VITALSTIM™ PLUS
Software Tutorial
Opening software
Connect VITALSTIM PLUS device
Connect mouse EMG
Create a new patient
Open display session
Template training
Work/Rest Assessment
Work/Rest Training
Games
Export Data from the device
Click VITALSTIM software icon on your desktop
Click VITALSTIM software icon on your desktop

The software window open up with an invite to enter your Login and password (created at the first install)
Enter Login and Password

Click OK
Connect VITALSTIM PLUS

Bluetooth and Wifi should be activated on your computer

Click on your tool bar to show hidden icons
Check on VITALSTIM PLUS device the Bluetooth ID

1. Press "Tool" menu
2. Press "Bluetooth"
3. Press "Set"

Bluetooth should be ON
Switch on your VITALSTIM PLUS device. Make sure Bluetooth is “ON” in the device menu.

A searching window opens on the bottom of the page.

From the home page, you can see which VITALSTIM PLUS devices are activated and reachable in the close environment. If needed, your device Bluetooth ID can be read in the device Bluetooth menu.

Click on Connect for the device you are going to use.
From the home page, you can see which VITALSTIM PLUS devices are activated and reachable in the close environment.

Click on Connect for the device you are going to use.
When the device is properly connected to the PC, the EMG bargraphs are activated and the blue windows indicate the Device ID.

**IMPORTANT!**
When your device goes on screen saving mode the connection is interrupted. To avoid this you should:
1/ activate sEMG mode on the device
2/ press “START/PAUSE” button on the device. Then clock is running, no more blue tooth interruption.
Connect Mouse EMG allows the user to mimic the EMG signal by using the computer mouse/cursor.

The feature is useful to learn about the software features without having to connect the Vitalstim device.

Click Connect mouse EMG button
Controlling EMG signal with mouse

Scroll mouse or cursor up/down to control EMG signal for Channel 1.

Scroll left/right to control EMG signal for Channel 2.
Create a new patient

Starting from the Home page

Click on Patient Database
Create a new patient

Click *Add* to create a new patient profile
Create a new patient

Click Add to create a new patient profile
Create a new patient

Fill in patients details, then click Add
Create a new patient

New patients are listed in the database. All past patient sessions can be retrieved here.

Double-click on *patient name* to start a session.
Open Display – Start session

Select patient *Condition*, then click *Open Display*
The Open Display screen allows the user to record a session without any predefined template or Work/Rest protocol.

Click **Start** to begin displaying the EMG signal.
Graph lines for channels 1 and 2 are automatically displayed. Numerical and statistical values are displayed on the right.

Click *Pause* to pause the display
Channels can be viewed together or individually.
Area under graph line can be viewed filled on not filled.
μV scaling can be adjusted automatically when EMG signal exceeds the displayed Y axis.
Open Display – Show/Hide threshold

Show or hide channel threshold.
Open Display – Adjust μV scale

μV scaling can be adjusted manually by scrolling up or down in the vertical axis.
Open Display – Adjust Time scale

Time scaling can be adjusted manually by scrolling left or right in the horizontal axis.
Event indicator can be added on the μV axis with comments during session. It may be helpful to describe a peak value.
Add a marker to highlight and select a time segment.
Open Display – Add Marker

Select “new marker”
Open Display – Add Marker

Left Click on the screen and drag to create a segment.

Useful to extract statistics for a specific event during the session.
Open Display – Segment data

Statistics of selected segment are displayed. Clicking on Close saves the segment and removes the data from the final session report.
Open Display – End Session

Click *Finish* to end the session.
Open Display – Session Report

Report includes data and full session graph.

Graph can be scaled by scrolling on either axis.
Open Display – Session Report

Screen can be print or saved as a .Jpeg picture format. Statistics or graph only can be printed.
Session data can be exported for further analysis.

Click on Export to CSV.

Spreadsheet is generated with raw data averaged at 16 samples per second.
Open Display – Session Review

To review a previous session, click on patient name, then select the session and click Review.
Template training allows the clinician to create a visual template for the EMG activity to guide the patient activity.

Click **Template Training** to start.
Template Training – Setting Threshold

Click Auto to set the threshold automatically.

Ask the patient for some contractions when prompted. Threshold will be reset after 3 seconds.
Template Training – Setting Threshold

Click *Start* when the new threshold value is set.
Template Training – Create Period

Click *Create or Select Period*. On next screen, click *Create Period* to start creating a new template.
Now “draw” a period on the graph that is representative of the action that the patient has to follow.

A period is the base element of the template; the template will consist of repeated periods.

Draw by clicking on different points of the path of the line. Name the period and click Save when done.
Select the period and click OK.
Adjust the width of the line as needed. A thicker band will create a wider band or path for the patient to follow.
Template Training – Create Template

Adjust the µV and the time scale by scrolling on the vertical and horizontal axes, and set the number of reps.
Template Training – Create Template

Name the template and click Save Template when done.
Template Training – Run session

Click **Start** to begin Template Training session.
Template Training – Run session

Adjust the scaling as needed at any time before or during the session.
The patient EMG graph will run on the screen during the session. The patient is instructed to follow the yellow line as a guide.
Template Training – Run session

Report page will be displayed at the completion of the session.

Click Save to save the session to the patient record.
Template Training – Review session

Saved sessions are listed in the patient profile for review.
A Work/Rest Assessment is a standardized test that can be performed at regular intervals to quantify patient improvement.

Select the Condition in the dropdown and click Work / Rest Assessment.
Work/Rest Assessment

Select the number of reps, and Work and Rest time.

Click on Auto to set the Threshold automatically.
Ask the patient to swallow normally when prompted. After 3 seconds, the threshold is automatically set.

Click **Start** when done.
Work/Rest Assessment

EMG signal is shown. Adjust the scaling and the view as needed.

Click Start to begin the assessment.
Patient is instructed by the Work and Rest voice prompts and visually by the vertical lines on the graph.

The Voice prompts can be turned off.
The report is shown at the end of the assessment. The report can be saved.
A progress report can be generated when a minimum of 2 Work/Rest Assessments have been performed.

Select the Work/Rest Assessment sessions to report on and click *Create Progress report (Assessment)*.
Work/Rest Assessment – Reporting

First report tab shows EMG Graphs for the selected sessions.

Clinician can add comments in bottom section.
EMG statistics tab reports on and compares numerical values for the different sessions.
The Quick Comparison tab provides a visual report of the data.
The Summary tab lists all comments documented by the clinician.

Clicking Print will generate a PDF file of the entire progress, including all graphics, statistics and comments. Report can be printed or saved to file.
**Work/Rest Training**

![Image of VitalStim Software interface]

- **Patient Name**: James Winter
- **Condition**: Stroke

**Settings Checklist**
- **Device**: EmgSimulator
- **Mode**: sEMG
- **Threshold**: 100.0 μV / 1000.0 μV
- **Work**: 5 secs
- **Rest**: 5 secs
- **Trials**: 5
- **Sound Feedback**: 0%
- **Heart Beat Filter**: Off
- **Target type**: Manual

![Graph showing EMG readings]
- **Ch 1**: 222.7 μV
- **Ch 2**: 375.3 μV

**Instructions**
- Click on **Work/Rest Training**

---

---
Work/Rest Training

Select the number of reps, and Work and Rest time.

Click on Auto to set the Threshold automatically.
Ask the patient to swallow normally when prompted. After 3 seconds, the threshold is automatically set.

Click **Start** when done.
Work/Rest Training

EMG signal is shown. Adjust the scaling and the view as needed.

Click *Start* to begin the training.
Work/Rest Training

The report is shown at the end of the training. The report can be saved.
Work/Rest Training – Reporting

Saved sessions are listed on the patient page.

Click on Start Protocol to start a new session.
Click *Games* in Protocol Selection page
There are 8 different games to choose from. The games provide biofeedback of muscle activity in a virtual environment – the muscle activity drives the movements of the ‘avatars’ in the game.

The games encourage muscle control by alternately focusing on contraction and relaxation.
The first four games are most useful for swallowing rehabilitation:

- **Bunny Game** – Contract to climb a hill, relax to proceed to next hill
- **Plane Game** – Contract or relax to increase or decrease altitude
- **Yacht Game** – Keep tone in 2 channels equal to keep yacht from sinking
- **Rose Game** – Contract to close the rose, relax to open
Games

Click on chosen game
Game Options:
- Start the game
- Adjust the game settings
- Get explanations on how to play
- Get scoring history for the patient

Click *Settings* to customize for the individual patient.
Games – Setup

- Set the number of trials based on patient tolerance
- Upper threshold: Patient must contract above this level to progress
- Lower threshold: Patient must relax to below this level to progress
- Constant or Adaptive to keep the threshold the same or have it automatically adjust to patient performance

Click *next* when done.
Games – Setup

- **Work Time:** Amount of time to hold a contraction
- **Rest:** Amount of time to allow muscle relaxation

Click *done* when ready.
Click *start game* to begin.
In this game, the patient has to catch as many stars as possible by contracting to fly over the mountain and relaxing to drop to the bottom.
Score and time is displayed after end of game.

Clinician can restart the game by clicking **restart**.
Games sessions statistics can be retrieved under the **Game Sessions** tab in the Patient Database.
Step 1 (see device manual): Create a patient profile and save the sessions on the device.

Step 2: Launch the VitalStim Software and ensure that Bluetooth connection with device is established.

Step 3: On the device, highlight the patient in Patient Data and click on Export to PC.

Click Save Sessions open on the home page.
The download process starts.

Click OK.
The Patient Database opens and lists the new patient in the patient list.
EXPORT DATA from the device

Select the session that you want to review and click Review.
The patient session data are displayed.

IMPORTANT: No graph display is available for export sessions.