

omegawave

COACH  
USER GUIDE

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## WELCOME

Thank you for purchasing the Omegawave Coach! Let's start by reviewing what is inside your package:

- Omegawave Bluetooth Low Energy (BLE) sensor. Model name: OW-CB2.  
Simultaneously measures both an electrocardiogram (ECG) and Direct Current (DC) Potential of the Brain.



- ECG chest strap(s)



- DC Potential cable



- Pre-gelled electrodes for DC Potential measurement



- Micro-USB charging cable



In order to use the Omegawave Coach App, you will need to have an iPad with iOS 8.0 or a newer and have downloaded the Omegawave App from the App Store.

Please check the following:

- Ensure that your iPad has an active Internet connection via WLAN or mobile data (3G/4G).
- Please fully charge the sensor before first use by connecting the micro-USB cable to a computer or USB compatible power source and attaching it to the sensor.
  - A red light on the sensor will appear to indicate that the sensor is being charged. Once the light turns off, the sensor is fully charged. A full charge will take approximately one hour.
  - If charging via a wall outlet, use a USB compatible power adapter (not included with the product). Make sure that the adapter is specified with the following voltage and current values: "output 5V DC, 0.5A - 2A max".

**IMPORTANT!**

Please ensure that the white dot on the charging cable aligns with the sensor LED as illustrated.

Please do not force the cable into the sensor, otherwise you may break the sensor's micro-USB connector.



**Support:**


If you have any questions or need technical assistance, please contact us by sending an email to: [support@omegawave.com](mailto:support@omegawave.com)

## QUICKSTART GUIDE

### To start using Omegawave Coach follow the next steps to setup your team

1. Check the getting started email
  - a. The email contains instructions about downloading the Omegawave app, setting your Omegawave password and logging into the app
2. Log in to the application
3. Create your athletes
4. Allocate licenses to your athletes
  - a. A license is needed in order to measure an athlete
5. Group your athletes
  - a. Tags are used for grouping your athletes
6. Setup the hardware
7. Study the Omegawave measurement protocol

### Daily usage

- Tap the synchronize button  to download your athletes' daily measurements
- *Team overview* provides a snapshot of your athletes based on their latest measurements:
  - Athletes are automatically sorted into three groups: *excellent*, *moderate* and *poor*
  - If an athlete hasn't completed a measurement during a current day, he/she is placed into the group *not measured*
- *Team detailed view* allows you to compare athletes based on their Central Nervous, Cardiac, Energy Supply Systems and Overall Readiness scores
  - You can also use tags to filter the athlete list
- From an athlete's *result view*, you can see his/her full measurement history including all of the associated indices

## GETTING STARTED EMAIL

After purchasing the Omegawave Coach, you will receive an email containing instructions on how to get started. Open the email with your iPad's Mail application if possible.

1. Set your Omegawave account password

*Click the link **Complete your account** and type in the password you want to use with your Omegawave account.*

2. Install the Omegawave application

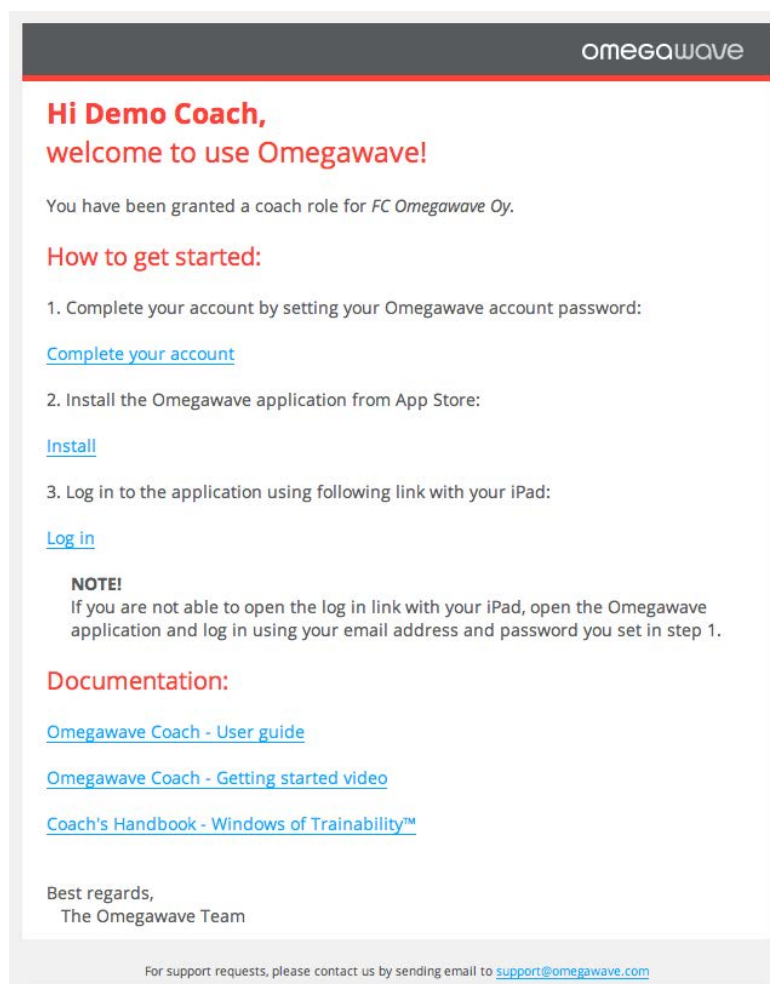
*The **Install** link will automatically direct you to the AppStore to install the Omegawave application.*

*You will need to have an iPad with iOS 8.0 or newer.*

3. Log in to the Omegawave application

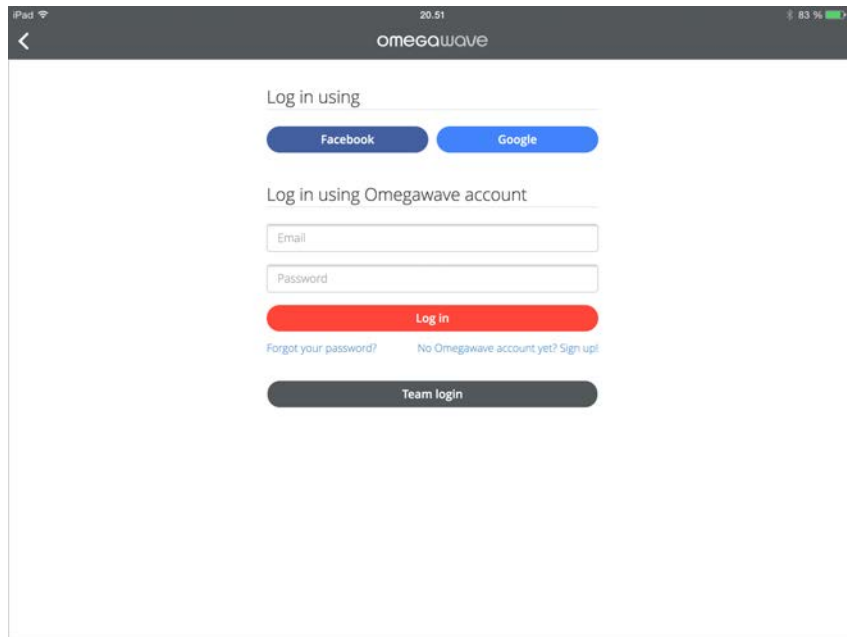
*If you opened the email using your iPad, you can click the **Log in** link to log in automatically without the need to input your email and password.*

*If you are not able to open the log in link with your iPad, open the Omegawave application and log in using Omegawave authentication. Type in your email address and the password you set in step 1.*



## LOGGING IN TO THE APPLICATION

Open the Omegawave application and tap the **Start** button.



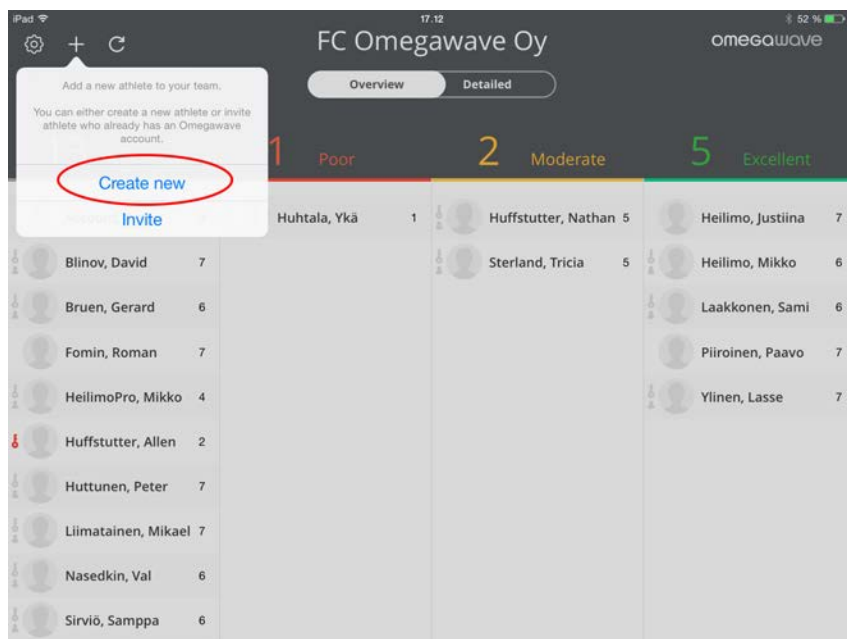
Use your email address and password to log in.

### NOTE!

If you forget your Omegawave account password, you can request a new one from the login screen by tapping **Forgot your password**.

## CREATING ATHLETES

You can create a new athlete by tapping the add button **+** in the team view and selecting **Create new**.



This will open an empty athlete profile view. Fill in the personal data for an athlete.

FC Omegawave Oy

Firstname

Lastname

Gender Male Female

Date of birth 01/01/1980

Units kg/cm lbs/in

Weight 75.0 kg (165.3 lbs)

Height 175.0 cm (5' 8.9")

Email athletes email address

Nickname athletes nickname

Searchable nickname Yes No

Add athlete

Email field is optional. Athlete will get an email that allows him/her to set Omegawave account password and automatic log in link to Omegawave application. Email is sent after a license has been given to athlete.

Nickname and searchable nickname fields are for future use, but need to be filled in now. Searchable nickname simply means that the athlete can be found using his/her nickname.



When you have filled all fields, tap **Add athlete** to create the athlete.

FC Omegawave Oy

Name: Demo  
Athlete: Athlete

Gender: ☒ Male ☐ Female

Date of birth: 01/01/1980

Units: ☒ kg/cm ☐ lbs/in

Weight: 75.0 kg (165.3 lbs)

Height: 175.0 cm (5' 8.9")

Email: demo.athlete@omegawave.com

Nickname: demo.athlete1

Searchable nickname: ☒ Yes ☐ No

**Add athlete**

The athlete has now been added to your team.

#### NOTE

When the athlete has been created, a license is not automatically given to the athlete. Remember that a license is needed to complete measurements. See the next chapter on how to allocate licenses.

#### IMPORTANT!

Omegawave's algorithms need to know the athletes' gender, date of birth, weight and height in order to calculate certain results. It is important that you always keep their personal data up to date.

## ALLOCATING LICENSES TO ATHLETES

The athlete will need a license before he/she can complete measurements. You are also not able to measure the athlete with your iPad before the license is given.

From the athlete's profile tap the **Give** button to assign a license.

The screenshot shows the athlete profile for 'Demo Athlete' on an iPad. The profile includes fields for Gender (Male/Female), Date of birth (01/01/1980), Units (kg/cm/lbs/in), Weight (75.0 kg (165.3 lbs)), Height (175.0 cm (5' 8.9")), Email (demo.athlete@omegawave.com), Nickname (demo.athlete1), and Searchable nickname (Yes/No). On the right, the 'Athlete license status' section shows 'No license' with a 'Give' button. Below this, it states 'Athlete does not have any licenses for measurement. You can give one of your licenses from your subscription to the athlete.' and 'You have 80 licenses available'. At the bottom right are 'Remove from Team' and 'Save' buttons.

After the license has been successfully given, you will see the athlete's license status changed from *No license* to *License set*, note that your available licenses will have decreased by one.

The screenshot shows the same athlete profile, but the 'Athlete license status' section now shows '✓ License set' with a 'Remove' button. Below this, it states 'Athlete has your license for measurements. You can remove license from the athlete and add it back to your subscription. Activation key: D15E6821-3F82-4866-84C6-CCDE9414220C'. The available licenses are now '79 licenses available'. The 'Save' button remains at the bottom right.

When the license has been given, a *getting started email* is sent to the athlete's email address. The email contains instructions on how to set an Omegawave password, install the Omegawave application and log into the application.

### IMPORTANT!

If you mistyped the athlete's email address and thus the athlete did not receive the *getting started* email, do the following:

- Enter the correct email address in the athlete's profile view and tap **Save**
- Remove the license from the athlete by tapping **Remove** from the *Athlete license status* box
- Give the license back to the athlete by tapping **Give** from the *Athlete license status* box  
=> The getting started email is re-sent to the new address

### NOTE

If you do not have any licenses available, you need to request more licenses or take a license away from one of your licensed athletes. You can see how many free licenses you have from the *Athlete license status* box: "You have XX licenses available".

See "Managing your subscriptions and licenses" chapter for more detailed instructions.

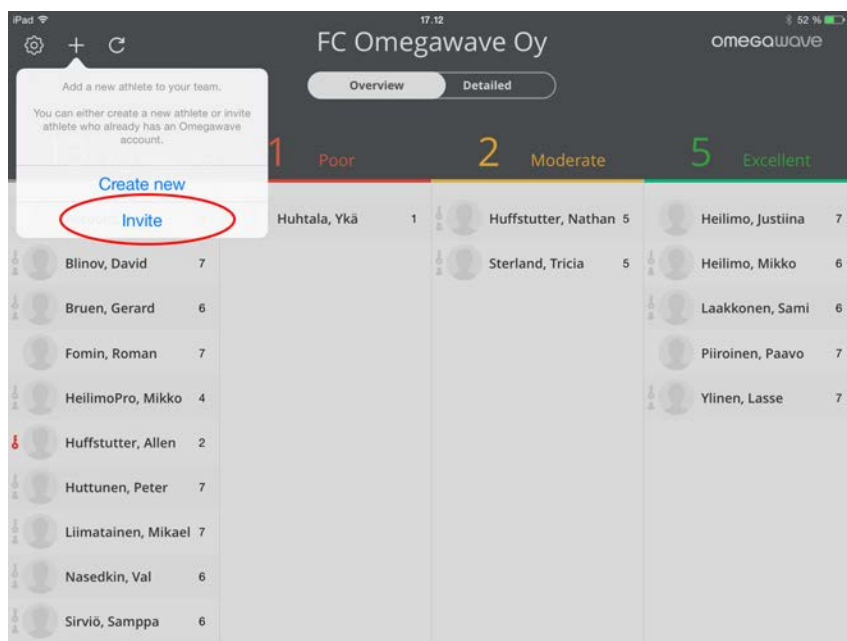
## INVITING ATHLETES

If the athlete already has Omegawave account, you can invite him/her to your team. One example is an athlete who is already using Omegawave Personal.

### IMPORTANT!

When you invite an athlete, the data sharing relationship is established between the athlete and you, not with your team. This means that the other coaches in your team cannot see the athlete. If other coaches want to see the same athlete, they will have to separately invite the athlete from their Coach app.

You can invite an athlete by tapping the  button in the team view and selecting **Invite**.



Fill in the athlete's email you want to invite to your team. You can also write a personal message which is included in the invitation email the athlete receives. When ready, tap **Send invitation**.

Invite Omegawave User

You can invite an athlete who already has an Omegawave account by filling in the email field below. You can also write a personal message that is included in your invitation email. When the athlete receives your invitation email, he/she can choose if the invitation is accepted or not.

Email address:

Personal message:

Type here your personal invite message (optional).

Send invitation

The invited athlete will receive an email containing the invitation request. If the athlete accepts the invitation, you can see him/her under your team.

## GROUPING ATHLETES

Tags can be used for grouping your athletes.

### What does a tag mean?

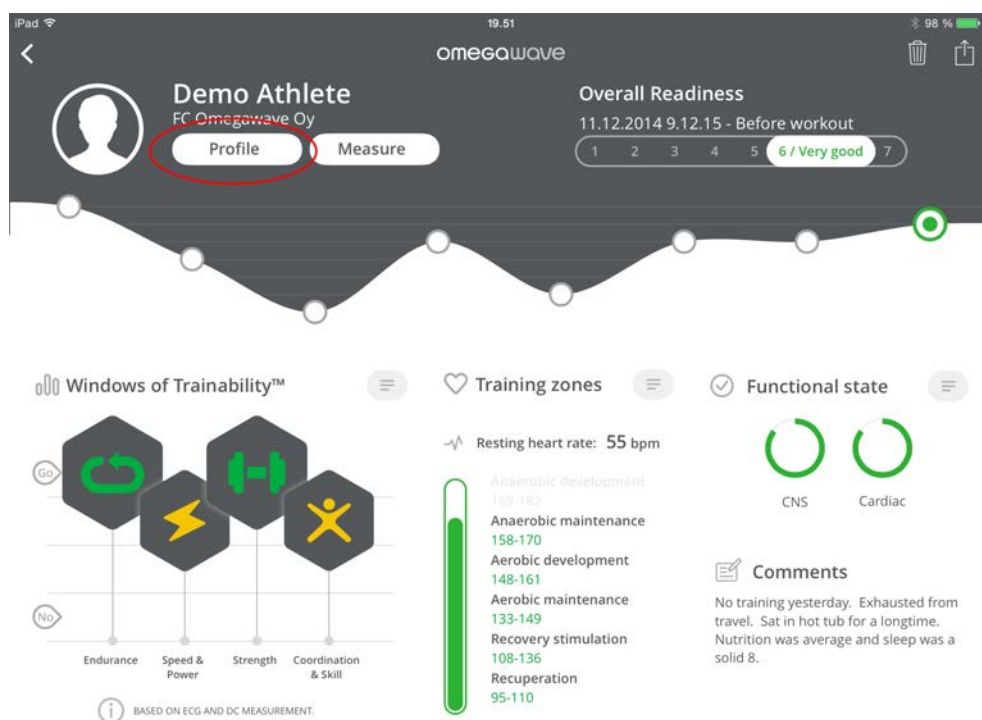
- A tag functions like a filter. By creating tags, you can create filtered groups and use them to view subsets of your athletes.
- A tag can be any short description, e.g. "A-team", "injured" or a specific position.
- You can filter your athletes using tags in the team detailed view.
- You can assign one or more tags for each athlete.


### IMPORTANT!

- Tags are coach-specific, only you can see the tags you have created and assigned to athletes
- You cannot modify an existing tag name
- You cannot delete a created tag


### How to assign tags?

Select one athlete from the team view and tap **Profile** to open the athlete's profile.



To create a new tag, tap **Specify new tag and add** button. Choose a tag name and tap the add button . The new tag is created and allocated to the athlete. You can create multiple tags for the athlete at the same time. When you have finished assigning tags, tap **Save** button.

## How to manage existing tags?

When you open the athlete's profile, you will see all of the tags you have created for your athletes. Highlighted tags are the ones assigned to the athlete, e.g. *Injured* in the example below. If you want to remove a tag from the athlete, tap on the remove button  inside the tag. When you have finished making changes, tap **Save** button.

## REMOVING ATHLETES

You can remove created and invited athletes from your team by opening the athlete profile page and making sure that the athlete does not have a team athlete license. Tap **Remove from Team** button to remove the athlete from your team.


The screenshot shows the 'FC Omegawave Oy' athlete profile page. The form includes fields for Name (Demo), Athlete, Gender (Male/Female), Date of birth (01/01/1980), Units (kg/cm/lbs/in), Weight (75.0 kg (165.3 lbs)), Height (175.0 cm (5' 8.9")), Email (demo.athlete@omegawave.com), Nickname (demo.athlete), and Searchable nickname (Yes/No). A modal window titled 'Athlete license status' is open, showing 'License set' with a 'Remove' button. The 'Remove from Team' button at the bottom is circled in red.

### IMPORTANT!

If you remove an athlete, you are not able to undo this action.




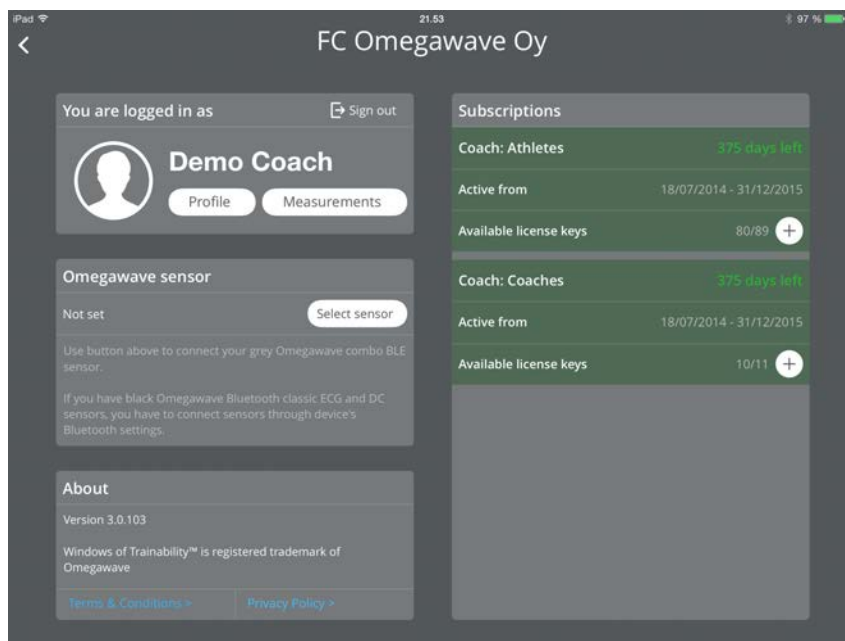
## MANAGING YOUR SUBSCRIPTIONS AND LICENSES

You can see your subscriptions' from the team view by tapping the settings button .

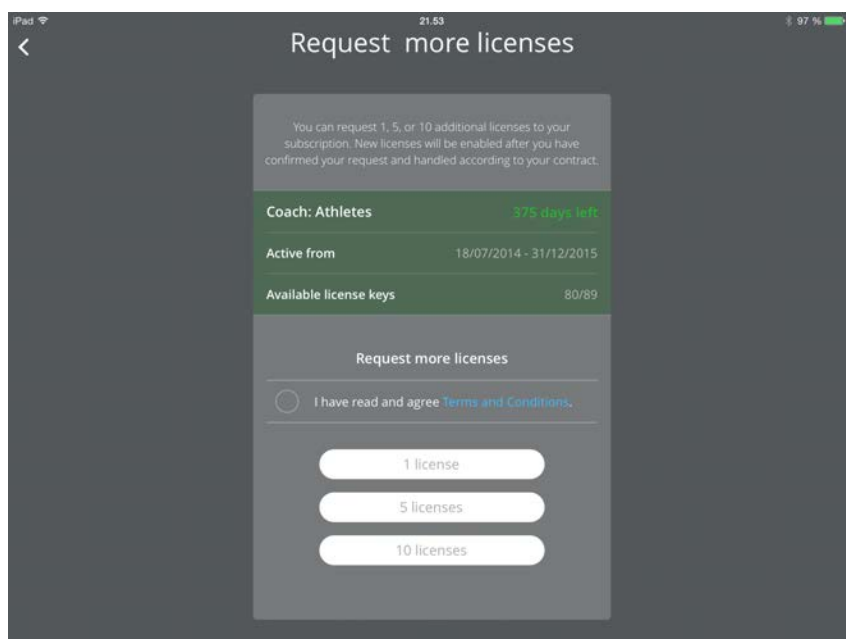
On the right side of the settings view you can see all subscriptions connected to your Omegawave account. If you are the main subscription owner for your team, you should see separate subscriptions for athletes and coaches.

### Requesting more coach or athlete licenses

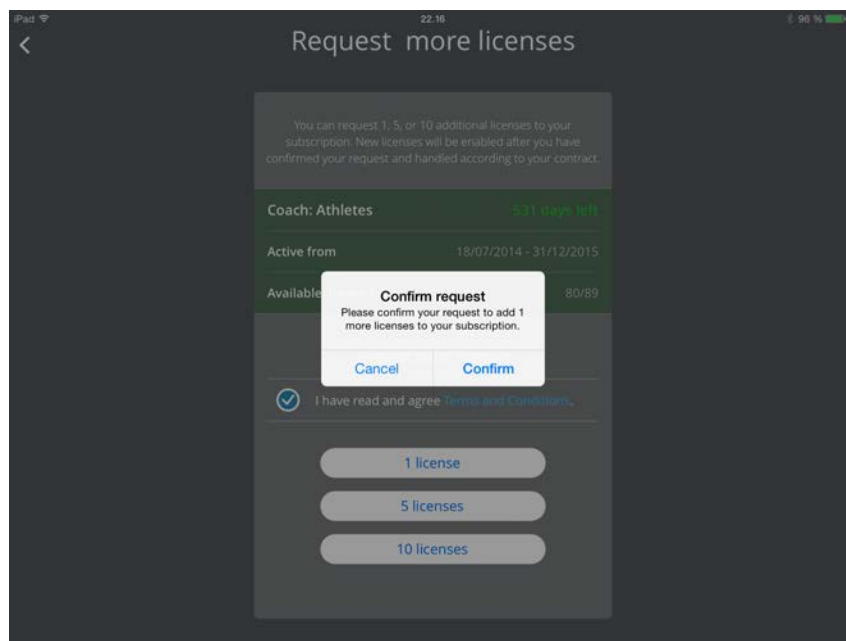
If you need more licenses for athletes or coaches, you can request more by tapping the  button.



You need to read and agree to the **Terms and Conditions** before proceeding. You can add 1, 5 or 10 licenses to your subscription by tapping the corresponding button.



The additional licenses will be added to your subscription after you have confirmed the request. The additional licenses will be billed according to your contract. Confirm your request by tapping **Confirm** button.



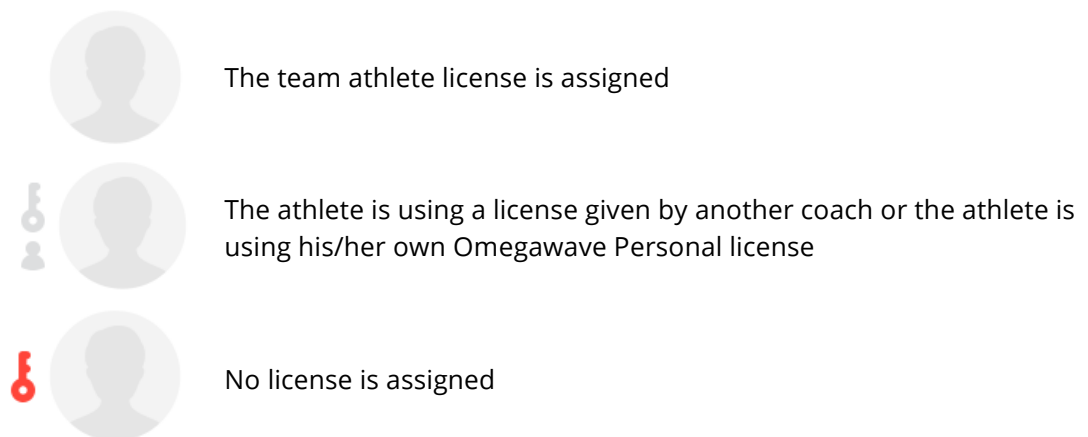
## Managing athlete licenses

Each athlete needs to have a valid license before he/she can use the Omegawave app to conduct assessments himself/herself and/or to be directly measured using your iPad.

From the team *Overview* you can see information about the status of the athletes' license.

12 Not measured		0 Poor	5 Moderate	5 Excellent
Athlete, Demo	4		Account, Tester	3
Blinov, David	7		Heilimo, Mikko	4
Bruen, Gerard	6		Huffstutter, Nathan	5
Fomin, Roman	7		Huhtala, Ykä	4
HeilimoPro, Mikko	4		Ylinen, Lasse	5
Huffstutter, Allen	2		Heilimo, Justiina	6
Huttunen, Peter	7		Laakkonen, Sami	6
Nasedkin, Val	6		Liimatainen, Mikael	7
Sirviö, Samppa	6		Piironen, Paavo	7
Talikka, Jesse	7		Sterland, Tricia	6

The athlete icon provides information about the status of the athletes' license:



You can manage athlete's license by selecting individual athlete from the team view and then opening the athlete's profile.

You can give a license for the athlete by tapping the **Give** button.

The screenshot shows the "FC Omegawave Oy" athlete profile screen on an iPad. The screen is dark gray with white text and buttons. At the top, there is a back arrow, the team name "FC Omegawave Oy", and the time "21:07". Below the team name, there is a profile section with a circular athlete icon, a "Demo" name field, and an "Athlete" role field. The main section contains various fields for athlete information: Gender (Male/Female), Date of birth (01/01/1980), Units (kg/cm/lbs/in), Weight (75.0 kg (165.3 lbs)), Height (175.0 cm (5' 8.9")), Email (demo.athlete@omegawave.com), Nickname (demo.athlete), and Searchable nickname (Yes/No). On the right side, there is a "Tags" section with a "Specify new tag and add" button. Below that, there is an "Athlete license status" section with a "No license" status and a "Give" button. A message below the "Give" button states: "Athlete does not have any licenses for measurement. You can give one of your licenses from your subscription to the athlete." At the bottom, there is a "You have 80 licenses available" message and two buttons: "Remove from Team" and "Save".

If the athlete has your team's athlete license, you can remove it by tapping the **Remove** button.

The screenshot shows the 'FC Omegawave Oy' athlete profile interface. On the left, there's a form with fields for Name (Demo), Athlete status, Gender (Male/Female), Date of birth (01/01/1980), Units (kg/cm, lbs/in), Weight (75.0 kg (165.3 lbs)), Height (175.0 cm (5' 8.9")), Email (demo.athlete@omegawave.com), Nickname (demo.athlete), and Searchable nickname (Yes/No). On the right, the 'Athlete license status' section shows 'License set' with a 'Remove' button. Below this, it states: 'Athlete has your license for measurements. You can remove license from the athlete and add it back to your subscription. Activation key: B09D71E1-27A3-4871-88BA-877375C03770. You have 80 licenses available.' At the bottom right, there are 'Remove from Team' and 'Save' buttons.

If the athlete has his/her own valid personal license or given by another coach, you cannot remove it. But you can give your team's athlete license to him/her if needed. You might need to do this e.g. if the athlete's personal license does not allow DC Potential measurement.

This screenshot is identical to the one above, but the 'Athlete license status' section shows 'License set' with a 'Give' button instead of 'Remove'. The text below states: 'Athlete has his/her own license for measurements. You can give one of your licenses from your subscription to the athlete. Athlete has right to measure DC and ECG. You have 80 licenses available.' The 'Remove from Team' and 'Save' buttons remain at the bottom right.

## Managing coach licenses

If you want to add a coach to your team or remove a coach from your team, contact us by sending an email to: [support@omegawave.com](mailto:support@omegawave.com)

## CHANGING BETWEEN TEAMS

If you have a coach role for multiple teams, you will see a small arrow next to your team name.

You can switch between your teams by tapping the team name and selecting a team.



When you are performing the data sync, it will sync only the team which is currently selected.

## USING THE MEASUREMENT HARDWARE

### ECG measurement

An ECG recording is used to assess the athlete's cardiac and metabolic state.

The sensor should be attached to the ECG chest strap and must be placed at the bottom of the sternum. Soak the ECG chest strap electrode pads with water. The micro-USB port on the sensor needs to be facing down; if you attach the sensor upside-down, your ECG will appear inverted and will cause inaccurate assessment results.

The electrode pads on the inside of the chest strap must be aligned with the midaxillary line of the body (position V6, shown as a red dot in the picture below). The chest strap should be tight around the chest and it should not move out of position during normal breathing.



Female athletes should place the chest strap directly below or under a sports bra support band. When possible, remove undergarments to ensure optimal placement of the chest strap.

### DC Potential measurement

A DC Potential of the Brain recording is used to assess the state of the athlete's CNS.

One single-use, pre-gelled electrode should be used to connect the sensor to the athlete's forehead via the DC Potential cable (please see the next page for illustrations). The other electrode should be attached to the palm of the athlete's dominant hand at the base of the thumb, and also connected to the sensor via the DC Potential cable. **Each measurement requires a new set of gelled electrodes;** using old or standard ECG electrodes will result in inaccurate assessment results.

#### NOTE

Keep unused electrodes in their original pouch.

Always seal an opened pouch by tightly folding the top of the pouch to prevent the electrodes from drying.

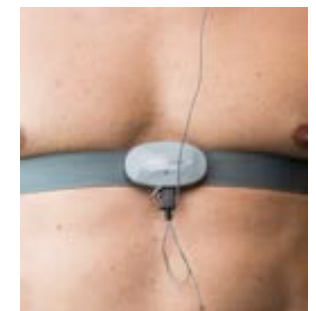
The DC Potential cable with a head symbol connects to the athlete's forehead.



The DC Potential cable with a hand symbol connects to the base of the thumb of the athlete's **dominant** hand.



The DC Potential cable connects to the micro-USB port of the sensor. Please ensure that the white dot on the cable aligns with the sensor LED as illustrated.

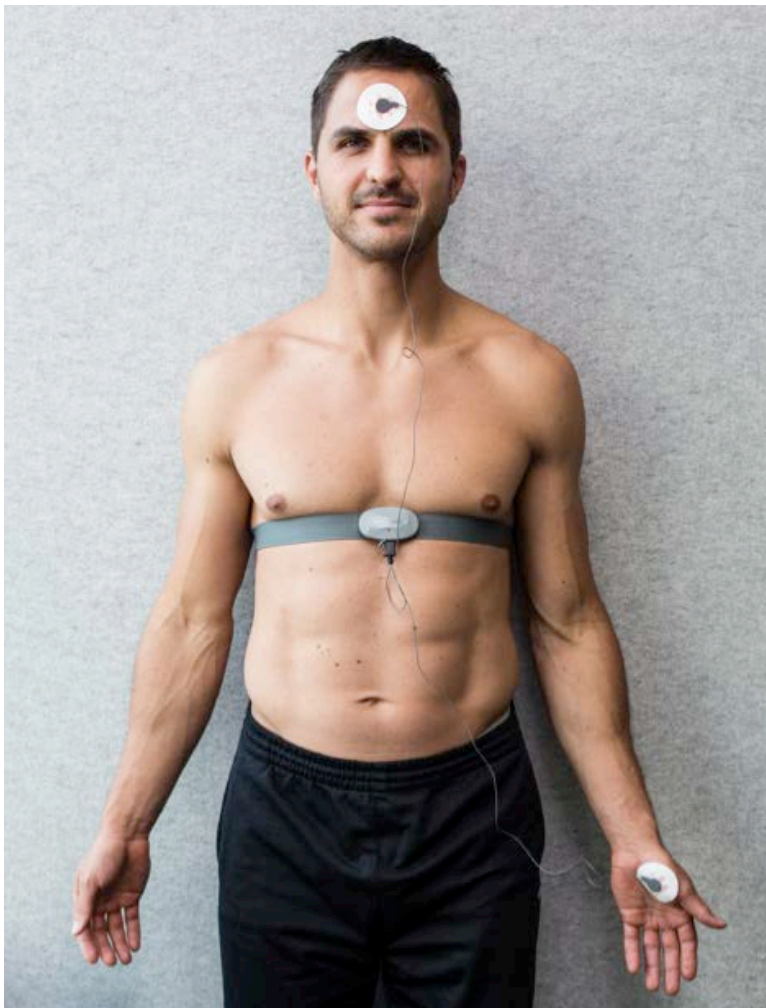


### IMPORTANT!

Follow this protocol when dressing the chest strap, sensor and DC electrodes to avoid bending the micro-USB connector:

1. Thoroughly wet the chest strap electrodes and wear it
2. Attach the DC electrodes to the hand and the forehead
3. Attach the DC cable to the DC electrodes on the body
4. Attach the DC cable to the sensor
5. Go to **Measure** view
6. Attach the sensor to the chest strap
7. Wait until the application detects data from the sensor
8. Lay down
9. Start the measurement immediately
10. After the measurement is done, take sensor from the chest strap before standing up
11. Remove the DC cable from the sensor

The picture below shows an athlete with the hardware properly attached (left hand dominant).





## PAIRING THE SENSOR WITH YOUR IPAD

You need to pair the Omegawave sensor before you are able to conduct assessments with your iPad.

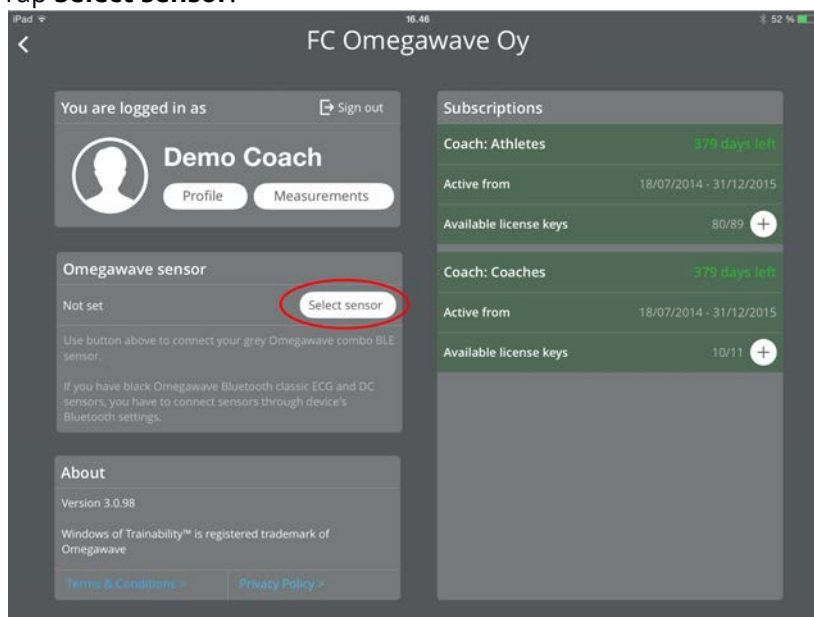
### NOTE

Before proceeding with the following steps, please put on the chest strap and attach the sensor to the strap as previously described. Please ensure that your iPad's Bluetooth is switched on. The sensor's Bluetooth connection will be activated and the LED will start blinking blue only when the sensor is connected to the chest strap.

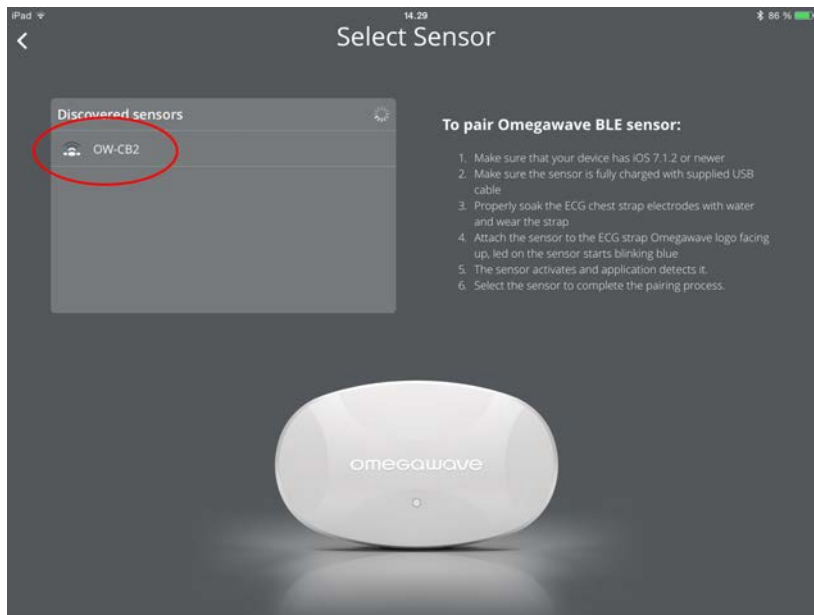
1. From the team view open the **Settings** view by tapping the settings button .



2. Tap **Select sensor**.



3. The Omegawave sensor should now become visible in the device list. Select the sensor from the list by tapping the line saying **OW-CB2** in order to complete the pairing process.



Now the Omegawave BLE sensor is paired to the application.

**IMPORTANT!**

Do not pair the sensor via your device's Bluetooth settings.

If you have an old black sensor however, pairing is to be conducted via your device's Bluetooth settings.

## MEASURING – QUICK GUIDE

### General rules

- **To achieve comparable results, measure your athletes in the same way each time.**
- If interrupted for any reason, cancel the measurement.
- If measuring after exercise, wait at least 30 minutes.

### Measurement instructions

1. Pair the Omegawave sensor **in the application** (needs to be done only once).
2. Thoroughly wet the ECG chest strap pads with water and only use new gelled electrodes.
3. Attach the belt and sensor as instructed.
4. Athlete should lie down flat on your back, relax and breathe normally.
5. Begin the measurement immediately upon athlete has laid down.
6. The application will sound when the measurement is complete.

#### NOTE

There are two measurement types available:

- ECG only
- ECG + DC Potential (requires a subscription that allows you to measure DC Potential)

Completing only a DC Potential measurement is not supported.

#### NOTE

It is possible to do measurements without Internet connection, but the results will be calculated only when the connection is available. You will see a blue dot indicator next to athlete indicating that you have done measurement(s) for the athlete(s) which are not yet calculated.

### Conditions

- If you wish to measure in the morning, please allow at least 30 minutes after waking up to ensure that your body is in the right state of wakefulness.
- Choose a calm and quiet environment.
- Switch off loud electronic devices and bright lights.
- Do not use any other electronic devices during the measurement.
- Lie down flat on your back with your arms alongside your body, without using a pillow to support your head.
- Straighten your legs but do not cross them.
- Breathe normally.
- Do not talk, sneeze or cough. Cancel the measurement if needed.
- Avoid interruptions and external stimuli (TV, music, etc.). Cancel the measurement if interrupted.

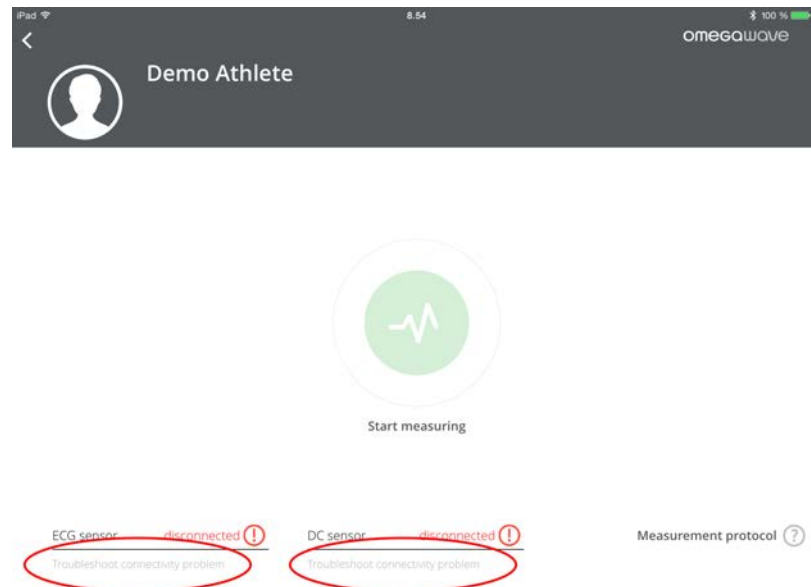
### Food and supplements

- Morning measurements should be conducted before your first meal.
- Allow at least one hour after meals before conducting measurements at any other time of the day.
- Avoid consuming coffee, alcohol, energy drinks and other stimulants for at least 5 hours before a measurement.

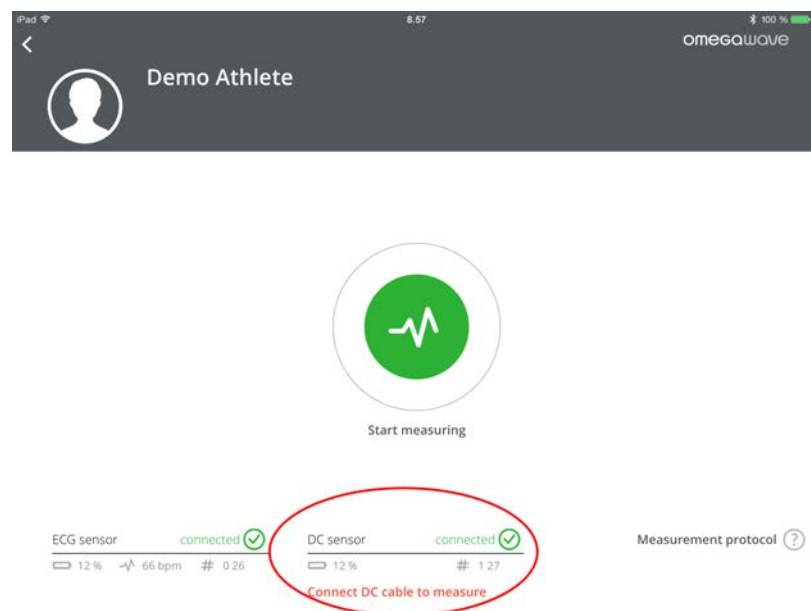
### Measurement instructions

1. Make sure that you have an active Internet connection via Wi-Fi or mobile data.
2. Make sure that your device has the volume switched on.
3. Make sure you have paired the Omegawave sensor in the application.
4. Make sure that the athlete is correctly wearing the chest strap, sensor and electrodes as previously described.
5. Tap the **Measure** button.

The application will automatically find the paired Omegawave sensor. If the sensor does not appear, tap “Troubleshoot connectivity problem” on the screen to review possible reasons, see screenshots below. The most common reason is that the ECG chest strap electrodes have not been properly moistened.

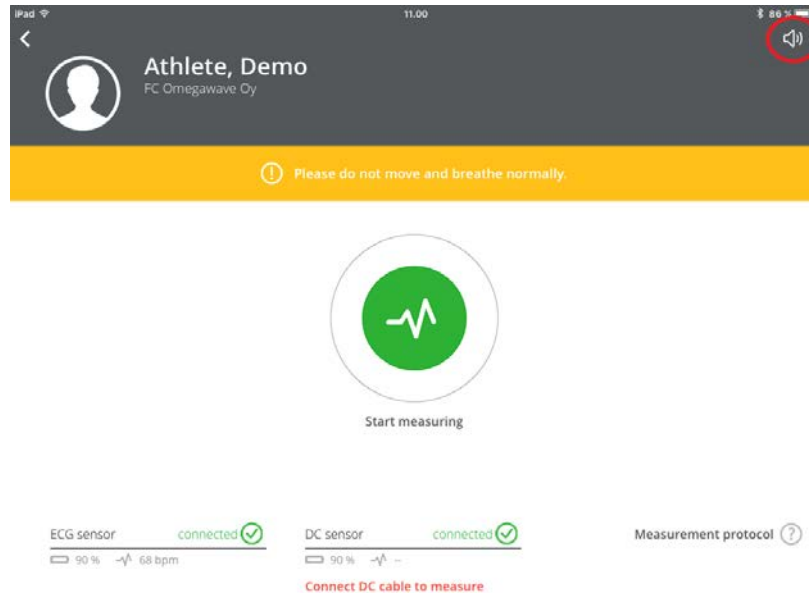


If you want to do an ECG only measurement, do not connect the DC cable. See screenshot below.

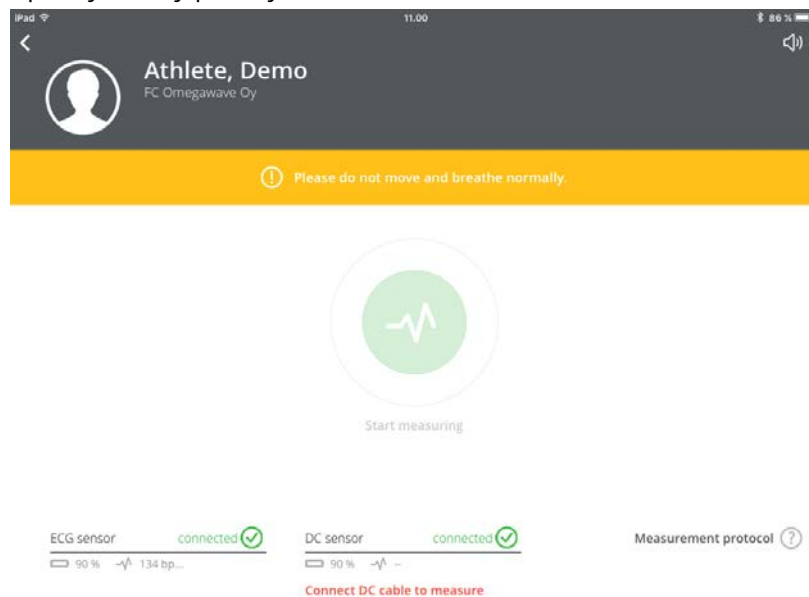


6.

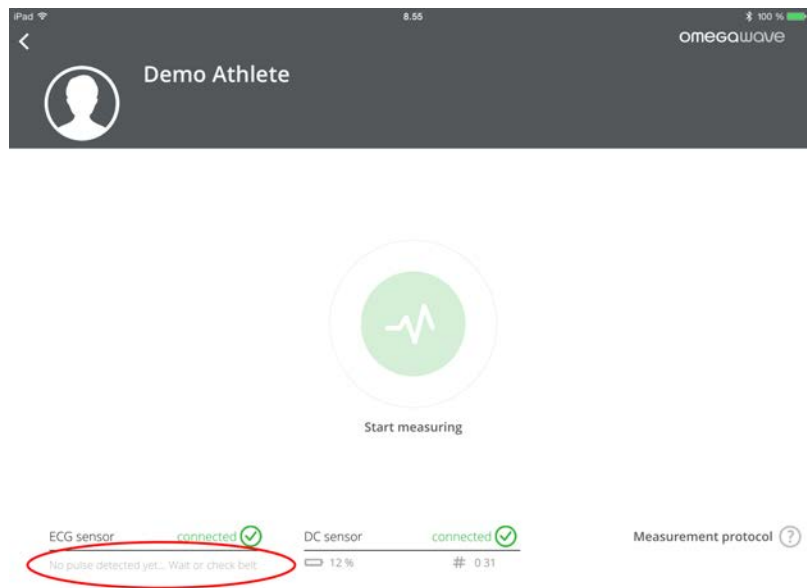
7. While getting ready for the measurement, you will probably still be moving around. Any movement, talking, coughing, sneezing or other such activities will disrupt the signal being received from the sensor. Under such a scenario, you will be notified on-screen and through voice guidance (which can be muted). This is given already in the pre-measurement view to get you ready for the measurement. See screenshots below for how this works in practice.



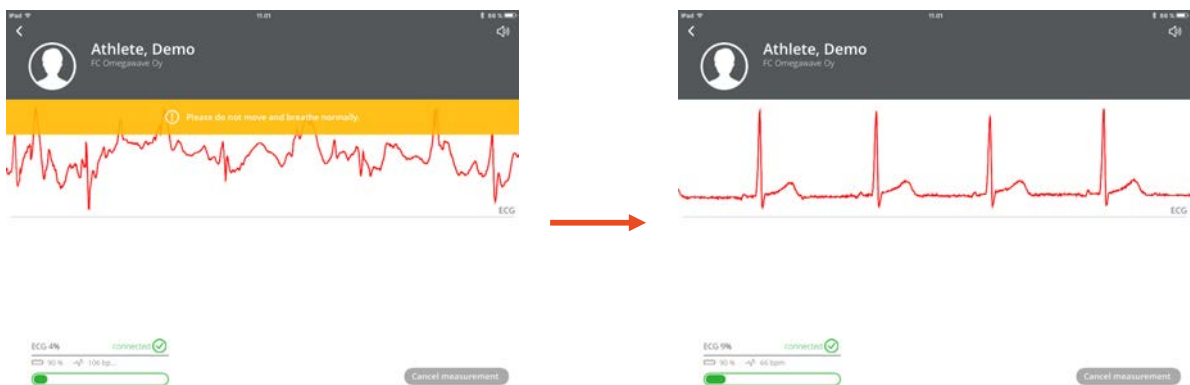
8. If the signal quality is very poor, you won't be able to start a measurement.



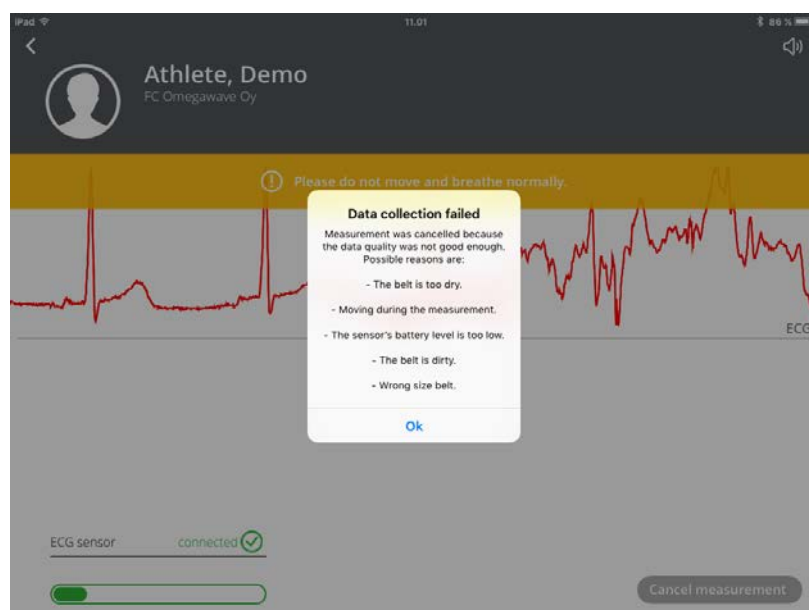
9. There may also be other reasons why the **Start measuring** button is not turning green, check the messages under the ECG and DC sensor to review possible reasons.



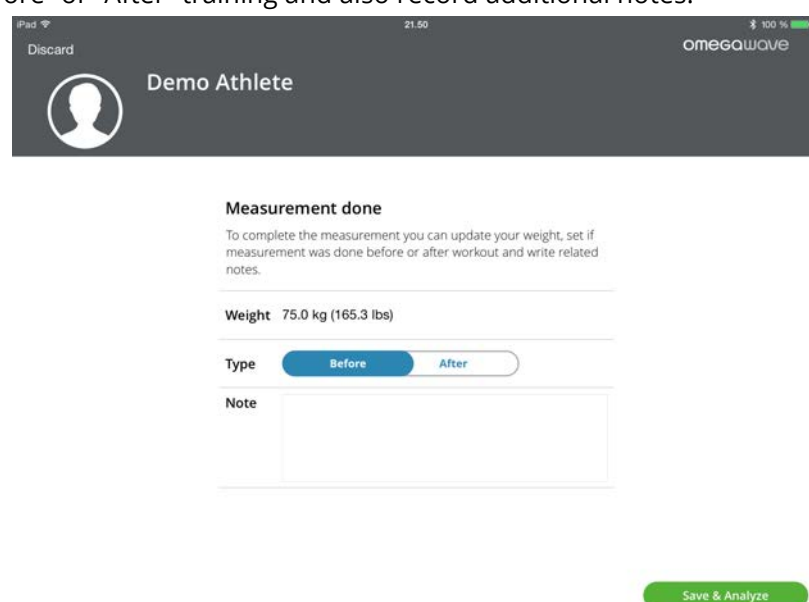
10. When the sensor is ready to start a measurement, the Start button will turn green. To begin the measurement, tap **Start measuring**. The measurement will take approximately 4 minutes.
11. If the signal quality is poor during the measurement, you will be notified both visually and through voice guidance. Return to the optimal measurement procedure to improve the signal quality and to complete a high-quality measurement.



12. If the signal quality is very poor, the measurement will be cancelled and you will be required to start again. This is because a good quality signal is required to complete the sophisticated data analysis performed by Omegawave.



13. You will hear a sound when the measurement is complete. Please ensure that your iPad's volume is switched on.
14. Before the results are calculated, you can update your weight, mark whether the measurement was taken "Before" or "After" training and also record additional notes.



15. Tap **Save & Analyze**. After the calculation is complete, the assessment results will be presented.
- If you do not have Internet connection available, the application will ask if you want to save the measurement data and calculate the results later when you have connection available.
  - If you tap **Discard**, the measurement will be deleted without calculating any results.
  - In rare cases calculation may fail. Should this happen, perform a new measurement.



16. After the measurement, remove the sensor from the ECG chest strap and the DC cable from the sensor to prevent battery drain. The sensor should be charged approximately once a month. You can also check the battery level from the measurement screen.

**IMPORTANT!**

If you want to repeat a measurement for the athlete:

Please wait at least 10 minutes before initiating a new measurement. During this time ask the athlete to stand up to return athlete body's functional state back to an active level of wakefulness.

If the athlete maintains a resting position and you initiate a new measurement without following this protocol, the athlete's functional state will change from active to reduced wakefulness. Omegawave's algorithms are designed to analyze an athlete's functional state at an active level of wakefulness. Doing a measurement while in a state of reduced wakefulness will therefore distort an athlete's measurement results.

**IMPORTANT!**

If you want to complete a measurement for the athlete after a period of physical exertion, you need to wait at least 30 minutes. This time is needed to allow the athlete's body to stabilize back to a normal level of active wakefulness.

## MEASUREMENT TROUBLESHOOTING TIPS

If you are seeing **odd assessment results or inaccurate ECG recordings**, one of the cases listed below may be the cause. If the potential solution listed for the case doesn't work, try the other ones one-by-one until you have tried all of them. If you are still experiencing difficulties, please reach out to Omegawave so that we can investigate the issue further ([support@omegawave.com](mailto:support@omegawave.com)).

Source of disturbance	Explanation	Potential solution
Wearing the belt incorrectly.	If the belt is too small or too large, the belt's electrode pads may be positioned on top of the latissimus dorsi muscle, in which case the recorded signal will be EMG from the muscle instead of an ECG from the heart.	Choose a belt that fits snugly so that the electrode pads will be positioned on top of your ribs, about 6 inches (15cm) below the armpits ( <a href="https://shop.omegawave.com/belt-sizes">https://shop.omegawave.com/belt-sizes</a> ). Also, position the belt so that the sensor is in the middle of the chest and on top of the sternum (i.e. below your pecs), with the sensor's text upright.
The belt or the athlete's skin is too dry.	If the belt's electrode pads are inadequately moistened prior to the measurement, a high quality ECG cannot be recorded as the belt's conduction will be too low.	Wet the belt's electrode pads with water (by running it under a tap or soaking it in a cup of water), ECG gel (highly effective and lasting), or regular moisturizing cream.
	If the air is dry, for example during cold winter months or with strong air conditioning indoors, the athlete's skin may be dry in which case the electrodes require more moisture than would otherwise be the case.	
Moving during the measurement.	Any kind of movement, particularly of the arms and upper body, generates electrical activity from the associated muscles which can interfere with the ECG signal being recorded.	Aim to lie supine on a comfortable surface and remain completely still during the measurement.
Sitting or walking during the measurement.	Completing the measurement in a sitting position or while walking will generate interference from active muscles, thereby disrupting the ECG signal.	Aim to complete the measurement in a supine resting position without moving, talking, coughing, sneezing or yawning.
Sensor's battery level is low.	If the sensor's battery level drops below 50%, the ECG signal being recorded may become inaccurate on occasion.	Charge the sensor regularly and particularly if it drops below 50%.
Dirty belt.	Particles from the skin transfer to the belt's electrode pads with use and build up over time. This increases the resistance meaning that the sensor won't receive a high quality ECG.	Wash the belt regularly and take note of the washing instructions located on the belt (note: use only liquid washing detergent).
Synthetic shirts.	Often worn by athletes for training, synthetic shirts (i.e. quick dry or 'technical' shirts) produce additional static electricity that may interfere with the ECG signal. This can occur for example when the air and user's skin are very dry and the belt has not been sufficiently moistened.	Apply moisture or in some cases an antistatic agent to the belt to resolve the issue, or remove the shirt while completing the measurement.

Electrical interference (from refrigerators, fluorescent lights, etc.).	Electrical interference in the immediate vicinity of the user may cause electric 'noise', thereby disrupting the ECG signal.	Avoid completing the measurement right next to sources of electrical interference.
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## TEAM ANALYSIS – OVERVIEW

The team *Overview* provides a snapshot of all your athletes based on their latest measurements:

- Your athletes are automatically sorted into three groups: *excellent*, *moderate* and *poor*.
- If the athlete hasn't conducted a measurement during a current day, he/she is placed into the group *not measured*.
- The Overall Readiness score is shown for all athletes using a 1-7 scale, where 7 is the best value.



Tap the synchronize button  to download your athletes' latest measurements.



If you see text on blue background and blue dot next to athlete name(s), it means that you have done measurement(s) without Internet connection for these athletes(s). You can calculate results by tapping the sync button.

This view also gives information about the status of the athletes' licenses.

You can select an individual athlete for analysis by tapping the athlete's name.

## TEAM ANALYSIS – DETAILED VIEW

The *detailed* view allows comparisons to be made between athletes based on their Central Nervous, Cardiac, Energy Supply systems and Overall Readiness scores.

Please note that if the athlete hasn't conducted a measurement during a current day, he/she is not visible in this view.

The default sorting is based on the Overall Readiness index but you can select another one by tapping on the appropriate column title, for example Cardiac, after which all the athletes are sorted based on Cardiac Readiness in a descending order (the best Readiness results first, the worst last). Tapping the same column title again will sort the values in an ascending order.

At the bottom of the view you can see the team averages for each individual Readiness category. The averages are calculated based on the athletes selected for the view.

Under each athlete's name you can also see a timestamp that tells you when the last measurement has been completed.

You can enable one or more tags to filter the athlete list. The tags you have created are listed under the **Filters** on the left side of the view. If you select **Everyone**, then you will see all of your athletes who have conducted a measurement during a current day.

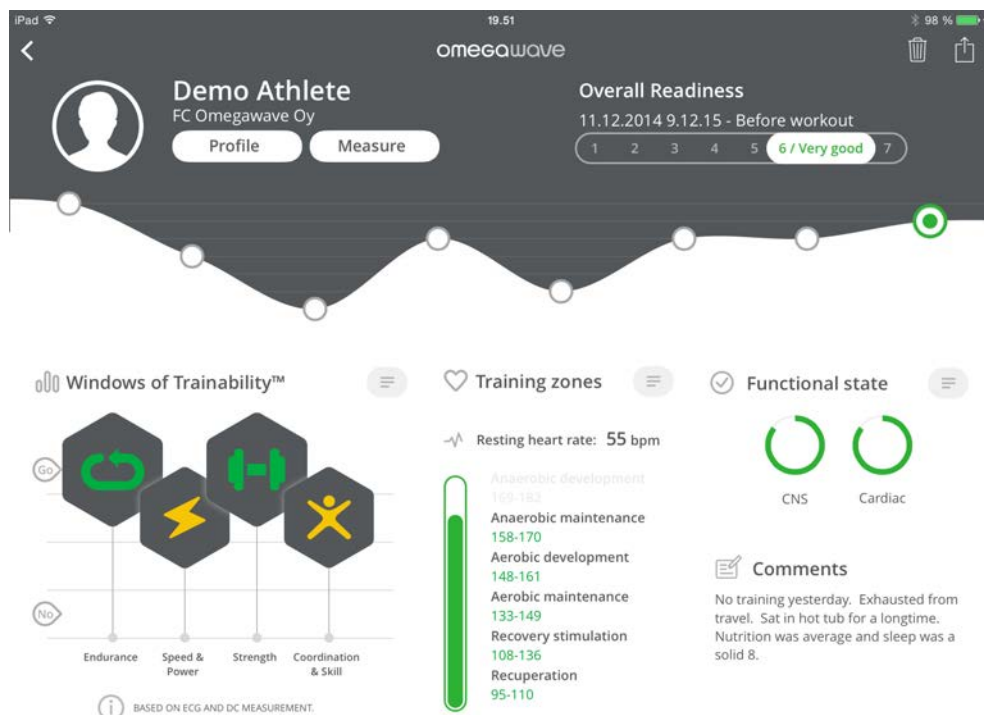
The screenshot shows the 'Detailed' view of athlete readiness scores for FC Omegawave Oy. The interface includes a top bar with the team name and a toggle between 'Overview' and 'Detailed' views. On the left, there is a 'Filters' section with options: 'Everyone' (selected), 'FC Alistair', 'Injured', and 'Attackers'. The main table displays readiness scores for two athletes: Laakkonen, Sami and Salminen, Mikko. The columns are 'Athlete Readiness', 'CNS', 'Cardiac', 'Energy', and 'Overall'. The 'Overall' column shows a yellow circle with a minus sign for both athletes. At the bottom, there is a 'Team averages' row showing the average scores for each category.

Athlete Readiness	CNS	Cardiac	Energy	Overall
Laakkonen, Sami 14/06/16 07:30	6	4	4	4
Salminen, Mikko 14/06/16 07:16	0	4	6	4
Team averages	6.0	4.0	5.0	4.0

You can select an individual athlete for athlete analysis by tapping the athlete's name.

## ATHLETE ANALYSIS

When you have selected an individual athlete for analysis, you will see their *Readiness Summary* screen. It contains the following elements:



Overall Readiness score for the selected measurement, timestamp and Before/After tag.

Overall Readiness history based on previous measurements.

Functional state of Central Nervous and Cardiac systems.


Additional notes for the measurement.

Windows of Trainability™ broken down to 4 physical qualities: Endurance, Speed & Power, Strength, and Coordination & Skill.

Resting heart rate and heart rate training zones for a spectrum of recovery and development activities.

An indication of which measurements were conducted: ECG & DC.

You can analyze the athlete's measurement history by swiping the Overall Readiness graph to the left or right.

To select a measurement from the history, tap one data point  from the Overall Readiness graph.

For a detailed breakdown of CNS, Cardiac and Energy Supply system indices as well as their historical data, simply swipe the screen up or down.

### NOTE!

For a more in-depth discussion on interpreting results and utilise them for athlete preparation, refer to the [Coach's Handbook](#). You will find a link to the handbook in the getting started email.

## Windows of Trainability™

Windows of Trainability™ represents an innovative approach to athlete preparation, one that can be easily integrated into any system of training. Omegawave's approach centers on the concept that the amount of the load should not be the primary focus of the training process, but rather the timing of when the load is applied.

Utilizing the Windows of Trainability™ approach will allow for the optimization of the training process by addressing and providing comprehensive answers to the fundamental dilemmas of training:

- Is your athlete ready for another workout, and at what volume and intensity?
- Which physical qualities should be developed to produce the greatest training effect – Endurance, Speed & Power, Strength, or Coordination & Skill?
- How can the training process be optimized to achieve the best results in the shortest period of time and with the least amount of physiological cost?

From the Windows of Trainability™ graph, you can see four hexagons that will change dynamically based on your measurement results. Each hexagon represents a different physical quality: Endurance, Speed & Power, Strength, and Coordination & Skill. The positioning of the hexagons on the graph provides an easy visual interpretation: the higher the hexagon, the more open the Window of Trainability™ for that index. This status is also reflected by the color of the symbols inside the hexagons: at the highest position the symbol will be green, in the middle-range it will be yellow, and at the lowest-levels the color will be red.


Training Advice can be found by tapping the Windows of Trainability hexagons and scrolling down. This advice should help you to better adjust daily workouts based on athlete's Readiness.

Beneath the graph, there is an indicator that tells which measurements have provided the basis for the results.

### **IMPORTANT!**

If you have only measured the ECG, the state of the athlete's Central Nervous System is assumed to be optimal.

To get the most accurate results for Windows of Trainability™, we advise you to complete the full Omegawave assessment, which includes both ECG and DC Potential measurements.

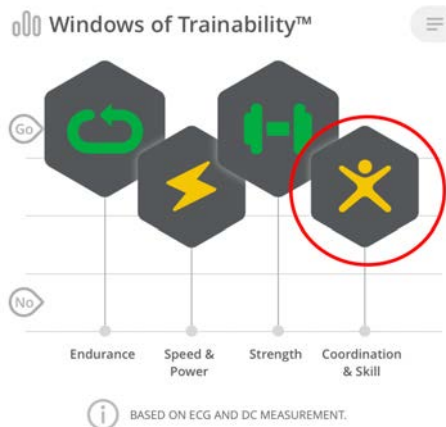
If you want to see the textual conclusion of the Windows of Trainability™ scale, tap the paragraph symbol .



Windows of Trainability™

Incomplete recovery. Not ready for any activities of maximum volume and maximum intensity.

If you want to see the definition of each physical quality, tap the individual hexagon.



Windows of Trainability™

### Definitions

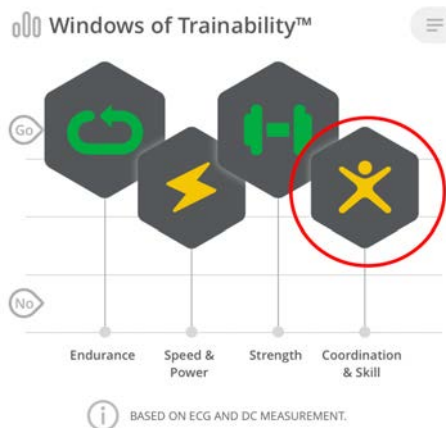
**Coordination:** The ability to integrate motor actions into an efficient pattern of movement.

**Skill:** A complex, coordinated, goal-oriented motor act, which comprises a sequence of individual simple motor actions, developed during the training process until it can be realized with minimal conscious regulation (automatization) for the most effective achievement of a motor task while adjusting to external conditions.

### Training advice

You should avoid highly complex coordination & skill exercises performed at a high intensity (slightly below 90).

If you want to see the training advice of each physical quality, tap the individual hexagon and scroll down until you see the “Training advice” paragraph.



Windows of Trainability™

**Skill:** A complex, coordinated, goal-oriented motor act, which comprises a sequence of individual simple motor actions, developed during the training process until it can be realized with minimal conscious regulation (automatization) for the most effective achievement of a motor task while adjusting to external conditions.

### Training advice

You should avoid highly complex coordination & skill exercises performed at a high intensity (slightly below 90).

**Exercises should be stopped when technique begins to break down**, at which a full recovery (at least 3-4 minutes) is necessary before the next exertion.

Activities may include sport-specific exercises.

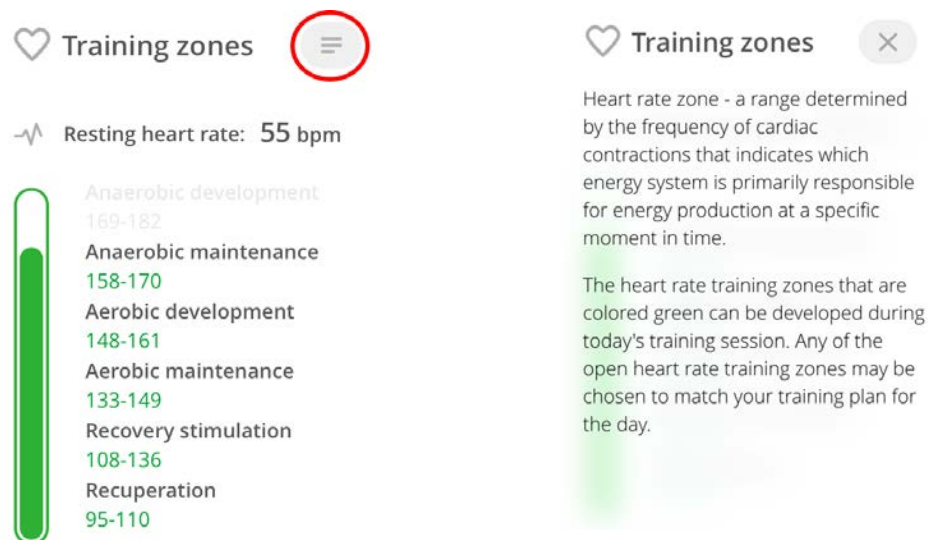
## Training zones

The graph in the middle of the screen shows both the athlete's resting heart rate and the suggested heart rate training zones as those levels relate to cardiac and metabolic training. The numerical heart rate values in these training zones can change from one measurement to the next, reflecting changes in the athlete's current functional state.

### IMPORTANT!

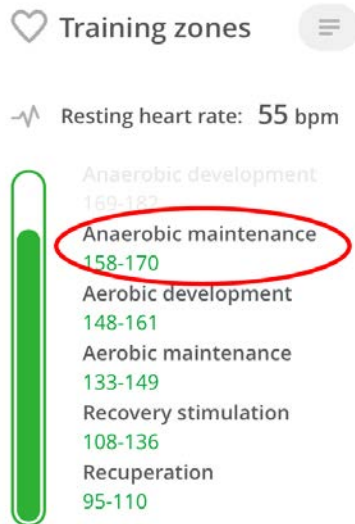
The height of the green bar will indicate all of the training zones the athlete is ready to train in at that moment in time; the highest zone in green is the maximum recommended training zone. In general, whenever multiple zones are in the green, it is up to you to choose the intensity-level of the athlete's next training session.

If you want to see a definition for the training zones scale, tap the paragraph symbol .



If you want to see a definition for each heart rate zone, tap the name of the individual zone.





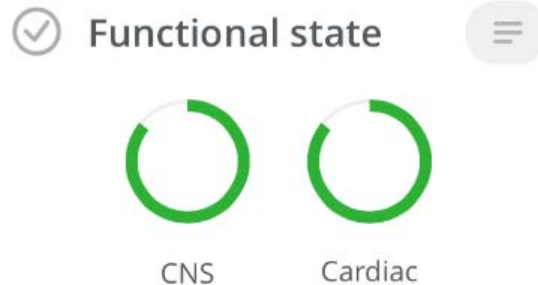
Training zones

### Anaerobic maintenance

The dominant system of energy production in this heart rate zone is the **anaerobic glycolytic system**. A by-product of this type of metabolism is lactate, which considerably inhibits the ability of muscle function. Training in this heart rate zone, provided that the Window of Trainability™ is open, allows the body to maintain pre-formed adaptations in the anaerobic glycolytic energy system (power and capacity of lactic anaerobic processes).

## Functional state

In this graph, Overall Readiness is divided into two subsystems: Central Nervous and Cardiac systems. The measurement results will determine the color and completeness of the circles. The color scale for these circles is the same as that of the hexagons in the Windows of Trainability™ scale: green, yellow, and red. By observing these results, you can see with greater detail the functional state of these systems and gain a better sense of what your athlete's body will be ready for in the next session.



## Comments

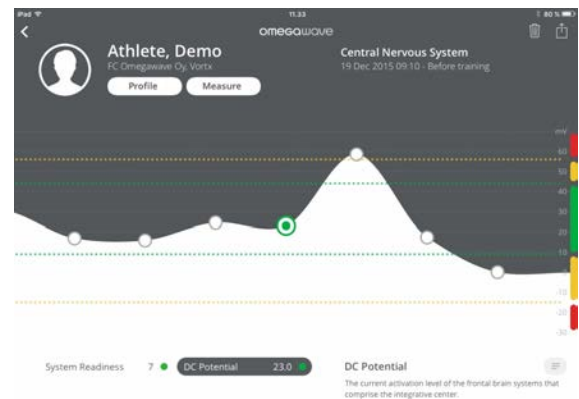
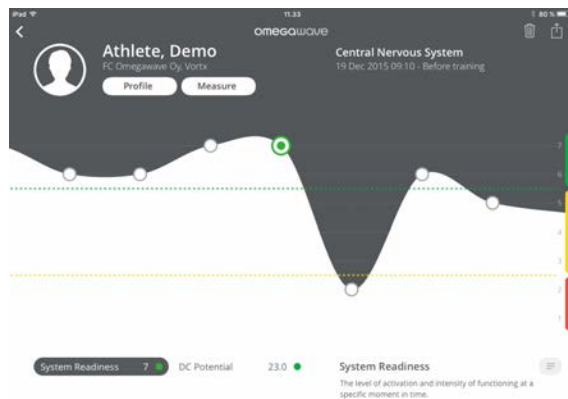
No training yesterday. Exhausted from travel. Sat in hot tub for a longtime. Nutrition was average and sleep was a solid 8.

## Readiness Breakdown

By swiping up/down from the main screen you will be able to access a detailed view of each physiological system and sub-system assessed:

### Central Nervous System (CNS)

- System Readiness
- DC Potential

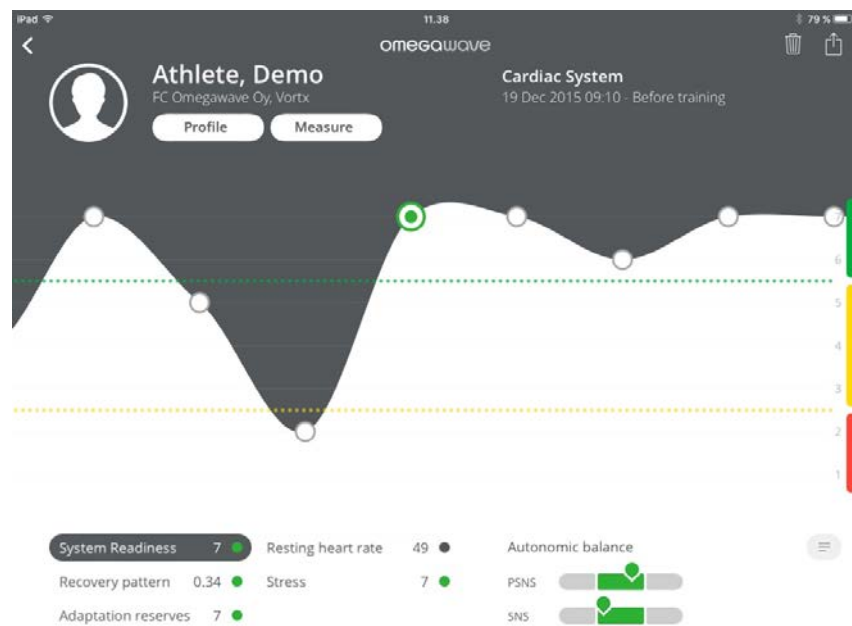


- DC Curve



## Cardiac system

- System Readiness
- Resting heart rate
- Recovery pattern
- Stress
- Adaptation reserves
- Autonomic balance



## Cardiac System – HRV 1

- Detailed breakdown of your Heart Rate Variability




Parameter	Value	Norm range
Parasympathetic activity (s)	0.34	0.16 - 0.41
Sympathetic activity (%)	21	15 - 55
Level of tension (r.u.)	28	15 - 180
Aperiodic influences (s)	1.70	1.25 - 3.05
Aspirate waves (r.u.)	0.051	0.018 - 0.054

#### Time and frequency parameters

SDNN (ms)	104	HF (ms <sup>2</sup> )	949
SDSD (ms)	113	HF n.u. (n.u.)	59.4
RMSSD (ms)	91	LF (ms <sup>2</sup> )	648
Total power (ms <sup>2</sup> )	1688	LF n.u. (n.u.)	40.6
LF/HF	0.68		

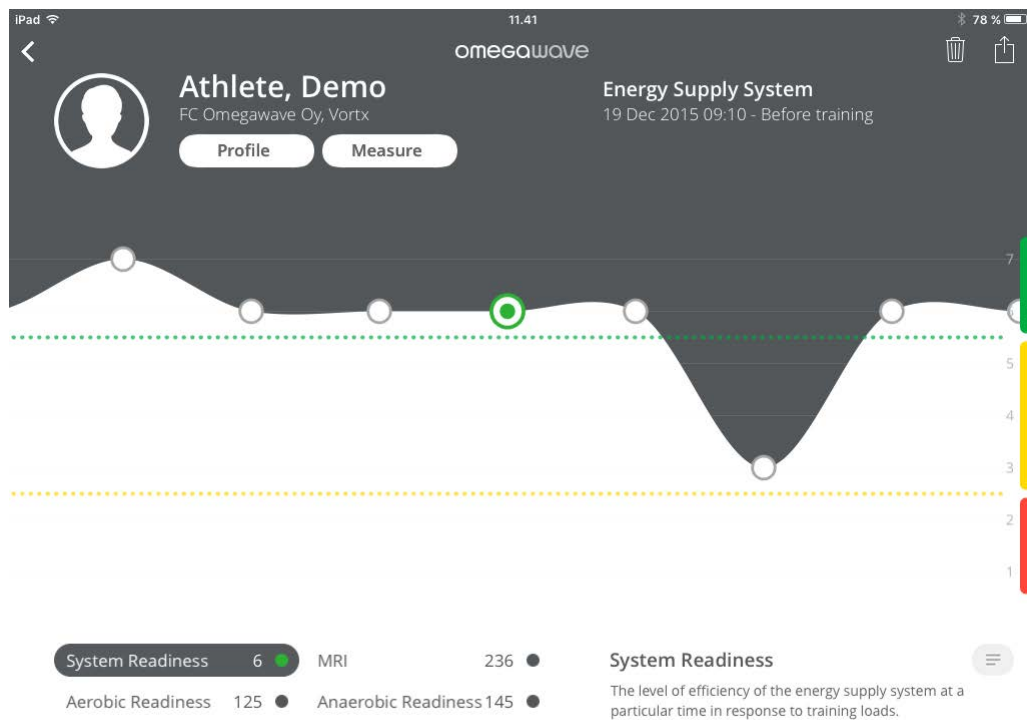
#### Cardiac System – HRV 2

- Further analysis of your Heart Rate Variability and a tool of viewing your ECG (can be magnified by tapping the icon zoom icon )



## Energy Supply System

- System Readiness
- MRI (metabolic reaction index)
- Aerobic readiness
- Anaerobic readiness



- Each data point on the graph represents one measurement. Tap the data point ○ to see the associated index values.
- Analyze your full measurement history by swiping the graph left or right.
- Switch between indices by tapping on the names.
- Get more information about the index and guidance on how to interpret it by tapping the paragraph symbol ⓘ.

## Other functions

The following icons are visible on the application title bar when you are in athlete analysis view:



Delete a measurement:

- Delete currently selected measurement
- If you delete a measurement, you are not able to undo this operation. If you accidentally deleted a measurement, please contact customer support.



Share:

- Share a screenshot of the currently selected measurement view via email, message, Twitter or Facebook.

### The Omegawave App cannot find the BLE sensor when trying to pair?

Pre-condition: Verify that the sensor is fully charged and the iPad's Bluetooth is on.

- Verify that your device has the latest iOS version.
- Verify that you have NOT paired the BLE sensor via iOS Bluetooth settings.
- The sensor's Bluetooth activates only when attached to the ECG chest strap and when the strap is placed around the athlete's chest. Verify that the ECG chest strap is properly moisturized and that the sensor is correctly attached to the strap. When the sensor's Bluetooth is activated, the LED starts to blink a blue light at a fast pace. When the sensor is connected to the Omegawave App and is ready for a measurement, the LED blinks slower.
- Connect the sensor to a power supply using the micro-USB charging cable for a few seconds. Check that the sensor's LED light turns red. This will reset the sensor. → Try to set the sensor again.
- If that doesn't work, shut down the App completely. Double tap the Home button to open the app switcher and swipe the app up. → Repeat the steps above and try to set the sensor again.
- If that doesn't work, turn off Bluetooth from the Settings menu, and then turn it back on. → Repeat the steps above and try to set the sensor again.
- If that doesn't work, repeat all the steps above first, and then do a hard reset by pressing the Home button and the power button at the same time for more than 7 seconds. This will reboot your device. → Try to set the sensor again.

### Application cannot find the BLE sensor when in measurement view?

- Verify that the sensor is charged and that the device's Bluetooth is on.
- Verify that you have configured the BLE sensor via the Omegawave App settings and that you have NOT paired the BLE sensor via iOS Bluetooth settings.
- The sensor's Bluetooth activates only when attached to the ECG chest strap and the strap is properly placed around your chest. Verify that the ECG chest strap is properly moisturized and that the sensor is attached to the strap.


### Energy supply system values are really low compared to old ones?

Ensure that you have placed the sensor the right way up in relation to the ECG chest strap; the Micro-USB port needs to be facing down.


### Results cannot be calculated because of an invalid measurement?

Omegawave's algorithms will analyze the quality of the data, and if issues are detected in relation to the measurement, results will not be calculated (because they would be irrelevant/incorrect). Often, the underlying reason is that the ECG chest strap is the wrong size or the strap's electrodes are not properly moisturized with water. Also, if you did not follow the measurement protocol (for example moving excessively or coughing during the measurement), it may cause an invalid measurement.

### You have completed a measurement but cannot see results?

If you see text on blue background on “team analysis overview” view and blue dot next to athlete name(s), it means that you have done measurement(s) without Internet connection for these athletes(s). To calculate and see results, make sure that you have a working Internet connection and then tap the sync button .

### An athlete has done a measurement but his/her results are not updated to the Coach app?

Tap the sync button  to fetch measurements from the Omegawave cloud and verify that you have a working Internet connection.

### ECG graph appears odd?

If your ECG graph looks like the illustration below, cancel the measurement and connect the sensor to your charger using the micro-USB charging cable for a few seconds. Check that the sensor’s LED light turns red. This will reset the sensor and the problem should disappear.



### Measurement was cancelled because the DC Potential values were out of range?

This may happen if you are reusing old electrodes or they have dried due to improper storage. Always use unused electrodes and make sure that you properly seal the electrode bag to prevent drying.

### DC Potential signal is not detected?

Make sure that you are using unused electrodes and that you have connected the DC Potential cable to athlete’s forehead and hand. If the application still indicates that it is not able to detect the DC Potential signal, it can mean that the micro-USB connector of the sensor may be broken. In this case, contact Omegawave support for further assistance: [support@omegawave.com](mailto:support@omegawave.com)

### The sensor cannot be charged?

If you cannot see the LED light turning red when the sensor is connected to a power supply with the micro-USB cable, it means that the sensor is already fully charged. It can also mean that the micro-USB



connector of the sensor may be broken. In this case, contact Omegawave support for further assistance: [support@omegawave.com](mailto:support@omegawave.com)

### **Can the ECG chest straps be washed?**

Yes, and it's recommended to do so regularly inside a washing bag. The washing recommendations are printed on the strap care label (40°C / 104°F, no fabric softener).

### **Sensor operating temperature?**

0 °C to +40 °C / 32 °F to 104 °F

## REGULATORY INFORMATION

OMEGAWAVE HAS NOT APPROVED ANY CHANGES OR MODIFICATIONS TO THIS DEVICE BY THE USER. ANY CHANGES OR MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

OMEGAWAVE N'A APPROUÉ AUCUNE MODIFICATION APPORTÉE À L'APPAREIL PAR L'UTILISATEUR, QUELLE QU'EN SOIT LA NATURE. TOUT CHANGEMENT OU TOUTE MODIFICATION PEUVENT ANNULER LE DROIT D'UTILISATION DE L'APPAREIL PAR L'UTILISATEUR.

### **FCC REGULATORY INFORMATION**

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION.

### **INDUSTRY CANADA (IC) REGULATORY INFORMATION**

THIS DEVICE COMPLIES WITH INDUSTRY CANADA LICENCE-EXEMPT RSS STANDARD(S). OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION OF THE DEVICE.

### **AVIS DE CONFORMITÉ À LA RÉGLEMENTATION D'INDUSTRIE CANADA**

LE PRÉSENT APPAREIL EST CONFORME AUX CNR D'INDUSTRIE CANADA APPLICABLES AUX APPAREILS RADIO EXEMPTS DE LICENCE. L'EXPLOITATION EST AUTORISÉE AUX DEUX CONDITIONS SUIVANTES : (1) L'APPAREIL NE DOIT PAS PRODUIRE DE BROUILLAGE, ET (2) L'UTILISATEUR DE L'APPAREIL DOIT ACCEPTER TOUT BROUILLAGE RADIOÉLECTRIQUE SUBI, MÊME SI LE BROUILLAGE EST SUSCEPTIBLE D'EN COMPROMETTRE LE FONCTIONNEMENT.

### **CLASS B DIGITAL DEVICE NOTICE**

THIS CLASS B DIGITAL APPARATUS COMPLIES WITH CANADIAN ICES-003, RSS-GEN AND RSS-210.  
CET APPAREIL NUMERIQUE DE LA CLASSE B EST CONFORME A LA NORME NMB-003, CNR-GEN ET CNR-210 DU CANADA.