

Protocol: adult\_chest\_Cardiac Function & Viability

**PATIENT POSITION**

Patient Entry *Feet First*  
 Patient Position *Supine*  
 Coil Configuration *GEM Body*  
 Plane *3-PLANE*  
 Series Description *3-Plane Localizer*

**SCAN TIMING**

Flip Angle *45*  
 TE *Min Full*  
 Number of Echoes *1*  
 Receiver Bandwidth *100.00*

**IMAGE ENHANCE**

Filter Choice *None*

**GATING/TRIGGER**

Auto Trigger Type *Off*

**FMRI**

PSD Trigger *Internal*  
 View Order *Bottom/Up*  
 # of Repetitions REST *0*  
 # of Repetitions ACTIVE *0*

**SAT**

Tag Type *None*

**TRICKS**

Pause On/Off *On*  
 Auto Subtract *0*  
 Auto SCIC *Off*

**IMAGING PARAMETERS**

Imaging Mode *2D*  
 Pulse Sequence *Fiesta*  
 Imaging Options *Seq, Fast*

**SCAN RANGE**

FOV *46.0*  
 Slice Thickness *8.0*  
 Slice Spacing *7.0*

**ACQ TIMING**

Freq *132*  
 Phase *128*  
 Freq DIR *Unswap*  
 NEX *1.00*  
 # of Acq. Before Pause *0*  
 Phase FOV *1.00*  
 Auto Shim *Auto*  
 Phase Correction *No*

**USER CVS**

User CV20 *1.00*

**MULTI-PHASE**

Seperate Series *0*  
 Mask Phase *0*  
 Mask Pause *0*

**DIFFUSION**

Recon All Images *On*

**CONTRAST**

Contrast Yes/No *No*

3-Plane Localizer

3-Plane Localizer

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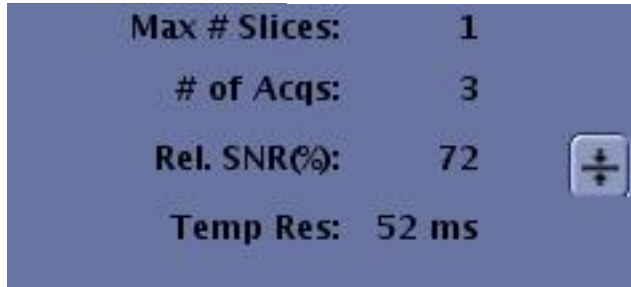
OTHERS

**Protocol Notes**

*Fiesta Cine Considerations:*

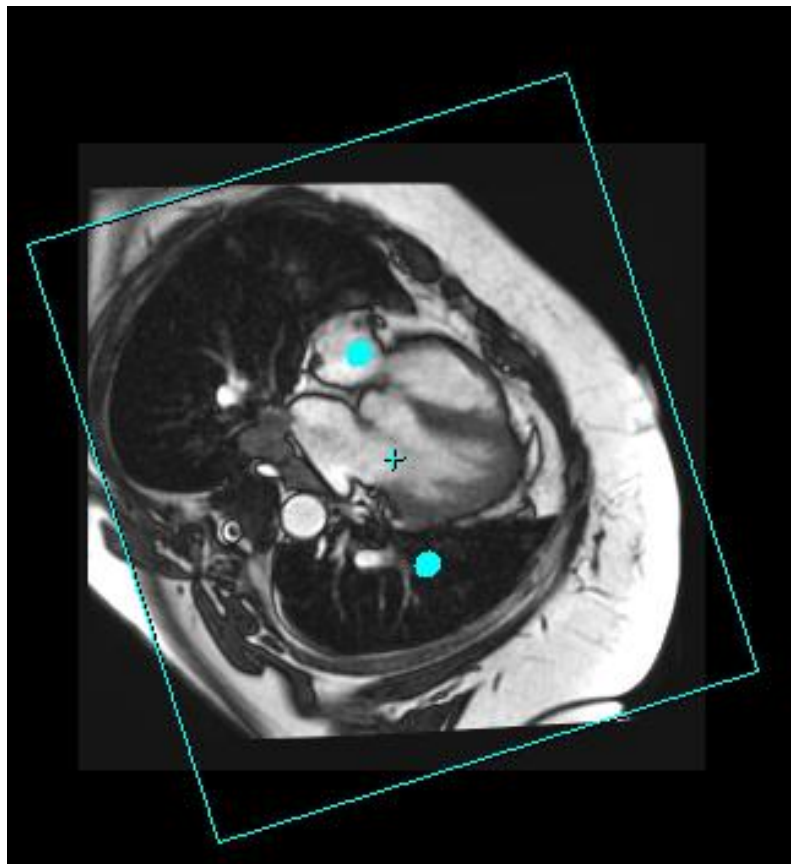
*-Make sure that Temp Res is around 50ms*

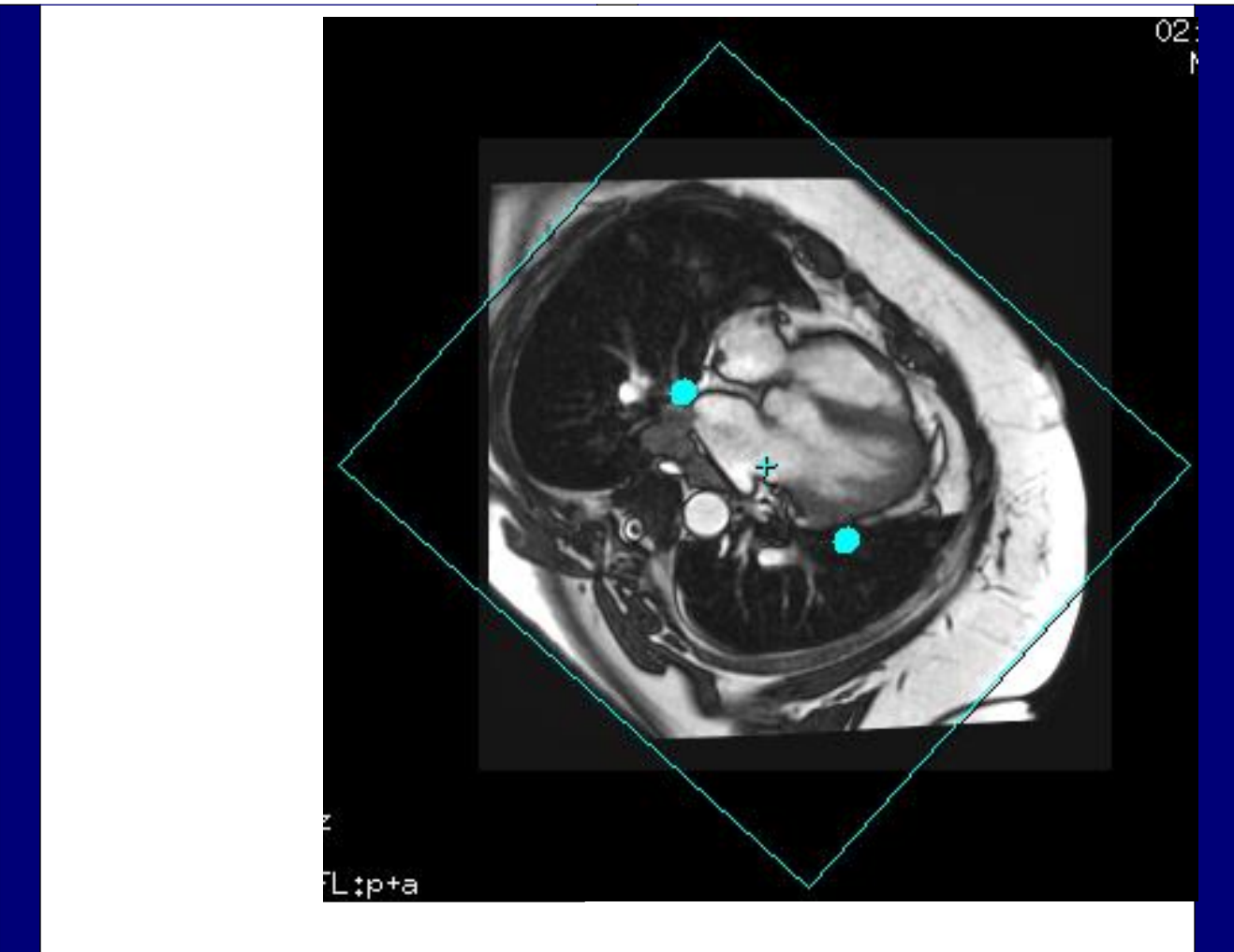
*. The higher the HR, the lower the value of Temp Res should be.*



<b>Max # Slices:</b>	<b>1</b>
<b># of Acqs:</b>	<b>3</b>
<b>Rel. SNR(%) :</b>	<b>72</b>
<b>Temp Res:</b>	<b>52 ms</b>

- To adjust the Temp Res, change VPS accordingly. Decreasing VPS will decrease Temp Res.*
- Keep TR under 4ms if possible. To adjust TR consider changing the rBW (range 62.5-125), Frequency Matrix, FOV, Slice Thickness, FA, TE Min*
- Verify CF Water as needed via auto prescan and manual prescan.*
- In case the image comes out rotated, Duplicate & Setup the series, then select the series from the Graphic Rx Toolbar to bring up the image you just scanned, zoom out to visualize the full FOV, and rotate the FOV box as shown below to orient the box parallel to the chest wall.*
- Wrong FOV rotation --*
- 
- Correct FOV rotation --*





Protocol: adult\_chest\_Cardiac Function & Viability

**PATIENT POSITION**

Patient Entry *Feet First*  
 Patient Position *Supine*  
 Coil Configuration *GEM Body*  
 Plane *AXIAL*  
 Series Description *Ax FIESTA ungated*

**SCAN TIMING**

Flip Angle *60*  
 TE *Min Full*  
 Number of Echoes *1*  
 Receiver Bandwidth *83.33*

**IMAGE ENHANCE**

Filter Choice *A*

**GATING/TRIGGER**

Auto Trigger Type *Off*

**FMRI**

PSD Trigger *Internal*  
 View Order *Bottom/Up*  
 # of Repetitions REST *0*  
 # of Repetitions ACTIVE *0*

**SAT**

Tag Type *None*

**TRICKS**

Pause On/Off *On*  
 Auto Subtract *0*  
 Auto SCIC *2*

**IMAGING PARAMETERS**

Imaging Mode *2D*  
 Pulse Sequence *Fiesta*  
 Imaging Options *Seq, EDR, Fast, ZIP512, Asset*

**SCAN RANGE**

FOV *32.0*  
 Slice Thickness *8.0*  
 Slice Spacing *0.0*

**ACQ TIMING**

Freq *132*  
 Phase *138*  
 Freq DIR *R/L*  
 NEX *1.00*  
 # of Acq. Before Pause *0*  
 Phase FOV *1.00*  
 Auto Shim *Auto*  
 Phase Correction *No*

**USER CVS**

User CV20 *1.00*

**MULTI-PHASE**

Seperate Series *0*  
 Mask Phase *0*  
 Mask Pause *0*

**DIFFUSION**

Optimized TE *Yes*  
 Recon All Images *On*

**CONTRAST**

Contrast Yes/No *No*

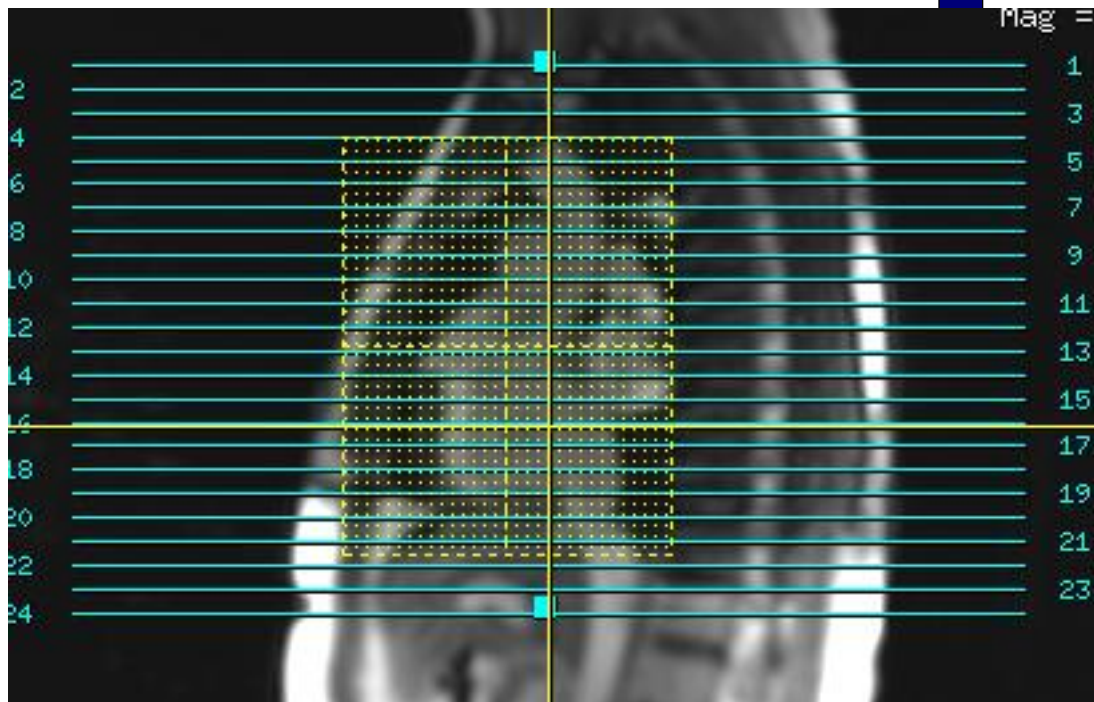
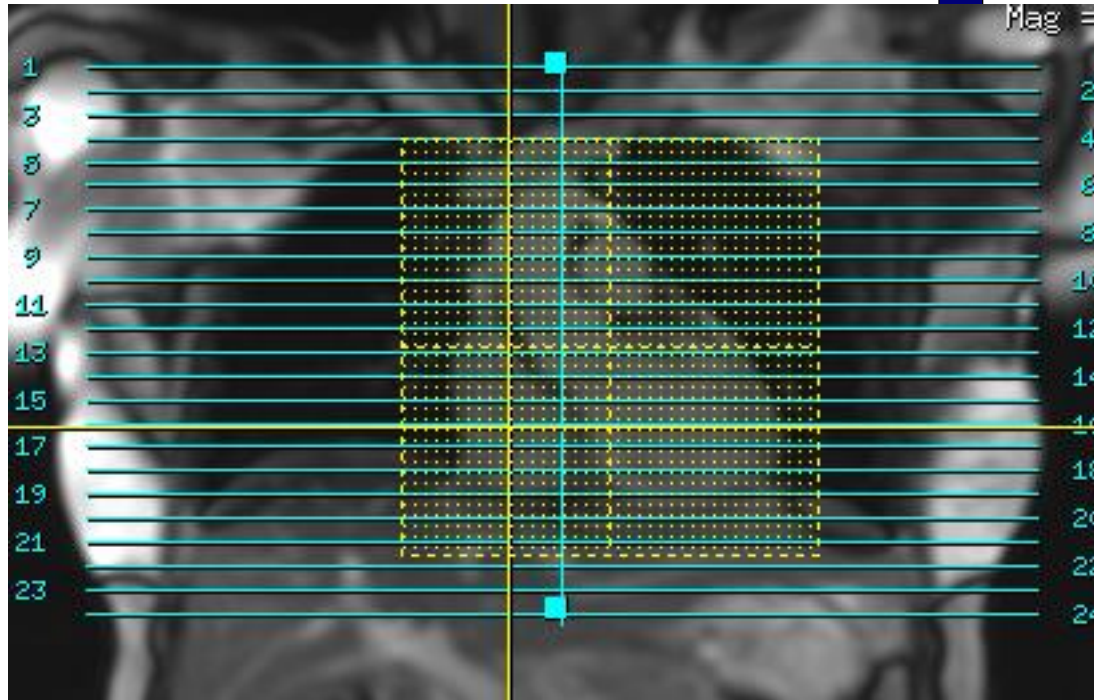
Ax FIESTA ungated

Ax FIESTA ungated

**OTHERS**

**Protocol Notes**

*Cover from above the arch to below the base of the heart.*



Protocol: adult\_chest\_Cardiac Function & Viability

**PATIENT POSITION**

Patient Entry *Feet First*  
 Patient Position *Supine*  
 Coil Configuration *GEM Body*  
 Plane *3-PLANE*  
 Series Description *\*\*\*Auto Cal OFF\*\*\**

**SCAN TIMING**

Flip Angle *45*  
 TE *Min Full*  
 Number of Echoes *1*  
 Receiver Bandwidth *100.00*

**IMAGE ENHANCE**

Filter Choice *None*

**GATING/TRIGGER**

Auto Trigger Type *Off*

**FMRI**

PSD Trigger *Internal*  
 View Order *Bottom/Up*  
 # of Repetitions REST *0*  
 # of Repetitions ACTIVE *0*

**SAT**

Tag Type *None*

**TRICKS**

Pause On/Off *On*  
 Auto Subtract *0*  
 Auto SCIC *Off*

**IMAGING PARAMETERS**

Imaging Mode *2D*  
 Pulse Sequence *Fiesta*  
 Imaging Options *Seq, Fast*

**SCAN RANGE**

FOV *46.0*  
 Slice Thickness *8.0*  
 Slice Spacing *7.0*

**ACQ TIMING**

Freq *132*  
 Phase *128*  
 Freq DIR *Unswap*  
 NEX *1.00*  
 # of Acq. Before Pause *0*  
 Phase FOV *1.00*  
 Auto Shim *Auto*  
 Phase Correction *No*

**USER CVS**

User CV20 *1.00*

**MULTI-PHASE**

Seperate Series *0*  
 Mask Phase *0*  
 Mask Pause *0*

**DIFFUSION**

Recon All Images *On*

**CONTRAST**

Contrast Yes/No *No*

\*\*\*Auto Cal OFF\*\*\*

\*\*\*Auto Cal OFF\*\*\*



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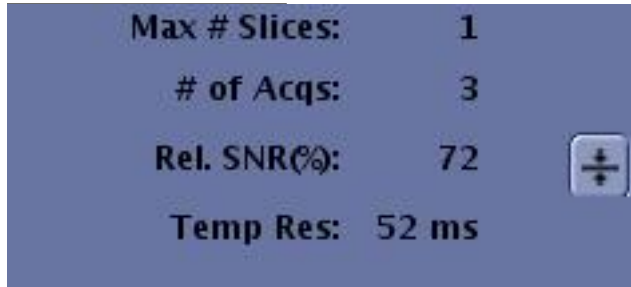
OTHERS

**Protocol Notes**

*Fiesta Cine Considerations:*

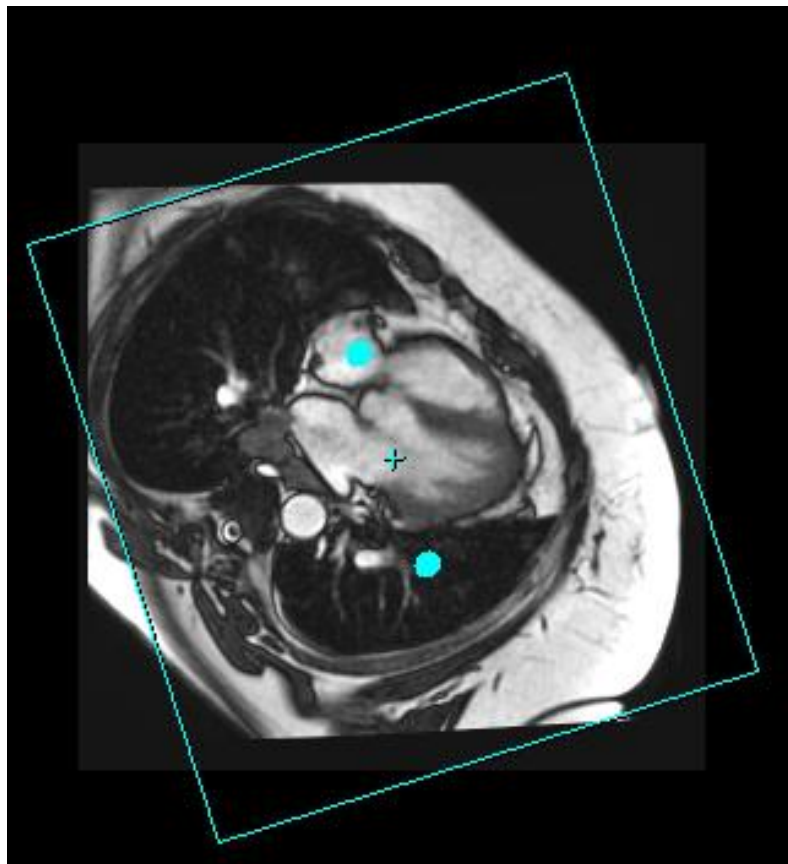
*-Make sure that Temp Res is around 50ms*

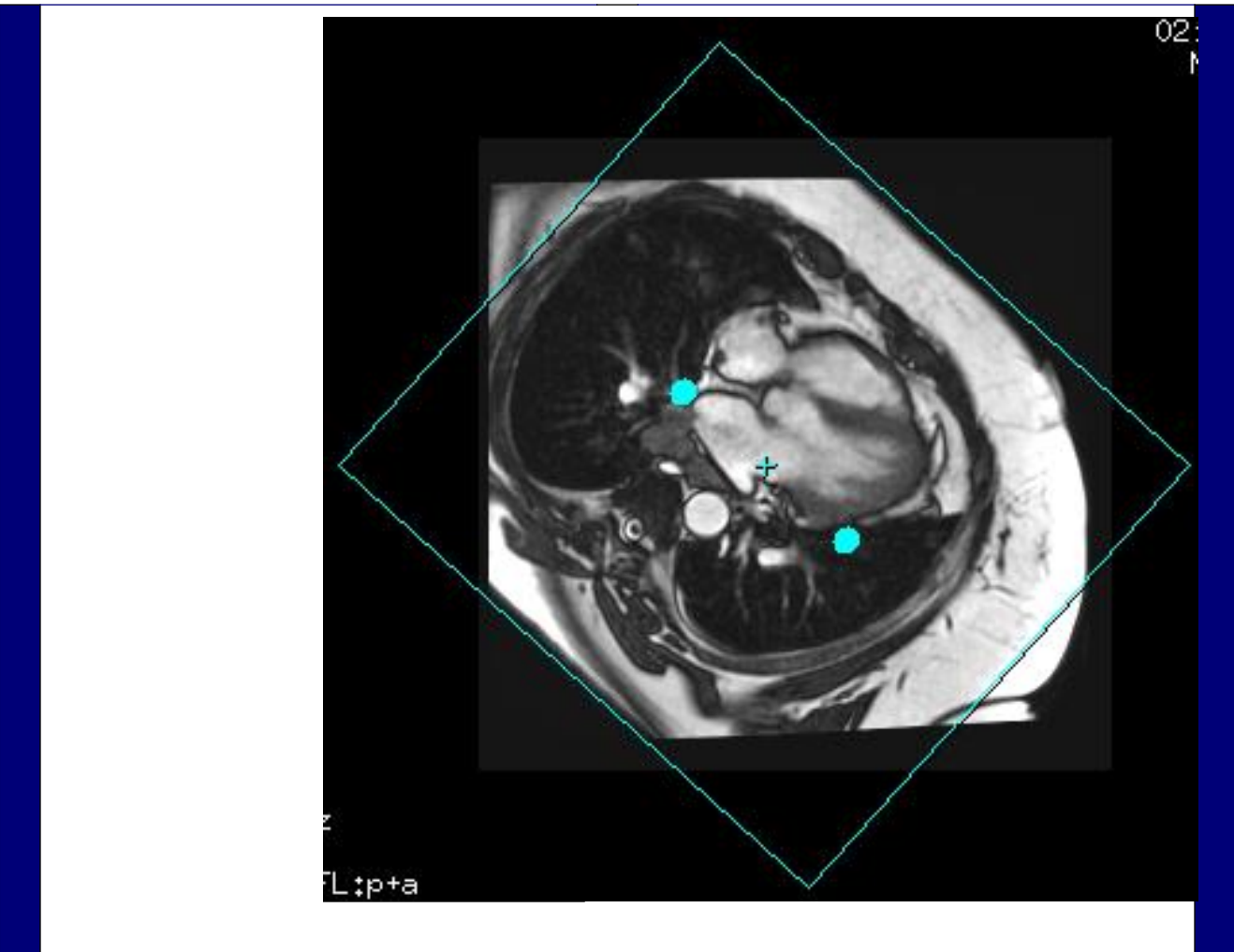
*. The higher the HR, the lower the value of Temp Res should be.*



Max # Slices:	1
# of Acqs:	3
Rel. SNR(%) :	72
Temp Res:	52 ms

- To adjust the Temp Res, change VPS accordingly. Decreasing VPS will decrease Temp Res.*
- Keep TR under 4ms if possible. To adjust TR consider changing the rBW (range 62.5-125), Frequency Matrix, FOV, Slice Thickness, FA, TE Min*
- Verify CF Water as needed via auto prescan and manual prescan.*
- In case the image comes out rotated, Duplicate & Setup the series, then select the series from the Graphic Rx Toolbar to bring up the image you just scanned, zoom out to visualize the full FOV, and rotate the FOV box as shown below to orient the box parallel to the chest wall.*
- Wrong FOV rotation --*
- 
- Correct FOV rotation --*





Protocol: adult\_chest\_Cardiac Function & Viability

<b>PATIENT POSITION</b>		<b>IMAGING PARAMETERS</b>	
Patient Entry	<i>Feet First</i>	Imaging Mode	<i>2D</i>
Patient Position	<i>Supine</i>	Pulse Sequence	<i>Spin Echo</i>
Coil Configuration	<i>GEM Body</i>	Imaging Options	<i>Gat, Seq, EDR, Fast, ZIP512, SS, BSP, Asset</i>
Plane	<i>OBLIQUE</i>	<b>SCAN RANGE</b>	
Series Description	<i>Ax SSFSE Black Blood</i>	FOV	<i>32.0</i>
<b>SCAN TIMING</b>		Slice Thickness	<i>8.0</i>
TE	<i>40.0</i>	Slice Spacing	<i>0.0</i>
Number of Echoes	<i>1</i>	<b>ACQ TIMING</b>	
Blood Suppression TI	<i>737</i>	Freq	<i>212</i>
Receiver Bandwidth	<i>83.33</i>	Phase	<i>160</i>
<b>IMAGE ENHANCE</b>		Freq DIR	<i>R/L</i>
Filter Choice	<i>A</i>	# of Acq. Before Pause	<i>9</i>
<b>GATING/TRIGGER</b>		Phase FOV	<i>1.00</i>
Auto Trigger Type	<i>On</i>	Auto Shim	<i>Auto</i>
Trigger Type	<i>0</i>	Phase Correction	<i>No</i>
Minimum Trigger Delay	<i>4</i>	<b>USER CVS</b>	
Cardiac Phase	<i>1</i>	User CV2	<i>240.00</i>
Cardiac Slices	<i>1</i>	User CV13	<i>1.00</i>
<b>FMRI</b>		<b>MULTI-PHASE</b>	
PSD Trigger	<i>Internal</i>	Seperate Series	<i>0</i>
View Order	<i>Bottom/Up</i>	Mask Phase	<i>0</i>
# of Repetitions REST	<i>0</i>	Mask Pause	<i>0</i>
# of Repetitions ACTIVE	<i>0</i>	<b>DIFFUSION</b>	
<b>SAT</b>		Recon All Images	<i>On</i>
Tag Type	<i>None</i>	<b>CONTRAST</b>	
<b>TRICKS</b>		Contrast Yes/No	<i>No</i>
# of RR Intervals	<i>3</i>		
Trigger Delay	<i>1674</i>		
Pause On/Off	<i>On</i>		
Auto Subtract	<i>0</i>		
Auto SCIC	<i>2</i>		

Ax SSFSE Black Blood

Ax SSFSE Black Blood

**OTHERS**

**Protocol Notes**

-Make sure that Trigger Delay is set to Diastolic from the pull down menu, as cardiac motion is reduced.  
-Increase RR interval if "error msg" pops up at the bottom of the screen. This will allow you to use Diastolic TD.



Linked to the AX Fiesta, cover from arch to base of heart.  
To determine Locs Before Pause:  
Total Number of Slices / Desired Number of Breath Holds = Locs Before Pause  
(Always round up)  
 $27/3=9$



(This gives 3 breath holds)

Protocol: adult\_chest\_Cardiac Function & Viability

**PATIENT POSITION**

Patient Entry *Feet First*  
 Patient Position *Supine*  
 Coil Configuration *GEM Body*  
 Plane *CORONAL*  
 Series Description *Cor FIESTA ungated*

**SCAN TIMING**

Flip Angle *60*  
 TE *Min Full*  
 Number of Echoes *1*  
 Receiver Bandwidth *83.33*

**IMAGE ENHANCE**

Filter Choice *A*

**GATING/TRIGGER**

Auto Trigger Type *Off*

**FMRI**

PSD Trigger *Internal*  
 View Order *Bottom/Up*  
 # of Repetitions REST *0*  
 # of Repetitions ACTIVE *0*

**SAT**

Tag Type *None*

**TRICKS**

Pause On/Off *On*  
 Auto Subtract *0*  
 Auto SCIC *2*

**IMAGING PARAMETERS**

Imaging Mode *2D*  
 Pulse Sequence *Fiesta*  
 Imaging Options *Seq, EDR, Fast, ZIP512, Asset*

**SCAN RANGE**

FOV *36.0*  
 Slice Thickness *8.0*  
 Slice Spacing *0.0*

**ACQ TIMING**

Freq *132*  
 Phase *138*  
 Freq DIR *S/I*  
 NEX *1.00*  
 # of Acq. Before Pause *0*  
 Phase FOV *1.00*  
 Auto Shim *Auto*  
 Phase Correction *No*

**USER CVS**

User CV20 *1.00*

**MULTI-PHASE**

Seperate Series *0*  
 Mask Phase *0*  
 Mask Pause *0*

**DIFFUSION**

Optimized TE *Yes*  
 Recon All Images *On*

**CONTRAST**

Contrast Yes/No *No*

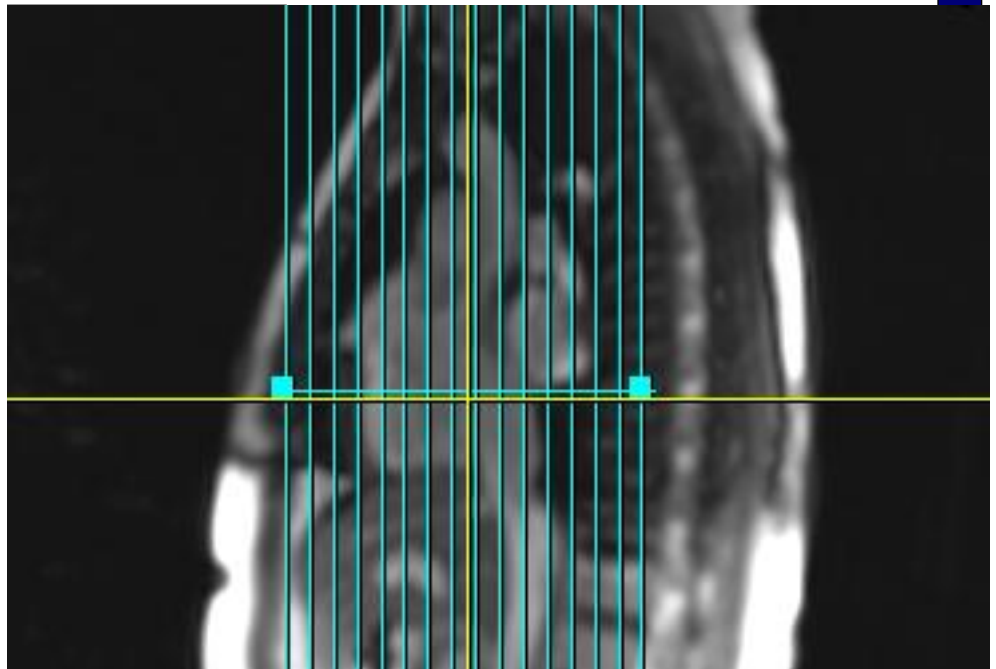
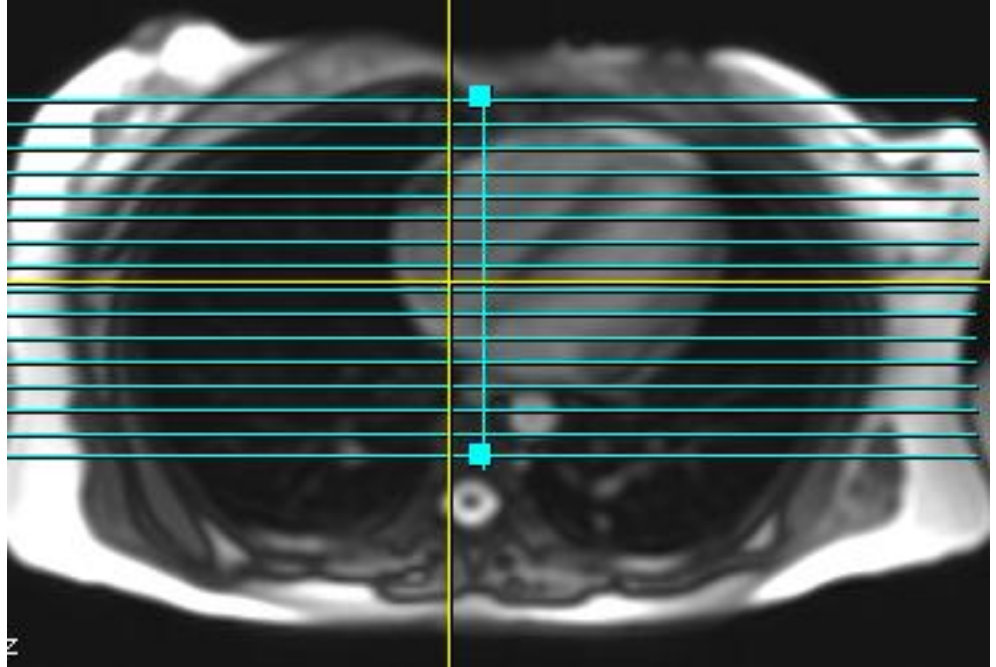
Cor FIESTA ungated

Cor FIESTA ungated

**OTHERS**

**Protocol Notes**

*Cover from back of aorta to front of heart (Don't forget your shim!!)*





Protocol: adult\_chest\_Cardiac Function & Viability

PATIENT POSITION		IMAGING PARAMETERS	
Patient Entry	<i>Feet First</i>	Imaging Mode	<i>2D</i>
Patient Position	<i>Supine</i>	Pulse Sequence	<i>Fiesta</i>
Coil Configuration	<i>GEM Body</i>	Imaging Options	<i>Gat, Seq, EDR, Fast, ZIP512, Asset</i>
Plane	<i>OBLIQUE</i>	<b>SCAN RANGE</b>	
Series Description	<i>RVOT FIESTA CINE</i>	FOV	<i>32.0</i>
<b>SCAN TIMING</b>		Slice Thickness	<i>8.0</i>
Flip Angle	<i>55</i>	Slice Spacing	<i>0.0</i>
TE	<i>Min Full</i>	<b>ACQ TIMING</b>	
Number of Echoes	<i>1</i>	Freq	<i>200</i>
Receiver Bandwidth	<i>62.50</i>	Phase	<i>200</i>
<b>IMAGE ENHANCE</b>		Freq DIR	<i>Unswap</i>
Filter Choice	<i>A</i>	NEX	<i>1.00</i>
<b>GATING/TRIGGER</b>		Phase FOV	<i>1.00</i>
Auto Trigger Type	<i>On</i>	Auto Shim	<i>Auto</i>
Trigger Type	<i>0</i>	Phase Correction	<i>No</i>
Views per Segment	<i>12</i>	<b>USER CVS</b>	
<b>FMRI</b>		User CV20	<i>1.00</i>
PSD Trigger	<i>Internal</i>	<b>MULTI-PHASE</b>	
View Order	<i>Bottom/Up</i>	Seperate Series	<i>0</i>
# of Repetitions REST	<i>0</i>	Mask Phase	<i>0</i>
# of Repetitions ACTIVE	<i>0</i>	Mask Pause	<i>0</i>
<b>SAT</b>		<b>DIFFUSION</b>	
Tag Type	<i>None</i>	Recon All Images	<i>On</i>
<b>TRICKS</b>		<b>CINE</b>	
Pause On/Off	<i>On</i>	# of Cardiac Phases to Reconstruct	<i>30</i>
Auto Subtract	<i>0</i>		
Auto SCIC	<i>2</i>		
<b>CONTRAST</b>			
Contrast Yes/No	<i>No</i>		

RVOT FIESTA CINE

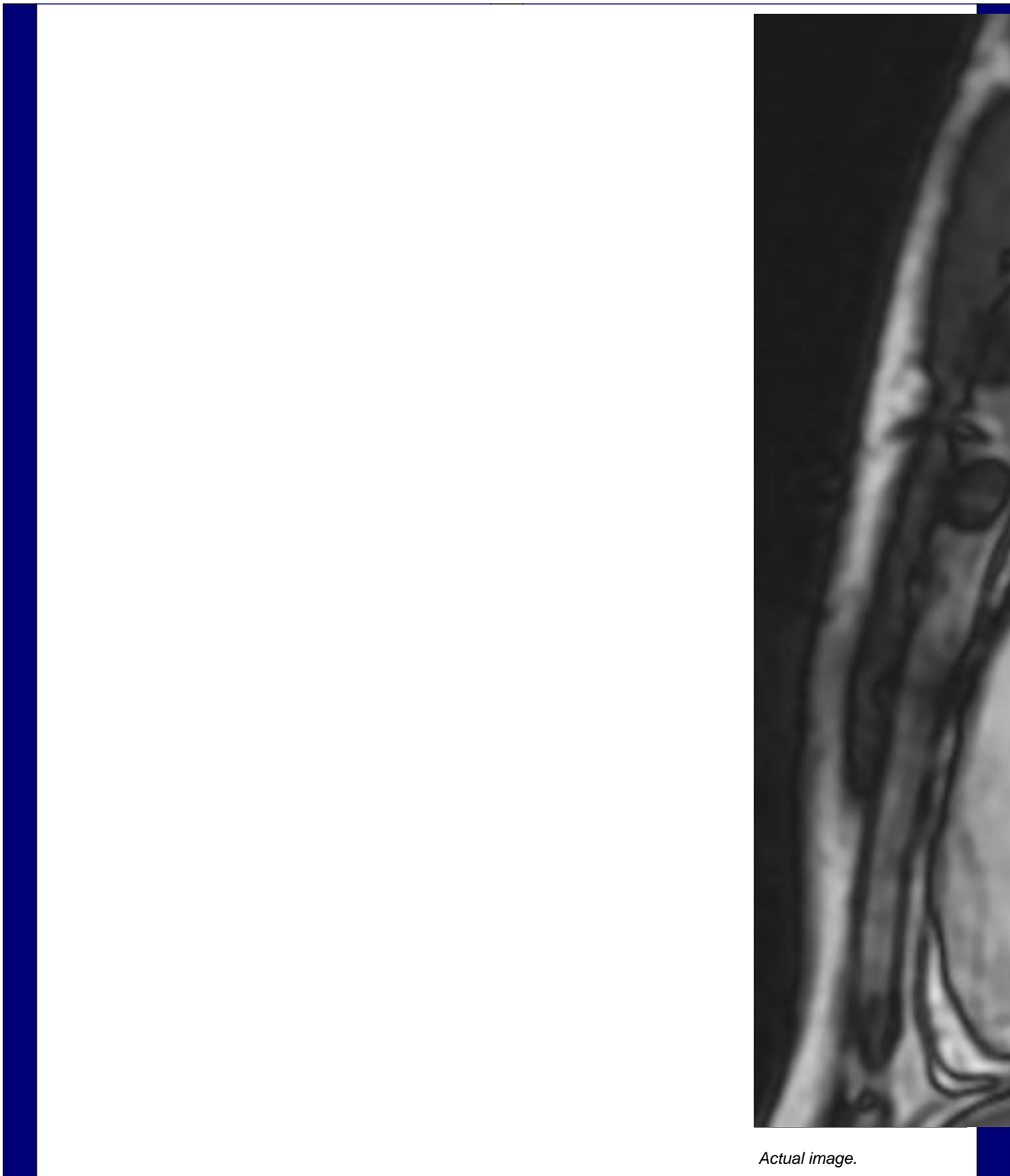
RVOT FIESTA CINE

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OTHERS







*Actual image.*

Protocol: adult\_chest\_Cardiac Function & Viability

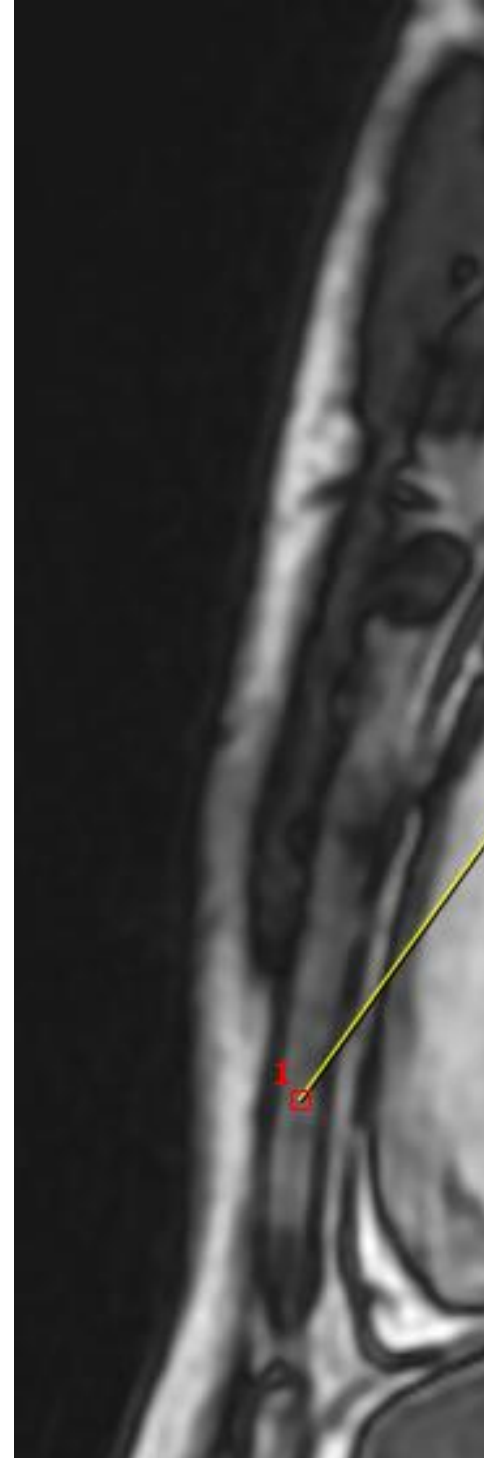
RVOT2 FIESTA CINE	<b>PATIENT POSITION</b>		<b>IMAGING PARAMETERS</b>	
	Patient Entry	<i>Feet First</i>	Imaging Mode	<i>2D</i>
	Patient Position	<i>Supine</i>	Pulse Sequence	<i>Fiesta</i>
	Coil Configuration	<i>GEM Body</i>	Imaging Options	<i>Gat, Seq, EDR, Fast, ZIP512, Asset</i>
	Plane	<i>OBLIQUE</i>	<b>SCAN RANGE</b>	
	Series Description	<i>RVOT2 FIESTA CINE</i>	FOV	<i>32.0</i>
	<b>SCAN TIMING</b>		Slice Thickness	<i>8.0</i>
	Flip Angle	<i>55</i>	Slice Spacing	<i>0.0</i>
	TE	<i>Min Full</i>	<b>ACQ TIMING</b>	
	Number of Echoes	<i>1</i>	Freq	<i>200</i>
	Receiver Bandwidth	<i>83.33</i>	Phase	<i>200</i>
	<b>IMAGE ENHANCE</b>		Freq DIR	<i>Unswap</i>
	Filter Choice	<i>A</i>	NEX	<i>1.00</i>
	<b>GATING/TRIGGER</b>		Phase FOV	<i>1.00</i>
	Auto Trigger Type	<i>On</i>	Auto Shim	<i>Auto</i>
	Trigger Type	<i>0</i>	Phase Correction	<i>No</i>
	Views per Segment	<i>12</i>	<b>USER CVS</b>	
	<b>FMRI</b>		User CV20	<i>1.00</i>
	PSD Trigger	<i>Internal</i>	<b>MULTI-PHASE</b>	
	View Order	<i>Bottom/Up</i>	Seperate Series	<i>0</i>
	# of Repetitions REST	<i>0</i>	Mask Phase	<i>0</i>
	# of Repetitions ACTIVE	<i>0</i>	Mask Pause	<i>0</i>
	<b>SAT</b>		<b>DIFFUSION</b>	
	Tag Type	<i>None</i>	Recon All Images	<i>On</i>
	<b>TRICKS</b>		<b>CINE</b>	
Pause On/Off	<i>On</i>	# of Cardiac Phases to Reconstruct	<i>30</i>	
Auto Subtract	<i>0</i>			
Auto SCIC	<i>2</i>			
<b>CONTRAST</b>				
Contrast Yes/No	<i>No</i>			

RVOT2 FIESTA CINE

**OTHERS**

Protocol Notes

*Drop RVOT cine.*



Protocol: adult\_chest\_Cardiac Function & Viability

PATIENT POSITION	
Patient Entry	Feet First
Patient Position	Supine
Coil Configuration	GEM Body
Plane	OBLIQUE
Series Description	2ch Loc FIESTA CINE

SCAN TIMING	
Flip Angle	55
TE	Min Full
Number of Echoes	1
Receiver Bandwidth	62.50

IMAGE ENHANCE	
Filter Choice	A

GATING/TRIGGER	
Auto Trigger Type	On
Trigger Type	0
Views per Segment	12

FMRI	
PSD Trigger	Internal
Slice Order	Interleaved
View Order	Bottom/Up
# of Repetitions REST	0
# of Repetitions ACTIVE	0

SAT	
Tag Type	None

TRICKS	
Pause On/Off	On
Auto Subtract	0
Auto SCIC	2

CONTRAST	
Contrast Yes/No	No

IMAGING PARAMETERS	
Imaging Mode	2D
Pulse Sequence	Fiesta
Imaging Options	Gat, Seq, EDR, Fast, ZIP512, Asset

SCAN RANGE	
FOV	32.0
Slice Thickness	8.0
Slice Spacing	0.0

ACQ TIMING	
Freq	200
Phase	200
Freq DIR	Unswap
NEX	1.00
Phase FOV	1.00
Auto Shim	Auto
Phase Correction	No

USER CVS	
User CV20	1.00

MULTI-PHASE	
Seperate Series	0
Mask Phase	0
Mask Pause	0

DIFFUSION	
Recon All Images	On

CINE	
# of Cardiac Phases to Reconstruct	30

2ch Loc FIESTA CINE

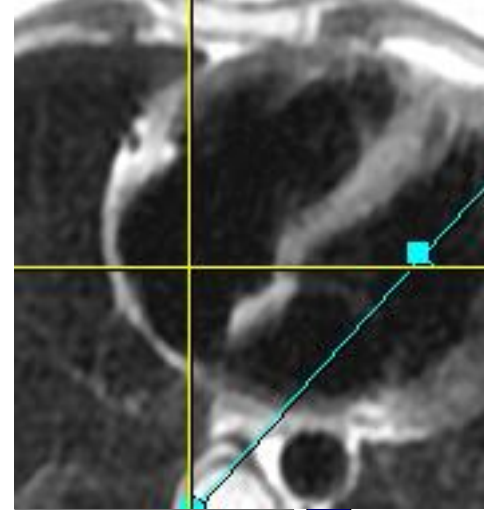
2ch Loc FIESTA CINE



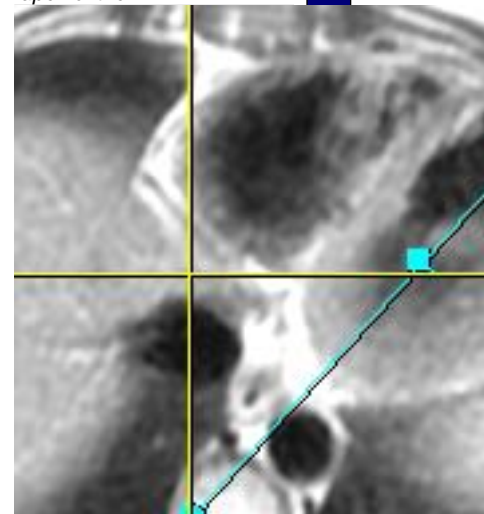
**OTHERS**

**Protocol Notes**

*Load in Axial:  
Setup a slice that is  
perpendicular to the MV  
(Mitral Valve) and runs  
through the apex of the LV  
(Left Ventricle)*



*Scroll inferior to find the true  
apex of the LV*



Protocol: adult\_chest\_Cardiac Function & Viability

PATIENT POSITION	
Patient Entry	Feet First
Patient Position	Supine
Coil Configuration	GEM Body
Plane	OBLIQUE
Series Description	SAXs LOC FIESTA ungated

SCAN TIMING	
Flip Angle	60
TE	Min Full
Number of Echoes	1
Receiver Bandwidth	83.33

IMAGE ENHANCE	
Filter Choice	A

GATING/TRIGGER	
Auto Trigger Type	Off

FMRI	
PSD Trigger	Internal
View Order	Bottom/Up
# of Repetitions REST	0
# of Repetitions ACTIVE	0

SAT	
Tag Type	None

TRICKS	
Pause On/Off	On
Auto Subtract	0
Auto SCIC	2

IMAGING PARAMETERS	
Imaging Mode	2D
Pulse Sequence	Fiesta
Imaging Options	Seq, EDR, Fast, ZIP512, Asset

SCAN RANGE	
FOV	32.0
Slice Thickness	8.0
Slice Spacing	0.0

ACQ TIMING	
Freq	132
Phase	138
Freq DIR	S/I
NEX	1.00
# of Acq. Before Pause	0
Phase FOV	0.90
Auto Shim	Auto
Phase Correction	No

USER CVS	
User CV20	1.00

MULTI-PHASE	
Seperate Series	0
Mask Phase	0
Mask Pause	0

DIFFUSION	
Optimized TE	Yes
Recon All Images	On

CONTRAST	
Contrast Yes/No	No

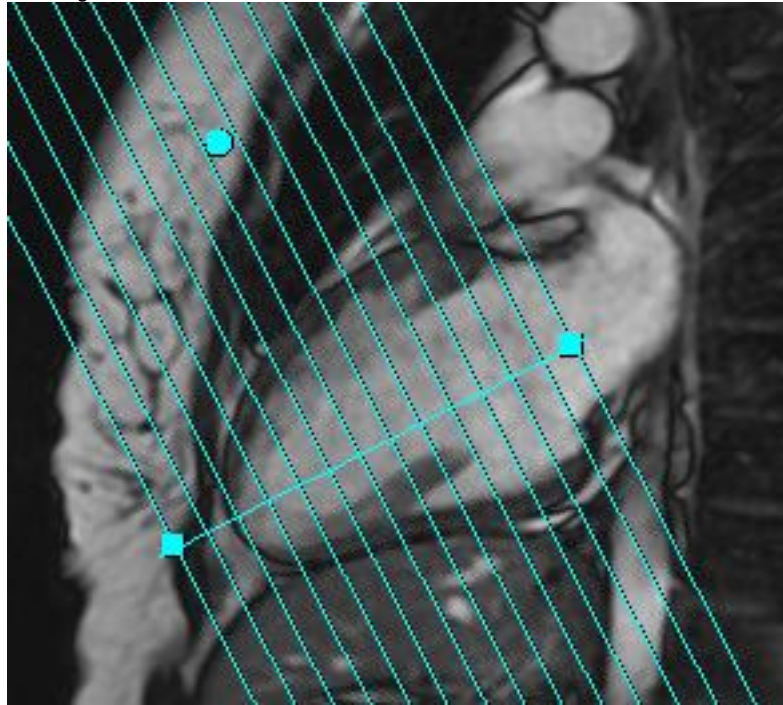
SAXs LOC FIESTA ungated

SAXs LOC FIESTA ungated

**OTHERS**

**Protocol Notes**

*Load in the 2ch LOC:  
Setup a slice on the 2ch loc  
that runs parallel to the MV  
and goes through the apex.  
Remember to setup your  
angle then adjust the slice.  
Don't forget to shim!  
Scan from base to apex.  
This is a loc to check for  
coverage and artifacts.*



Protocol: adult\_chest\_Cardiac Function & Viability

**PATIENT POSITION**

Patient Entry *Feet First*  
 Patient Position *Supine*  
 Coil Configuration *GEM Body*  
 Plane *OBLIQUE*  
 Series Description *SAXs FIESTA CINE*

**SCAN TIMING**

Flip Angle *55*  
 TE *Min Full*  
 Number of Echoes *1*  
 Receiver Bandwidth *83.33*

**IMAGE ENHANCE**

Filter Choice *A*

**GATING/TRIGGER**

Auto Trigger Type *On*  
 Trigger Type *0*  
 Views per Segment *12*

**FMRI**

PSD Trigger *Internal*  
 View Order *Bottom/Up*  
 # of Repetitions REST *0*  
 # of Repetitions ACTIVE *0*

**SAT**

Tag Type *None*

**TRICKS**

Pause On/Off *On*  
 Auto Subtract *0*  
 Auto SCIC *2*

**CONTRAST**

Contrast Yes/No *No*

**IMAGING PARAMETERS**

Imaging Mode *2D*  
 Pulse Sequence *Fiesta*  
 Imaging Options *Gat, Seq, EDR, Fast, ZIP512, Asset*

**SCAN RANGE**

FOV *32.0*  
 Slice Thickness *8.0*  
 Slice Spacing *0.0*

**ACQ TIMING**

Freq *200*  
 Phase *200*  
 Freq DIR *S/I*  
 NEX *1.00*  
 # of Acq. Before Pause *2*  
 Phase FOV *0.90*  
 Auto Shim *Auto*  
 Phase Correction *No*

**USER CVS**

User CV20 *1.00*

**MULTI-PHASE**

Seperate Series *0*  
 Mask Phase *0*  
 Mask Pause *0*

**DIFFUSION**

Recon All Images *On*

**CINE**

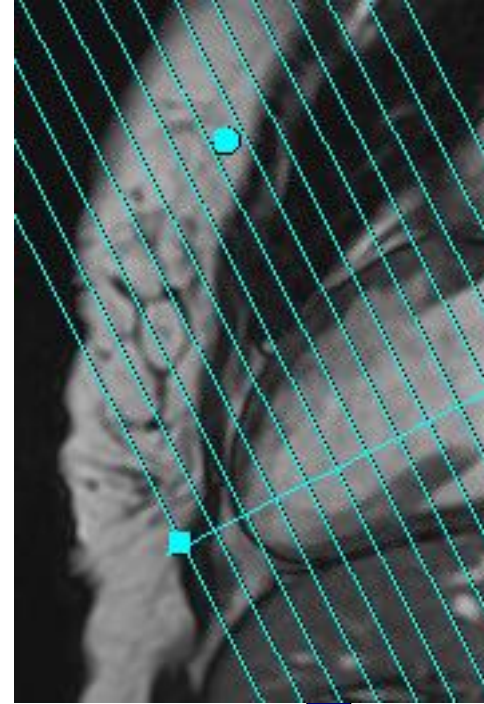
# of Cardiac Phases to Reconstruct *30*

SAXs FIESTA CINE

SAXs FIESTA CINE

**OTHERS**

**Protocol Notes**



*This sequence is linked the the SAXs LOC. Check the loc for artifacts and coverage. Verify that TR and Temp res are acceptable, set Locs Before Pause, auto and manual prescan to verify CF water.*

Protocol: adult\_chest\_Cardiac Function & Viability

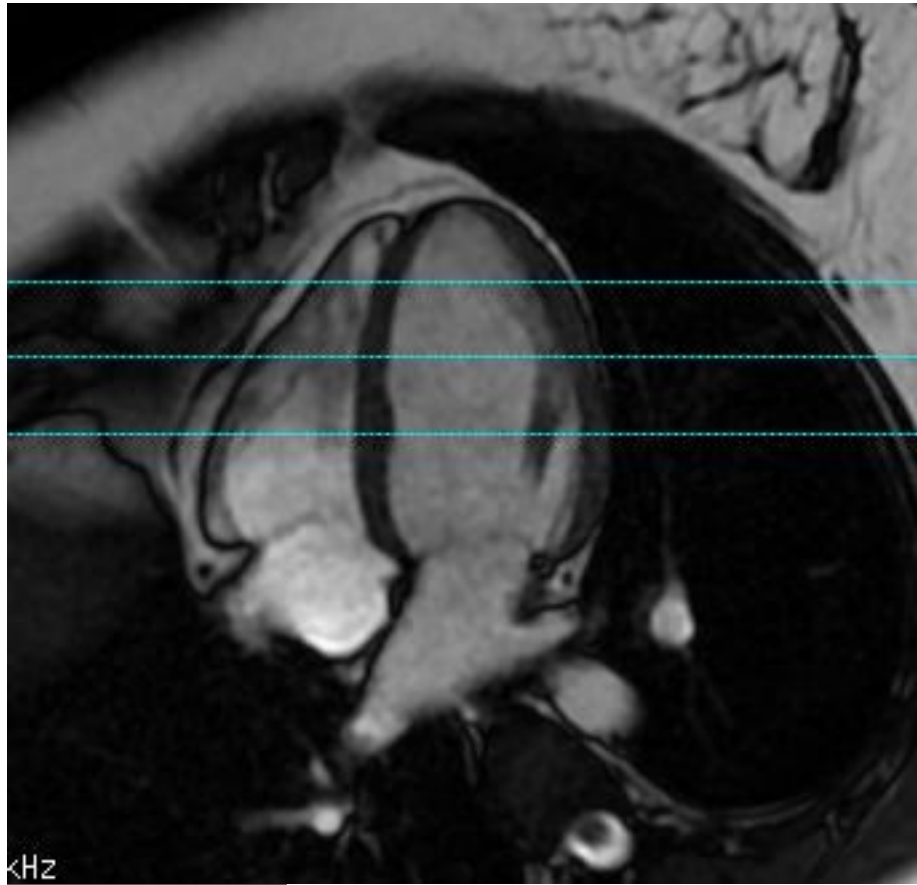
PATIENT POSITION		IMAGING PARAMETERS	
Patient Entry	<i>Feet First</i>	Imaging Mode	<i>2D</i>
Patient Position	<i>Supine</i>	Pulse Sequence	<i>FSE-XL</i>
Coil Configuration	<i>GEM Body</i>	Imaging Options	<i>Gat, Seq, EDR, Fast, ZIP512, BSP, Asset</i>
Plane	<i>OBLIQUE</i>	<b>SCAN RANGE</b>	
Series Description	<i>SAXs T2 DIR FS</i>	FOV	<i>32.0</i>
<b>SCAN TIMING</b>		Slice Thickness	<i>10.0</i>
Flip Angle	<i>155</i>	Slice Spacing	<i>15.0</i>
TE	<i>54.0</i>	<b>ACQ TIMING</b>	
Number of Echoes	<i>1</i>	Freq	<i>224</i>
TI	<i>138</i>	Phase	<i>192</i>
Echo Train Length	<i>24</i>	Freq DIR	<i>S/I</i>
Blood Suppression TI	<i>624</i>	Fat Shift DIR	<i>Normal (I)</i>
Receiver Bandwidth	<i>41.67</i>	NEX	<i>1.00</i>
<b>IMAGE ENHANCE</b>		# of Acq. Before Pause	<i>1</i>
Filter Choice	<i>A</i>	Phase FOV	<i>1.00</i>
<b>GATING/TRIGGER</b>		Auto Shim	<i>Auto</i>
Auto Trigger Type	<i>On</i>	Phase Correction	<i>No</i>
Trigger Type	<i>0</i>	<b>USER CVS</b>	
Minimum Trigger Delay	<i>2</i>	User CV14	<i>1.50</i>
Cardiac Phase	<i>1</i>	User CV19	<i>1.00</i>
Cardiac Slices	<i>1</i>	User CV22	<i>1.00</i>
<b>FMRI</b>		<b>MULTI-PHASE</b>	
PSD Trigger	<i>Internal</i>	Seperate Series	<i>0</i>
View Order	<i>Bottom/Up</i>	Mask Phase	<i>0</i>
# of Repetitions REST	<i>0</i>	Mask Pause	<i>0</i>
# of Repetitions ACTIVE	<i>0</i>	<b>DIFFUSION</b>	
<b>SAT</b>		Recon All Images	<i>On</i>
Tag Type	<i>None</i>	<b>CONTRAST</b>	
Fat/Water Saturation	<i>Fat Special</i>	Contrast Yes/No	<i>No</i>
<b>TRICKS</b>			
# of RR Intervals	<i>2</i>		
Trigger Delay	<i>635</i>		
Pause On/Off	<i>On</i>		
Auto Subtract	<i>0</i>		
Auto SCIC	<i>2</i>		

SAXs T2 DIR FS

SAXs T2 DIR FS

**OTHERS**

**Protocol Notes**



*3 SAX slices to cover Base,  
Mid, Apex  
Auto Prescan and verify CF  
water.*

Protocol: adult\_chest\_Cardiac Function & Viability

**PATIENT POSITION**

Patient Entry *Feet First*  
 Patient Position *Supine*  
 Coil Configuration *GEM Body*  
 Plane *OBLIQUE*  
 Series Description *3ch FIESTA CINE*

**SCAN TIMING**

Flip Angle *60*  
 TE *Min Full*  
 Number of Echoes *1*  
 Receiver Bandwidth *83.33*

**IMAGE ENHANCE**

Filter Choice *A*

**GATING/TRIGGER**

Auto Trigger Type *On*  
 Trigger Type *0*  
 Views per Segment *12*

**FMRI**

PSD Trigger *Internal*  
 View Order *Bottom/Up*  
 # of Repetitions REST *0*  
 # of Repetitions ACTIVE *0*

**SAT**

Tag Type *None*

**TRICKS**

Pause On/Off *On*  
 Auto Subtract *0*  
 Auto SCIC *2*

**CONTRAST**

Contrast Yes/No *No*

**IMAGING PARAMETERS**

Imaging Mode *2D*  
 Pulse Sequence *Fiesta*  
 Imaging Options *Gat, Seq, EDR, Fast, ZIP512, Asset*

**SCAN RANGE**

FOV *32.0*  
 Slice Thickness *8.0*  
 Slice Spacing *0.0*

**ACQ TIMING**

Freq *200*  
 Phase *200*  
 Freq DIR *Unswap*  
 NEX *1.00*  
 Phase FOV *1.00*  
 Auto Shim *Auto*  
 Phase Correction *No*

**USER CVS**

User CV20 *1.00*

**MULTI-PHASE**

Seperate Series *0*  
 Mask Phase *0*  
 Mask Pause *0*

**DIFFUSION**

Recon All Images *On*

**CINE**

# of Cardiac Phases to Reconstruct *30*

3ch FIESTA CINE

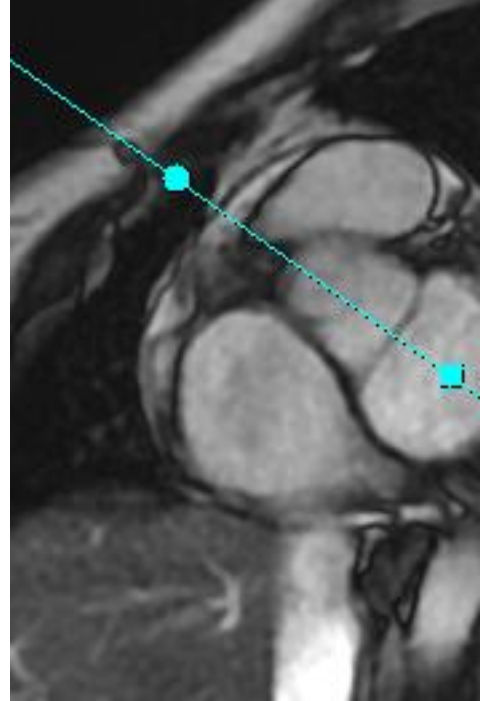
3ch FIESTA CINE



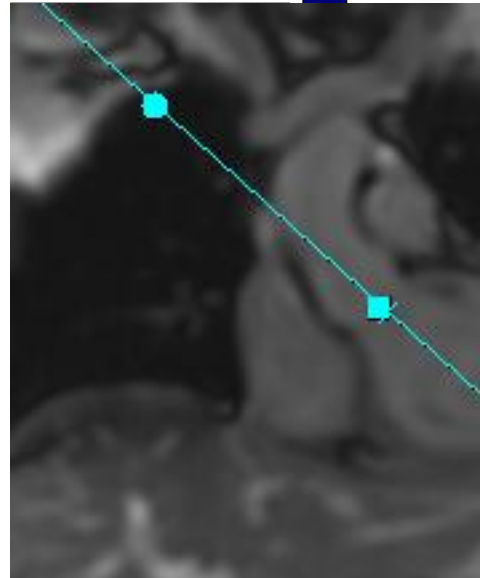
**OTHERS**

Protocol Notes

*Load in SAX Fiesta Stack.*



*Find "snow man". Cut in half. Verify position on coronal*



Protocol: adult\_chest\_Cardiac Function & Viability

PATIENT POSITION	
Patient Entry	Feet First
Patient Position	Supine
Coil Configuration	GEM Body
Plane	OBLIQUE
Series Description	4ch FIESTA CINE

SCAN TIMING	
Flip Angle	60
TE	Min Full
Number of Echoes	1
Receiver Bandwidth	83.33

IMAGE ENHANCE	
Filter Choice	A

GATING/TRIGGER	
Auto Trigger Type	On
Trigger Type	0
Views per Segment	12

FMRI	
PSD Trigger	Internal
View Order	Bottom/Up
# of Repetitions REST	0
# of Repetitions ACTIVE	0

SAT	
Tag Type	None

TRICKS	
Pause On/Off	On
Auto Subtract	0
Auto SCIC	2

CONTRAST	
Contrast Yes/No	No

IMAGING PARAMETERS	
Imaging Mode	2D
Pulse Sequence	Fiesta
Imaging Options	Gat, Seq, EDR, Fast, ZIP512, Asset

SCAN RANGE	
FOV	32.0
Slice Thickness	8.0
Slice Spacing	0.0

ACQ TIMING	
Freq	200
Phase	200
Freq DIR	Unswap
NEX	1.00
Phase FOV	1.00
Auto Shim	Auto
Phase Correction	No

USER CVS	
User CV20	1.00

MULTI-PHASE	
Seperate Series	0
Mask Phase	0
Mask Pause	0

DIFFUSION	
Recon All Images	On

CINE	
# of Cardiac Phases to Reconstruct	30

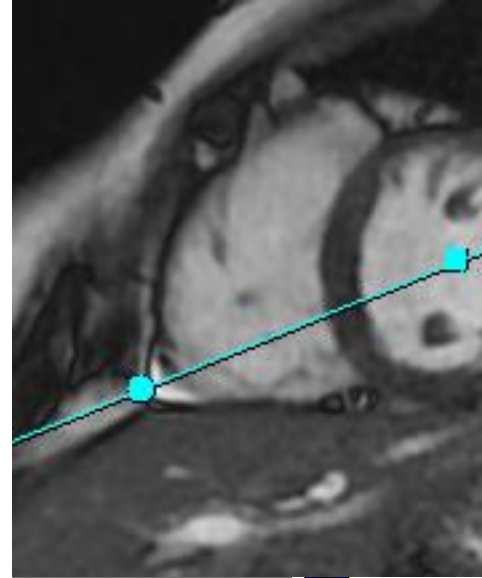
4ch FIESTA CINE

4ch FIESTA CINE

**OTHERS**

Protocol Notes

*Load SAX stack.*



*For ARVD or a MASS do a  
4 CH stack  
Find mid SAX LV view -drop  
slice in middle of LV. Angle  
slice through apex of RV.*

Protocol: adult\_chest\_Cardiac Function & Viability

PATIENT POSITION	
Patient Entry	Feet First
Patient Position	Supine
Coil Configuration	GEM Body
Plane	OBLIQUE
Series Description	2ch FIESTA CINE

SCAN TIMING	
Flip Angle	60
TE	Min Full
Number of Echoes	1
Receiver Bandwidth	83.33

IMAGE ENHANCE	
Filter Choice	A

GATING/TRIGGER	
Auto Trigger Type	On
Trigger Type	0
Views per Segment	12

FMRI	
PSD Trigger	Internal
View Order	Bottom/Up
# of Repetitions REST	0
# of Repetitions ACTIVE	0

SAT	
Tag Type	None

TRICKS	
Pause On/Off	On
Auto Subtract	0
Auto SCIC	2

CONTRAST	
Contrast Yes/No	No

IMAGING PARAMETERS	
Imaging Mode	2D
Pulse Sequence	Fiesta
Imaging Options	Gat, Seq, EDR, Fast, ZIP512, Asset

SCAN RANGE	
FOV	32.0
Slice Thickness	8.0
Slice Spacing	0.0

ACQ TIMING	
Freq	200
Phase	200
Freq DIR	Unswap
NEX	1.00
Phase FOV	1.00
Auto Shim	Auto
Phase Correction	No

USER CVS	
User CV20	1.00

MULTI-PHASE	
Seperate Series	0
Mask Phase	0
Mask Pause	0

DIFFUSION	
Recon All Images	On

CINE	
# of Cardiac Phases to Reconstruct	30

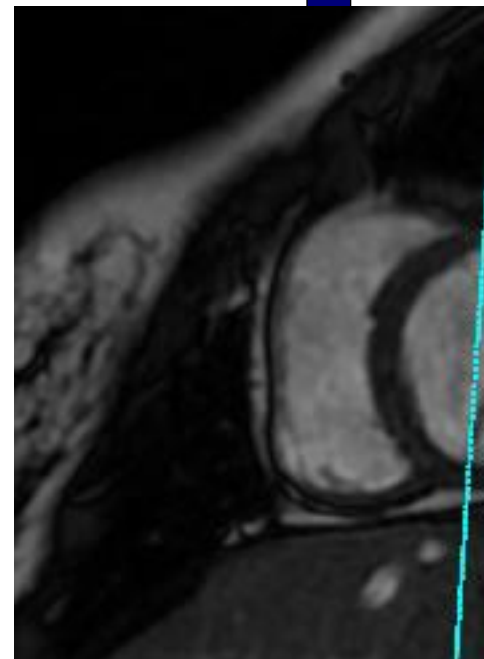
2ch FIESTA CINE

2ch FIESTA CINE

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OTHERS

Protocol Notes



*IMPORTANT TIPS:*

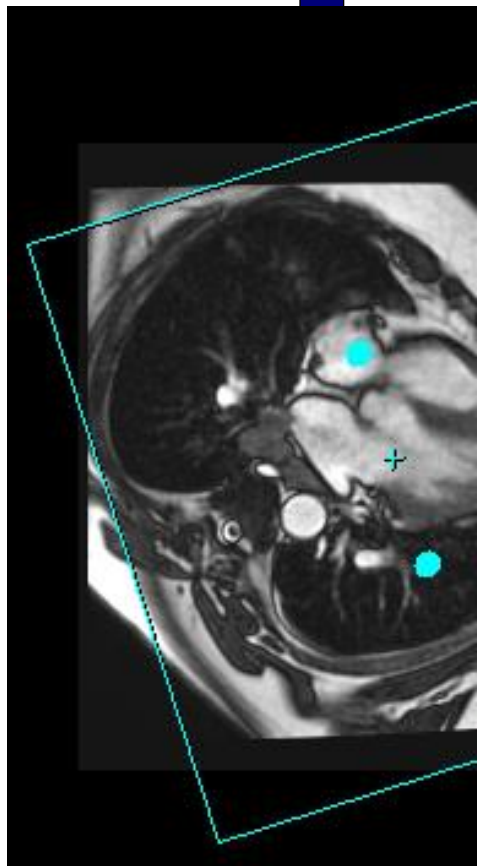
*-Make sure that  
Temp Res  
is around  
50ms*

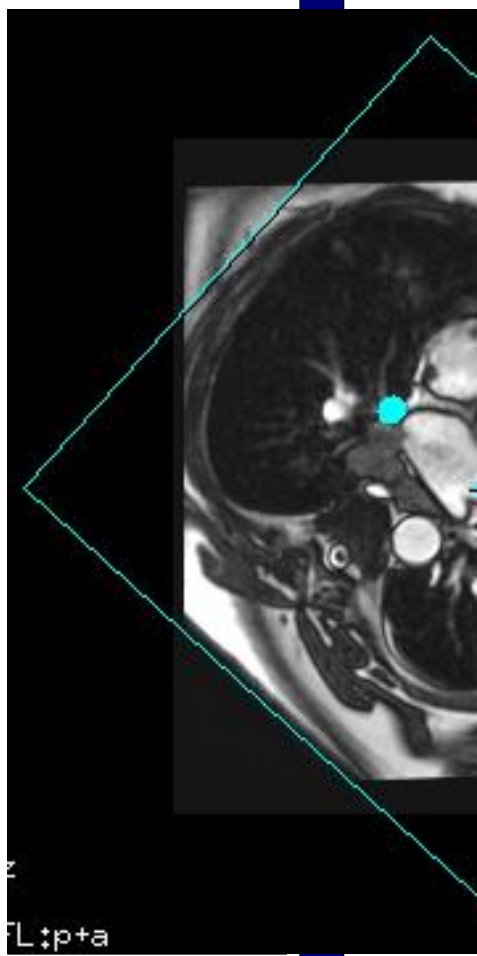
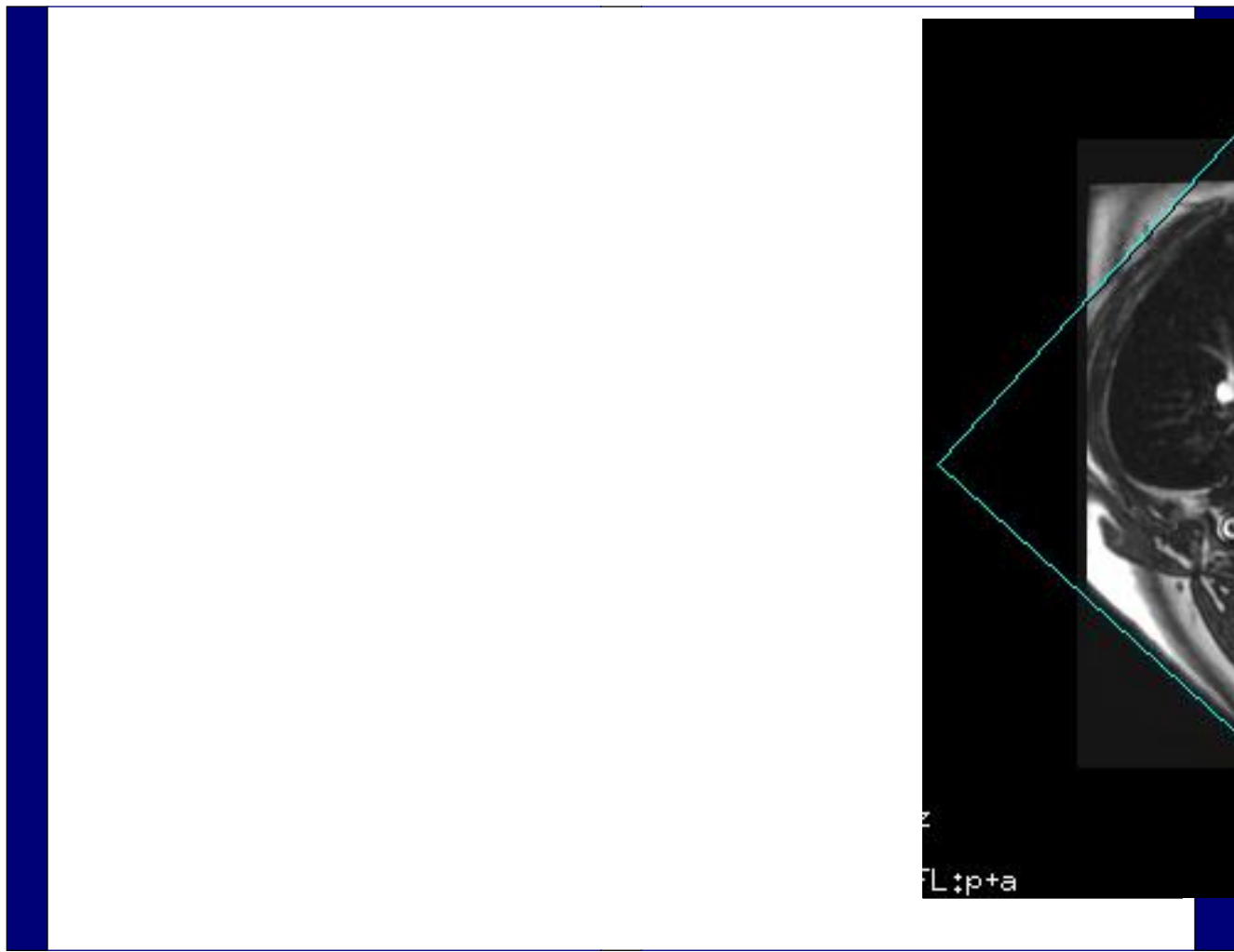
*. The higher the HR, the  
lower the value of Temp  
Res should be.*

*·  
---Wrong FOV rotation ---*

*-*

*-----Correct FOV  
rotation --*







Protocol: adult\_chest\_Cardiac Function & Viability

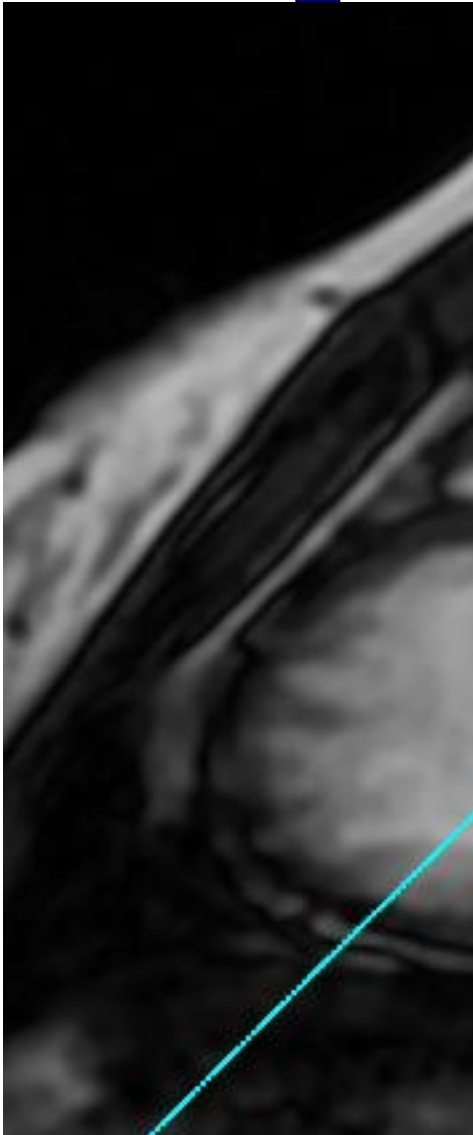
LVOT FIESTA CINE	<b>PATIENT POSITION</b>		<b>IMAGING PARAMETERS</b>	
	Patient Entry	<i>Feet First</i>	Imaging Mode	<i>2D</i>
	Patient Position	<i>Supine</i>	Pulse Sequence	<i>Fiesta</i>
	Coil Configuration	<i>GEM Body</i>	Imaging Options	<i>Gat, Seq, EDR, Fast, ZIP512, Asset</i>
	Plane	<i>OBLIQUE</i>	<b>SCAN RANGE</b>	
	Series Description	<i>LVOT FIESTA CINE</i>	FOV	<i>32.0</i>
	<b>SCAN TIMING</b>		Slice Thickness	<i>8.0</i>
	Flip Angle	<i>60</i>	Slice Spacing	<i>0.0</i>
	TE	<i>Min Full</i>	<b>ACQ TIMING</b>	
	Number of Echoes	<i>1</i>	Freq	<i>200</i>
	Receiver Bandwidth	<i>83.33</i>	Phase	<i>200</i>
	<b>IMAGE ENHANCE</b>		Freq DIR	<i>Unswap</i>
	Filter Choice	<i>A</i>	NEX	<i>1.00</i>
	<b>GATING/TRIGGER</b>		Phase FOV	<i>1.00</i>
	Auto Trigger Type	<i>On</i>	Auto Shim	<i>Auto</i>
	Trigger Type	<i>0</i>	Phase Correction	<i>No</i>
	Views per Segment	<i>12</i>	<b>USER CVS</b>	
	<b>FMRI</b>		User CV20	<i>1.00</i>
	PSD Trigger	<i>Internal</i>	<b>MULTI-PHASE</b>	
	View Order	<i>Bottom/Up</i>	Seperate Series	<i>0</i>
# of Repetitions REST	<i>0</i>	Mask Phase	<i>0</i>	
# of Repetitions ACTIVE	<i>0</i>	Mask Pause	<i>0</i>	
<b>SAT</b>		<b>DIFFUSION</b>		
Tag Type	<i>None</i>	Recon All Images	<i>On</i>	
<b>TRICKS</b>		<b>CINE</b>		
Pause On/Off	<i>On</i>	# of Cardiac Phases to Reconstruct	<i>30</i>	
Auto Subtract	<i>0</i>			
Auto SCIC	<i>2</i>			
<b>CONTRAST</b>				
Contrast Yes/No	<i>No</i>			

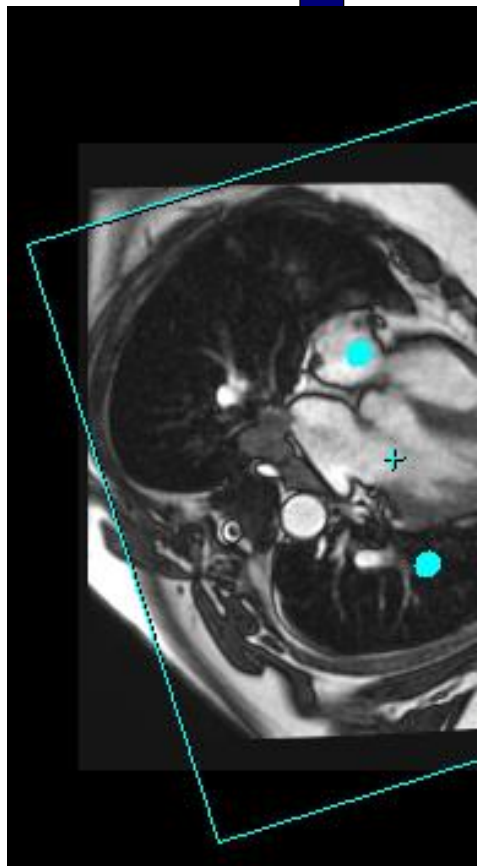
LVOT FIESTA CINE

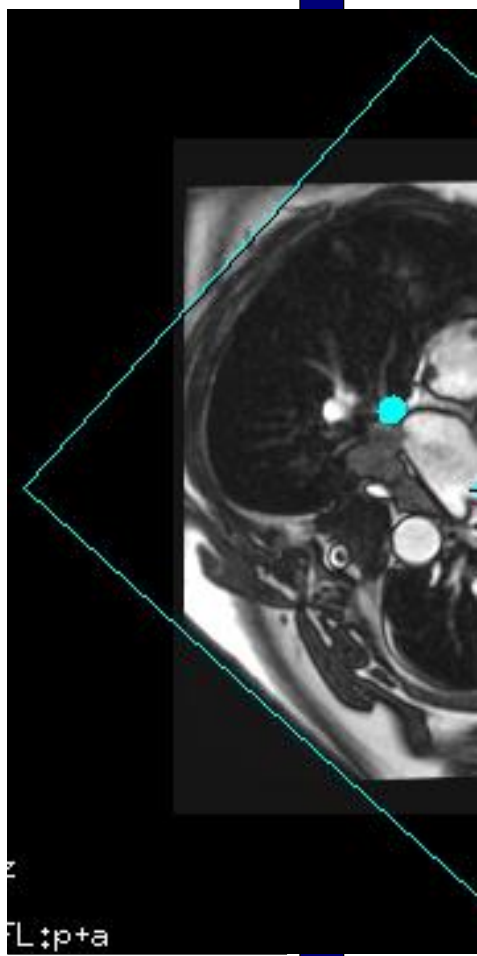
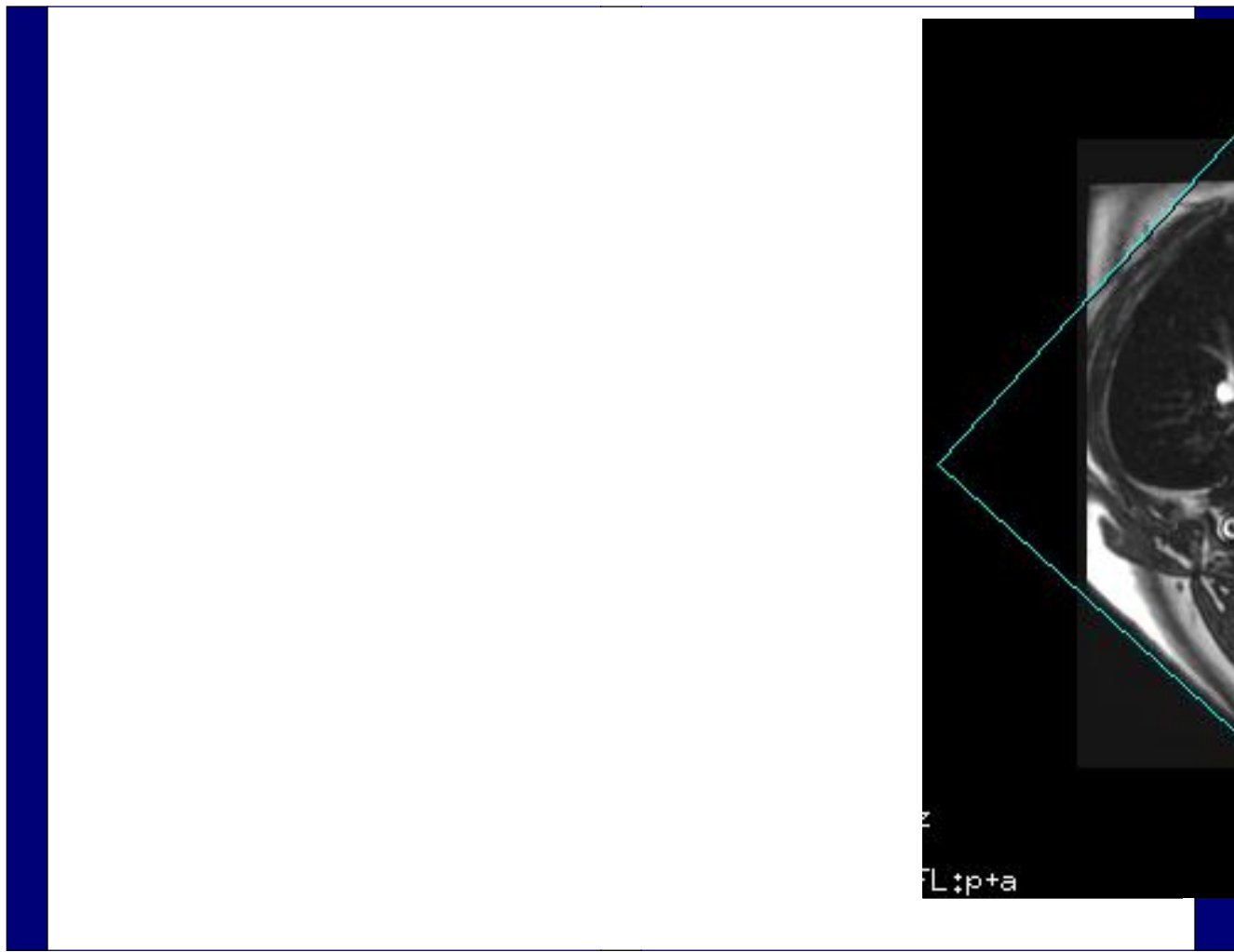
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OTHERS

Protocol Notes







Protocol: adult\_chest\_Cardiac Function & Viability

<b>PATIENT POSITION</b>		<b>IMAGING PARAMETERS</b>	
Patient Entry	<i>Feet First</i>	Imaging Mode	<i>2D</i>
Patient Position	<i>Supine</i>	Pulse Sequence	<i>Fiesta</i>
Coil Configuration	<i>GEM Body</i>	Imaging Options	<i>Gat, Seq, EDR, Fast, ZIP512, Asset</i>
Plane	<i>OBLIQUE</i>	<b>SCAN RANGE</b>	
Series Description	<i>AV FIESTA CINE</i>	FOV	<i>32.0</i>
<b>SCAN TIMING</b>		Slice Thickness	<i>8.0</i>
Flip Angle	<i>60</i>	Slice Spacing	<i>0.0</i>
TE	<i>Min Full</i>	<b>ACQ TIMING</b>	
Number of Echoes	<i>1</i>	Freq	<i>200</i>
Receiver Bandwidth	<i>62.50</i>	Phase	<i>200</i>
<b>IMAGE ENHANCE</b>		Freq DIR	<i>R/L</i>
Filter Choice	<i>A</i>	NEX	<i>1.00</i>
<b>GATING/TRIGGER</b>		# of Acq. Before Pause	<i>1</i>
Auto Trigger Type	<i>On</i>	Phase FOV	<i>1.00</i>
Trigger Type	<i>0</i>	Auto Shim	<i>Auto</i>
Views per Segment	<i>12</i>	Phase Correction	<i>No</i>
<b>FMRI</b>		<b>USER CVS</b>	
PSD Trigger	<i>Internal</i>	User CV20	<i>1.00</i>
View Order	<i>Bottom/Up</i>	<b>MULTI-PHASE</b>	
# of Repetitions REST	<i>0</i>	Seperate Series	<i>0</i>
# of Repetitions ACTIVE	<i>0</i>	Mask Phase	<i>0</i>
<b>SAT</b>		Mask Pause	<i>0</i>
Tag Type	<i>None</i>	<b>DIFFUSION</b>	
<b>TRICKS</b>		Recon All Images	<i>On</i>
Pause On/Off	<i>On</i>	<b>CINE</b>	
Auto Subtract	<i>0</i>	# of Cardiac Phases to Reconstruct	<i>30</i>
Auto SCIC	<i>2</i>		
<b>CONTRAST</b>			
Contrast Yes/No	<i>No</i>		

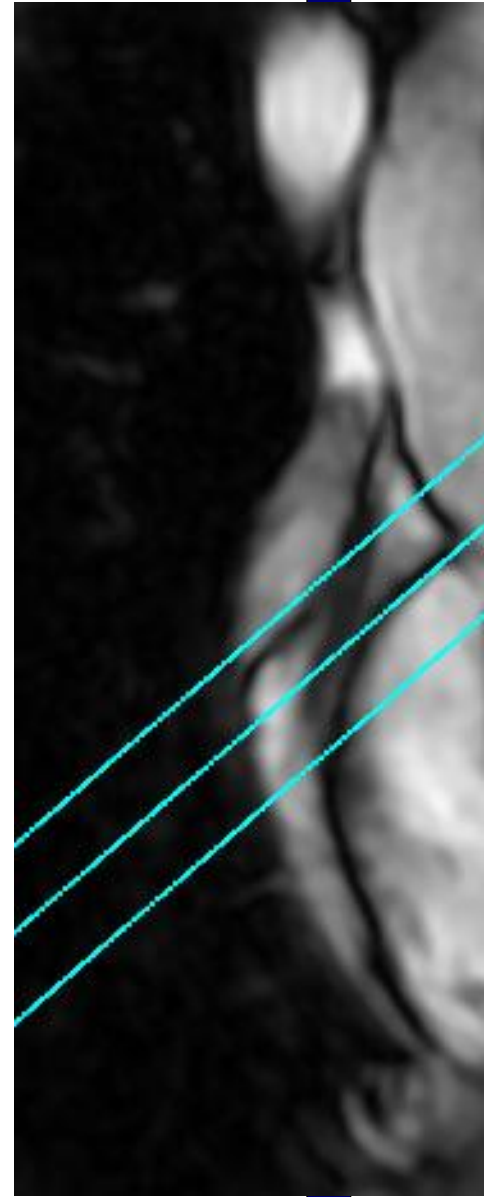
AV FIESTA CINE

AV FIESTA CINE

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OTHERS

Protocol Notes

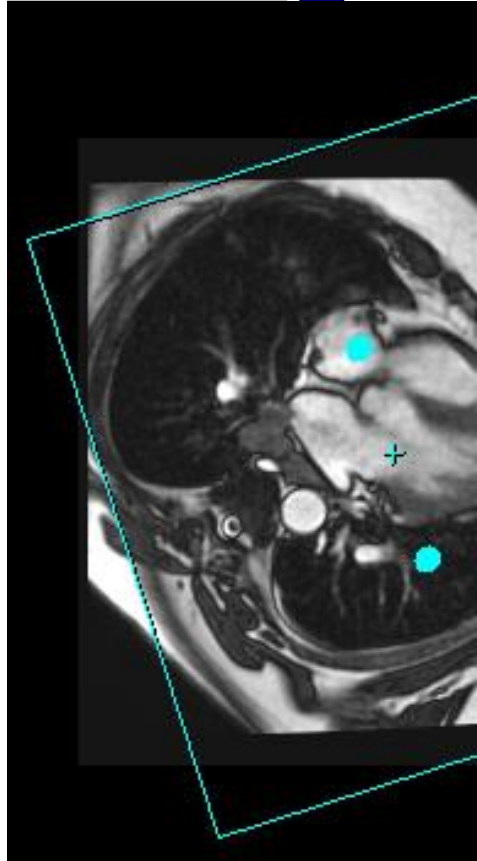


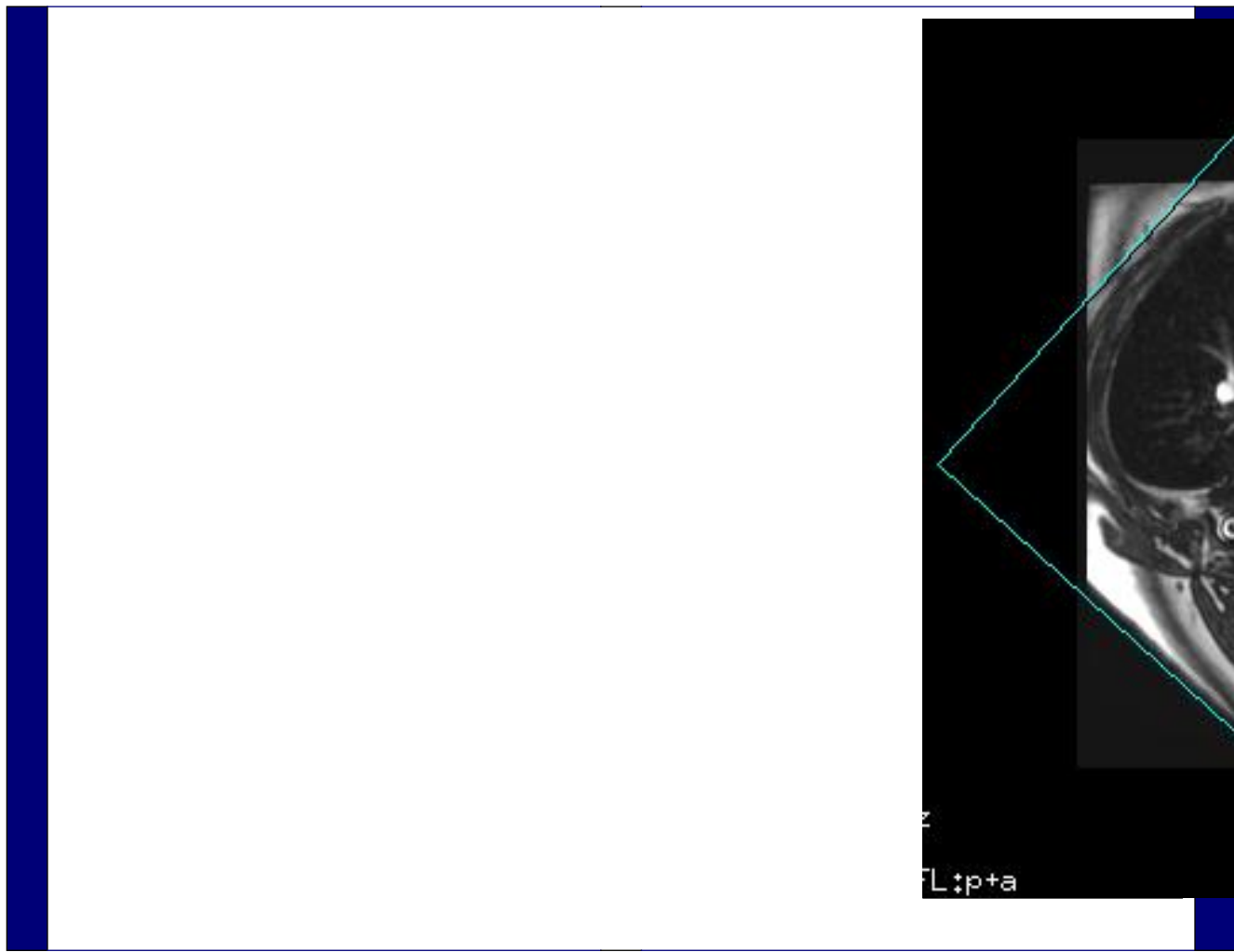
*IMPORTANT TIPS:*  
*-Make sure that Temp Res is around 50ms . The higher the HR, the lower the value of Temp Res should be.*

<b>Max # Slices:</b>	<b>1</b>
<b># of Acqs:</b>	<b>3</b>
<b>Rel. SNR(%):</b>	<b>72</b>
<b>Temp Res:</b>	<b>52 ms</b>



-  
---Wrong FOV rotation ---  
-  
-----Correct FOV  
rotation --





Protocol: adult\_chest\_Cardiac Function & Viability

<b>PATIENT POSITION</b>		<b>IMAGING PARAMETERS</b>	
Patient Entry	<i>Feet First</i>	Imaging Mode	<i>2D</i>
Patient Position	<i>Supine</i>	Pulse Sequence	<i>CINE IR</i>
Coil Configuration	<i>GEM Body</i>	Imaging Options	<i>Gat, Seq, EDR, Fast, Asset, IrP</i>
Plane	<i>OBLIQUE</i>	<b>SCAN RANGE</b>	
Series Description	<i>Cine IR 2RR</i>	FOV	<i>36.0</i>
<b>SCAN TIMING</b>		Slice Thickness	<i>10.0</i>
Flip Angle	<i>5</i>	Slice Spacing	<i>0.0</i>
TE	<i>Min Full</i>	<b>ACQ TIMING</b>	
Number of Echoes	<i>1</i>	Freq	<i>128</i>
Receiver Bandwidth	<i>15.63</i>	Phase	<i>96</i>
<b>IMAGE ENHANCE</b>		Freq DIR	<i>Unswap</i>
Filter Choice	<i>None</i>	NEX	<i>1.00</i>
<b>GATING/TRIGGER</b>		Phase FOV	<i>0.75</i>
Auto Trigger Type	<i>On</i>	Auto Shim	<i>Auto</i>
Trigger Type	<i>0</i>	Phase Correction	<i>No</i>
Cardiac Phase	<i>1</i>	<b>USER CVS</b>	
Cardiac Slices	<i>1</i>	User CV0	<i>1.00</i>
Views per Segment	<i>12</i>	<b>MULTI-PHASE</b>	
<b>FMRI</b>		Seperate Series	<i>0</i>
PSD Trigger	<i>Internal</i>	Mask Phase	<i>0</i>
Slice Order	<i>Interleaved</i>	Mask Pause	<i>0</i>
View Order	<i>Bottom/Up</i>	<b>DIFFUSION</b>	
# of Repetitions REST	<i>0</i>	Recon All Images	<i>On</i>
# of Repetitions ACTIVE	<i>0</i>	<b>CINE</b>	
<b>SAT</b>		# of Cardiac Phases to Reconstruct	<i>30</i>
Tag Type	<i>None</i>		
<b>TRICKS</b>			
# of RR Intervals	<i>2</i>		
Pause On/Off	<i>On</i>		
Auto Subtract	<i>0</i>		
Auto SCIC	<i>Off</i>		
<b>CONTRAST</b>			
Contrast Yes/No	<i>Yes</i>		

Cine IR 2RR

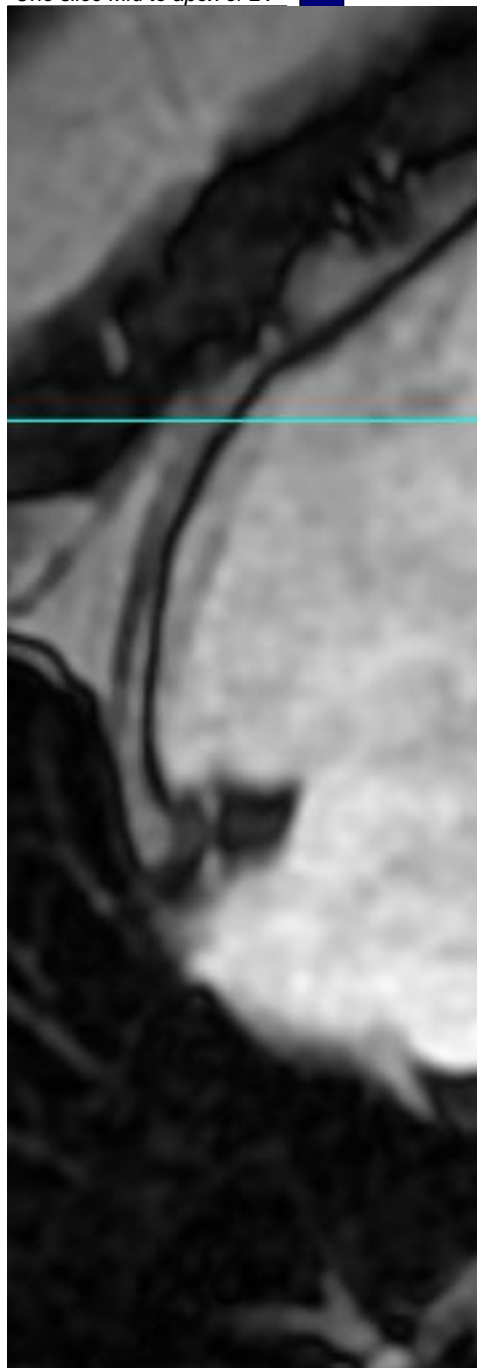
Cine IR 2RR

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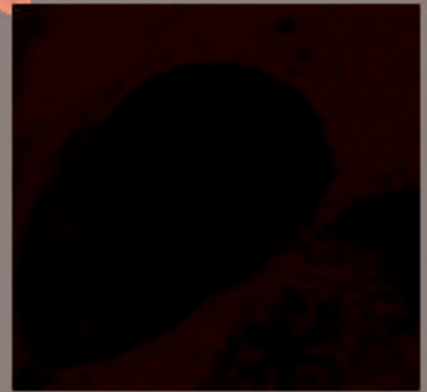
OTHERS

Protocol Notes

*IMPORTANT TIPS:  
One slice Mid to apex of LV*



-When scanning 2D MDE, use the same #RR for both the CINE IR and the 2D MDE scans.  
- For low HR < 55 BPM, use #RR = 1 for CINE IR and MDE.  
- Pick optimal TI ( Prep Time ) with nulled (=dark) normal myocardium. Beware the " bounce point artifact " indicating that TI is too short . This artifact looks like a black outline along the endo/epicardial borders.



TI 200 ms

- now Cine IR supports # RR interval up to 4.

Protocol: adult\_chest\_Cardiac Function & Viability

PATIENT POSITION	
Patient Entry	Feet First
Patient Position	Supine
Coil Configuration	GEM Body
Plane	OBLIQUE
Series Description	SAXs SS PSMDE

SCAN TIMING	
Flip Angle	45
Number of Echoes	1
TI	275
Receiver Bandwidth	83.33

IMAGE ENHANCE	
Filter Choice	A

GATING/TRIGGER	
Auto Trigger Type	On
Trigger Type	0
Minimum Trigger Delay	4
Cardiac Phase	1
Cardiac Slices	1

FMRI	
PSD Trigger	Internal
View Order	Bottom/Up
# of Repetitions REST	0
# of Repetitions ACTIVE	0

SAT	
Tag Type	None

TRICKS	
# of RR Intervals	4
Trigger Delay	1201
Pause On/Off	On
Auto Subtract	0
Auto SCIC	2

CONTRAST	
Contrast Yes/No	Yes

IMAGING PARAMETERS	
Imaging Mode	2D
Pulse Sequence	Fiesta
Imaging Options	Gat, Seq, EDR, Fast, PS, Asset, IrP

SCAN RANGE	
FOV	36.0
Slice Thickness	8.0
Slice Spacing	0.0

ACQ TIMING	
Freq	160
Phase	140
Freq DIR	S/I
NEX	1.00
# of Acq. Before Pause	5
Phase FOV	0.75
Auto Shim	Auto
Phase Correction	No

USER CVS	
User CV20	1.00

MULTI-PHASE	
Seperate Series	0
Mask Phase	0
Mask Pause	0

DIFFUSION	
Recon All Images	On

CINE	
# of Cardiac Phases to Reconstruct	1

SAXs SS PSMDE

SAXs SS PSMDE

**OTHERS**

**Protocol Notes**

**IMPORTANT TIPS:**  
- When scanning PSMDE, # RR interval for CINE IR must match #RR interval for PSMDE.  
- For optimal image quality, set the Trigger Delay to Diastolic or type in a value manually.

**Trigger Delay:** Diastoli

**Inter-Seq. Delay:**

- Increase TI by 20-25ms after every 5min to account for wash-out over time.  
- Ensure Temp Res is <200ms. For HR>100BPM, Temp Res should be <160ms.

**Max # Slices: 1**

**# of Acqs: 6**

**Rel. SNR(%): 87**

**Temp Res: 132 ms**



Protocol: adult\_chest\_Cardiac Function & Viability

PATIENT POSITION	
Patient Entry	Feet First
Patient Position	Supine
Coil Configuration	GEM Body
Plane	OBLIQUE
Series Description	4CHs SS PSMDE

SCAN TIMING	
Flip Angle	45
Number of Echoes	1
TI	300
Receiver Bandwidth	83.33

IMAGE ENHANCE	
Filter Choice	A

GATING/TRIGGER	
Auto Trigger Type	Off
Trigger Type	1
Minimum Trigger Delay	4
Cardiac Phase	1
Cardiac Slices	1

FMRI	
PSD Trigger	Internal
View Order	Bottom/Up
# of Repetitions REST	0
# of Repetitions ACTIVE	0

SAT	
Tag Type	None

TRICKS	
# of RR Intervals	3
Trigger Delay	601
Pause On/Off	On
Auto Subtract	0
Auto SCIC	2

CONTRAST	
Contrast Yes/No	Yes

IMAGING PARAMETERS	
Imaging Mode	2D
Pulse Sequence	Fiesta
Imaging Options	Gat, Seq, EDR, Fast, PS, Asset, IrP

SCAN RANGE	
FOV	36.0
Slice Thickness	8.0
Slice Spacing	0.0

ACQ TIMING	
Freq	160
Phase	140
Freq DIR	R/L
NEX	1.00
# of Acq. Before Pause	5
Phase FOV	0.75
Auto Shim	Auto
Phase Correction	No

USER CVS	
User CV20	1.00

MULTI-PHASE	
Seperate Series	0
Mask Phase	0
Mask Pause	0

DIFFUSION	
Recon All Images	On

CINE	
# of Cardiac Phases to Reconstruct	1

4CHs SS PSMDE

4CHs SS PSMDE

**OTHERS**

**Protocol Notes**

**IMPORTANT TIPS:**  
- When scanning PSMDE, # RR interval for CINE IR must match #RR interval for PSMDE.  
- For optimal image quality, set the Trigger Delay to Diastolic or type in a value manually.

**Trigger Delay:** Diastoli

**Inter-Seq. Delay:**

- Increase TI by 20-25ms after every 5min to account for wash-out over time.  
- Ensure Temp Res is <200ms. For HR>100BPM, Temp Res should be <160ms.

**Max # Slices:** 1

**# of Acqs:** 6

**Rel. SNR(%):** 87

**Temp Res:** 132 ms

Protocol: adult\_chest\_Cardiac Function & Viability

PATIENT POSITION	
Patient Entry	<i>Feet First</i>
Patient Position	<i>Supine</i>
Coil Configuration	<i>GEM Body</i>
Plane	<i>OBLIQUE</i>
Series Description	<i>4CH PS MDE</i>

SCAN TIMING	
Flip Angle	<i>25</i>
Number of Echoes	<i>1</i>
TI	<i>300</i>
Receiver Bandwidth	<i>15.63</i>

IMAGE ENHANCE	
Filter Choice	<i>A</i>

GATING/TRIGGER	
Auto Trigger Type	<i>Off</i>
Trigger Type	<i>1</i>
Minimum Trigger Delay	<i>2</i>
Cardiac Phase	<i>1</i>
Cardiac Slices	<i>1</i>
Views per Segment	<i>24</i>

MULTI-PHASE	
Seperate Series	<i>0</i>
Mask Phase	<i>0</i>
Mask Pause	<i>0</i>

DIFFUSION	
Recon All Images	<i>On</i>

CONTRAST	
Contrast Yes/No	<i>Yes</i>

IMAGING PARAMETERS	
Imaging Mode	<i>2D</i>
Pulse Sequence	<i>Gradient Echo</i>
Imaging Options	<i>Gat, EDR, Fast, PS, Asset, IrP</i>

SCAN RANGE	
FOV	<i>32.0</i>
Slice Thickness	<i>8.0</i>
Slice Spacing	<i>0.0</i>

ACQ TIMING	
Freq	<i>180</i>
Phase	<i>180</i>
Freq DIR	<i>R/L</i>
NEX	<i>1.00</i>
Phase FOV	<i>1.00</i>
Auto Shim	<i>Auto</i>
Phase Correction	<i>No</i>

FMRI	
PSD Trigger	<i>Internal</i>
View Order	<i>Bottom/Up</i>
# of Repetitions REST	<i>0</i>
# of Repetitions ACTIVE	<i>0</i>

SAT	
Tag Type	<i>None</i>

TRICKS	
# of RR Intervals	<i>2</i>
Trigger Delay	<i>305</i>
Pause On/Off	<i>On</i>
Auto Subtract	<i>0</i>
Auto SCIC	<i>2</i>

4CH PS MDE

4CH PS MDE

**OTHERS**

**Protocol Notes**

**IMPORTANT TIPS:**  
- When scanning PSMDE, # RR interval for CINE IR must match #RR interval for PSMDE.  
- For optimal image quality, set the Trigger Delay to Diastolic or type in a value manually.

**Trigger Delay:** Diastoli

**Inter-Seq. Delay:**

- Increase TI by 20-25ms after every 5min to account for wash-out over time.  
- Ensure Temp Res is <200ms. For HR>100BPM, Temp Res should be <160ms.

**Max # Slices:** 1

**# of Acqs:** 6

**Rel. SNR(%):** 87

**Temp Res:** 132 ms

Protocol: adult\_chest\_Cardiac Function & Viability

PATIENT POSITION	
Patient Entry	<i>Feet First</i>
Patient Position	<i>Supine</i>
Coil Configuration	<i>GEM Body</i>
Plane	<i>OBLIQUE</i>
Series Description	<i>2CH PS MDE</i>

SCAN TIMING	
Flip Angle	25
Number of Echoes	1
TI	300
Receiver Bandwidth	15.63

IMAGE ENHANCE	
Filter Choice	A

GATING/TRIGGER	
Auto Trigger Type	<i>Off</i>
Trigger Type	1
Minimum Trigger Delay	2
Cardiac Phase	1
Cardiac Slices	1
Views per Segment	24

MULTI-PHASE	
Seperate Series	0
Mask Phase	0
Mask Pause	0

DIFFUSION	
Recon All Images	<i>On</i>

CONTRAST	
Contrast Yes/No	Yes

IMAGING PARAMETERS	
Imaging Mode	2D
Pulse Sequence	<i>Gradient Echo</i>
Imaging Options	<i>Gat, EDR, Fast, PS, Asset, IrP</i>

SCAN RANGE	
FOV	32.0
Slice Thickness	8.0
Slice Spacing	0.0

ACQ TIMING	
Freq	180
Phase	180
Freq DIR	<i>S/I</i>
NEX	1.00
# of Acq. Before Pause	1
Phase FOV	1.00
Auto Shim	<i>Auto</i>
Phase Correction	<i>No</i>

FMRI	
PSD Trigger	<i>Internal</i>
View Order	<i>Bottom/Up</i>
# of Repetitions REST	0
# of Repetitions ACTIVE	0

SAT	
Tag Type	<i>None</i>

TRICKS	
# of RR Intervals	2
Trigger Delay	305
Pause On/Off	<i>On</i>
Auto Subtract	0
Auto SCIC	2

2CH PS MDE

2CH PS MDE

**OTHERS**

**Protocol Notes**

**IMPORTANT TIPS:**  
- When scanning PSMDE, # RR interval for CINE IR must match #RR interval for PSMDE.  
- For optimal image quality, set the Trigger Delay to Diastolic or type in a value manually.

**Trigger Delay:** Diastoli

**Inter-Seq. Delay:**

- Increase TI by 20-25ms after every 5min to account for wash-out over time.  
- Ensure Temp Res is <200ms. For HR>100BPM, Temp Res should be <160ms.

**Max # Slices:** 1

**# of Acqs:** 6

**Rel. SNR(%):** 87

**Temp Res: 132 ms**

Protocol: adult\_chest\_Cardiac Function & Viability

PATIENT POSITION	
Patient Entry	<i>Feet First</i>
Patient Position	<i>Supine</i>
Coil Configuration	<i>GEM Body</i>
Plane	<i>OBLIQUE</i>
Series Description	<i>3CH PS MDE</i>

SCAN TIMING	
Flip Angle	<i>25</i>
Number of Echoes	<i>1</i>
TI	<i>390</i>
Receiver Bandwidth	<i>15.63</i>

IMAGE ENHANCE	
Filter Choice	<i>A</i>

GATING/TRIGGER	
Auto Trigger Type	<i>Off</i>
Trigger Type	<i>1</i>
Minimum Trigger Delay	<i>2</i>
Cardiac Phase	<i>1</i>
Cardiac Slices	<i>1</i>
Views per Segment	<i>24</i>

MULTI-PHASE	
Seperate Series	<i>0</i>
Mask Phase	<i>0</i>
Mask Pause	<i>0</i>

DIFFUSION	
Recon All Images	<i>On</i>

CONTRAST	
Contrast Yes/No	<i>Yes</i>

IMAGING PARAMETERS	
Imaging Mode	<i>2D</i>
Pulse Sequence	<i>Gradient Echo</i>
Imaging Options	<i>Gat, EDR, Fast, PS, Asset, IrP</i>

SCAN RANGE	
FOV	<i>32.0</i>
Slice Thickness	<i>8.0</i>
Slice Spacing	<i>0.0</i>

ACQ TIMING	
Freq	<i>180</i>
Phase	<i>180</i>
Freq DIR	<i>S/I</i>
NEX	<i>1.00</i>
Phase FOV	<i>1.00</i>
Auto Shim	<i>Auto</i>
Phase Correction	<i>No</i>

FMRI	
PSD Trigger	<i>Internal</i>
View Order	<i>Bottom/Up</i>
# of Repetitions REST	<i>0</i>
# of Repetitions ACTIVE	<i>0</i>

SAT	
Tag Type	<i>None</i>

TRICKS	
# of RR Intervals	<i>2</i>
Trigger Delay	<i>395</i>
Pause On/Off	<i>On</i>
Auto Subtract	<i>0</i>
Auto SCIC	<i>2</i>

3CH PS MDE

3CH PS MDE

**OTHERS**

**Protocol Notes**

**IMPORTANT TIPS:**  
- When scanning PSMDE, # RR interval for CINE IR must match #RR interval for PSMDE.  
- For optimal image quality, set the Trigger Delay to Diastolic or type in a value manually.

**Trigger Delay:** Diastoli

**Inter-Seq. Delay:**

- Increase TI by 20-25ms after every 5min to account for wash-out over time.  
- Ensure Temp Res is <200ms. For HR>100BPM, Temp Res should be <160ms.

**Max # Slices:** 1

**# of Acqs:** 6

**Rel. SNR(%):** 87

**Temp Res:** 132 ms



Protocol: adult\_chest\_Cardiac Function & Viability

PATIENT POSITION	
Patient Entry	<i>Feet First</i>
Patient Position	<i>Supine</i>
Coil Configuration	<i>GEM Body</i>
Plane	<i>OBLIQUE</i>
Series Description	<i>SAXs PS MDE</i>

SCAN TIMING	
Flip Angle	25
Number of Echoes	1
TI	275
Receiver Bandwidth	15.63

IMAGE ENHANCE	
Filter Choice	A

GATING/TRIGGER	
Auto Trigger Type	<i>Off</i>
Trigger Type	1
Minimum Trigger Delay	4
Cardiac Phase	1
Cardiac Slices	1
Views per Segment	24

MULTI-PHASE	
Seperate Series	0
Mask Phase	0
Mask Pause	0

DIFFUSION	
Recon All Images	<i>On</i>

CONTRAST	
Contrast Yes/No	Yes

IMAGING PARAMETERS	
Imaging Mode	2D
Pulse Sequence	<i>Gradient Echo</i>
Imaging Options	<i>Gat, EDR, Fast, PS, Asset, IrP</i>

SCAN RANGE	
FOV	32.0
Slice Thickness	8.0
Slice Spacing	0.0

ACQ TIMING	
Freq	180
Phase	180
Freq DIR	<i>S/I</i>
NEX	1.00
# of Acq. Before Pause	1
Phase FOV	0.90
Auto Shim	<i>Auto</i>
Phase Correction	<i>No</i>

FMRI	
PSD Trigger	<i>Internal</i>
View Order	<i>Bottom/Up</i>
# of Repetitions REST	0
# of Repetitions ACTIVE	0

SAT	
Tag Type	<i>None</i>

TRICKS	
# of RR Intervals	2
Trigger Delay	631
Pause On/Off	<i>On</i>
Auto Subtract	0
Auto SCIC	2

SAXs PS MDE

SAXs PS MDE

**OTHERS**

**Protocol Notes**

**IMPORTANT TIPS:**  
- When scanning PSMDE, # RR interval for CINE IR must match #RR interval for PSMDE.  
- For optimal image quality, set the Trigger Delay to Diastolic or type in a value manually.

**Trigger Delay:** Diastoli

**Inter-Seq. Delay:**

- Increase TI by 20-25ms after every 5min to account for wash-out over time.  
- Ensure Temp Res is <200ms. For HR>100BPM, Temp Res should be <160ms.

**Max # Slices:** 1

**# of Acqs:** 6

**Rel. SNR(%):** 87

**Temp Res:** 132 ms

Protocol: adult\_chest\_Cardiac Function & Viability

**PATIENT POSITION**

Patient Entry *Feet First*  
 Patient Position *Supine*  
 Coil Configuration *GEM Body*  
 Plane *OBLIQUE*  
 Series Description *Aorta 2D Flow V175*

**SCAN TIMING**

Flip Angle *25*  
 Number of Echoes *1*  
 Receiver Bandwidth *50.00*

**IMAGE ENHANCE**

Filter Choice *None*

**GATING/TRIGGER**

Auto Trigger Type *On*  
 Trigger Type *0*  
 Views per Segment *6*

**FMRI**

PSD Trigger *Internal*  
 Slice Order *Interleaved*  
 View Order *Bottom/Up*  
 # of Repetitions REST *0*  
 # of Repetitions ACTIVE *0*

**SAT**

Tag Type *None*

**DIFFUSION**

Recon All Images *On*

**CINE**

# of Cardiac Phases to Reconstruct *30*

**IMAGING PARAMETERS**

Imaging Mode *2D*  
 Pulse Sequence *Vasc PC*  
 Imaging Options *FC, Gat, Seq, EDR, Fast, Asset*

**SCAN RANGE**

FOV *36.0*  
 Slice Thickness *8.0*  
 Slice Spacing *0.0*

**ACQ TIMING**

Freq *192*  
 Phase *160*  
 Freq DIR *Unswap*  
 NEX *1.00*  
 Phase FOV *0.90*  
 Auto Shim *Auto*  
 Phase Correction *No*

**USER CVS**

User CV21 *1.00*

**MULTI-PHASE**

Seperate Series *0*  
 Mask Phase *0*  
 Mask Pause *0*

**VASCULAR**

Flow Analysis *Slice*  
 Additional Flow Images *0*  
 Flow Recon Type *Phase Diff.*  
 Velocity Encoding *175.0*

**TRICKS**

Pause On/Off *On*  
 Auto Subtract *0*  
 Auto SCIC *Off*

**CONTRAST**

Contrast Yes/No *Yes*

Aorta 2D Flow V175

Aorta 2D Flow V175

**OTHERS**

**Protocol Notes**

**IMPORTANT TIPS:**  
- Make sure scan plane is orthogonal to the flow direction.  
- Always check scan plane prescription in 2 orthogonal views.  
- For HR<70 BPM  
, Temp Res should be < 72ms  
.  
- For HR>70 BPM  
, Temp Res should be < 50ms  
.

Rel. SNR(%)	70	
Temp Res:	62 ms	
Pixel Size:	1.9x2.2	

- Change Views Per Segment to adjust Temp Res.  
- Advanced Tab  
.  
the following settings are preferred.

CV0	Arr. Rej. (0= OFF, 1= Thresh OFF, 2= Thresh ON):	1.00
CV2	Use Magnitude Weighting Mask:	0.00
CV21	Flow quantification optimization (1= on):	1.00

Protocol: adult\_chest\_Cardiac Function & Viability

**PATIENT POSITION**

Patient Entry *Feet First*  
 Patient Position *Supine*  
 Coil Configuration *GEM Body*  
 Plane *OBLIQUE*  
 Series Description *PA 2D Flow V175*

**SCAN TIMING**

Flip Angle *25*  
 Number of Echoes *1*  
 Receiver Bandwidth *50.00*

**IMAGE ENHANCE**

Filter Choice *None*

**GATING/TRIGGER**

Auto Trigger Type *On*  
 Trigger Type *0*  
 Views per Segment *6*

**FMRI**

PSD Trigger *Internal*  
 Slice Order *Interleaved*  
 View Order *Bottom/Up*  
 # of Repetitions REST *0*  
 # of Repetitions ACTIVE *0*

**SAT**

Tag Type *None*

**DIFFUSION**

Recon All Images *On*

**CINE**

# of Cardiac Phases to Reconstruct *30*

**IMAGING PARAMETERS**

Imaging Mode *2D*  
 Pulse Sequence *Vasc PC*  
 Imaging Options *FC, Gat, Seq, EDR, Fast, Asset*

**SCAN RANGE**

FOV *36.0*  
 Slice Thickness *8.0*  
 Slice Spacing *0.0*

**ACQ TIMING**

Freq *192*  
 Phase *160*  
 Freq DIR *Unswap*  
 NEX *1.00*  
 Phase FOV *0.90*  
 Auto Shim *Auto*  
 Phase Correction *No*

**USER CVS**

User CV21 *1.00*

**MULTI-PHASE**

Seperate Series *0*  
 Mask Phase *0*  
 Mask Pause *0*

**VASCULAR**

Flow Analysis *Slice*  
 Additional Flow Images *0*  
 Flow Recon Type *Phase Diff.*  
 Velocity Encoding *175.0*

**TRICKS**

Pause On/Off *On*  
 Auto Subtract *0*  
 Auto SCIC *Off*

**CONTRAST**

Contrast Yes/No *Yes*


PA 2D Flow V175

PA 2D Flow V175

**OTHERS**

**Protocol Notes**

**IMPORTANT TIPS:**  
- Make sure scan plane is orthogonal to the flow direction.  
- Always check scan plane prescription in 2 orthogonal views.  
- For HR<70 BPM  
, Temp Res should be < 72ms  
.  
- For HR>70 BPM  
, Temp Res should be < 50ms  
.

Rel. SNR(%):	70	
Temp Res:	62 ms	
Pixel Size:	1.9x2.2	

- Change Views Per Segment to adjust Temp Res.  
- Advanced Tab  
.  
the following settings are preferred.

CV0	Arr. Rej. (0= OFF, 1= Thresh OFF, 2= Thresh ON):	1.00
CV2	Use Magnitude Weighting Mask:	0.00
CV21	Flow quantification optimization (1= on):	1.00

Protocol: adult\_chest\_Cardiac Function & Viability

**PATIENT POSITION**

Patient Entry *Feet First*  
 Patient Position *Supine*  
 Coil Configuration *GEM Body*  
 Plane *3-PLANE*  
 Series Description *\*\*\*extra*

**SCAN TIMING**

Flip Angle *45*  
 TE *Min Full*  
 Number of Echoes *1*  
 Receiver Bandwidth *100.00*

**IMAGE ENHANCE**

Filter Choice *None*

**GATING/TRIGGER**

Auto Trigger Type *Off*

**FMRI**

PSD Trigger *Internal*  
 View Order *Bottom/Up*  
 # of Repetitions REST *0*  
 # of Repetitions ACTIVE *0*

**SAT**

Tag Type *None*

**TRICKS**

Pause On/Off *On*  
 Auto Subtract *0*  
 Auto SCIC *Off*

**IMAGING PARAMETERS**

Imaging Mode *2D*  
 Pulse Sequence *Fiesta*  
 Imaging Options *Seq, Fast*

**SCAN RANGE**

FOV *46.0*  
 Slice Thickness *8.0*  
 Slice Spacing *7.0*

**ACQ TIMING**

Freq *132*  
 Phase *128*  
 Freq DIR *Unswap*  
 NEX *1.00*  
 # of Acq. Before Pause *0*  
 Phase FOV *1.00*  
 Auto Shim *Auto*  
 Phase Correction *No*

**USER CVS**

User CV20 *1.00*

**MULTI-PHASE**

Seperate Series *0*  
 Mask Phase *0*  
 Mask Pause *0*

**DIFFUSION**

Recon All Images *On*

**CONTRAST**

Contrast Yes/No *No*

\*\*\*extra

\*\*\*extra

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OTHERS

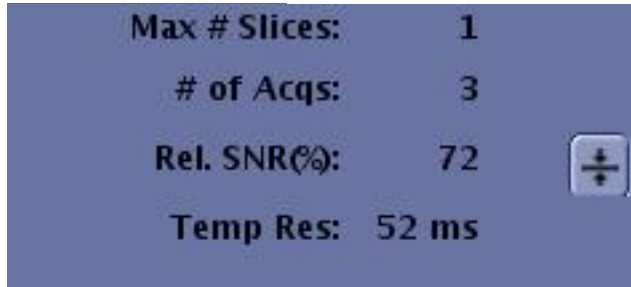


**Protocol Notes**

*Fiesta Cine Considerations:*

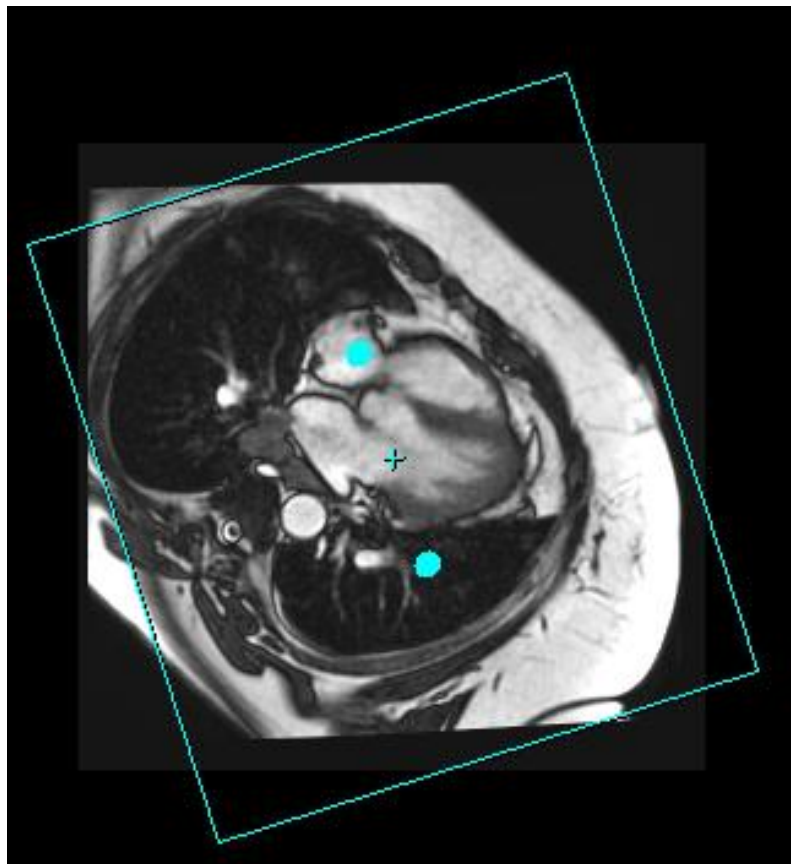
*-Make sure that Temp Res is around 50ms*

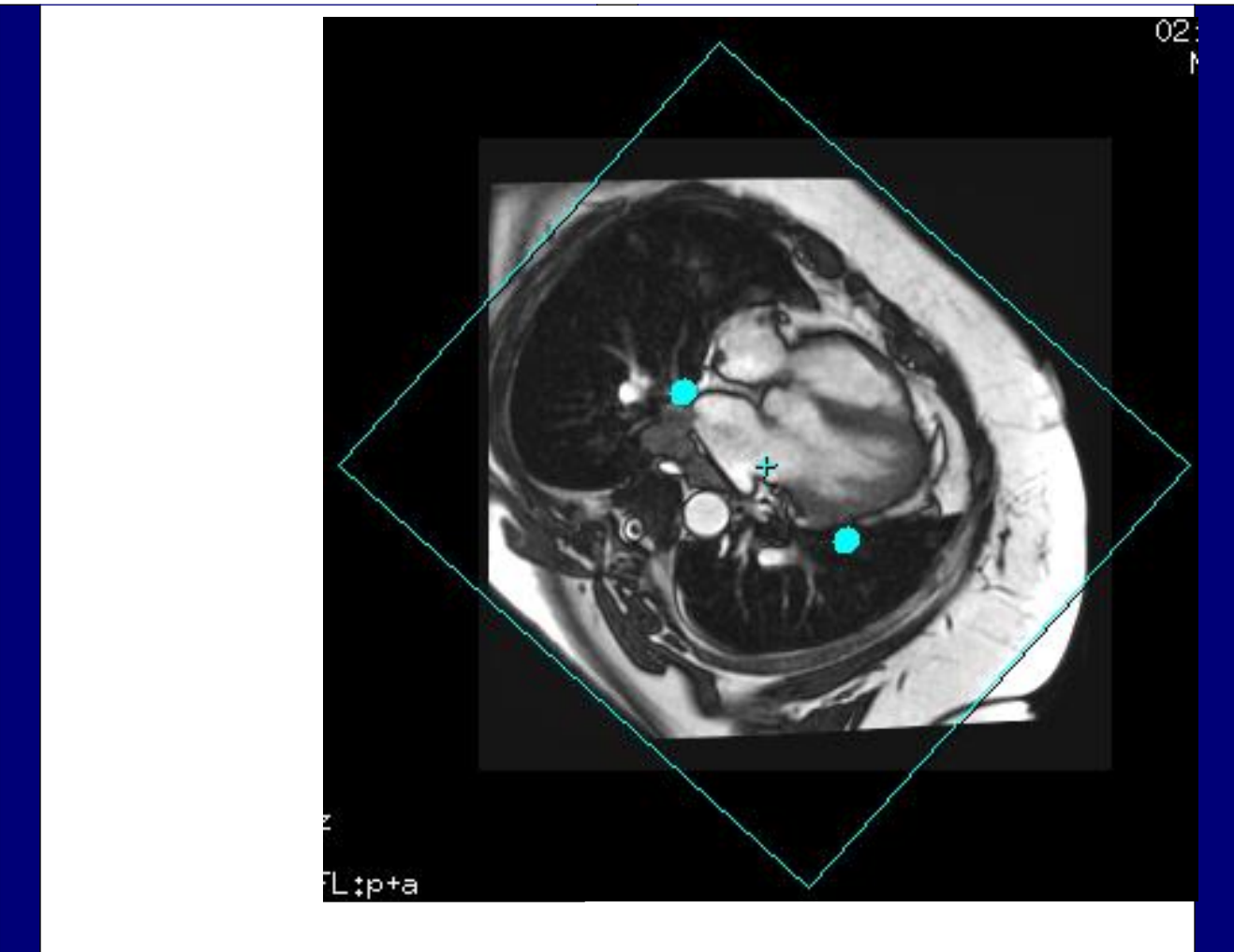
*. The higher the HR, the lower the value of Temp Res should be.*



<b>Max # Slices:</b>	<b>1</b>
<b># of Acqs:</b>	<b>3</b>
<b>Rel. SNR(%) :</b>	<b>72</b>
<b>Temp Res:</b>	<b>52 ms</b>

- To adjust the Temp Res, change VPS accordingly. Decreasing VPS will decrease Temp Res.*
- Keep TR under 4ms if possible. To adjust TR consider changing the rBW (range 62.5-125), Frequency Matrix, FOV, Slice Thickness, FA, TE Min*
- Verify CF Water as needed via auto prescan and manual prescan.*
- In case the image comes out rotated, Duplicate & Setup the series, then select the series from the Graphic Rx Toolbar to bring up the image you just scanned, zoom out to visualize the full FOV, and rotate the FOV box as shown below to orient the box parallel to the chest wall.*
- -Wrong FOV rotation - - -*
- 
- Correct FOV rotation - -*





Protocol: adult\_chest\_Cardiac Function & Viability

<b>PATIENT POSITION</b>		<b>IMAGING PARAMETERS</b>	
Patient Entry	<i>Feet First</i>	Imaging Mode	<i>2D</i>
Patient Position	<i>Supine</i>	Pulse Sequence	<i>Fiesta</i>
Coil Configuration	<i>GEM Body</i>	Imaging Options	<i>Gat, Seq, EDR, Fast, ZIP512, Asset</i>
Plane	<i>OBLIQUE</i>	<b>SCAN RANGE</b>	
Series Description	<i>MPAV FIESTA CINE</i>	FOV	<i>32.0</i>
<b>SCAN TIMING</b>		Slice Thickness	<i>8.0</i>
Flip Angle	<i>55</i>	Slice Spacing	<i>0.0</i>
TE	<i>Min Full</i>	<b>ACQ TIMING</b>	
Number of Echoes	<i>1</i>	Freq	<i>200</i>
Receiver Bandwidth	<i>83.33</i>	Phase	<i>200</i>
<b>IMAGE ENHANCE</b>		Freq DIR	<i>R/L</i>
Filter Choice	<i>A</i>	NEX	<i>1.00</i>
<b>GATING/TRIGGER</b>		# of Acq. Before Pause	<i>1</i>
Auto Trigger Type	<i>On</i>	Phase FOV	<i>1.00</i>
Trigger Type	<i>0</i>	Auto Shim	<i>Auto</i>
Views per Segment	<i>12</i>	Phase Correction	<i>No</i>
<b>FMRI</b>		<b>USER CVS</b>	
PSD Trigger	<i>Internal</i>	User CV20	<i>1.00</i>
View Order	<i>Bottom/Up</i>	<b>MULTI-PHASE</b>	
# of Repetitions REST	<i>0</i>	Seperate Series	<i>0</i>
# of Repetitions ACTIVE	<i>0</i>	Mask Phase	<i>0</i>
<b>SAT</b>		Mask Pause	<i>0</i>
Tag Type	<i>None</i>	<b>DIFFUSION</b>	
<b>TRICKS</b>		Recon All Images	<i>On</i>
Pause On/Off	<i>On</i>	<b>CINE</b>	
Auto Subtract	<i>0</i>	# of Cardiac Phases to Reconstruct	<i>30</i>
Auto SCIC	<i>2</i>		
<b>CONTRAST</b>			
Contrast Yes/No	<i>No</i>		

MPAV FIESTA CINE

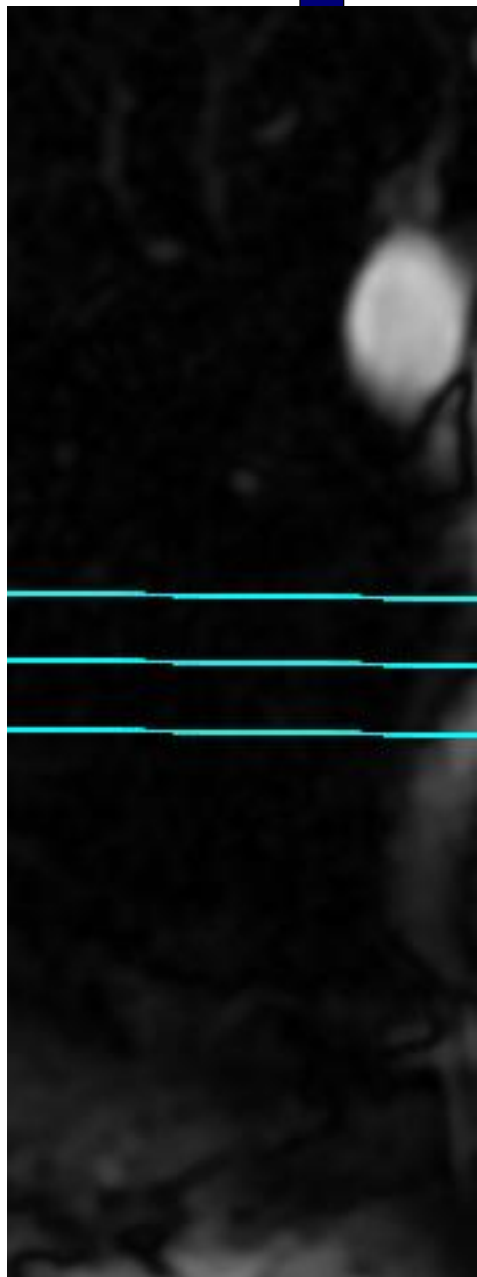
MPAV FIESTA CINE

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OTHERS

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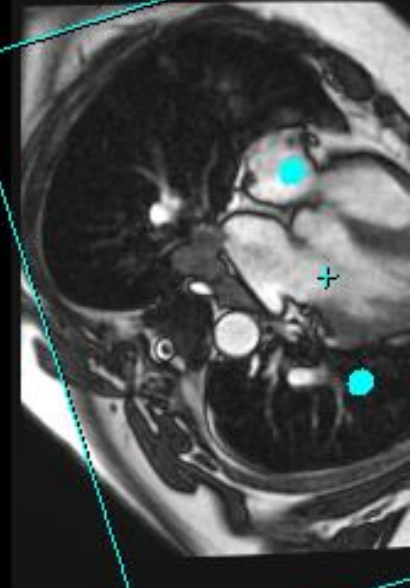
Protocol Notes

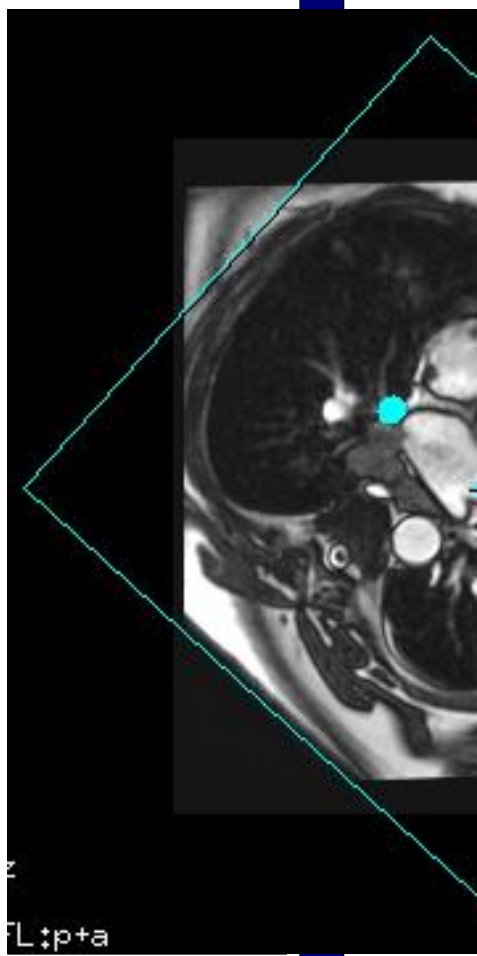
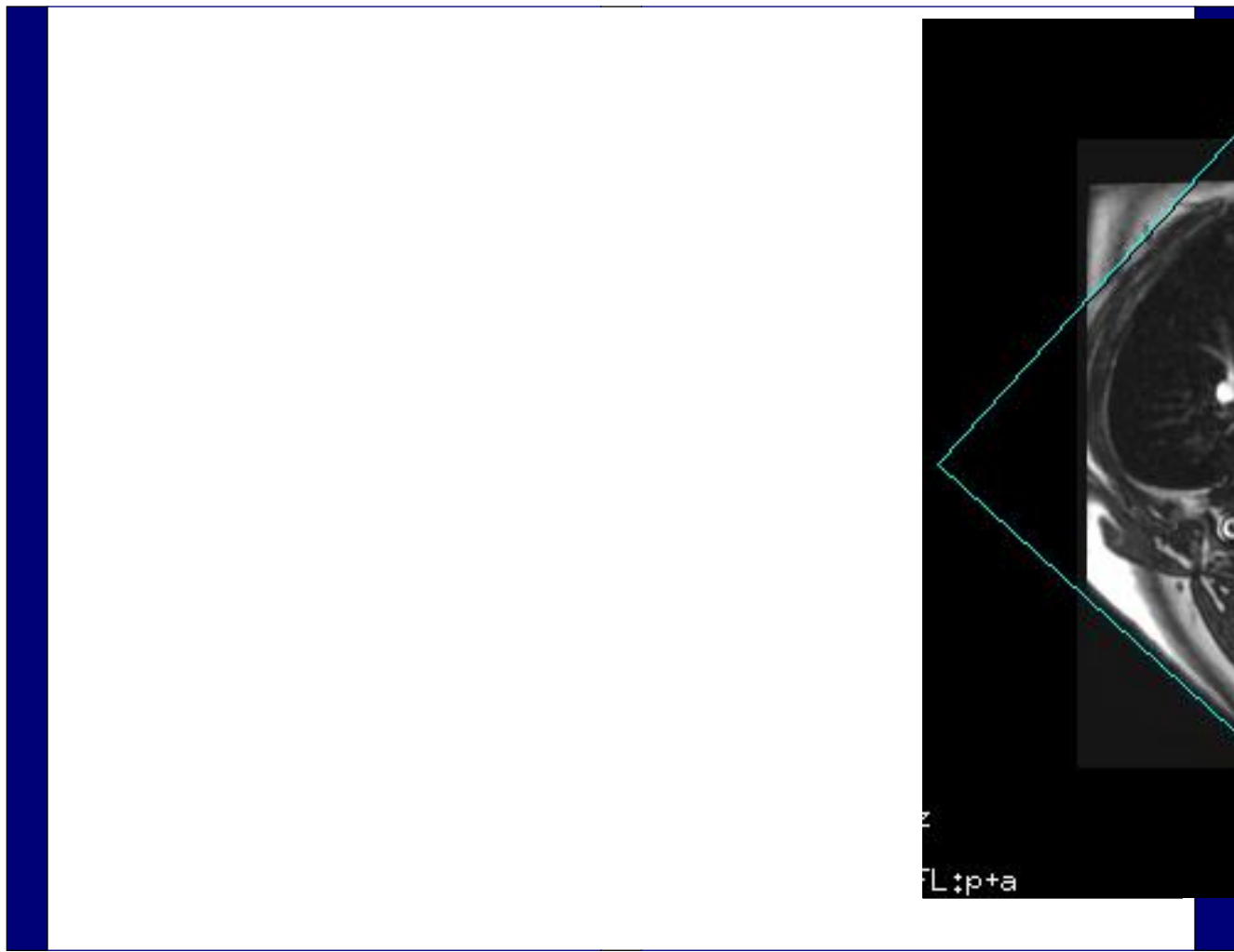


*IMPORTANT TIPS:  
-Make sure that  
Temp Res  
is around  
50ms  
. The higher the HR, the  
lower the value of Temp  
Res should be.*

Max # Slices: 1  
# of Acqs: 3  
Rel. SNR(%): 72  
Temp Res: 52 ms

---Wrong FOV rotation ---  
-----Correct FOV rotation --







Protocol: adult\_chest\_Cardiac Function & Viability

FGRE Perfusion	<b>PATIENT POSITION</b>		<b>IMAGING PARAMETERS</b>	
	Patient Entry	<i>Feet First</i>	Imaging Mode	<i>2D</i>
	Patient Position	<i>Supine</i>	Pulse Sequence	<i>Gradient Echo</i>
	Coil Configuration	<i>GEM Body</i>	Imaging Options	<i>Gat, EDR, Fast, MPh, Asset, SrP</i>
	Plane	<i>OBLIQUE</i>	<b>SCAN RANGE</b>	
	Series Description	<i>FGRE Perfusion</i>	FOV	<i>36.0</i>
	<b>SCAN TIMING</b>		Slice Thickness	<i>10.0</i>
	Flip Angle	<i>25</i>	Slice Spacing	<i>15.0</i>
	TE	<i>Min Full</i>	<b>ACQ TIMING</b>	
	Number of Echoes	<i>1</i>	Freq	<i>128</i>
	TI	<i>150</i>	Phase	<i>128</i>
	Receiver Bandwidth	<i>62.50</i>	Freq DIR	<i>Unswap</i>
	<b>IMAGE ENHANCE</b>		NEX	<i>1.00</i>
	Filter Choice	<i>None</i>	Phase FOV	<i>0.75</i>
	<b>GATING/TRIGGER</b>		Auto Shim	<i>Auto</i>
	Auto Trigger Type	<i>On</i>	Phase Correction	<i>No</i>
	Trigger Type	<i>0</i>	<b>USER CVS</b>	
	Minimum Trigger Delay	<i>2</i>	User CV16	<i>1.00</i>
	Cardiac Phase	<i>1</i>	<b>MULTI-PHASE</b>	
	Cardiac Slices	<i>1</i>	Slice per Location	<i>40</i>
	<b>FMRI</b>		Seperate Series	<i>0</i>
	PSD Trigger	<i>Internal</i>	Mask Phase	<i>0</i>
	Slice Order	<i>Interleaved</i>	Mask Pause	<i>0</i>
	View Order	<i>Bottom/Up</i>	<b>DIFFUSION</b>	
	# of Repetitions REST	<i>0</i>	Recon All Images	<i>On</i>
# of Repetitions ACTIVE	<i>0</i>	<b>CONTRAST</b>		
<b>SAT</b>		Contrast Yes/No	<i>No</i>	
Tag Type	<i>None</i>			
<b>TRICKS</b>				
# of RR Intervals	<i>1</i>			
Trigger Delay	<i>10</i>			
Pause On/Off	<i>On</i>			
Auto Subtract	<i>0</i>			
Auto SCIC	<i>Off</i>			

FGRE Perfusion

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Protocol: adult\_chest\_Cardiac Function & Viability

**OTHERS**

**Protocol Notes**

*IMPORTANT TIPS:*  
*-Multi-plane is supported when UserCV 16, Prep Pulse, is set to 1. To add slices in different planes, use [Shift] + click to deposit the desired slices, up to the Max # Slices shown on the screen.*



*- If the highest frame rate is desired, change # RR Interval to 1. Max # Slices will decrease accordingly.*