

QUICK REFERENCE ELIMINATING EXTRA-CARDIAC ACTIVITY

**Corridor4DM Version:**  
6.0 and 6.1



**Target Audience:**  
Technologists

**Primary Workstation:**  
Processing

**Constraints are NOT the same as masking!**



By using constraints you do not eliminate viewing the extra-cardiac space around the heart.

**Clinical Importance**

In rare occurrences, **extra-cardiac** activity in the field of view (e.g., hot liver or loop of bowel) will affect 4DM LV contour generation. The images on the **Surf QA** screen will show misplaced surface estimation (See Figure 1 for an example). Use the **Constraints** option at the top of the **Setup** screen to correct this.

**To apply Constraints follow these steps:**

- Check the **Constraint** toggle checkbox in the Screen Options Control Panel at the top of the **Setup** screen. Constraint limits and handles will appear overlying the VLA, SA and HLA views (Figure 2).
- In **all of the SA images**, click and drag the constraint handles to reposition the constraints. Be careful not to clip any myocardium out of the limits, but do not leave too much space around the LV, either. See Figures 3 and 4 for examples of **improperly** positioned constraints.
- **Visually confirm** that the extra-cardiac activity is excluded in all of the HLA and VLA views and adjust if necessary.
- Click **Process** (at top of **Setup** screen) to apply 4DM algorithms using your specified orientation, limits, and constraints. The 4DM program will automatically proceed to the **Surf QA** screen to check the new LV surface estimates with constraints applied. (See Figure 5).

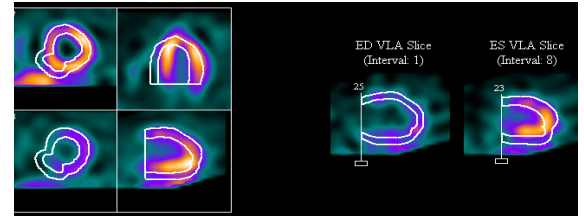


Figure 1: Shows an example of MISPLACED 4DM contour generations overlaying the LV on the Surf QA screen.

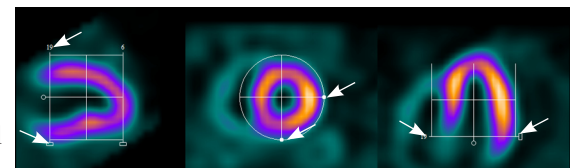


Figure 2: Shows proper constraint placement. The white arrows in the image above are pointing to the VLA, SA, and HLA constraint handles.

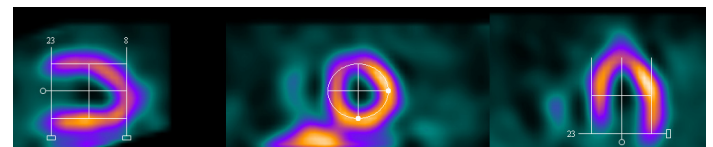


Figure 3: Shows constraints IMPROPERLY placed (e.g., too tight). They are clipping out the visible bowel loop as desired, but are ALSO clipping portions of the myocardium.

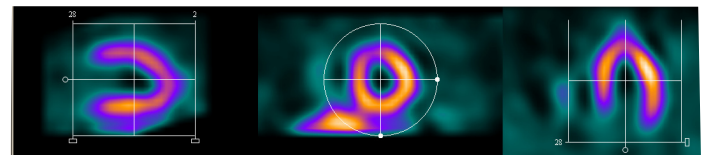


Figure 4: Shows constraints IMPROPERLY placed (e.g., too loose). Although they are not clipping out any myocardium, a portion of the loop of bowel (seen at the bottom left of the SA slice) is also included.

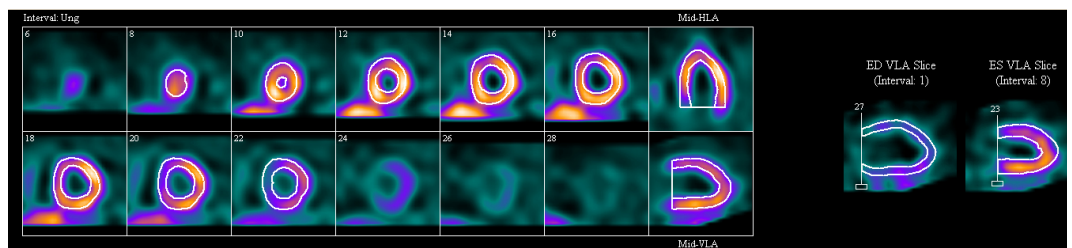


Figure 5: Shows ACCURATE 4DM contour generations overlaying the LV on the Surf-QA screen after applying constraints.