

## Recording your data:

There are two ways to data record:

**1. BASIC:** Click the "Red Dot" icon on the bottom row of icons. Click on the "Red Dot" icon on the bottom row of icons *to deactivate or reactive* recording.

**2. ADVANCED:** Click on "Select Task" icon (gold-red bar at bottom). Click on "Manual" in the lower left corner of the window, if it's not already checked. Select an "event" appropriate to your use, e.g., "baseline." Click on "Run Selected Task." The task name appears. Click on the "red dot" icon when you are ready to record. Click on the "red dot" icon to deactivate recording. Click again on "Select Task" to select another event. Repeat the process described above as desired. Recorded data for events will appear separated in data reports, e.g., Baseline, Stressor, Recovery.

**NOTE:** If data recording is in the "pause" mode, you cannot deactivate recording. Click on "pause" to restore recording, then click on the "red dot" icon to deactivate data recording.

## Saving your data:

Upon exit, you will be prompted to enter a client name. Select a name on the "drop down list," or enter a new one by clicking on "New Client." Then, "Save to Database" OR "Discard" when prompted.

## Reviewing recorded data:

Click on **MANAGE DATA** on the MAIN MENU. Select a client name from the drop-down list, and then either double click the name or click on "View." Choose a data report title at the top of the screen. Click on the graph you wish to adjust with the left-sided vertical arranged icons shown below.

-  **Gain up:** Reduce the range of signal values so you can see signal variation more easily.
-  **Gain down:** Increase the range of the signal values for improving visual perspective.
-  **Less data:** Show a smaller time frame for greater details, e.g., 1 minute vs 30 minutes.
-  **More data:** Show a longer time frame for greater session perspective.
-  **Show/hide signals:** Add or eliminate specific data graphs.

The horizontally arranged icons at the bottom of the screen control display features for reviewing data and then creating Excel reports if desired:

 **Data scrolling:** Examine data segment by segment, OR go to beginning/end.

 **Generate report:** Select criteria for creating an Excel Report with imported graphs (Automatic Excel report making not compatible with Windows 8).

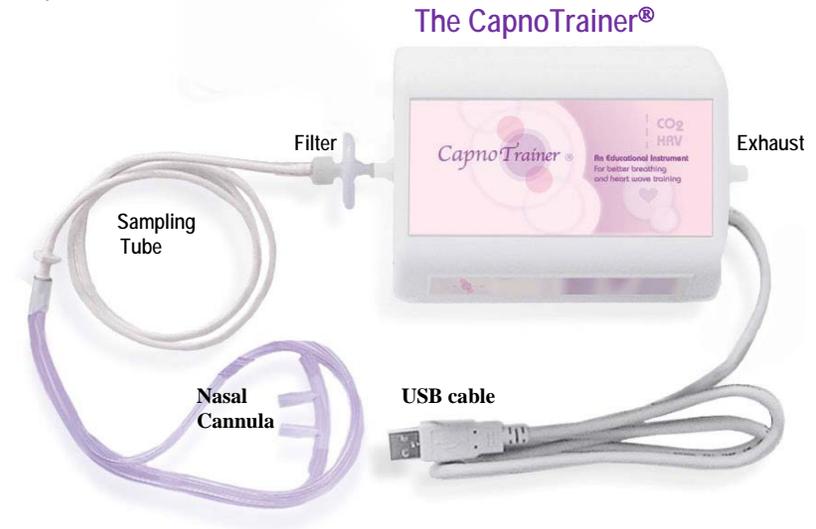


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## QUICK START

*The CapnoTrainer® is an educational device for learning breathing behavior. It is NOT intended for diagnosis and/or treatment of respiratory or any other kinds of disorders.*

The CapnoTrainer® is a combination hardware-software system for "live" displaying and recording of exhaled partial pressure carbon dioxide (PCO<sub>2</sub>) for learning and teaching new breathing behaviors. The display signals include: the PCO<sub>2</sub> "raw waveform" (continuous measurement throughout the breathing cycle), End Tidal PCO<sub>2</sub> (PetCO<sub>2</sub>), peak values achieved on the exhale), breathing rate, and various averages and quantities derived from these. The raw data of all types of signals can be saved under a learner's name, session by session, for subsequent review in assorted formats. The **hardware components** are illustrated below:



## REQUIRED SUPPLIES:

**Sampling hoses:** One sampling hose is included and should be enough for several years.

**Nasal Cannulas:** Provide a new cannula for each client. Each cannula may be reused by the same client if desired, but do not store it in a closed plastic bag. Insert the sampling hose bulb into a nasal cannula only slightly beyond its rear edge; inserting it further will make it difficult to remove.

**Filters:** Filters will last from a few minutes to many weeks. Filters fail when mucous is drawn into the nasal cannula and then becomes clogged in the filter. The filter will dry out between uses. If there is a filter problem, the PetCO<sub>2</sub> levels will drop dramatically. If so, simply replace the filter.

## INSTRUMENT CALIBRATION:

**Zero CO<sub>2</sub> level calibration:** Zero calibrate weekly or as desired. Click on "Commands" on the menu bar. Click on "Reset CO<sub>2</sub> zero level." Follow the instructions that appear. **Recap the fixture** and put in back in its plastic bag. Replace the fixture it at least once per year.

**CO<sub>2</sub> calibration:** Complete the Repair-Calibrate Order Form by finding it on your Getting Started CD, or by downloading it at [www.betterphysiology.com](http://www.betterphysiology.com). Do not attempt to CO<sub>2</sub> calibrate the instrument without expert help. For calibration in other countries: email [instruments@betterphysiology.com](mailto:instruments@betterphysiology.com).

## INSTALLING THE CapnoTrainer® ON YOUR COMPUTER

The instrument is a plug-and-play device. Plug the **USB cable** attached to the instrument into an available USB port on your computer **BEFORE** engaging your software. The USB cable **provides power to the instrument** and transfers data from the instrument to your computer. Once plugged in, a **colored light (blue, yellow, or other color) will flash** on the corner end of the instrument, indicating that the USB is providing power. Upon activating the software, **the colored light will become continuous** during normal operation. *Do NOT disconnect instrument until exiting the software.*

### USB Connection Problems?

If the colored light doesn't flash, or the software fails to engage the hardware, there are a number of possible explanations and solutions: (1) The changes made to the Windows Registry may not have been applied. Try rebooting your computer. (2) The USB ports may not provide adequate power. If so, install an external USB hub with its own power supply. And, (3) if you see a steady rather than a blinking light, you have inserted the cable into the CapnoTrainer upside down.

## PREPARING YOUR INSTRUMENT FOR USE

After connecting the **CapnoTrainer®** to your computer, you will need to connect a number of additional components to the instrument, as follows:

- Connect the **Filter gently** to the frontend of the instrument. Do NOT turn it tightly. Do not connect to the exhaust on opposite side; although obvious, it is a common mistake
- Connect the **Air Sampling Hose** to the Filter so that it fits snugly, but do not twist with pressure.
- Place a **Nasal Cannula** in the nostrils, over the ears, and under the chin (or behind the head). Adjust the cannula for a comfortable fit with **the slider** located at its base.
- Connect the Nasal Cannula to the Air Sampling Tube only **AFTER** the client has correctly placed it. *Be careful that your client does not accidentally pull the instrument onto the floor with the cannula.*
- **Install your software** with the CD marked **"installation CD"** OR go to DOWNLOADS at [www.betterphysiology.com](http://www.betterphysiology.com). For beginners, simply click "next" at every choice point. There are no decisions for you to make. Be sure to take note of the licensing agreement during the installation. You may go to [www.betterphysiology.com](http://www.betterphysiology.com) to download software updates.

### WARNINGS:

- Do NOT use instrument without a filter.
- Use **ONLY** the filters provided with the instrument.
- Do not twist filters tightly.
- Insert sampling hose bulb into cannula slightly beyond its outer edge.
- Inserting the bulb too far will make it difficult to remove.
- Do NOT use the instrument on your lap; put it on flat surface.
- Use the instrument at desk level or higher.
- Connect the instrument before activating the software.
- Do NOT unplug the instrument while using the software.
- NEVER try to CO<sub>2</sub> calibrate WITHOUT a CO<sub>2</sub> bottle.
- Failure to recap zero calibration fixture means short life of fixture.
- Do not open (or refill) zero calibrator.

## SOFTWARE



Start the **CapnoTrainer®** software by clicking this icon. The **MAIN MENU** will appear:



- **RUN SESSION.**  
Launch a learning session.
- **MANAGE DATA.**  
Review a learning session.

### Selecting a live screen:

Click on any of the display screen titles at the top of the screen. For details about each screen, click on the drop-down menu arrow immediately to right of each title, and then click on INFO screen. **Click on the drop-down arrow for "Getting Started" to read about CapnoLearning®** (Lessons for Clients).

### Exiting the session (software):

Click on the arrow in the lower left corner. Note: the "x" in upper right will not allow you to exit. If data recording is ON, turn off data recording. Then exit. You may NOT exit if data recording is ON.

### Signal-Control icons (left side, vertically organized icons):

These icons control features of a specifically selected graph on a display screen. Select a graph by clicking on it (color shade will change). Only useful icons are lighted; inactive icons are dimmed.

### Most commonly used vertical icons (left side) include:

- Signal up:** Move (offset) signal up in display window, so that signal appears higher.
- Signal down:** Move (offset) signal down in display window, so that signal appears lower.
- Auto offset:** Keep the signal centered in the display window automatically.
- Gain up:** Reduce the range of signal values so you can see signal change more easily.
- Gain down:** Increase the range of the signal values so that changes are less abrupt.
- Auto gain:** Optimize the range of signal values automatically for good viewing.
- Faster graph:** shorter time frame, e.g., 30 seconds
- Slower graph:** longer time frame, e.g. 10 minutes
- Zoom function:** Click on a graph of choice, then zoom.
- Thresholds:** Click to change threshold values, one or both

### Session-Control icons (bottom, horizontally organized icons):

These icons control display and session features.



### Most commonly used bottom horizontal icons (see above) include:

- Exit live recording (return to main Menu)
- Record data for later review
- Clear screen (not data)
- Freeze screen (for discussion)
- Select task (manual or automated, see below)