

Introduction to Computer and Special Equipment

Hardware and Software Setup

Before beginning:

Have your laptop and monitor ready. Laptops must have Windows 7, have 4 USB ports,

- and support a screen resolution of at least 1366 x 768. External monitors must measure **19" widescreen** and support a screen resolution of 1440 x 900. **The Internet Explorer browser that is open on the external monitor must be set to full screen**
- **Browser requirements: NIH Toolbox instruments have been optimized to run and are supported on Internet Explorer 11**
- An Adobe Flash player is required for many of the cognition instruments (www.adobe.com).
- Have a multi plug power strip ready to accommodate the power cords and chargers.
- Have the necessary Toolbox equipment close at hand.

Laptop and Monitor Setup for NIH Toolbox Cognition and Sensory Instruments:

The Cognition and Sensory measures are designed to be administered in dual-screen mode so the examiner controls start of test, skipping a test (when the participant is ineligible or unwilling to take a measure), stopping a test (if the participant refuses to continue), and in some cases, scoring. The laptop is used by the examiner and the external monitor is used by the participant.

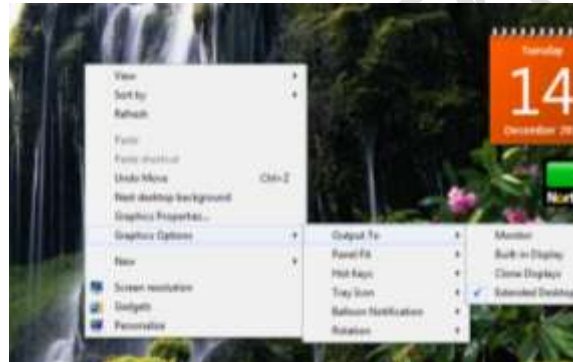
It is essential that you set up your laptop and monitors properly. If resolution on primary monitor is incorrect you will have difficulty administering the Toolbox.

Set up the monitor to the **left** of the laptop at slightly more than a 90-degree angle. Plug in the three laptop-to-monitor cables:

1. Laptop power cord;
2. External monitor power cord; and
3. Monitor VGA cable (the one provided with monitor). If vision measures are not given, 15-foot VGA cable required for administration of the Vision measures.

To set up dual screen display with the external monitor as primary, do the following after the external monitor has been plugged in:

- Right click on the desktop.
- Choose **Graphics** options.
- Choose **Output To**.
- Hover over **Extend Desktop** and select **Monitor + Laptop** (external monitor is the primary display).
- The resolution for the monitor should be set to 1440 x 900. To set this, right click on the desktop and choose **Graphic Properties** or **Resolution**. Click the dropdown following **Resolution** to adjust it only if it is not set to 1440 x 900. You may need to repeat this process whenever the monitor is unplugged from the laptop.
- The resolution for the laptop should be set to 1366 x 768 or 1440 x 900.



Because the secondary window is implemented as a browser pop-up, you will need to allow pop-ups from the **Assessment Center/NIH Toolbox** web site before using the Toolbox.

During testing we recommend that automatic updates and virus scanning software be disabled, as these can disrupt the administration of the instruments.

Users should dedicate laptop(s) solely for NIH Toolbox usage. If other programs are installed on the laptop, device drivers can conflict with NIH Toolbox drivers and prevent instruments from functioning. **Laptop or Desktop Setup for NIH Toolbox Motor and Emotion Instruments:**

The Motor and Emotion instruments do not require a two-screen setup. They do, however, require a minimum resolution of 1366 x 768, Windows 7.0, and IE 8.0 to run properly.

Mice, Keyboard, and Speakers Setup for NIH Toolbox Cognition and Sensory Instruments:

Two mice are needed when giving Cognition or Sensory instruments: one for the examiner and one for the participant.

The keyboard is needed for the cognition processing speed and executive function instruments (Flanker, DCCS, and Pattern Comparison).

If using external speakers or headphones (recommended), plug the connector from the speakers or headphones into the computer's headphone jack.

A note about touch-screen monitors or other input devices: Some studies prefer to use touch-screen monitors. Touch screens that employ a mouse driver emulation can be used. Please note that response time norms for the Flanker, DCCS, and Pattern Comparison tests were collected using the keyboard arrow keys, so using a touch screen for response will invalidate the norms for those instruments. We do not provide technical support for touch screen use.

Input devices such as trackballs that use mouse drivers are also supported. Toolbox instruments cannot be used with a button box or other serial devices that are designed for use with Windows applications, as Assessment Center is a browser-based .NET application.

USB Hub

You will need a hub only if you are giving instruments that require additional hardware or devices, such as Words-In-Noise, Hearing Threshold, Standing Balance, and Dynamic Visual Acuity, or if your laptop does not have at least 4 USB ports.

Plug the hub into one of the laptop's USB ports. Plug the mice used by participant and examiner, and the keyboard, into the hub's ports. The specialized Toolbox equipment should always plug directly into one of the laptop's USB ports.

Bluetooth

Setup for the NIH Toolbox Standing Balance Test:

The Standing Balance test uses an accelerometer to transmit sway data to the laptop using Bluetooth. The laptop must be able to receive this data using an internal Bluetooth 3.0 receiver (recommended) or an external Bluetooth receiver. The balance device comes with a power cord to recharge the internal batteries. It should be charged between examinations.

Installing the Bluetooth Receiver:

If the laptop does not have an internal Bluetooth 3.0 receiver, plug an external USB Bluetooth Receiver directly into one of the laptop USB ports (not the hub). You will need to install the Bluetooth receiver driver following manufacturer's instructions.

Pairing the Bluetooth Receiver for the Standing Balance Test:

Each Bluetooth receiver is paired with an individual laptop. Keep track of which device goes with which laptop; do not switch them. If you find yourself with a balance device that is not paired with your machine you, will need to repeat the pairing process.

To pair the NIH Toolbox Standing Balance Bluetooth receiver before administering the test:

- Make sure Bluetooth is enabled: Open **Control Panel** and choose **Devices and Printers**, or choose the Bluetooth icon from the shortcut menu. If you have installed a Bluetooth receiver, you should see an icon labeled as such.
- Turn on the new balance device and click **Add a device**.
- Click the **VA-NIH-99** icon to select the device and choose **Next** (each device will have a different number).



- The device will pair with the laptop and a message will ask for the pairing code. Enter **default**.
- The COM port assigned to the balance receiver is stored in the browser's local storage. If you delete your browser history you may have to set this up again.

IMPORTANT! Do not turn off the Bluetooth receiver or the accelerometer while you are collecting data, as this will cause data loss and may affect the COM port.

Soundcard and Headphone setup for the NIH Toolbox Words-in-Noise:

The hearing tests require an external soundcard and headphones. Before connecting the hardware for the first time, you **must** install the soundcard driver from the avid website (www.avid.com). If you plug in the hardware before installing the driver, the operating system will choose a generic driver and the Toolbox instruments will not work. Take care to setup your hearing equipment properly. Failure to do so will cause the instruments not to work or the results to be invalid.

Installing the Soundcard Driver:

- Go to <http://avid.force.com/pkb/articles/download/Fast-Track-USB-Drivers>.
- Scroll to the **Windows Release**, click on **6.0.6**.
- Click **Save File** when prompted.
- Open the file and follow the instructions to install the driver.
- If unable to locate this driver please contact us by email to info@nihtoolbox.org

Plugging in the Soundcard and Headphones:

Once the sound card drivers are installed, you may plug in the soundcard and headphones and set the dials.

- Plug the mini end into the soundcard (box) and then connect the USB cable directly to a USB port on the laptop (not a port on the USB hub if one is used). If there is a USB port in the back of the laptop, this is an excellent port for the soundcard. It is important to *always* plug the headphones into *the same* USB port each time you use them. If you do not, you will lose the settings and need to reconfigure the device.
- Connect the headphones to the large stereo headphone jack on the soundcard (not the guitar jack). Make sure the connector is fully seated.
- Verify that front button and back switch are in **OFF** position.
- Set the **Mic Gain** dial to nine o'clock; set the **Guitar Gain** dial to seven o'clock; set the **Output** dial to three o'clock.



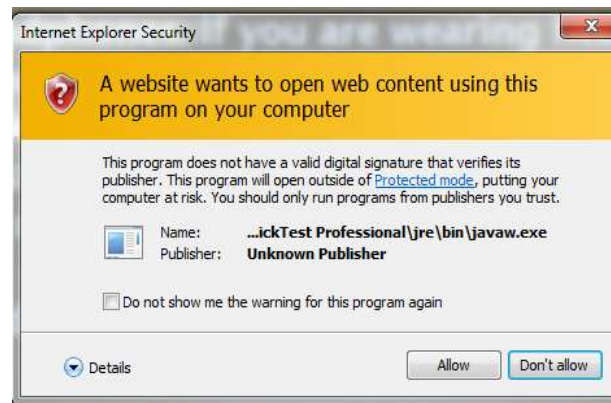
Setup the External Sound Card:



- Open the **Control Panel** and choose **Sound**.
- Double click on **M-Audio Fast Track**.
- On the **General** tab, enter **Headphones** for the device name.
- Select the **Levels** tab and set the sound level to **50**.
- Select the **Advanced** tab and set **Default Format** to **2 channel, 24 bit 48000Hz (Studio Quality)**.
- Click **OK** to save.
- Close the browser. If this does not work, reopen browser and try again.

Install the Java Applet for the Words-In-Noise Test:

The first time you launch the Words-In-Noise test you will be asked to install the Java Applet that controls the sound and logic of the test. This applet is required for the test to work. You may see a dialog box similar to the following. You should select the Allow button to install the applet. If present, you should check the box 'Always trust content from this publisher.'



Equipment Setup for the NIH Toolbox Dynamic Visual Acuity Test:

The NIH Dynamic Visual Acuity Test uses a rate sensor attached to headgear connected to the computer with a supplied mini USB-to-USB cable. Make sure the laptop is turned on with Windows running *before* plugging in this equipment. If you plug this equipment in first and then turn on the laptop, you may receive a blue screen of death (BSOD).

- Plug the USB end directly into a USB port on the laptop (preferably on the right side), not a USB port on the external hub.
- Connect the DVA headgear to the other end of the cable via the supplied mini-USB plug.
- The DVA device should begin working once it is plugged in and the XR21V device driver is installed.
- If the DVA device stops working, it is often due to a disruption in the communication between the USB/COM port and the device. Reasons this may happen include allowing the PC to go into hibernate mode during the test or letting the test time out. If this happens:
 - unplug the cable, plug it back into the same USB port, and wait approximately 10 seconds for COM port to be recognized (see lower right for message).
 - If necessary, restart the test by closing out of both the browser and the DVA application. If it is still a problem, reboot the laptop.

Frequently Asked Questions (FAQs)

Please consult this list before calling Tech Support

The following steps should solve most low-level problems:

- 1) If external monitor displays **No Signal Detected** or nothing at all, do the following:
 - Right click on the desktop.
 - Choose **Output To**.
 - Hover over **Extend Desktop**.
 - Select **Monitor + Laptop**.
 - Ensure the laptop on which the Toolbox is given is set up with the following settings:
 - Windows 7: hibernate **OFF** if using Toolbox equipment; Windows updates **OFF** during test administration;
 - IE 9: on-click sound turned **OFF**, compatibility mode **ON**;
 - Virus scan software: automatic scans turned **OFF** so as not to disrupt the testing session.
- 2) If your problem is not resolved after trying the above steps, please consult the list of frequently asked questions below.

General Hardware and Software FAQs

Nothing is displayed on the monitor or the monitor is displaying weird colors:

- Check the VGA cable and ensure it is seated firmly into the VGA port on the left side of the laptop. Then, follow the steps immediately below to setup two screens.

You see only one screen on a two-screen instrument:

- Move the monitor to the **left side of the laptop**.

OR, if that does not correct it:

- Right click on the desktop.
- Choose **Graphic Options**.
- Choose **Output To**.

- Hover over **Extend Desktop**.
- Select **Monitor + Laptop**.

OR, if that does not correct it:

- Make sure that pop-ups are enabled for the Toolbox website: Click **Tools > Popup blocker** in IE.

OR, if that does not correct it:

- Hover over the Internet Explorer icon in the system tray at the bottom of the screen. If two windows are there, click on the window you could not see.

OR if that does not correct it:

- Click the participant screen and press **CTRL+R** to refresh.

On the examiner (laptop) screen...

I can't see the Start Test button:

- Verify that your screen resolution is set to 1366 x 768 or 1440 x 900;

OR

- Grab the title bar of the examiner screen and move it up and down a bit on the screen to see if it adjusts itself;

OR

- Grab the lower boundary of the screen and expand the window size.

I can't see the title bar:

This can happen if your laptop resolution is not set to 1366 x 768. You should not have to move the window, so you can simply leave it alone until you are finished testing your participant.

The examiner screen doesn't open automatically at the beginning of a test (or during a test):

- First, hover over the **IE** icon in the system tray on the external monitor to see if two instances open. If yes, select the examiner window. It should open on the laptop and stay open. If it opens on the participant screen, click on the title bar and drag the window from the monitor screen to the laptop screen. This should correct the problem. If necessary, close the browser and then reopen it.
- When you hover over the IE icon in the system tray, if only one instance appears, click the open browser to select it and press **F5**. Select refresh on the menu bar or click **CTRL+R** to refresh the screens.

The shading on the examiner screen is uneven:

- From the **Tools** menu on **IE**, make sure **Compatibility mode** is selected.

When attempting to log in a participant...

I get an error saying the PIN and Password combination is wrong:

- Log in as yourself.
- Click **Registration Details** on the **Administration** tab in **Assessment Center**.
- Verify that the password listed is the one you believe you entered.

I get an error stating no assessment is scheduled for this participant:

- Log in as yourself.
- Click **Registration Details** on the **Administration** tab in **Assessment Center**.
- Select **View Schedule Details**.
- Verify the schedule start and end date listed includes today's date. If not, adjust the schedule:
 - Edit the **End Date** for the **Baseline** or **Retest** event to a date beyond the current date.
 - Click the **pencil** icon to the left to save. The line turns green to indicate the testing window is now open.
 - Close the window, log out, and re-enter the participant PIN.

FAQs for Individual Instruments (in alphabetical order)

Emotion Domain

A participant with limited vision wants to increase the font size for survey-type instruments:

- Use the **Zoom** feature of IE to make the text larger. Note that the participant will have to scroll down to see the navigation buttons.
- With the focus on the participant screen, hold down the Ctrl key and press the plus (+) key (**Ctrl+**) one or more times until you reach the desired size.
 - To reduce the text size, –follow the same procedure, but use the minus (-) key (**Ctrl-**).

Words-In-Noise Test (Sensory domain)

I am trying to skip Words-In-Noise but it is not working:

Once the Words-In-Noise is started it will take several seconds to skip it. Be patient and wait for it to work. **DO NOT** click **Skip Test** again or you may end up skipping the next test as well.

Words-In-Noise Test buttons don't work or no sound is heard for the instructions:

- Verify sound card is plugged directly into the *correct* USB port of the laptop.
- Verify that headphones are securely connected to headphone (*not guitar*) jack of soundcard and that front button and back switch are in **OFF** position.

If that does not work, check the external soundcard settings as described in the set-up section above.

List Sorting Working Memory (Cognition domain)

Scroll bars are present on the pictures on list sorting:

From the **Menu** or **Command** bar of IE, select **Zoom** and make sure it is set to **100%**.

Pattern Comparison Processing Speed (Cognition domain)

I stopped the test before it was completed, and when I log back in it takes me to the next test:

Pattern comparison is a timed test. Once you start it, you must complete it. You cannot resume.

Picture Sequence Memory (Cognition Domain)

I can't get past Arranging Flowers. The NEXT button is inactive.

You must follow the **training sequence steps** in the manual or on screen to enable the button:

- Move both pictures from the mat to the boxes.
- Move both pictures back to the mat.
- Move one or more pictures from one box to the other box.

Please refer to the **Picture Sequence Memory** section of the manual and follow the sequence as described.