CardioFreeze

Advanced motion management delivers virtually motion-free images

Cardiac images are subject to motion from both the beating heart and breathing. While we can correct the heart motion by acquiring the ECG signal and gating, respiratory motion is not corrected, and can lead to difficulty in precise evaluation of cardiac pathology.

CardioFreeze reduces image blur from both cardiac and respiratory motion using only the ECG trigger for gating. Decreasing the blur may improve visualization of myocardial tracer distribution, wall thickness and defect definition. This additional information can increase diagnostic confidence.

- 24x more counts in each frame to improve the signal-to-noise ratio and image quality[1]
- Improved visualization of gated cardiac images and definition of defects
- Deviceless respiratory gating

CardioFreeze provides 24x more counts in each frame[1], improving the signal-to-noise ratio and image quality

Using an optical flow technique, CardioFreeze enables each individual frame to have 100% of the counts—24x more in each individual frame than conventional dual gating.[1] This improves the signal-to-noise ratio and the image quality.

Percentage of data utilized for motion-free imaging[1]

	Static	Cardiac gating (8 gates)	Conventional dual gating*	CardioFreeze
% of data that is utilized in each frame of the final image	100%	12.5%	~4.2%	100%
Heartbeat motion-free	No	Yes	Yes	Yes
Respiratory motion-free	No	No	Yes	Yes
Deviceless respiratory gating	No	No	No	Yes

*Cardiac & respiratory

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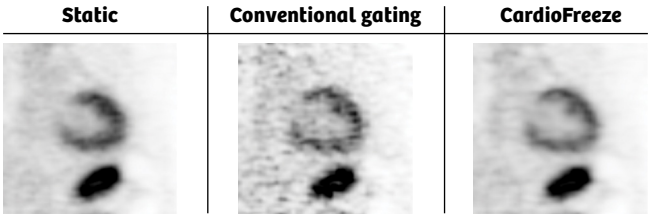
Improved visualization and definition

Reduced respiratory motion improves visualization of gated cardiac images. It provides better visualization of tracer distribution in the myocardium, reduction of the apparent thickness of the myocardium due to the motion blur, and improved definition of defects over non-respiratory, motion-corrected images.

Deviceless respiratory gating

Respiratory motion is conventionally corrected using an external device that measures the respiratory cycle. CardioFreeze does not require an external respiratory device and can obtain the respiratory waveform just by analyzing PET data.



Data courtesy of University of Michigan, Ann Arbor, Michigan, USA

Key benefits of CardioFreeze

- Minimizes both cardiac and respiratory motion, utilizing 100% of the information in each cardiac gate[1]
- Avoids poor image quality due to cardiac and respiratory motion
- Improves signal-to-noise ratio and image quality
- Does not require an external respiratory device
- Offers the possibility of research on vulnerable plaque

To learn more, contact your Siemens Healthineers sales representative.

The products/features mentioned herein are not commercially available in all countries. Their future availability cannot be guaranteed.

Reference:

1. Based on internal measurements at time of publication. Data on file.

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