

NOTE: Biopac Science Lab for Mac OS was discontinued in 2012. This platform is no longer supported.

SETUP GUIDE



This Setup Guide covers the following topics:

- A. Components
- B. Hardware Connections
- C. Computer Connections
- D. Software Installation
- E. System Check
- F. Headphone Connections
- G. Stimulus/Response Set
- H. Running a Lesson
- I. Analyzing Data
- J. Support Materials
- K. Technical Support



Setup, support, and
training videos at
www.biopac.com

A. Biopac Science Lab Components

Introductory System

- installation CD
- MP40 control unit
- 40EL lead set
- 9V battery
- 40PAD adhesive base pads

Optional

Stimulus-Response Set

- 40CBLFB1 feedback cable
- 40HP headphones
- 40CBLEXT audio extension



B. MP40 Hardware Connections

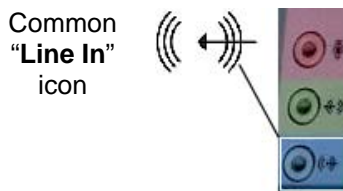
1. Insert the 9V battery into the MP40 unit.
 - Slide cover off, insert battery (note +/- polarity), replace cover.
2. Plug the 40EL into the top of the MP40 and tighten the screws.
3. *Optional:* For improved tabletop stability when the belt clip is attached, apply the self-adhesive 40PAD to the MP40 (attach one on each flat corner of the back of the unit).
 - Be careful not to place the self-adhesive base on the battery component area.



C. Computer Line In Connections

Requires Line In and working sound card

PC line in:



Mac line in:



PC

Port is usually **blue**.

Mac models with line in:

Core Duo, eMac, G5, iMac lamp/swing arm with 17" or 19" monitor; Mac mini - Core Duo; PowerBook with aluminum case; Power Mac (tower) G5.

Mac models without line in:

G3 iMac (candy color/flower power/Dalmation with CRT monitor); G4 iMac lamp/swing arm with 15' monitor; iBook; PowerBook with titanium case, Mac mini - PowerPC; Power Mac G4.

Important - Audio line in is *not* the same as headphones.



- If the computer does not have built-in audio line in, an external line in is required.
 - USB-Sound adapter from BIOPAC, or
 - Audio adapter (Griffin iMic, USBGear, etc.), or
 - PCI sound card
 - See *Audio Adapter Compatibility* reviews at Biopac Science Lab online support www.biopac.com.
1. Plug the MP40 cord into the computer's Line In port (**blue** on most Windows computers).
 2. If you are running Biopac Science Lab on a laptop and you have it plugged in (as opposed to running on battery power), you need to use a three-prong (grounded) plug to prevent excess "noise."

3. If running under Windows Vista® you must adjust the audio setting *prior to initial audio capture setup*. Lesson 11 requires 2-channel audio and the default under Vista is 1-channel audio.
 - a. Go to Start > Control Panel > Sound.
 - b. Click the 'Recording' tab and then double-click 'Microphone' to open 'Microphone Properties'.
 - c. Click the 'Advanced' tab.
 - d. From the 'Default Format' menu, select “2 channel, 16-bit, 44100 Hz”. (48000 Hz will also work.)
 - e. Click 'Apply' and then click 'OK'.
 - f. In the 'Sound' dialog, click the 'Playback' tab.
 - g. Double-click 'Speakers' to open 'Speaker Properties'.
 - h. Click the 'Advanced' tab.
 - i. From the 'Default Format' menu, select “16-bit, 44100 Hz”. (48000 Hz will also work)
 - j. Restart the computer.

D. Software Installation

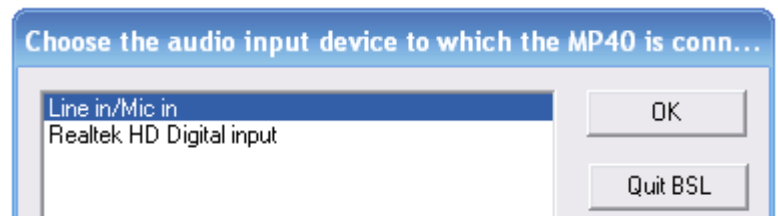
1. Insert the Biopac Science Lab installation CD.
2. The installer should launch automatically.
 - If the installer does not launch automatically, open the CD and double-click either “BScLSetup.exe” (Windows®) or “Install Biopac Science Lab” (VISE icon in Mac OS™).
3. Follow screen prompts to complete software installation. Make sure to accept the terms in the License Agreement before clicking Next in the License Agreement dialog.



Note You will be prompted to select an audio card.





- If there is more than one option (if you have more than one audio card installed), choose the one with the MP40 connected.
 - The options for selection will vary with each computer, but should resemble the “Sound card selection” dialog above.
4. When you click Finish in the final installation prompt, the Biopac Science Lab registration Web page will open (if your computer is connected to the Internet). **Complete the registration to access Technical Support and receive updates.** If your computer is not currently connected to the Internet, you can register online later.
 5. When you click Finish, Biopac Science Lab will automatically launch. Choose the audio input device to which the MP40 is connected and click OK.
 6. When you click OK, a Check System prompt will display. Continue to section E for System Check direction.

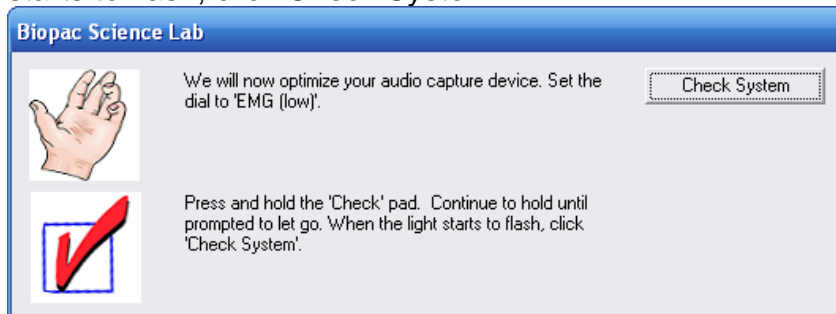


E. System Check

Installation requires a System Check (audio system check).

- If you skip the System Check, you will only be able to use the program for analysis (review of saved data files).
- Students can install the program without running the System Check to allow for analysis outside of the classroom.

1. Set the MP40 to  EMG (low) as prompted. Hold down the  Check pad. When the light starts to flash, click Check System.

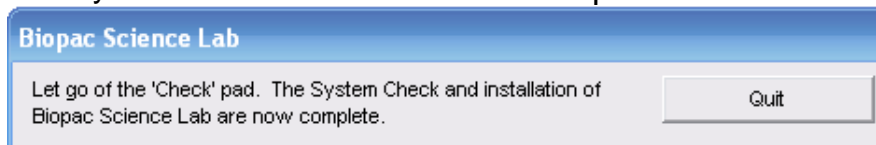


2. **Continue to hold down the  Check pad until prompted to let go.**
The System Check will last approximately 15 seconds.

- If you receive an error message, see Technical Support at the end of this guide for troubleshooting tips.

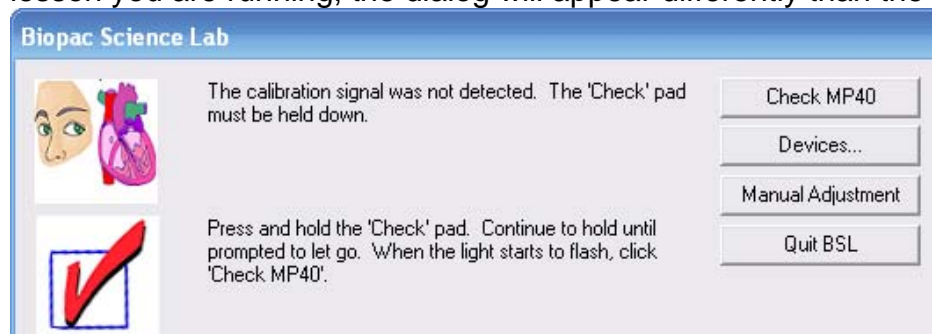
3. When prompted, let go of the Check pad and then click Quit.

- The System Check and Installation of Biopac Science Lab are now complete.




Note To repeat a System Check *after* installation:

- a. Launch any lesson and do not set the MP40 as prompted.
- b. Click Check MP40.
 - The MP40 Check will fail and a dialog will be generated (depending on the lesson you are running, the dialog will appear differently than the one below).



- c. Click Devices. In the dialog that opens, choose the appropriate audio input device (if necessary), and click Check System. Follow System Check directions.

F. Headphone Connections

-  Some lessons feature optional listening segments. To run these segments, connect stereo headphones (40HP) to the computer.
- If you have the optional extension (40CBLEXT, included with the Stimulus/Response Kit), you can connect it to extend the reach of the headphone jack. Plug the 40CBLEXT into the computer and then plug the headphones into the extension cable.

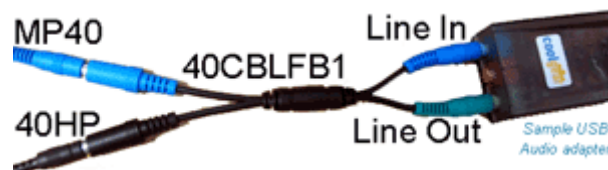
Note Lesson 11 requires Stimulus/Response set in addition to headphones (see next segment).

G. Stimulus/Response Set

Optional The Stimulus/Response Set includes a feedback cable (40CBLFB1), headphones (40HP), and an extension cable (40CBLEXT) and is used for Lesson 11 Reaction Time.



Feedback cable via built-in Line In



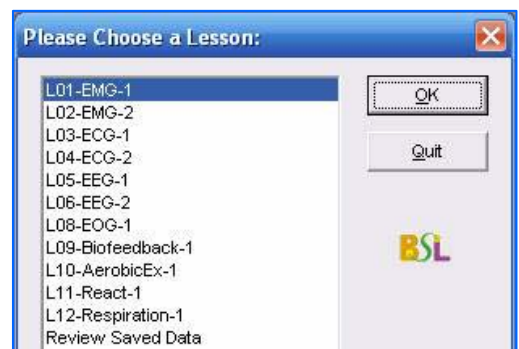
A variety of USB audio adapters can be used; yours may not match the sample shown.


Feedback cable via Line In audio adapter

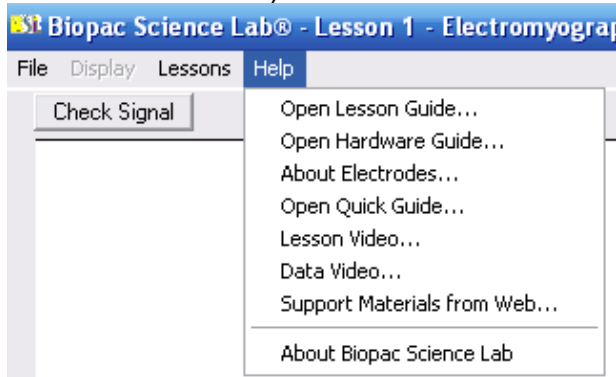
1. Connect the feedback cable to the computer (or Line In adapter)
40CBLFB1 connections should always be: **blue** to Line In and **green** to Line Out.
2. Connect the MP40 to the feedback cable (**blue** to **blue**).
3. Connect the headphones to the feedback cable (black to black).
 - If needed, use the extension cable (40CBLEXT) from the Line Out to the feedback cable (40CBLFB1); connect the extension cable to Line Out (**green** to **green**), and then connect the headphones to the extension (black to black).
4. Run a system check to confirm the feedback cable is working. See Section E for details.

H. Running a Lesson

1. Launch the Biopac Science Lab software.
 - Double-click the shortcut that the installer automatically created on your desktop, or open the file by selecting it from the Start menu (Windows) or from the Finder in the Applications folder (Mac).
2. Choose a lesson to run. Click OK.
 - Select Review Saved Data to analyze stored data files or Sample Data; see Section I Analyze for details.



3. Type in a unique file name when prompted.
 - No two people can have the same file name, so use a unique identifier, such as the Subject's nickname or student ID#.
4. At the beginning of each lesson, you will be prompted to run an MP40 Check. Follow the on-screen directions, making sure to press and hold the  **Check** pad for the entire five-second check.
5. After running the MP40 Check, the Help menu will be accessible. The Help menu for each lesson contains a Lesson Guide, video clips of sample data and the lesson procedure, a hardware overview, electrode overview, and a link to the BIOPAC Support page (requires active browser link).



- Each Lesson Guide offers detailed, step-by-step lesson instructions.
- Journal entries also will guide you through each lesson.


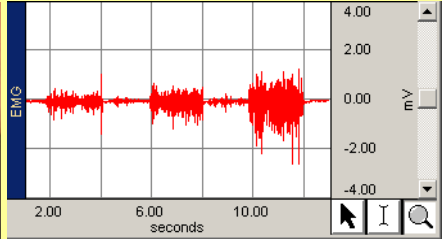
Lesson 1 - Electromyography (EMG) 1

Attach electrodes to each arm and connect the leads to the dominant arm
 Optional: Plug the headphones into the headphone jack. See the Help n
 Click 'Check Signal' when ready.

- Buttons in the lesson also provide video access.

6. After the MP40 Check in each lesson, a Signal Check is required. Follow on-screen prompts to check the signal, and continue with lesson.

REAL-TIME DATA DISPLAY

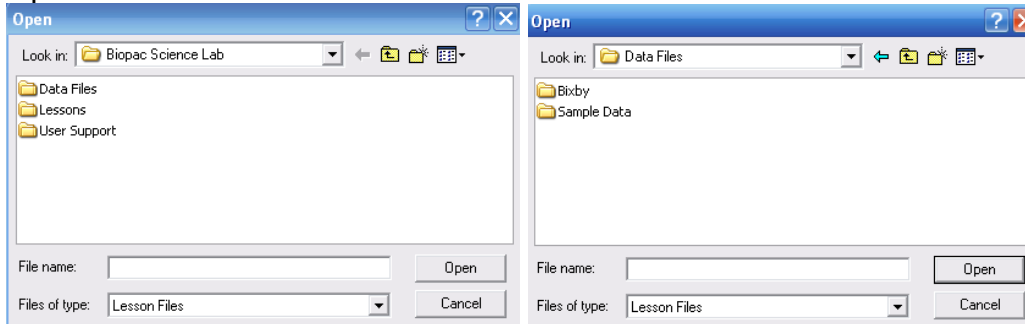
The intro system is ideal for life science labs and includes tutorial-style lesson experiments for

- Biology - Physiology - Exercise Physiology - Psychology

Plus, it's ready to record student-designed protocols

I. Analyzing Data

1. To review saved data, choose “Analyze current data file” from the Done dialog after recording data, or choose “Review Saved Data” from the Lessons menu and browse to the required file.
2. You will be prompted to open a saved data file. Open the Data Files folder and select either a lesson that you previously stored or a Sample Data File from the Sample Data folder. Click Open.



J. Support Materials

- A. Help Menu
- B. Video Buttons
- C. Sample data files
- D. Files on the installation CD
- E. www.biopac.com Support > Biopac Science Lab

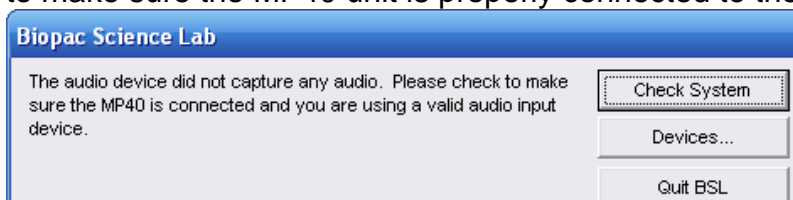
K. Technical Support

General Troubleshooting

- Check MP40 battery (see Hardware Guide under the Help menu).
- Check Line In status.
- Restart computer.
- Relaunch the software and repeat the System Check.

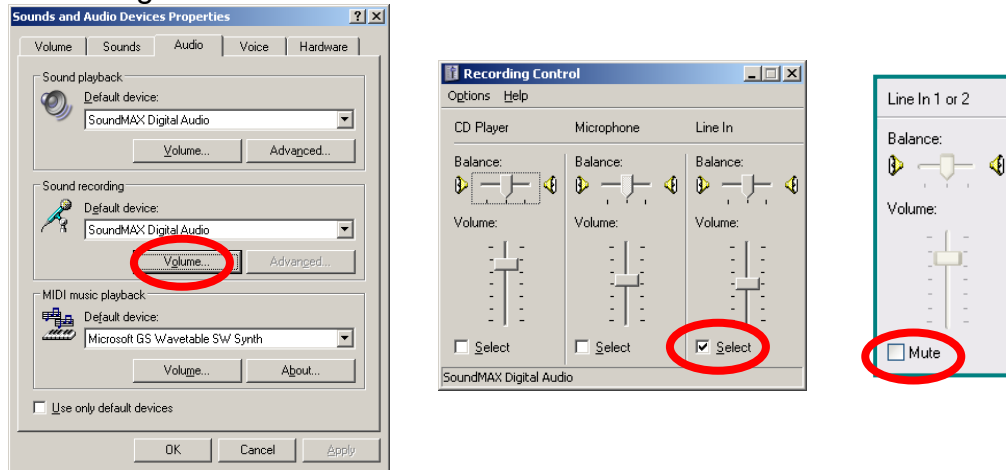
System Check Troubleshooting

- Clipping: If the system check does not work the first time (and a prompt indicates that the MP40 is clipping), click Check System and try to run the system check again. Repeat if necessary.
- Audio input device error: If the System Check generates an audio input device error, check to make sure the MP40 unit is properly connected to the Line In port.



Line In Issues

- Line In status
 - Line In must be active for Sound Recording Volume. Check the select box or uncheck the Mute box per your system OS.
 - The path to this setting may vary based on your OS but should be similar to: Start > Settings > Control panel > Sounds and Audio Devices > Audio tab > Sound Recording section > Volume



Windows OS Settings

- Line In Tolerance
 - The Line In must tolerate a 1 V RMS signal.
 - Check the manufacturer's web site to see if the tolerance is provided.
 - If you cannot determine the tolerance, email support@biopac.com with the sound card name and computer operating system information (i.e., Windows XP Service Pack 2).
 - If the sound card will not tolerate 1 V RMS
 - Use a different built-in sound card.
 - Use a USB Line In/Out audio adapter (Griffin, USBGear, etc.).
 - Use a PCI sound card.

Adapter Issues

- If using a Griffin iMic under Vista, set the Sound > Microphone Properties default format to "2 channel, 16-bit, 44100 Hz" (or 48000 Hz) and restart the computer.

Contacting BIOPAC

If you need to send a support email to BIOPAC, please include the information from the About dialog and System Info dialog, accessed under the Help menu.

