



LODEN SPORTS

Loden Sports Performance Lab

A Performance Lab in Your Pocket

User Manual and Usage Guide

Version 1.23

Contents

WHAT IS THE LODEN SPORTS PERFORMANCE LAB	4
Data Reliability.....	4
Key Features.....	4
REQUIREMENTS	5
Hardware.....	5
Connectivity.....	5
SETTING UP AN ACCOUNT	6
What are your Needs?	6
The Dashboard Explained	6
MANAGE	7
How to Add an Athlete.....	7
How to Edit an Athlete.....	7
How to Deactivate an Athlete	8
How to Create Groups	8
COLLECT	9
Executing Jump Tests.....	9
Best Practices for Executing Jump Tests	10
3 Rebound Jumps – Readiness Bundle	10
5 Single Leg Jumps (Left and Right) – Symmetry Bundle.....	10
Vertical Jump.....	11
Reaction Jump.....	11
Broad Jump.....	12
Navigating the COLLECT Camera Screen.....	13
How to Select a Test	14
Self-Record.....	15
Using the Measuring Board	16
Reliability.....	16
Best Practices.....	17
Inputting Run Times	18
Unofficial Loden Score	20
What is the Loden Score System.....	20

- Loden Score System Inclusivity..... 20
- How to Generate an Unofficial Loden Score..... 20
- Best Practices for Generating Your Unofficial Loden Score 21
- Get your Official Loden Score 21
- TRACK 22
 - How to Navigate 22
 - Metric Definitions 23
 - 3 Rebound Jumps..... 23
 - Single Leg Jumps..... 23
 - Vertical Jump..... 24
 - Broad Jump..... 24
 - Reaction Jump..... 24
 - Loden Score / Female Loden Score / Junior Loden Score 24
- ACCOUNT..... 26
 - Settings..... 26
 - View Subscription 26
 - Log Out..... 26

WHAT IS THE LODEN SPORTS PERFORMANCE LAB

The Loden Sports Performance Lab is a sports performance lab in your pocket. It is an affordable tool that allows for the quick and accurate capture of biometric data for the purposes of benchmarking development and monitoring athlete health and readiness. Loden Sports is for the 99% of parents, coaches, and athletes that don't understand performance science and don't have the time to try to. While most sports performance or sports science products and companies are for the sports scientist, Loden Sports is for the layman.

The Loden Sports Performance Lab can be used anytime, anywhere; it's versatile, coming stock with a variety of jump tests; it's made for self-use and parent use, so it's EASY; it provides reliable, lab-quality data; and it provides instant, easy-to-understand feedback.

Data Reliability

Jump performance data captured by the Loden Sports Performance Lab is validated against industry-leading force plate and optical systems. Loden Sports stands by the Loden Sports Performance Lab as a consistent and reliable vehicle for capturing performance data.

Key Features

- Self-testing Functionality
- Visualizations for tracking and monitoring.
- Get your Loden Score at home.
- Ability to execute the following assessments: Rebound Jumps, Single Leg Jumps, Broad Jump, Reaction Jump, and Vertical Jump.
- Ability to accurately measure ground contact time, flight time, height or distance, contraction time, peak velocity, peak acceleration, average acceleration, peak ground force, jump used areas (multiple jumps), power generation and reactive strength index (RSI) using proprietary methodologies.
- Ability to represent lower-half asymmetry deltas in power and RSI.
- Ability to capture frame measurements (Height, Wingspan, Hip Height, Femur Length, Hand Length, Forearm Length, Torso Length, Seated Height, Hip Width)
- Ability to input external run times.
- Video saved to your device's camera roll.

The Loden Sports Performance Lab addresses the many barriers to collecting quality, reliable performance data. It visualizes the data to provide immediate feedback in a clear and concise manner.

REQUIREMENTS

Hardware

The Loden Sports Performance Lab is currently available for iOS users only. The Loden Sports Lab App is currently compatible with: iPhone 12 Pro, iPhone 13 Pro, iPhone 14 Pro, iPhone 12 Pro Max, iPhone 13 Pro Max, iPhone 14 Pro Max, iPad Pro 11-in. (Generation 3 or newer), and iPad Pro 12.9-in.

Connectivity

Collection of performance data using the Loden Sports Performance Lab currently only works with an active Wi-Fi connection or active access to cellular data. Users cannot collect data offline and upload to the cloud at a later time when they gain access to Wi-Fi or cellular data.

SETTING UP AN ACCOUNT

What are your Needs?

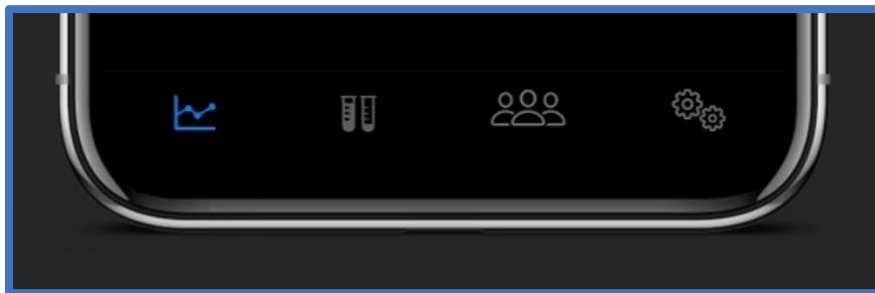
When setting up your account, consider your needs when choosing a subscription. Loden Sports has options for individual athletes starting as low as \$3.33 / month; can meet the needs of teams of various sizes; and for unique cases with large organizations, contact Loden Sports via email (info@lodensports.com) for pricing.

Type of Account	Number of Athletes	Price / Month
Individual	1-3	\$10
Small Team	4-25	\$125
Medium Team	26-50	\$165
Large Team	51-100	\$200
Organization	100+	Contact Loden Sports

If you start using the Loden Sports Performance Lab and down the road, find that you need to adjust your subscription based on the number of athletes you are currently servicing, you can do so within the app: ACCOUNT > VIEW SUBSCRIPTION > EDIT SUBSCRIPTION.

The Dashboard Explained

The Loden Sports Performance Lab experience was designed to be simple and intuitive. We don't want you spending any more time than you have to within the app. Our dashboard (present across the bottom of your screen when the app is open) has 4 tabs: TRACK, COLLECT, MANAGE, and ACCOUNT.



TRACK, COLLECT, MANAGE, and ACCOUNT pictured in order from left-to-right.

TRACK is where you'll be able to view visualizations for select metrics captured during testing. COLLECT is where you'll be able to execute jump testing, input run times, and/or capture frame measurements for you or your athlete/s. MANAGE is where you'll go to add athletes, edit biographical information, and create groups for greater testing ease and efficiency. ACCOUNT is where you'll go for settings, to change your subscription, or to log out.

Detailed procedures on how to navigate and utilize each tab on the dashboard are included in this manual.

MANAGE

How to Add an Athlete

You just downloaded the Loden Sports Performance Lab and now you are looking to populate your account with athletes. To add a new athlete:

- Click on the MANAGE tab on the dashboard at the bottom of your screen.
- Click “athletes,” this will pull up a list of all athletes on your account.
- On the top right, click the “+” sign to add a new athlete.
- Fill out the registration information. If you are unsure of any of the required fields, take your best guess and you will be able to come back to manage and edit the athlete information at any time once they are created.
- Once all information is provided, click submit.
- Navigate back to the MANAGE tab, click “athletes,” and the athlete you just added should appear here on the list.
- You can now begin collecting performance data for this athlete.

Consider the athlete capacity of your subscription. You will only be allowed to add new athletes to an account that has the athlete capacity to do so. For example, if your account is capped at 25 athletes and there are 25 athletes listed, you will be met with an error message when you attempt to add a new athlete. You can always add athlete capacity to your subscription under the ACCOUNT tab on the dashboard.

How to Edit an Athlete

Remember the part in *How to Add an Athlete* where you were unsure of a required registration field and you took your best guess? This is where if you guessed wrong, you can fix it – at any time.

- Click on the MANAGE tab on the dashboard at the bottom of your screen.
- Click “athletes.”
- Find which athlete you are looking to edit and click on the pencil icon to edit this athlete.
- Make your changes to the fields you need to update.
- At the bottom of the form, click “Submit.”
- If you’ve done this right, a green banner will pop-down from the top of the screen indicating your changes have been saved.
- Click the arrow at top left to return to your list of athletes.

How to Deactivate an Athlete

The Loden Sports Performance Lab allows coaches and administrators to deactivate athletes from their account to make room for new athletes. For example: your account has a capacity of 50 athletes and right now, you are at 46/50. You just graduated a senior class of 8 athletes and you have 8 incoming freshmen. Deactivating athletes allows you to make room for your incoming freshmen without having to increase your subscription size or deleting your 8 outbound seniors.

Deactivated athletes appear “greyed out” at the bottom of athlete menus within the app. If an athlete is deactivated, you will be unable to collect new data for this athlete, however, you can still view their historical data in the TRACK tab on the dashboard. That way, you can make comparisons between your favorite freshman this year and your favorite senior from 4 years ago. How to deactivate an athlete:

- Click on the MANAGE tab on the dashboard at the bottom of your screen.
- Click “athletes.”
- Find which athlete you are looking to deactivate and click on the pencil icon to edit this athlete.
- At the bottom of the form, click on the big red button that says “Deactivate.”
- The app will ask you to confirm that you want to deactivate the athlete.

Proceed with caution: once an athlete is deactivated, you will not be able to reactivate this athlete from within the app, so be careful.

How to Create Groups

Your organization has hundreds of athletes and dozens of teams – it just isn’t practical to scroll through your entire organization’s directory of athletes every time you want to test a specific team. Loden Sports makes it easy to create and edit groups within the Loden Sports Performance Lab so that you only have to do this once! To create a group:

- Click on the MANAGE tab on the dashboard at the bottom of your screen.
- Click “groups,” this will pull up a listing of all groups created on your account.
- On the top right, click the “+” sign to add a new group.
- Name your group and then select which athletes you want to include from the athlete list below. When you’re done, click submit.
- Navigate back to the MANAGE tab, click “groups,” and the group you just added should appear here on the list.
- You can now select this group in place of individual athletes on the COLLECT tab when you go to test athletes.

It is worth noting that athletes can be assigned to multiple groups.

COLLECT

Updating Your Weight

Loden Sports highly recommends that athletes who are using the Loden Sports Performance Lab daily, weekly, or monthly to track changes in power output, frequently update their weight within the app.

For teams and organizations that test less frequently, be cognizant of any significant changes in body weight in your athletes from testing session to testing session and adjust accordingly. The usefulness of Loden Power Points is dependent on an (relatively) accurate weight. To update an athlete's weight:

- Navigate to the COLLECT tab on the dashboard.
- On the "Select Athletes" menu, find which athlete you want to update weight for and click on the pencil at the end of their row to edit that athlete.
- Click on the "Weight" field and enter the updated weight.
- Click done.
- Click the button that says "Submit" on the bottom of the form.
- If you've done this right, a green banner will pop-down from the top of the screen indicating your changes have been saved.
- Click the arrow at top left to return to your list of athletes.

Executing Jump Tests

Executing jump tests using the Loden Sports Performance Lab is simple and easy. See below for a full walkthrough on how to collect jump test data using the app:

- Select the name of the athlete/s or group you are looking to test. Click continue on the bottom.
- Under jump tests, click "get started."
- On the bottom right, click on the test selection in the middle of display.
- From the test menu, select the test you are looking for.
- Click the back arrow back to return to the COLLECT camera screen.
- Make sure the athlete's shirt is tucked into their waistband and that when they jump, no parts of their body leave the screen. Stand 8-15 feet away from the athlete with the device camera directed at the athlete oriented in portrait mode.
- Make sure the athlete is standing straight up and click the record button to start the capture of the jump.
- Let the athlete know it's time to jump and instruct them appropriately.
- Once they have jumped, click the record button again to stop the collection of jump data.
- Click the cloud with the arrow on the bottom left of the display to save the data.

For detailed instructions on how to best execute jump tests, see the following section: COLLECT; Best Practices for Executing Jump Tests. Video from jump tests automatically saves to your camera roll.

Best Practices for Executing Jump Tests

This section will cover specific instructions for each jump test featured in the Loden Sports Performance Lab. As a general rule of thumb:

- Make sure the athlete's shirt is tucked into their waistband and that they don't have any loose or baggy clothing. A loose shirt can mess with the device's ability to capture clean data on the jump.
- When the athlete jumps, make sure no part of their body leaves the screen.
- Make sure the athlete is standing straight up when you hit record so the device can register the origin point for the hip at rest.
- Portrait mode is always best.
- In an ideal world, the device you are using should be situated on a tripod, but if you don't have a tripod available, holding the device upright and still, at about chest height, will work just as well.
- Try to avoid backgrounds that are of similar color to what the athlete is wearing. The device may struggle to discern between the athlete and the background.
- Make sure there aren't other athletes, moving persons, animals, or moving objects within the frame while the athlete is jumping. For this reason, it is highly encouraged to avoid jumping in front of mirrors.

3 Rebound Jumps (Use for Readiness)

For the 3 Rebound Jumps test, the athlete is instructed to jump as high as they can, as quick as they can, three times – similar to pogo jumps. The athlete's legs should remain straight while in the air. The athlete should load up on the first jump and the emphasis on the next two should be bouncing as quickly as they can back up to the height of the first jump.

Review and follow the best practices outlined earlier in this section and make sure the device is about 8-10 feet back from where the athlete is jumping. In the case of a common test environment, when you find an ideal set-up for your tripod with sufficient distance to the jump spot, it may not be a bad idea to mark both spots with a piece of tape on the ground for easy and consistent set-up.

Frequency: With a primary use-case of this test being the monitoring of athlete health and physical readiness, Loden Sports recommends utilizing this test weekly. For the competitive athlete, this test can be used as frequently as daily during the competitive season.

5 Single Leg Jumps (Left and Right) – Symmetry

For the 5 Single Leg Jumps test, the athlete is instructed to jump as high as they can, as quick as they can, five times on a single leg – like a pogo stick. The leg the athlete is jumping with should remain straight while in the air. The emphasis on this test is for the athlete to remain in control of their body to the best of their ability.

Review and follow the best practices outlined earlier in this section and make sure the device is about 8-10 feet back from where the athlete is jumping. In the case of a common test environment, when you find an ideal set-up for your tripod with sufficient distance to the jump

spot, it may not be a bad idea to mark both spots with a piece of tape on the ground for easy and consistent set-up.

Frequency: With a primary use-case of these tests being the monitoring of athlete health, Loden Sports recommends utilizing these tests twice per month. For the competitive athlete, this test can be used as frequently as 1-2 times per week during the competitive season.

Vertical Jump

For the Vertical Jump test, the athlete is instructed to jump as high as they can, one time. This test is adaptable. Athletes can be instructed for their arms to free swing or, alternatively, to isolate the legs, instruct the athlete to keep their hands on their hips. For the purposes of tracking over time, Loden Sports recommends that, whichever method is chosen or instruction is given, it is consistent for that athlete.

Review and follow the best practices outlined earlier in this section and make sure the device is about 8-10 feet back from where the athlete is jumping. In the case of a common test environment, when you find an ideal set-up for your tripod with sufficient distance to the jump spot, it may not be a bad idea to mark both spots with a piece of tape on the ground for easy and consistent set-up.

Frequency: This test is a good benchmark for progress in athletic development. Utilize this test at the start, during, and post-training periods.

Reaction Jump

For the Reaction Jump test, the athlete is instructed to jump when the flashlight on the device turns off. When the user starts the test, the flashlight immediately turns on. The premise of the test is for the athlete to react and jump when the flashlight turns off (at random) – at which point the device has recorded how long it took for the athlete to react. For the athlete, the focus should be the reaction time, but be sure that jump effort (whatever you instruct) is consistent each time the athlete tests.

Review and follow the best practices outlined earlier in this section and make sure the device is about 8-10 feet back from where the athlete is jumping. In the case of a common test environment, when you find an ideal set-up for your tripod with sufficient distance to the jump spot, it may not be a bad idea to mark both spots with a piece of tape on the ground for easy and consistent set-up.

Frequency: Used regularly, this test can set a baseline for an athlete's reaction times – a valuable baseline to have for athletes in contact sports that may encounter a head injury. Loden Sports recommends that all athletes complete the Reaction Jump test monthly and more frequently when appropriate (during a competitive season). Loden Sports recommends that when you do this test, do it 3-5 times per athlete because a cluster of reaction times will paint a clearer picture vs. a single reaction time.

Broad Jump

For the Broad Jump test, the athlete is instructed to jump as far as they can while sticking the landing.

The Broad Jump test is unique in that, unlike all other tests in the app, the athlete isn't jumping in place. You will want to make sure the device is about 12-16 feet back from where the athlete is jumping and that the athlete jumps directly at the camera. In the case of a common test environment, when you find an ideal set-up for your tripod with sufficient distance to the jump spot, it may not be a bad idea to mark both spots with a piece of tape on the ground for easy and consistent set-up.

Frequency: This test is a good benchmark for progress in athletic development. Utilize this test at the start, during, and post-training periods.

Navigating the COLLECT Camera Screen

Use the screen guide below to help you navigate the COLLECT camera screen. This screen guide will show you how to change athletes, select tests, start and stop jump tests, view raw data before you save, and save raw data after an athlete jumps.

A – Use the top line of the display to toggle selected athletes.

B – The bottom line of the display shows the selected “test bundle.” To change the “test bundle,” click directly on the shown test.

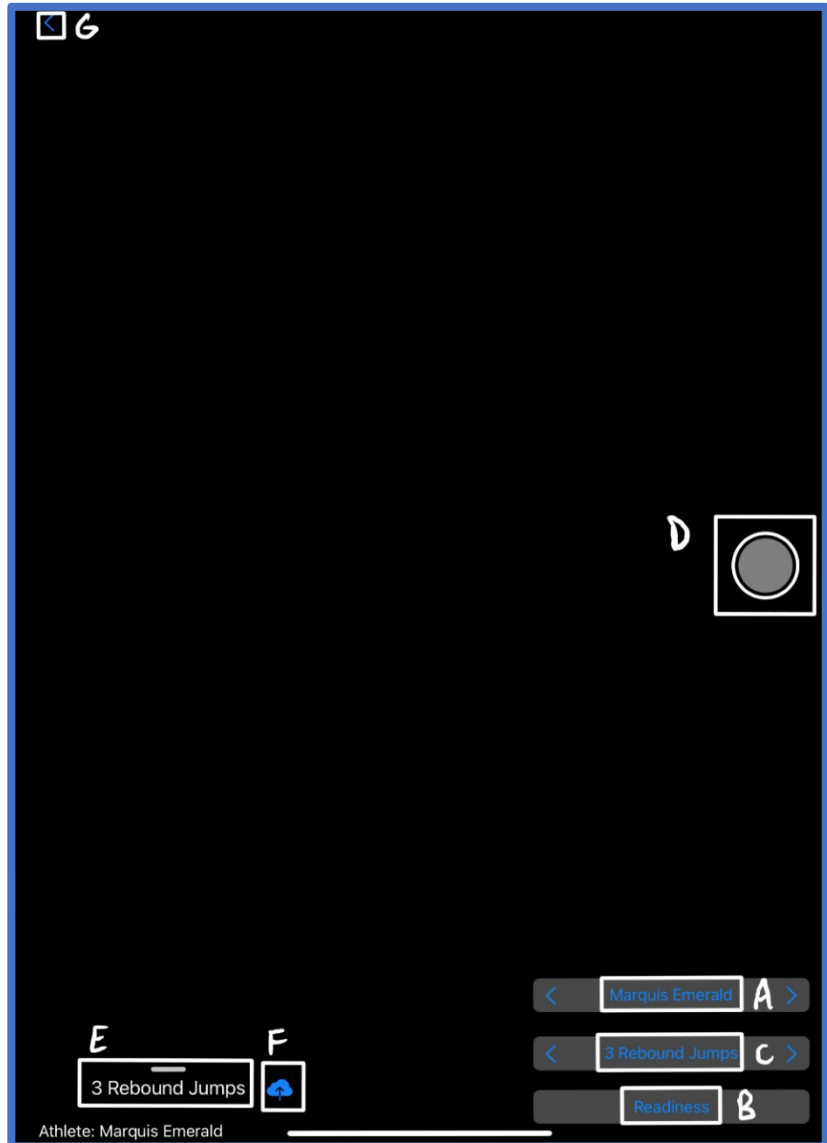
C – The middle line of the display shows the selected test within the “test bundle.” If there are multiple tests within the “test bundle,” use the arrows to toggle between them.

D – The button used to both start and stop collecting jump data.

E – Following the completion of a jump test, pull up on this tab to view all of the raw data points associated with the selected test. If everything looks good, click the button with the cloud and arrow to save the data (F). If not, don’t save the data and try again.

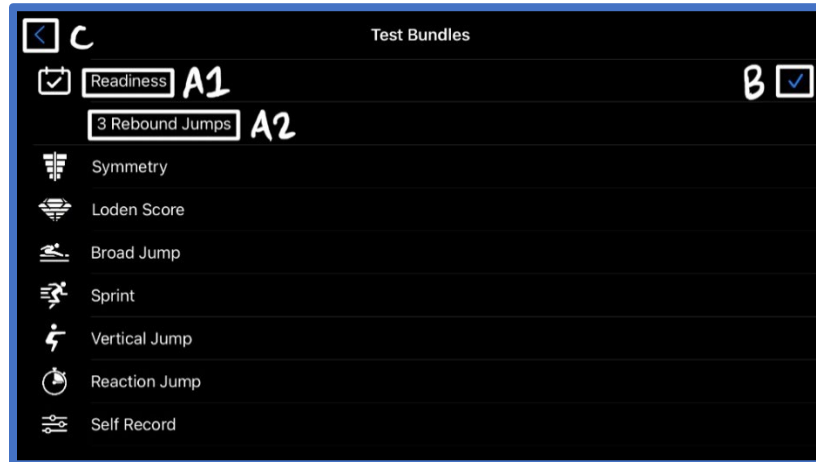
F – Use the button with the cloud and arrow to save data from a jump test. If you don’t click this button after a jump test, data from the session will not save.

G – Use the back button at top left to navigate back to the “athlete select” screen.



How to Select a Test

From the COLLECT camera screen, click on the selected “test bundle” at the bottom of the display at the bottom right. This is illustrated by *B* in the section: *COLLECT; Navigating the COLLECT Camera Screen*. When you click on the selected “test bundle,” you will pull up a test select menu.



A1 – Click on a test bundle to select the bundle and reveal the tests included. Example pictured: the “Readiness” bundle includes the 3 Rebound Jumps test.

A2 – Tests included in the bundle. In this example, the “Readiness” bundle only has one test: the 3 Rebound Jumps test.

B – Confirm that the test bundle you want is selected when a blue check mark appears at the end of the row.

C – Once you have selected the test bundle you want and you’ve confirmed there’s a blue check mark next to it, use the back arrow at top left to return to the COLLECT camera screen. The test bundle you have selected should now appear on the display.

Self-Record

The Loden Sports Performance Lab provides athletes with the capability to self-test if there isn't another person around to execute the testing for them. The process is very similar to testing with someone else operating the device, but requires an additional step to turn "Self Record" on. A walkthrough on how to self-test:

- Select your name as the athlete you are looking to test. Once the check mark appears next to your name, click continue on the bottom.
- Under jump tests, click "get started."
- On the bottom right, you should see your name, on the second line of the display, you'll see the current selected test, click on the test, even if it's the one you are looking to execute.

A1 – At the bottom of the menu, select "Self Record."

A2 – A blue check mark should appear at the end of the row.

B – A blue check mark will also indicate which jump test you have selecting for self-testing. If it isn't the test you're looking to execute, click on a different test listed in the menu.



C – When there is both a blue check mark next to "Self Record" and a blue check mark next to the test you are looking to execute, click the "back arrow" at top left to return to the COLLECT camera screen.

- The display on the bottom right should be showing your name and the selected test.
- Set your device up in portrait mode with the camera facing towards the spot you plan to jump, about 8-10 feet away from the tripod.
- Make sure your shirt is tucked in.
- Click the record button to start the capture of the jump. You will have 8 seconds to position yourself to jump. The device will click 8 times and then chime (sound on). When you hear the chime, the jump capture will be live and you can complete your jump test.
- Once you have jumped, click the record button again to stop the collection of jump data.
- Click the cloud with the arrow on the bottom left of the display to save your data. If you do not click the cloud with the arrow, no data will save.
- Return to the athlete select screen by clicking the arrow at the top left of the screen twice.
- An app refresh will likely be needed before you can view your newly captured jump data using the TRACK tab on the dashboard.

Self-testing requires a tripod.

Using the Measuring Board

The measuring board within the Loden Sports Performance Lab can be used to measure standing height, wingspan, hip height, femur length, hand length, forearm length, torso length, seated height, and hip width with the careful placement of just 4 measurement nodes. The process for measuring athletes is outlined below:

- Using the COLLECT tab on the dashboard, select which athlete/s or group you want to measure and click “Continue.”
- Under “Measurement,” click “Get Started.”
- See *Best Practices* within this section for instructions on how best to set-up the measuring board in world space.
- Once the measuring board is set-up, direct the athlete to position themselves at the center of board in a T-pose (standing straight up with heels on the ground and arms stretched directly out at their sides so as to create a “T” with their body).
- Drag and place the 4 red nodes to sit on top of the athlete’s head (1), at each of their finger tips (2 and 3), and at the top of their hip joint (4).
- You can view the current measurements by pulling up the menu at the bottom left.
- When you are confident in the placement of the nodes, save the results by clicking the upload button at bottom left (blue cloud with an up arrow).
- On the display at the bottom right, click the arrow to the right of the selected athlete’s name to toggle to the next athlete, or if you’re done, use the back arrow at top left to return to the previous screen.
- You will now be able to view your athlete’s most recent body measurements from the MANAGE tab on the dashboard by clicking the “ruler” next to the athlete’s name.

Reliability

The virtual measuring board is anchored to the ground in world space which allows for the measurer to walk “around” the individual being measured and precisely place each node at the appropriate locations. The position of the nodes on the board are used to calculate three main metrics: overall height, wingspan, and hip height. The accuracy in the placement of these movable nodes is dependent on the individual placing them, but the precision of the measurements obtained is dependent on the sensitivity of the device and how close to the ground the board can be placed. According to Apple Developer forums, the accuracy of the depth measurement captured by compatible devices is within 1-2%. Which means the closer to the ground the device is when placing the virtual board, the more accurate the height measurements will be. The error in the placement of the virtual measuring board is considered minimal as a typical distance the board will be placed from will be approximately 3’ which results in a maximum possible error of around 1/2 an inch. The device sensitivity does not have an effect on the wingspan measurements.

Best Practices

For the gathering of body measurements with the measuring board, a couple simple setup requirements are needed to ensure the best results.

- When “placing” the measurement board verify the ground reference being used is flat and/or level.
- Orient the device so the camera is mostly parallel to the ground.
- For better results place the measurement board near the base of a wall and have the person stand against the wall in the T-pose position. This will assist in the person being measured to get aligned to the board quicker than if it were placed out in an open area.
- Encourage the person being measured to remain still during the process in order to capture the best results.
- Excessively baggy clothing should be avoided if possible as the person doing the measurements will have a more difficult time placing the hip node. If it cannot be avoided it is encouraged to have overly baggy shirts tucked in to assist in better node placement.

Utilizing the measuring board takes some getting used to. We encourage users to practice in environments that aren't subject to time constraints.

Inputting Run Times

The Loden Sports Performance Lab has the capability to record certain run splits collected using external methods (laser timers highly suggested). You can input the following run splits: 10-yard, 20-yard, 30-yard, 40-yard, and 60-yard. The process for inputting run times is similar to that of testing an athlete:

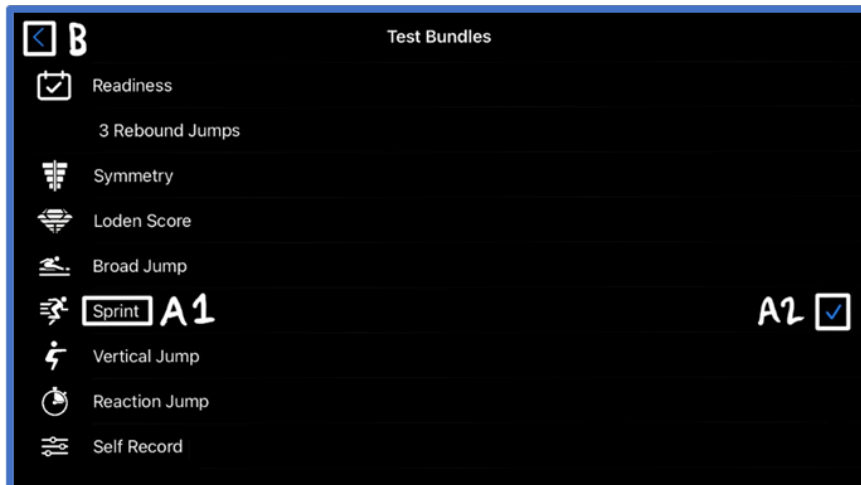
- Navigate to the COLLECT tab on the dashboard.
- Select which athlete/s or group you want to input run times for.
- Under “Jump Tests,” click “Get Started.”

[1]

B - On the COLLECT “camera” screen, click on the test bundle on the bottom right of the display.



[2]



A1 - Click “Sprint.”

A2 - A blue check mark will appear at the end of the row.

B - Click the back arrow at the top left to return to the COLLECT camera screen. The “Run Entry” window should pop-up on your camera screen.

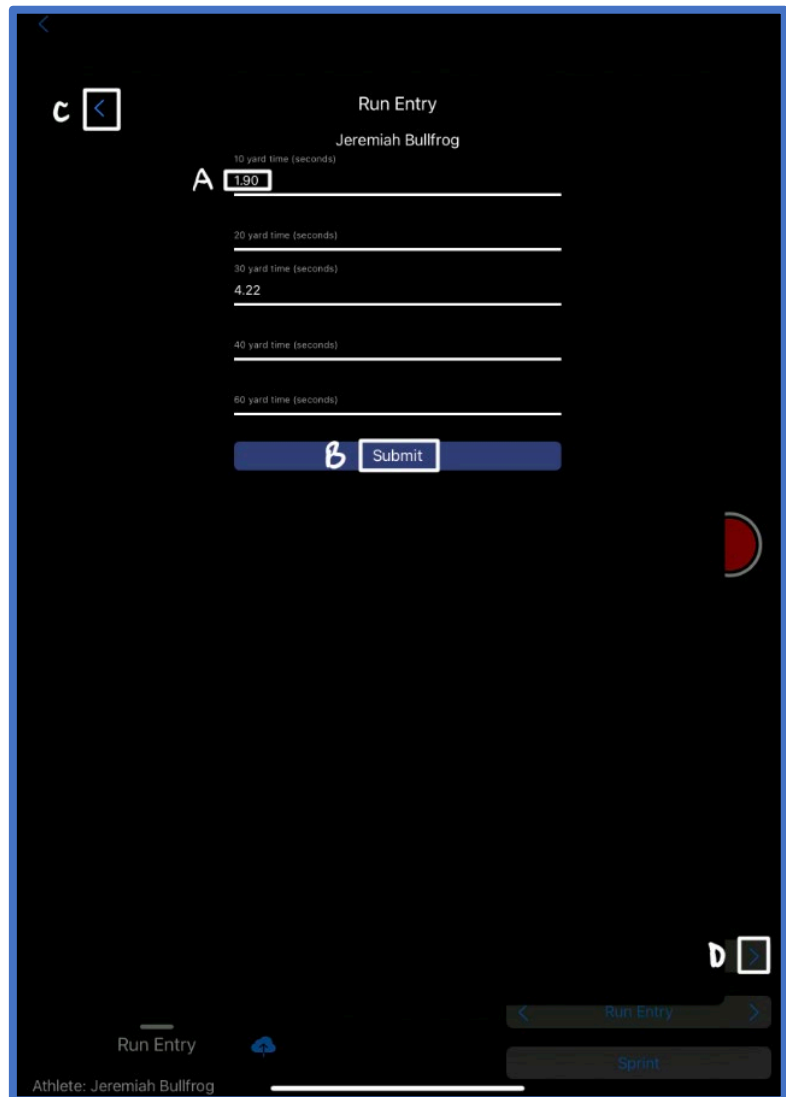
[3]

A – Enter in run times in the format of “#.##”

B – Click “Submit.”

C – Once the app has indicated that run times have been saved, click the “back arrow.”

D – Use the arrows on the display at bottom right to toggle to the next athlete.



- To input run times for your next athlete, you will need to re-select the “Run Entry” test by clicking on “Sprint” on the bottom of the display at right, the “test select” screen will pop-up, click “Sprint” and the “Run Entry” window will pop back up for you on the COLLECT camera screen.

In order to calculate a Loden Speed Score for inclusion in a Loden Score, it is required that a 10-yard and 20-yard or 10-yard and 30-yard are inputted for an athlete as outlined in the section: Unofficial Loden Score; How to Generate an Unofficial Loden Score using the Loden Sports Performance Lab.

Unofficial Loden Score

The Loden Sports Performance Lab allows users to generate an unofficial Loden Score. The reason why the score is unofficial is because Loden Sports currently has no way to regulate collection methods for run time inputs. With that being said, we do want to provide the opportunity for anyone to get an idea of where they're at with an "unofficial" Loden Score.

Loden Sports stands behind Loden Power and Quickness scores captured by users as accurate depictions of how the athlete would score during an official Loden Sports dynamic performance evaluation.

What is the Loden Score System

The Loden Score System is a conglomerate of a power, quickness, speed, and overall metric. The series of proprietary algorithms were developed as a means of concisely communicating the results of each standardized Loden Sports dynamic performance evaluation. The metrics are strongly correlated to indicators of success on-field. The Loden Score System is backed by research and is battle-tested.

Human performance data is largely foreign to most parents, coaches, and athletes and for this reason, the Loden Score System was created to benchmark and answer the question "was that good?" In total, each athlete that completes a Loden Sports dynamic performance evaluation receives a Power, Quickness, Speed, and Loden (overall) score. These scores allow athletes and talent evaluators to track physical progress as the athlete matures. Each score is on a 0-12 scale.

Loden Score System Inclusivity

Loden Sports has three separate Loden Score Systems: the Loden Score System, the Female Loden Score System, and the Junior Loden Score System. While the Loden Score System provides a comparative for the male athlete that is close-to or at physical maturity, the Female Loden Score System is, intuitively, benchmarked against the physically mature female athlete; and the Junior Loden Score System is benchmarked against the pre-growth spurt athlete. Using date of birth and gender designation from the registration process, the Loden Sports Performance Lab will show an athlete their Loden Score on the appropriate scale:

- Male athletes aged 14+ = Loden Score System
- Female athletes aged 14+ = Female Loden Score System
- All athletes aged 13 or younger = Junior Loden Score System

How to Generate an Unofficial Loden Score

A full walkthrough on generating an unofficial Loden Score using the Loden Sports Performance Lab:

- Using the COLLECT tab on the dashboard, select which athlete/s or group you want to test.
- Under "Jump Tests," click "Get Started."

- On the display at the bottom right, click the bottom button (it should be set to “Readiness” by default).
- Here you will find a list of “Test Bundles,” select “Loden Score” and then click the back arrow at top left.
- On the display at the bottom right, you should now see (in order from top to bottom): the name of the athlete you are testing, “3 Rebound Jumps,” and “Loden Score.”
- Proceed to execute the “3 Rebound Jumps” test for your athlete and save the results by clicking the upload button at bottom left (blue cloud with an up arrow).
- On the display at the bottom right, click the arrow to the right of “3 Rebound Jumps” to toggle to the “Run Entry.”
- In order to calculate a Loden Speed Score and a Loden Score, you must enter some combination of the following:
 - A 10-yard split and a 30-yard split.
 - A 10-yard split and a 20-yard split.
 - A 10-yard split, 20-yard split, and a 30-yard split.
- Once the appropriate run times have been inputted, click submit.
- You will now be able to view your athlete’s Power, Quickness, Speed, and Loden Scores using the TRACK tab on the dashboard.

For the most accurate representation of your Loden Score, make sure you update the weight of your athlete/s prior to executing the Loden Score bundle. How to update weight is outlined in the earlier section: COLLECT; Updating Your Weight.

Best Practices for Generating Your Unofficial Loden Score

For the most accurate representation of an athlete’s Loden Score, Loden Sports recommends making sure their weight is accurate (can be edited under MANAGE > ATHLETES > SELECT ATHLETE > SUBMIT) and run times are captured using electronic timing gates.

Get your Official Loden Score

If you or your athlete/s are interested in an official Loden Score, contact Loden Sports at info@lodensports.com or send us a DM on Twitter or Instagram (@LodenSports).

TRACK

How to Navigate

After completing jump testing using the Loden Sports Performance Lab, you have the ability to view the results in real-time to track changes in an athlete's performance. Navigate to the TRACK tab on the dashboard. See below for a walkthrough on how to utilize the TRACK tab of the Loden Sports Performance Lab:

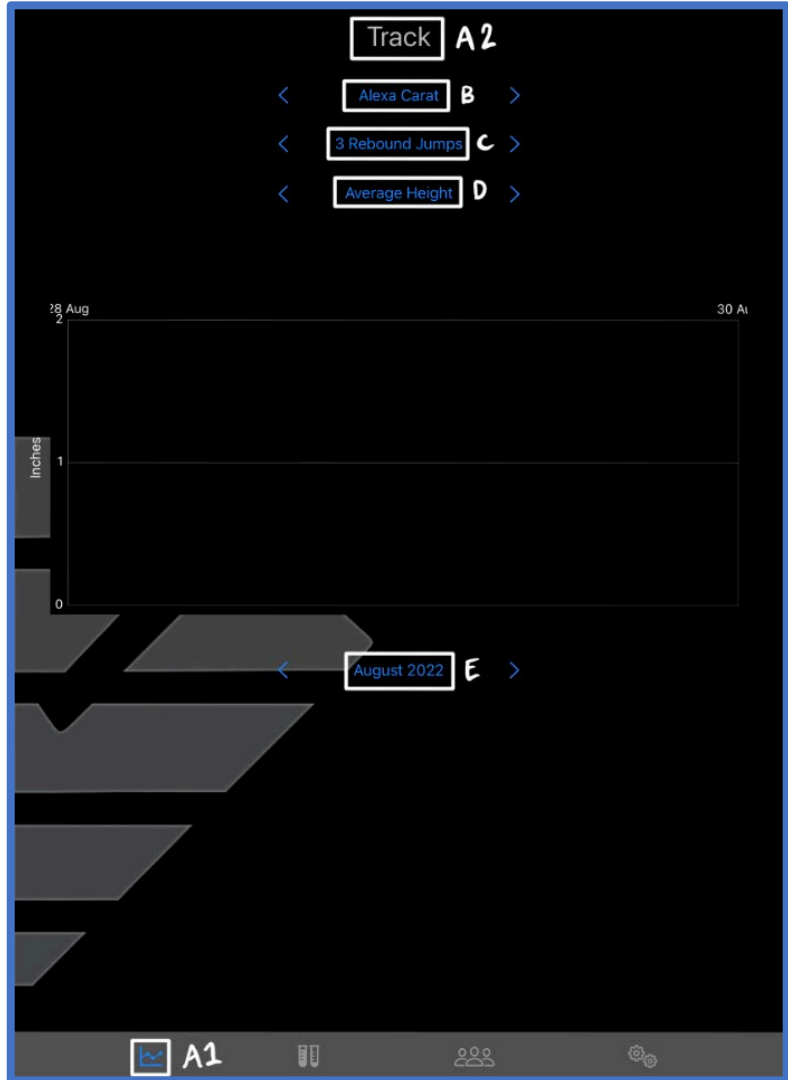
A1 – Click on the TRACK icon on the dashboard, the furthest left of the four dashboard icons.

A2 – Be sure that the header of the screen you're on is "Track."

B – This is how you select which athlete you want to view. Either use the arrows to toggle between athletes alphabetically, or, for a quicker search, click directly on the name currently presented to pull-up a full listing of all athletes in the organization.

C – This is how you select which test you want to view. Either use the arrows to toggle between tests, or, click directly on the name of the test to pull-up a full listing of all available tests.

D – This is how you select which metric you want to view for the selected test. Use the arrows to toggle between metrics, or, click directly on the current selected metric to pull-up a listing of available metrics to view for the selected test.



E – Select the time frame for which you are trying to view data at the bottom of the graph.

Metric Definitions

This section will define each of the trackable metrics within the TRACK section of the Loden Sports Performance Lab.

3 Rebound Jumps

Average Height – The average height (in inches) of the three rebound jumps.

RSI – The average RSI (reactive strength index) of the three rebound jumps. Loden Sports uses a flight time divided by ground contact time ratio for RSI.

Power – The average amount of Loden Power Points generated during the three rebound jumps. Loden Power Points are Loden Sports measure of power. Loden Sports has found strong relationships between power output measured in Loden Power Points for this test and key on-field performance indicators.

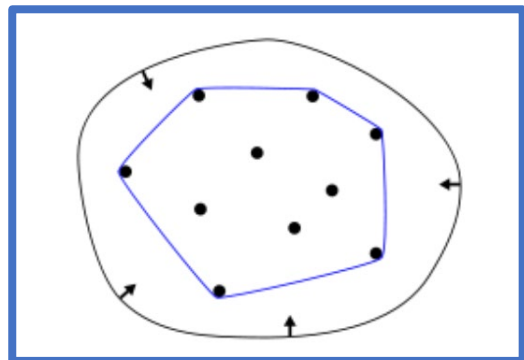
Single Leg Jumps

Power – The average amount of Loden Power Points generated during the five single leg jumps. Loden Power Points are Loden Sports measure of power.

RSI – The average RSI (reactive strength index) of the five single leg jumps. Loden Sports uses a flight time divided by ground contact time ratio for RSI.

Height – The average height (in inches) of the five single leg jumps.

Used Area – The used jump area is determined by tracking and recording the landing position for each of the five single leg jumps. Once the five landing points are determined, the best way to “visually” explain how used area is determined is to consider the five landing points to be nails in a board. If you were to stretch a rubber band around all of the nails on the board and then let go, it would snap into place around all the outermost nails – enclosing all other nails within its interior.



Power Asymmetry – Power asymmetry is the average percent-difference between an athlete’s left leg and right leg power metrics.

RSI Asymmetry – RSI asymmetry is the average percent-difference between an athlete’s left leg and right leg RSI metrics.

Height Asymmetry – Height asymmetry is the average percent-difference between an athlete’s left leg and right leg height metrics.

Vertical Jump

Power – The amount of Loden Power Points generated during a single vertical jump. Loden Power Points are Loden Sports measure of power.

Height – The height (in inches) of a single vertical jump.

Broad Jump

Power – The amount of Loden Power Points generated during a single broad jump. Loden Power Points are Loden Sports measure of power.

Distance – The distance (in feet) of a single broad jump.

Reaction Jump

Reaction Time – The time (in seconds) it takes to react and jump to the device flashlight randomly turning off.

Loden Score / Female Loden Score / Junior Loden Score

A couple of notes on the Loden Score System. The Loden Score System was created as a simple way to quickly benchmark an athlete against their peers with metrics that are heavily correlated to things that matter in competitive sports. The Loden Score System was built using thousands of data points on athletes across the most popular sports in the world. Loden Sports stands by the Junior Loden Score System, Loden Score System, and Female Loden Score System as accurate, universal benchmarks of raw athleticism.

- The Junior Loden Score System should be used for athletes aged-14 and younger. This scale is used to monitor developmental progress in athletes prior to their growth spurt.
- The Loden Score System is used for the physically maturing or mature, male athlete. This scale was built using a data set comprised of elite, physically mature athletes. If your 12-year-old scores a 0 on the Loden Score System, well, of course they did.
- The Female Loden Score System is used for the physically maturing or mature, female athlete. This scale was built using a data set comprised of elite, physically mature athletes.

Under the TRACK tab for the Loden Sports Performance Lab, you will have the option to view the Junior Loden Score System or the Loden Score System. Again, if your athlete is aged-14 or younger, male or female, we encourage your focus to remain on the Junior Loden Score System. If an athlete is designated “male” during registration, the Loden Score System will populate with the male Loden Score System. If an athlete is designated “female” during registration, the Loden Score System will populate with the Female Loden Score System.

As a female athlete, there is no way to view what your male Loden Score would be and vice versa. In a unique case where a female athlete is interested in what her male Loden Score would be, contact Loden Sports directly at info@lodensports.com or via DM on Twitter or Instagram (@LodenSports).

Power Score – Loden Sports uses the Power Score to benchmark lower-half power production. The Power Score is on a 0-12 scale. Age averages in the table below.

Quickness Score – Loden Sports uses the Quickness Score to benchmark the relationship between time spent in the air and ground contact time. The Quickness Score is on a 0-12 scale. Age averages in the table below.

Speed Score – Loden Sports uses the Speed Score to benchmark top-end speed. The Speed Score is on a 0-12 scale. Age averages in the table below.

Loden Score – Loden Sports uses the Loden Score as a measure of overall raw athleticism. The Loden Score is on a 0-12 scale. Age averages in the table below.

Age	Junior Loden Score				Female Loden Score				Loden Score			
	Power	Quickness	Speed	Loden Score	Power	Quickness	Speed	Loden Score	Power	Quickness	Speed	Loden Score
7	-	-	-	-	-	-	-	-	0	1	0	0
8	0	4	1	1	-	-	-	-	0	1	0	0
9	1	4	2	2	-	-	-	-	0	1	0	0
10	2	4	2	2	-	-	-	-	0	1	0	0
11	2	5	2	3	2	5	4	4	0	1	0	0
12	3	4	3	4	2	5	5	5	0	1	0	0
13	5	5	5	5	3	6	6	5	0	1	1	0
14	6	6	6	6	4	6	7	6	0	2	2	1
15	-	-	-	-	5	6	7	6	1	3	4	2
16	-	-	-	-	5	7	7	7	3	4	5	3
17	-	-	-	-	5	7	8	7	3	5	5	4
18	-	-	-	-	-	-	-	-	4	5	6	4
19	-	-	-	-	-	-	-	-	4	6	6	5
20	-	-	-	-	-	-	-	-	5	6	6	6
21	-	-	-	-	-	-	-	-	6	6	6	6
22	-	-	-	-	-	-	-	-	6	6	6	6
23	-	-	-	-	-	-	-	-	6	7	7	6
24	-	-	-	-	-	-	-	-	6	6	6	6
25	-	-	-	-	-	-	-	-	6	6	6	6
26-30	-	-	-	-	-	-	-	-	4	6	5	4

Loden Sports collects additional metrics that aren't currently displayed within the Loden Sports Performance Lab TRACK tab. There are plans to incorporate the presentation of inputted run times, and for select jump tests, ground contact time, flight time, contraction time, peak velocity, peak acceleration, average acceleration, and peak ground force into future offerings from Loden Sports.

ACCOUNT

Settings

Under the ACCOUNT tab on the dashboard, click “Settings” to view version information, terms of use, our privacy policy, or an email pop-up to contact us.

View Subscription

“View Subscription” allows you to view the account type and the current number of athlete licenses allowed on the account. Additionally, you can edit or cancel your subscription from here depending on your needs as outlined in the section: *Setting Up An Account; What are your Needs?*

Log Out

If you are signed into your account on a device that you do not own; are looking to sign into an alternate account; or for whatever other reason, you can log out of your account using the “Log Out” button on the ACCOUNT tab of the dashboard.