

Eye Gaze Calibration on TD Pilot®

Calibration is how we train the eye gaze device where the eyes are looking and how the eyes are moving. It allows the eye tracker to accurately interpret gaze direction by learning the unique characteristics of the person's eyes. If the eye tracker is not accurately tracking someone's eyes, calibrating can make a big difference. This document describes the eye gaze calibration process on TD Pilot devices. **Note:** You can also watch a [video on calibration here](#).

How to Calibrate

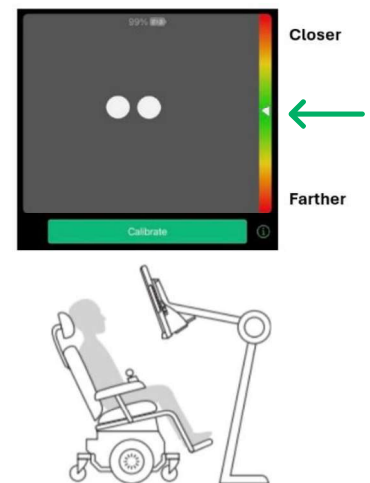
1. Open the TD CoPilot app.



You can open this app two ways: by selecting the TD CoPilot icon from your home screen, or by pressing the button with the eye icon on the back of the device. 

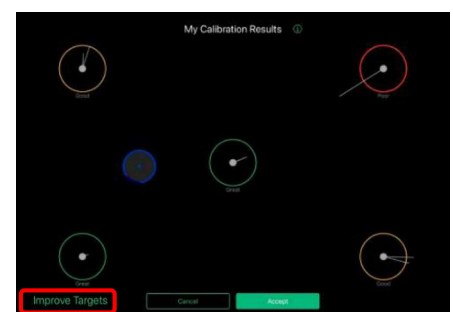
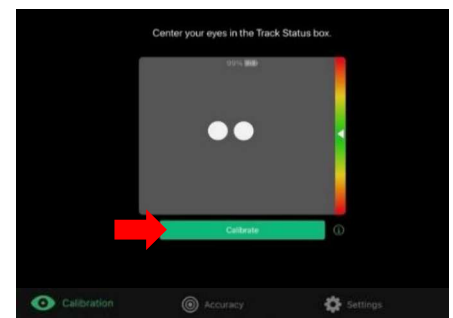
2. Use the Track Status Box to ensure the eyes are seen by the eye tracker.

- You should see 1 or 2 **white dots** that represent where the person's eyes are in relation to the screen. Position the device so that their eyes land approximately in the **center of the box**.
- The **color spectrum sidebar** on the right side of the box shows how close the person is to the screen. As a starting point, it can be helpful to position the device so that **the white arrow is in the green area** of this bar. Adjust the device distance to what works best for the person.
- Pay attention to how the screen is **tilted or turned** in relation to the person's face. Match the angle of the screen to the angle of their face on all planes to ensure the best eye tracking performance.



3. Calibrate.

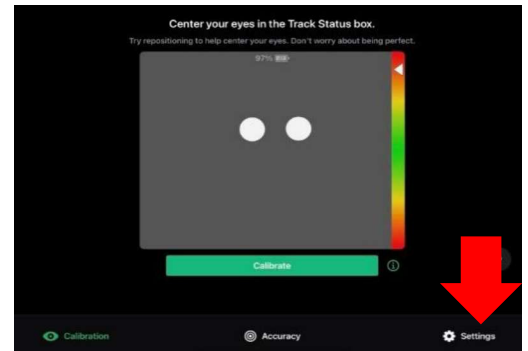
- If the settings are already adjusted or if you are satisfied with the default settings, simply select the green **Calibrate** button to begin.
 - i Note:** If you need to adjust settings before you calibrate, please continue to the next section, *How to Adjust Calibration Settings*.
- The person should look at each stimulus point as calibration progresses. When complete, you will see a summary screen showing each point. For the best experience, **aim for green or yellow calibrations** for each target.
- You can improve individual calibration points as needed. Simply select **Improve Targets**, then select the point(s) you wish to improve to recalibrate them. But don't worry about getting the "perfect" calibration –calibrating multiple times can be discouraging, not to mention boring! Even a calibration with a few red points can end up meeting the needs of the person using the device.
- When satisfied with your calibration, select **Accept**. Your calibration data is saved and you are ready to begin using your device.



How to Adjust Calibration Settings

1. Select Settings.

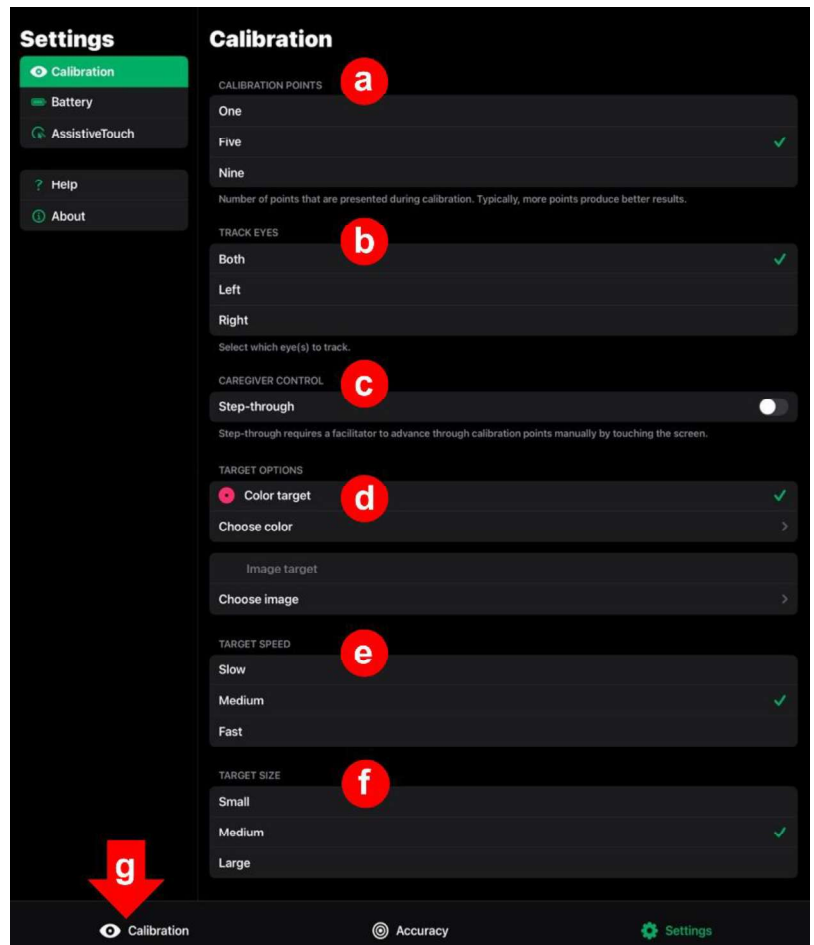
- In the TD CoPilot app, select the **Settings** tab in the lower right.



2. Customize your calibration settings.

In Settings, you can use the left-hand menu to adjust calibration, check battery levels, adjust AssistiveTouch, find the User Manual, and learn about your hardware. This section explores how to adjust calibration settings to meet the needs of the person you're supporting.

- Select **how many points** to use for the calibration process: 1, 5, or 9. Five calibration points is ideal for most eye gaze users. If 5 points is too many for someone, try using a single point to keep the process quick. If someone wants the most accuracy possible, try 9 points.
- Under **Track Eyes**, customize based on the person's visual capabilities and needs. TD CoPilot can track both eyes, left eye only, or right eye only.
- If you want to control the calibration manually, select **Step-through**. This supports people who need extra time to focus on the targets to capture the best data. Toggled on, Step-through allows a support team member to control progression to each calibration point using a Bluetooth connected mouse or keyboard or by tapping on the screen. When toggled off, the calibration will progress automatically.
- Customize the target** by selecting the color or by choosing an image from the iPad photo library. Personalizing the target can be especially helpful for users who respond better to familiar or engaging images. Choose a clear, simple image that will draw attention. You'll need to give the iPad permission to access your photo library. The chosen image will be cropped to a circle and outlined in the target color chosen. Only images are supported at this time.

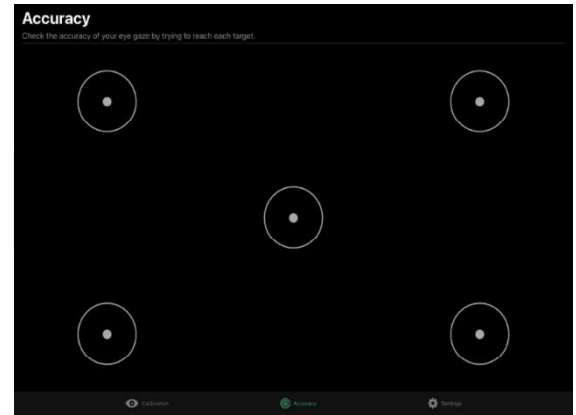


- Select slow, medium, or fast for the **target speed** to adjust how quickly each new calibration point appears on screen. Try a faster setting if the person calibrating has a shorter attention span or has difficulty holding their gaze for too long. Try a slower setting if the person needs more time to focus on the targets. If you need complete control over the speed, try the Step-through option in (c) above.
- Select small, medium, or large for the **target size**.
- When you're happy with the settings selected, select the **Calibration** tab in the lower left. For details, see Step 3 in the previous section, *How to Calibrate*.

How to Test Calibration Accuracy

If you're unsure whether the eye tracker is responding accurately, you can test its performance at any time. In the TD CoPilot app, select the **Accuracy** tab located at the bottom center of the screen.

Have the person move their eyes to each target. If the dot falls within the target, the calibration is accurate. If not, consider recalibrating for more accuracy.



Additional Considerations

Does the person have difficulty paying attention throughout the calibration process?

- Try using just **one calibration point** to make this process quick and comfortable.
- **Customize the target** in calibration settings by using an image from the iPad photo library. Try using a familiar face, a pet, favorite character, etc.
- Increase the **target size** or **target speed**.
- Try the **Step-through** option to manually advance to each point, allowing you to ensure you have the person's attention first. Don't cover up the eye tracking camera with your hand or arm if you are prompting the person throughout calibration.
- **Reduce ambient noise and distractions** by performing the calibration in a quiet space.
- **Try using a video** on your phone, holding it up to the screen to follow along with the target as it moves.

Does the person have a strong reaction to sound?

- **Turn down** the volume.

When is recalibration helpful?

1. When something changes. **Changes in lighting, medication, eye wear, and mood** can affect pupil size. A **change in positioning** can also affect how well the eye tracker is working for someone. This might be a result of someone moving the person, them repositioning themselves, or simply the effects of gravity.
2. When you feel that the **eye tracking isn't responding well**. You don't have to recalibrate every time something changes, but be aware that you may need to recalibrate, especially when something has changed.

Helpful Links

- [Getting Started Guide: TD Pilot with TD Snap](#)
- [Getting Started Guide: TD Pilot with TD Talk](#)
- [TD Pilot User Manual](#)
- [Contact Technical Support](#)
- Explore free resources on the [Learning Hub](#).
- Register for our live sessions on our [Live Events Calendar](#).