				· · · · · · · · · · · · · · · · · · ·	
	IMAGING PARAMETERS		SCAN TIMING		
	Imaging Mode	2D	TE	100.0	
	Pulse Sequence	Spin Echo	Number of Echoes	1	
	Imaging Options	Seq, EDR, Fast, SS, ARC	TR	Minimum	
	Phase	2.50	Receiver Bandwidth	83.33	
	SCAN RANGE		IMAGE ENHANCE		
	FOV	50.0	Filter Choice	None	
	Slice Thickness	6.00	USER CVS		
	Slice Spacing	5.0	User CV2	240.00	
	Overlap Locations	0	User CV13	1.00	
	ACQ TIMING		User CV Mask2	256	
ë	Freq	256	MULTI-PHASE		ë
alis	Phase	128	Seperate Series	0	plane localiser
<u> </u>	Freq DIR	Unswap	Mask Phase	0	<u> </u>
ne	# of Acq. Before Pause	0	Mask Pause	0	ne
pla	Phase FOV	1.00	Preserve	0	pla
. 3	Auto Shim	On	DIFFUSION		. 33
ë	Phase Correction	No	Recon All Images	On	e.
alis	RF Drive Mode	Single	# Synthetic b-values	1	alis
plane localiser - 3 plane localiser	Excitation Mode	Selective	Synthetic b-value	1000.0;	plane localiser - 3
ıne	FMRI		CONTRAST	,	ne
	PSD Trigger	Internal	CONTRAST Contrast Yes/No	Ma	eld
3	View Order	Bottom/Up	Contrast Yes/No	No	က
	# 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		SCAN TIMING		
Imaging Mode	2D	TE	62.0	
Pulse Sequence	Spin Echo	Number of Echoes	1	
Imaging Options	EDR, TRF, Fast, SS, ARC	TR	Minimum	
Phase	2.00	Receiver Bandwidth	83.33	
SCAN RANGE		IMAGE ENHANCE		
FOV	40.0	Filter Choice	None	
Slice Thickness	3.00	USER CVS		
Slice Spacing	0.3	User CV1	1.00	_
Overlap Locations	0	User CV Mask2	256	
Number of Slices	50		200	
ACQ TIMING		MULTI-PHASE Seperate Series	0	
Freq	288	Mask Phase	0	
Phase	224	Mask Phase Mask Pause	0	
Freq DIR	S/I	Preserve	0	
NEX	1.00			
# of Acq. Before Pause	25	DIFFUSION		
Phase FOV	1.00	Recon All Images	On	
Auto Shim	Auto	# Synthetic b-values	1	
Phase Correction	No	Synthetic b-value	1000.0;	_
RF Drive Mode	Single	CONTRAST		
Excitation Mode	Selective	Contrast Yes/No	No	
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			

Protocol: adult_abdomen_BOD -Gad Liver STANDARD aspir protocol - ARDL smartprep

	IMAGING PARAMETERS	
	Imaging Mode	2D
	Pulse Sequence	SPGR
	Imaging Options	EDR, Fast, ZIP512, ARC
	Phase	2.00
		2.00
	SCAN RANGE	
	FOV	40.0
	Slice Thickness	5.00
	Slice Spacing	0.6
	Overlap Locations	0
	Number of Slices	36
	ACQ TIMING	
工	Freq	224
512	Phase	224
<u>a</u>	Freq DIR	R/L
7 7	NEX	1.00
2	# of Acq. Before Pause	1
A	Phase FOV	0.80
o Spc	Auto Shim	Auto
Щ	Phase Correction	No
onc	RF Drive Mode	Single
×	Excitation Mode	Selective
H	USER CVS	
占	User CV20	1.00
AR	TR Min	120.0
Ţ	TR Max	250.0
2 F	User CV Mask2	0
51	MULTI-PHASE	
ZF	Seperate Series	0
Ы	Mask Phase	0
AR	Mask Pause	0
ر ور	Preserve	0
Ecl	DIFFUSION	
4x Dual Echo ARDL ZIP 512 H - ARDL H Ax Dual Echo ARDL ZIP 512	Number of Diffusion	0
×	Directions	-
	Dual Spin Echo	Off
ARDL H	Diffusion Tenser Processing Output	No Selection
AR	Recon All Images	On
	# Synthetic b-values	1
	Synthetic b-value	1000.0;
	CONTRAST	
	Contrast Yes/No	No
	22401 100/110	

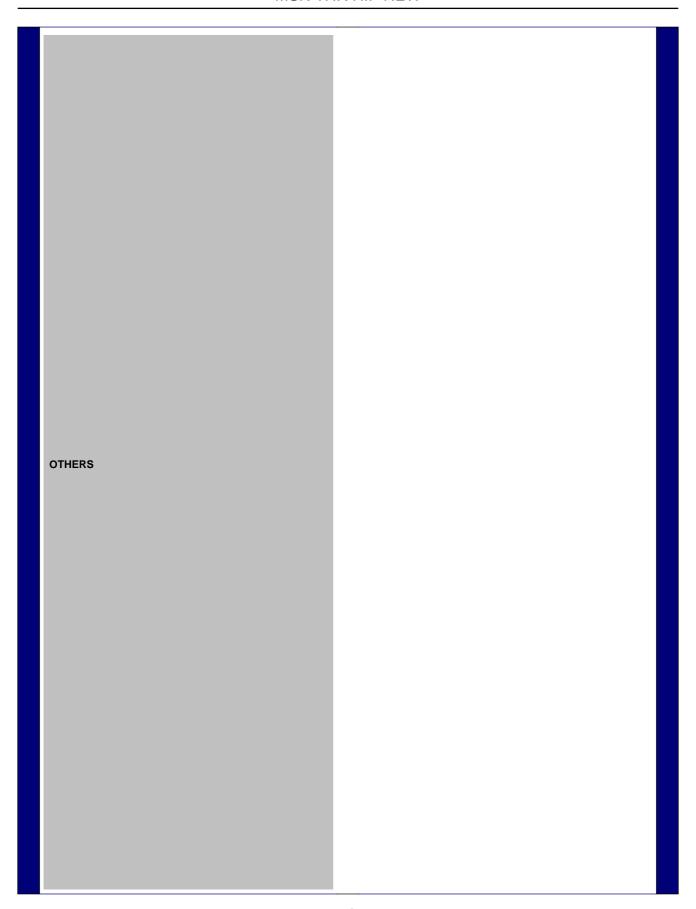
SCAN TIMING	
Flip Angle	60
Number of Echoes	2
TR	120.0
IMAGE ENHANCE	
Filter Choice	None
GATING/TRIGGER	
Pause After Navigator Prescan	0
FMRI	
PSD Trigger	Internal
View Order	Bottom/Up
# of Repetitions REST	0
# of Repetitions ACTIVE	0
SAT	
SAT Location	S
SAT Location	1
Tag Type	None
TRICKS	
Pause On/Off	On
Auto Subtract	0
Auto SCIC	2

ARDL H Ax Dual Echo ARDL ZIP 512 H - ARDL H Ax Dual Echo ARDL ZIP 512 H

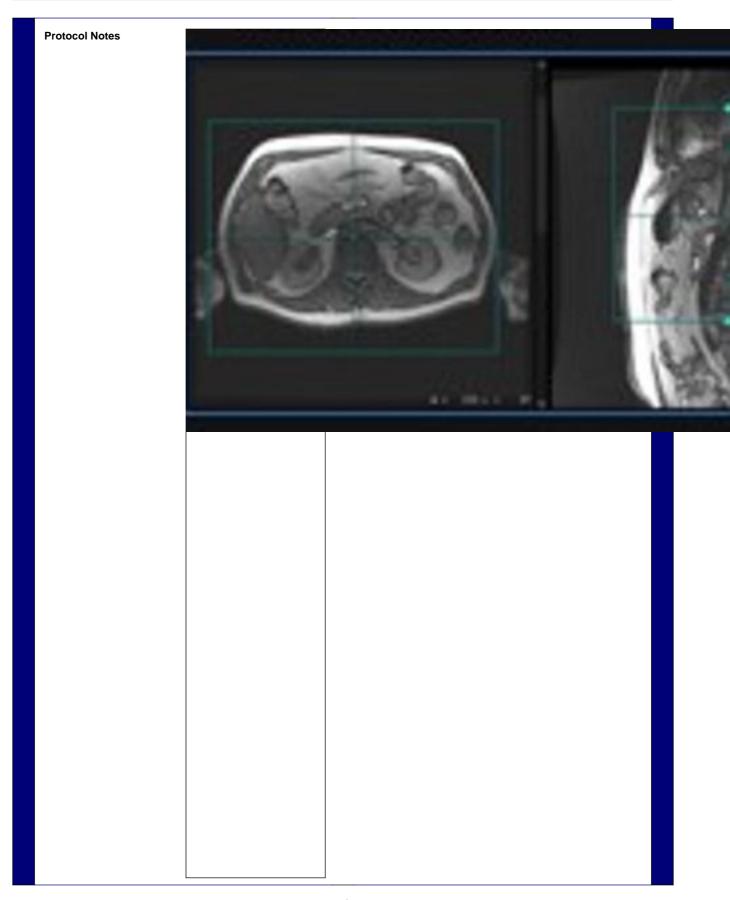
	IMAGING PARAMETERS	
	Imaging Mode	3D
	Pulse Sequence	LAVA
	Imaging Options	EDR, Fast, ARC, HS
	PSD Name	efgre3d_aspir
	Phase	2.00
	Slice	1.30
	HyperSense	1.10
	SCAN RANGE	
	FOV	44.0
	Slice Thickness	2.20
	Location per Slab	112
	Overlap Locations	0
	Number of Slices	1
	ACQ TIMING	
	Freq	288
	Phase	200
	Freq DIR	R/L
d)	NEX	1.00
pre	Phase FOV	0.70
ped	Auto Shim	Auto
μ	Phase Correction	No
arc	RF Drive Mode	Single
黑	Excitation Mode	Selective
ASF	FMRI	
\A	PSD Trigger	Internal
A	View Order	Bottom/Up
×	# of Repetitions REST	0
7 - 6	# of Repetitions ACTIVE	0
_AVA ASPIR ardl med pre - Ax LAVA ASPIR ardl med pre	SAT	
pec	Tag Type	None
ᅨㅠ	Fat/Water Saturation	Fat Special
s ar	TRICKS	
F	Pause On/Off	On
AS	Auto Subtract	0
\langle	Auto SCIC	2
A		

SCAN TIMING	
Flip Angle	12.0
Number of Echoes	1
TI	24
Receiver Bandwidth	50.00
IMAGE ENHANCE	
Filter Choice	None
USER CVS	
User CV4	10.20
User CV6	1.00
User CV34	90.00
User CV Mask2	8
MULTI-PHASE	
Seperate Series	0
Trigger Delay without AV	10.2
Mask Phase	0
Mask Pause	0
Preserve	0
DIFFUSION	
Recon All Images	On
# Synthetic b-values	1
Synthetic b-value	1000.0;
CONTRAST	
Contrast Yes/No	No

Ax LAVA ASPIR ardl med pre - Ax LAVA ASPIR ardl med pre



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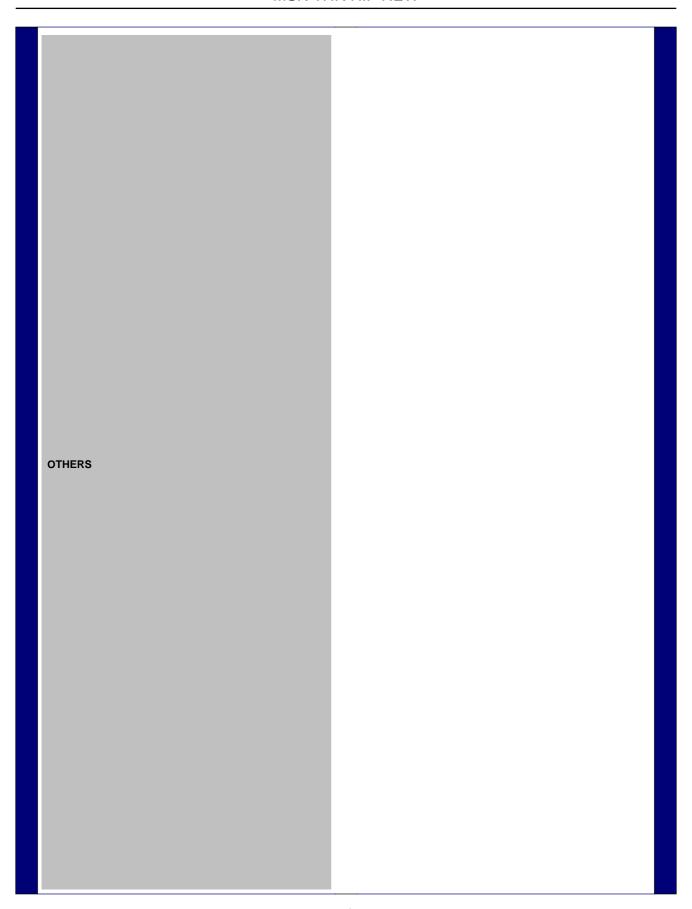
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LAVA Considerations: -Use LAVA for abdominal scanning, in particular, liver imaging Inlaging
-LAVA automatically turns
on the ARC Imaging Option.
If you deselect ARC and
select ASSET, you must
have acquired a calibration scan prior to acquiring the LAVA san. If any or all of these scan parameters are selected (ASSET, Hyperband, PURE), and if you select ON from the Calibration in Prescan menu, which is located on the Details tab, a calibration scan is acquired during Auto Prescan Consider the following with Fat/Water SAT: -The overall SNR of Improved Fat SAT images may slightly decrease.
Consider adjusting parameters with affect SNR, e.g. increase NEX, increase the FOV, decrease matrix size, decrease the Recieve Bandwidth -Uneven saturation can still occur as a result of local inhomogeneities, e.g. at air/tissue interfaces when the anatomy of interest is non-uniform -Site or patient specific inhomogeneities may be unavoidable even at isocenter. The result can be uneven suppression. Techniques for Fat Saturation include: Chemical Fat SAT, STIR, ASPIR, and Flex. -Consider using shom volumes to increase Fat SAT homogeneity. Localized TG is used to improve the accuracy of the TG for a specifically designated area, such as cardiac, pelvis or prostate imaging, or when an anatomy is positioned at a patient's side. Localize TG can be used wth any pulse sequence to improve signal homogeneity and is found under the Shim Volume

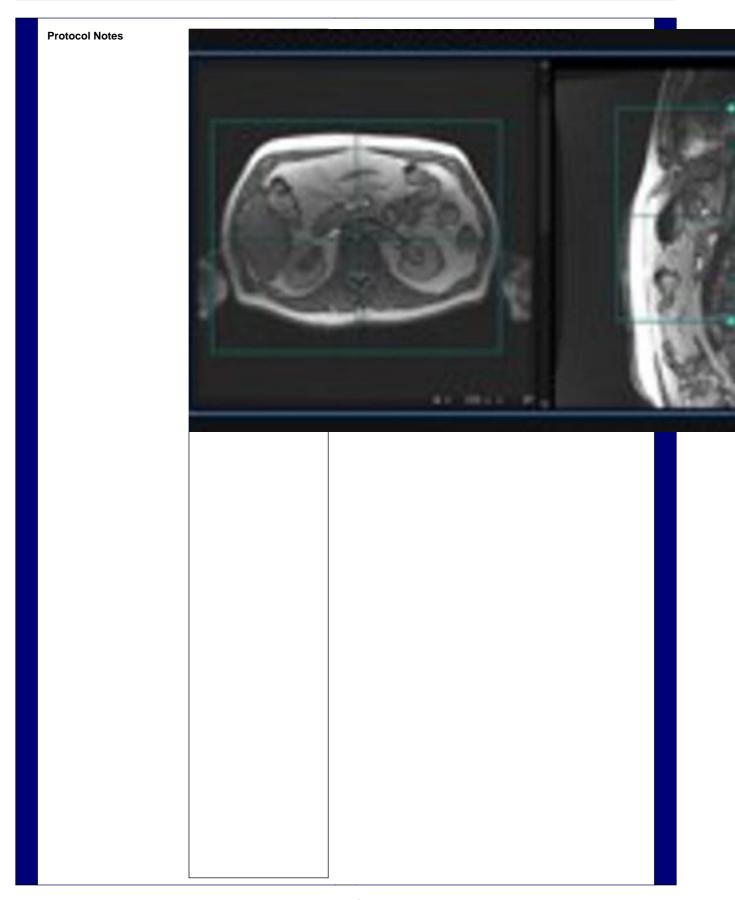
	IMAGING PARAMETERS	
	Imaging Mode	3D
	Pulse Sequence	LAVA
	Imaging Options	EDR, Fast, MPh, SmartPrep, ARC, HS
	PSD Name	efgre3d_aspir
	Phase	2.00
	Slice	1.30
	HyperSense	1.10
	SCAN RANGE	
	FOV	44.0
	Slice Thickness	2.20
	Location per Slab	112
	Overlap Locations	0
	Number of Slices	1
	ACQ TIMING	
	Freq	288
	Phase	200
	Freq DIR	R/L
띨	NEX	1.00
2	# of Acq. Before Pause	1
arc	Phase FOV	0.70
lph	Auto Shim	Auto
2	Phase Correction	No
ᇤ	RF Drive Mode	Single
AS	Excitation Mode	Selective
۱۷	FMRI	
7	PSD Trigger	Internal
Š	View Order	Bottom/Up
<u>-</u>	# of Repetitions REST	0
ME	# of Repetitions ACTIVE	0
ard	SAT	
sh a	Tag Type	None
М	Fat/Water Saturation	Fat Special
x LAVA ASPIR Mph ardl MED - Ax LAVA ASPIR Mph ardl MED	TRICKS	
AS	Pause On/Off	On
Ą	Auto Subtract	7
¥.	Auto SCIC	2
×		

SCAN TIMING	
Flip Angle	12.0
Number of Echoes	1
TI	24
Receiver Bandwidth	50.00
IMAGE ENHANCE	
Filter Choice	None
USER CVS	
User CV2	40.00
User CV4	4.00
User CV6	1.00
User CV34	90.00
User CV Mask2	8
MULTI-PHASE	
Slice per Location	3
Delay after Acquisition	Minimum
Seperate Series	0
Delay after Acquisition without AV	17
Trigger Delay without AV	4
Mask Phase	0
Mask Pause	0
DIFFUSION	
Recon All Images	On
# Synthetic b-values	1
Synthetic b-value	1000.0;
CONTRAST	
Contrast Yes/No	No

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LAVA Considerations: -Use LAVA for abdominal scanning, in particular, liver imaging -LAVA automatically turns on the ARC Imaging Option. If you deselect ARC and select ASSET, you must have acquired a calibration scan prior to acquiring the LAVA san. If any or all of these scan parameters are selected (ASSET, Hyperband, PURE), and if you select ON from the Calibration in Prescan menu, which is located on the Details tab, a calibration scan is acquired during Auto Prescan Consider the following with Fat/Water SAT: -The overall SNR of Improved Fat SAT images may slightly decrease.
Consider adjusting parameters with affect SNR, e.g. increase NEX, increase the FOV, decrease matrix size, decrease the Recieve Bandwidth -Uneven saturation can still occur as a result of local inhomogeneities, e.g. at air/tissue interfaces when the anatomy of interest is non-uniform -Site or patient specific inhomogeneities may be unavoidable even at isocenter. The result can be uneven suppression. Techniques for Fat Saturation include: Chemical Fat SAT, STIR, ASPIR, and Flex. -Consider using shom volumes to increase Fat SAT homogeneity. Localized TG is used to improve the accuracy of the TG for a specifically designated area, such as cardiac, pelvis or prostate imaging, or when an anatomy is positioned at a patient's side. Localize TG can be used wth any pulse sequence to improve signal homogeneity and is found under the Shim Volume

IMAGING PARAMETERS						
Pulse Sequence Spin Echo Number of Echoes 1 Imaging Options EDR, Fast, SS, ARC TR Minimum Phase 2.00 Receiver Bandwidth 90.91 SCAN RANGE FOV 42.0 Filter Choice None Slice Thickness 5.00 USER CVS		IMAGING PARAMETERS		SCAN TIMING		
Imaging Options EDR, Fast, SS, ARC TR Minimum Phase 2.00 Receiver Bandwidth 90.91 SCAN RANGE IMAGE ENHANCE FOV 42.0 Filter Choice None Slice Thickness 5.00 USER CVS		Imaging Mode	2D	TE	162.0	
Phase 2.00 Receiver Bandwidth 90.91 SCAN RANGE FOV 42.0 Filter Choice None Slice Thickness 5.00 USER CVS		Pulse Sequence	Spin Echo	Number of Echoes	1	
SCAN RANGE FOV 42.0 Filter Choice None Slice Thickness 5.00 USER CVS		Imaging Options	EDR, Fast, SS, ARC	TR	Minimum	
FOV 42.0 Filter Choice None Slice Thickness 5.00 USER CVS		Phase	2.00	Receiver Bandwidth	90.91	
Slice Thickness 5.00 USER CVS		SCAN RANGE		IMAGE ENHANCE		
OH OH OH		FOV	42.0	Filter Choice	None	
		Slice Thickness	5.00	USER CVS		
Overlap Locations 0 Number of Slices 37 User CV2 240.00 User CV1 1.00 User CV1 256 Use	g	Slice Spacing	0.3		1.00	þ
Number of Slices 37	E E	Overlap Locations	0			me
Name	Ы	Number of Slices	37	User CV13		占
Freq	AR	ACQ TIMING		User CV Mask2	256	AR
Phase 224 Seperate Series 0 100	ШШ	Freq	260	MULTI-PHASE		Шщ
Freq DIR R/L NEX 1.00 Mask Phase 0 Mask Pause 0 Preserve 0 DIFFUSION Recon All Images On Recon All Images 1000.0; FMRI PSD Trigger Internal View Order Bottom/Up # of Repetitions ACTIVE 0 SAT Tag Type None TRICKS Pause On/Off On Auto Subtract 0 Auto SCIC 2 Mask Phase 0 O Mask Pause 0 O DIFFUSION Recon All Images On Preserve 0 DIFFUSION Recon All Images 1000.0; CONTRAST Contrast Yes/No Yes Death of Repetitions ACTIVE 0 SAT Tag Type None TRICKS Pause On/Off On Auto Subtract 0 Auto SCIC 2	5r	Phase	224		0	5r
WEX 1.00 Mask Pause 0 Phase FOV 0.80 Auto Shim Auto Phase Correction No RF Drive Mode Single Excitation Mode Selective FMRI PSD Trigger Internal View Order Bottom/Up # of Repetitions REST 0 For Repetitions ACTIVE 0 SAT Tag Type None TRICKS Pause 0n/Off On Auto Subtract 0 Auto SCIC 2 Mask Pause 0 Preserve 0 DIFFUSION Recon All Images On # Synthetic b-values 1 Synthetic b-value 1000.0; CONTRAST Contrast Yes/No Yes PBU TRICKS Pause On/Off On Auto Subtract 0 Auto SCIC 2	160	Freq DIR	R/L	•		160
# of Acq. Before Pause 16 Phase FOV 0.80 Auto Shim Auto Phase Correction No Recon All Images On #Synthetic b-values 1 Synthetic b-value 1000.0; 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 Preserve 0 DIFFUSION Recon All Images On #Synthetic b-values 1 Synthetic b-value 1000.0; CONTRAST Contrast Yes/No Yes Pause On/Off On Auto Subtract 0 Auto SCIC 2	世		1.00	Mask Pause		
Phase FOV	įц		16	Preserve	0	
Auto Shim Phase Correction No RF Drive Mode Single Excitation Mode Selective FMRI PSD Trigger View Order # of Repetitions REST # of Repetitions ACTIVE SAT Tag Type None TRICKS Pause On/Off Auto Subtract Auto SCIC Auto SCIC Auto SCIC Auto SCIC Phase Correction No Recon All Images Synthetic b-value 1000.0; # Synthetic b-value 1000.0; CONTRAST Contrast Yes/No Yes Yes Yes Auto SCIC Auto SCIC Pause On/Off Auto SCIC Auto SCIC Auto SCIC Auto SCIC Auto SCIC Pause On/Off Auto SCIC Auto SCIC Auto SCIC	SFS		0.80	DIEEUSION		F SF
Phase Correction No RF Drive Mode Single Excitation Mode Selective FMRI PSD Trigger Internal View Order Bottom/Up # of Repetitions ACTIVE 0 SAT Tag Type None TRICKS Pause On/Off On Auto Subtract 0 Auto SCIC 2	SS				On	SS
RF Drive Mode Single Synthetic b-value 1000.0; 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	Ä					¥
Excitation Mode Selective Selective Solution State FMRI PSD Trigger View Order # of Repetitions REST # of Repetitions ACTIVE SAT Tag Type None TRICKS Pause On/Off Auto Subtract Auto SCIC Auto SCIC Selective Syllinates State CONTRAST Contrast Yes/No Yes Pause CONTRAST Contrast Yes/No Yes	Ä		=	•		집
FMRI PSD Trigger Internal View Order Bottom/Up # of Repetitions ACTIVE 0 SAT Tag Type None TRICKS Pause On/Off On Auto Subtract 0 Auto SCIC 2	AD	Excitation Mode	Selective	•	7000.0,	AD
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	- 0	FMRI			Van	ı و
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	me	PSD Trigger	Internal	Contrast Yes/No	Yes	me
# of Repetitions REST 0 # of Repetitions ACTIVE 0 SAT Tag Type None TRICKS Pause On/Off On Auto Subtract 0 Auto SCIC 2	占		Bottom/Up			占
# of Repetitions ACTIVE 0 SAT Tag Type None TRICKS Pause On/Off On Auto Subtract 0 Auto SCIC 2	AR	•				AR
SAT Tag Type None TRICKS Pause On/Off On Auto Subtract 0 Auto SCIC 2	Ę	# of Repetitions ACTIVE	0			Ē
TRICKS Pause On/Off On Auto Subtract 0 Auto SCIC 2	5m	SAT				5n
TRICKS Pause On/Off On Auto Subtract 0 Auto SCIC 2	160	Tag Type	None			160
Pause On/Off On Auto Subtract 0 Auto SCIC 2	世	TRICKS				世
Auto Scic 2 Auto Scic 2 Auto Scic 2	Щ	Pause On/Off	On			Щ
MAUTO SCIC 2 XA HATO SCIC 2 XA HATO SCIC 2 XA HATO SCIC 2	SFS	Auto Subtract	0			SFS
ADRL AX	SS	Auto SCIC	2			SS
ADRL	Š					Ã
A D	R					R.
	AD					AD

	IMAGING PARAMETERS		SCAN TIMING		
	Imaging Mode	2D	TE	90.0	
	Pulse Sequence	Spin Echo	Number of Echoes	1	
	Imaging Options	EDR, Fast, SS, ARC	TR	Minimum	
	Phase	2.00	ті	130	
	SCAN RANGE		Receiver Bandwidth	83.33	
	FOV	42.0	IMAGE ENHANCE		
	Slice Thickness	5.00	Filter Choice	None	
	Slice Spacing	0.5	USER CVS		
픘	Overlap Locations	0	User CV1	1.00	一
H	Number of Slices	36	User CV2	240.00	읠
)L	ACQ TIMING		User CV13	1.00	7
ARI	Freq	260	User CV Mask2	256	4RI
90 3mm ARDL HIGH	Phase	256	MULTI-PHASE		FS TE 90 3mm ARDL HIGH
3m	Freq DIR	R/L	Seperate Series	0	3m
90	NEX	1.00	Mask Phase	0	90
FS TE	# of Acq. Before Pause	16	Mask Pause	0	쁜
ပ္ပ	Phase FOV	0.80	Preserve	0	ပ္ပ
E	Auto Shim	Auto		0	
FS	Phase Correction	No	DIFFUSION		F S
SS	RF Drive Mode	Single	Number of Diffusion Directions	0	SS
Ax	Excitation Mode	Selective	Dual Spin Echo	Off	Ax
DL	FMRI		Diffusion Tenser	No Selection	Ы
AR	PSD Trigger	Internal	Processing Output		AR
+	View Order	Bottom/Up	Recon All Images	On	
<u>5</u>	# of Repetitions REST	0	Multi b-values	1000.0;	<u>ত</u>
I 폭	# of Repetitions ACTIVE	0	Multi NEX Values	1.0;	T
3DI	SAT		# Synthetic b-values	1	ZD.
AF	Tag Type	None	Synthetic b-value	1000.0;	A
mm	Fat/Water Saturation	Fat Special	CONTRAST		mm
90 3mm ARDL HIGH - ARDL Ax SSFSE		, at opena.	Contrast Yes/No	Yes	TE 90 3mm ARDL HIGH - ARDL Ax SSFSE
TE 9	TRICKS Pause On/Off	On			Е Э
T S	Auto Subtract	0			<u> </u>
FS.	Auto SCIC	2			Ľ.
SE	Auto Soic	2			SE
SS					SSF
×					6)
ARDL Ax SSFSE					ARDL Ax SSFSE FS
RD					RD
A					A

Protocol: adult_abdomen_BOD -Gad Liver STANDARD aspir protocol - ARDL smartprep

	addit_abdofficfi_bc	DE Gad LIVET OTTAIND
	IMAGING PARAMETERS	
	Imaging Mode	2D
	Pulse Sequence	Spin Echo
	Imaging Options	EDR, EPI, DIFF, Asset, Nav
	Phase	2.00
	Phase	2.00
	SCAN RANGE	
	FOV	40.0
	Slice Thickness	5.00
	Slice Spacing	0.4
	Overlap Locations	0
	Number of Slices	37
	ACQ TIMING	
	Freq	90
	Phase	100
	Freq DIR	R/L
	Phase FOV	1.00
	Auto Shim	Auto
모	Phase Correction	Yes
hig	RF Drive Mode	Single
av	Excitation Mode	Selective
Z ×		00.00.00
ΓA	USER CVS	4.00
	User CV0	1.00
M	User CV Mask2	256
-	MULTI-PHASE	
igh	Seperate Series	0
\ \ \	Mask Phase	0
Na	Mask Pause	0
Ax	Preserve	0
DWI DL Ax Nav high - DWI DL Ax Nav high	DIFFUSION	
M	Optimized TE	Yes
	Diffusion Directions	All
	Number of Diffusion Directions	3
	Number of T2 Images	0
	Dual Spin Echo	Off
	Recon All Images	On
	Multi b-values	100.0;600.0;
	Multi NEX Values	2.0;4.0;
	Real Time Field Adjustment	1
	# Synthetic b-values	1
	Synthetic b-value	800.0;
	TRACKER	
	Tracker Length	120.0
	Tracker Thickness	20.0

SCAN TIMING	
TE	Minimum
Number of Echoes	1
Number of Shots	1
IMAGE ENHANCE	
Filter Choice	None
GATING/TRIGGER	
Resp. Trigger Window	30
Acceptance Window	2.0
Run RR Measurement	1
Auto Trigger Time	5
Navigator Pre Scan Time	10
Max RR Measurement Time	20
FMRI	
FMRI PSD Trigger	Internal
	Internal Bottom/Up
PSD Trigger	
PSD Trigger View Order	Bottom/Up
PSD Trigger View Order # of Repetitions REST	Bottom/Up 0
PSD Trigger View Order # of Repetitions REST # of Repetitions ACTIVE	Bottom/Up 0
PSD Trigger View Order # of Repetitions REST # of Repetitions ACTIVE	Bottom/Up 0 0
PSD Trigger View Order # of Repetitions REST # of Repetitions ACTIVE SAT Tag Type	Bottom/Up 0 0
PSD Trigger View Order # of Repetitions REST # of Repetitions ACTIVE SAT Tag Type TRICKS	Bottom/Up 0 0 None
PSD Trigger View Order # of Repetitions REST # of Repetitions ACTIVE SAT Tag Type TRICKS Pause On/Off	Bottom/Up 0 0 None
PSD Trigger View Order # of Repetitions REST # of Repetitions ACTIVE SAT Tag Type TRICKS Pause On/Off Auto Subtract	Bottom/Up 0 0 None On 0

DWI DL Ax Nav high - DWI DL Ax Nav high

	IMAGING PARAMETERS		SCAN TIMING		
	Imaging Mode	3D	Flip Angle	12	
	Pulse Sequence	LAVA	Number of Echoes	1	
	Imaging Options	EDR, Fast, ARC, Star	ТІ	23	
	PSD Name	efgre3d_aspir	Receiver Bandwidth	62.50	
	Phase	1.50	IMAGE ENHANCE		
	Slice	2.00	Filter Choice	Α	
	SCAN RANGE		USER CVS		
	FOV	40.0	User CV30	1.00	
	Slice Thickness	2.20	User CV34	70.00	
	Location per Slab	100	User CV Mask2	8	
	Overlap Locations	0	MULTI-PHASE		
	Number of Slices	1	Seperate Series	0	
	ACQ TIMING		Trigger Delay without AV	0	
	Freq	288	Mask Phase	0	
	Freq DIR	R/L	Mask Pause	0	
	NEX	1.80	Preserve	0	
tar	Auto Shim	Auto		•	tar
A S	Phase Correction	No	DIFFUSION	0.5	S
1//	RF Drive Mode	Single	Recon All Images	On	1
Ĺ	Excitation Mode	Selective	# Synthetic b-values Synthetic b-value	1 1000.0;	Ţ
- 3D Ax LAVA Star	FMRI			1000.0,	- 3D Ax LAVA Star
3	PSD Trigger	Internal	CONTRAST		33
Ax LAVA Star -	View Order	Bottom/Up	Contrast Yes/No	No	<u> </u>
	# of Repetitions REST	0			Ste
	# of Repetitions ACTIVE	0			X Y
LA	SAT				3D Ax LAVA Star
	Tag Type	None			â
3D	Fat/Water Saturation	Fat Special			3D
	TRICKS				
	Pause On/Off	On			
	Auto Subtract	0			
	Auto SCIC	2			
	OTHERS				
	Protocol Notes	Streak artifacts can increase from arm movement and incomplete fat suppression To decrease streak artifacts: Increase NEX Decrease phase acceleration Raise arms above head Increase number of spokes=less streaks			

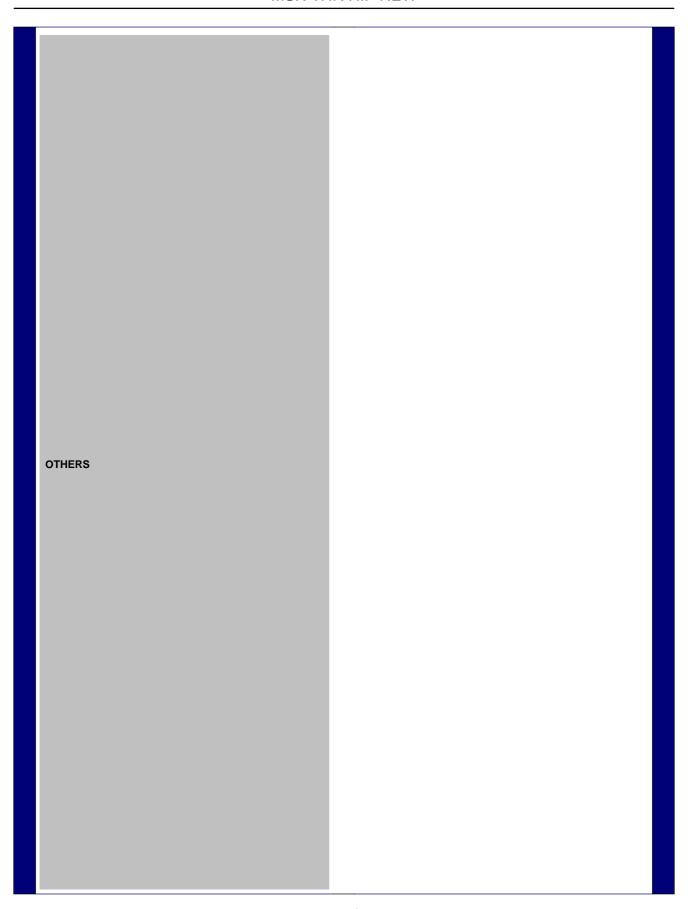
				<u> </u>	
	IMAGING PARAMETERS		SCAN TIMING		
	Imaging Mode	3D	Flip Angle	8	
	Pulse Sequence	IDEAL IQ	TE	Min Full	
	Imaging Options	EDR, Fast, IDEAL, ARC	Number of Echoes	6	
	IDEAL	207	Echo Train Length	6	
	Phase	2.00	Number of Shots	1	
	Slice	1.00	Receiver Bandwidth	100.00	
	SCAN RANGE		IMAGE ENHANCE		
	FOV	40.0	Filter Choice	None	
	Slice Thickness	6.0	USER CVS		
	Location per Slab	32	User CV4	8.70	
	Overlap Locations	0	User CV30	1.00	
	Number of Slices	1	User CV Mask2	0	
	ACQ TIMING		MULTI-PHASE		
g	Freq	224	Seperate Series	0	Q
AL	Phase	192	Trigger Delay without AV	8.7	AL
	Freq DIR	R/L 0.50 0.80	Mask Phase Mask Pause Preserve	0	Ax IDEAL IQ - Ax IDEAL IQ
Ϋ́	NEX			0	
Ax IDEAL IQ - Ax IDEAL IQ	Phase FOV			0	- ~
2	Auto Shim	Auto	DIFFUSION		2
EAI	Phase Correction	No	Recon All Images	On	EAL
□	RF Drive Mode	Sirigle # Synthotic h-value	# Synthetic b-values	1	Ax IDE
Ax	Excitation Mode	Selective	Synthetic b-value	1000.0;	
	FMRI		CONTRAST		
	PSD Trigger	Internal	Contrast Yes/No	No	
	Slice Order View Order	Interleaved			
		Bottom/Up			
	# of Repetitions REST # of Repetitions ACTIVE	0 0			
		0			
	SAT	Mana			
	Tag Type	None			
	TRICKS				
	Pause On/Off	On			
	Auto Subtract	0			
	Auto SCIC	Off			

	IMAGING PARAMETERS	
	Imaging Mode	3D
	Pulse Sequence	LAVA
	Imaging Options	EDR, Fast, ARC, HS
	PSD Name	efgre3d_aspir
	Phase	2.00
	Slice	1.30
	HyperSense	1.10
	SCAN RANGE	
	FOV	44.0
	Slice Thickness	2.20
	Location per Slab	112
	Overlap Locations	0
	Number of Slices	1
	ACQ TIMING	
	Freq	288
	Phase	200
~	Freq DIR	R/L
уес	NEX	1.00
ela	Phase FOV	0.70
О	Auto Shim	Auto
me	Phase Correction	No
ᅙ	RF Drive Mode	Single
Ка	Excitation Mode	Selective
SPI	FMRI	
Ä	PSD Trigger	Internal
\langle	View Order	Bottom/Up
7	# of Repetitions REST	0
Ä	# of Repetitions ACTIVE	0
eq.	SAT	
lay.	Tag Type	None
de	Fat/Water Saturation	Fat Special
ASPIR ardl med delayed - Ax LAVA ASPIR ardl med delayed	TRICKS	
미	Pause On/Off	On
ar	Auto Subtract	0
PIR	Auto SCIC	2
AS		

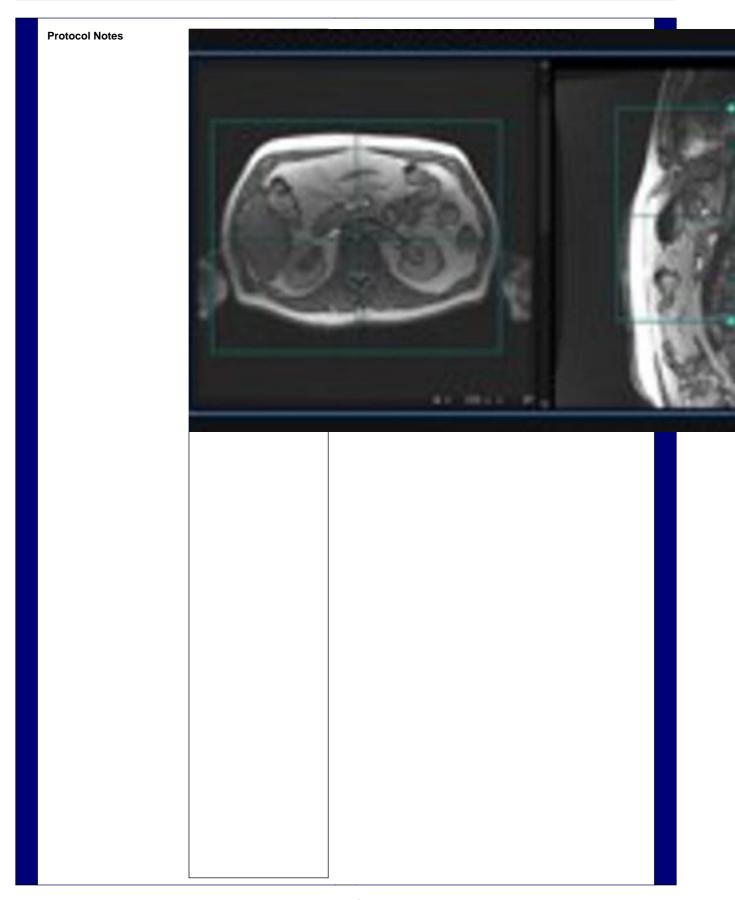
SCAN TIMING	
Flip Angle	12.0
Number of Echoes	1
TI	24
Receiver Bandwidth	50.00
IMAGE ENHANCE	
Filter Choice	None
USER CVS	
User CV4	10.20
User CV6	1.00
User CV34	90.00
User CV Mask2	8
MULTI-PHASE	
Seperate Series	0
Trigger Delay without AV	10.2
Mask Phase	0
Mask Pause	0
Preserve	0
DIFFUSION	
Recon All Images	On
# Synthetic b-values	1
Synthetic b-value	1000.0;
CONTRAST	
Contrast Yes/No	No

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Ax LAVA ASPIR ardl med delayed - Ax LAVA ASPIR ardl med delayed



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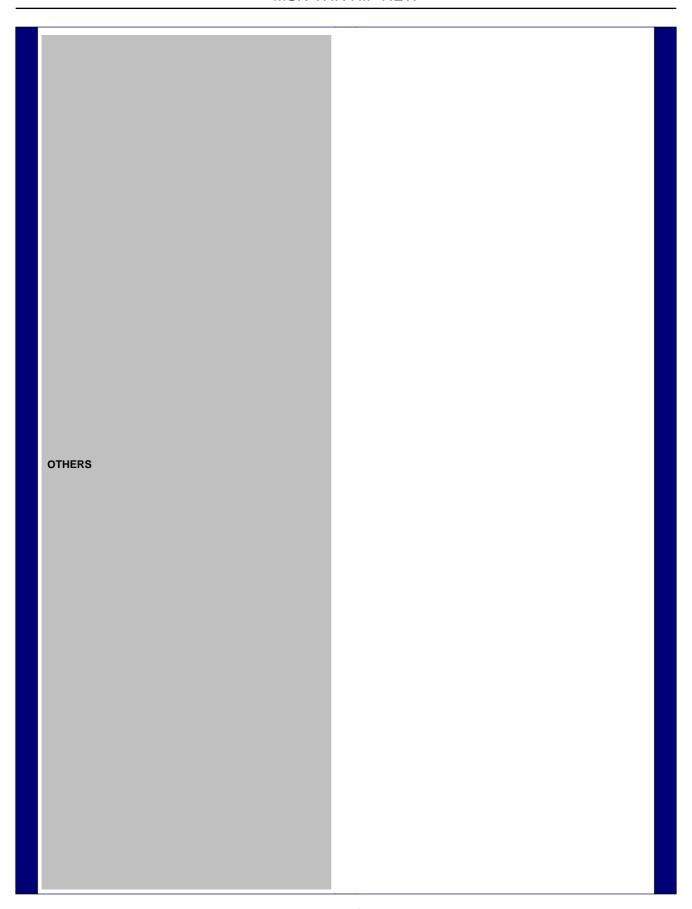
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LAVA Considerations: -Use LAVA for abdominal scanning, in particular, liver imaging Inlaging
-LAVA automatically turns
on the ARC Imaging Option.
If you deselect ARC and
select ASSET, you must
have acquired a calibration scan prior to acquiring the LAVA san. If any or all of these scan parameters are selected (ASSET, Hyperband, PURE), and if you select ON from the Calibration in Prescan menu, which is located on the Details tab, a calibration scan is acquired during Auto Prescan Consider the following with Fat/Water SAT: -The overall SNR of Improved Fat SAT images may slightly decrease.
Consider adjusting parameters with affect SNR, e.g. increase NEX, increase the FOV, decrease matrix size, decrease the Recieve Bandwidth -Uneven saturation can still occur as a result of local inhomogeneities, e.g. at air/tissue interfaces when the anatomy of interest is non-uniform -Site or patient specific inhomogeneities may be unavoidable even at isocenter. The result can be uneven suppression. Techniques for Fat Saturation include: Chemical Fat SAT, STIR, ASPIR, and Flex. -Consider using shom volumes to increase Fat SAT homogeneity. Localized TG is used to improve the accuracy of the TG for a specifically designated area, such as cardiac, pelvis or prostate imaging, or when an anatomy is positioned at a patient's side. Localize TG can be used wth any pulse sequence to improve signal homogeneity and is found under the Shim Volume

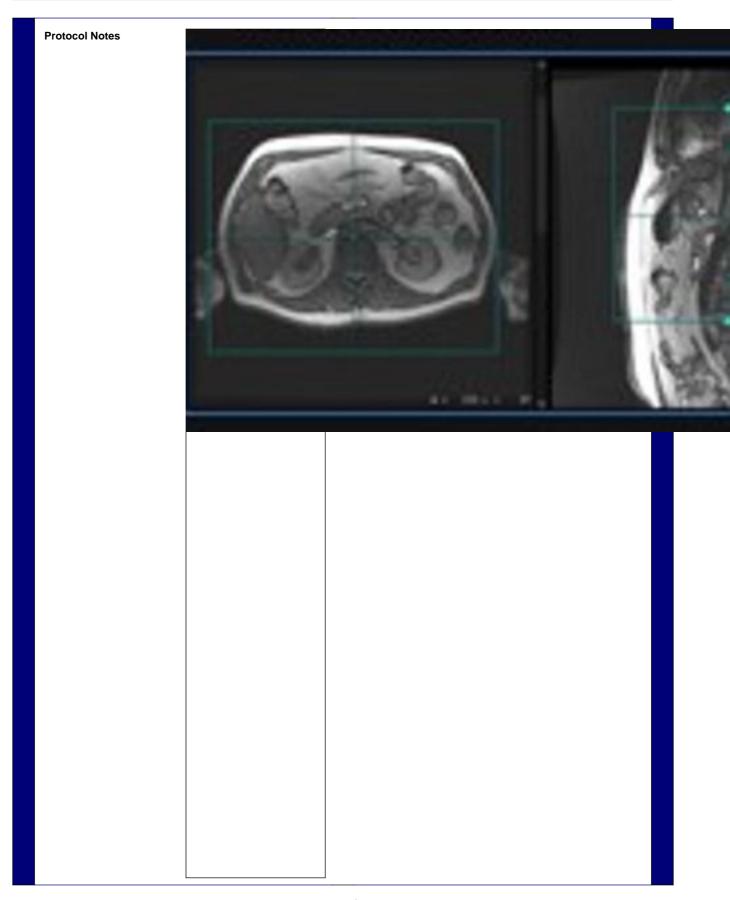
3D
LAVA
EDR, Fast, ARC, HS
efgre3d_aspir
2.00
1.40
1.20
45.0
2.30
112
0
300
192
S/I
1.00
0.80
Auto
No
Single
Selective
Internal
Bottom/Up
0
0 0
0
0 None
0 None
0 None Fat Special
None Fat Special On

SCAN TIMING	
Flip Angle	12.0
Number of Echoes	1
TI	24
Receiver Bandwidth	62.50
IMAGE ENHANCE	
Filter Choice	None
USER CVS	
User CV4	10.20
User CV6	1.00
User CV34	90.00
User CV Mask2	8
MULTI-PHASE	
Seperate Series	0
Trigger Delay without AV	10.2
Mask Phase	0
Mask Pause	0
Preserve	0
DIFFUSION	
Recon All Images	On
Multi b-values	1000.0;
Multi NEX Values	1.0;
# Synthetic b-values	1
Synthetic b-value	1000.0;
CONTRAST	
Contrast Yes/No	No

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LAVA Considerations: -Use LAVA for abdominal scanning, in particular, liver imaging Inlaging
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on the ARC Imaging Option.
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have acquired a calibration scan prior to acquiring the LAVA san. If any or all of these scan parameters are selected (ASSET, Hyperband, PURE), and if you select ON from the Calibration in Prescan menu, which is located on the Details tab, a calibration scan is acquired during Auto Prescan Consider the following with Fat/Water SAT: -The overall SNR of Improved Fat SAT images may slightly decrease.
Consider adjusting parameters with affect SNR, e.g. increase NEX, increase the FOV, decrease matrix size, decrease the Recieve Bandwidth -Uneven saturation can still occur as a result of local inhomogeneities, e.g. at air/tissue interfaces when the anatomy of interest is non-uniform -Site or patient specific inhomogeneities may be unavoidable even at isocenter. The result can be uneven suppression. Techniques for Fat Saturation include: Chemical Fat SAT, STIR, ASPIR, and Flex. -Consider using shom volumes to increase Fat SAT homogeneity. Localized TG is used to improve the accuracy of the TG for a specifically designated area, such as cardiac, pelvis or prostate imaging, or when an anatomy is positioned at a patient's side. Localize TG can be used wth any pulse sequence to improve signal homogeneity and is found under the Shim Volume

	addit_abdomon_bo	
	IMAGING PARAMETERS	
	Imaging Mode	2D
	Pulse Sequence	Spin Echo
	Imaging Options	Seq, EDR, TRF, Fast, SS, FR, ARC
	Phase	2.00
	SCAN RANGE	
	FOV	48.0
	Slice Thickness	8.0
	Slice Spacing	10.0
	ACQ TIMING	
	Freq	384
	Phase	160
	Freq DIR	Unswap
	# of Acq. Before Pause	0
	Phase FOV	1.00
Ţ	Auto Shim	Auto
tior	Phase Correction	No
do-	RF Drive Mode	Quadrature
-	Excitation Mode	Selective
optionoption	USER CVS	
otio	User CV1	1.00
do	User CV39	1.00
i	User CV Mask2	256
	MULTI-PHASE	
	Seperate Series	0
	Mask Phase	0
	Mask Pause	0
	Preserve	0
	DIFFUSION	
	Recon All Images	On
	Multi b-values	1000.0;
	Multi NEX Values	1;
	# Synthetic b-values	1
	Synthetic b-value	1000.0;
	CONTRAST	
	Contrast Yes/No	No

D aspir protocol - ARDL smartprep			
	SCAN TIMING		
	TE	80.0	
	Number of Echoes	1	
	TR	700.0	
	Receiver Bandwidth	83.33	
	IMAGE ENHANCE		
	Filter Choice	None	
	GATING/TRIGGER		
	Auto Trigger Type	Off	
	FMRI		
	PSD Trigger	Internal	
	Slice Order	Interleaved	
	View Order	Bottom/Up	
	# of Repetitions REST	0	
	# of Repetitions ACTIVE	0	
	SAT		
	SAT Tag Type	None	:
		None	•
	Tag Type	None On	
	Tag Type TRICKS Pause On/Off Auto Subtract	On 0	
	Tag Type TRICKS Pause On/Off	On	
	Tag Type TRICKS Pause On/Off Auto Subtract	On 0	
	Tag Type TRICKS Pause On/Off Auto Subtract	On 0	
	Tag Type TRICKS Pause On/Off Auto Subtract	On 0	
	Tag Type TRICKS Pause On/Off Auto Subtract	On 0	
	Tag Type TRICKS Pause On/Off Auto Subtract	On 0	
	Tag Type TRICKS Pause On/Off Auto Subtract	On 0	
	Tag Type TRICKS Pause On/Off Auto Subtract	On 0	
	Tag Type TRICKS Pause On/Off Auto Subtract	On 0	
	Tag Type TRICKS Pause On/Off Auto Subtract	On 0	

	IMAGING PARAMETERS	
	Imaging Mode	2D
	Pulse Sequence	Spin Echo
	Imaging Options	EDR, Fast, SS, ARC
	Phase	2.00
	SCAN RANGE	
	FOV	50.0
	Slice Thickness	4.00
	Slice Spacing	1.0
	Overlap Locations	0
	Number of Slices	20
	ACQ TIMING	
	Freq	256
	Phase	256
	Freq DIR	S/I
	NEX	1.00
	# of Acq. Before Pause	15
	Phase FOV	1.00
	Auto Shim	Auto
	Phase Correction	No
	RF Drive Mode	Single
_	Excitation Mode	Selective
BH	FMRI	
SE	PSD Trigger	Internal
SS	View Order	Bottom/Up
g	# of Repetitions REST	0
BH - sag SSFSE	# of Repetitions ACTIVE	0
표	SAT	
SE I	Tag Type	None
sag SSFSE	TRICKS	
g	Pause On/Off	On
sa	Auto Subtract	0
	Auto SCIC	2

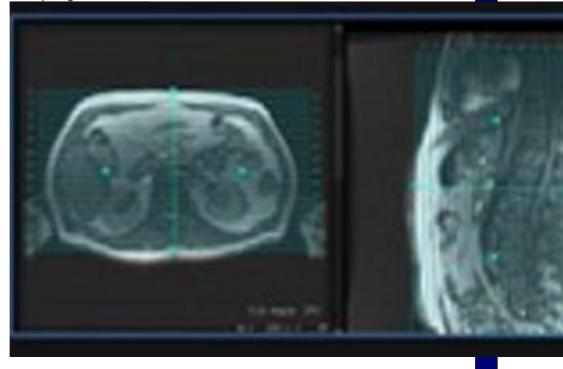
SCAN TIMING	
TE	90.0
Number of Echoes	1
TR	1000.0
Receiver Bandwidth	90.91
IMAGE ENHANCE	
Filter Choice	None
USER CVS	
User CV1	1.00
User CV2	240.00
User CV13	1.00
User CV Mask2	256
MULTI-PHASE	
Seperate Series	0
Mask Phase	0
Mask Pause	0
Preserve	0
DIFFUSION	
Recon All Images	On
# Synthetic b-values	1
Synthetic b-value	1000.0;
CONTRAST	
Contrast Yes/No	No

sag SSFSE BH - sag SSFSE BH

OTHERS

Protocol Notes

General Considerations:
-To avoid contrast signal
differences between
contiguous slices, use a
slice spacing >20% of slice
thickness. If number of
acquisitions is >1, then 0
slice spacing can be used

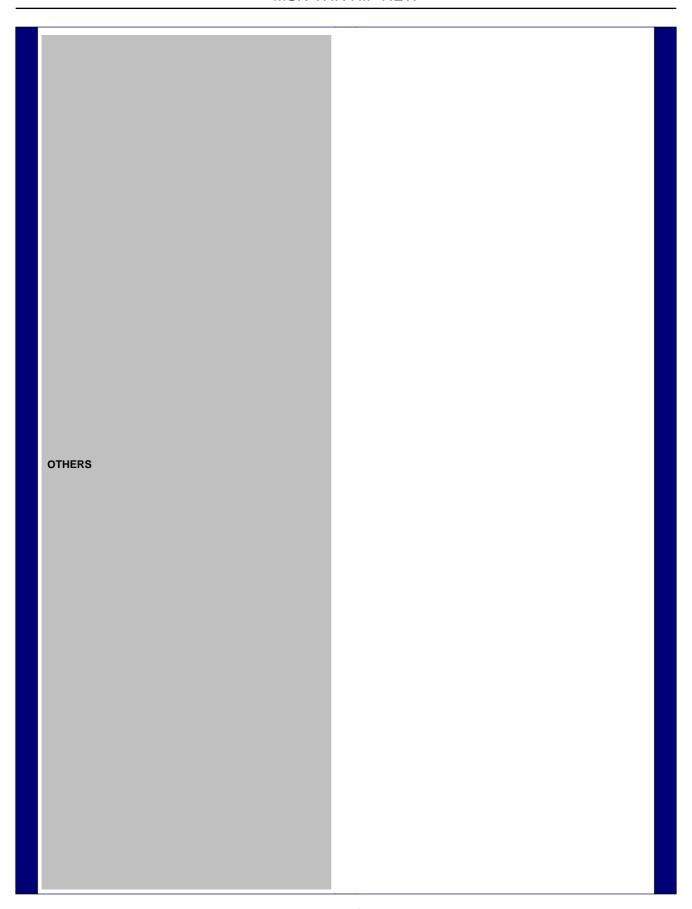


SSFSE Considerations:
-Use SSFSE:
-to reduce motion artifact
and imaging time
-to scan uncooperative
patients in short scan times
-for breath hold abdominal
and cardiac imagin
-with long TE values (3001300 ms) to image the
gallbladder and biliary tree
No Phase Wrap
Considerations:
-When No Phase Wrap
factor is set to a value
greater than 1.0, it allows
the patient to have arms at
the side, which may
increase patient comfort
-A larger NPW value
increases the ETL, which
may increase image
blurring. To preserve image
sharpness decrease the
value
-A slight increase in SNR
may occur due to more
noise averaging that occurs
with NPW

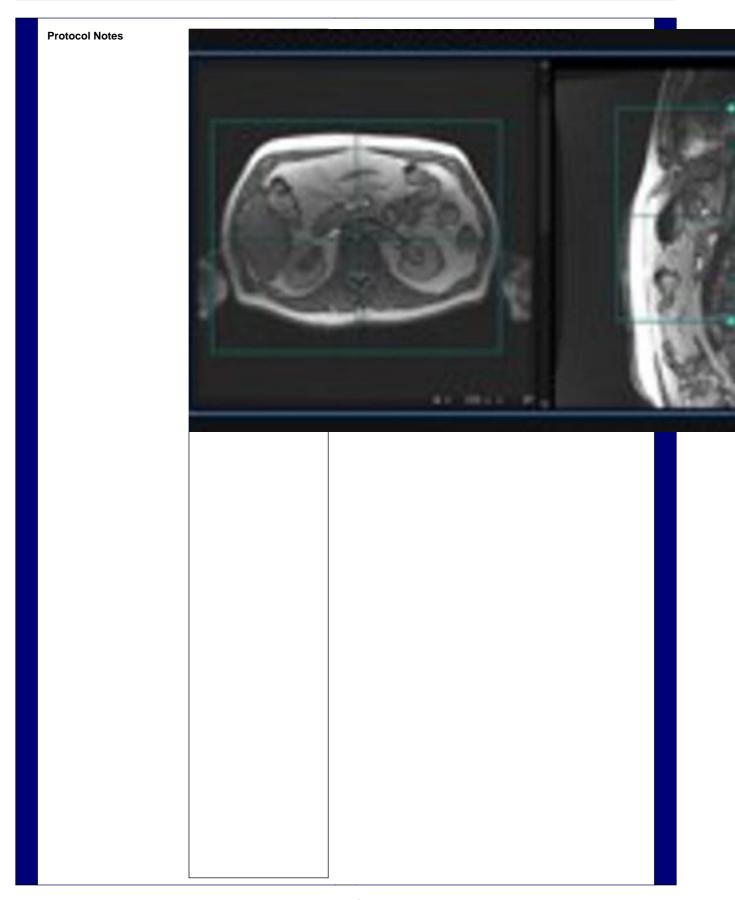
	IMAGING PARAMETERS	
	Imaging Mode	3D
	Pulse Sequence	LAVA
	Imaging Options	EDR, Fast, ARC, HS
	PSD Name	efgre3d_aspir
	Phase	2.00
	Slice	1.25
	HyperSense	1.20
	SCAN RANGE	
	FOV	42.0
	Slice Thickness	1.30
	Location per Slab	112
	Overlap Locations	0
	Number of Slices	1
	ACQ TIMING	
	Freq	300
	Phase	200
	Freq DIR	S/I
	NEX	1.00
	Phase FOV	1.00
표	Auto Shim	Auto
≅	Phase Correction	No
S	RF Drive Mode	Single
Α	Excitation Mode	Selective
A\	FMRI	
or L	PSD Trigger	Internal
Ö	View Order	Bottom/Up
.3	# of Repetitions REST	0
H.	# of Repetitions ACTIVE	0
R	SAT	
SP	Tag Type	None
۸	Fat/Water Saturation	Fat Special
AV,	TRICKS	
r L	Pause On/Off	On
3D cor LAVA ASPIR BH - 3D cor LAVA ASPIR BH	Auto Subtract	0
3	Auto SCIC	2

SCAN TIMING	
Flip Angle	12.0
Number of Echoes	1
TI	24
Receiver Bandwidth	62.50
IMAGE ENHANCE	
Filter Choice	None
USER CVS	
User CV6	1.00
User CV34	90.00
User CV Mask2	8
MULTI-PHASE	
Seperate Series	0
Trigger Delay without AV	0
Mask Phase	0
Mask Pause	0
Preserve	0
DIFFUSION	
Recon All Images	On
Multi b-values	1000.0;
Multi NEX Values	1.0;
# Synthetic b-values	1
Synthetic b-value	1000.0;
CONTRAST	
Contrast Yes/No	No

3D cor LAVA ASPIR BH - 3D cor LAVA ASPIR BH



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LAVA Considerations: -Use LAVA for abdominal scanning, in particular, liver imaging Inlaging
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Consider adjusting parameters with affect SNR, e.g. increase NEX, increase the FOV, decrease matrix size, decrease the Recieve Bandwidth -Uneven saturation can still occur as a result of local inhomogeneities, e.g. at air/tissue interfaces when the anatomy of interest is non-uniform -Site or patient specific inhomogeneities may be unavoidable even at isocenter. The result can be uneven suppression. Techniques for Fat Saturation include: Chemical Fat SAT, STIR, ASPIR, and Flex. -Consider using shom volumes to increase Fat SAT homogeneity. Localized TG is used to improve the accuracy of the TG for a specifically designated area, such as cardiac, pelvis or prostate imaging, or when an anatomy is positioned at a patient's side. Localize TG can be used wth any pulse sequence to improve signal homogeneity and is found under the Shim Volume

	IMAGING PARAMETERS		SCAN TIMING		
	Imaging Mode	3D	Flip Angle	12	
	Pulse Sequence	LAVA	TE	Min Full	
	Imaging Options	EDR, Fast, Fluoro, ARC,	Number of Echoes	2	
		Flex	Receiver Bandwidth	62.50	
	IDEAL	15	IMAGE ENHANCE		
	Phase	2.00	Filter Choice	A	
	Slice	1.20		A	
	SCAN RANGE		USER CVS		
	FOV	42.0	User CV4	3.00	
	Slice Thickness	2.30	User CV6	1.00	
	Location per Slab	80	User CV30	1.00	
	Overlap Locations	0	User CV34	70.00	
Ax LAVA Flex Pre - Ax LAVA Flex Pre	Number of Slices	1	User CV Mask2	8	Φ
	ACQ TIMING		MULTI-PHASE		K Pr
	Freq	288	Seperate Series	0	Ax LAVA Flex Pre - Ax LAVA Flex Pre
	Phase	200	Trigger Delay without AV	3	
	Freq DIR	R/L	Mask Phase	0	
	NEX	1.00	Mask Pause	0	
	Phase FOV	0.80	Preserve	0	
	Auto Shim	Auto	DIFFUSION		
	Phase Correction	No	Recon All Images	On	eX
	RF Drive Mode	Single	# Synthetic b-values	1	正
*	Excitation Mode	Selective	Synthetic b-value	1000.0;	*
×	FMRI		CONTRAST		× L/
A	PSD Trigger	Internal	Contrast Yes/No	No	A
	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			

				<u> </u>	
	IMAGING PARAMETERS		SCAN TIMING		
	Imaging Mode	3D	Flip Angle	12	
	Pulse Sequence	LAVA	TE	Min Full	
	Imaging Options	EDR, Fast, MPh, Fluoro,	Number of Echoes	2	
		ARC, Flex	Receiver Bandwidth	62.50	
	IDEAL	3	IMAGE ENHANCE		
	Phase	2.00	Filter Choice	Α	
	Slice	1.20	USER CVS		
	SCAN RANGE		User CV4	3.00	
	FOV	40.0	User CV6	1.00	
	Slice Thickness	2.30	User CV30	1.00	
	Location per Slab	80	User CV34	70.00	
Ax LAVA Flex Multiphase - Ax LAVA Flex Multiphase	Overlap Locations	0	User CV Mask2	8	sse
	Number of Slices	1			pha
lulti	ACQ TIMING		MULTI-PHASE	2	lulti
≥ ×	Freq	288	Slice per Location	3	≥ ×
A Fle	Phase	200	Delay after Acquisition	Minimum	<u>(e)</u>
	Freq DIR	R/L	Seperate Series	0	Ā
Ą	NEX	1.00	Trigger Delay without AV	3	A
×	# of Acq. Before Pause	1	Mask Phase	0	×
Ise - A	Phase FOV	0.80	Mask Pause	0	٠
	Auto Shim	Auto	DIFFUSION		se
pha	Phase Correction	No	Recon All Images	On	pha
ulti	RF Drive Mode	Single	# Synthetic b-values	1	ulŧi
×	Excitation Mode	Selective	Synthetic b-value	1000.0;	Σ
Fe	FMRI		CONTRAST		Ax LAVA Flex Multiphase - Ax LAVA Flex Multiphase
¥	PSD Trigger	Internal	Contrast Yes/No	Yes	₹
A	View Order	Bottom/Up			\leq
×	# of Repetitions REST	0			×
1	# of Repetitions ACTIVE	0			1
	SAT				
	Tag Type	None			
	TRICKS				
	Pause On/Off	On			
	Auto Subtract	7			
	Auto SCIC	2			