

McLeod Pavilion

Protocol: adult_abdomen_LIVER-free-breathing 4/3/2018

PATIENT POSITION		IMAGING PARAMETERS	
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>Body</i>	Imaging Options	<i>Seq, EDR, TRF, Fast, SS, FR, ARC</i>
Plane	<i>3-PLANE</i>	SCAN RANGE	
Series Description	<i>3-Plane Localizer</i>	FOV	<i>48.0</i>
SCAN TIMING		Slice Thickness	<i>8.0</i>
TE	<i>80.0</i>	Slice Spacing	<i>5.0</i>
Number of Echoes	<i>1</i>	ACQ TIMING	
TR	<i>525.0</i>	Freq	<i>384</i>
Receiver Bandwidth	<i>83.33</i>	Phase	<i>160</i>
IMAGE ENHANCE		Freq DIR	<i>Unswap</i>
Filter Choice	<i>None</i>	# of Acq. Before Pause	<i>0</i>
GATING/TRIGGER		Phase FOV	<i>1.00</i>
Auto Trigger Type	<i>Off</i>	Auto Shim	<i>Auto</i>
FMRI		Phase Correction	<i>No</i>
PSD Trigger	<i>Internal</i>	USER CVS	
View Order	<i>Bottom/Up</i>	User CV1	<i>1.00</i>
# of Repetitions REST	<i>0</i>	MULTI-PHASE	
# of Repetitions ACTIVE	<i>0</i>	Seperate Series	<i>0</i>
SAT		Mask Phase	<i>0</i>
Tag Type	<i>None</i>	Mask Pause	<i>0</i>
TRICKS		DIFFUSION	
Pause On/Off	<i>On</i>	Recon All Images	<i>On</i>
Auto Subtract	<i>0</i>	CONTRAST	
Auto SCIC	<i>Off</i>	Contrast Yes/No	<i>No</i>

3-Plane Localizer

3-Plane Localizer

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PATIENT POSITION		IMAGING PARAMETERS	
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>Body</i>	Imaging Options	<i>EDR, Fast, SS, Asset, Nav</i>
Plane	<i>CORONAL</i>	SCAN RANGE	
Series Description	<i>Cor SSFSE Nav</i>	FOV	<i>40.0</i>
SCAN TIMING		Slice Thickness	<i>7.0</i>
TE	<i>90.0</i>	Slice Spacing	<i>1.0</i>
Number of Echoes	<i>1</i>	ACQ TIMING	
Receiver Bandwidth	<i>83.33</i>	Freq	<i>320</i>
IMAGE ENHANCE		Phase	<i>256</i>
Filter Choice	<i>A</i>	Freq DIR	<i>S/I</i>
GATING/TRIGGER		NEX	<i>1.00</i>
Auto Trigger Type	<i>Off</i>	Phase FOV	<i>1.00</i>
Resp. Trigger Window	<i>30</i>	Auto Shim	<i>Auto</i>
FMRI		Phase Correction	<i>No</i>
PSD Trigger	<i>Internal</i>	USER CVS	
View Order	<i>Bottom/Up</i>	User CV1	<i>1.00</i>
# of Repetitions REST	<i>0</i>	User CV2	<i>184.00</i>
# of Repetitions ACTIVE	<i>0</i>	User CV13	<i>1.00</i>
SAT		MULTI-PHASE	
Tag Type	<i>None</i>	Seperate Series	<i>0</i>
TRICKS		Mask Phase	<i>0</i>
Pause On/Off	<i>On</i>	Mask Pause	<i>0</i>
Auto Subtract	<i>0</i>	DIFFUSION	
Auto SCIC	<i>2</i>	Recon All Images	<i>On</i>
CONTRAST		TRACKER	
Contrast Yes/No	<i>No</i>	Tracker Length	<i>120.0</i>
		Tracker Thickness	<i>20.0</i>

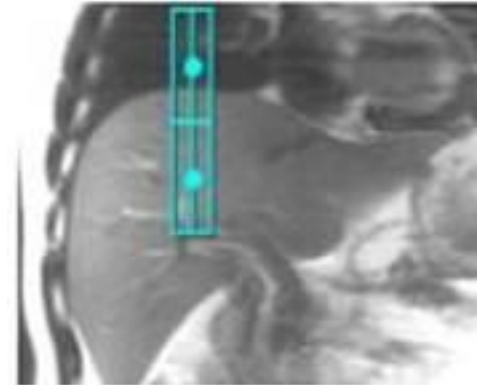
Cor SSFSE Nav

Cor SSFSE Nav

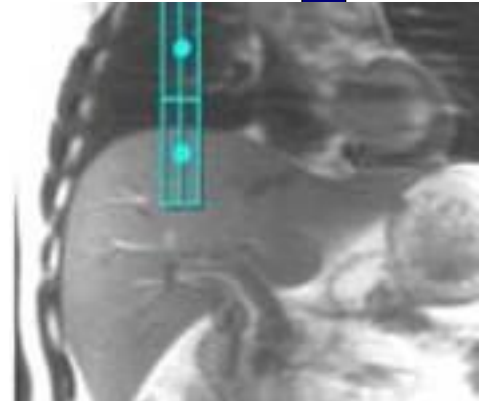
OTHERS

Protocol Notes

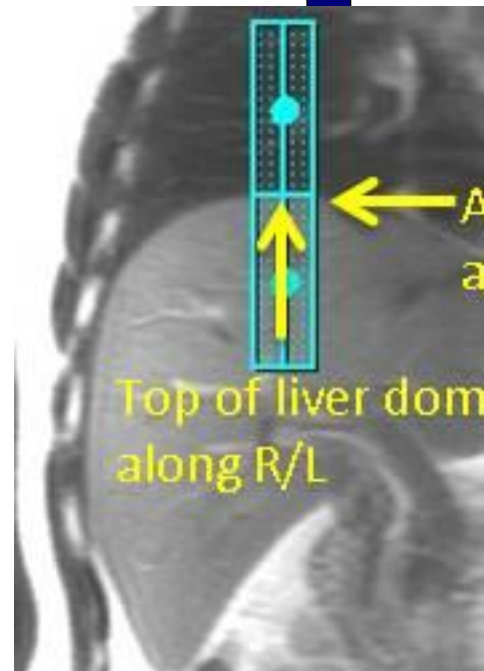
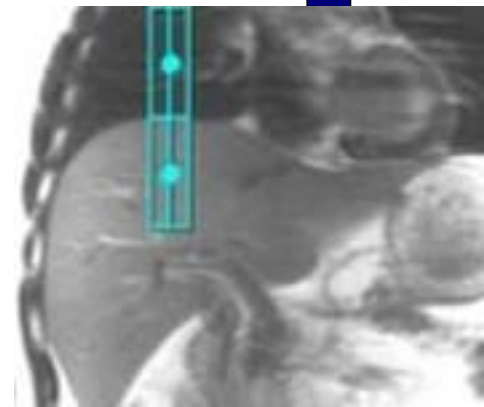
*Auto Tracker placement is turned on
Tracker will be placed automatically
Manual Placement
Instructions:
Navigator Tracker
Placement Considerations
* Place navigator tracker on a breath hold localizer for the optimum performance*
- Center of tracker should be 1.5 cm below diaphragm if localizer was acquired with expiration breath hold
- Center of tracker should be 1.5 cm above diaphragm if localizer was acquired with inspiration breath hold
- Center of tracker should be placed on the diaphragm if localizer was acquired free breathing
*Please review operator manual for additional information
Expiration-Breath Hold Tracker Placement*

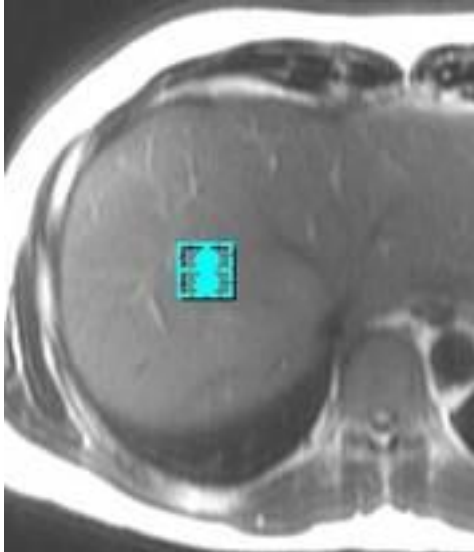
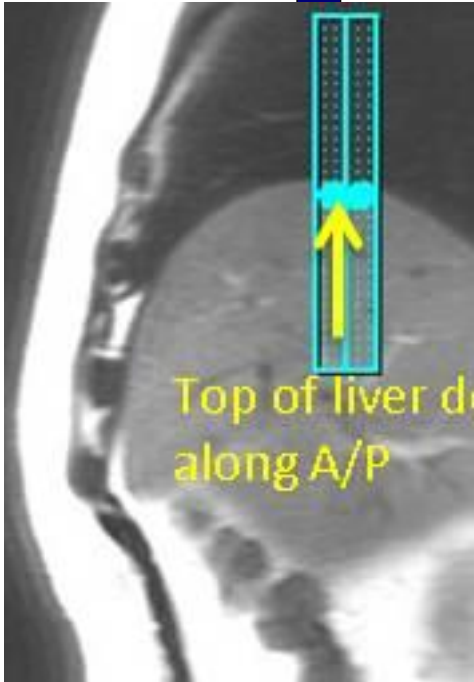


Inspiration-Breath Hold Tracker Placement

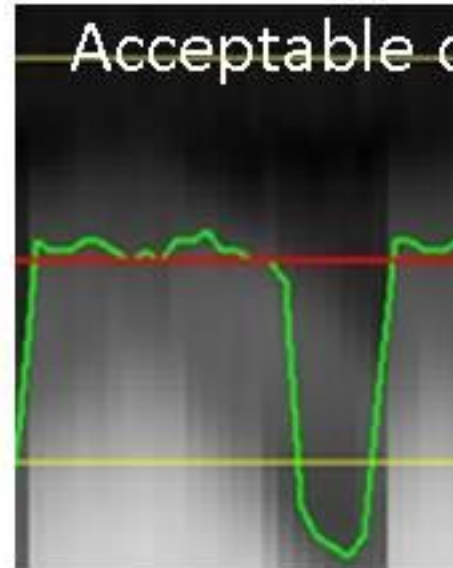


Free Breathing Tracker Placement





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-> No need to ch
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Protocol: adult_abdomen_LIVER-free-breathing 4/3/2018

PATIENT POSITION		IMAGING PARAMETERS	
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>Body</i>	Imaging Options	<i>EDR, Fast, SS, Asset, Nav</i>
Plane	<i>AXIAL</i>	SCAN RANGE	
Series Description	<i>Ax SSFSE Nav</i>	FOV	<i>40.0</i>
SCAN TIMING		Slice Thickness	<i>7.0</i>
TE	<i>90.0</i>	Slice Spacing	<i>1.0</i>
Number of Echoes	<i>1</i>	ACQ TIMING	
Receiver Bandwidth	<i>83.33</i>	Freq	<i>320</i>
IMAGE ENHANCE		Phase	<i>256</i>
Filter Choice	<i>A</i>	Freq DIR	<i>R/L</i>
GATING/TRIGGER		NEX	<i>1.00</i>
Auto Trigger Type	<i>Off</i>	Phase FOV	<i>1.00</i>
Resp. Trigger Window	<i>30</i>	Auto Shim	<i>Auto</i>
FMRI		Phase Correction	<i>No</i>
PSD Trigger	<i>Internal</i>	USER CVS	
View Order	<i>Bottom/Up</i>	User CV1	<i>1.00</i>
# of Repetitions REST	<i>0</i>	User CV2	<i>184.00</i>
# of Repetitions ACTIVE	<i>0</i>	User CV13	<i>1.00</i>
SAT		MULTI-PHASE	
Tag Type	<i>None</i>	Seperate Series	<i>0</i>
TRICKS		Mask Phase	<i>0</i>
Pause On/Off	<i>On</i>	Mask Pause	<i>0</i>
Auto Subtract	<i>0</i>	DIFFUSION	
Auto SCIC	<i>2</i>	Recon All Images	<i>On</i>
CONTRAST		TRACKER	
Contrast Yes/No	<i>No</i>	Tracker Length	<i>120.0</i>
		Tracker Thickness	<i>20.0</i>

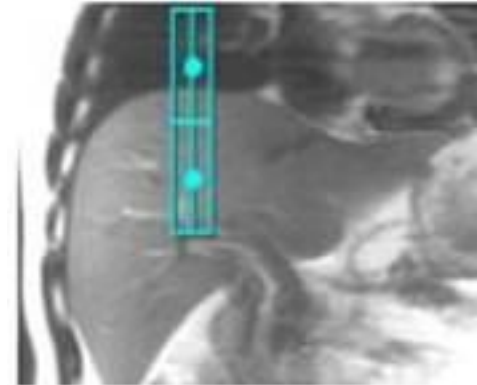
Ax SSFSE Nav

Ax SSFSE Nav

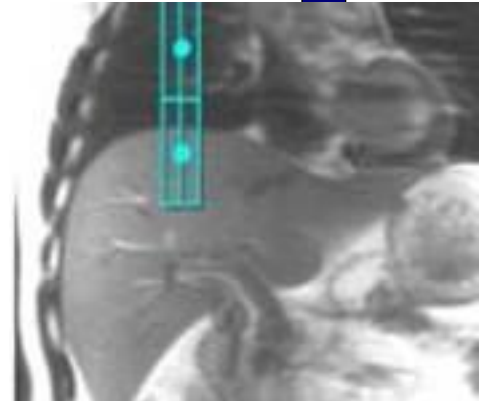
OTHERS

Protocol Notes

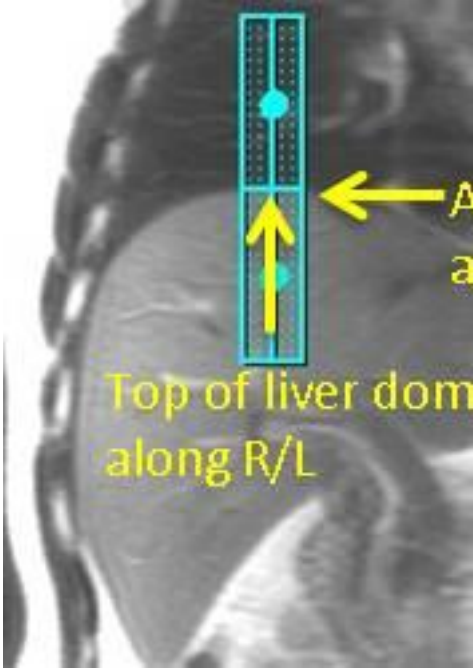
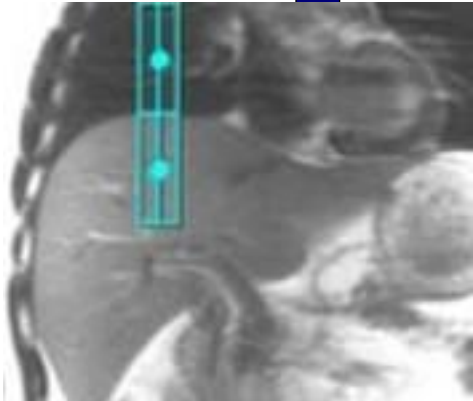
*Auto Tracker placement is turned on
Tracker will be placed automatically
Manual Placement
Instructions:
Navigator Tracker
Placement Considerations
* Place navigator tracker on a breath hold localizer for the optimum performance*
- Center of tracker should be 1.5 cm below diaphragm if localizer was acquired with expiration breath hold
- Center of tracker should be 1.5 cm above diaphragm if localizer was acquired with inspiration breath hold
- Center of tracker should be placed on the diaphragm if localizer was acquired free breathing
*Please review operator manual for additional information
Expiration-Breath Hold Tracker Placement*

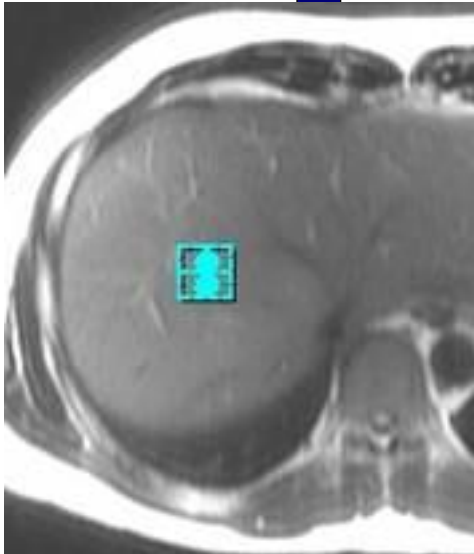
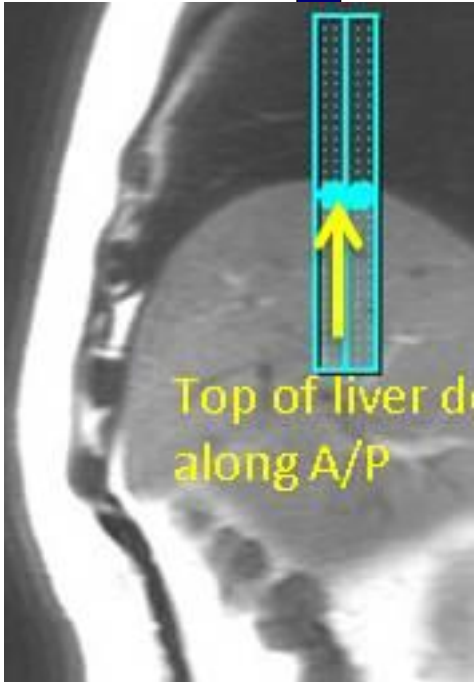


Inspiration-Breath Hold Tracker Placement

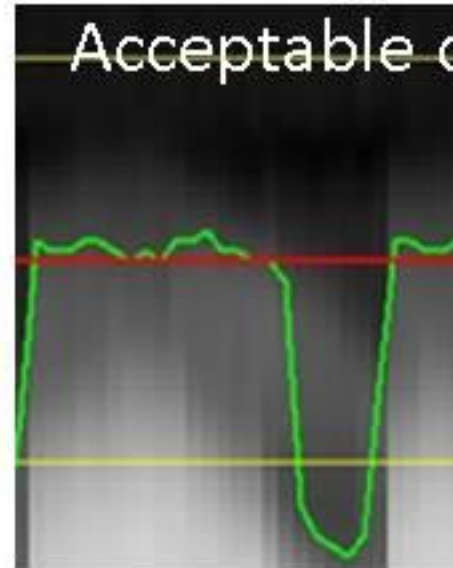


Free Breathing Tracker Placement





Easy Tro



-> No need to check anything since green waveform reflects respiratory status

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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>Body</i>	Imaging Options	<i>FC, EDR, TRF, Fast, FR, Nav, ARC</i>
Plane	<i>AXIAL</i>	SCAN RANGE	
Series Description	<i>Ax T2 frFSE Nav FS</i>	FOV	<i>40.0</i>
SCAN TIMING		Slice Thickness	<i>7.0</i>
Flip Angle	<i>111</i>	Slice Spacing	<i>1.0</i>
TE	<i>102.0</i>	ACQ TIMING	
Number of Echoes	<i>1</i>	Freq	<i>384</i>
Echo Train Length	<i>17</i>	Phase	<i>256</i>
Receiver Bandwidth	<i>62.50</i>	Freq DIR	<i>R/L</i>
IMAGE ENHANCE		Fat Shift DIR	<i>Normal (L)</i>
Filter Choice	<i>A</i>	NEX	<i>2.00</i>
GATING/TRIGGER		Phase FOV	<i>1.00</i>
Auto Trigger Type	<i>Off</i>	Auto Shim	<i>Auto</i>
Resp. Trigger Window	<i>50</i>	Phase Correction	<i>No</i>
FMRI		Flow Direction	<i>Slice</i>
PSD Trigger	<i>Internal</i>	Compensation	
View Order	<i>Bottom/Up</i>	USER CVS	
# of Repetitions REST	<i>0</i>	User CV18	<i>1.00</i>
# of Repetitions ACTIVE	<i>0</i>	User CV19	<i>1.00</i>
SAT		User CV22	<i>1.00</i>
Tag Type	<i>None</i>	MULTI-PHASE	
Fat/Water Saturation	<i>Fat</i>	Seperate Series	<i>0</i>
TRICKS		Mask Phase	<i>0</i>
Pause On/Off	<i>On</i>	Mask Pause	<i>0</i>
Auto Subtract	<i>0</i>	DIFFUSION	
Auto SCIC	<i>2</i>	Recon All Images	<i>On</i>
CONTRAST		TRACKER	
Contrast Yes/No	<i>No</i>	Tracker Length	<i>120.0</i>
		Tracker Thickness	<i>20.0</i>

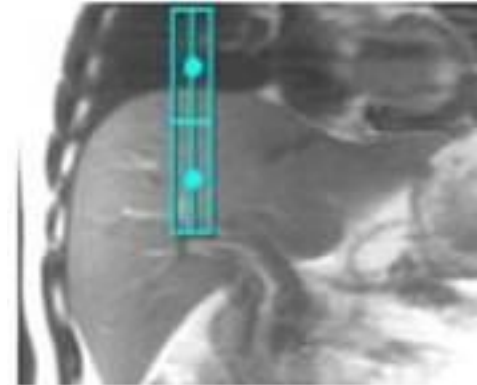
Ax T2 frFSE Nav FS

Ax T2 frFSE Nav FS

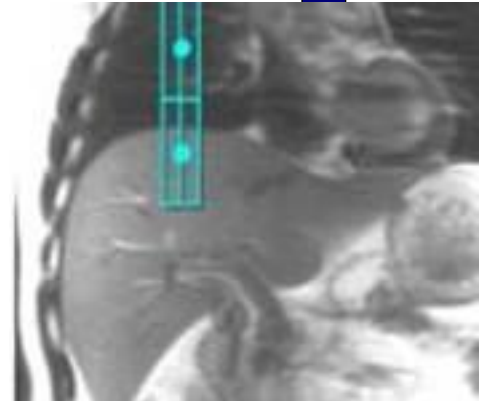
OTHERS

Protocol Notes

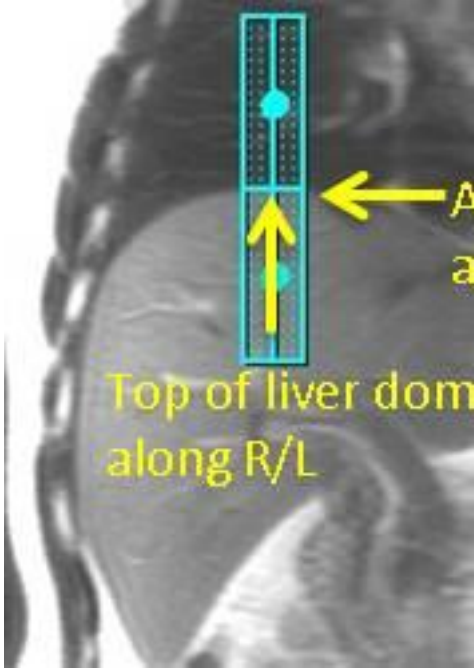
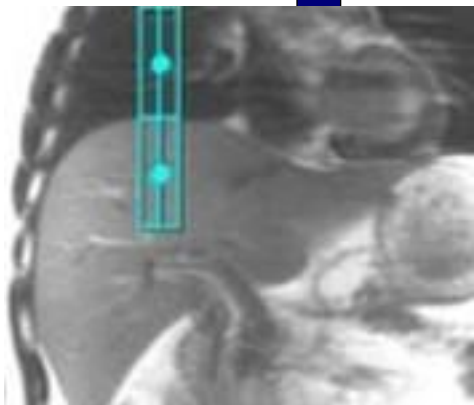
*Auto Tracker placement is turned on
Tracker will be placed automatically
Manual Placement
Instructions:
Navigator Tracker
Placement Considerations
* Place navigator tracker on a breath hold localizer for the optimum performance*
- Center of tracker should be 1.5 cm below diaphragm if localizer was acquired with expiration breath hold
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*Please review operator manual for additional information
Expiration-Breath Hold Tracker Placement*

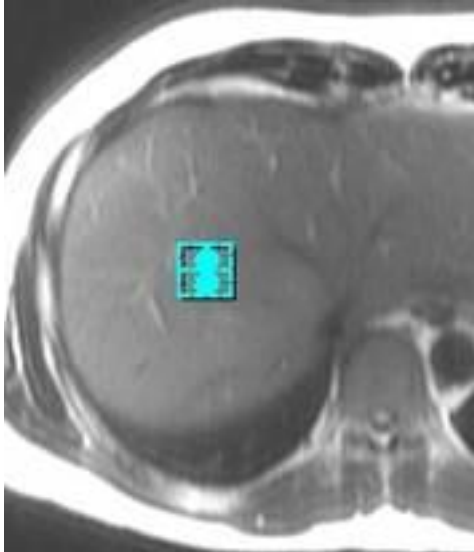
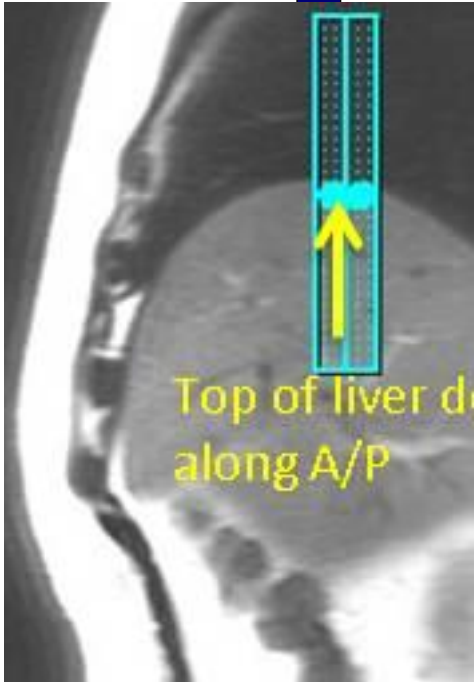


Inspiration-Breath Hold Tracker Placement

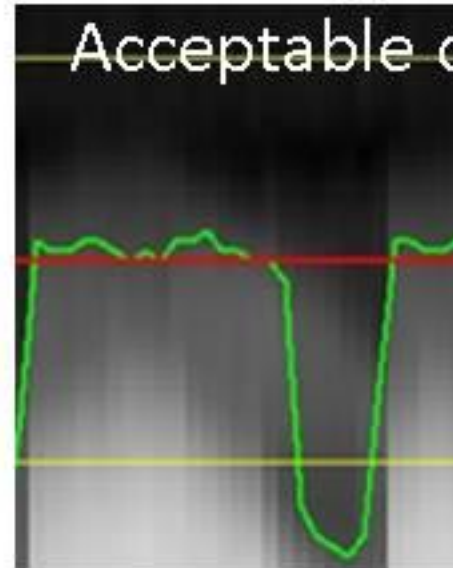


Free Breathing Tracker Placement





Easy Tro



-> No need to check anything since green waveform reflects respiratory status

Protocol: adult_abdomen_LIVER-free-breathing 4/3/2018

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>Body</i>	Imaging Options	<i>Seq, EDR, Fast, ARC</i>
Plane	<i>AXIAL</i>	SCAN RANGE	
Series Description	<i>Ax FIESTA ASPIR BH</i>	FOV	<i>40.0</i>
SCAN TIMING		Slice Thickness	<i>7.0</i>
Flip Angle	<i>50</i>	Slice Spacing	<i>1.0</i>
TE	<i>Minimum</i>	ACQ TIMING	
Number of Echoes	<i>1</i>	Freq	<i>192</i>
TI	<i>210</i>	Phase	<i>300</i>
Receiver Bandwidth	<i>125.00</i>	Freq DIR	<i>R/L</i>
IMAGE ENHANCE		NEX	<i>1.00</i>
Filter Choice	<i>None</i>	# of Acq. Before Pause	<i>0</i>
GATING/TRIGGER		Phase FOV	<i>0.80</i>
Auto Trigger Type	<i>Off</i>	Auto Shim	<i>Auto</i>
MULTI-PHASE		Phase Correction	<i>No</i>
Seperate Series	<i>0</i>	FMRI	
Mask Phase	<i>0</i>	PSD Trigger	<i>Internal</i>
Mask Pause	<i>0</i>	View Order	<i>Bottom/Up</i>
DIFFUSION		# of Repetitions REST	<i>0</i>
Recon All Images	<i>On</i>	# of Repetitions ACTIVE	<i>0</i>
CONTRAST		SAT	
Contrast Yes/No	<i>No</i>	Tag Type	<i>None</i>
		Fat/Water Saturation	<i>Fat Special</i>
		TRICKS	
		Pause On/Off	<i>On</i>
		Auto Subtract	<i>0</i>
		Auto SCIC	<i>Off</i>
		OTHERS	
		Protocol Notes	<i>Tip:</i> - Place a shim volume over the liver to help reduce artifacts. - TI time for ASPIR (ChemSAT) can be modified by changing the Prep Time.

AX FIESTA ASPIR BH

AX FIESTA ASPIR BH

Protocol: adult_abdomen_LIVER-free-breathing 4/3/2018

PATIENT POSITION		IMAGING PARAMETERS	
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>Body</i>	Imaging Options	<i>EDR, EPI, DIFF, Asset, Nav</i>
Plane	<i>AXIAL</i>	SCAN RANGE	
Series Description	<i>Ax DWI 3:1 B-800-500-50</i>	FOV	<i>40.0</i>
SCAN TIMING		Slice Thickness	<i>7.0</i>
TE	<i>Minimum</i>	Slice Spacing	<i>1.0</i>
Number of Echoes	<i>1</i>	ACQ TIMING	
Number of Shots	<i>1</i>	Freq	<i>80</i>
IMAGE ENHANCE		Phase	<i>128</i>
Filter Choice	<i>None</i>	Freq DIR	<i>R/L</i>
GATING/TRIGGER		Phase FOV	<i>1.00</i>
Auto Trigger Type	<i>Off</i>	Auto Shim	<i>Auto</i>
Resp. Trigger Window	<i>30</i>	Phase Correction	<i>Yes</i>
FMRI		USER CVS	
PSD Trigger	<i>Internal</i>	User CV0	<i>1.00</i>
View Order	<i>Bottom/Up</i>	User CV17	<i>1.00</i>
# of Repetitions REST	<i>0</i>	User CV18	<i>1.00</i>
# of Repetitions ACTIVE	<i>0</i>	MULTI-PHASE	
SAT		Seperate Series	<i>0</i>
Tag Type	<i>None</i>	Mask Phase	<i>0</i>
Fat/Water Saturation	<i>Fat</i>	Mask Pause	<i>0</i>
TRICKS		DIFFUSION	
Pause On/Off	<i>On</i>	Optimized TE	<i>Yes</i>
Auto Subtract	<i>0</i>	Diffusion Directions	<i>64</i>
Auto SCIC	<i>2</i>	Number of Diffusion Directions	<i>1</i>
CONTRAST		Number of T2 Images	<i>0</i>
Contrast Yes/No	<i>No</i>	Dual Spin Echo	<i>Off</i>
		Recon All Images	<i>On</i>
		TRACKER	
		Tracker Length	<i>120.0</i>
		Tracker Thickness	<i>20.0</i>

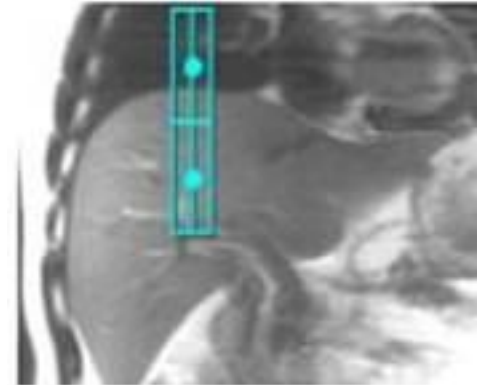
Ax DWI 3:1 B-800-500-50

Ax DWI 3:1 B-800-500-50

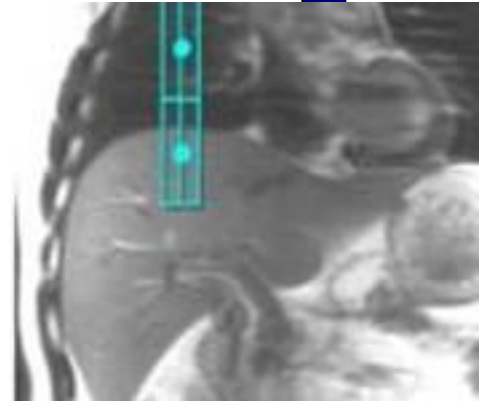
OTHERS

Protocol Notes

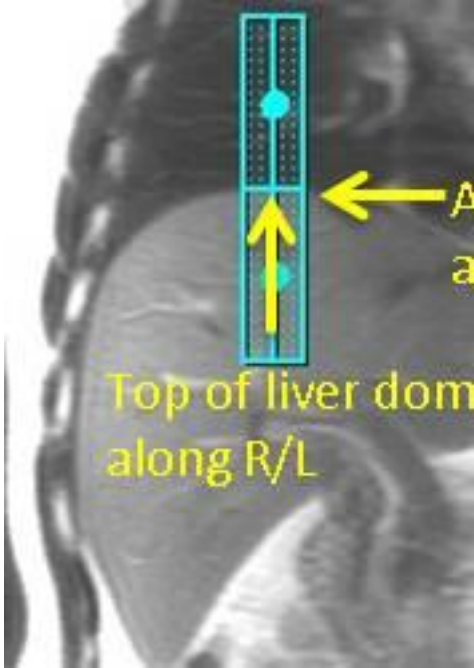
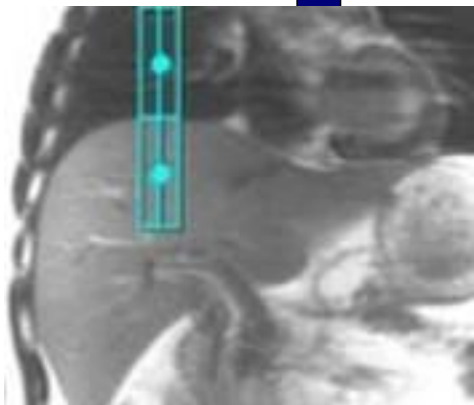
*Auto Tracker placement is turned on
Tracker will be placed automatically
Manual Placement
Instructions:
Navigator Tracker
Placement Considerations
* Place navigator tracker on a breath hold localizer for the optimum performance*
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*Please review operator manual for additional information
Expiration-Breath Hold Tracker Placement*

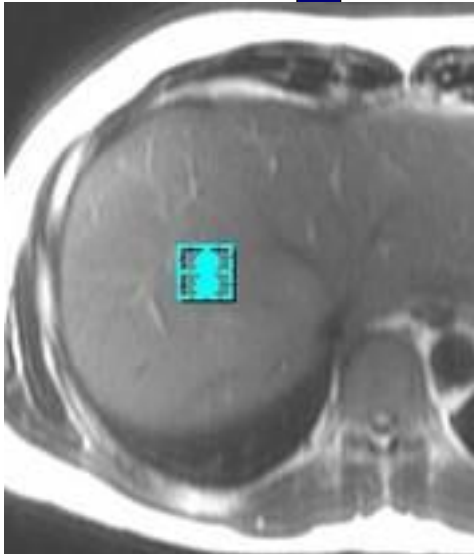
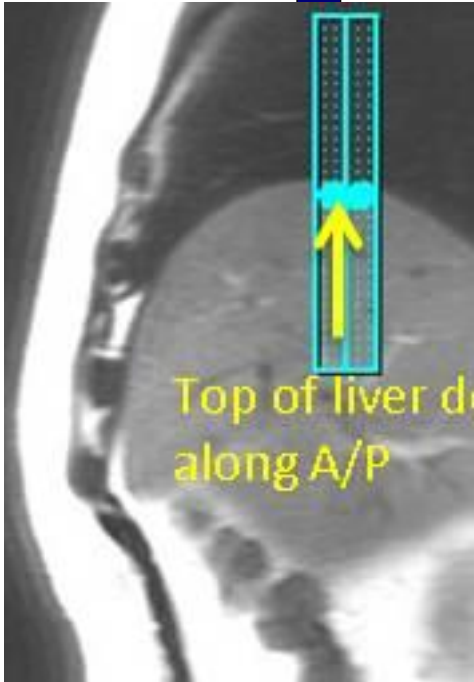


Inspiration-Breath Hold Tracker Placement

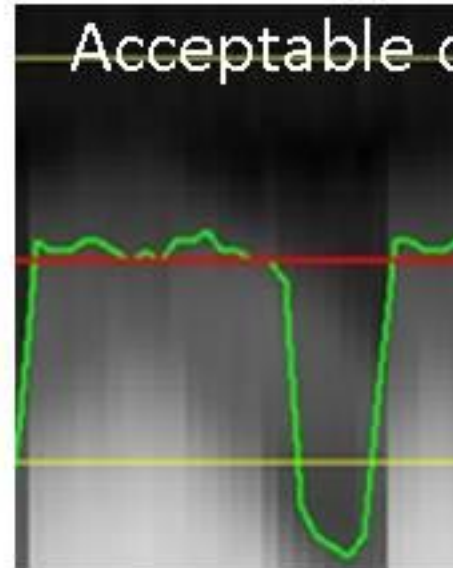


Free Breathing Tracker Placement





Easy Tro



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Protocol: adult_abdomen_LIVER-free-breathing 4/3/2018

3D Ax LAVA Flex Pre/AV	PATIENT POSITION		IMAGING PARAMETERS	
	Patient Entry	<i>Feet First</i>	Imaging Mode	<i>3D</i>
	Patient Position	<i>Supine</i>	Pulse Sequence	<i>LAVA</i>
	Coil Configuration	<i>Body</i>	Imaging Options	<i>EDR, Fast, ZIP2, MPhVar, ARC, Flex</i>
	Plane	<i>AXIAL</i>	IDEAL	<i>15</i>
	Series Description	<i>3D Ax LAVA Flex Pre/AV</i>	SCAN RANGE	
	SCAN TIMING		FOV	<i>42.0</i>
	Flip Angle	<i>12</i>	Slice Thickness	<i>4.4</i>
	TE	<i>Minimum</i>	Location per Slab	<i>56</i>
	Number of Echoes	<i>2</i>	Overlap Locations	<i>0</i>
	Receiver Bandwidth	<i>142.86</i>	ACQ TIMING	
	IMAGE ENHANCE		Freq	<i>300</i>
	Filter Choice	<i>A</i>	Phase	<i>200</i>
	GATING/TRIGGER		Freq DIR	<i>R/L</i>
	Auto Trigger Type	<i>Off</i>	NEX	<i>1.00</i>
	FMRI		Phase FOV	<i>1.10</i>
	PSD Trigger	<i>Internal</i>	Auto Shim	<i>Auto</i>
	View Order	<i>Bottom/Up</i>	Phase Correction	<i>No</i>
	# of Repetitions REST	<i>0</i>	USER CVS	
	# of Repetitions ACTIVE	<i>0</i>	User CV6	<i>1.00</i>
SAT		MULTI-PHASE		
Tag Type	<i>None</i>	# of Phases	<i>3</i>	
TRICKS		Seperate Series	<i>1</i>	
Pause On/Off	<i>On</i>	Trigger Delay without AV	<i>6</i>	
Auto Subtract	<i>4099</i>	Mask Phase	<i>1</i>	
Auto SCIC	<i>2</i>	Mask Pause	<i>1</i>	
		DIFFUSION		
		Recon All Images	<i>On</i>	
		CONTRAST		
		Contrast Yes/No	<i>No</i>	

3D Ax LAVA Flex Pre/AV

McLeod Pavilion

Protocol: adult_abdomen_LIVER-free-breathing 4/3/2018

PATIENT POSITION		IMAGING PARAMETERS	
Patient Entry	<i>Feet First</i>	Imaging Mode	<i>3D</i>
Patient Position	<i>Supine</i>	Pulse Sequence	<i>LAVA</i>
Coil Configuration	<i>Body</i>	Imaging Options	<i>EDR, Fast, ZIP2, ARC, Flex</i>
Plane	<i>CORONAL</i>	IDEAL	<i>3</i>
Series Description	<i>3D Cor LAVA Flex BH</i>	SCAN RANGE	
SCAN TIMING		FOV	<i>44.0</i>
Flip Angle	<i>12</i>	Slice Thickness	<i>4.4</i>
TE	<i>Minimum</i>	Location per Slab	<i>56</i>
Number of Echoes	<i>2</i>	Overlap Locations	<i>0</i>
Receiver Bandwidth	<i>142.86</i>	ACQ TIMING	
IMAGE ENHANCE		Freq	<i>300</i>
Filter Choice	<i>A</i>	Phase	<i>200</i>
GATING/TRIGGER		Freq DIR	<i>S/I</i>
Auto Trigger Type	<i>Off</i>	NEX	<i>1.00</i>
FMRI		Phase FOV	<i>1.00</i>
PSD Trigger	<i>Internal</i>	Auto Shim	<i>Auto</i>
View Order	<i>Bottom/Up</i>	Phase Correction	<i>No</i>
# of Repetitions REST	<i>0</i>	USER CVS	
# of Repetitions ACTIVE	<i>0</i>	User CV4	<i>6.60</i>
SAT		User CV6	<i>1.00</i>
Tag Type	<i>None</i>	MULTI-PHASE	
TRICKS		Seperate Series	<i>0</i>
Pause On/Off	<i>On</i>	Trigger Delay without AV	<i>6.6</i>
Auto Subtract	<i>0</i>	Mask Phase	<i>0</i>
Auto SCIC	<i>2</i>	Mask Pause	<i>0</i>
		DIFFUSION	
		Recon All Images	<i>On</i>
		CONTRAST	
		Contrast Yes/No	<i>No</i>

3D Cor LAVA Flex BH

3D Cor LAVA Flex BH

McLeod Pavilion

Protocol: adult_abdomen_LIVER-free-breathing 4/3/2018

3D Ax LAVA Flex 3MIN	PATIENT POSITION		IMAGING PARAMETERS		3D Ax LAVA Flex 3MIN
	Patient Entry	<i>Feet First</i>	Imaging Mode	<i>3D</i>	
	Patient Position	<i>Supine</i>	Pulse Sequence	<i>LAVA</i>	
	Coil Configuration	<i>Body</i>	Imaging Options	<i>EDR, Fast, ZIP2, ARC, Flex</i>	
	Plane	<i>AXIAL</i>	IDEAL	<i>3</i>	
	Series Description	<i>3D Ax LAVA Flex 3MIN</i>	SCAN RANGE		
	SCAN TIMING		FOV	<i>42.0</i>	
	Flip Angle	<i>12</i>	Slice Thickness	<i>4.4</i>	
	TE	<i>Minimum</i>	Location per Slab	<i>56</i>	
	Number of Echoes	<i>2</i>	Overlap Locations	<i>0</i>	
	Receiver Bandwidth	<i>142.86</i>	ACQ TIMING		
	IMAGE ENHANCE		Freq	<i>300</i>	
	Filter Choice	<i>A</i>	Phase	<i>200</i>	
	GATING/TRIGGER		Freq DIR	<i>R/L</i>	
	Auto Trigger Type	<i>Off</i>	NEX	<i>1.00</i>	
	FMRI		Phase FOV	<i>1.10</i>	
	PSD Trigger	<i>Internal</i>	Auto Shim	<i>Auto</i>	
	View Order	<i>Bottom/Up</i>	Phase Correction	<i>No</i>	
	# of Repetitions REST	<i>0</i>	USER CVS		
	# of Repetitions ACTIVE	<i>0</i>	User CV4	<i>6.60</i>	
	SAT		User CV6	<i>1.00</i>	
	Tag Type	<i>None</i>	MULTI-PHASE		
	TRICKS		Seperate Series	<i>0</i>	
	Pause On/Off	<i>On</i>	Trigger Delay without AV	<i>6.6</i>	
	Auto Subtract	<i>0</i>	Mask Phase	<i>0</i>	
Auto SCIC	<i>2</i>	Mask Pause	<i>0</i>		
		DIFFUSION			
		Recon All Images	<i>On</i>		
		CONTRAST			
		Contrast Yes/No	<i>No</i>		

Protocol: adult_abdomen_LIVER-free-breathing 4/3/2018

3D Ax LAVA Flex 6MIN	PATIENT POSITION		IMAGING PARAMETERS		3D Ax LAVA Flex 6MIN
	Patient Entry	<i>Feet First</i>	Imaging Mode	<i>3D</i>	
	Patient Position	<i>Supine</i>	Pulse Sequence	<i>LAVA</i>	
	Coil Configuration	<i>Body</i>	Imaging Options	<i>EDR, Fast, ZIP2, ARC, Flex</i>	
	Plane	<i>AXIAL</i>	IDEAL	<i>3</i>	
	Series Description	<i>3D Ax LAVA Flex 6MIN</i>	SCAN RANGE		
	SCAN TIMING		FOV	<i>42.0</i>	
	Flip Angle	<i>12</i>	Slice Thickness	<i>4.4</i>	
	TE	<i>Minimum</i>	Location per Slab	<i>56</i>	
	Number of Echoes	<i>2</i>	Overlap Locations	<i>0</i>	
	Receiver Bandwidth	<i>142.86</i>	ACQ TIMING		
	IMAGE ENHANCE		Freq	<i>300</i>	
	Filter Choice	<i>A</i>	Phase	<i>200</i>	
	GATING/TRIGGER		Freq DIR	<i>R/L</i>	
	Auto Trigger Type	<i>Off</i>	NEX	<i>1.00</i>	
	FMRI		Phase FOV	<i>1.10</i>	
	PSD Trigger	<i>Internal</i>	Auto Shim	<i>Auto</i>	
	View Order	<i>Bottom/Up</i>	Phase Correction	<i>No</i>	
	# of Repetitions REST	<i>0</i>	USER CVS		
	# of Repetitions ACTIVE	<i>0</i>	User CV4	<i>6.60</i>	
SAT		User CV6	<i>1.00</i>		
Tag Type	<i>None</i>	MULTI-PHASE			
TRICKS		Seperate Series	<i>0</i>		
Pause On/Off	<i>On</i>	Trigger Delay without AV	<i>6.6</i>		
Auto Subtract	<i>0</i>	Mask Phase	<i>0</i>		
Auto SCIC	<i>2</i>	Mask Pause	<i>0</i>		
		DIFFUSION			
		Recon All Images	<i>On</i>		
		CONTRAST			
		Contrast Yes/No	<i>No</i>		

Protocol: adult_abdomen_LIVER-free-breathing 4/3/2018

3D Ax LAVA Flex 10 MIN	PATIENT POSITION		IMAGING PARAMETERS	
	Patient Entry	<i>Feet First</i>	Imaging Mode	<i>3D</i>
	Patient Position	<i>Supine</i>	Pulse Sequence	<i>LAVA</i>
	Coil Configuration	<i>Body</i>	Imaging Options	<i>EDR, Fast, ZIP2, ARC, Flex</i>
	Plane	<i>AXIAL</i>	IDEAL	<i>3</i>
	Series Description	<i>3D Ax LAVA Flex 10 MIN</i>	SCAN RANGE	
	SCAN TIMING		FOV	<i>42.0</i>
	Flip Angle	<i>12</i>	Slice Thickness	<i>4.4</i>
	TE	<i>Minimum</i>	Location per Slab	<i>56</i>
	Number of Echoes	<i>2</i>	Overlap Locations	<i>0</i>
	Receiver Bandwidth	<i>142.86</i>	ACQ TIMING	
	IMAGE ENHANCE		Freq	<i>300</i>
	Filter Choice	<i>A</i>	Phase	<i>200</i>
	GATING/TRIGGER		Freq DIR	<i>R/L</i>
	Auto Trigger Type	<i>Off</i>	NEX	<i>1.00</i>
	FMRI		Phase FOV	<i>1.10</i>
	PSD Trigger	<i>Internal</i>	Auto Shim	<i>Auto</i>
	View Order	<i>Bottom/Up</i>	Phase Correction	<i>No</i>
	# of Repetitions REST	<i>0</i>	USER CVS	
	# of Repetitions ACTIVE	<i>0</i>	User CV4	<i>6.60</i>
	SAT		User CV6	<i>1.00</i>
	Tag Type	<i>None</i>	MULTI-PHASE	
	TRICKS		Seperate Series	<i>0</i>
	Pause On/Off	<i>On</i>	Trigger Delay without AV	<i>6.6</i>
	Auto Subtract	<i>0</i>	Mask Phase	<i>0</i>
Auto SCIC	<i>2</i>	Mask Pause	<i>0</i>	
		DIFFUSION		
		Recon All Images	<i>On</i>	
		CONTRAST		
		Contrast Yes/No	<i>No</i>	

3D Ax LAVA Flex 10 MIN

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Protocol: adult_abdomen_LIVER-free-breathing 4/3/2018

--OPTIONS--	PATIENT POSITION		IMAGING PARAMETERS	
	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>Body</i>	Imaging Options	<i>Seq, EDR, TRF, Fast, SS, FR, ARC</i>
	Plane	<i>3-PLANE</i>	SCAN RANGE	
	Series Description	<i>--OPTIONS--</i>	FOV	<i>48.0</i>
	SCAN TIMING		Slice Thickness	<i>8.0</i>
	TE	<i>80.0</i>	Slice Spacing	<i>5.0</i>
	Number of Echoes	<i>1</i>	ACQ TIMING	
	TR	<i>525.0</i>	Freq	<i>384</i>
	Receiver Bandwidth	<i>83.33</i>	Phase	<i>160</i>
	IMAGE ENHANCE		Freq DIR	<i>Unswap</i>
	Filter Choice	<i>None</i>	# of Acq. Before Pause	<i>0</i>
	GATING/TRIGGER		Phase FOV	<i>1.00</i>
	Auto Trigger Type	<i>Off</i>	Auto Shim	<i>Auto</i>
	FMRI		Phase Correction	<i>No</i>
	PSD Trigger	<i>Internal</i>	USER CVS	
	View Order	<i>Bottom/Up</i>	User CV1	<i>1.00</i>
	# of Repetitions REST	<i>0</i>	MULTI-PHASE	
	# of Repetitions ACTIVE	<i>0</i>	Seperate Series	<i>0</i>
	SAT		Mask Phase	<i>0</i>
	Tag Type	<i>None</i>	Mask Pause	<i>0</i>
	TRICKS		DIFFUSION	
	Pause On/Off	<i>On</i>	Recon All Images	<i>On</i>
	Auto Subtract	<i>0</i>	CONTRAST	
Auto SCIC	<i>Off</i>	Contrast Yes/No	<i>No</i>	

--OPTIONS--

Protocol: adult_abdomen_LIVER-free-breathing 4/3/2018

PATIENT POSITION		IMAGING PARAMETERS	
Patient Entry	Feet First	Imaging Mode	3D
Patient Position	Supine	Pulse Sequence	DISCO
Coil Configuration	Body	Imaging Options	EDR, Fast, ZIP2, MPhVar, ARC, Flex
Plane	AXIAL	IDEAL	3
Series Description	3D Ax DISCO Dyn Mph 3 BH	SCAN RANGE	
SCAN TIMING		FOV	42.0
Flip Angle	12	Slice Thickness	4.4
TE	Minimum	Location per Slab	56
Number of Echoes	2	Overlap Locations	0
Receiver Bandwidth	166.67	ACQ TIMING	
IMAGE ENHANCE		Freq	320
Filter Choice	A	Phase	192
GATING/TRIGGER		Freq DIR	R/L
Auto Trigger Type	Off	Phase FOV	0.80
FMRI		Auto Shim	Auto
PSD Trigger	Internal	Phase Correction	No
View Order	Bottom/Up	USER CVS	
# of Repetitions REST	0	User CV11	2.00
# of Repetitions ACTIVE	0	MULTI-PHASE	
SAT		# of Phases	5
Tag Type	None	Seperate Series	0
TRICKS		Trigger Delay without AV	0
Pause On/Off	On	Mask Phase	1
Auto Subtract	0	Mask Pause	1
Auto SCIC	2	DIFFUSION	
OTHERS		Recon All Images	On
Protocol Notes	<p>Scan Time Dislay: 1st scan time = total time for wash in and delay phases. 2nd scan time = mask scan time/non wash in phases scan time. If "Mask" and "Pause After Mask" are selected the scanner will pause after completeing the mask portion and wait for the scan button to be pressed before starting the wash in portions. Phases per Locations: = wash in and deayed phases (Total number of phases) Wash-in-Phases: = number of phases for the wash in portion. - After the pre/mask is complete the scanner will pause. - Press the scan button to begin the wash in portions - The delayed phases will start after the prescribed delay time runs down.</p>		
CONTRAST		Contrast Yes/No	No

3D Ax DISCO Dyn Mph 3 BH

3D Ax DISCO Dyn Mph 3 BH

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Protocol: adult_abdomen_LIVER-free-breathing 4/3/2018

PATIENT POSITION		IMAGING PARAMETERS	
Patient Entry	<i>Feet First</i>	Imaging Mode	<i>2D</i>
Patient Position	<i>Supine</i>	Pulse Sequence	<i>SPGR</i>
Coil Configuration	<i>Body</i>	Imaging Options	<i>EDR, Fast, ARC</i>
Plane	<i>AXIAL</i>	SCAN RANGE	
Series Description	<i>Ax Dual Echo BH</i>	FOV	<i>46.0</i>
SCAN TIMING		Slice Thickness	<i>7.0</i>
Flip Angle	<i>55</i>	Slice Spacing	<i>1.0</i>
Number of Echoes	<i>2</i>	ACQ TIMING	
TR	<i>150.0</i>	Freq	<i>288</i>
IMAGE ENHANCE		Phase	<i>192</i>
Filter Choice	<i>A</i>	Freq DIR	<i>R/L</i>
GATING/TRIGGER		Phase FOV	<i>0.80</i>
Auto Trigger Type	<i>Off</i>	Auto Shim	<i>Auto</i>
MULTI-PHASE		Phase Correction	<i>No</i>
Seperate Series	<i>0</i>	FMRI	
Mask Phase	<i>0</i>	PSD Trigger	<i>Internal</i>
Mask Pause	<i>0</i>	View Order	<i>Bottom/Up</i>
DIFFUSION		# of Repetitions REST	<i>0</i>
Recon All Images	<i>On</i>	# of Repetitions ACTIVE	<i>0</i>
CONTRAST		SAT	
Contrast Yes/No	<i>No</i>	Tag Type	<i>None</i>
		TRICKS	
		Pause On/Off	<i>On</i>
		Auto Subtract	<i>0</i>
		Auto SCIC	<i>2</i>

Ax Dual Echo BH

Ax Dual Echo BH

Protocol: adult_abdomen_LIVER-free-breathing 4/3/2018

PATIENT POSITION		IMAGING PARAMETERS	
Patient Entry	<i>Feet First</i>	Imaging Mode	<i>3D</i>
Patient Position	<i>Supine</i>	Pulse Sequence	<i>FRFSE-XL</i>
Coil Configuration	<i>Body</i>	Imaging Options	<i>EDR, Fast, ZIP2, T2P, Asset, FR, Nav, MRCP</i>
Plane	<i>OBLIQUE</i>		
Series Description	<i>3D Obi MRCP Nav</i>		
SCAN TIMING		SCAN RANGE	
TE	<i>900.0</i>	FOV	<i>34.0</i>
Number of Echoes	<i>1</i>	Slice Thickness	<i>1.4</i>
Echo Train Length	<i>120</i>	Location per Slab	<i>64</i>
Receiver Bandwidth	<i>41.67</i>	Overlap Locations	<i>0</i>
IMAGE ENHANCE		ACQ TIMING	
Filter Choice	<i>None</i>	Freq	<i>288</i>
		Phase	<i>288</i>
		Freq DIR	<i>Unswap</i>
		NEX	<i>1.00</i>
		Phase FOV	<i>1.00</i>
		Auto Shim	<i>Auto</i>
		Phase Correction	<i>No</i>
GATING/TRIGGER		FMRI	
Auto Trigger Type	<i>Off</i>	PSD Trigger	<i>Internal</i>
Resp. Trigger Window	<i>30</i>	View Order	<i>Bottom/Up</i>
		# of Repetitions REST	<i>0</i>
		# of Repetitions ACTIVE	<i>0</i>
MULTI-PHASE		SAT	
Seperate Series	<i>0</i>	Tag Type	<i>None</i>
Mask Phase	<i>0</i>	Fat/Water Saturation	<i>Fat</i>
Mask Pause	<i>0</i>		
DIFFUSION		TRICKS	
Recon All Images	<i>On</i>	Pause On/Off	<i>On</i>
		Auto Subtract	<i>0</i>
		Auto SCIC	<i>Off</i>
TRACKER		CONTRAST	
Tracker Length	<i>120.0</i>	Contrast Yes/No	<i>No</i>
Tracker Thickness	<i>20.0</i>		

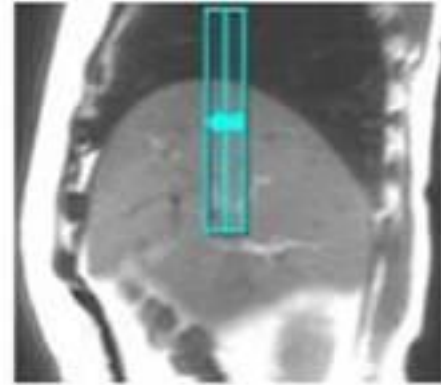
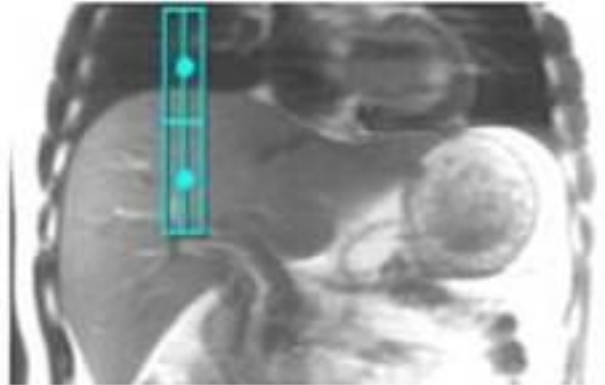
3D Obi MRCP Nav

3D Obi MRCP Nav

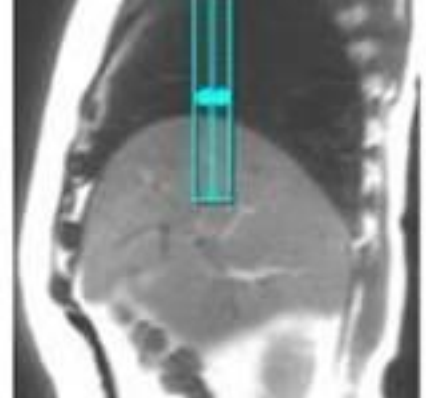
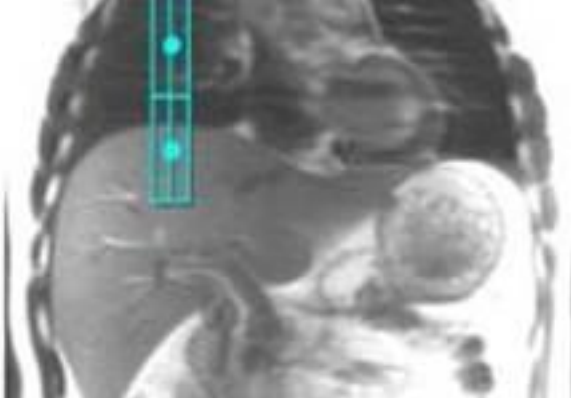
<p>OTHERS</p>	
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Protocol Notes

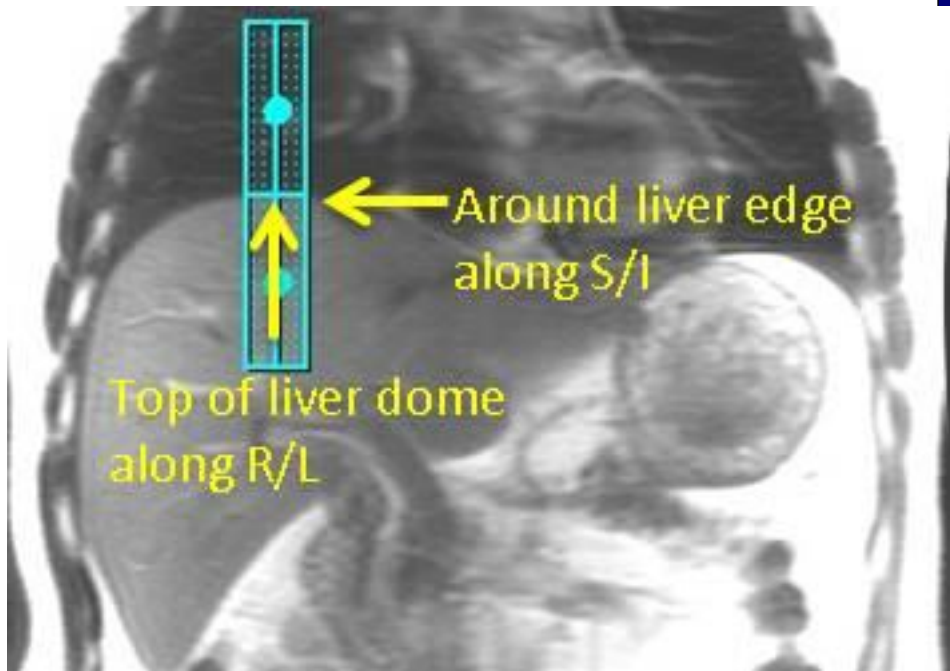
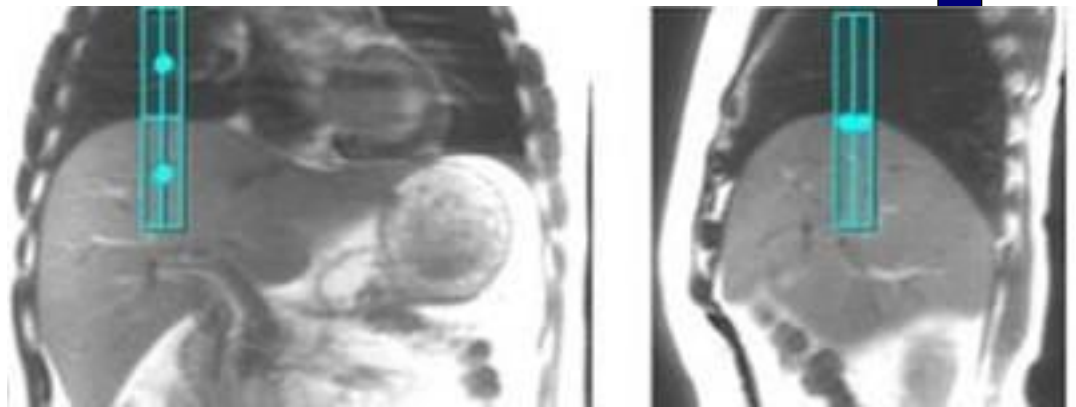
*Auto Tracker placement is turned on
Tracker will be placed automatically
Manual Placement
Instructions:
Navigator Tracker
Placement Considerations
* Place navigator tracker on a breath hold localizer for the optimum performance*
- Center of tracker should be 1.5 cm below diaphragm if localizer was acquired with expiration breath hold
- Center of tracker should be 1.5 cm above diaphragm if localizer was acquired with inspiration breath hold
- Center of tracker should be placed on the diaphragm if localizer was acquired free breathing
*Please review operator manual for additional information
Expiration-Breath Hold Tracker Placement*

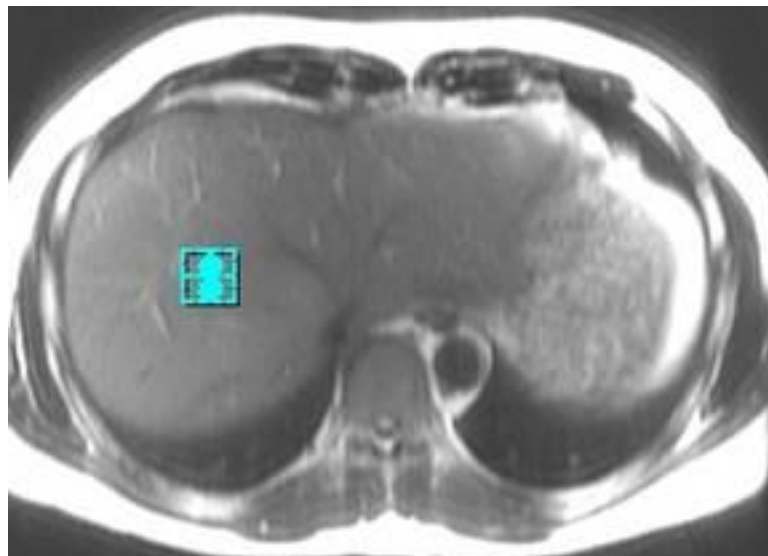
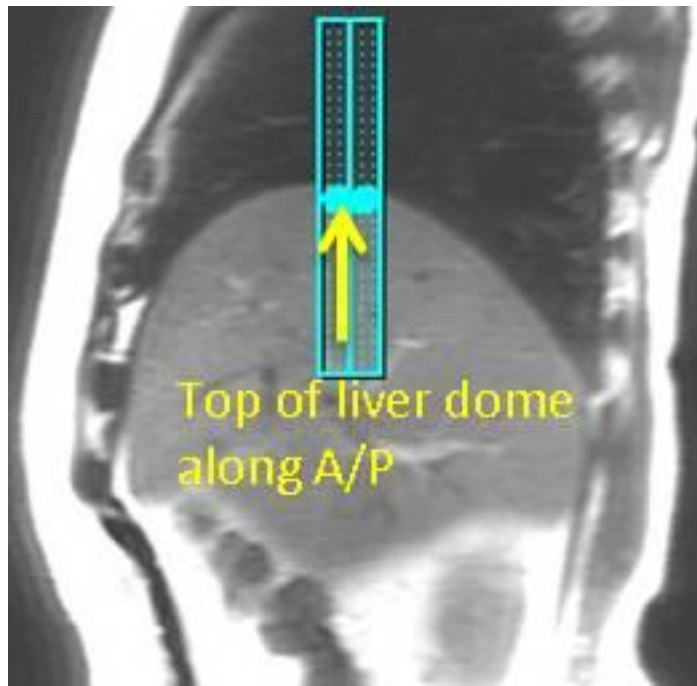


Inspiration-Breath Hold Tracker Placement

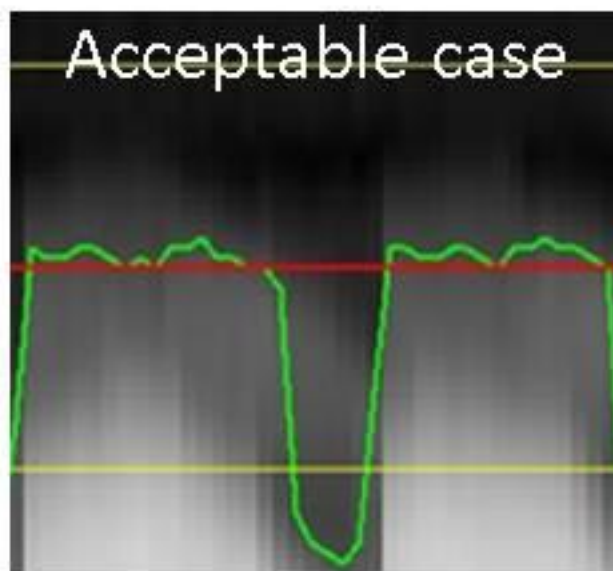


Free Breathing Tracker Placement

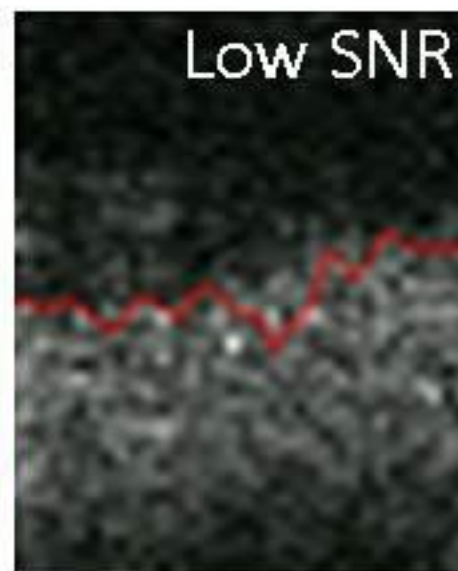




Easy Troubleshooting fo



-> No need to change anything since green waveform reflects respiratory status



-> Increase Track Thickness

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Protocol: adult_abdomen_LIVER-free-breathing 4/3/2018

PATIENT POSITION		IMAGING PARAMETERS	
Patient Entry	Feet First	Imaging Mode	2D
Patient Position	Supine	Pulse Sequence	Spin Echo
Coil Configuration	Body	Imaging Options	Fast, SS, Asset
Plane	OBLIQUE	SCAN RANGE	
Series Description	Radial SSFSE ASPIR Thick BH	FOV	38.0
SCAN TIMING		Slice Thickness	40.0
TE	900.0	Slice Spacing	0.0
Number of Echoes	1	ACQ TIMING	
TR	Minimum	Freq	320
TI	170	Phase	256
Receiver Bandwidth	31.25	Freq DIR	Unswap
IMAGE ENHANCE		NEX	1.00
Filter Choice	None	# of Acq. Before Pause	1
GATING/TRIGGER		Phase FOV	1.00
Auto Trigger Type	Off	Auto Shim	Auto
FMRI		Phase Correction	No
PSD Trigger	Internal	USER CVS	
Slice Order	Interleaved	User CV1	1.00
View Order	Bottom/Up	User CV2	264.00
# of Repetitions REST	0	User CV13	1.00
# of Repetitions ACTIVE	0	MULTI-PHASE	
SAT		Seperate Series	0
Tag Type	None	Mask Phase	0
Fat/Water Saturation	Fat Special	Mask Pause	0
TRICKS		DIFFUSION	
Pause On/Off	On	Recon All Images	On
Auto Subtract	0	CONTRAST	
Auto SCIC	Off	Contrast Yes/No	No

Radial SSFSE ASPIR Thick BH

Radial SSFSE ASPIR Thick BH

Protocol: adult_abdomen_LIVER-free-breathing 4/3/2018

PATIENT POSITION		IMAGING PARAMETERS	
Patient Entry	Feet First	Imaging Mode	3D
Patient Position	Supine	Pulse Sequence	IDEAL IQ
Coil Configuration	Body	Imaging Options	EDR, Fast, IDEAL, ARC
Plane	AXIAL	IDEAL	195
Series Description	3D Ax FAT FRACTION IDEAL IQ BH	SCAN RANGE	
SCAN TIMING		FOV	44.0
Flip Angle	3	Slice Thickness	10.0
TE	Min Full	Location per Slab	32
Number of Echoes	6	Overlap Locations	0
Echo Train Length	3	ACQ TIMING	
Number of Shots	2	Freq	160
Receiver Bandwidth	111.11	Phase	160
IMAGE ENHANCE		Freq DIR	R/L
Filter Choice	None	NEX	0.50
GATING/TRIGGER		Phase FOV	0.90
Auto Trigger Type	Off	Auto Shim	Auto
FMRI		Phase Correction	No
PSD Trigger	Internal	USER CVS	
Slice Order	Interleaved	User CV4	5.60
View Order	Bottom/Up	MULTI-PHASE	
# of Repetitions REST	0	Seperate Series	0
# of Repetitions ACTIVE	0	Trigger Delay without AV	5.6
SAT		Mask Phase	0
Tag Type	None	Mask Pause	0
TRICKS		DIFFUSION	
Pause On/Off	On	Recon All Images	On
Auto Subtract	0	CONTRAST	
Auto SCIC	Off	Contrast Yes/No	No
OTHERS			
Protocol Notes	<p>* Number of echoes = Number of shots x ETL The "Auto" Flip angle feature optimizes this sequence for maximal SNR, minimal T1 weighting and maximum fat fraction accuracy for the liver. If this sequence is used outside of the liver, the fixed flip angle value of 3 degrees is recommended otherwise fat fraction values may be overestimated R2* value may be overestimated after injection of contrast media. *Fat fraction value may change after injection of contrast media especially when the flip angle is sufficiently high. Please use auto flip angle option</p>		

3D Ax FAT FRACTION IDEAL IQ BH

3D Ax FAT FRACTION IDEAL IQ BH