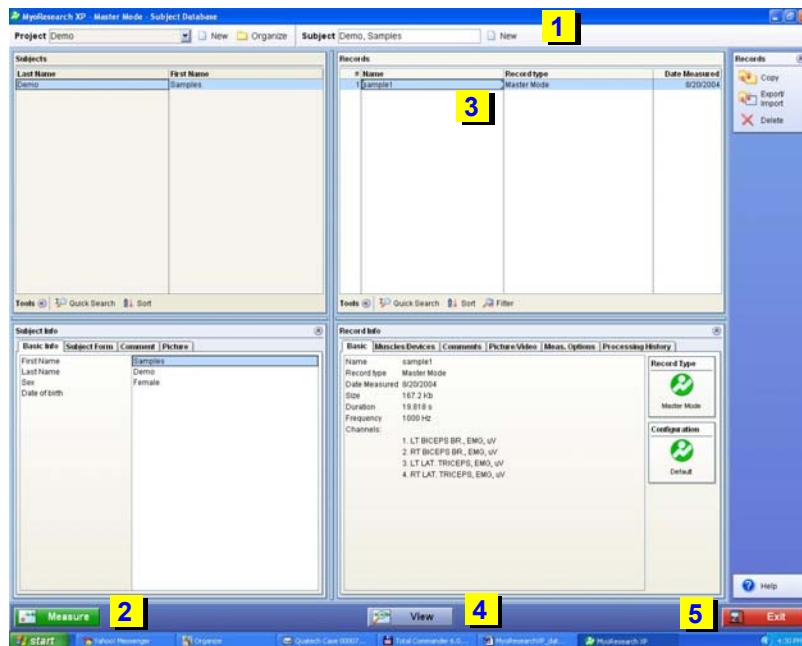




## Step 1: Prepare the Database

**MyoResearch XP** starts with the main Database screen. All individual recordings (Records) are organized under **Project** and **Subject** directories. In this menu you can **Measure** (Instructions A) new records or **View** (Instructions B) existing records. Other database operations include **Copy**, **Export**, and **Import** functions and editing subject and record properties.

### How to use this menu:



### - Instructions -

#### A. Prepare for a measurement

- 1** Click on **New** in the top right corner and type in the name of a new test subject or choose an existing subject from the list in the top left section of the screen.
- 2** Click on the green action button **Measure** in the bottom left corner to proceed to the measurement setup screen.

#### B. View or Analyze a Record

- 3** Click to choose a record from the list on the top right section of the screen.
- 4** Click on the **View** button in the middle of the bottom panel to open and view the record.
- 5** Click on the red **Exit** button to quit using MyoResearch XP.

### Additional options and comments:

#### Subject, Record and Info panels

You can customize the lists in these panels by right mouse clicking and then clicking on **Show/Hide**.

#### Comments tab

You can load any RTF based document (e.g. Microsoft WinWord) or picture (e.g. scanned image) to the Comments window.

#### Subject and Record Picture tabs

You can load pictures to this panel by double-clicking on the window. If you install a USB (web) CAM to take pictures of the subject, electrode placement, test movements etc. You can easily store the images to the clipboard and paste them to the info section for detailed documentation.

#### Right side panel tools

Clicking on either the Subject or Record list section will load corresponding database functions to the tool bar in the right side panel. Use the **Copy** function to back up your data (files are already compressed). You can also use the **Copy** function to load data to MyoResearch XP from external sources or from earlier software versions.

Records can be exported and imported in ASCII format. Several import routines are available for other manufacturers' data files.

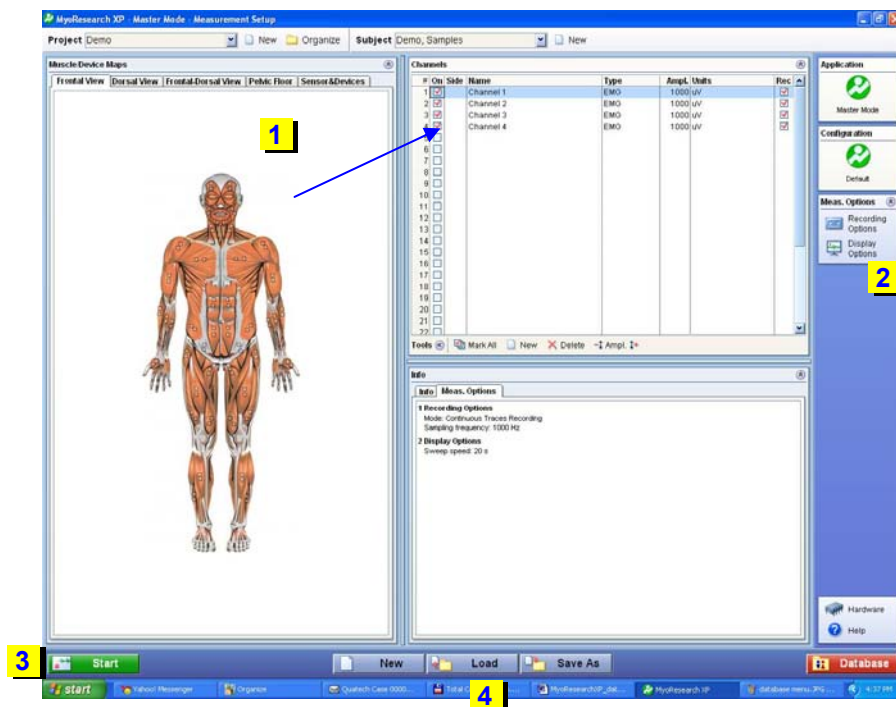


## Step 2: Create a Measurement Configuration

MyoResearch XP allows you to create, store and load your own measurement configurations that match the hardware that you use. You can **A.** create new configurations or **B.** load the predefined Master Mode configuration. In any configuration, the muscle maps can be used to quickly select and drag a muscle to the list of selected channels. Recording and Display options may be changed in the Measurement Options menu.

### How to use this menu:

### - Instructions -



### A. Create a measurement

- 1 Select a map **View**, click on the desired muscles, and the names will be transferred automatically to the highlighted channels.
- 2 Click on the **Measurement Options** button in the side panel on the right and make your selections.
- 3 Click **Start** in the bottom left corner of the screen to enter the measurement screen.

### B. Load a measurement

- 4 To enter the configuration menu, click on the **Load** button in the bottom panel or choose the **Application** and/or **Configuration** icon in the right side panel.

### Additional options and comments:

#### Muscle and Device Maps

Green dots indicate muscles that have already been added to the channel list. The muscle under current selection has yellow dots.

#### Load / Save As configuration menus

The **New** button removes all selections from the measurement setup currently on display and allows the user to create a new one. The **Load / Save** menus allow the user to load or save user-defined configurations.

#### Hardware

This menu provides tools for hardware management, e.g. selecting the A/D device and channel type definition.

#### Measurement Options

##### **Recording Options:**

The standard mode is **Continuous Traces**. Periodic Recording is also included.

##### **Display Options:**

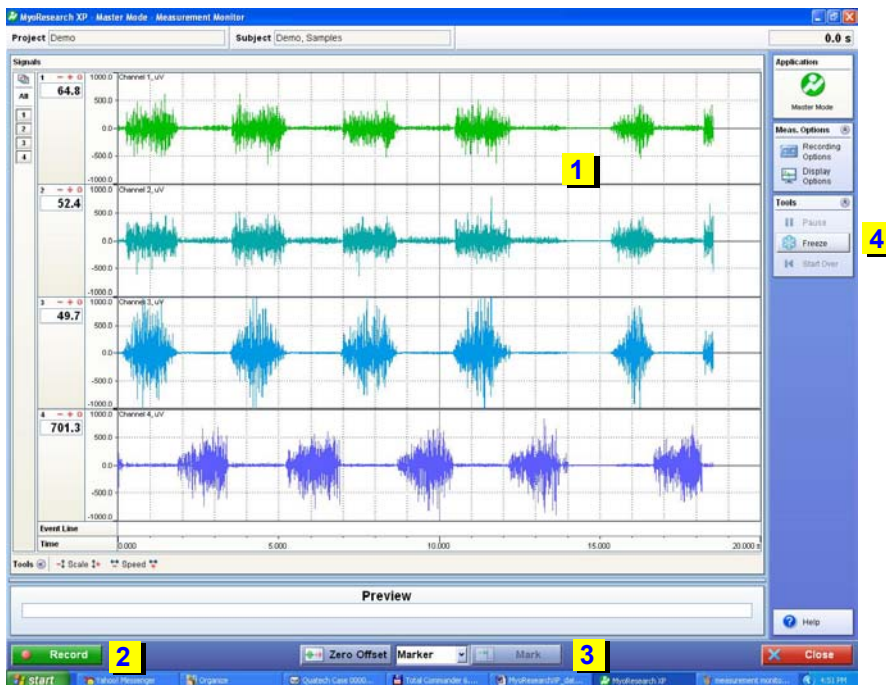
This menu includes tools for customizing colors and other display features.



### Step 3: Start a Measurement

The initial measurement monitor display provides a preview of all the signals specified in the measurement setup menu. DC offset correction is done automatically for all EMG channels. The preview mode can be used to adjust some of the measurement options, such as display settings. Additional tools, such as pausing and event labelling buttons become available after the actual recording is started.

#### How to use this menu:



#### - Instructions -

##### Record a Measurement

- 1 Check the quality of the EMG and other signal tracings.
- 2 Start the recording by clicking on the green **Record** button in the bottom left corner. The text will change to **Finish**. Click on the same button when you are ready to stop and save the recording.
- 3 Click on the **Mark** button in the bottom panel to identify events in the recording. Select an event label from the pull down list or type it in (can be done later).
- 4 If necessary, use the **Tools** options in the right side panel to **Pause**, **Freeze** or **Start over** the recording.

#### Additional options and comments:

##### Left panel channel selector

Use the numbered buttons below **All** to select the channels to be displayed. To select multiple channels or hide channels, press the Ctrl key and simultaneously "click" mouse on channel number. **All** displays all channels.

##### Left panel single channel operators

The current amplitude value is displayed to the left of each channel. The red - and + buttons adjust the amplitude scale for that channel only. Each red 0 button corrects for baseline offset in that channel only.

##### Bottom panel operators

The **Zero Offset** button affects all channels. To establish the baseline for EMG channels, ask your subject to relax all muscles. Sensors for other analog input signals should be placed in their neutral or zero position. Event lines can be placed on the record at any time. You can pre-name or choose an existing marker/event name from the list.

##### Right panel Measurement options

The measurement options can be adjusted in the preview mode.

##### Right panel Tools

**Pause** stops the data storage to hard disk but keeps monitoring the signals on the screen in real-time. **Freeze** stops both the data storage and the real-time signal monitoring. Clicking either of these buttons a second time restarts the recording. **Start over** deletes the recording done so far and restarts from the beginning.

##### Bottom panel channel tools

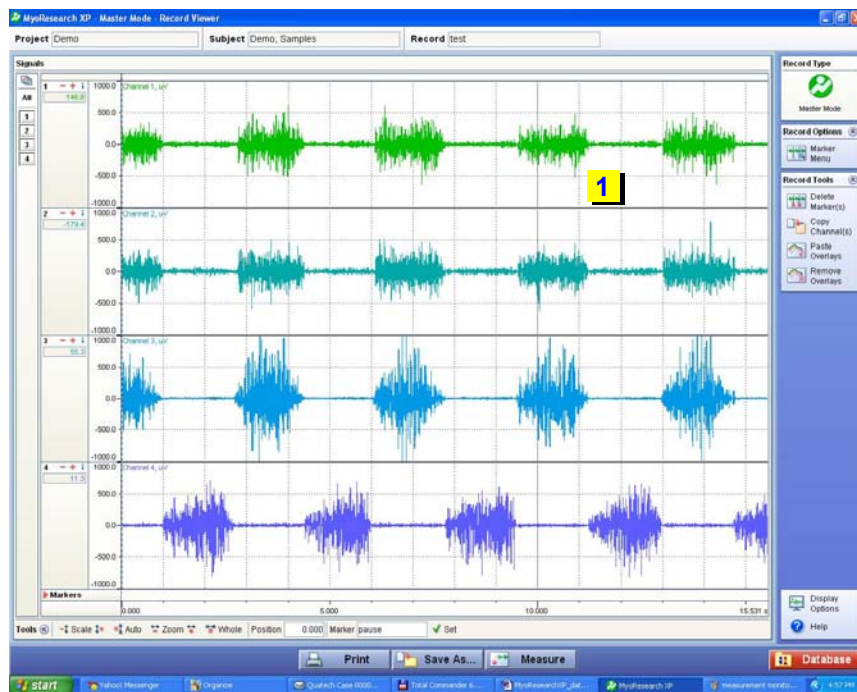
Clicking on + or - on the **Scale** button affects the amplitude scale on all channels currently on display. **Speed** changes the sweep speed across all channels. Slower speed allows you to see a longer stretch of data on each screen.



### Step 4: Inspect a Record

In the Database menu any record can be loaded to the Record Viewer. It allows you to visually inspect the recording, physically edit channels and place markers needed for analysis. At any time during the process, the record can be printed or saved as a new record under a different name after editing.

#### How to use this menu:



#### Instructions -

#### Inspect a Record

- 1 Use the mouse, the channel operators and other available tools to zoom into specific signal portions, change the amplitude scaling or overlay channel and time segments selected by dragging.

#### Additional options and comments:

##### Bottom panel Main Operators

**Print** loads the current record viewer display to a print preview page. The **Save As** function allows you to store the record in its current state, e.g. after editing it under a different name. The new record will appear in the database menu directly below the original.

**Measure** returns to the measurement setup menu.

##### Right side panel Record Options

##### **Marker Menu**

Vertical marker lines can be placed in the record by left-mouse clicking. Alternatively, automatic algorithms defined in the **Marker Menu** can be used to place markers in fixed sequences (**Steps**) or based on trigger signals. Marker sets can be stored and loaded in this menu.

##### Right side panel Record Tools

**Delete markers** deletes all markers in the current selection.

**Copy channel** selects one channel or more and allows them to be pasted over other channels (super-positioning plot).

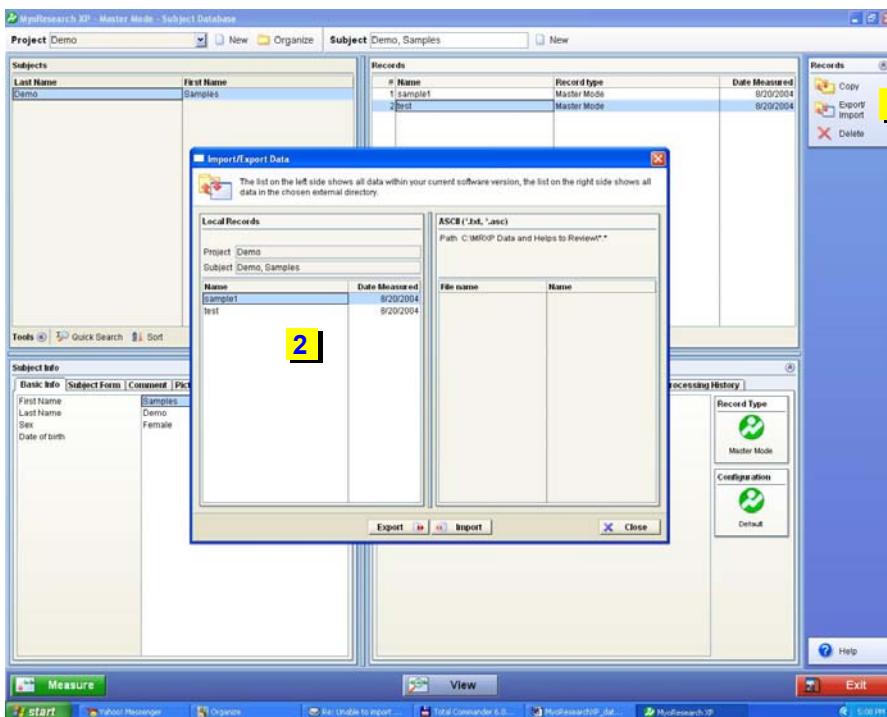
**Remove Overlays** restores the original screen display by removing all signal overlays.



## Step 5: Export Data

The **Export** function is located in the Database menu. This function allows you to transfer your data to another program to complete your analysis of the data. The **Export** function can be used on any record in the database.

### How to use this menu:



### Instructions -

#### Export a Record

- 1 Click on Export/Import. Select ASCII (for use with programs such as Excel) or C3D format. You will then be asked to select an external directory for the records.
- 2 Select the records you want to Export in the left-hand panel and click Export.