

Plotting Normal Data

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.

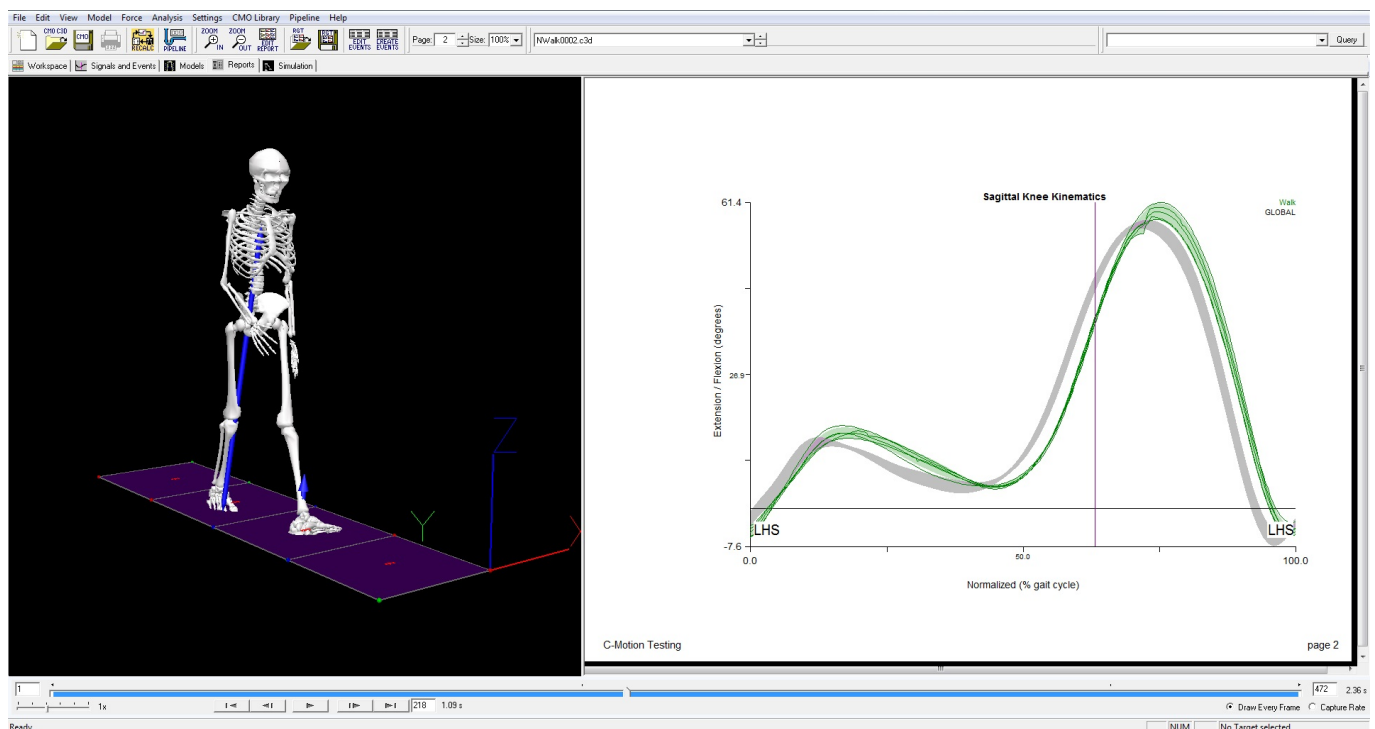
The *CreatingReport_Tutorial_withNormalData.cmo* is the completed cmo file with the plotted normal data.

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*

Files Already Open...

There is already a file open in the Visual3D workspace.

How would you like to handle the new file(s):

- ☐ Close all open files before loading the new files.
(Unsaved information will be lost)
- ☐ Merge currently open workspace with the new files to create a new workspace (Current workspace becomes Untitled)
- ☒ Insert new files into your currently open workspace

OK

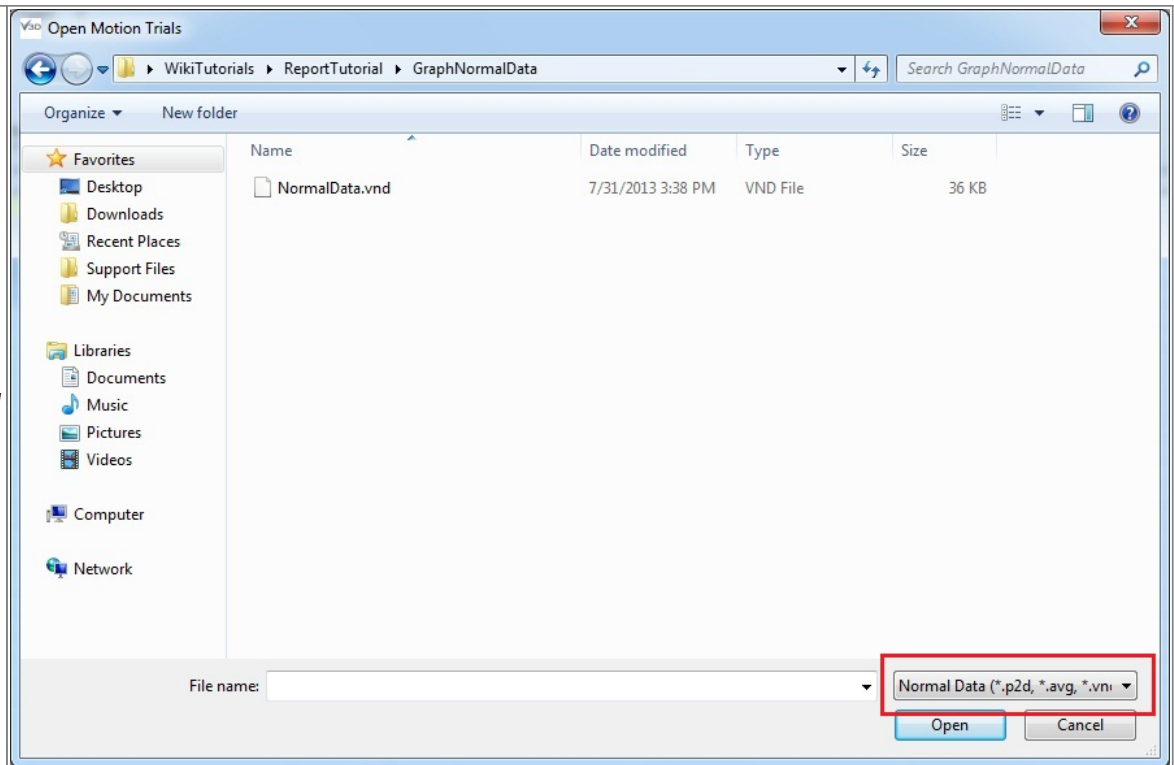
3. In the **Open Motion Trials** dialog window:

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

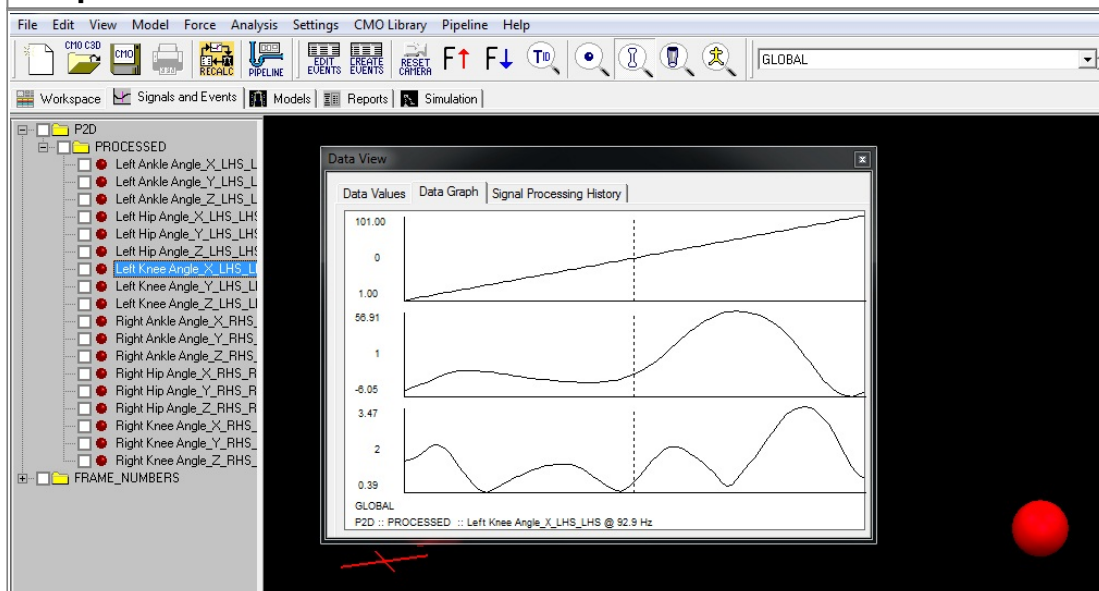
4. **Select** the *Left Knee Angle_X_LHS_LHS* signal

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



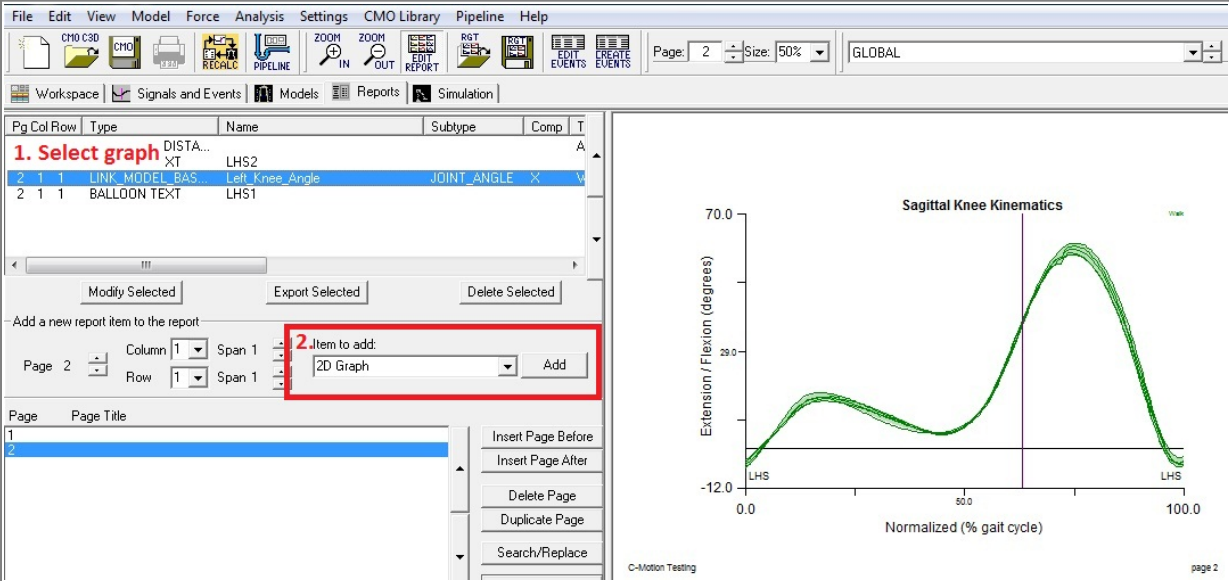
Graph Normative Data

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

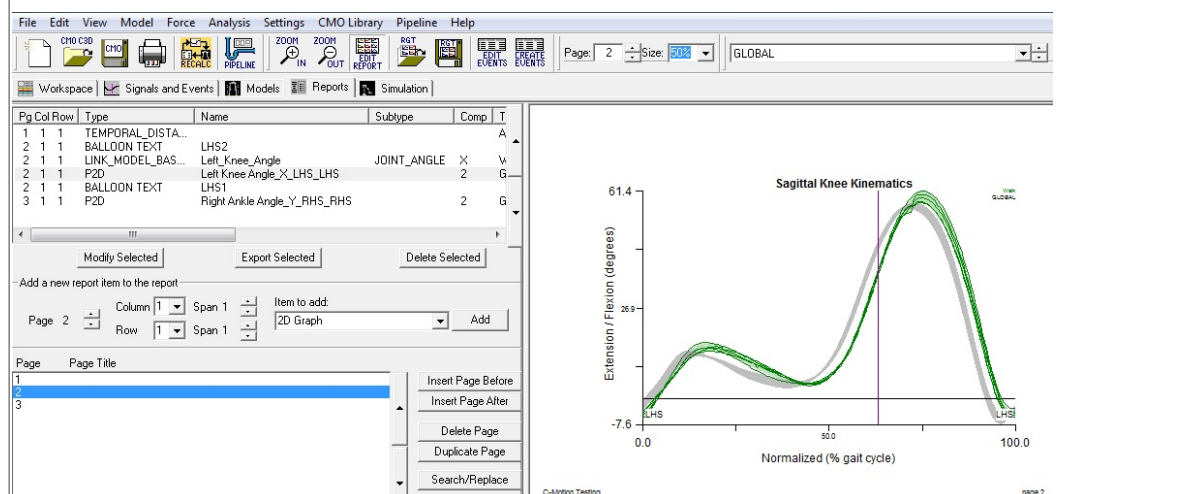
Click Add



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
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Add / Modify Graph			
Graph Title	Sagittal Knee Kinematics		Arial 14 B <i>I</i> <u>U</u> [List Icon] [List Icon] [List Icon]
	Color		Black Custom
Graph Properties			
Location		Files to Graph	
Pos.	Span	GLOBAL	
Column: 1	1	Line Color	Black Custom Line Style: NULL ☐ Bold
Row: 1	1	☐ Graph Mean ☐ Graph Standard Deviation	
Page: 2	Annotations...		
X Axis Properties			
X Axis Label	Normalized (% gait cycle)		Normalize 0% to 100%
Data Type	P2D	☐ Graph within a range of events	
Data Name	hee Angle_X_LHS_LHS		
Component	1		
Folder	PROCESSED		
Y Axis Properties			
Y Axis Label	Extension / Flexion (degree)		Global Min to Max
Data Type	P2D	☐ Use scientific notation	☐ Display ON/OFF Bar Graph
Data Name	hee Angle_X_LHS_LHS		☐ Show Points
Component	2		☒ Add Standard Deviation
Folder	PROCESSED		Component 3
Legend			
Done		Clear Form	Cancel

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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