

# VITALSTIM™ PLUS Software Tutorial



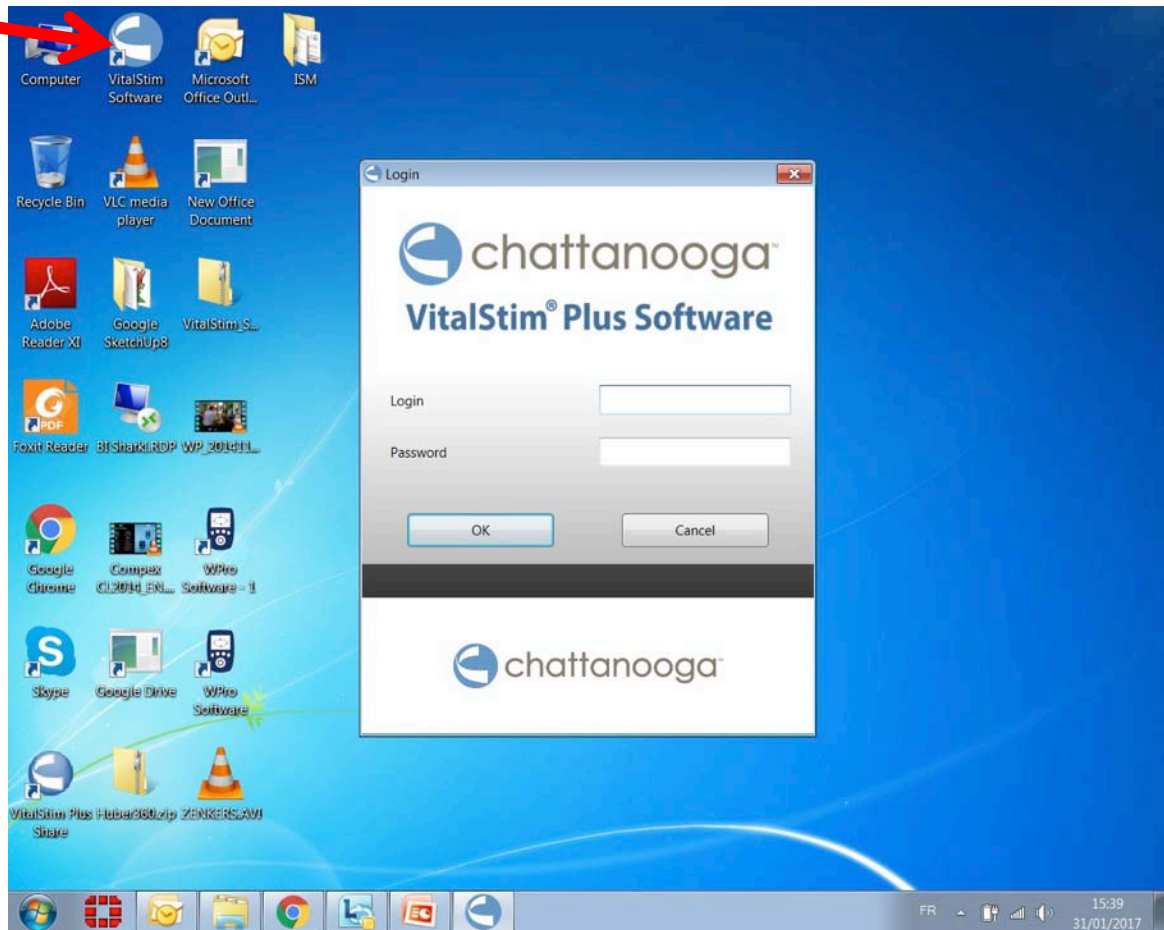
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# OPENING SOFTWARE

Click VITALSTIM software icon on your desktop

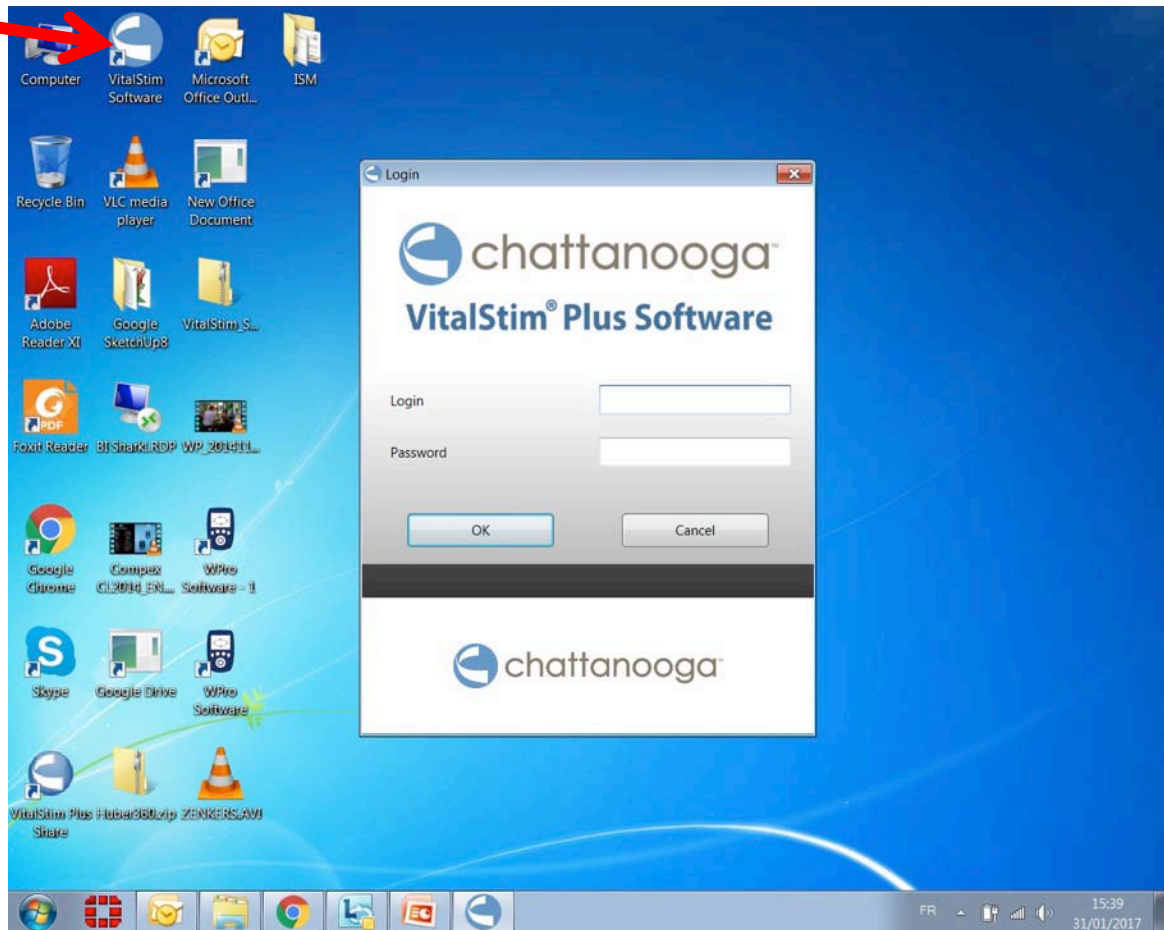




# OPENING SOFTWARE

Click VITALSTIM software icon on your desktop

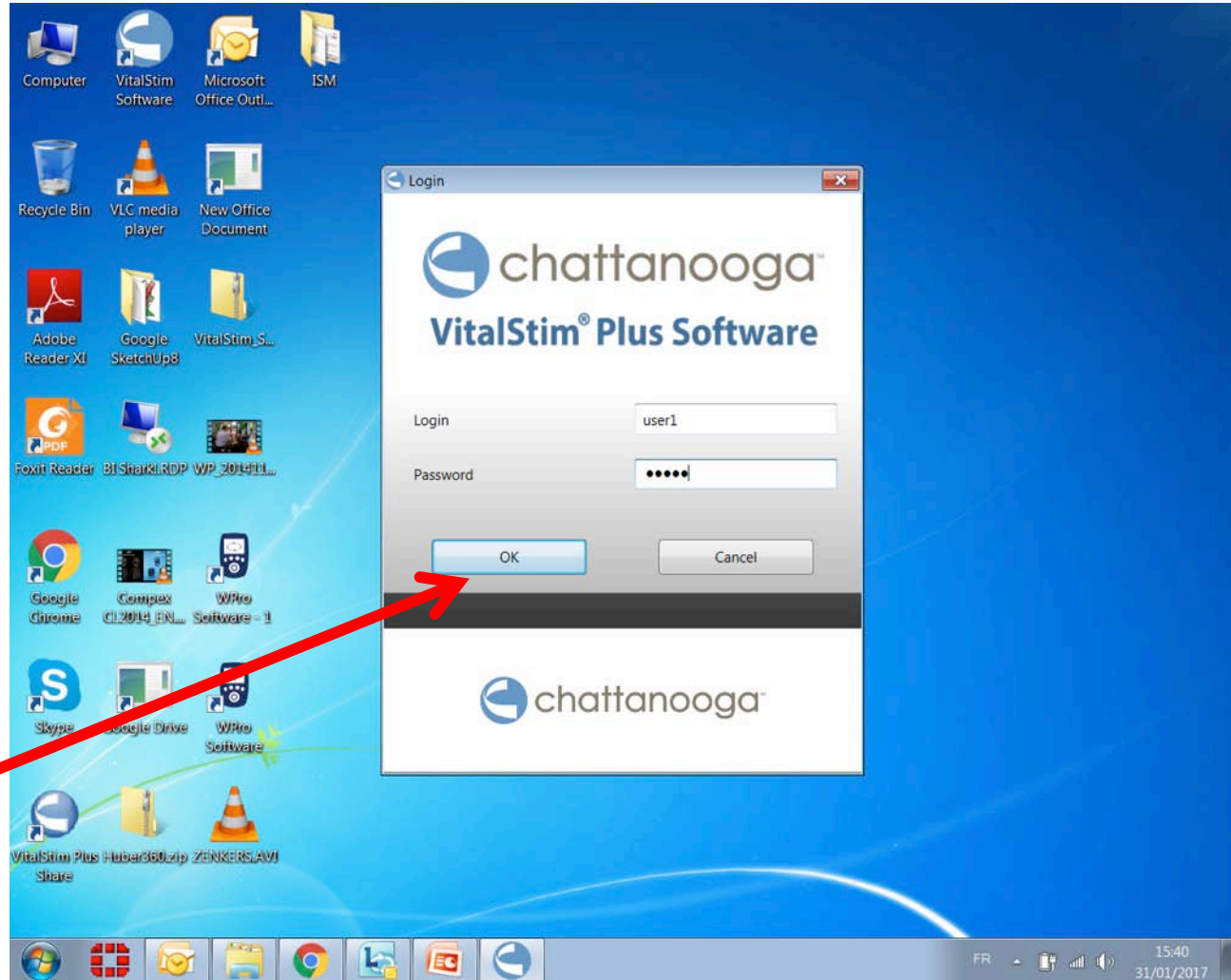
The software window open up with an invite to enter your Login and password (created at the first install)





# OPENING SOFTWARE

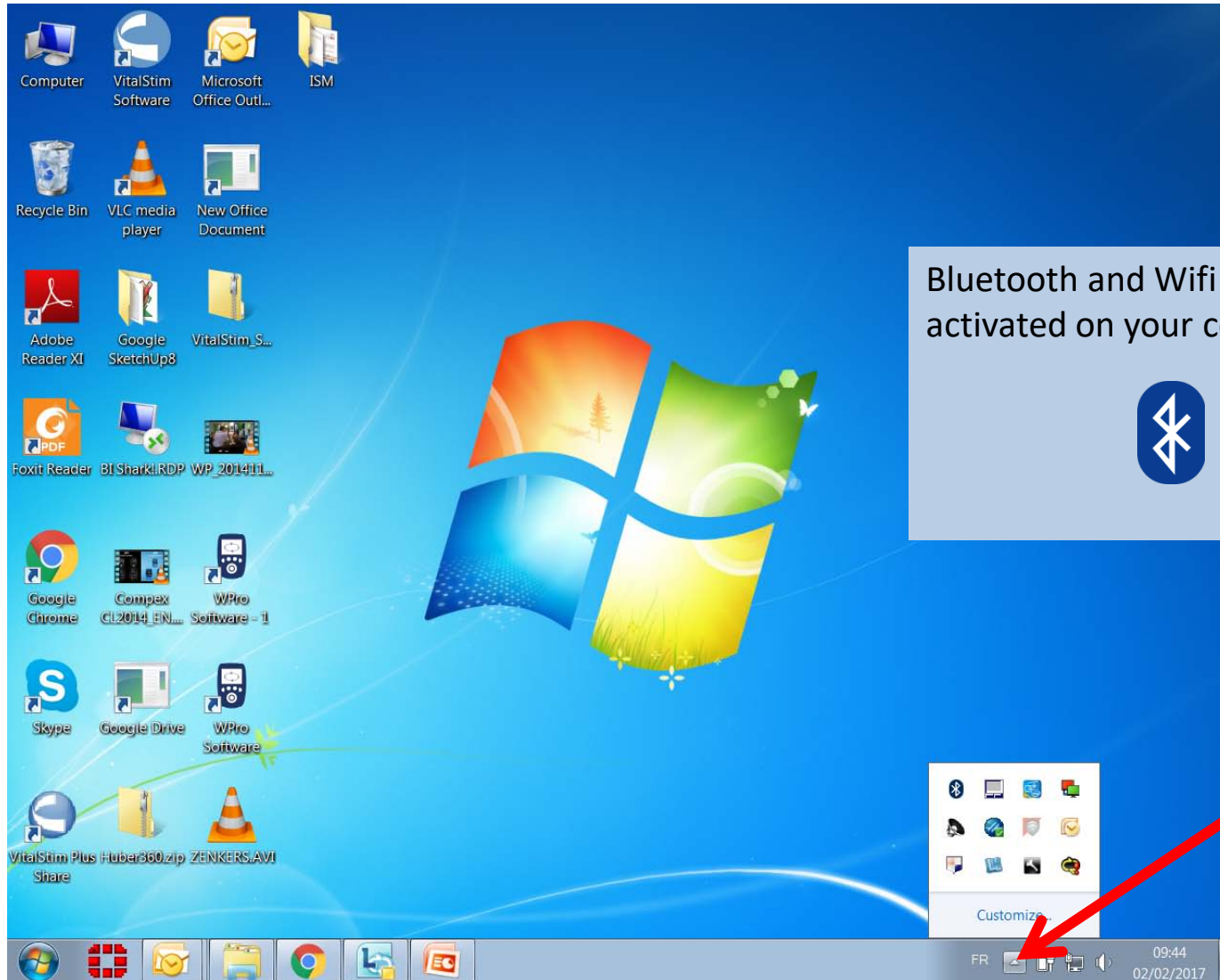
Enter Login and Password




Click OK



# Connect VITALSTIM PLUS



Bluetooth and Wifi should be activated on your computer

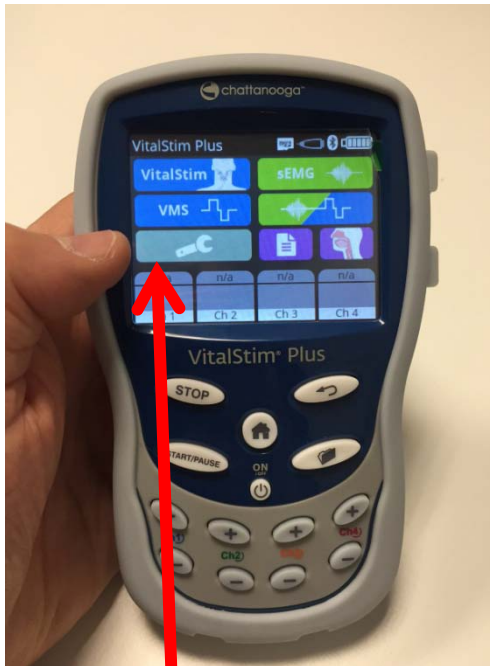


Click on your tool bar to show hidden icons

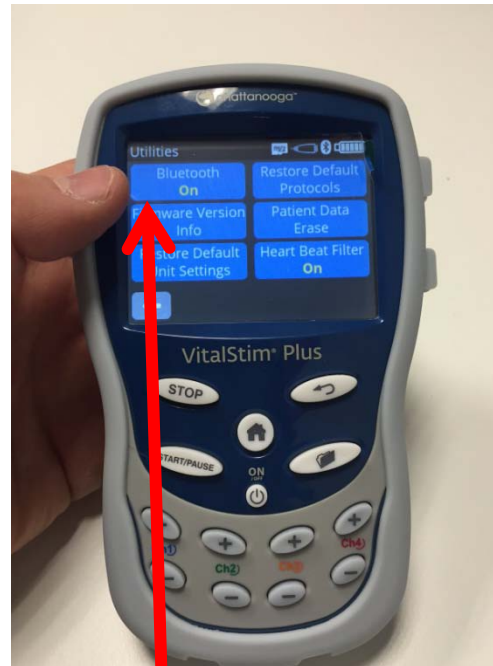


# Connect VITALSTIM PLUS

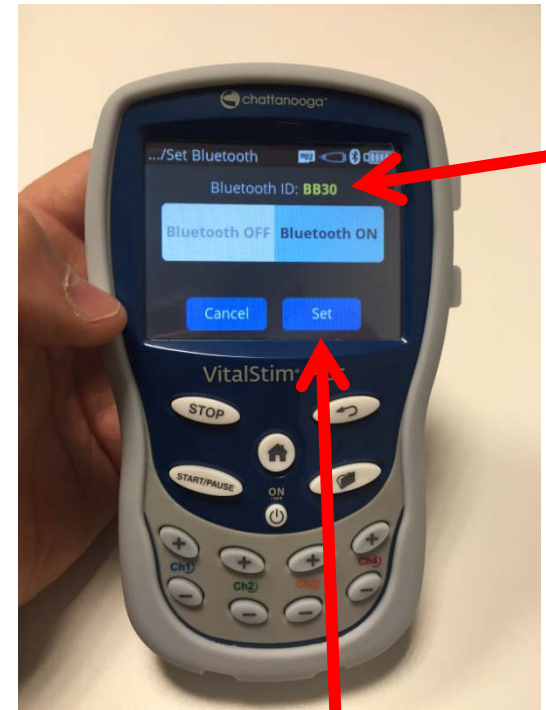
Check on VITALSTIM PLUS device the Bluetooth ID



Press "Tool" menu



Press "Bluetooth"



Press "Set"  
Bluetooth should be ON



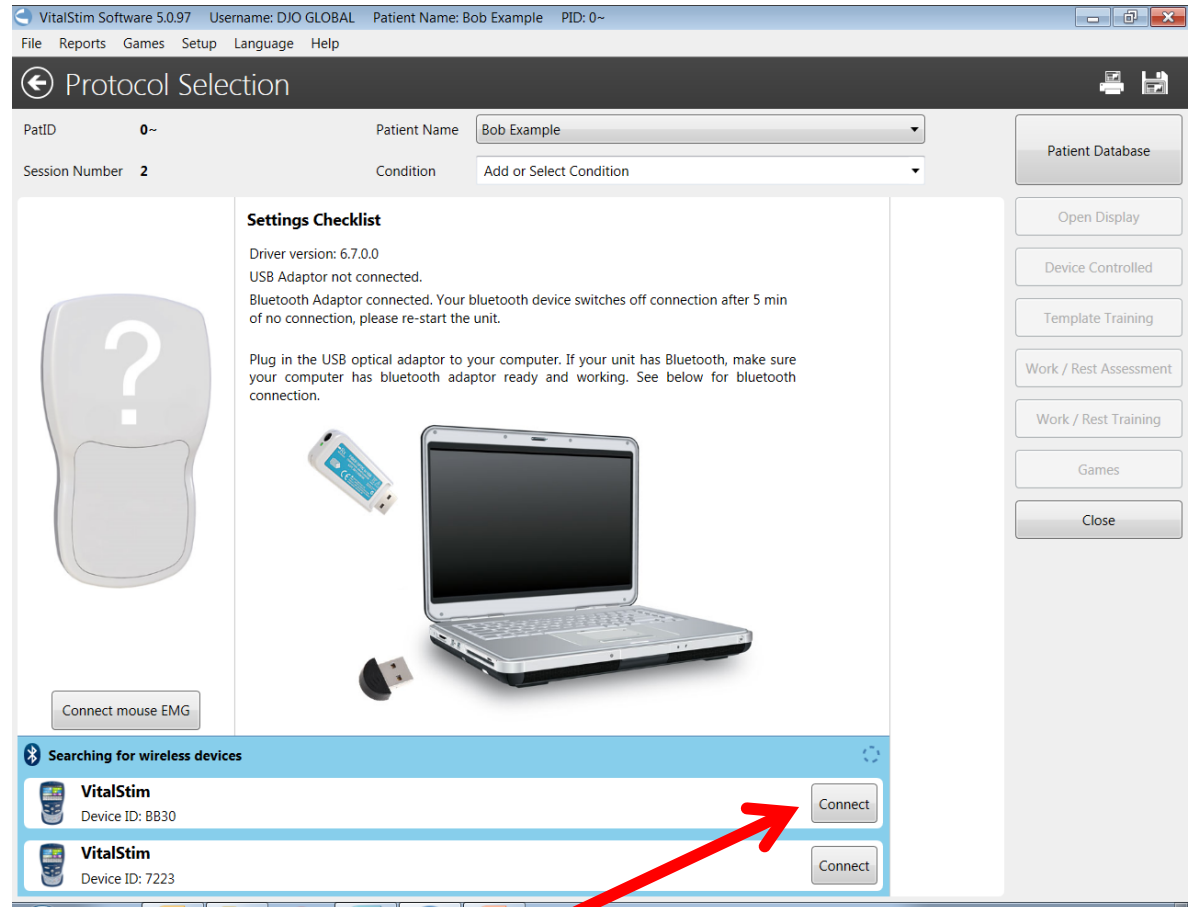
# Connect VITALSTIM PLUS

Switch on your VITALSTIM PLUS device. Make sure Bluetooth is "ON" in the device menu

A Searching windows open 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 Blue tooth menu.



VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: Bob Example PID: 0--

File Reports Games Setup Language Help

Protocol Selection

PatID 0-- Patient Name Bob Example

Session Number 2 Condition Add or Select Condition

Patient Database

Open Display

Device Controlled

Template Training

Work / Rest Assessment

Work / Rest Training

Games

Close

**Settings Checklist**

Driver version: 6.7.0.0  
USB Adaptor not connected.  
Bluetooth Adaptor connected. Your bluetooth device switches off connection after 5 min of no connection, please re-start the unit.

Plug in the USB optical adaptor to your computer. If your unit has Bluetooth, make sure your computer has bluetooth adaptor ready and working. See below for bluetooth connection.

Connect mouse EMG

Searching for wireless devices

VitalStim Device ID: BB30 Connect

VitalStim Device ID: 7223 Connect

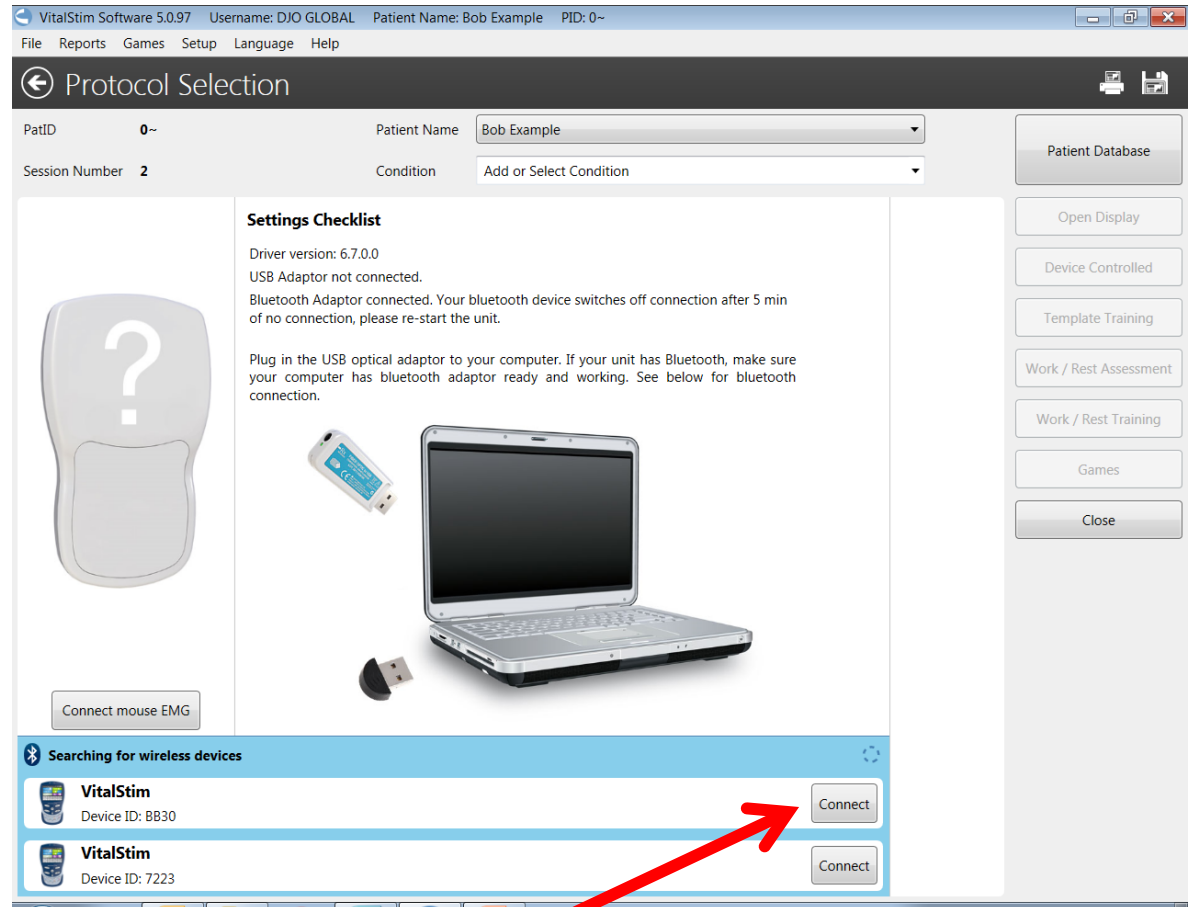
Click on *Connect* for the device you are going to use.





# Connect VITALSTIM PLUS

From the home page  
You can see which  
VITALSTIM PLUS  
devices are activated  
and reachable in the  
close environment



VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: Bob Example PID: 0~

File Reports Games Setup Language Help

Protocol Selection

PatID 0~ Patient Name Bob Example

Session Number 2 Condition Add or Select Condition

**Settings Checklist**

Driver version: 6.7.0.0  
USB Adaptor not connected.  
Bluetooth Adaptor connected. Your bluetooth device switches off connection after 5 min of no connection, please re-start the unit.

Plug in the USB optical adaptor to your computer. If your unit has Bluetooth, make sure your computer has bluetooth adaptor ready and working. See below for bluetooth connection.

Connect mouse EMG

Searching for wireless devices

- VitalStim Device ID: BB30 Connect
- VitalStim Device ID: 7223 Connect

Click on *Connect*  
for the device you  
are going to use.



# Connect VITALSTIM PLUS

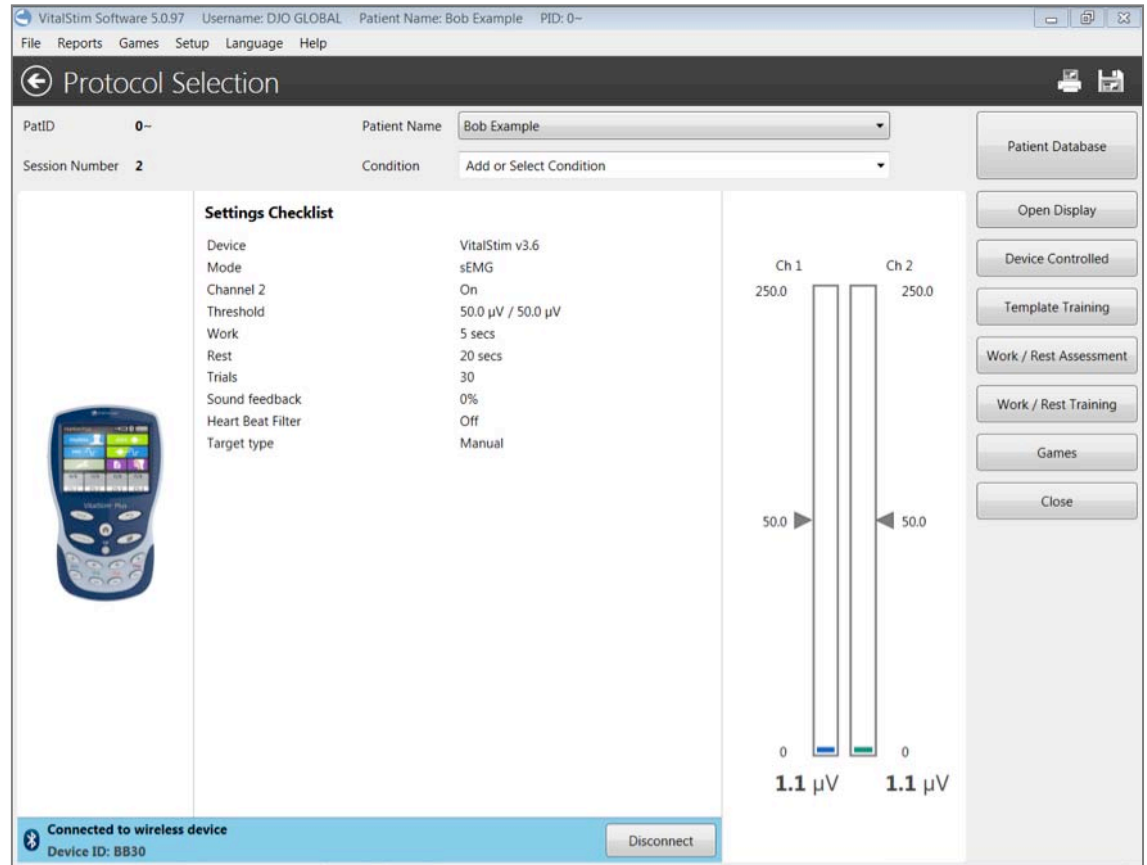
When the device is properly connected to the PC,  
The EMG bargraphs are activated  
And the blue windows indicate the Device ID

## 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



VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: Bob Example PID: 0~

File Reports Games Setup Language Help

### Protocol Selection

PatID: 0~ Patient Name: Bob Example

Session Number: 2 Condition: Add or Select Condition

Patient Database

Open Display

Device Controlled

Template Training

Work / Rest Assessment

Work / Rest Training

Games

Close

#### Settings Checklist

Device	VitalStim v3.6
Mode	sEMG
Channel 2	On
Threshold	50.0 µV / 50.0 µV
Work	5 secs
Rest	20 secs
Trials	30
Sound feedback	0%
Heart Beat Filter	Off
Target type	Manual

Ch 1: 250.0, 50.0, 0, 1.1 µV

Ch 2: 250.0, 50.0, 0, 1.1 µV

Connected to wireless device  
Device ID: BB30

Disconnect

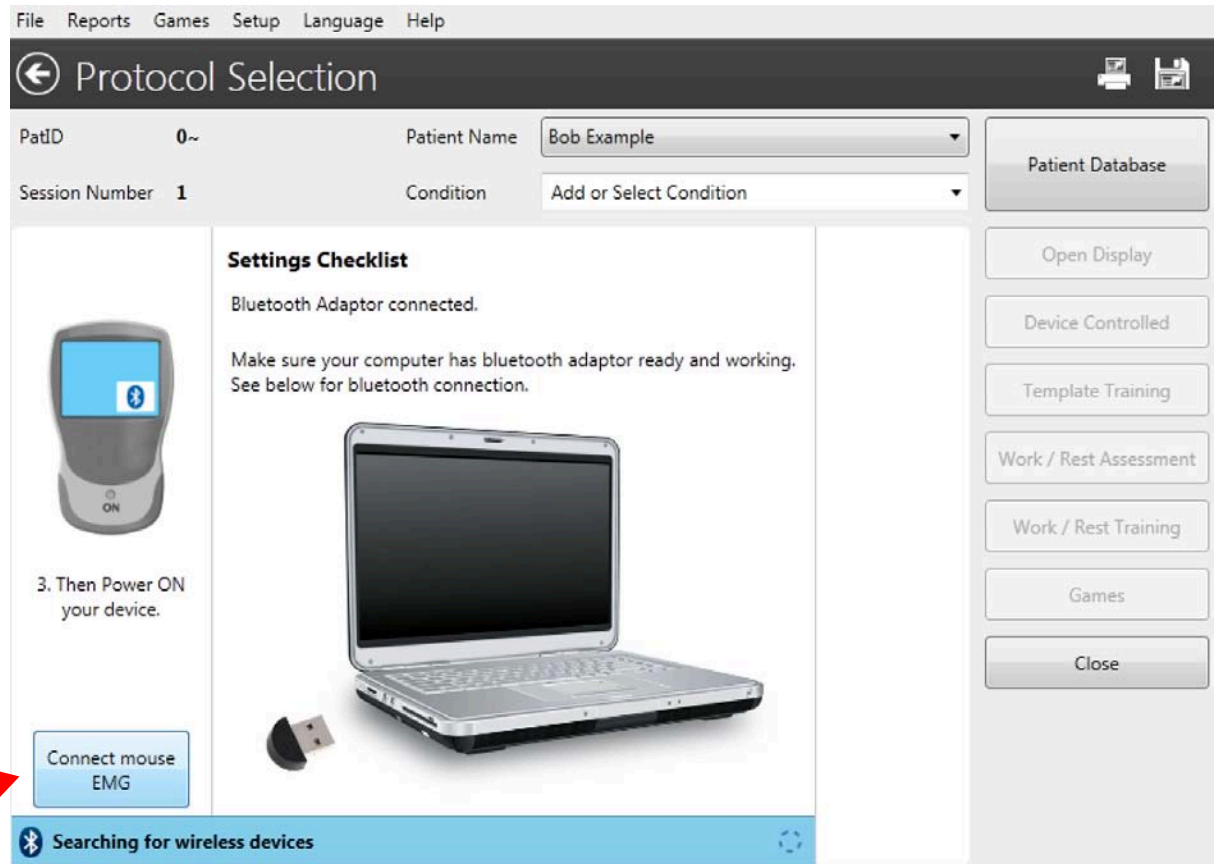


# Connect mouse EMG

*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



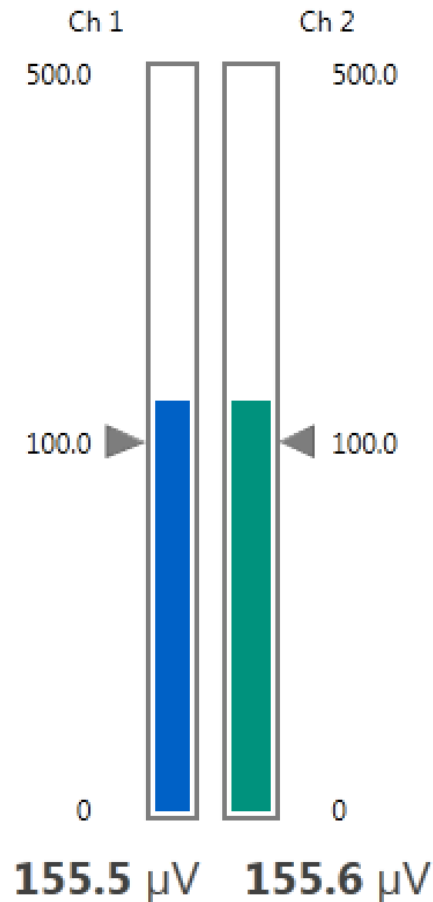
The screenshot shows the 'Protocol Selection' window of the software. At the top, there is a menu bar with 'File', 'Reports', 'Games', 'Setup', 'Language', and 'Help'. Below the menu bar, the window title is 'Protocol Selection'. The main area contains fields for 'PatID' (0~), 'Patient Name' (Bob Example), 'Session Number' (1), and 'Condition' (Add or Select Condition). A 'Settings Checklist' section indicates that the 'Bluetooth Adaptor' is connected and provides instructions to ensure the computer's Bluetooth adaptor is ready and working. A 'Connect mouse EMG' button is visible at the bottom left of the main area. A red arrow points from the text box on the left to this button. At the bottom of the window, a status bar shows a Bluetooth icon and the text 'Searching for wireless devices'. On the right side of the window, there is a vertical sidebar with buttons for 'Patient Database', 'Open Display', 'Device Controlled', 'Template Training', 'Work / Rest Assessment', 'Work / Rest Training', 'Games', and 'Close'.



# 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

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: Bob Example PID: 0~

File Reports Games Setup Language Help

### Protocol Selection

PatID 0~ Patient Name Bob Example

Session Number 2 Condition Add or Select Condition

**Settings Checklist**

Device	VitalStim v3.6
Mode	sEMG
Channel 2	On
Threshold	50.0 $\mu$ V / 50.0 $\mu$ V
Work	5 secs
Rest	20 secs
Trials	30
Sound feedback	0%
Heart Beat Filter	Off
Target type	Manu

Ch 1 50.0 Ch 2 250.0

50.0 50.0

0 0

1.1  $\mu$ V 1.1  $\mu$ V

Connected to wireless device Device ID: BB30 Disconnect

Patient Database

Open Display

Device Controlled

Template Training

Work / Rest Assessment

Work / Rest Training

Games

Close

Click on Patient Database



# Create a new patient

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: Bob Example PID: 0~

File Reports Games Setup Language Help

## Patient Database

Search patient

PatID	Surname	First name
0~	<b>Example</b>	<b>Bob</b>
1	Martin	John

Confidential  Default Patient

**Patient Options**

View / Edit

**Add**

Delete

**Sessions** Game Sessions

Session	Date	Time	Protocol	Condition	FOIS	Patient Weight	Attachments	Notes
<input type="checkbox"/> 1	20/12/2016	17:27	Open Display	Add or Select Condition			Attachments (0)	

**Session Options**

Review Delete Session

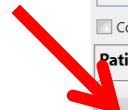
Deselect all sessions

Create Progress report (Assessment)

Start Protocol

Backup data

Click *Add* to create a new patient profile





# Create a new patient

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: Bob Example PID: 0~

File Reports Games Setup Language Help

## Patient Database

Search patient

PatID	Surname	First name
0~	<b>Example</b>	<b>Bob</b>
1	Martin	John

Sessions **Game Sessions**

Session	Date	Time	Protocol	Condition	FOIS	Patient Weight	Attachments	Notes
<input type="checkbox"/> 1	20/12/2016	17:27	Open Display	Add or Select Condition			Attachments (0)	

Confidential  Default Patient

**Patient Options**

View / Edit

**Add**

Delete

**Session Options**

Review Delete Session

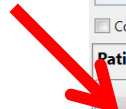
Deselect all sessions

Create Progress report (Assessment)

Start Protocol

Backup data

Click *Add* to create a new patient profile





# Create a new patient

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: Bob Example PID: 0~

File Reports Games Setup Language Help

## ← Patient Record

PatID: 2 D of B: 06/12/1983  
Format "dd/mm/yyyy"

First name: James  
Surname: Winter  
Sex:  M  F  
Insurance info:   
Insurance info:

Address: new york Street Post code:   
Country: USA  
Home phone no:   
Work phone no:

Notes  
Patient was sent by Dr Spring on Jan 02 2017

**Add** Close

Fill in patients  
details, then click  
*Add*



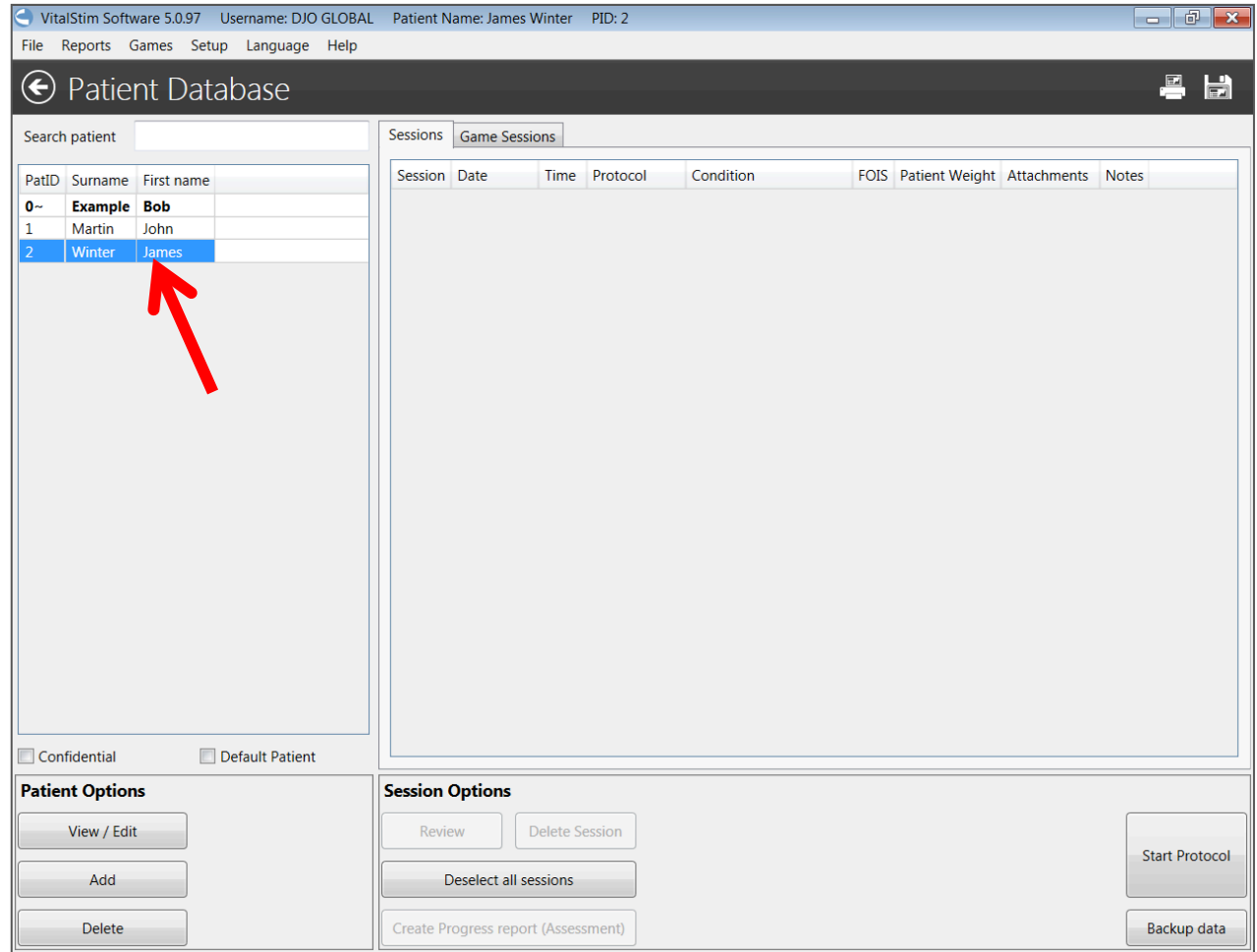




# Create a new patient

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

Double-click on *patient name* to start a session



VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

← Patient Database

Search patient

PatID	Surname	First name
0~	Example	Bob
1	Martin	John
2	Winter	James

Sessions Game Sessions

Session	Date	Time	Protocol	Condition	FOIS	Patient Weight	Attachments	Notes
---------	------	------	----------	-----------	------	----------------	-------------	-------

Confidential  Default Patient

**Patient Options**

View / Edit

Add

Delete

**Session Options**

Review Delete Session

Deselect all sessions

Create Progress report (Assessment)

Start Protocol

Backup data



# Open Display – Start session

Select patient  
*Condition*, then  
click *Open Display*

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

### Protocol Selection

PatID: 2 Patient Name: James Winter

Session Number: 1 Condition: Other

**Settings Checklist**

Device	EmgSimulator
Mode	sEMG
Channel 2	On
Threshold	100.0 $\mu$ V / 100.0 $\mu$ V
Work	5 secs
Rest	5 secs
Trials	5
Sound feedback	0%
Heart Beat Filter	Off
Target type	Manual

EMG

Disconnect mouse EMG

Ch 1: 309.8  $\mu$ V

Ch 2: 373.1  $\mu$ V

Open Display

Device Controlled

Template Training

Work / Rest Assessment

Work / Rest Training

Games

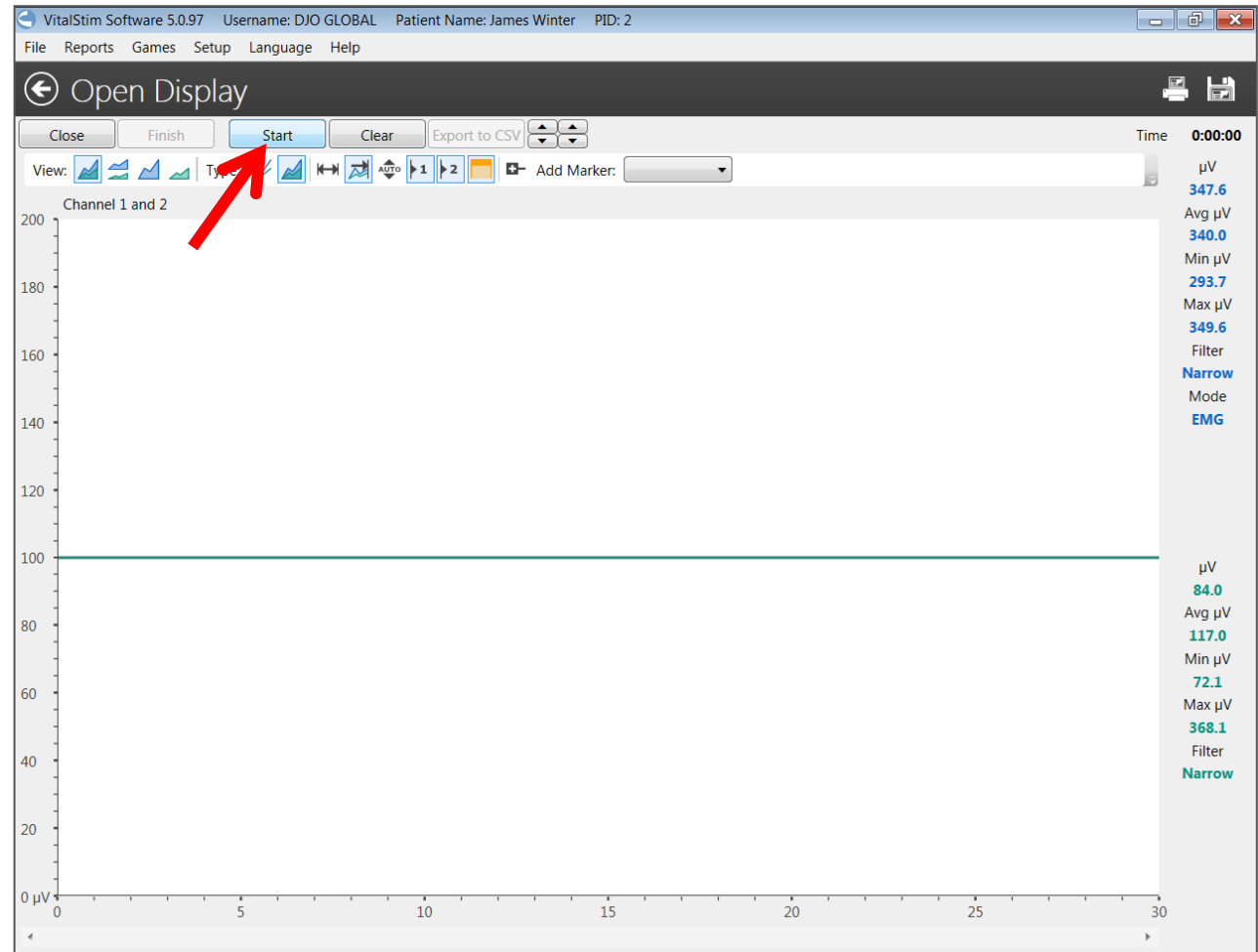
Close



# Open Display – Start session

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

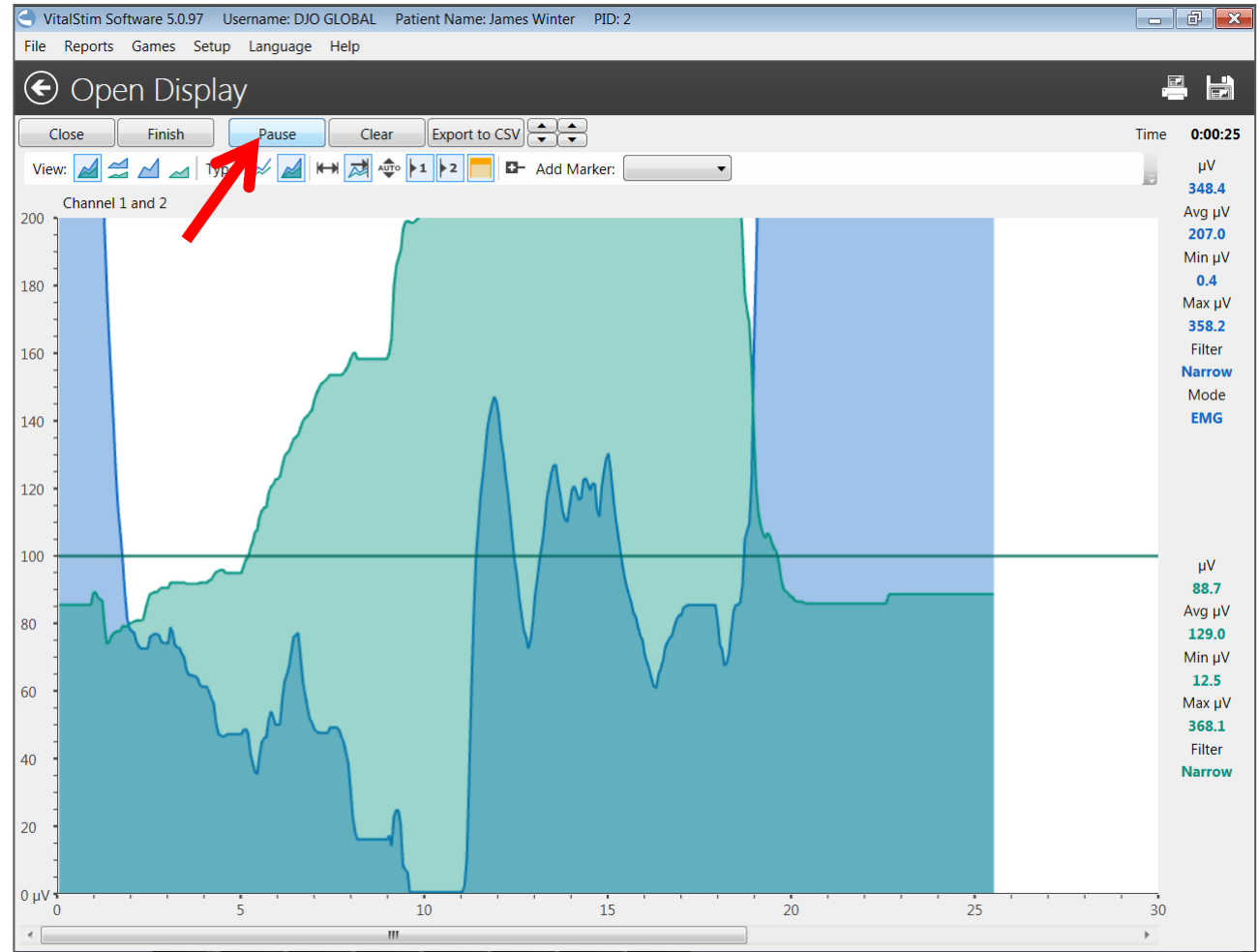




# Open Display – Channel view

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



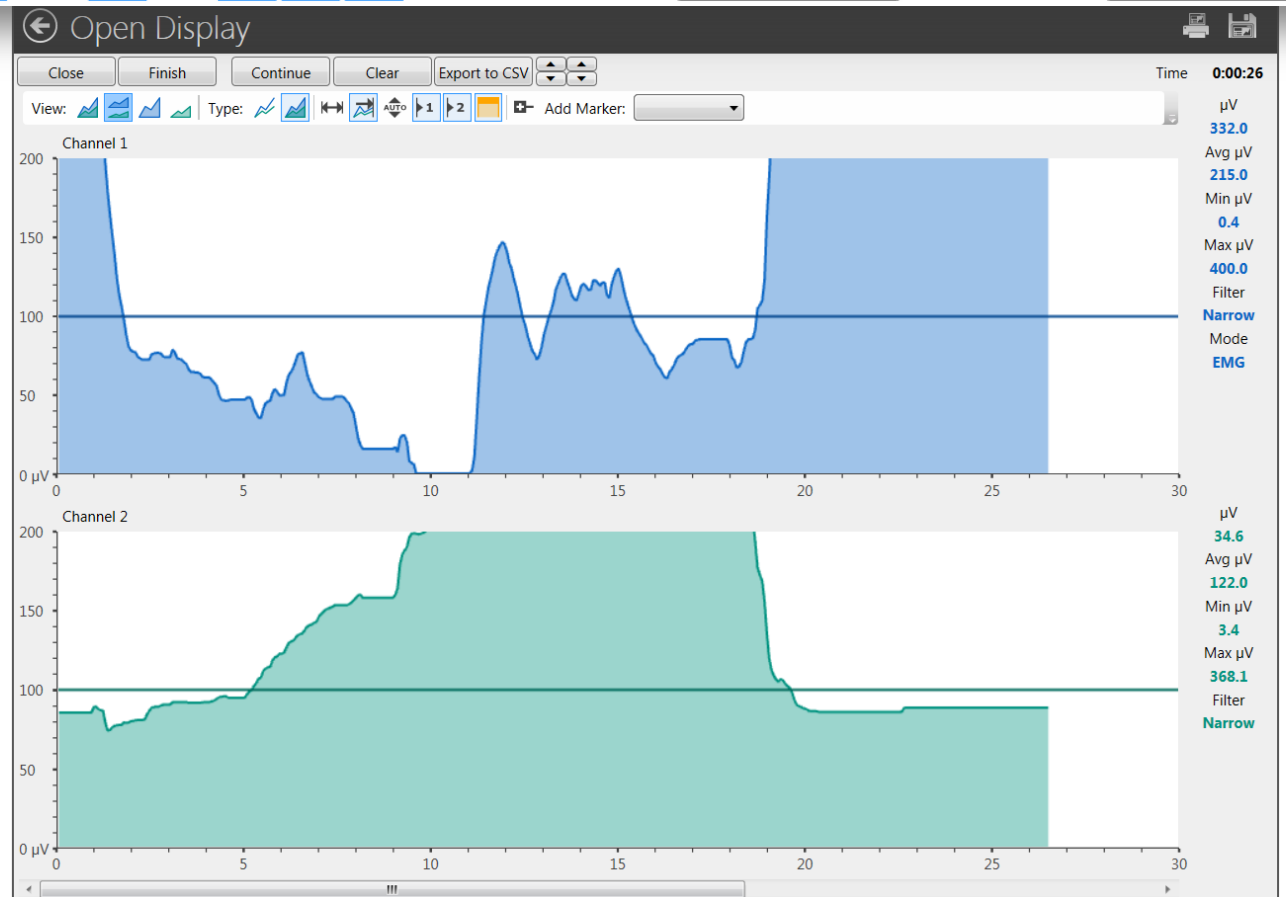


# Open Display – Channel view

View: Type: Add Marker:  Add Artifact:

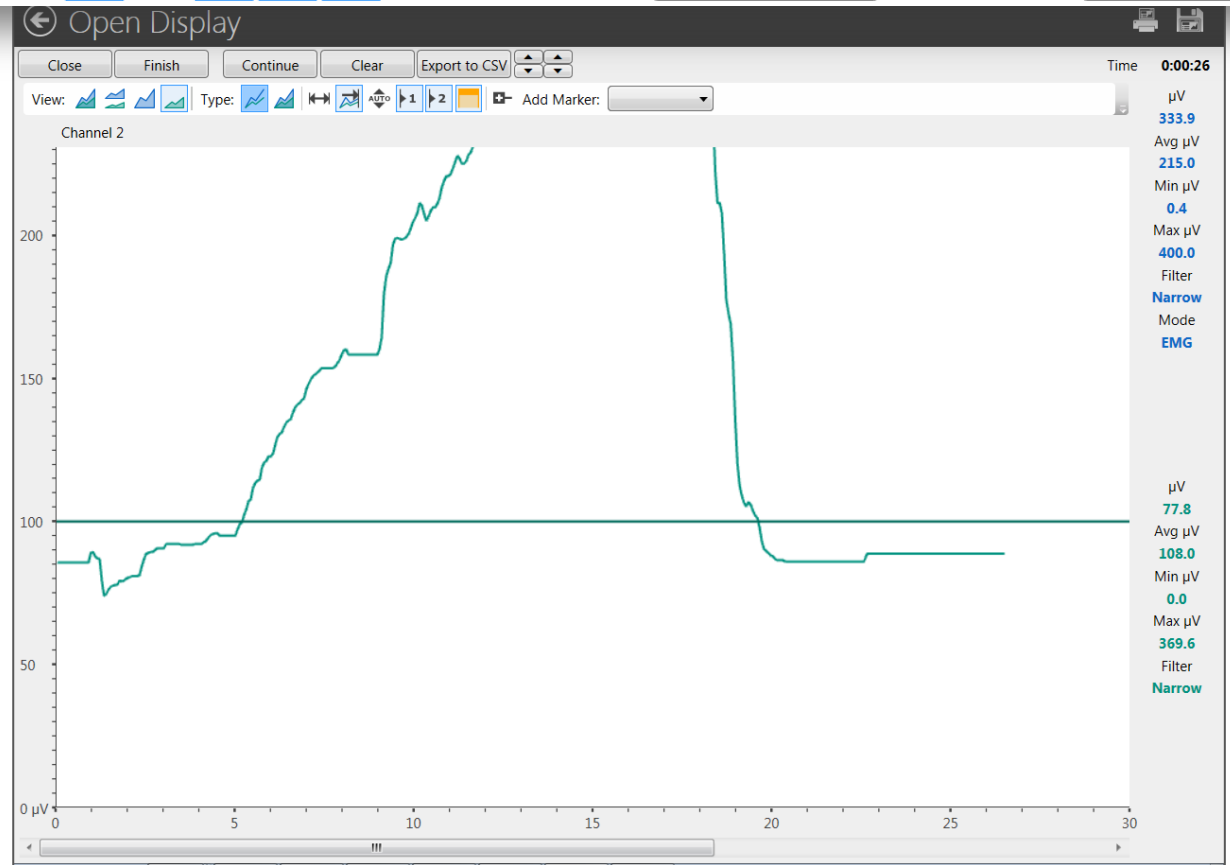


Channels can be viewed together or individually.





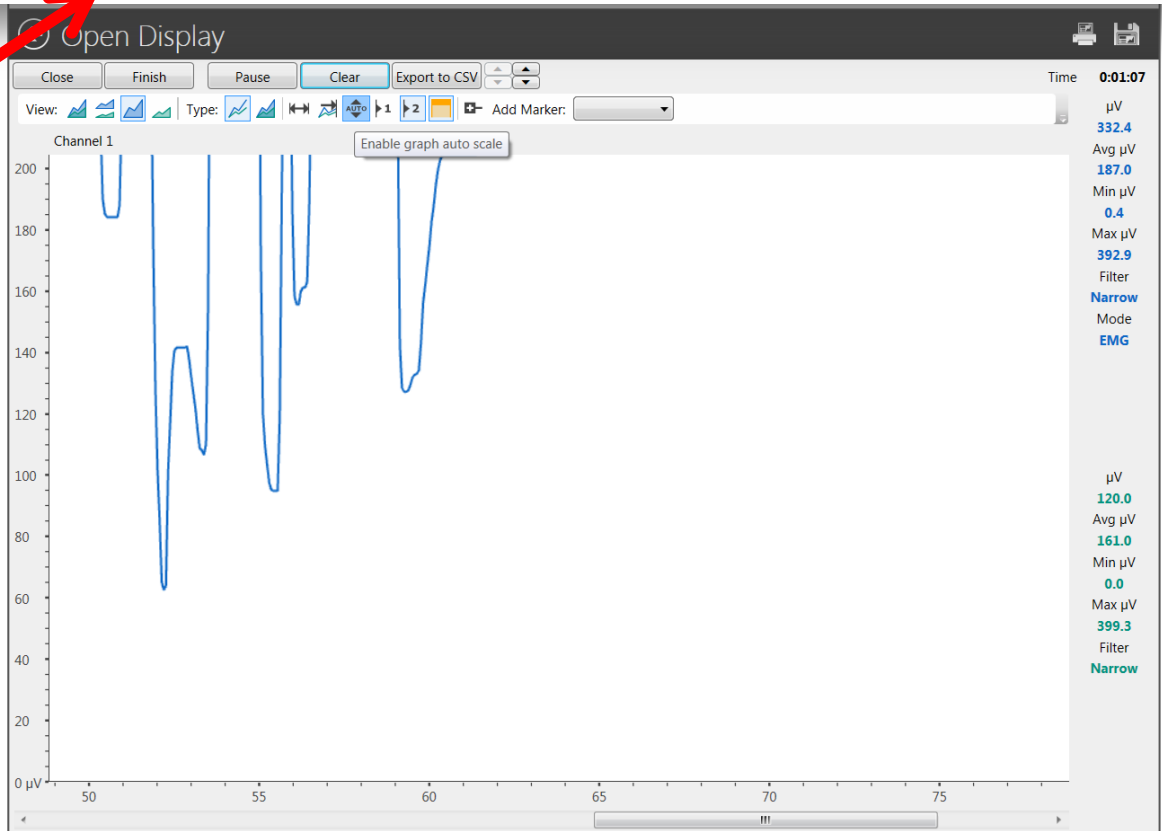
# Open Display – Graph fill



Area under graph line can be viewed filled or not filled.



# Open Display – Automatic scaling



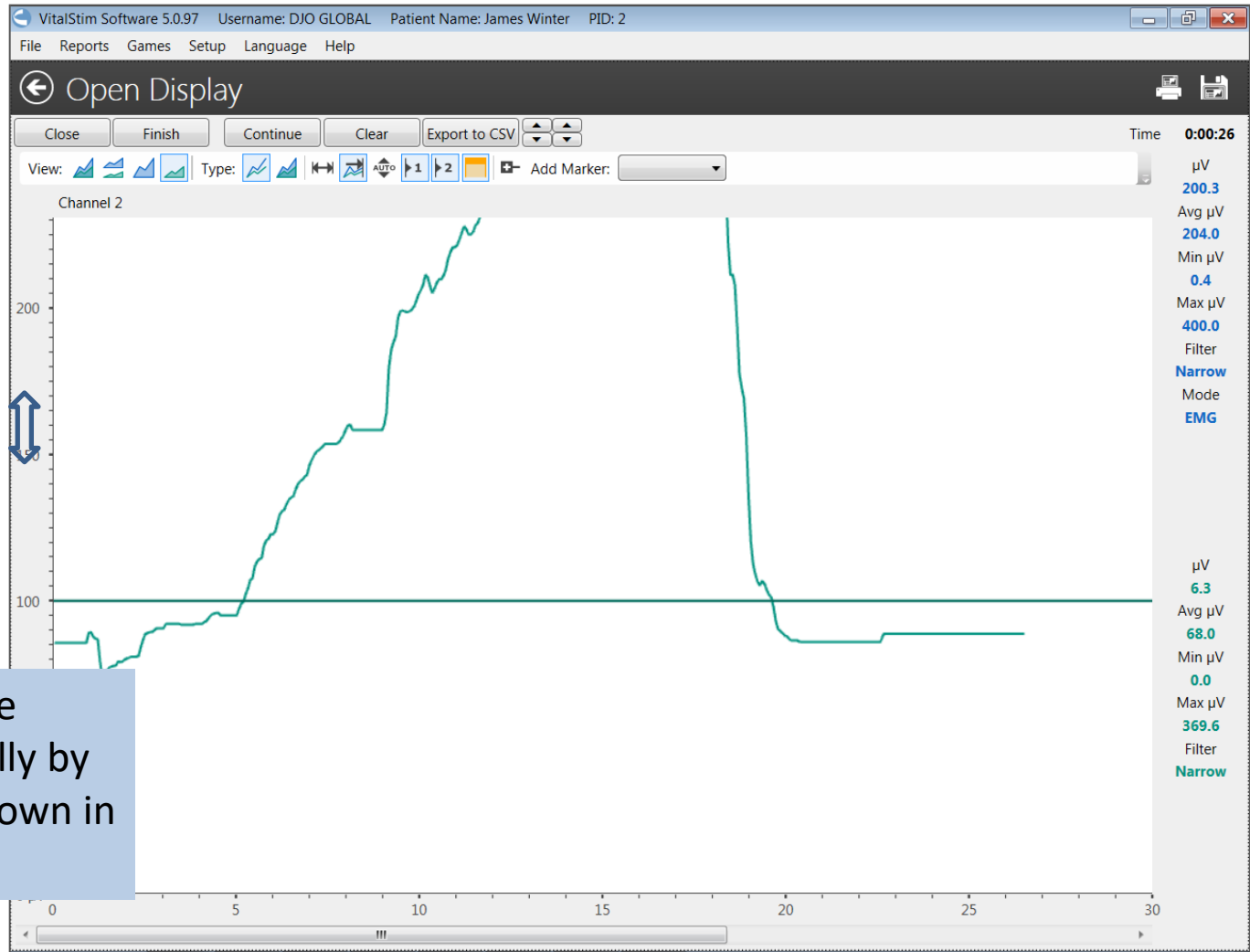
µV scaling can be adjusted automatically when EMG signal exceeds the displayed Y axis







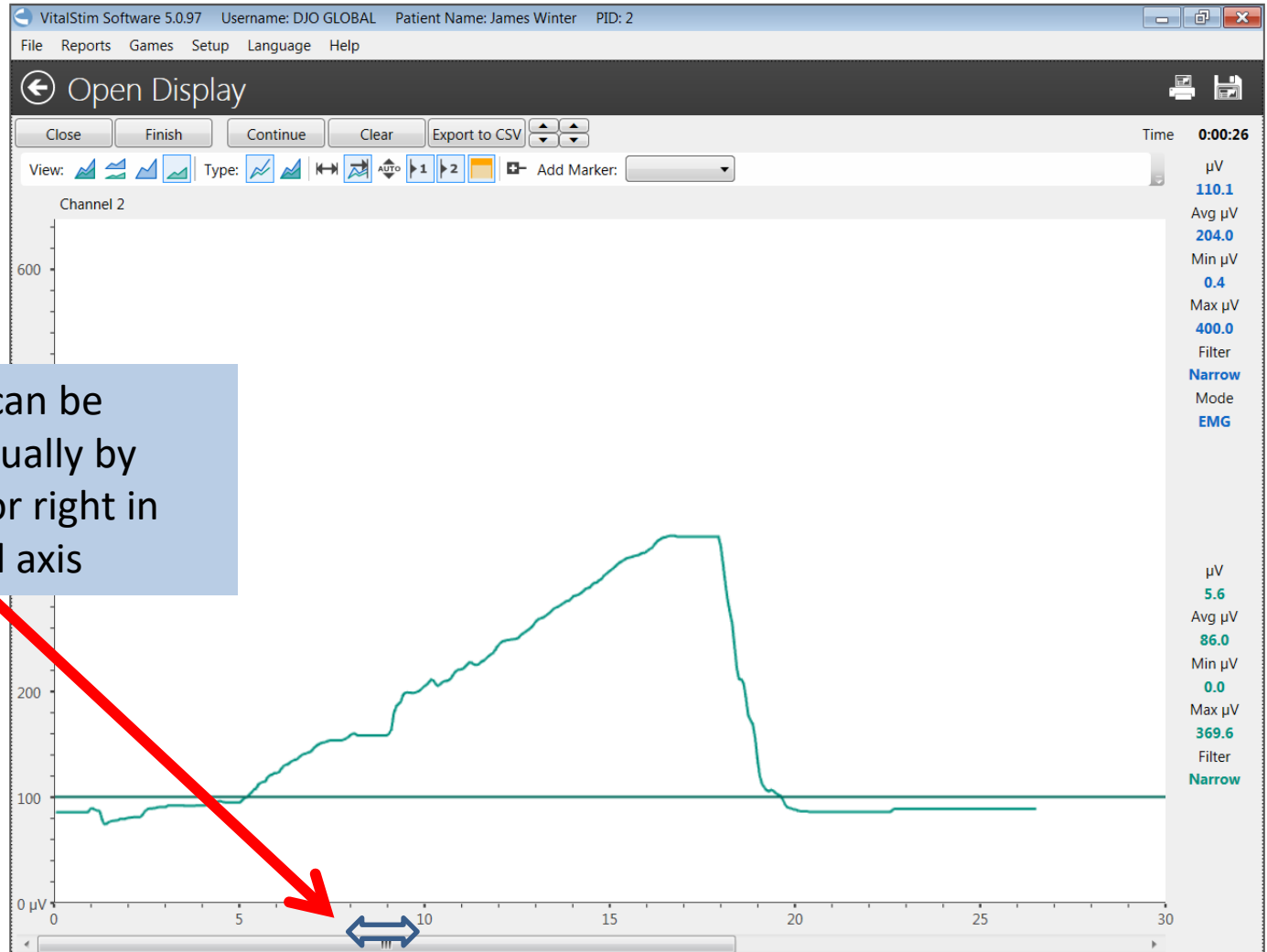
# Open Display – Adjust $\mu\text{V}$ scale



$\mu\text{V}$  scaling can be adjusted manually by scrolling up or down in the vertical axis



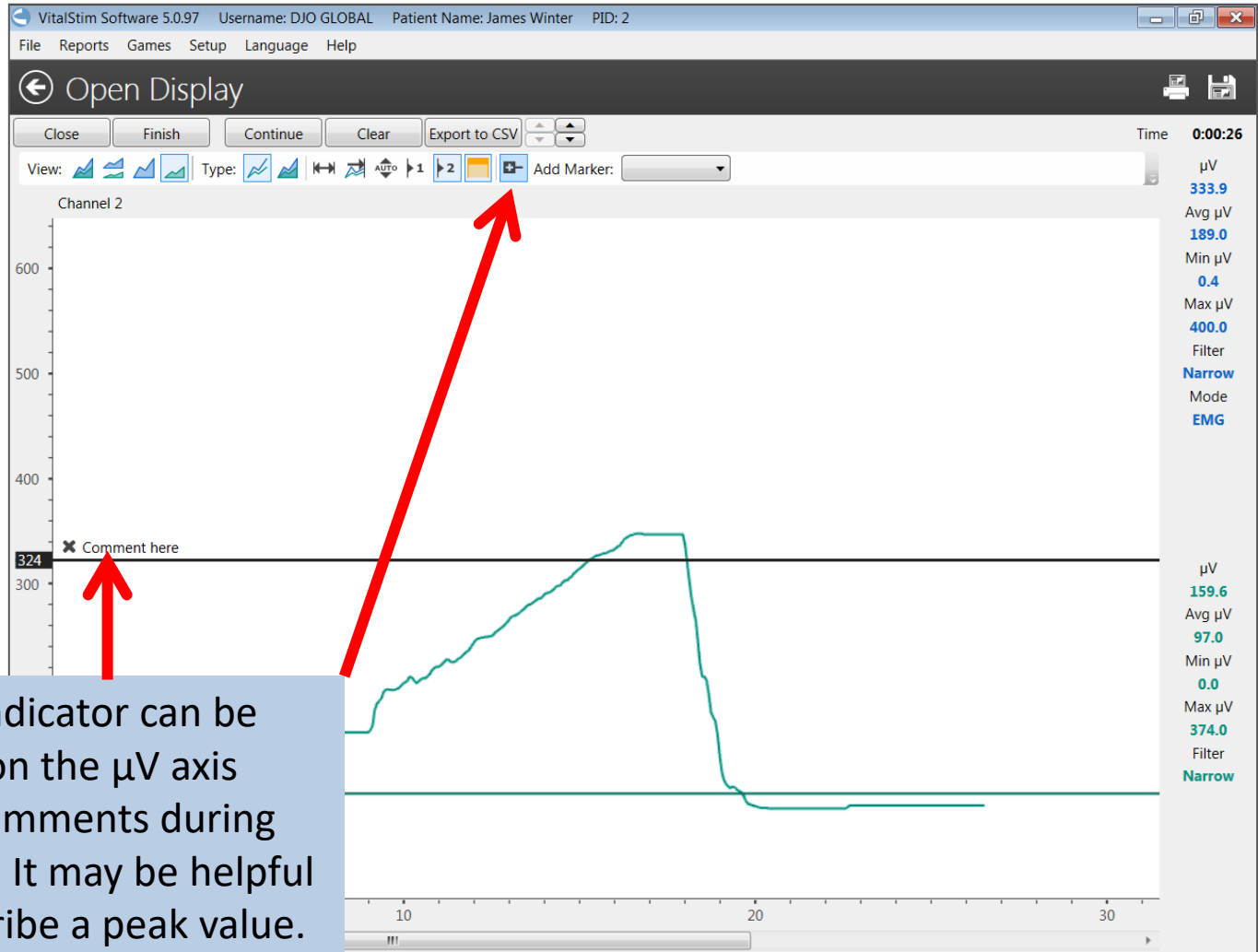
# Open Display – Adjust Time scale



Time scaling can be adjusted manually by scrolling left or right in the horizontal axis



# Open Display – Event indicator

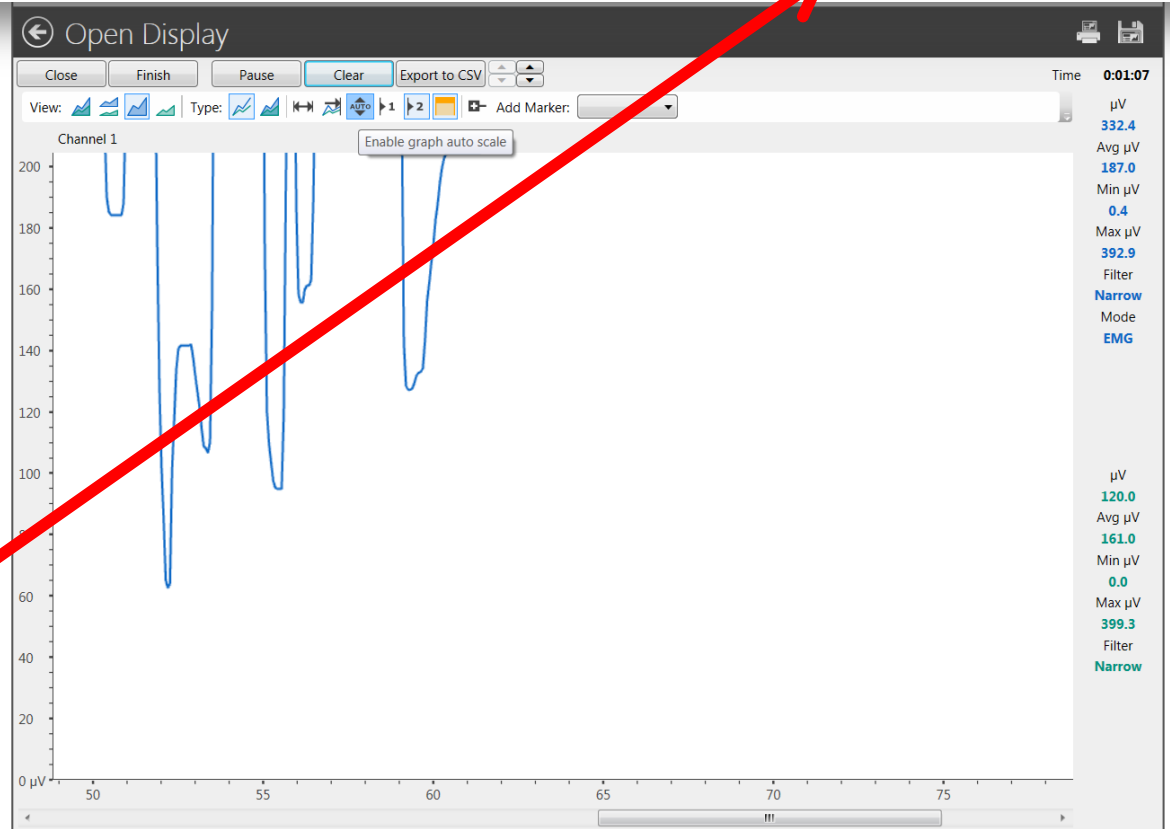


Event indicator can be added on the  $\mu\text{V}$  axis with comments during session. It may be helpful to describe a peak value.



# Open Display – Add Marker

View: Type: Add Marker: Add Artifact:

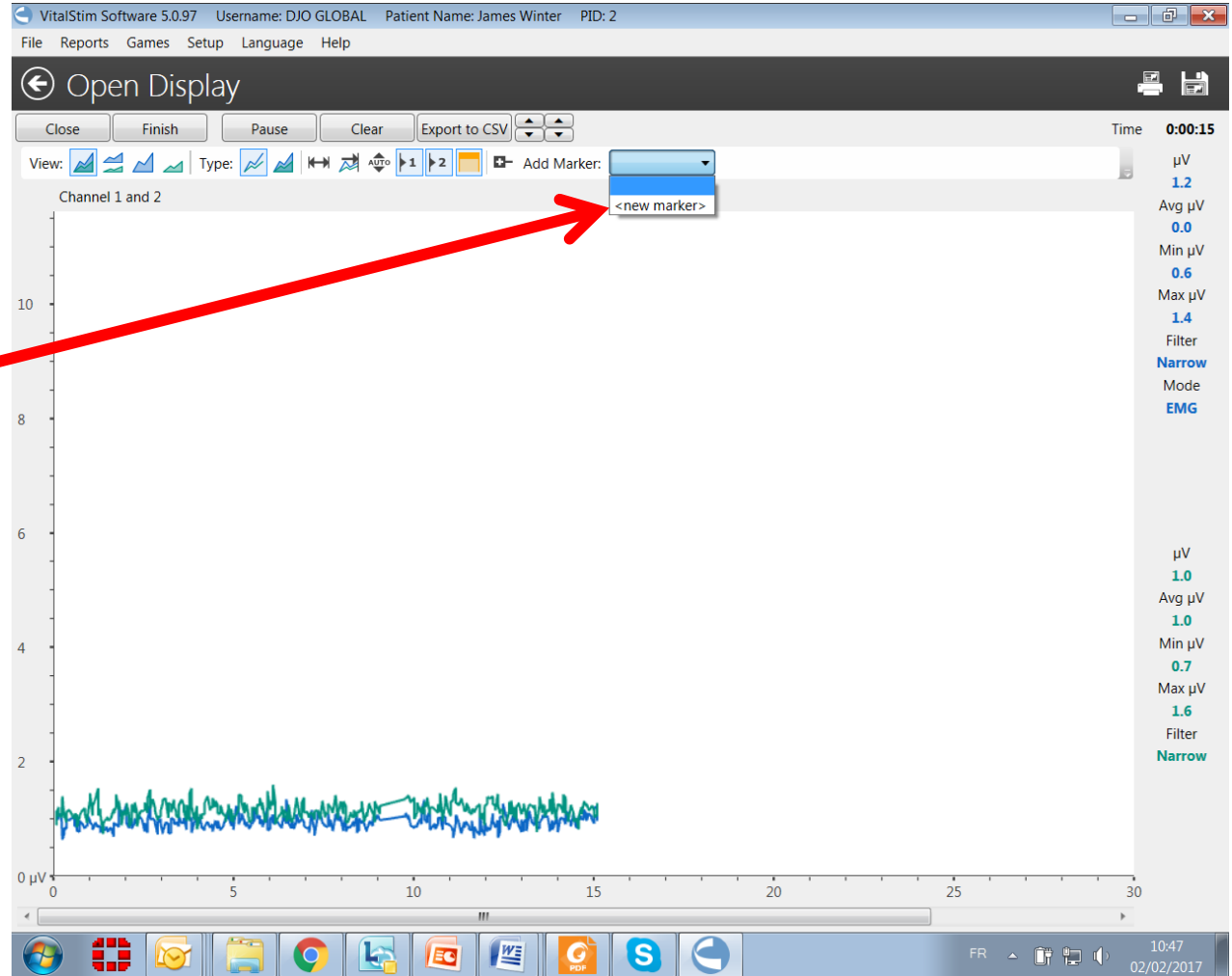


Add a marker to highlight and select a time segment.



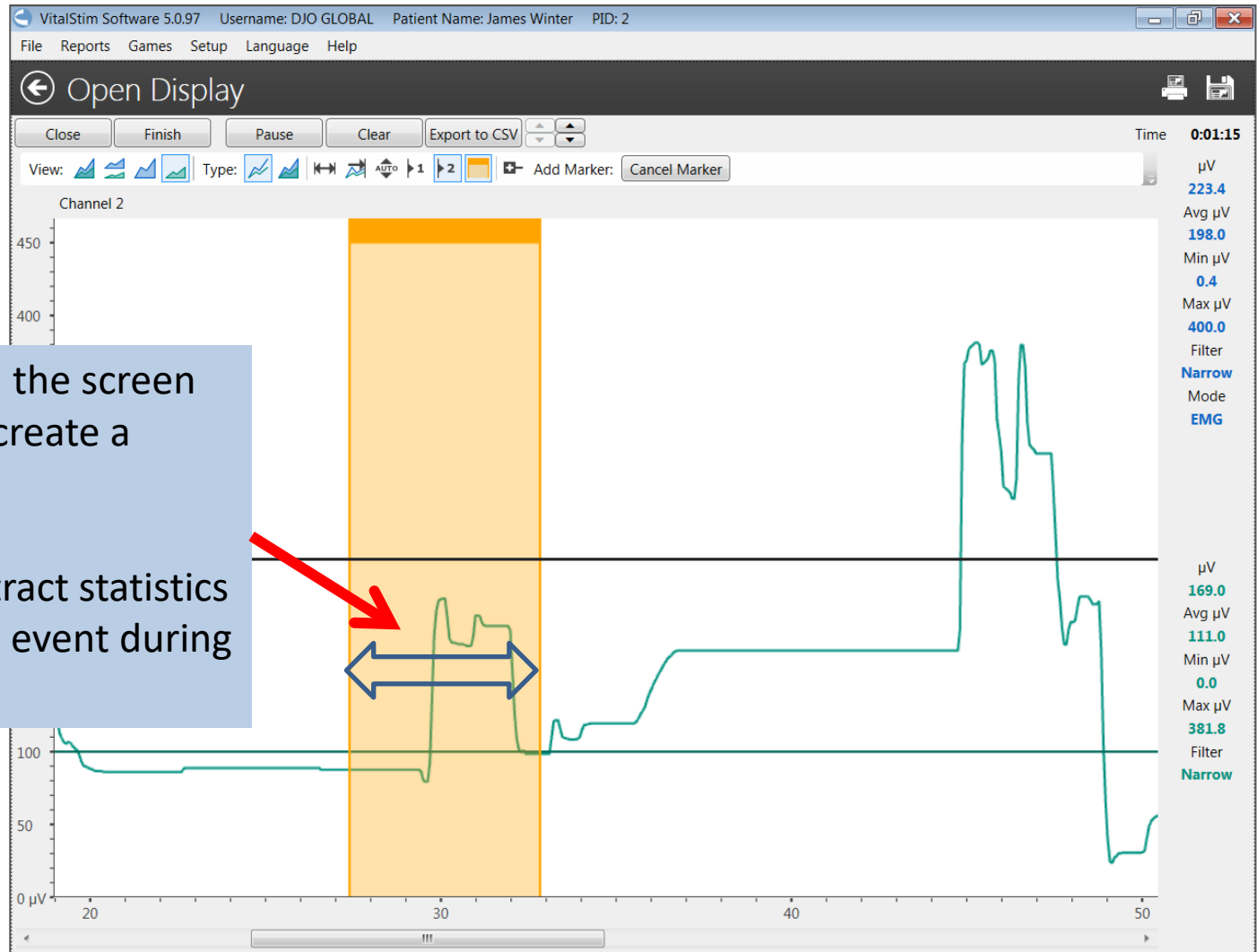
# Open Display – Add Marker

Select “new marker”





# Open Display – Add Marker

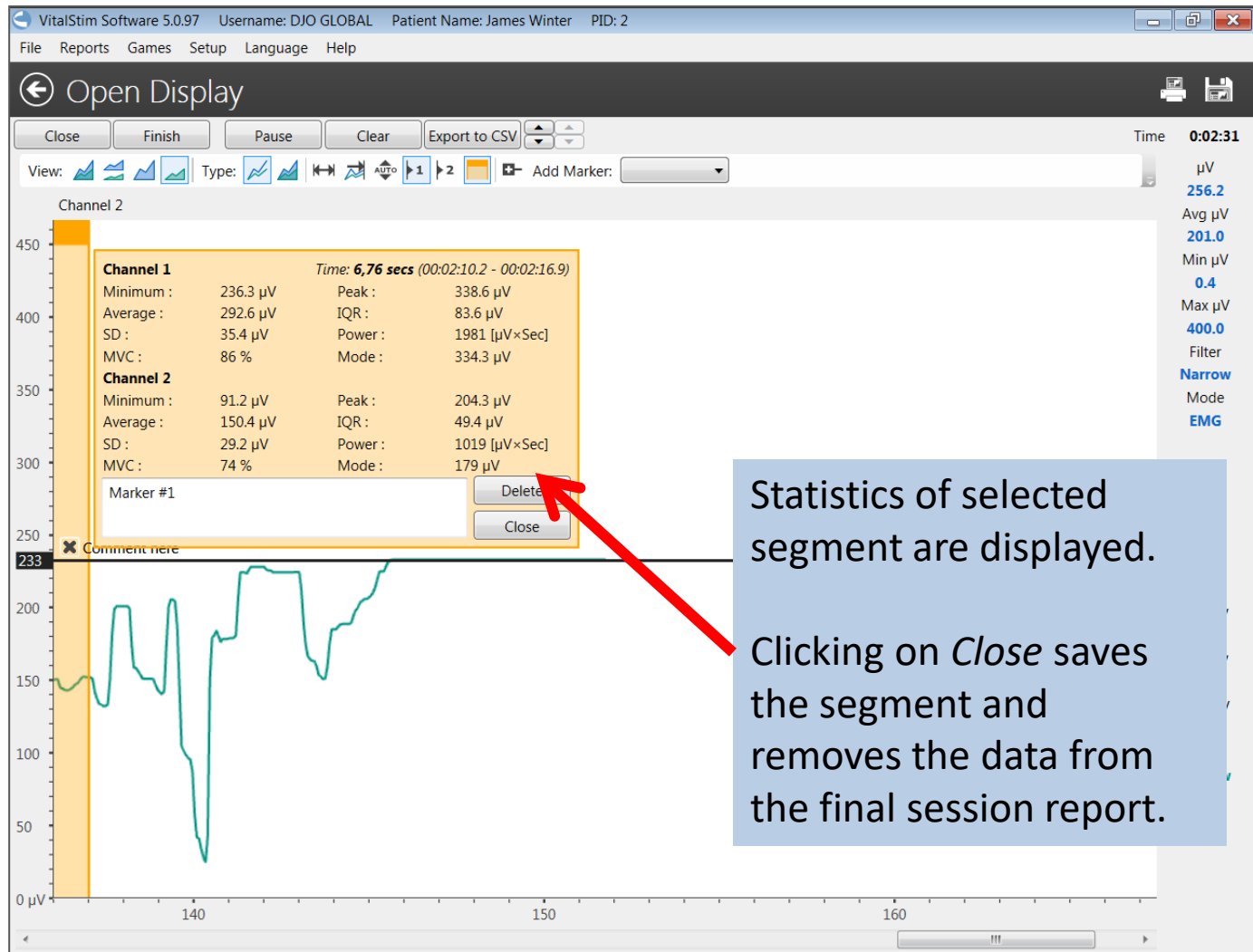


Left Click on the screen and drag to create a segment.

Useful to extract statistics for a specific event during the session



# Open Display – Segment data

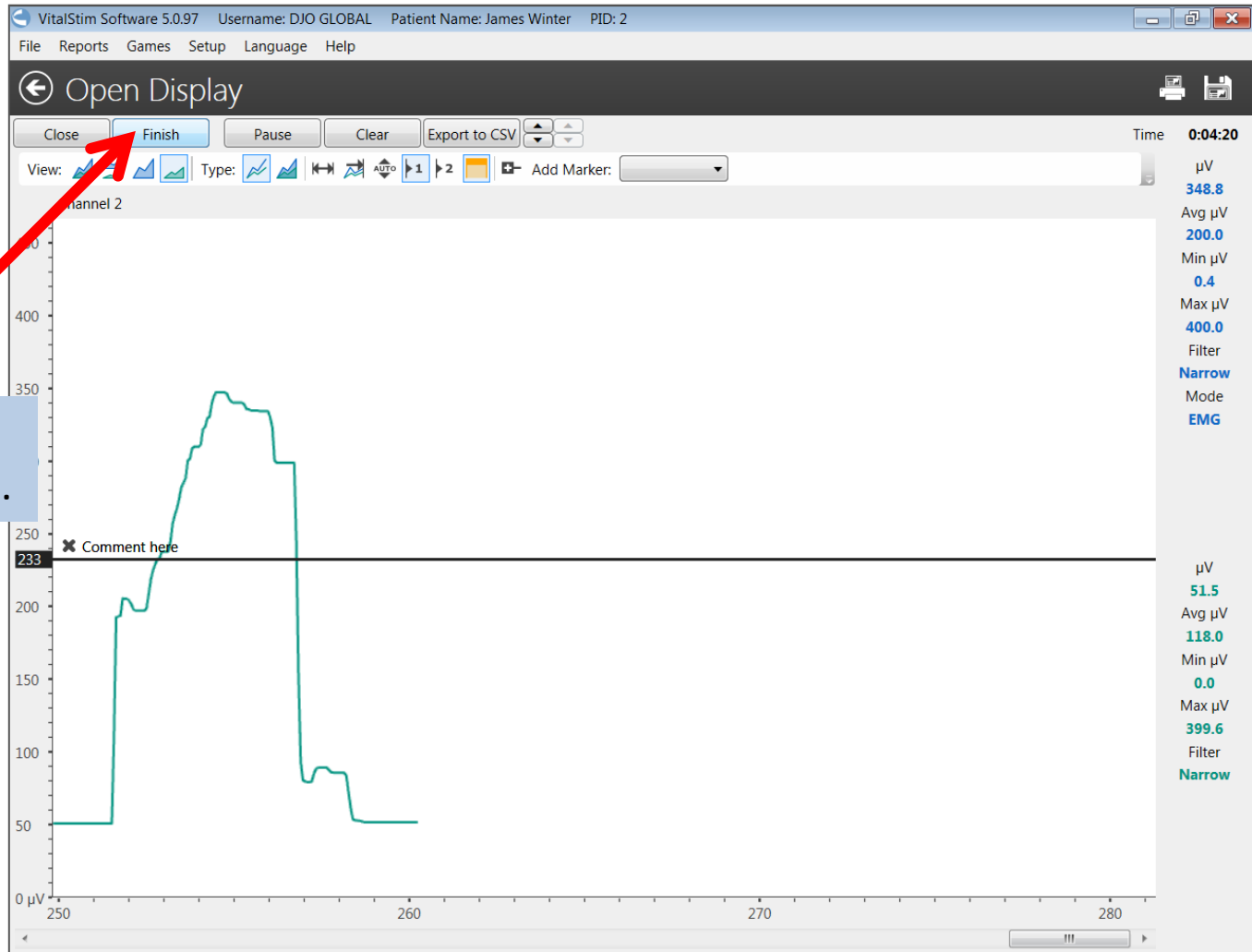


Statistics of selected segment are displayed.

Clicking on *Close* saves the segment and removes the data from the final session report.



# Open Display – End Session

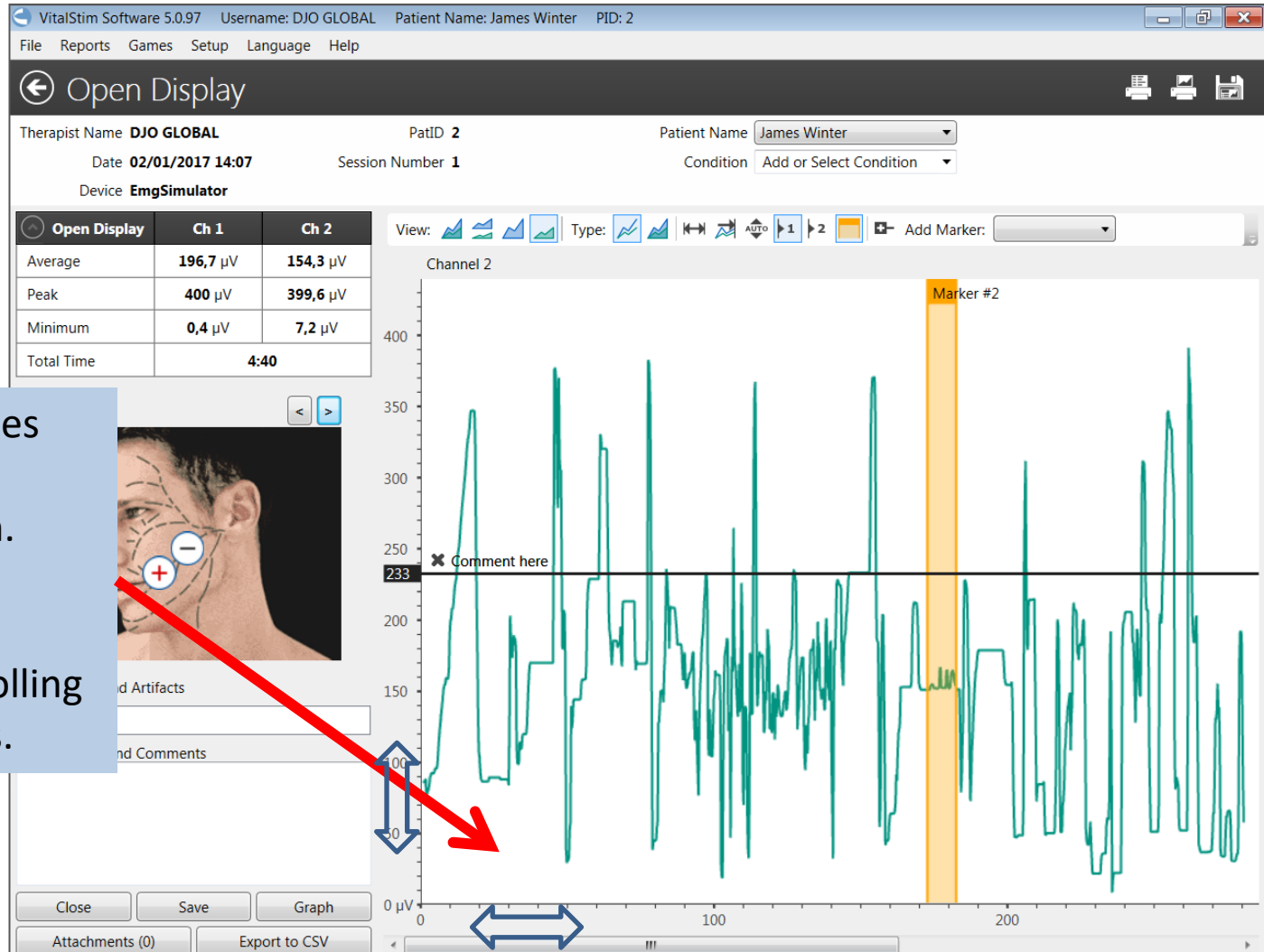


Click *Finish* to end the session.





# Open Display – Session Report



Report includes data and full session graph.

Graph can be scaled by scrolling on either axis.



# Open Display – Session Report

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

Open Display

Therapist Name **DJO GLOBAL** PatID **2** Patient Name **James Winter**

Date **02/01/2017 14:07** Session Number **1** Condition **Add or Select Condition**

Device **EmgSimulator**

Open Display	Ch 1	Ch 2
Average	196,7 $\mu$ V	154,3 $\mu$ V
Peak	400 $\mu$ V	399,6 $\mu$ V
Minimum	0,4 $\mu$ V	7,2 $\mu$ V
Total Time	4:40	

View: [Icons] Type: [Icons] Add Marker: [Dropdown]

Channel 2

Marker #2

233

Comment here

Screen can be print or saved as a .jpeg picture format  
Statistics or graph only can be printed

Close Save Graph

Attachments (0) Export to CSV



# Open Display – Session Export

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

## Open Display

Therapist Name **DJO GLOBAL** PatID **2**  
Session Number **1**

Ch 2  
154,3  $\mu$ V  
399,6  $\mu$ V  
7,2  $\mu$ V  
40

View:

Channel 2

400  
350  
300  
250  
200  
150  
100  
50  
0  $\mu$ V

233 Comment here

Observations and Comments

Close Save Graph Attachments (0) **Export to CSV**

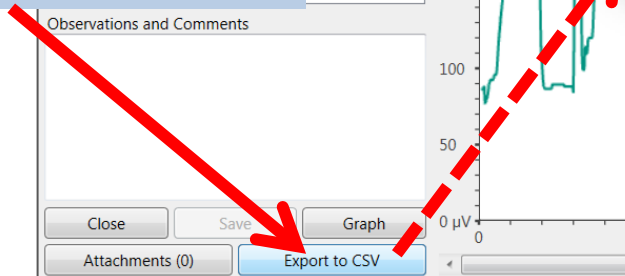
James\_Winter\_Session\_Statistics\_2017-01-02\_14-28-19.csv - Microsoft Excel

SESSION STATISTICS												
PatID	Patient Surnam	Patient First n	Date	Session Num	Protocol	Condition	Symptoms an	Chan	Ave Channel 1	Pea Channel 2	Ave Channel 2	
2	Winter	James	02/01/2017	1	Open Display			196,665877	400	154,329971	39	
MARKERS												
Number	Name	Start Time	Duration	Channel 1 Mir	Channel 1 Fee	Channel 1 Rar	Channel 1 Ave	Channel 1 Me	Channel 1 De	Channel 1 Lov	Channel 1	
1	Marker #2	00:02:52.481	00:00:09.730	192,1	334,3	142,2	296,787251	328,5	0,14%	288,2		
EMG												
Time	Channel 1	Channel 2										
12	0h: 0m: 0sec	349,2	85,6									
13		349,2	85,6									
14		349,2	85,6									
15		349,2	85,6									
16		349,2	85,6									
17		349,2	85,6									
18		349,2	85,6									
19		349,2	85,6									
20		349,2	85,6									
21		349,2	85,6									
22		349,2	85,6									
23		349,2	85,6									
24		349,2	85,6									
25		349,2	85,6									
26		349,2	85,6									
27		321,8	89									
28	0h: 0m: 1sec	236,7	89,3									
29		226,5	87,8									

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

The screenshot illustrates the software interface for reviewing a session. It shows three overlapping windows:

- Patient Database (Top Left):** A table with columns 'PatID', 'Surname', and 'First name'. Row 2 is highlighted with a blue background and a red arrow pointing to it.
- Patient Database (Middle):** A table with columns 'Session', 'Date', 'Time', 'Protocol', 'Condition', 'FOIS', 'Patient Weight', 'Attachments', and 'Notes'. Row 1 is highlighted with a blue background and a red arrow pointing to it.
- Open Display (Bottom Right):** A window showing session details and a graph. The 'Sessions' section has a 'Review' button highlighted with a red arrow. The graph shows a green waveform with a vertical orange line labeled 'Marker #2' at approximately 180 seconds.

**Session Data Table:**

Session	Date	Time	Protocol	Condition	FOIS	Patient Weight	Attachments	Notes
1	02/01/2017	14:07	Open Display	Add or Select Condition			Attachments (0)	

**Open Display Session Summary:**

Open Display	Ch 1	Ch 2
Average	196,7 $\mu$ V	154,3 $\mu$ V
Peak	400 $\mu$ V	399,6 $\mu$ V
Minimum	0,4 $\mu$ V	7,2 $\mu$ V
Total Time	4:40	

**Graph Data:**

Channel	Value ( $\mu$ V)	Time (s)
Channel 2	~350	~50
Channel 2	~400	~100
Channel 2	~350	~150
Channel 2	~400	~180
Channel 2	~350	~200
Channel 2	~300	~250
Channel 2	~350	~300
Channel 2	~300	~350
Channel 2	~350	~400

**Text Box:**

To review a previous session, click on patient name, then select the session and click *Review*.



# Template Training

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

## Protocol Selection

PatID: 2 Patient Name: James Winter

Session Number: 2 Condition: Add or Select Condition

**Settings Checklist**

Device	EmgSimulator
Mode	sEMG
Channel 2	On
Threshold	100.0 $\mu$ V / 100.0 $\mu$ V
Work	5 secs
Rest	5 secs
Trials	5
Sound feedback	0%
Heart Beat Filter	Off

Ch 1: 500.0, 100.0, 263.7  $\mu$ V

Ch 2: 500.0, 100.0, 369.7  $\mu$ V

Patient Database

Open Display

Device Controlled

**Template Training**

Work / Rest Assessment

Work / Rest Training

Games

Close

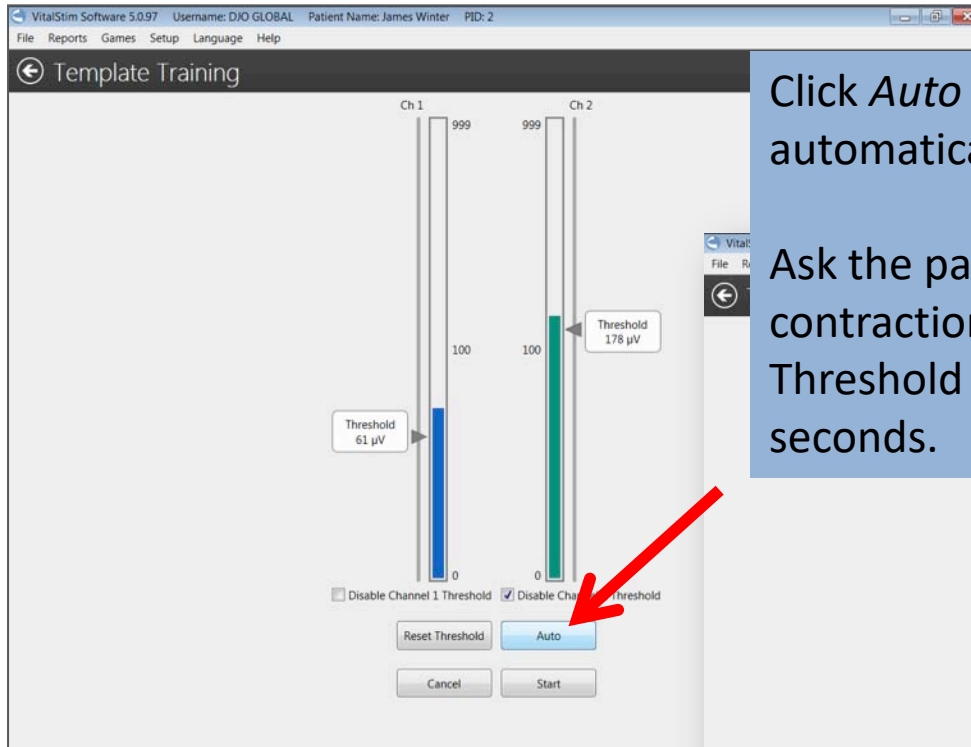
Disconnect mouse EMG

Template training allows the clinician to create a visual template for the EMG activity to guide the patient activity.

Click *Template Training* to start.

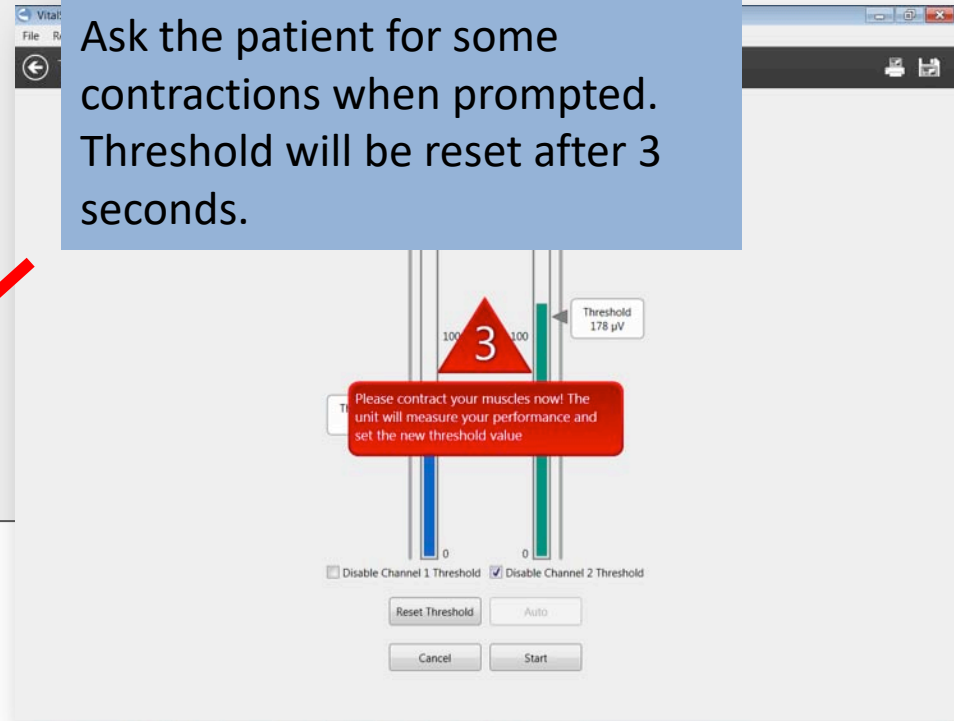


# Template Training – Setting Threshold



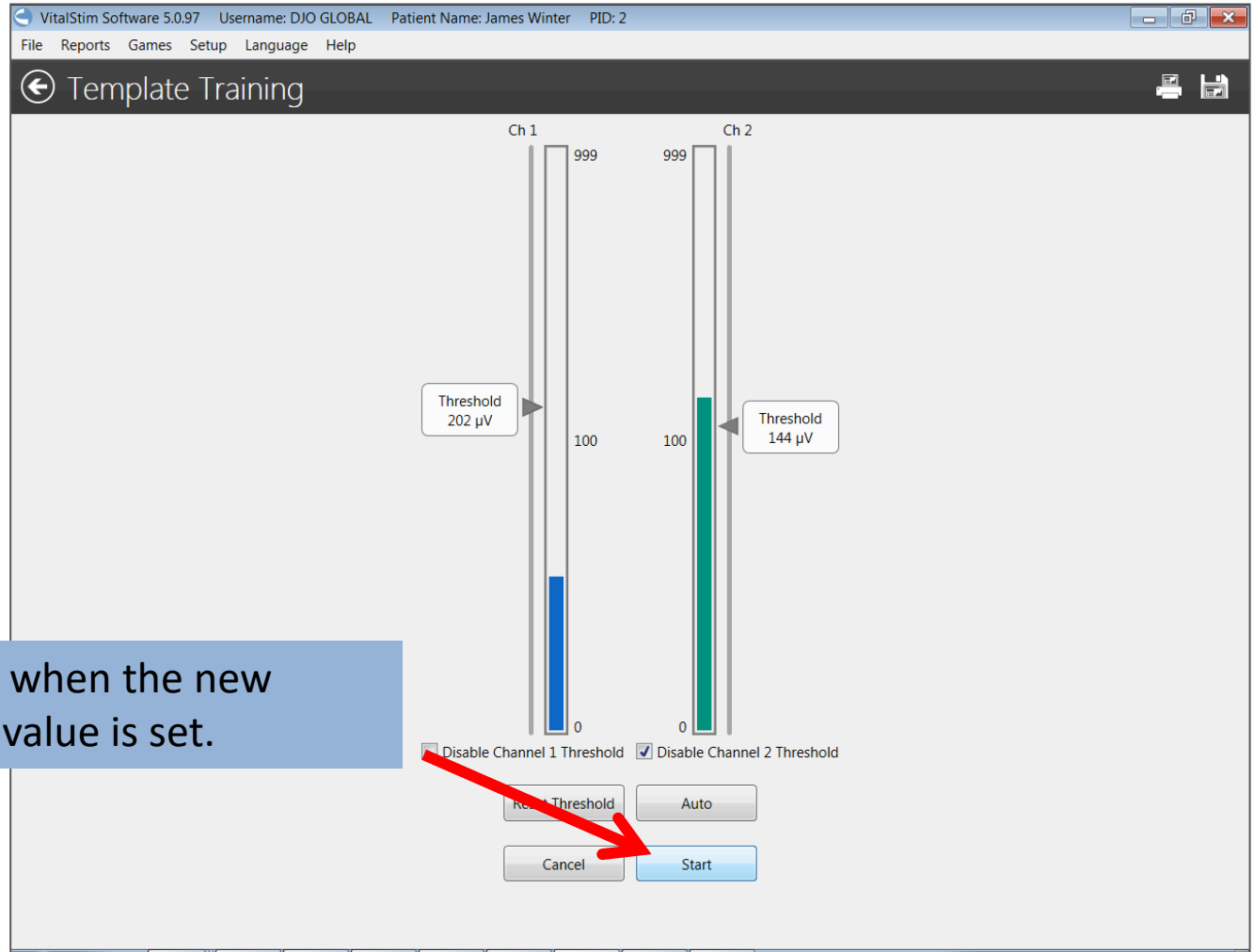
Click *Auto* to set the threshold automatically.

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





# Template Training – Setting Threshold



VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

## Template Training

Ch 1 Ch 2

Threshold 202  $\mu$ V

Threshold 144  $\mu$ V

999 100 0

999 100 0

Disable Channel 1 Threshold  Disable Channel 2 Threshold

Reset Threshold Auto

Cancel Start

The screenshot shows the 'Template Training' window in VitalStim Software. It features two vertical sliders for 'Ch 1' and 'Ch 2'. The Ch 1 slider is set to 202  $\mu$ V, and the Ch 2 slider is set to 144  $\mu$ V. Both sliders have a scale from 0 to 999 with a major tick at 100. Below the sliders are checkboxes for 'Disable Channel 1 Threshold' (unchecked) and 'Disable Channel 2 Threshold' (checked). At the bottom, there are buttons for 'Reset Threshold', 'Auto', 'Cancel', and 'Start'. A red arrow points from the 'Start' button to a text box on the left.

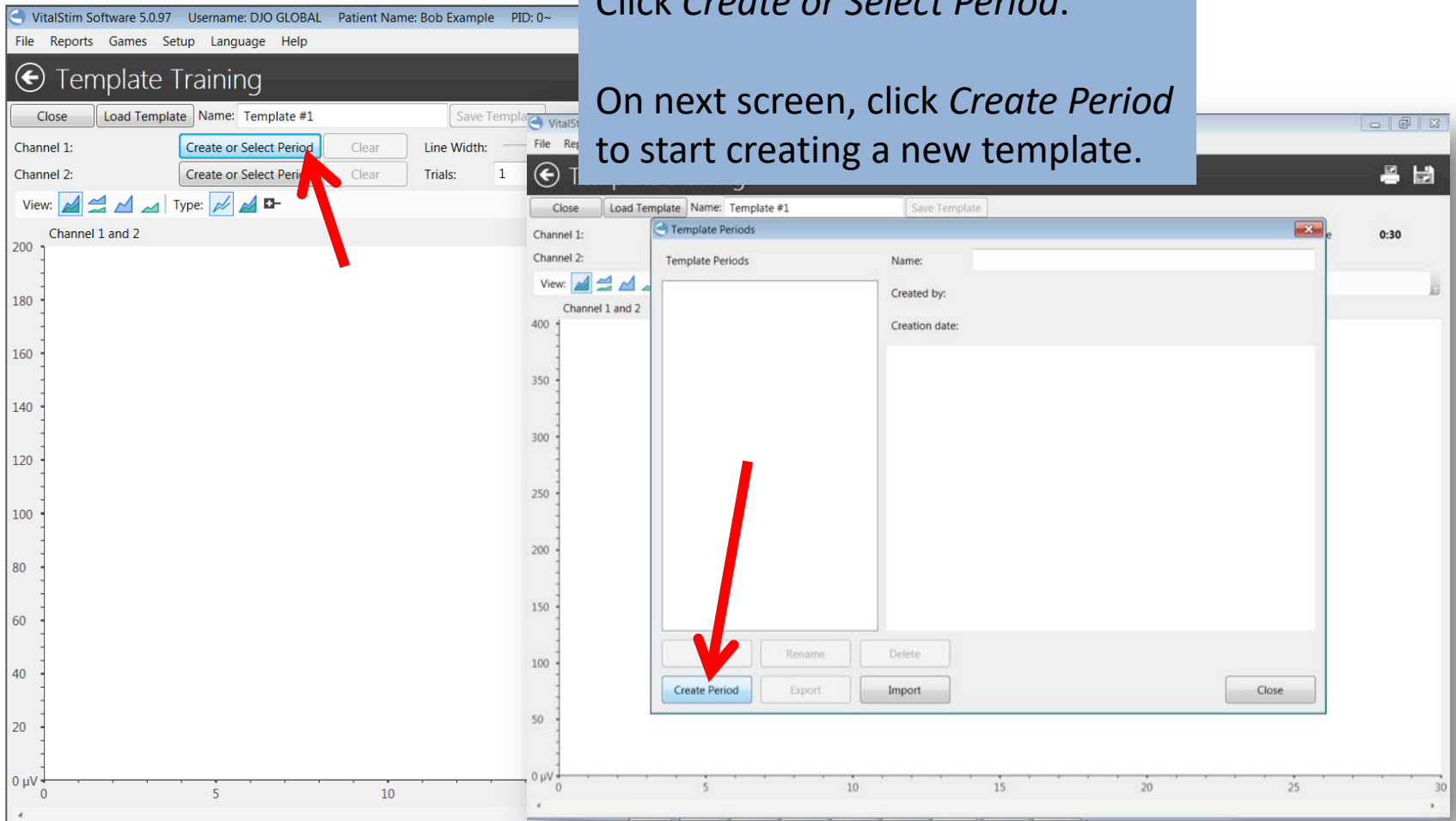
Click *Start* when the new threshold value is set.



# Template Training – Create Period

Click *Create or Select Period*.

On next screen, click *Create Period* to start creating a new template.

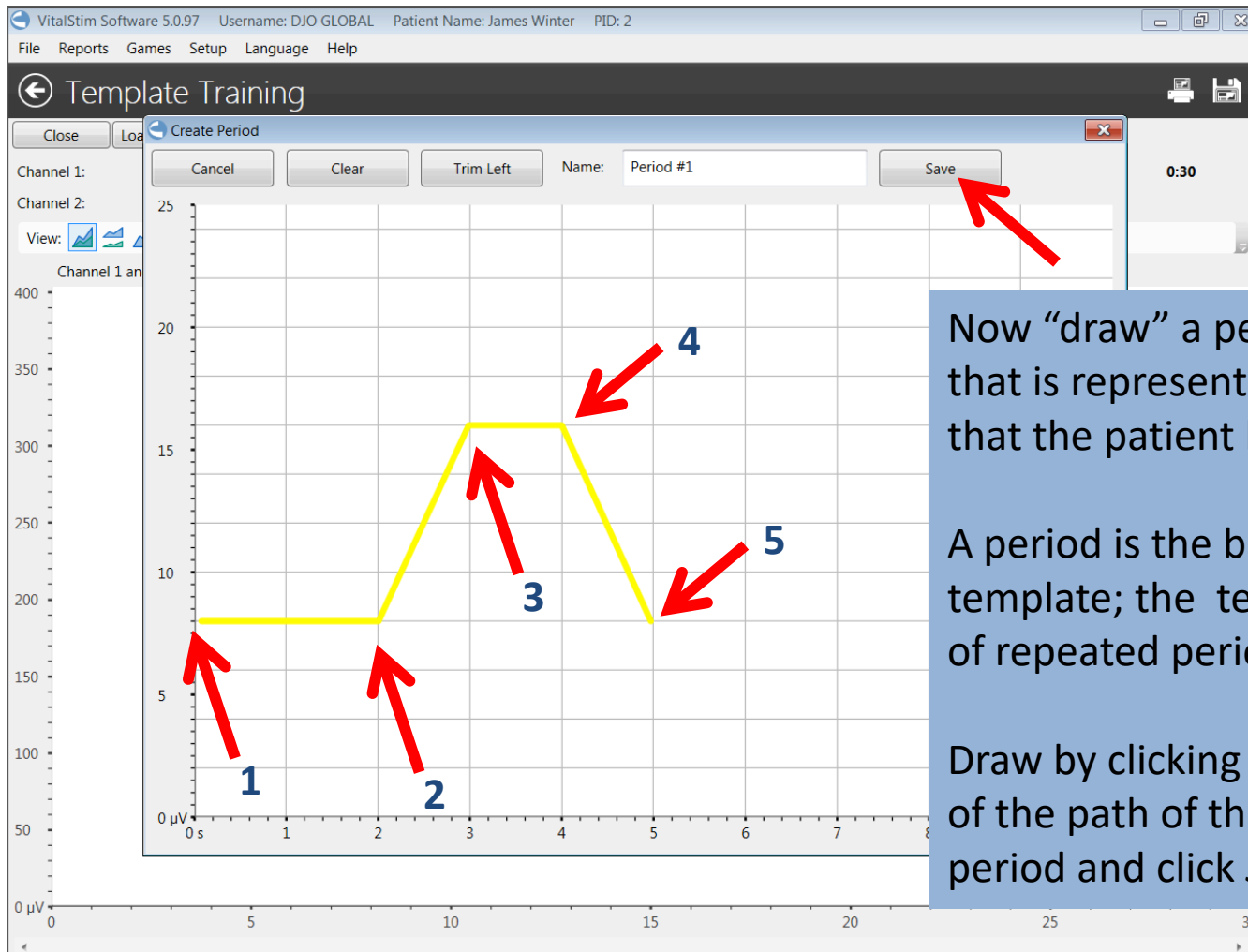


The screenshot shows the VitalStim Software 5.0.97 interface. The main window is titled 'Template Training' and displays a graph for 'Channel 1 and 2'. The graph has a y-axis from 0 to 200  $\mu\text{V}$  and an x-axis from 0 to 30. A red arrow points to the 'Create or Select Period' button in the 'Channel 1' section. An inset window titled 'Template Periods' is shown, with a red arrow pointing to the 'Create Period' button. The 'Template Periods' window has a 'Name' field, 'Created by' field, and 'Creation date' field. It also has buttons for 'Create Period', 'Rename', 'Delete', 'Export', 'Import', and 'Close'.





# Template Training – Create Period



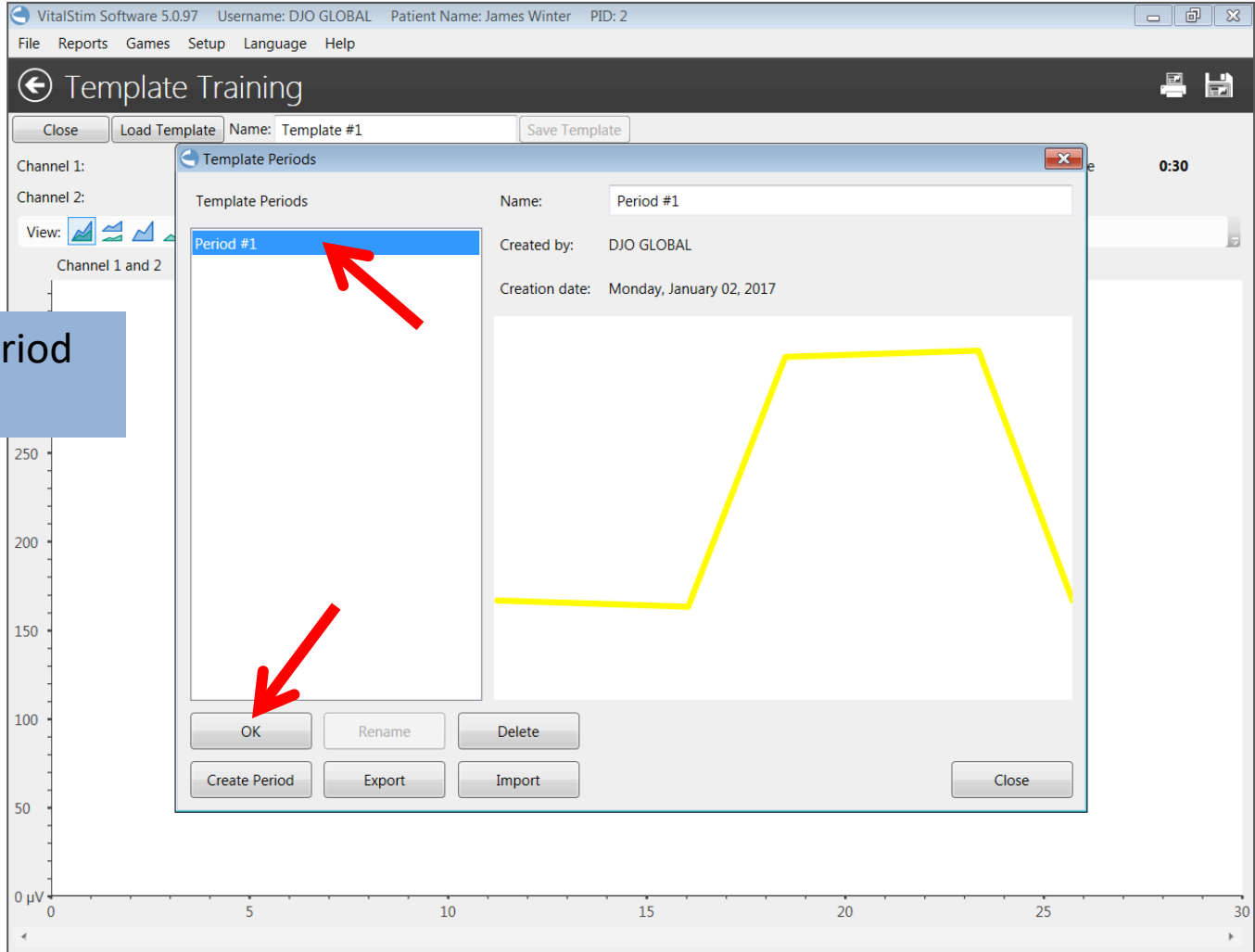
Now “draw” a period on the graph that is representative of the action that the patient has to follow.

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.



# Template Training – Create Template



VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

Template Training

Close Load Template Name: Template #1 Save Template

Channel 1:  
Channel 2:  
View: Channel 1 and 2

0:30

Template Periods

Name: Period #1

Created by: DJO GLOBAL

Creation date: Monday, January 02, 2017

Period #1

OK Rename Delete

Create Period Export Import Close

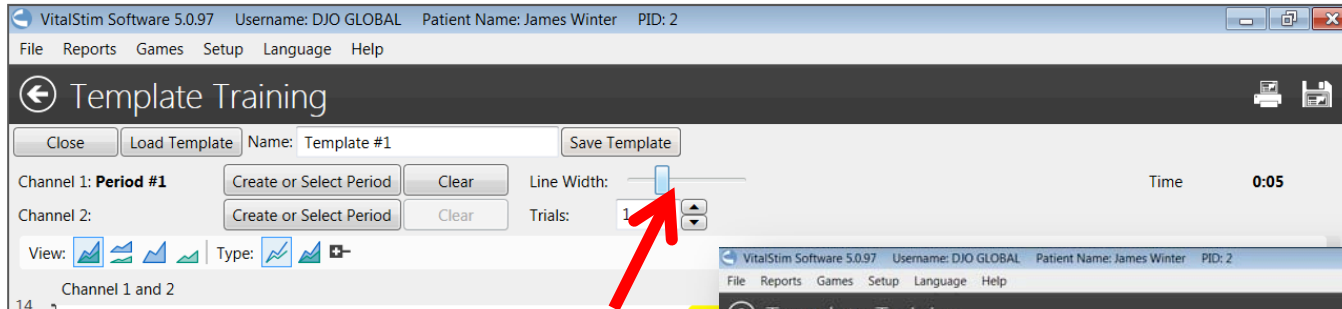
250  
200  
150  
100  
50  
0  $\mu$ V

0 5 10 15 20 25 30

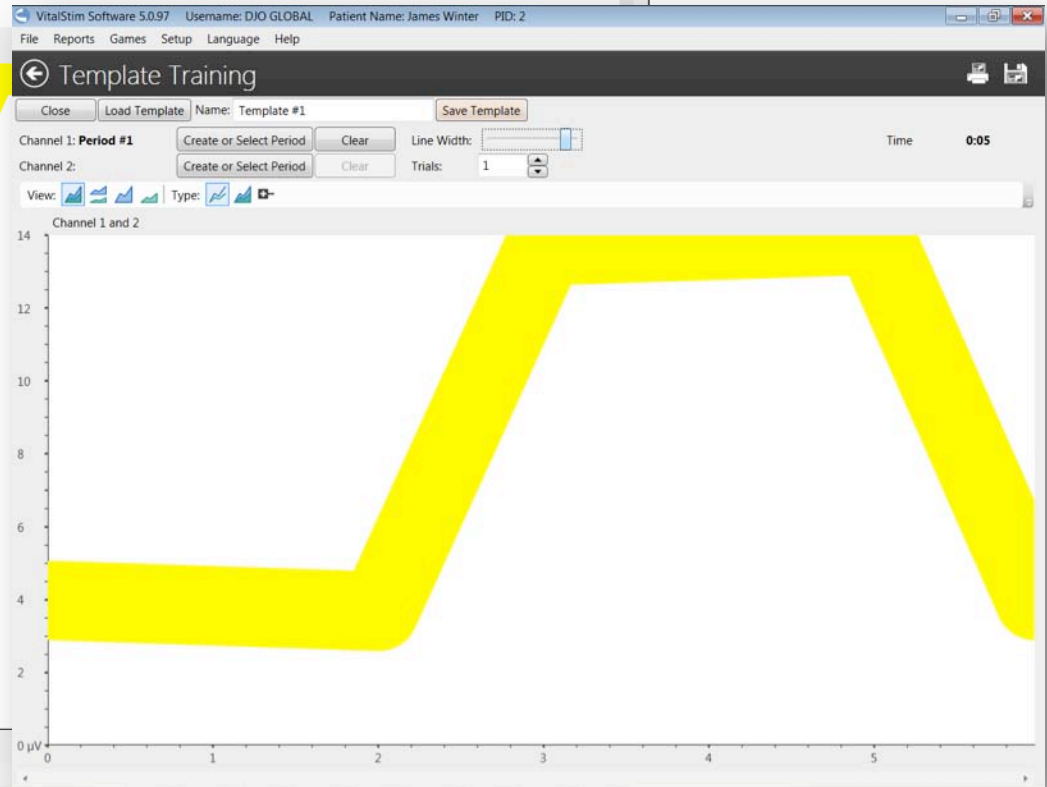
Select the period  
and click *OK*.



# Template Training – Create Template

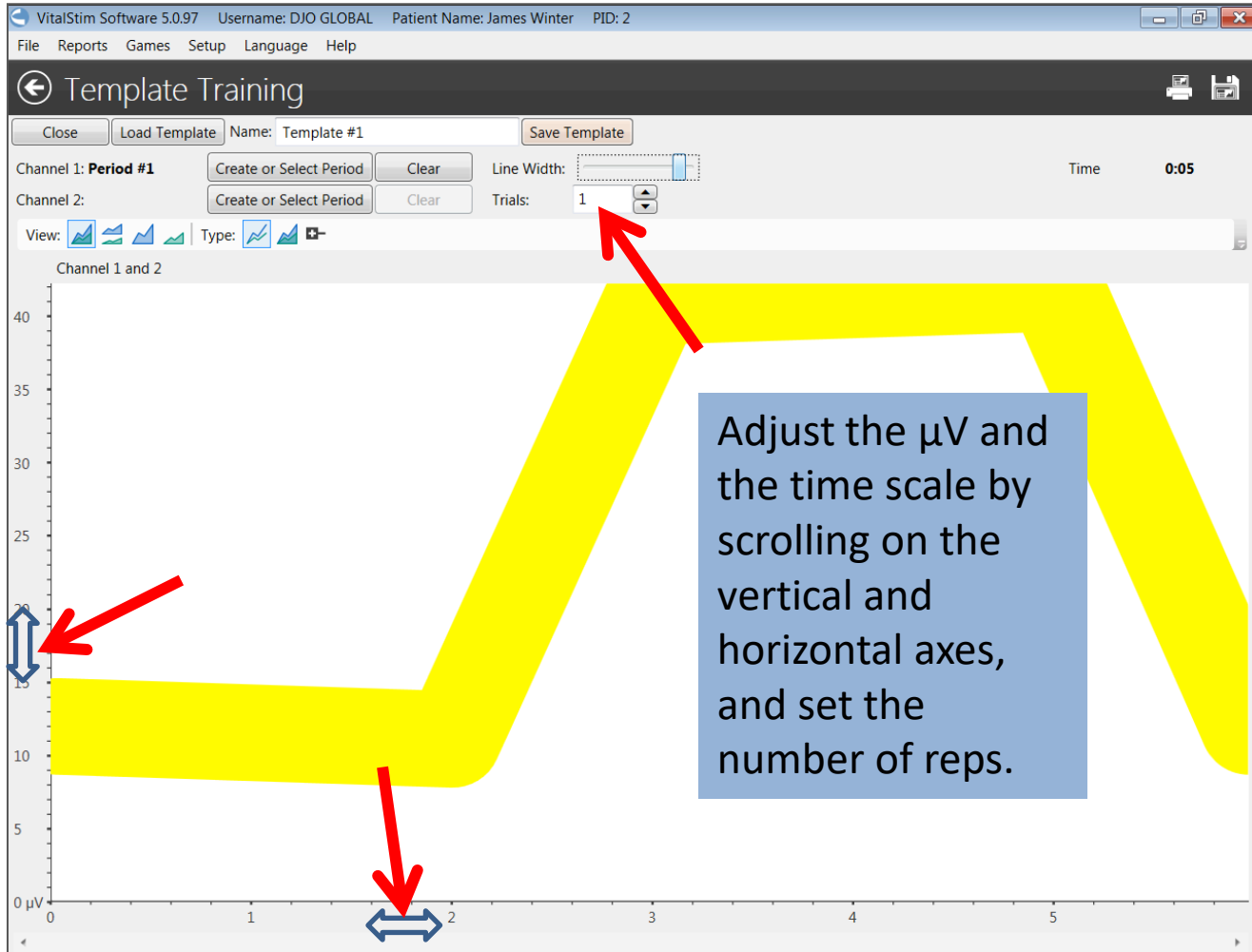


Adjust the width of the line as needed. A thicker band will create a wider band or path for the patient to follow.





# Template Training – Create Template

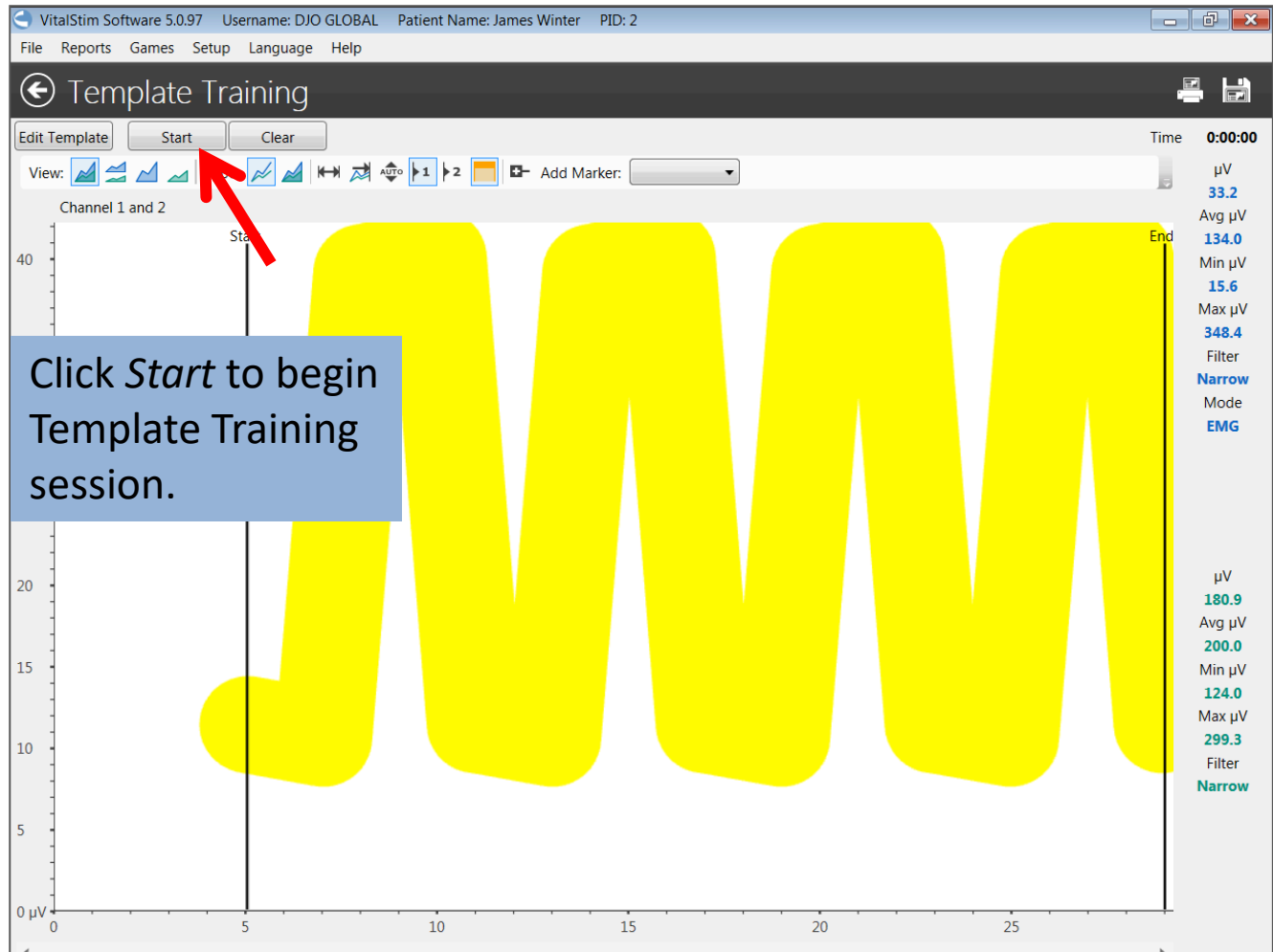




# Template Training – Create Template

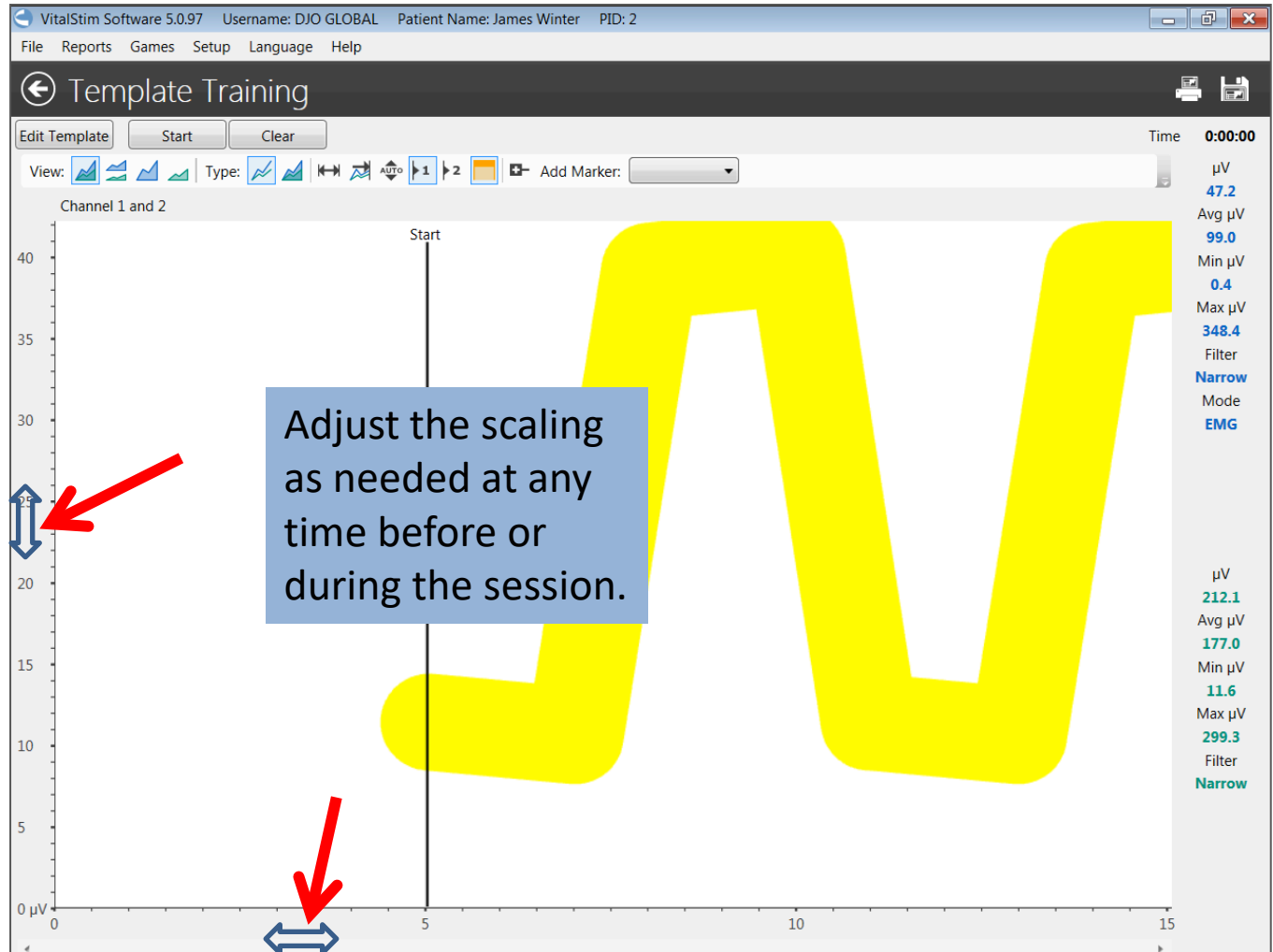


# Template Training – Run session



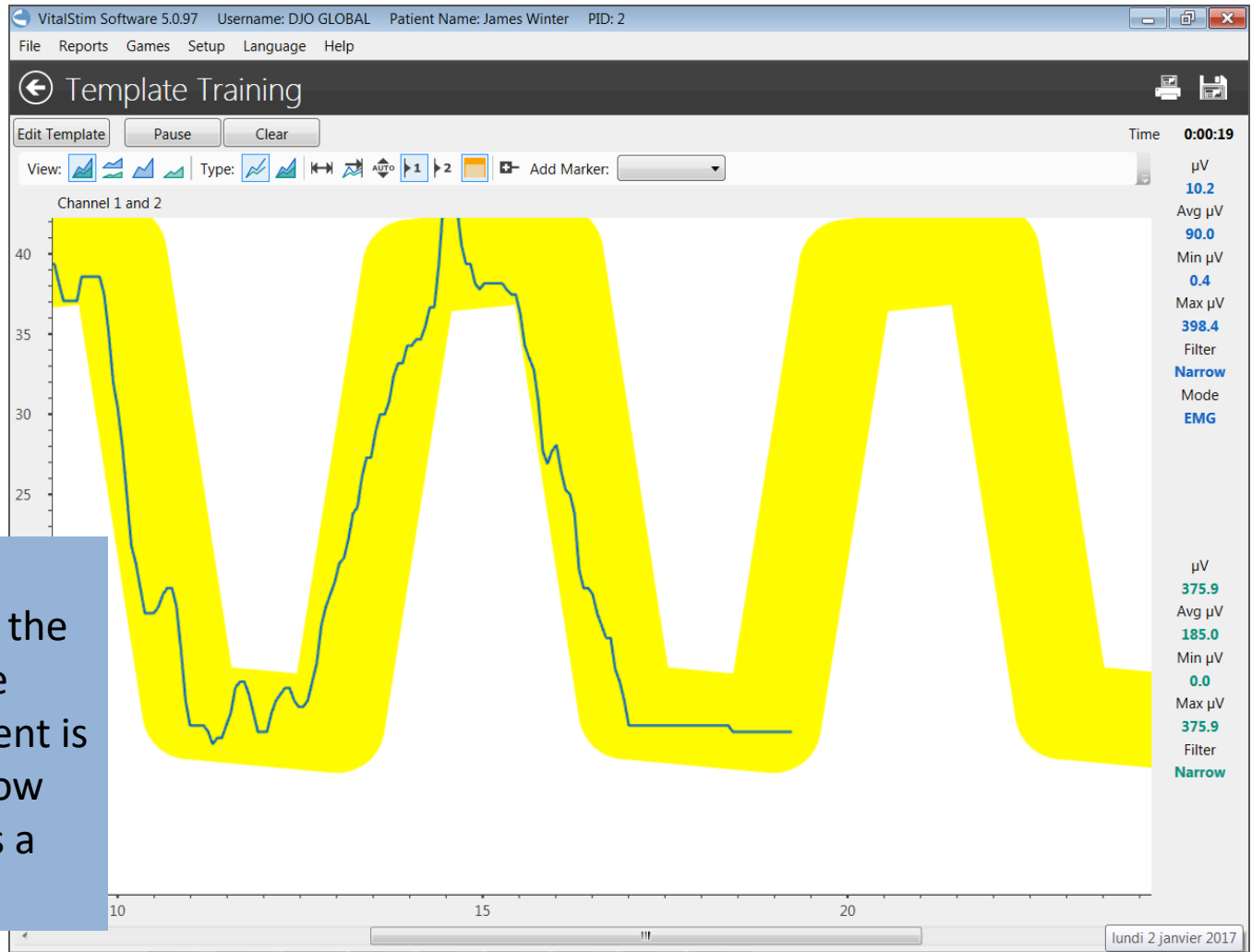


# Template Training – Run session





# Template Training – Run 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

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

## Template Training

Therapist Name: **DJO GLOBAL** PatID: **2** Patient Name: **James Winter**

Date: **02/01/2017 14:31** Session Number: **2** Condition: **Add or Select Condition**

Device: **EmgSimulator**

	Ch 1	Ch 2
Average	72,6 $\mu$ V	230,3 $\mu$ V
Peak	398,4 $\mu$ V	399,6 $\mu$ V
Minimum	0,4 $\mu$ V	0 $\mu$ V
Total Time	0:33	
Avg. Deviation	51,7 $\mu$ V	NA

View: [Icons] Type: [Icons] Add Marker: [Dropdown]

Channel 1

Start

140  
120  
100  
80  
60  
40  
20  
0  $\mu$ V

0 10 20

Markers and Artifacts

Observations and Comments

Close Save Graph

Attachments (0) Export to CSV

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

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

## ← Patient Database

Search patient

PatID	Surname	First name
0~	Example	Bob
1	Martin	John
2	Winter	James

Sessions Game Sessions

Session	Date	Time	Protocol	Condition	FOIS	Patient Weight	Attachments	Notes
<input type="checkbox"/> 1	02/01/2017	14:07	Open Display	Add or Select Condition			Attachments (0)	
<input type="checkbox"/> 2	02/01/2017	14:31	Template Training	Add or Select Condition			Attachments (0)	

**Saved sessions are listed in the patient profile for review.**

Confidential  Default Patient

**Patient Options**

View / Edit

Add

Delete

**Session Options**

Review Delete Session

Deselect all sessions

Create Progress report (Assessment)

Start Protocol

Backup data



# Work/Rest Assessment

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

## Protocol Selection

PatID: 2 Patient Name: James Winter

Session Number: 3 Condition: Add or Select Condition

**Settings Checklist**

- Device
- Mode
- Channel 2
- Threshold
- Work
- Rest
- Stimulus
- Sound feedback
- Heart Beat Filter
- Target type

EmgSimulator

sEMG

On

100.0  $\mu$ V / 100.0  $\mu$ V

5 secs

5 secs

Ch 1: 245.7  $\mu$ V

Ch 2: 375.0  $\mu$ V

**Error**

Add or Select Condition

OK

Disconnect mouse EMG

Patient Database

Open Display

Device Controlled

Template Training

Work / Rest Assessment

Work / Rest Training

Games

Close

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

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

## Work / Rest Assessment

Quality of Life Factor

Work  secs

Rest  secs

Trials

Ch 1 999 100 0 Threshold 97  $\mu$ V

Ch 2 999 100 0 Threshold 100  $\mu$ V

Disable Channel 1 Threshold  Disable Channel 2 Threshold

Reset Threshold Auto Cancel Start

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

Click on *Auto* to set the Threshold automatically.



# Work/Rest Assessment

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

Click *Start* when done.

Username: DJO GLOBAL Patient Name: James Winter PID: 2

Work/Rest Assessment

Quality of Life Factor 1

Work 5 secs

Rest 5 secs

Trials 5

Ch 1 999

Ch 2 999

Threshold 97  $\mu$ V

3

Threshold 100  $\mu$ V

Please contract your muscles now! The unit will measure your performance and set the new threshold value

0 0

Disable Channel 1 Threshold  Disable Channel 2 Threshold

Reset Threshold Auto

Cancel Start





# Work/Rest 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.



# Work/Rest Assessment

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

## Work / Rest Assessment

Therapist Name **DJO GLOBAL** PatID **2** Patient Name **James Winter**

Date **02/01/2017 15:01** Session Number **3** Condition **Stroke**

Device **EmgSimulator** Symptoms and Signs

Quality of Life Factor  Force (kgs)  Angle (degrees)

Work	Ch 1	Ch 2
Average	199,5 $\mu$ V	223,9 $\mu$ V
Avg. Deviation	9,9 $\mu$ V	52,8 $\mu$ V
Avg. Deviation	4,9 %	23,6 %
Peak	350,3 $\mu$ V	335,6 $\mu$ V
Average Onset	0 sec	0 sec
Valid Onsets	5	5
Work Time	5 sec	

Rest	Ch 1	Ch 2
Average	82 $\mu$ V	252 $\mu$ V
Avg. Deviation	22 $\mu$ V	46,4 $\mu$ V
Avg. Deviation	26,9 %	18,4 %
Minimum	5,5 $\mu$ V	25,9 $\mu$ V
Average Release	0,9 sec	> 2 sec
Valid Releases	1	0
Rest Time	5 sec	

Channel 1

View: [Icons] Type: [Icons] Add Marker: [Dropdown]

Observations and Comments

Close Save Graph

Attachments (0) Export to CSV

The report is shown at the end of the assessment.

The report can be saved.





# Work/Rest Assessment – Reporting

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

← Patient Database

Search patient

PatID	Surname	First name

Sessions Game Sessions

Session	Date	Time	Protocol	Condition	FOIS	Patient Weight	Attachments	Notes
<input type="checkbox"/> 1	02/01/2017	14:07	Open Display	Add or Select Condition			Attachments (0)	
<input type="checkbox"/> 2	02/01/2017	14:31	Template Training	Add or Select Condition			Attachments (0)	
<input checked="" type="checkbox"/> 3	02/01/2017	15:01	Work / Rest Assessment	Stroke			Attachments (0)	
<input checked="" type="checkbox"/> 4	02/01/2017	15:03	Work / Rest Assessment	Stroke			Attachments (0)	
<input checked="" type="checkbox"/> 5	02/01/2017	15:05	Work / Rest Assessment	Stroke			Attachments (0)	

Confidential  Default Patient

**Patient Options**

View / Edit

Add

Delete

**Session Options**

Review Delete Session

Deselect all sessions

Create Progress report (Assessment)

Start Protocol

Backup data

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

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

## ← Patient Progress Report

EMG Graph EMG statistics Quality of Life Factor Quick Comparison Summary

Channel 1

02-01-2017 Condition:- Stroke

Channel 2

02-01-2017 Condition:- Stroke

02-01-2017 Condition:- Stroke

02-01-2017 Condition:- Stroke

02-01-2017 Condition:- Stroke

02-01-2017 Condition:- Stroke

Problems identified by therapist.

- Final assessment comments
- Priorities and patient goals
- Initial assessment comments
- Principal treatments
- Comments re: stopping or continuing treatment

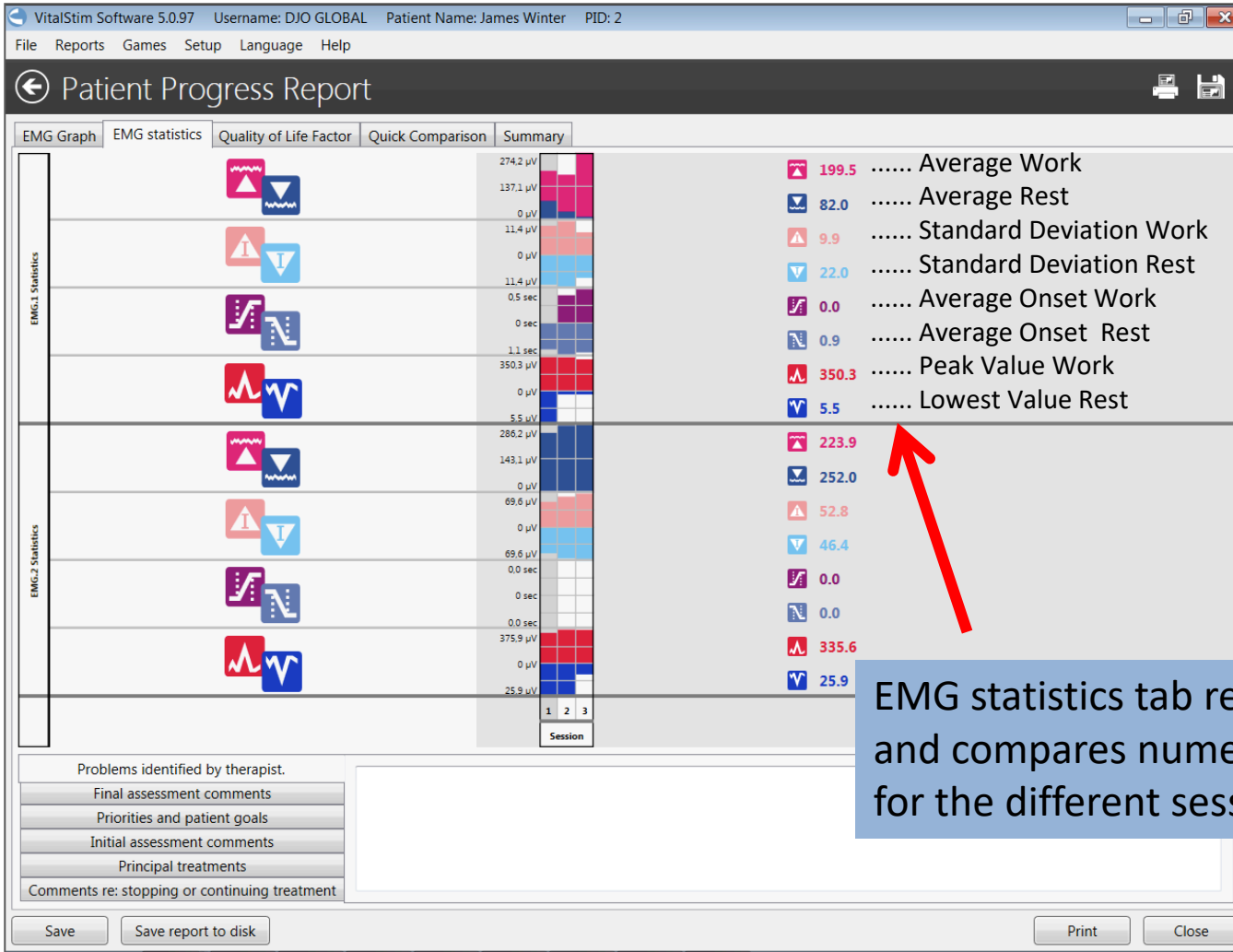
Save Save report to disk Print Close

First report tab shows EMG Graphs for the selected sessions.

Clinician can add comments in bottom section.



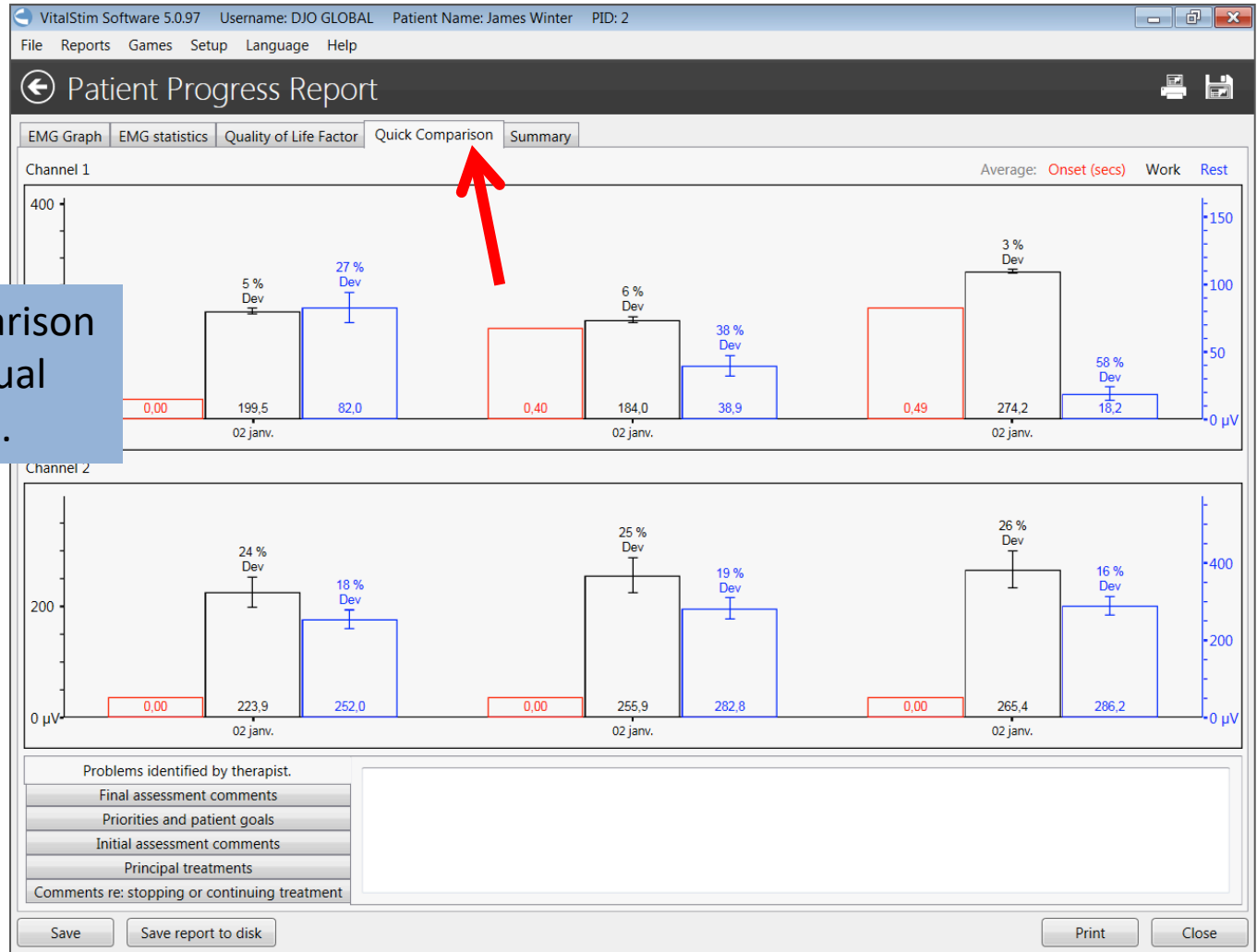
# Work/Rest Assessment – Reporting



EMG statistics tab reports on and compares numerical values for the different sessions.



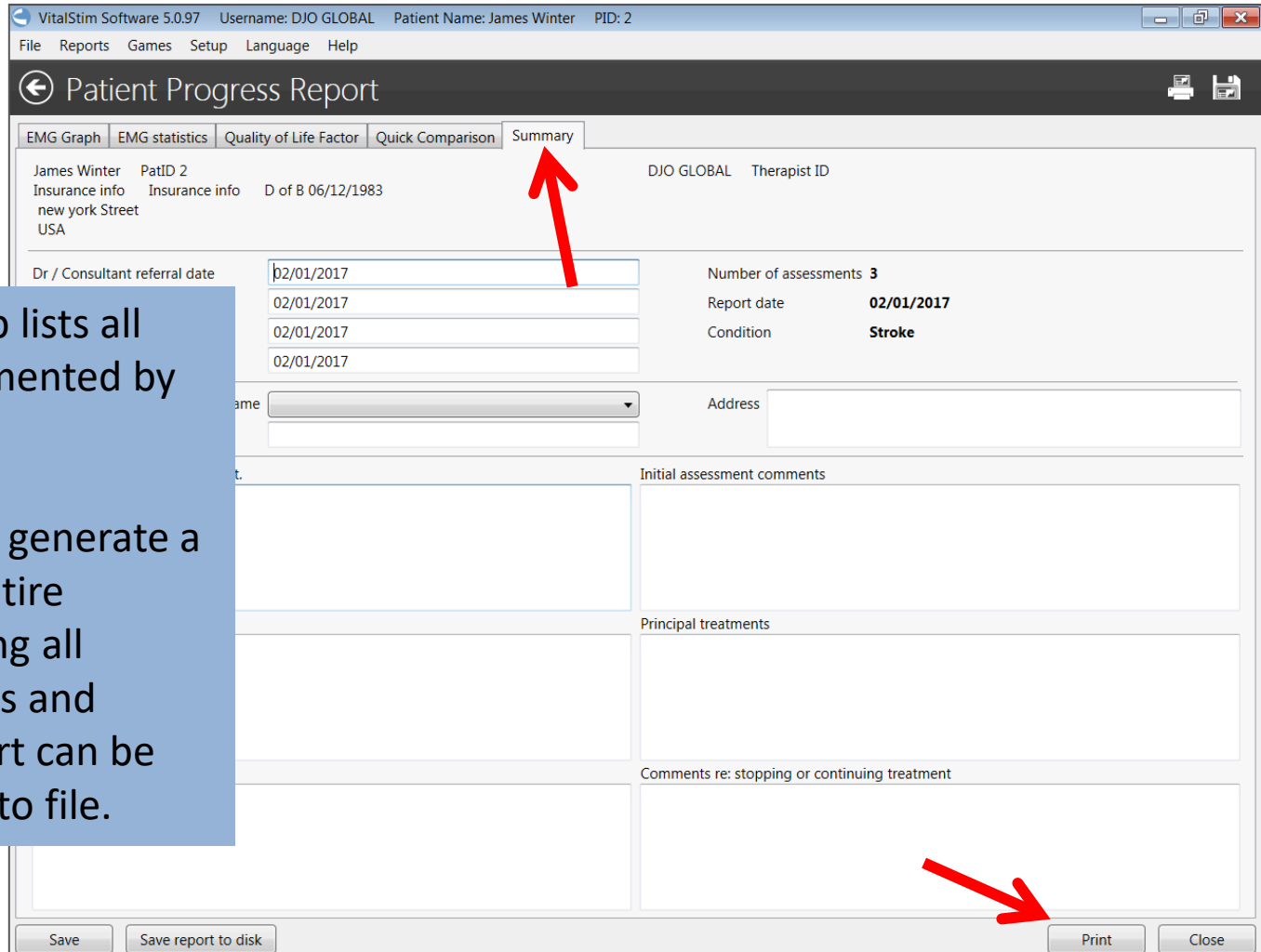
# Work/Rest Assessment – Reporting



The Quick Comparison tab provides a visual report of the data.



# Work/Rest Assessment – Reporting



VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

### ← Patient Progress Report

EMG Graph EMG statistics Quality of Life Factor Quick Comparison **Summary**

James Winter PatID 2 DJO GLOBAL Therapist ID  
Insurance info Insurance info D of B 06/12/1983  
new york Street  
USA

Dr / Consultant referral date 02/01/2017  
02/01/2017  
02/01/2017  
02/01/2017

Number of assessments **3**  
Report date **02/01/2017**  
Condition **Stroke**

Name Address

Initial assessment comments

Principal treatments

Comments re: stopping or continuing treatment

Save Save report to disk Print Close

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

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

## Protocol Selection

PatID: 2 Patient Name: James Winter

Session Number: 6 Condition: Stroke

Settings Checklist

Device	EmgSimulator
Mode	sEMG
Channel 2	On
Threshold	100.0 $\mu$ V / 100.0 $\mu$ V
Work	5 secs
Rest	5 secs
Trials	5
Sound feedback	0%
Heart Beat Filter	Off
Target type	Manual

EMG

Click on Work/Rest Training

Ch 1: 222.7  $\mu$ V

Ch 2: 375.3  $\mu$ V

Buttons: Patient Database, Open Display, Device Controlled, Template Training, Work / Rest Assessment, **Work / Rest Training**, Games, Close

Disconnect mouse EMG



# Work/Rest Training

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

## Work / Rest Training

Quality of Life Factor 1

Work 5 secs

Rest 5 secs

Trials 5

Ch 1 999 100 0 Threshold 157  $\mu$ V

Ch 2 999 100 0 Threshold 179  $\mu$ V

Disable Channel 1 Threshold  Disable Channel 2 Threshold

Reset Threshold Auto Cancel Start

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

Click on *Auto* to set the Threshold automatically.



# Work/Rest Training

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

## Work / Rest Training

Quality of Life Factor 1

Work 10 secs

Rest 4 secs

Trials 10

Ch 1

999

Threshold 166  $\mu$ V

100

0

Disable Channel 1 Threshold

Ch 2

999

Threshold 138  $\mu$ V

100

0

Disable Channel 2 Threshold

**3**

Please contract your muscles now! The unit will measure your performance and set the new threshold value

Reset Threshold Auto

Cancel Start

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

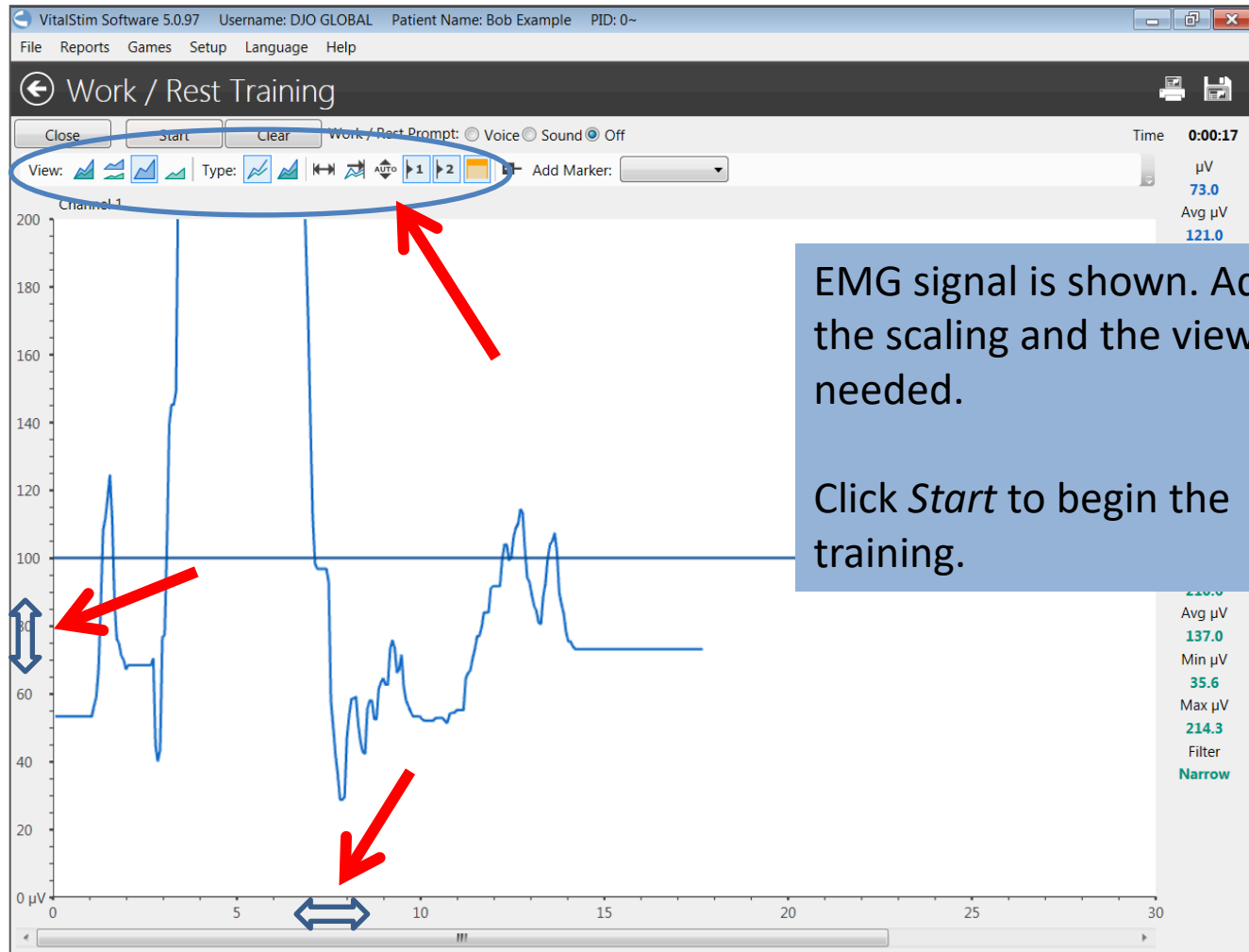
Click *Start* when done.







# Work/Rest Training

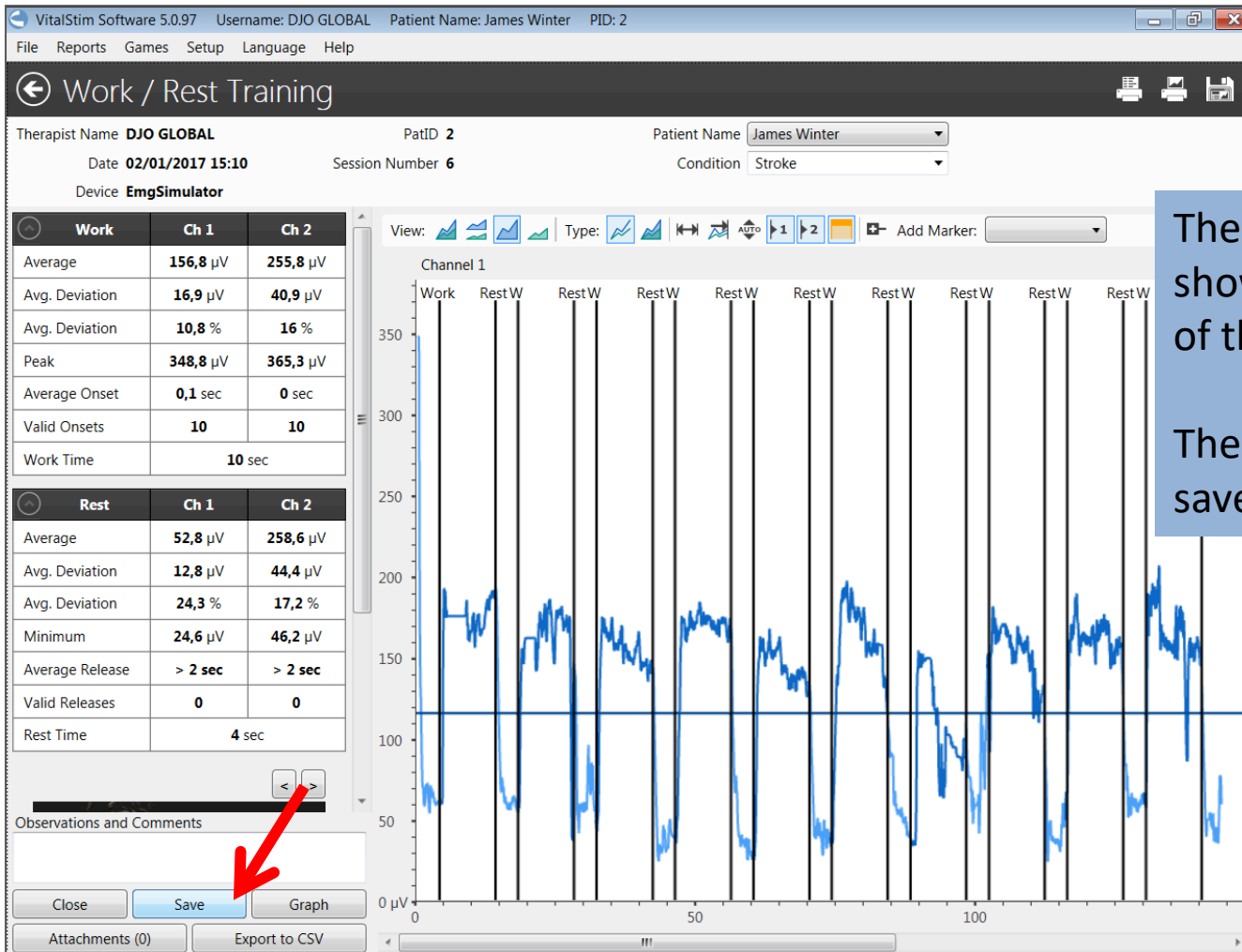


EMG signal is shown. Adjust the scaling and the view as needed.

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

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

## ← Patient Database

Search patient

PatID	Surname	First name
0~	<b>Example</b>	<b>Bob</b>
1	Martin	John
2	Winter	James

Confidential  Default Patient

**Patient Options**

**Sessions** **Game Sessions**

Session	Date	Time	Protocol	Condition	FOIS	Patient Weight	Attachments	Notes
<input type="checkbox"/> 1	02/01/2017	14:07	Open Display	Add or Select Condition			<input type="button" value="Attachments (0)"/>	
<input type="checkbox"/> 2	02/01/2017	14:31	Template Training	Add or Select Condition			<input type="button" value="Attachments (0)"/>	
<input type="checkbox"/> 3	02/01/2017	15:01	Work / Rest Assessment	Stroke			<input type="button" value="Attachments (0)"/>	
<input type="checkbox"/> 4	02/01/2017	15:03	Work / Rest Assessment	Stroke			<input type="button" value="Attachments (0)"/>	
<input type="checkbox"/> 5	02/01/2017	15:05	Work / Rest Assessment	Stroke			<input type="button" value="Attachments (0)"/>	
<input type="checkbox"/> 6	02/01/2017	15:10	Work / Rest Training	Stroke			<input type="button" value="Attachments (0)"/>	

**Session Options**

Saved sessions are listed on the patient page.

Click on *Start Protocol* to start a new session.



# Games

Click *Games* in Protocol Selection page

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

### Protocol Selection

PatID: 2 Patient Name: James Winter  
Session Number: 7 Condition: Stroke

**Settings Checklist**

Device	EmgSimulator
Mode	sEMG
Channel 2	On
Threshold	100.0 $\mu$ V / 100.0 $\mu$ V
Work	5 secs
Rest	5 secs
Trials	5
Sound feedback	0%
Heart Beat Filter	Off
Target type	Manual

Ch 1: 500.0, 100.0, 0  
200.0  $\mu$ V

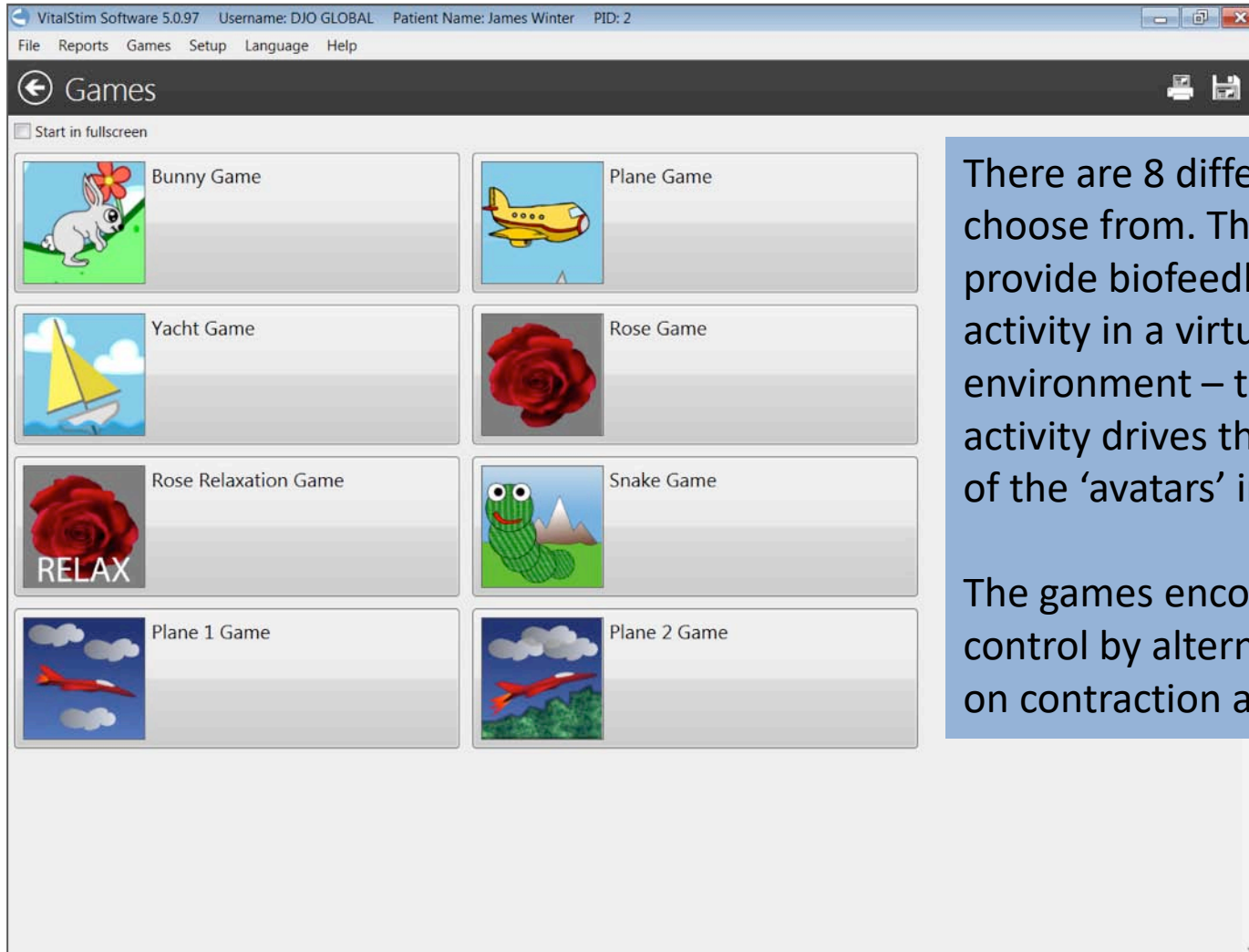
Ch 2: 500.0, 100.0, 0  
383.4  $\mu$ V

Buttons: Patient Database, Open Display, Device Controlled, Template Training, Work / Rest Assessment, Work / Rest Training, **Games**, Close

Disconnect mouse EMG



# Games

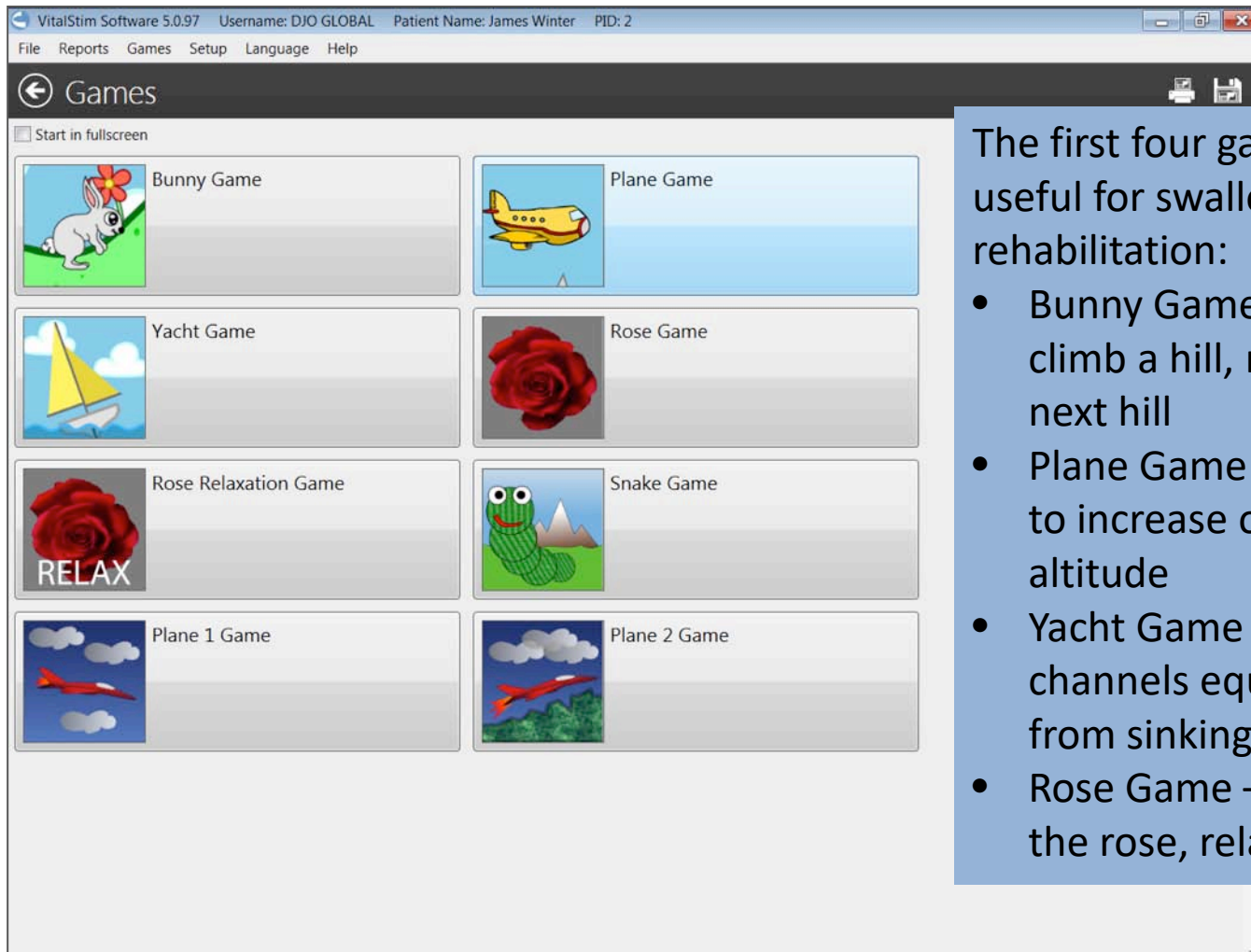


There are 8 different games to choose from. The games provide biofeedback of muscle activity in a virtual environment – the muscle activity drives the movements of the ‘avatars’ in the game.

The games encourage muscle control by alternately focusing on contraction and relaxation.



# Games



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

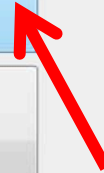
VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

## Games

Start in fullscreen

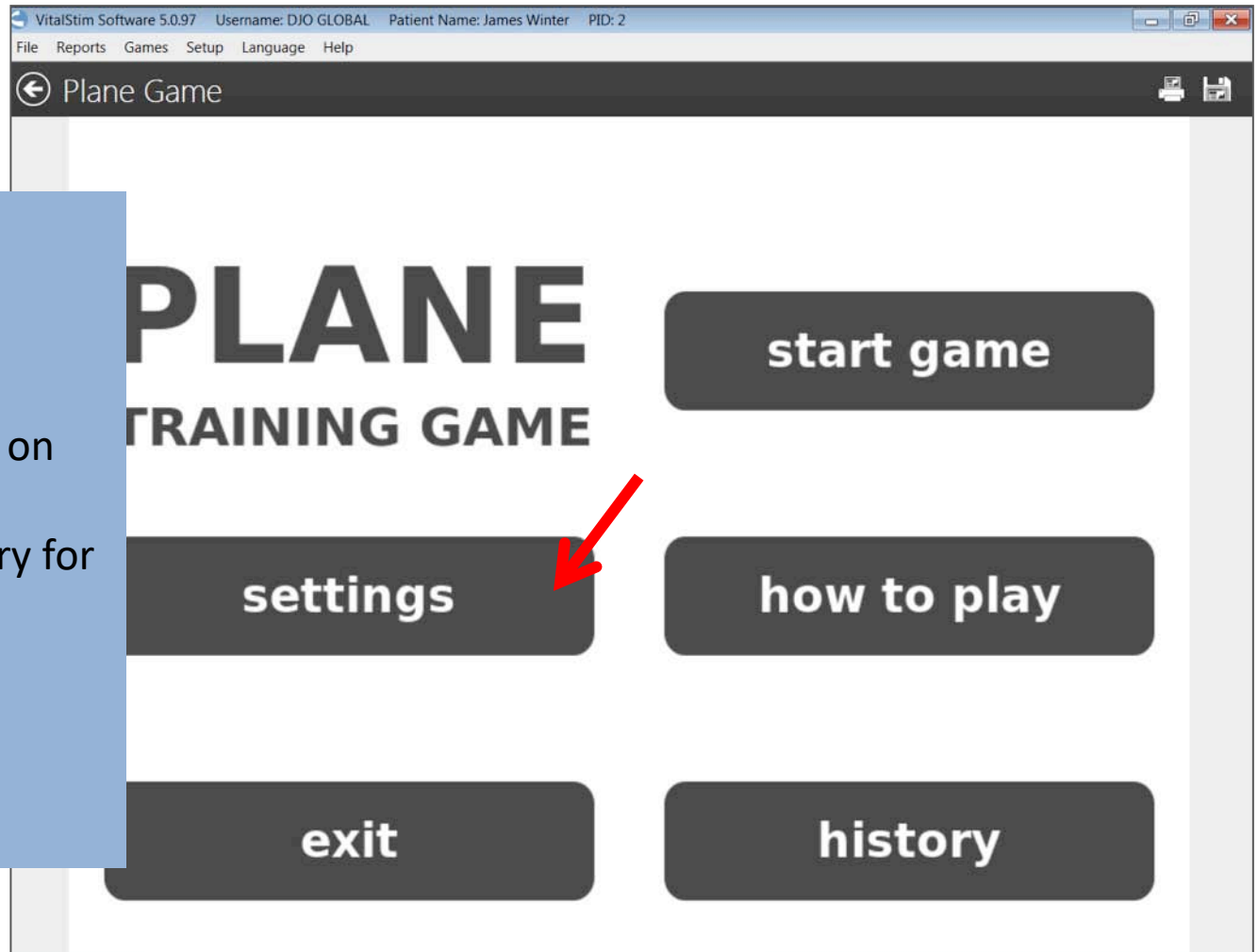
 Bunny Game	 Plane Game
 Yacht Game	 Rose Game
 Rose Relaxation Game <b>RELAX</b>	 Snake Game
 Plane 1 Game	 Plane 2 Game



Click on chosen game



# Games – Setup



## 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.

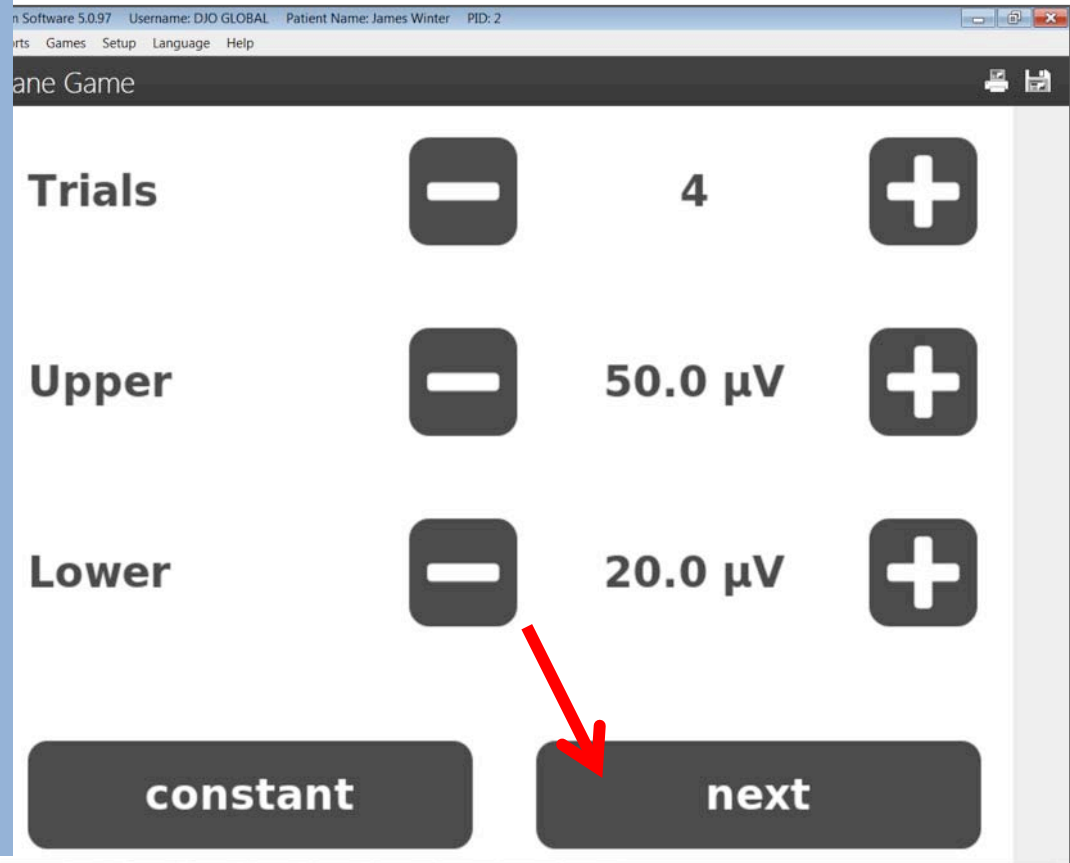




# Games – Setup

- 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.



The screenshot shows a software window titled 'Game Setup' with the following configuration options:

Parameter	Decrease	Value	Increase
<b>Trials</b>	[-]	4	[+]
<b>Upper</b>	[-]	50.0 $\mu$ V	[+]
<b>Lower</b>	[-]	20.0 $\mu$ V	[+]

At the bottom, there are two buttons: 'constant' and 'next'. A red arrow points to the 'next' button.



# Games – Setup

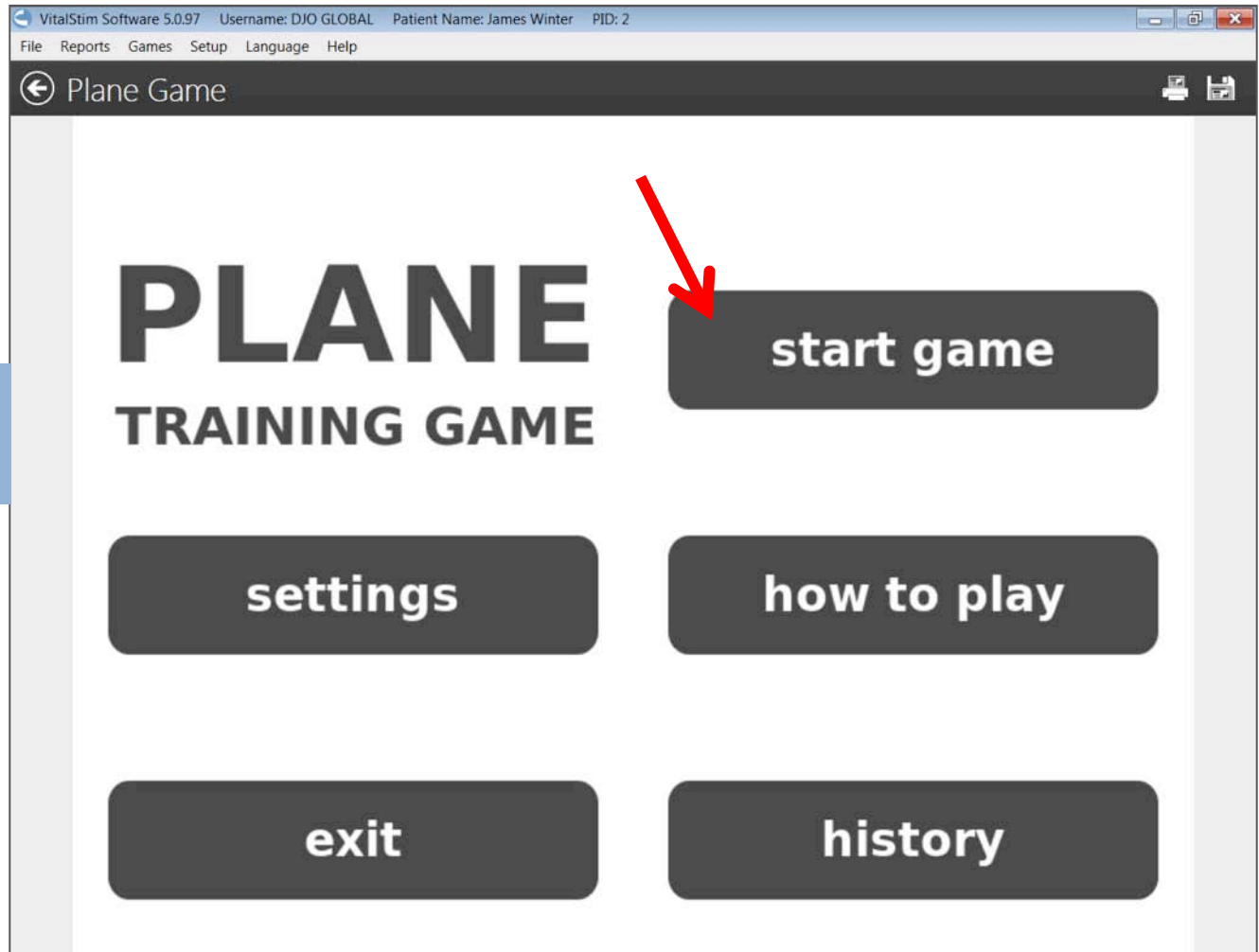


- Work Time: Amount of time to hold a contraction
- Rest: Amount of time to allow muscle relaxation

Click *done* when ready.



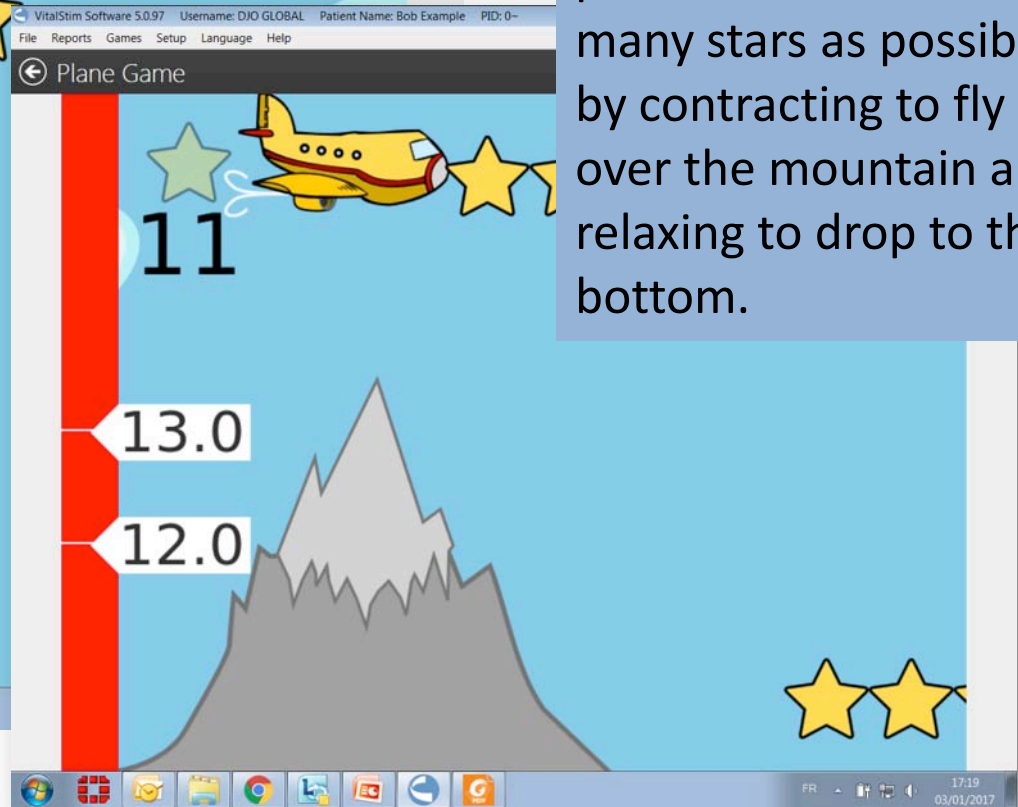
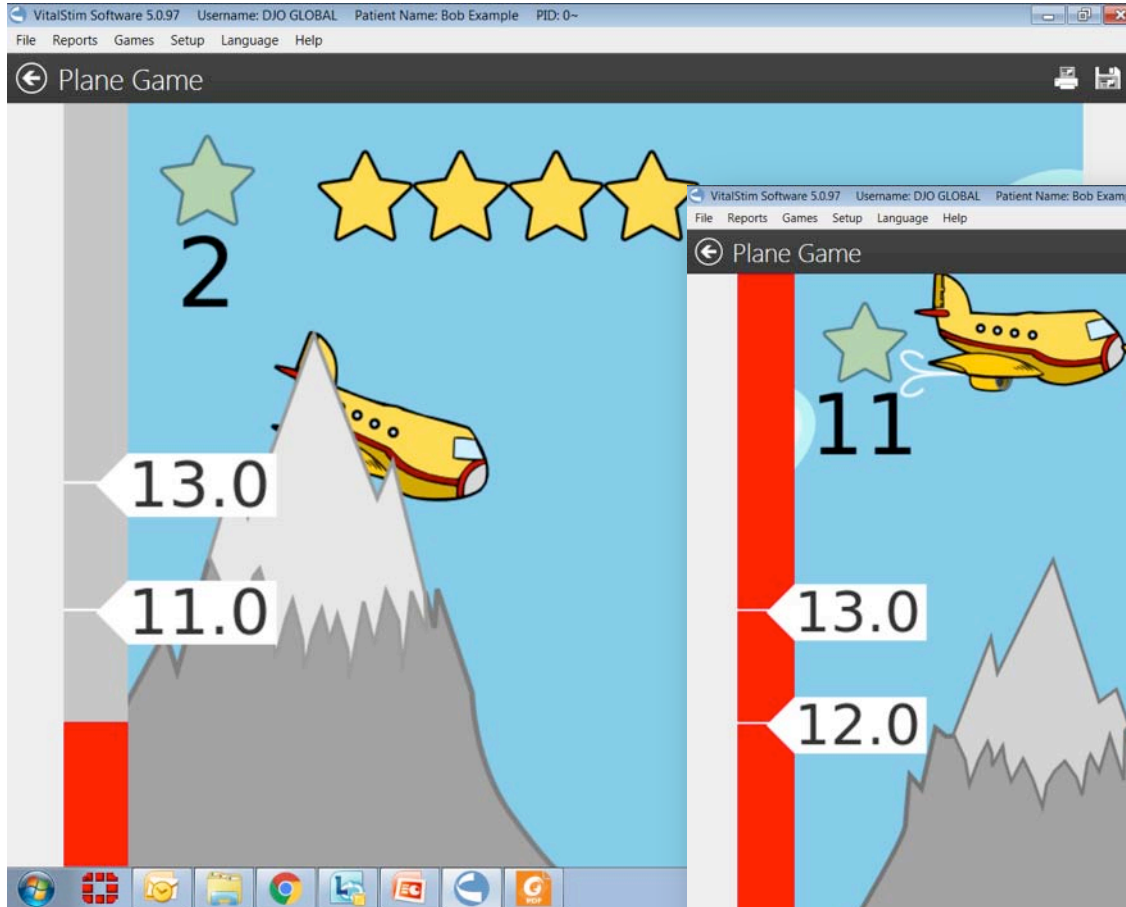
# Games – Setup



Click *start game* to begin.



# Games – Display



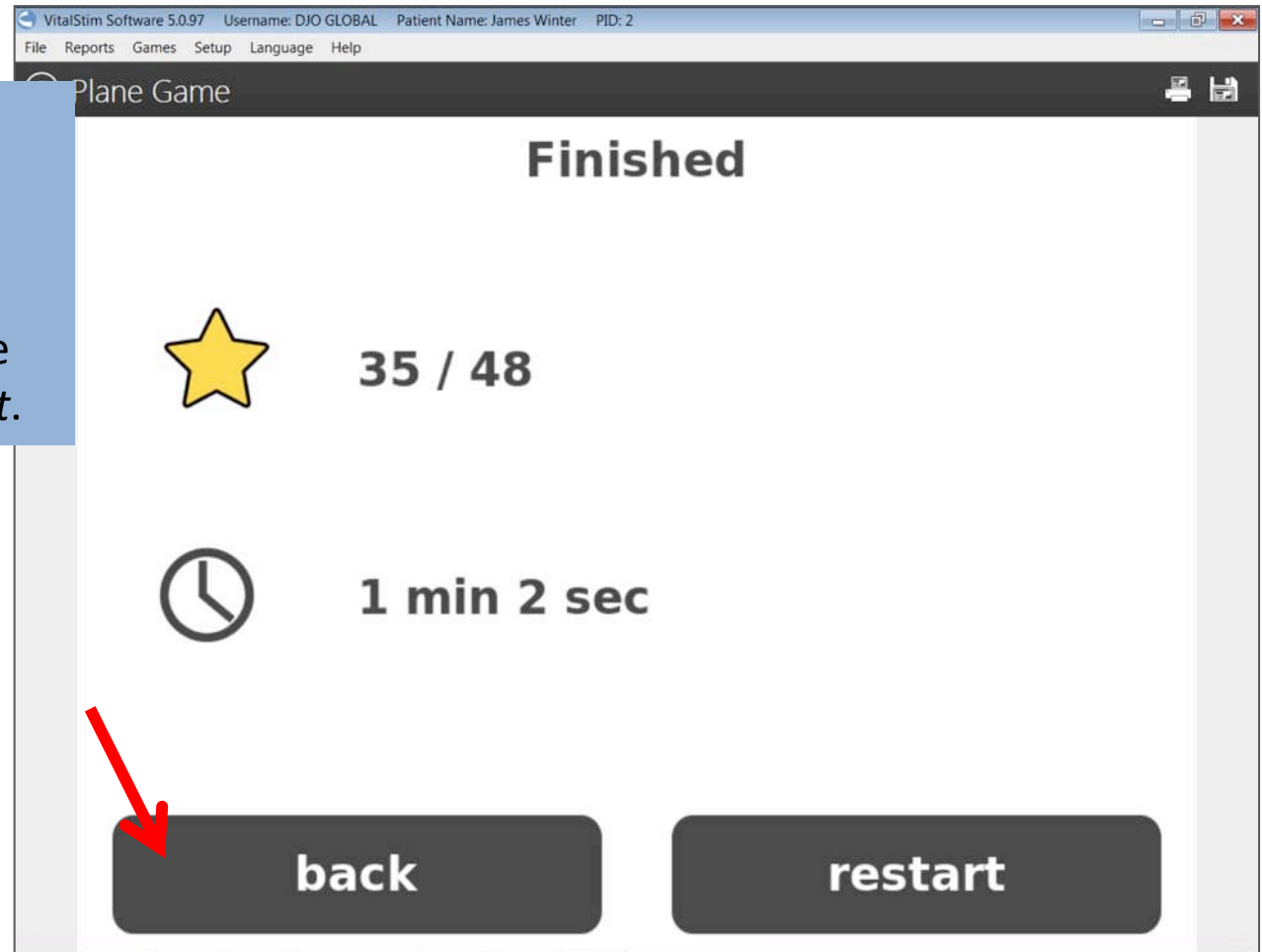
In this game, the patient has to catch as many stars as possible by contracting to fly over the mountain and relaxing to drop to the bottom.



# Games – Reporting

Score and time is displayed after end of game.

Clinician can restart the game by clicking *restart*.





# Games – Reporting

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

← Patient Database

Search patient

PatID	Surname	First name
0~	<b>Example</b>	<b>Bob</b>
1	Martin	John
2	Winter	James

Confidential  Default Patient

**Patient Options**

View / Edit

Add

Delete

**Sessions** **Game Sessions**

Session	Date	Finished	Duration	Game	Score	Low EMG	Max EMG	Notes
1	02/01/2017	15:22	1:02	Plane Game	72%	0.4	400.0	

**Session Options**

Review Delete Session

Deselect all sessions

Create Progress report (Assessment)

Start Protocol

Backup data

Games sessions statistics can be retrieved under the *Game Sessions* tab in the Patient Database.



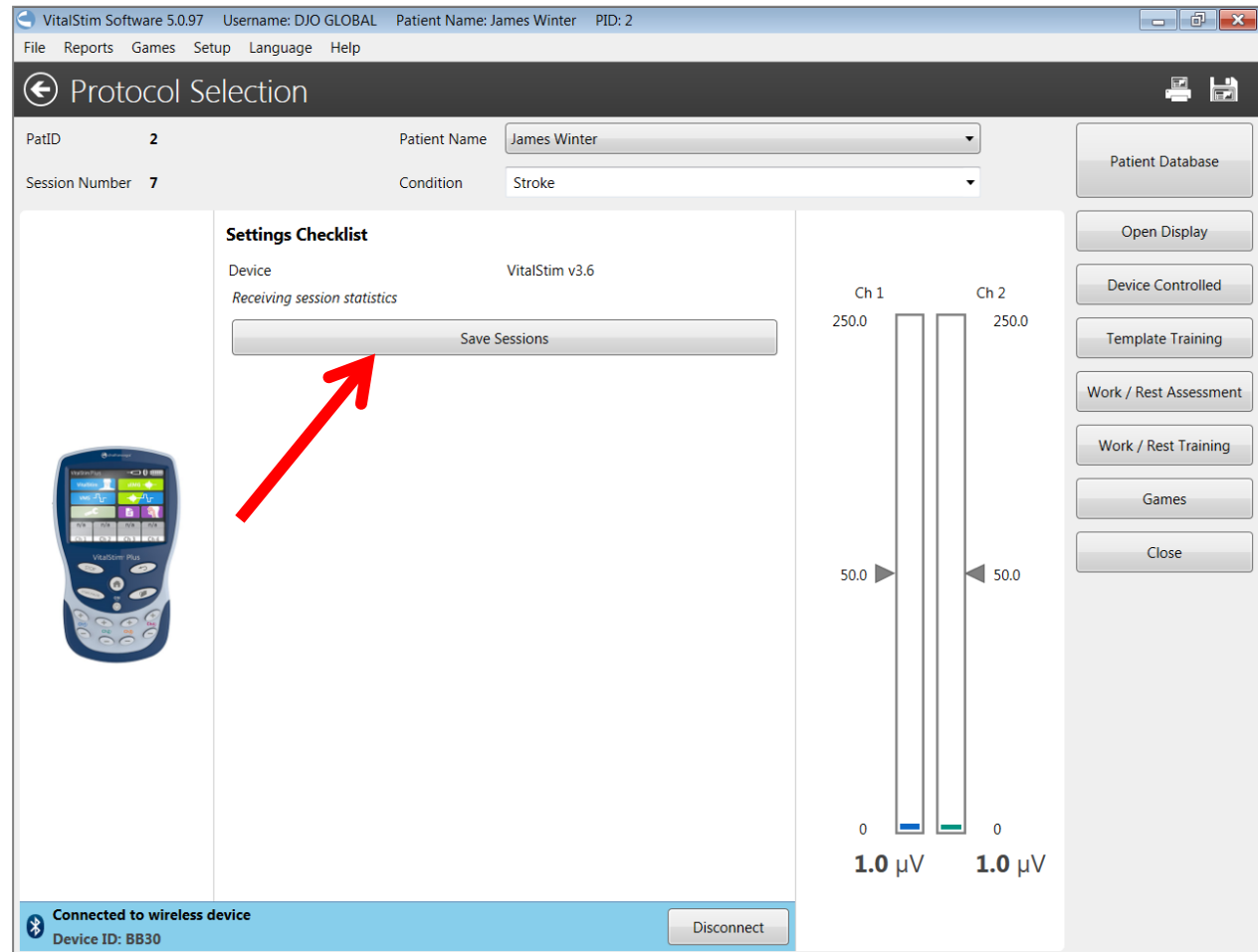
# EXPORT DATA from the device

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.



VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: James Winter PID: 2

File Reports Games Setup Language Help

Protocol Selection

PatID 2 Patient Name James Winter

Session Number 7 Condition Stroke

**Settings Checklist**

Device VitalStim v3.6

Receiving session statistics

Save Sessions

Ch 1 250.0 Ch 2 250.0

50.0 50.0

0 0

1.0  $\mu$ V 1.0  $\mu$ V

Connected to wireless device Device ID: BB30 Disconnect

Patient Database

Open Display

Device Controlled

Template Training

Work / Rest Assessment

Work / Rest Training

Games

Close



# EXPORT DATA from the device

The download process starts

Click *OK*

The screenshot shows the VitalStim Software 5.0.97 interface. The main window is titled "Protocol Selection" and displays patient information (PatID, Patient Name: Test, Session Number: 3, Condition: Add or Select Condition). A "Settings Checklist" section shows the device as "VitalStim v1.0" and "Receiving session statistics". A "Save Sessions" button is visible. A "Download Sessions" dialog box is open, showing a progress bar at 100% and a "Cancel" button. Below it, a "Download Patient Data" dialog box displays an information icon and the message "Treatment Summary has successfully downloaded", with a red arrow pointing to the "OK" button. The interface also features a "VitalStim Plus" device image, a "Patient Database" button, and a "Disconnect" button at the bottom. The status bar at the bottom indicates "Connected to wireless device" with "Device ID: BB30".





# EXPORT DATA from the device

The Patient Database opens and lists the new patient in the patient list.



VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: Test PID:

File Reports Games Setup Language Help

## Patient Database

Search patient

PatID	Surname	First name
0~	<b>Example</b>	<b>Bob</b>
1	Martin	John
2	Winter	James
		Test

Confidential  Default Patient

**Patient Options**

View / Edit

Add

Delete

Sessions Game Sessions

Session	Date	Time	Protocol	Condition	FOIS	Patient Weight	Attachments	Notes
<input type="checkbox"/> 1	05/01/2015	22:01	VitalStim (sEMG)		171	33351 lbs	Attachments (0)	
<input type="checkbox"/> 2	05/01/2015	22:02	VitalStim (Swallows)		171	33351 lbs	Attachments (0)	

**Session Options**

Review Delete Session

Deselect all sessions

Create Progress report (Assessment)

Start Protocol

Backup data



# EXPORT DATA from the device

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: Test PID:

File Reports Games Setup Language Help

← Patient Database

Search patient

PatID	Surname	First name	Session	Date	Time	Protocol	Condition	FOIS	Patient Weight	Attachments	Notes
0~	<b>Example</b>	<b>Bob</b>	1	05/01/2015	22:01	VitalStim (sEMG)		171	33351 lbs	Attachments (0)	
1	Martin	John	2	05/01/2015	22:02	VitalStim (Swallows)		171	33351 lbs	Attachments (0)	
2	Winter	James Test									

Confidential
  Default Patient

**Patient Options**  
 View / Edit  
 Add  
 Delete

**Session Options**  
 Review  
 Delete Session  
 Deselect all sessions  
 Create Progress report (Assessment)

Start Protocol  
 Backup data

Select the session that you want to review and click *Review*



# EXPORT DATA from the device

The patient session data are displayed.

**IMPORTANT:** No graph display is available for export sessions

VitalStim Software 5.0.97 Username: DJO GLOBAL Patient Name: Test PID:

File Reports Games Setup Language Help

VitalStim

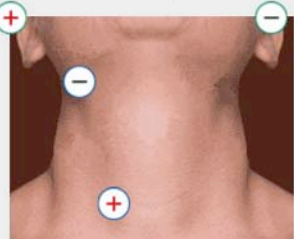
Therapist Name **DJO GLOBAL** PatID Patient Name Test

Date **05/01/2015 22:01** Session Number **1** Condition

Device **VitalStim v3.6**

sEMG	Ch 1	Ch 2
Max. Threshold	1,3	1,6
Min. Threshold	0	0
Avg. Threshold	0,8	1,1
Max. Work	6246,4	0
Avg. Work	6246,5	0
Avg. Baseline	6246,5	2816
% Time Above Threshold	1 %	0 %
Avg Work/Max Work Ratio	100 %	0 %
Treatment Duration	0:11	

No Graph



Observations and Comments

Close Save Graph

Attachments (0) Export to CSV



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An accessory to  
Vitalstim Plus system  
(REF 5923-3)