



BioSignals HS+
4-Channel System
USER GUIDE SUPPLEMENT

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Welcome to Alive Pioneer with the BioSignals HS+

The HS+ will allow you to make the most out of Alive Pioneer, adding the ability to **train Heart Rate (HRV), Respiration (breathing), Hand Temperature, and Skin Conductance.**

Connect the Sensors to your HS+

- 1) Attach the **black temperature sensor to the TEMP** port on the HS+. The temperature sensor has a thin black tip.
- 2) Attach the **blue respiration belt cable to the BREATH** port on the HS+.

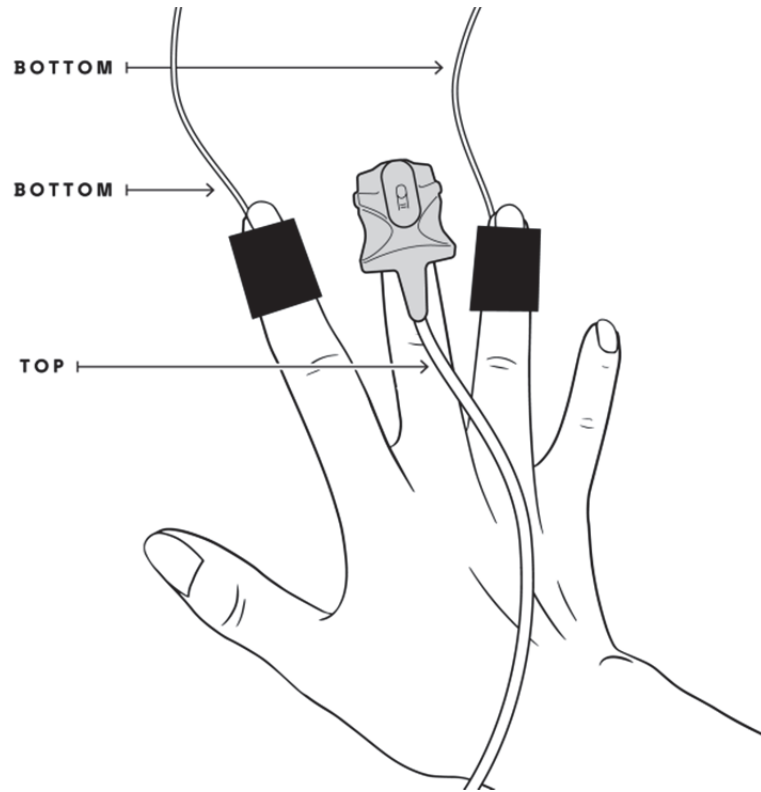


- 3) Attach the **grey soft rubber finger sensor to the HEART** port on the HS+.
- 4) Attach the **black and white pair of skin conductance sensors to the SKIN** port on the HS+.
- 5) **Attach the BioSignals HS+ to its USB extension cord.**
- 6) **Attach USB extension cord to your computer. Wait for 30 seconds or more after attaching the BioSignals HS+ to your computer before opening Alive.**
- 7) **Open Alive 3.2 or later.** If Alive doesn't find your BioSignals sensor, wait for one minute for BioSignals to finish its automatic setup, then open Alive again.

Connect the Sensors to You

- 1) Place the rubber heart rate sensor on the middle finger of your non-dominant hand.** The cable should be on the top (fingernail side) of your finger. The cable should extend from your fingertip in the direction of your wrist. **If the rubber heart rate sensor feels too tight, you can place it on your pinky or move your finger tip slightly back out of the tight end of the sensor.**
- 2) Place the black Velcro skin conductance sensors on your index and ring fingers of your non-dominant hand. The metal disks should be on the pads (underside) of your fingertips.**
- 3) Place the temperature sensor on the tip of one of your fingers.** You can hold the sensor between two fingers or slide it into one of the heart rate or skin conductance sensors. **The temperature sensor should be touching the pad of one of your fingers.** To get an accurate reading of your finger there shouldn't be wind or other air flow over the temperature sensor.
- 4) Place the respiration belt around your abdomen (or chest), connecting it to itself, as shown in the images to the right. The cable should be on the outside and hanging down.**

The belt should be loose, even during the peak of the in breath! If you notice double peaks when you breathe, loosen the belt. If you don't see the yellow respiration line in Alive change when you breathe, tighten the belt.



CONNECT THE RESPIRATION BELT

a) Hold the belt with the blue strap to the right. The cable should be on the outside and hanging down.



b) Loop the belt behind your back and attach it to the blue Velcro. The belt should NOT be tight.



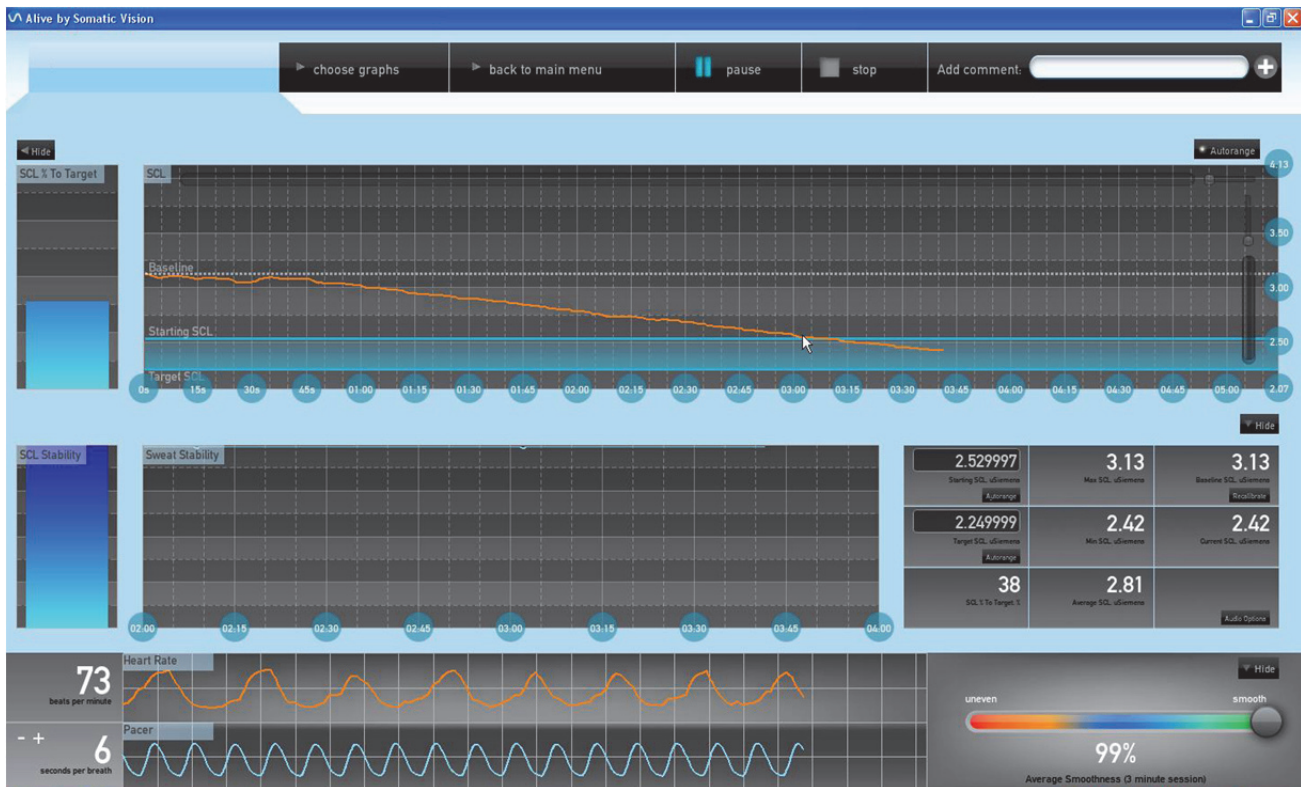
c) The remainder of the belt strap hangs down. If you prefer, you can fold the hanging part back over itself and attach it to the belt.



Heart Rate and Skin Conductance Training

Refer to the **Alive Clinical User Guide** to learn how to effectively train heart rate and skin conductance.

You can also watch Alive tutorials by searching YouTube.com for Somatic Vision Alive tutorials.



In many graphing screens, the top main graph has a blue area defined by two lines. You can drag the top and bottom lines to set the starting and target values. This determines your percent success as shown in the bar to the left of the main graph. **When using a manual measurement (Temp – Manual, SCL – Manual, etc.) this percent success is what will be displayed as feedback in any Alive Environment or Game**, so make sure you set the Starting and Target values appropriately. They can be adjusted at any time using the separate graphing screen that automatically appears when starting an environment or game.

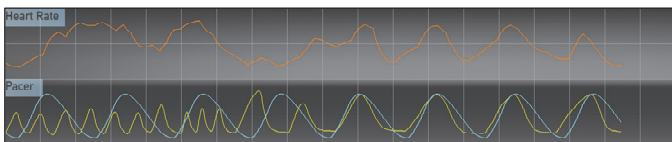
Respiration Training

The Respiration Belt is placed around the abdomen or chest to measure breathing. As you breathe, the belt stretches slightly and this stretch (near the middle of the belt) is measured.

Your respiration data is shown as a yellow line in the breath pacer area in the Alive Bottom Graphs. The respiration line is available throughout Alive, but is not available in some Alive Add-On games.

There are two Graph Training screens designed for respiration training: **Respiration Simple** and **Respiration Full**.

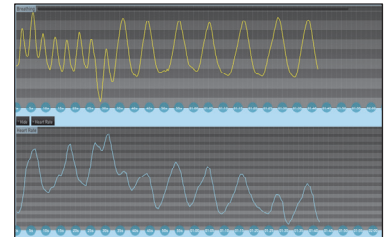
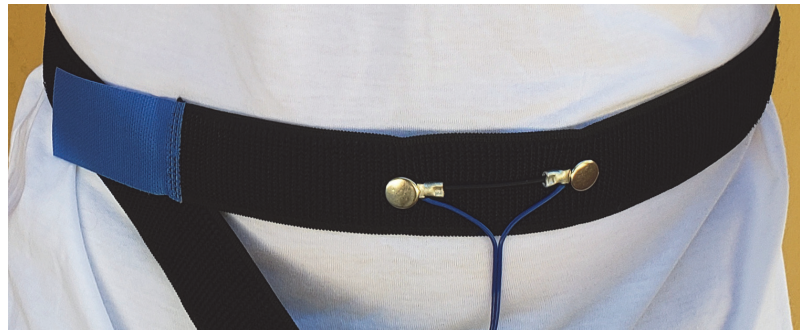
The yellow respiration line shows how your breathing affects your heart rate and smoothness.



Respiration training can be used to synchronize breathing and heart rate changes.

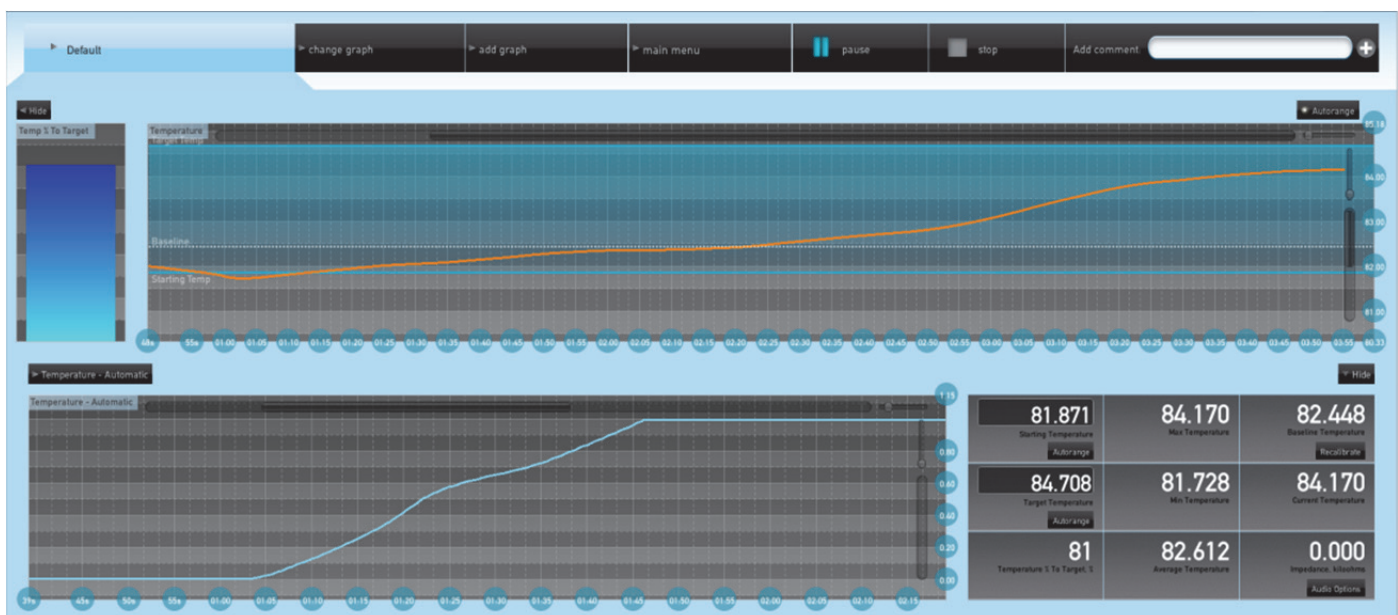
To begin using the Respiration Belt:

- 1) Attach the Respiration Belt cable to the BREATH port of your HS+.
- 2) Open the **Respiration Simple** graph from Alive Graph Training. **Click Play**.
- 3) Before putting the belt on, give a gentle pull on both sides of the respiration belt, to get a feel for how tension on the belt moves the yellow Respiration line in Alive.
- 4) Loop the Respiration Belt around your abdomen (or chest). Connect it to itself to **form a loose belt**. The center of the belt (with the cables) should be in front, **facing out with the cable hanging down**.
- 5) **PLACE THE RESPIRATION BELT LOOSELY AROUND YOUR ABDOMEN OR CHEST.**
- 6) The Respiration Belt should not be tight, even when your belly or chest is fully expanded during the peak of the in-breath. If you take a single breath, but the yellow respiration line in Alive shows two top peaks, the belt must be loosened. Experiment to determine the optimal belt tightness. If you inhale and the yellow line doesn't rise, or if the belt is falling, you may need to tighten the belt.
- 7) Observe the yellow line rise as you inhale and lower as you exhale. Notice whether or not your breathing and heart rate are in sync. Experiment with how your breathing affects your heart rate.
- 8) **Slow your breathing in a gentle and effortless manner. Find a comfortable breathing speed that smooths your heart rate and approximately synchronizes your breathing and heart rate. Observe how changing your breathing changes the synchrony of heart and breath. If your heart rate starts lowering a long time before you exhale, you may be breathing slower than you need.**



Temperature Training

The Temperature Graph is available by opening Graph Training and choosing Temperature Graph from the “change graph” drop down menu.



Attach the long thin black temperature sensor to the TEMP port of your HS+.

Place the thin end of the temperature sensor on the pad of one of your fingers. **You can use the heart rate sensor or one of the skin conductance Velcro finger straps to hold the temperature sensor in place.** Place the sensor on the underside of your finger tip, or just to the side of the electrode if you are also training skin conductance. You can also hold the temperature sensor between two fingers.

If the room is colder than your hands it may take 30 seconds to 1 minute for temperature to calibrate. Place the temperature sensor on your finger, then wait for 1 minute or **until the temperature measured stops increasing, then begin training.**

WHY DOES RELAXATION CAUSE HAND WARMING?

Relaxation increases blood flow in your periphery, especially your hands. When you are anxious, your body draws blood inwards, to the organs, and to major muscles in the legs. This prevents possible bleeding from injury during a flight-or-fight scenario, and brings more blood to where it is needed.

HOW WARM CAN I MAKE MY HANDS?

Over time, many people can learn to warm their hands to 90-95°F (30-35°C). Normal starting hand temperatures vary widely from 65°F to 90°F (18°C to 30°C).

Everyone can learn to increase their hand temperature.

It isn't important to raise your hand temperature dramatically. You can have a successful session by increasing your hand temperature 0.5 or 1°F.

HOW DO I WARM MY HANDS?

It takes time to raise your hand temperature. Give yourself time for at least a 10 minute session, and know it may take many sessions to learn to raise your hand temperature dramatically.

Hand warming requires relaxation, and letting go of trying. **People often start to succeed when they stop trying.**

Try this:

Open the temperature graph in Alive: Attach the temperature sensor, hit play and wait a minute until the line stops moving. Then zoom in using the vertical zoom slider to the right of the main temperature graph.

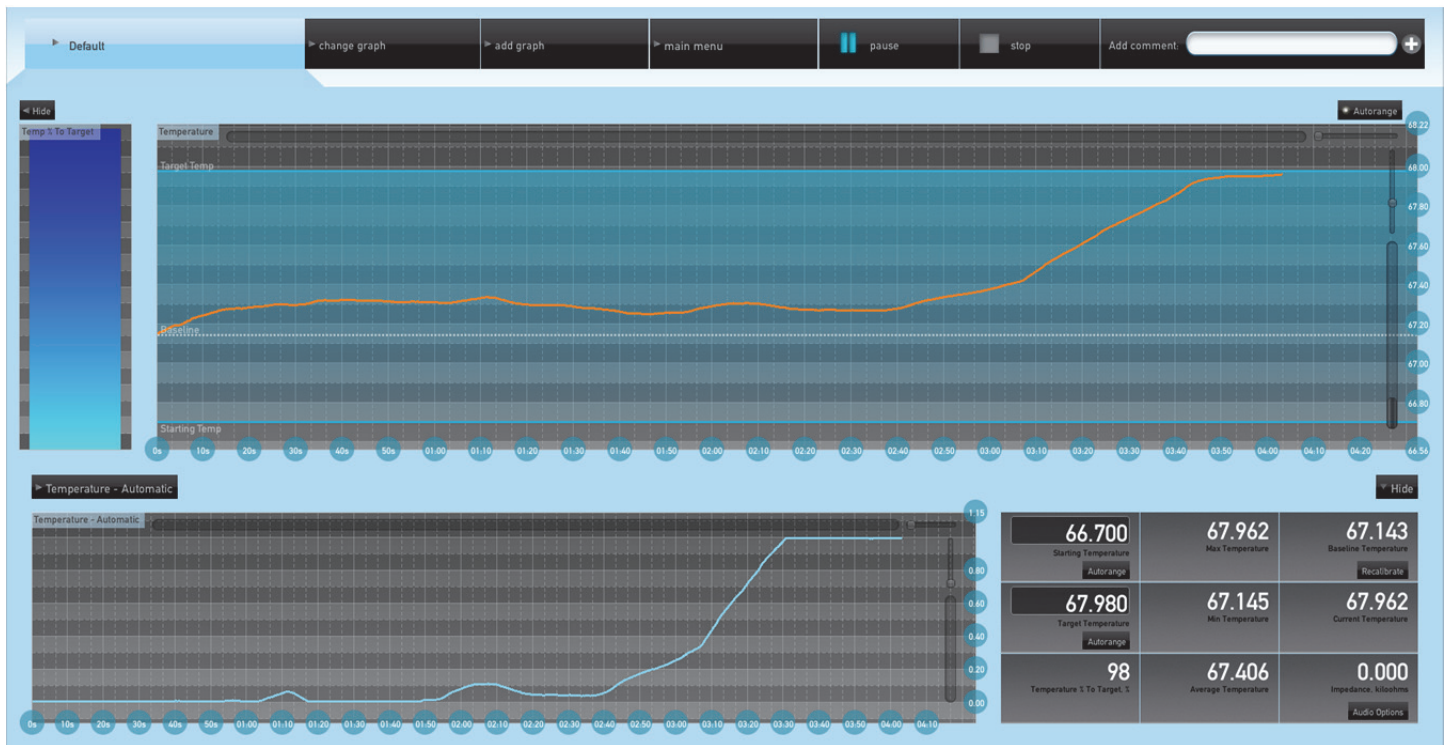
Experiment with decreasing and increasing your hand temperature. Relax your breathing. On each exhale gently breathe warmth down into your hands. Relax your body. Feel your muscles become heavy. Now stop trying to change your hand temperature, and just relax and watch the small changes in temperature.

The HS+ temperature sensor is very sensitive, and can measure changes of 0.02°C. This makes it easy to start learning as you can see small changes in finger temperature and know that you are heading in the right direction.

TEMPERATURE GRAPH FEEDBACK

Open Alive, select a user, and then open Graph Training. Graph Training is available from the Alive Main Menu as the top button on the left side.

In Graph Training choose Temperature Graph from the “change graph” drop down menu.



TEMPERATURE GRAPH WORKSHOP

1. **Place the temperature sensor** on one of your fingers, using a Velcro finger strap to hold it in place.
2. **Wait for 30 seconds or until the temperature line stops rising.** It can take up to a minute for the temperature sensor to fully warm up when placed on your body.
3. **Use the vertical zoom slider on the right side of the main temperature graph to zoom in on the temperature line.** Very small changes in temperature can be measured, and zooming in will help you see when you start to succeed.
4. **Try to decrease your finger temperature.** Tense your body or think of things that upset you.
5. **Relax and do nothing.** After tensing it should be easy to relax. Don't try to relax, just stop tensing. Stop doing anything. **Notice if the finger temperature line rises.**
6. Now take a few minutes and relax further. **See if you can feel your hands warming.** Notice if you are trying and stop trying. Relax and see what happens. Tense and release your muscles. Imagine breathing warmth down to your hands on each exhale. Stop trying to raise your hand temperature and turn your attention to something pleasant or boring. Over time you can learn to relax and warm your hands.
7. Click main menu to return to the **Alive Main Menu.**
8. **Select Manual or Automatic Temperature Feedback from the Feedback Drop Down.**
9. Go to Environments -> Petals of Light.
10. If you selected Temperature – Automatic, Petals of Light will open immediately. If you selected Temperature – Manual, you will now need to drag the starting and target lines on the main temperature graph. Set the starting line to be either where your temperature is now, or some value that you consider to be a low temperature. Set the target temperature to your desired final hand temperature, but don't set this too high, it will just make you frustrated.
11. Expand the mandala shapes by increasing your finger temperature.



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