents with Down syndrome. Journal of Strength & Conditioning Research, 27(11), 3221–3224. https://doi.org/10.1519/JSC.0b013e31828bed4e

The British School of Panama. (n.d.). Agility and speed: 10-meter shuttle run test (ACSM Youth Guidelines and Eurofit). https://tbspanthers.british-school.org/index.php/agility-and-speed-10-meter-shuttle-run-test/

CURL UP TEST

Cooper Institute. (2010). FitnessGram® Standards for Healthy Fitness Zone. https://www.pcsb.org/cms/lib/FL01903687/Centricity/Domain/2147/819DCEA3C2CD4D599151E76B02698308.pdf

Topend Sports. (n.d.). Sit-up and curl-up records. https://www.topendsports.com/testing/records/situps.htm

Hsu, P.-J., Yeh, H.-L., Tsai, C.-L., Chu, C.-H., Chen, F.-C., & Pan, C.-Y. (2021). Effects of a floor hockey intervention on motor proficiency, physical fitness, and adaptive development in youths with mild intellectual disabilities. International Journal of Environmental Research and Public Health, 18(13), 7059. https://doi.org/10.3390/ijerph18137059

REFERENCES

Stanish, H. I., & Temple, V. A. (2012). Efficacy of a peer-guided exercise programme for adolescents with intellectual disability. Journal of Applied Research in Intellectual Disabilities, 25(4), 319-328. https://doi.org/10.1111/j.1468-3148.2011.00668.x

Winnick, J. P., & Short, F. X. (2014). *Brockport physical fitness test manual: A health-related assessment for youngsters with disabilities* (2nd ed.). Human Kinetics.

HAND GRIP

Ababneh, M. M., et al. (2020). Reference values of hand-grip strength for 6-to 18-year-olds in Jordan. International Journal of Environmental Research and Public Health. https://doi.org/10.3390/ijerph17103442

Alahmari, K. A., & Alraddadi, M. A. (2023). Normative values for hand grip and pinch strength for 6 to 18 year olds in Saudi Arabia. BMC Musculoskeletal Disorders, 24(1), 612. https://doi.org/10.1186/s12891-023-06197-0

Baran, F., Aktop, A., Özer, D., Nalbant, S., Ağlamış, E., Barak, S., & Hutzler, Y. (2013). The effects of a Special Olympics Unified Sports soccer training program on anthropometry, physical fitness and skilled performance in Special Olympics soccer athletes and non-disabled partners. *Research in Developmental Disabilities, 34*(1), 695–709. https://doi.org/10.1016/j.ridd.2012.10.003

Farías-Valenzuela, C., Shepherd-Shepherd, C., Ferrero-Hernández, P., López-Sánchez, G. F., Espoz-Lazo, S., Cofré-Bolados, C., del Val-Martín, P., de Victo, E. R., & Ferrari, G. (2024). Five-repetition sit-to-stand test validation in adolescents and adults with intellectual disabilities. Scientific Reports, 14, Article 30355. https://doi.org/10.1038/s41598-024-80662-1

Lin, Y. Y., Su, C. T., Liao, Y. H., & Liu, Y. C. (2023). Effects of rope skipping exercise on physical, cardiovascular fitness and exercise tolerance in adolescent students with moderate intellectual disability. *Journal of Intellectual Disability Research, 67*(11), 1136–1149. https://doi.org/10.1111/jir.13071

PBS NewsHour. (2016). Coconut crabs have the strongest grip of any animal. https://www.pbs.org/newshour/science/coconut-crabs-strongest

Stanish, H. I., & Temple, V. A. (2012). Efficacy of a peer-guided exercise programme for adolescents with intellectual disability. *Journal of Applied Research in Intellectual Disabilities, 25*(4), 319–328. https://doi.org/10.1111/j.1468-3148.2011.00668.x

Sun, Y., Yu, S., Wang, A., Chan, H. C., Ou, A. X., Zhang, D., Xie, Y., Fong, S. S. M., & Gao, Y. (2022). Effectiveness of an adapted physical activity intervention on health-related physical fitness in adolescents with intellectual disability: A randomized controlled trial. *Scientific Reports, 12*(1), 22583. https://doi.org/10.1038/s41598-022-26024-1

Tejero-González, C. M., Martínez-Gómez, D., Bayón-Serna, J., Izquierdo-Gómez, R., Castro-Piñero, J., & Veiga, O. L. (2013). Reliability of the ALPHA health-related fitness test battery in adolescents with Down syndrome. *Journal of Strength & Conditioning Research, 27*(11), 3221–3224. https://doi.org/10.1519/JSC.0b013e31828bed4e

Topend Sports. (n.d.). Camry electronic hand dynamometer instruction manual and norms. https://www.topendsports.com/testing/norms/handgrip.htm

Wang, A., Bu, D., Yu, S., Sun, Y., Wang, J., Lee, T. C. T., Baker, J. S., & Gao, Y. (2022). Effects of a school-based physical activity intervention for obesity, health-related physical fitness, and blood pressure in children with intellectual disability: A randomized controlled trial. *International Journal of Environmental Research and Public Health, 19*(19), 12015. https://doi.org/10.3390/ijerph191912015

Winnick, J. P., & Short, F. X. (2014). Brockport physical fitness test manual: A health-related assessment for youngsters with disabilities (2nd ed.). Human Kinetics.

REFERENCES

ISOMETRIC PUSH-UP

Hamdani, S. A., & Rehman, N. (2023). Normative reference standard for core muscular endurance of adolescent 12–16 years from South Punjab, Pakistan: A cross-sectional study. Pakistan Journal of Physiology, 18(1). https://www.pps.org.pk/pjp/18-1/Hamdani.pdf

Hsu, P.-J., Yeh, H.-L., Tsai, C.-L., Chu, C.-H., Chen, F.-C., & Pan, C.-Y. (2021). Effects of a floor hockey intervention on motor proficiency, physical fitness, and adaptive development in youths with mild intellectual disabilities. International Journal of Environmental Research and Public Health, 18(13), 7059. https://doi.org/10.3390/ijerph18137059

Laurson, K. R., Eisenmann, J. C., & Welk, G. J. (2011). Strength and body weight in U.S. children and adolescents. Pediatric Exercise Science, 23(4), 523–531. https://doi.org/10.1123/pes.23.4.523

Topend Sports. (n.d.). World record plank: 62-year-old George Hood (2020) – 8 hours, 15 minutes, 15 seconds. https://www.topendsports.com/testing/tests/plank.htm

Winnick, J. P., & Short, F. X. (2014). *Brockport physical fitness test manual: A health-related assessment for youngsters with disabilities (2nd ed.)*. Human Kinetics.

TIMED SIT-TO-STAND

Farías-Valenzuela, C., Shepherd-Shepherd, C., Ferrero-Hernández, P., López-Sánchez, G. F., Espoz-Lazo, S., Cofré-Bolados, C., del Val-Martín, P., de Victo, E. R., & Ferrari, G. (2024). Five-repetition sit-to-stand test validation in adolescents and adults with intellectual disabilities. Scientific Reports, 14, Article 30355. https://doi.org/10.1038/s41598-024-80662-1

Guinness World Records. (n.d.). Most times to sit and stand in 30 seconds (online). Guinness World Records. https://www.guinnessworldrecords.com/world-records/621065-most-times-to-sit-and-stand-in-30-seconds-online

Radtke, T., Khattab, K., & Hebestreit, H. (2021). Reference values and validation of the 1-minute sit-to-stand test in healthy 5–16-year-old youth: A cross-sectional study. BMJ Open, 11(5), e049143. https://doi.org/10.1136/bmjopen-2021-049143