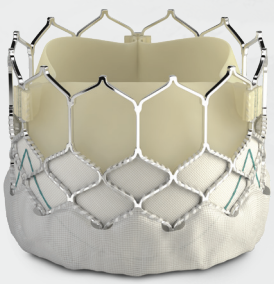
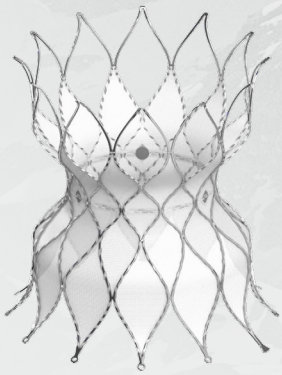
# CT Acquisition & Reconstruction for the SAPIEN 3 Valve with Alterra Adaptive Prestent



SAPIEN 3 valve



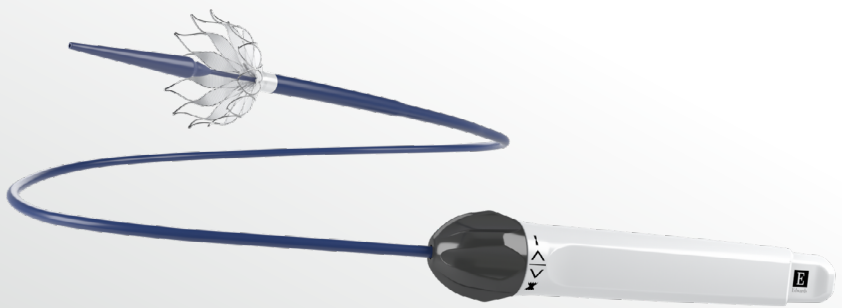
Alterra adaptive prestent



Edwards

# CT Image Acquisition & Reconstruction

| Parameters | |
|---|---|
| **Scan coverage** | • Minimum coverage: RVOT, MPA and branch PAs<br>• Coverage can be extended to include RV and LV if CT is used for chamber quantification (higher radiation exposure!) |
| **Contrast application** | • Optimized for right heart/MPA assessment<br>• Biphasic injection protocol using diluted contrast (70%/30% contrast/saline mixture) to reduce streak artifacts, 4-5ml/sec flow rate<br>• Bolus tracking for acquisition timing, ROI placed in RV or pulmonary artery |
| **Data acquisition mode** | • Volume CT scanner (GE Revolution, Canon/ Toshiba AQ1): ECG-gated volume acquisition<br>• All other scanner: retrospective ECG-gating |
| **Heart cycle coverage** | • Systole and diastole should be covered (ideally the entire cardiac cycle), to allow for dynamic assessment of landing zone/potentially contractile RVOT; if dose modulation is required, a peak dose window covering 20%-80% of the RR interval is recommended |
| **Image reconstruction** | • Multiphasic reconstruction covering entire cardiac cycle in 5-10% or 50msec increments<br>• 512-512 matrix, field of view limited to cardiac structures, MPA and branch PAs<br>• Maximize use of iterative reconstruction<br>• ≤0.75mm slice thickness |

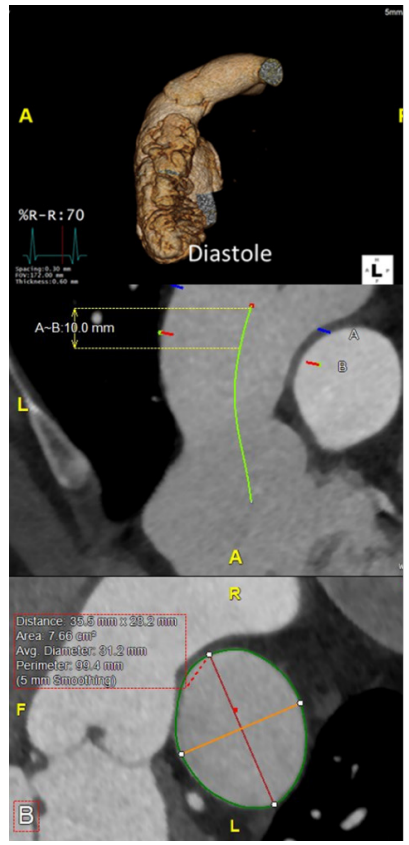


## Systole and Diastole should be covered!

This allows for assessment of:

- Dynamic changes throughout the cardiac cycle, with increase in MPA diameter and length in systole
- RVOT contractility

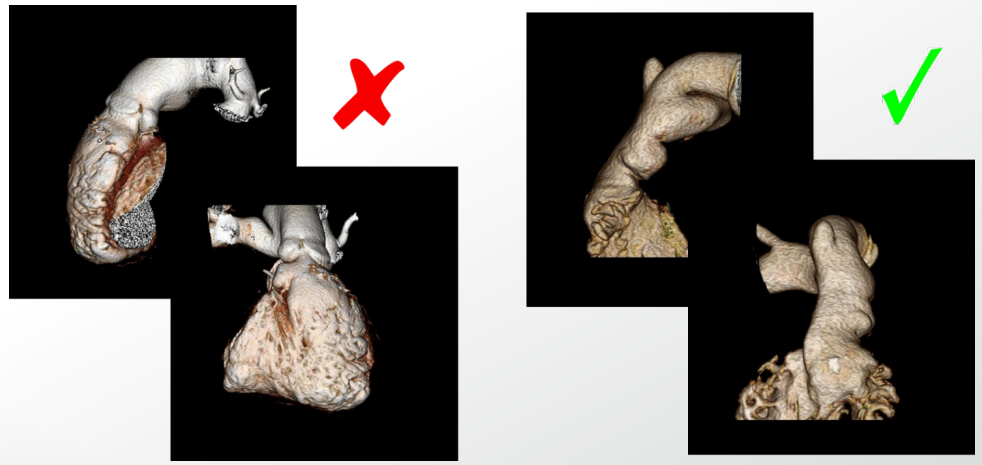
Largest MPA dimensions throughout cardiac cycle determine anatomical suitability




Scan range needs to cover at least MPA/branch PAs and RVOT.

Avoid truncating these structures!

RV/LV can be included into scan range if need for chamber quantification.



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**WARNING:** *Any reference to X–ray exposure, intravenous contrast dosage, and other medication is intended as a reference guideline only. The guidelines in this document do not substitute for the judgment of a health care provider. Each scan requires medical judgment by the health care provider about exposing the patient to ionizing radiation. Use the As Low As Reasonably Achievable (ALARA) radiation dose principle to balance factors such as the patient's condition, size, and age; region to be imaged; and diagnostic task.*

**NOTE:** *Algorithms/protocols included in this handout are for educational reference only. The authors do not endorse or support any one specific algorithm/protocol. It is up to each individual clinician and institution to select the treatment that is most appropriate.*

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