===== Contents =====

Before starting:
Please complete the Report Builder Tutorial

This tutorial uses the same sample files used in the report tutorial, but you can download the files here.

To begin the tutorial, open the *CreatingReport_Tutorial.cmo*.

On page 2 of the report, knee flexion is being graphed. Instructions for creating this graph are in the Report Builder Tutorial.

The *NormalData.vnd* is the average data file.

The *CreatingReport_Tutorial_withNormalData.cmo* is the completed cmo file with the plotted normal data.

Plotting Normative Data

See You Tube Video]

This tutorial describes how to graph normative data. The gray band on the report below shows the average knee flexion for several subjects. Before graphing normative data, the normal database file must be created using the CMO Library. For more information about creating a normal data base file see the Normative Data From CMO Library instructions.

For more information about graphing signals, please see the Report Builder Tutorial.

Load Normative Data

Load the normative data into the workspace:

1. **Open** the .cmo file *CreatingReport_Tutorial.cmo*

On page 2 of the report, knee flexion/extension should be graphed in green.

The files being graphed are the files that are currently loaded into the Workspace.

2. Select **Open/Add** files into the workspace and select *Insert new files into your currently open workspace*

3. In the **Open Motion Trials** dialog window:

1. Set the **data type** is set to *Normal Data*

2. **Select** *NormalData.vnd*

3. **Click** *Open*

NOTE: Normal data can be saved as .vnd, .p2d, or .avg files.

The normal data file should now be loaded into the workspace. To see the normal data:

1. Set the **Active File** to *GLOBAL*

2. **Expand** the *P2D* folder

3. **Expand** the *PROCESSED* folder

4. **Select** the *Left Knee Angle_X_LHS_LHS* signal

5. In the **Data View** dialog box:

Component 1 is the number of points the data was normalized to when exported

Component 2 is the average value

Component 3 is the standard deviation

Graph Normative Data

In the **Report Tab**:

1. Select the graph you would like to add normative data to by clicking on it once.
2. Set **Item to add:** to 2D Graph

Click Add

3. In the Add / Modify Graph dialog box enter the following parameters: (See the image below to view the dialog box)	**Graph Properties:** **Files to Graph:** *GLOBAL* **Line Color:** *Black* **Line Style:** *NULL* DO NOT check Graph Mean or Graph Standard Deviation, The normal data will not graph if these are checked.	**X Axis Properties Properties** **X Axis Label:** *Normalized (% gait cycle)* **Data Type:** *P2D* **Data Name:** *Left Knee Angle_X_LHS_LHS* **Component:** *1* **Folder:** *PROCESSED* **Select:** *Normalize 0% to 100%* DO NOT check Graph within a range of events. The normative data was normalized when exported from the CMO Library.	**Y Axis Properties Properties:** **Y Axis Label:** *Extension / Flexion (degrees)* **Data Type:** *P2D* **Data Name:***Left Knee Angle_X_LHS_LHS* **Component:** *2* **Folder:** *FOLDER* **Check** *Add Standard Deviation* **Component:** *3*	**Click** *Done*

4. The normal data should now be plotted in the selected graph. If it is not, check the parameters entered in Step 3.

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