

# Modifying the EF Algorithm

## OVERVIEW

Corridor4DM assumes that the base of the LV can move between 5 mm and 20 mm from end diastole (ED) to end systole (ES). Since other quantitative programs use different algorithms, 4DM offers users the ability to change the minimum and maximum ranges for LV movement (basal plane motion) when performing serial study comparisons. For example, if a prior study was processed using a base-constrained quantification program instead of 4DM, the user can process the current study with 4DM using base-constrained LV motion, which provides a truer comparison of the current study to the previous study.

## HOW-TO GUIDE

To change basal plane motion while processing a study, perform the following:

1. Select the **MI Processing** screen. (While in **Manual Processing** or **Reset** mode within **MI Processing**, the user can change basal plane motion.)
2. Click the **Processing Options** tool (Figure 1) found in the **Toolbar** prior to adjusting apical and basal limits.



Figure 1. Processing Options tool

**i** For processing assistance, refer to the **MI Processing** screen Quick Reference Guide.

3. After the *Advanced Algorithm Options* window appears (Figure 2), change **Min** and **Max** values for **Basal Plane Motion**.

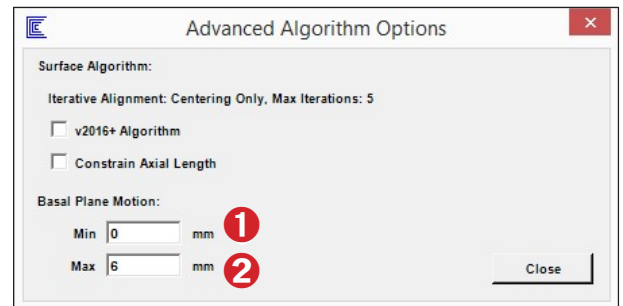


Figure 2. Advanced Algorithm Options window with base-constrained settings

- For motion consistent with a base-constrained application, set **Min** to 0 mm (see 1 Figure 2) and **Max** to 6 mm (see 2 Figure 2) and click **Close**.

**i** INVIA recommends the use of the default basal plane motion values of 5 mm and 20 mm for a more accurate assessment of the LVEF.

4. Perform any necessary processing adjustments to LV centering, apical, and basal limit positioning.
5. Click the **Process** tool (Figure 3) to apply algorithm changes. The changes made to the Basal Plane Motion values only apply to this study, and will reset to the INVIA default settings after closing 4DM.



Figure 3. Process tool



Figure 4. Control Panel

To change Basal Plane Motion as a Global Setting, perform the following:

1. Launch patient dataset into 4DM.
2. Select the **Preferences** button (see 1 Figure 4) from the **Control Panel**.
3. Under **Global Settings**, select the **Algorithms** page (see 1 Figure 5).
4. Set the **Min** and **Max** to the desired value and click **Save**, so that 4DM automatically applies the settings each time it is launched.

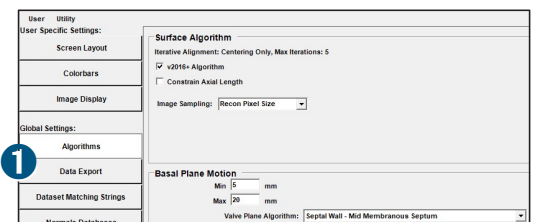


Figure 5. Algorithms page within Preferences

Changing the range of this variable impacts the calculation of the EF, and the Base Constrained calculation generally results in a lower EF.