	Protocol: pediatric_head_Research-DSBBEP-20180523_20180523135942153_6					
	PATIENT POSITION		IMAGING PARAMETERS			
	Patient Entry Patient Position Coil Configuration	Head First Supine Nova 32ch-Brain	Imaging Mode Pulse Sequence Imaging Options	2D Spin Echo Seq, EDR, Fast, SS, ARC		
	Plane Series Description	3-PLANE 3Plane_Loc_SSFSE	SCAN RANGE FOV	28.8		
	SCAN TIMING TE	80.0	Slice Thickness Slice Spacing	8.0 0.0		
	Number of Echoes TR Receiver Bandwidth	1 Minimum 83.33	ACQ TIMING Freq Phase	384 160		
SSFSE	IMAGE ENHANCE Filter Choice	None	Freq DIR # of Acq. Before Pause	Unswap 0	3Plane_Loc_SSFSE	
1	GATING/TRIGGER Auto Trigger Type	Off	Phase FOV Auto Shim Phase Correction	1.00 Auto No		
3Plane_Loc_	PSD Trigger View Order # of Repetitions REST # of Repetitions ACTIVE	Internal Bottom/Up 0 0	USER CVS User CV1 User CV2 User CV13	1.00 240.00 1.00		
	SAT Tag Type	None	MULTI-PHASE Seperate Series	0		
	TRICKS Pause On/Off	On	Mask Phase Mask Pause	0 0		
	Auto Subtract Auto SCIC	O Off	DIFFUSION Recon All Images	On		
			CONTRAST Contrast Yes/No	No		

	Protocol: pediatric_he	ead_Research-DSBBEP-2	0180523_2018052313594215	53_6	
	PATIENT POSITION		IMAGING PARAMETERS	IMAGING PARAMETERS	
	Patient Entry	Head First	Imaging Mode	3D	
	Patient Position	Supine	Pulse Sequence	SPGR	
	Coil Configuration	Nova 32ch-Brain	Imaging Options	EDR, Fast, ZIP2, Calib	
	Plane	AXIAL	SCAN RANGE		
	Series Description	Calibration	FOV	30.0	_
U	SCAN TIMING		Slice Thickness	11.4	
	Number of Echoes	1	ACQ TIMING		
	IMAGE ENHANCE		Freq DIR	A/P	
	Filter Choice	None	Auto Shim	Auto	_
Calibration	GATING/TRIGGER		Phase Correction	No	Calibration
alibr	Auto Trigger Type	Off	FMRI		alibr
ပိ	MULTI-PHASE		PSD Trigger	Internal	ပိ
	Seperate Series	0	View Order	Bottom/Up	
	Mask Phase	0	# of Repetitions REST	0	
	Mask Pause	0	# of Repetitions ACTIVE	0	
	DIFFUSION		SAT		
	Recon All Images	On	Tag Type	None	
	CONTRAST		TRICKS		
	Contrast Yes/No	No	Pause On/Off	On	
			Auto Subtract	0	
			Auto SCIC	Off	

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	Protocol: pediatric_hea	d_Research-DSBBEP-20180	523_2018052313594215	3_6	
	PATIENT POSITION		IMAGING PARAMETERS		
	Patient Entry	Head First	Imaging Mode	3D	
	Patient Position	Supine	Pulse Sequence	SPGR	
	Coil Configuration	Nova 32ch-Brain	Imaging Options	EDR, Fast, ARC, PROMO,	
	Plane	SAGITTAL	PSD Name	IrP research/mprage_promo2	
	Series Description	MPRAGE_PROMO		researcriviliprage_profiloz	
	SCAN TIMING		SCAN RANGE	20.0	
	Flip Angle	8	FOV	23.0	
	TE	Min Full	Slice Thickness	0.9	
	Number of Echoes	1	Location per Slab	164	
	TI	900	Overlap Locations	0	
	Receiver Bandwidth	31.25	ACQ TIMING		
	IMAGE ENHANCE		Freq	256	
	Filter Choice	None	Phase	256	
	GATING/TRIGGER		Freq DIR	S/I	
9	Auto Trigger Type	Off	NEX	1.00	9
PROMO			Phase FOV	1.00	Ö
监	FMRI		Auto Shim	Auto	뚭
MPRAGE	PSD Trigger	Internal	Phase Correction	No	MPRAGE_PROMO
Z AC	View Order	Bottom/Up	USER CVS		Z A
₽F	# of Repetitions REST # of Repetitions ACTIVE	0 0	User CV6	1.00	1PF
2		· ·	User CV8	1.00	2
	DIFFUSION		User CV9	24.00	
	Recon All Images	On	User CV10	24.00	
	CONTRAST		User CV23	100.00	
	Contrast Yes/No	No	User CV24	2488.00	
			MULTI-PHASE		
			Seperate Series	0	
			Trigger Delay without AV	0	
			Mask Phase	0	
			Mask Pause	0	
			TRICKS		
			Pause On/Off	On	
			Auto Subtract	0	
			Auto SCIC	2	

	Protocol: pediatric_hea	d_Research-DSBBEP-20180	0523_2018052313594215	3_6	
	PATIENT POSITION		IMAGING PARAMETERS		
	Patient Entry Patient Position Coil Configuration Plane	Head First Supine Nova 32ch-Brain AXIAL	Imaging Mode Pulse Sequence Imaging Options PSD Name	2D Gradient Echo EDR, MPh, EPI, ARC, HB multiband/mux epi	
	Series Description	fMRI_Resting_State_Inscape s_AP	SCAN RANGE FOV	24.0	
	SCAN TIMING		Slice Thickness	3.0	
	Flip Angle	52	Slice Spacing	0.0	
	TE	30.0	ACQ TIMING		fMRI_Resting_State_Inscapes_AP
	Number of Echoes TR	1 600.0	Freq	80	
	Number of Shots	1	Phase	80	
fMRI_Resting_State_Inscapes_AP		,	Freq DIR	R/L	
	IMAGE ENHANCE	• /	NEX	1.00	
be	Filter Choice	None	Phase FOV	1.00	
sca	GATING/TRIGGER		Auto Shim	Auto	
ü	Auto Trigger Type	Off	Phase Correction	Yes	
ate	FMRI		USER CVS		ate
S.	PSD Trigger	Internal	User CV0	1.00	S
ting	View Order	Bottom/Up	MULTI-PHASE		ting
Sest	# of Repetitions REST	0	Slice per Location	710	Sest
<u>"</u>	# of Repetitions ACTIVE	0	Phase Acquisition Order	Interleaved	5
MR	SAT		Delay after Acquisition	Minimum	MR
ŧ	Tag Type	None	Seperate Series	0	—
	TRICKS		Delay after Acquisition without AV	2	
	Pause On/Off	On	Mask Phase	0	
	Auto Subtract	0	Mask Pause	0	
	Auto SCIC	Off	DIFFUSION		
	OTHERS		Recon All Images	On	
	Protocol Notes	Multi-Phase Tab Total Phases: 710	CONTRAST		
		User CVs Check CV pepolar = 1	Contrast Yes/No	No	

		_	_
M	R	7	5
			_

	Protocol: pediatric_hea	d_Research-DSBBEP-2018	0523_2018052313594215	3_6	
	PATIENT POSITION		IMAGING PARAMETERS		
	Patient Entry	Head First	Imaging Mode	2D	
	Patient Position	Supine	Pulse Sequence	Gradient Echo	
	Coil Configuration	Nova 32ch-Brain	Imaging Options	EDR, MPh, EPI, ARC, HB	
	Plane	AXIAL	PSD Name	multiband/mux_epi	
	Series Description	fMRI_Resting_State_Inscape s_TOPUP_PA	SCAN RANGE		
	SCAN TIMING		FOV	24.0	
	Flip Angle	52	Slice Thickness	3.0	
	TE	30.0	Slice Spacing	0.0	
	Number of Echoes	1	ACQ TIMING		
	TR	600.0	Freq	80	
PA.	Number of Shots	1	Phase	80	PA
			Freq DIR	R/L	
후	IMAGE ENHANCE	.,	NEX	1.00	Ž
Ö	Filter Choice	None	Phase FOV	1.00	Ö
S	GATING/TRIGGER		Auto Shim	Auto	IMRI_Resting_State_Inscapes_TOPUP_
ape	Auto Trigger Type	Off	Phase Correction	Yes	
fMRI_Resting_State_Inscapes_TOPUP_	FMRI		USER CVS		SCS
=	PSD Trigger	Internal	User CV0	1.00	=
tate	View Order	Bottom/Up	MULTI-PHASE		tate
S	# of Repetitions REST	0	Slice per Location	30	S
ting	# of Repetitions ACTIVE	0	Phase Acquisition Order	Interleaved	ting
Ses	SAT		Delay after Acquisition	Minimum	Ses
5	Tag Type	None	Seperate Series	0	5
fMR	TRICKS		Delay after Acquisition without AV	2	fMR
	Pause On/Off	On	Mask Phase	0	
	Auto Subtract	0	Mask Pause	0	
	Auto SCIC	Off	DIFFUSION		
	OTHERS		Recon All Images	On	
	Protocol Notes	Multi-Phase Tab Total Phases: 30	CONTRAST		
		User CVs Check CV pepolar = 0	Contrast Yes/No	No	

Protocol: pediatric_head_Research-DSBBEP-20180523_20180523135942153_6

	·		00020_2010002010004		
	PATIENT POSITION		IMAGING PARAMETE		
	Patient Entry	Head First	Imaging Mode	2D	
	Patient Position	Supine	Pulse Sequence	Gradient Echo	
	Coil Configuration	Nova 32ch-Brain	Imaging Options	None	
	Plane	AXIAL	PSD Name	sprl_hos	_
	Series Description	HIGH_ORDER_SHIM	SCAN RANGE		
	SCAN TIMING		FOV	24.0	
	Flip Angle	60	Slice Thickness	5.8	
	TE	7.0	Slice Spacing	0.0	
	Number of Echoes	1	ACQ TIMING		
	TR	1558.0	Freq	64	
	IMAGE ENHANCE		Freq DIR	A/P	
	Filter Choice	None	NEX	1.00	
	GATING/TRIGGER		Auto Shim	Off	
	Auto Trigger Type	Off	Phase Correction	No	
	FMRI		USER CVS		
	PSD Trigger	Internal	User CV0	2.00	
	Slice Order	Interleaved	User CV1	2.00	
SHIM	View Order	Bottom/Up	User CV3	99.00	≥
ည်	# of Repetitions REST	0	User CV4	64.00	SHIM
絽	# of Repetitions ACTIVE	0	User CV5	0.50	4
HIGH_ORDER_	SAT		MULTI-PHASE		ORDER
ō	Tag Type	None	Seperate Series	0	Ō
E	TRICKS		Mask Phase	0	HBH
主	Pause On/Off	On	Mask Pause	0	Ĭ
	Auto Subtract	0	DIFFUSION		
	Auto SCIC	Off	Recon All Images	On	
			CONTRAST		
	OTHERS Protocol Notes		Contrast Yes/No	No	
	Trotogor Notes	Set up DTI first Once DTI set up, Open HOS and Save without changing anything HOS will Copy DTI coverage and apply itself to the last exam SET UP, so be sure that it is the DTI. Pop up screen will open. Drag and move Red Circle to fully encompass the Brain on all 3 planes. Hit CALCULATE SHIM, DONE and run DTI HOS Shims the brain for less distortion. DTI CV Change: image_size 140			

	Protocol: pediatric_hea	d_Research-DSBBEP-201	80523_201805231359421	53_6	
	PATIENT POSITION		IMAGING PARAMETERS		
	Patient Entry Patient Position Coil Configuration Plane	Head First Supine Nova 32ch-Brain OBLIQUE	Imaging Mode Pulse Sequence Imaging Options	2D Spin Echo EDR, Cla, EPI, DIFF, ARC, HB	ı
	Series Description	B300 10dir AP	SCAN RANGE		
	·	2000_10dii_71i	FOV	25.2	1
	SCAN TIMING TE	81.9	Slice Thickness	1.8	
	Number of Echoes	1	Slice Spacing	0.0	
	TR	4100.0	ACQ TIMING		
	Number of Shots	1	Freq	140	
	IMAGE ENHANCE		Phase	140	
	Filter Choice	None	Freq DIR	R/L	
	GATING/TRIGGER		Phase FOV	1.00	
Ъ	Auto Trigger Type	Off	Auto Shim	Off	
	FMRI	• ··	Phase Correction	Yes	
	PSD Trigger	Internal	USER CVS		<u>a</u>
A_	View Order	Bottom/Up	User CV5	1.00	Ā
Odii	# of Repetitions REST	0	User CV17	1.00	B300_10dir_AP
B300_10dir_AP	# of Repetitions ACTIVE	0	MULTI-PHASE		
300	SAT		Seperate Series	0	300
Ф	Tag Type	None	Mask Phase	0	Ф
	Fat/Water Saturation	Fat	Mask Pause	0	
		7 40	DIFFUSION		
	TRICKS Pause On/Off	On	Optimized TE	Yes	
	Auto Subtract	0	Diffusion Directions	Tensor	
	Auto SCIC	Off	Number of Diffusion Directions	10	
	OTHERS		Number of T2 Images	1	
	Protocol Notes	Ensure Autoshim is off and	Dual Spin Echo	Off	
		check "Retain HOS shim" Increase slice number to	Diffusion Tenser Processing Output	No Selection	
		cover as much brain as you can: max slice should go up	Recon All Images	Off	
		to 93 Phase acceleration = 2, MB	CONTRAST		
		factor = 3 CV Change: image_size = 140 CV Check: pepolar=1	Contrast Yes/No	No	

	Protocol: pediatric_hea	d_Research-DSBBEP-2018	0523_201805231359421	53_6	
	PATIENT POSITION		IMAGING PARAMETERS		
	Patient Entry	Head First	Imaging Mode	2D	
	Patient Position	Supine	Pulse Sequence	Spin Echo	
	Coil Configuration	Nova 32ch-Brain	Imaging Options	EDR, Cla, EPI, DIFF, ARC,	
	Plane	OBLIQUE		HB	
	Series Description	B700_40dir_AP	SCAN RANGE		
	SCAN TIMING		FOV	25.2	
	TE	81.9	Slice Thickness	1.8	
	Number of Echoes	1	Slice Spacing	0.0	
	TR	4100.0	ACQ TIMING		
	Number of Shots	1	Freq	140	
	IMAGE ENHANCE		Phase	140	
	Filter Choice	None	Freq DIR	R/L	
	GATING/TRIGGER		Phase FOV	1.00	
	Auto Trigger Type	Off	Auto Shim	Off	
	FMRI		Phase Correction	Yes	
B700_40dir_AP	PSD Trigger	Internal	USER CVS		AP.
	View Order	Bottom/Up	User CV5	1.00	늘
40	# of Repetitions REST	0	User CV17	1.00	40
00	# of Repetitions ACTIVE	0	MULTI-PHASE		B700_40dir_AP
B7	·		Seperate Series	0	B7
	SAT	None	Mask Phase	0	
	Tag Type Fat/Water Saturation	None Fat	Mask Pause	0	
		rai	DIFFUSION		
	TRICKS		Optimized TE	Yes	
	Pause On/Off	On	Diffusion Directions	Tensor	
	Auto Subtract Auto SCIC	0 Off	Number of Diffusion Directions	40	
	OTHERS		Number of T2 Images	1	
	Protocol Notes	Ensure Autoshim is off and	Dual Spin Echo	Off	
		check "Retain HOS shim" Copy the coverage of b300	Diffusion Tenser Processing Output	No Selection	
		shell (i.e. slice number) Phase acceleration = 2. MB	Recon All Images	Off	
		factor = 3	CONTRAST		
		CV Change: image_size = 140 CV Check:	Contrast Yes/No	No	
		pepolar=1			

	Protocol: pediatric_head	d_Research-DSBBEP-2018	0523_201805231359421	53_6	
	PATIENT POSITION		IMAGING PARAMETERS		
	Patient Entry Patient Position Coil Configuration	Head First Supine Nova 32ch-Brain	Imaging Mode Pulse Sequence Imaging Options	2D Spin Echo EDR, Cla, EPI, DIFF, ARC, HB	
	Plane Series Description	OBLIQUE B2000 90dir AP	SCAN RANGE		
	·	b2000_90dii_AP	FOV	25.2	
	SCAN TIMING TE	04.0	Slice Thickness	1.8	
	Number of Echoes	81.9 1	Slice Spacing	0.0	
	TR	4100.0	ACQ TIMING		
	Number of Shots	1	Freq	140	
	IMAGE ENHANCE		Phase	140	
	Filter Choice	None	Freq DIR	R/L	
	GATING/TRIGGER		Phase FOV	1.00	
	Auto Trigger Type	Off	Auto Shim	Off	
	FMRI		Phase Correction	Yes	
n	PSD Trigger	Internal	USER CVS		0
Ψ __	View Order	Bottom/Up	User CV5	1.00	_A_
Odir	# of Repetitions REST	T 0	User CV17	1.00	Odir
B2000_90dir_AP	# of Repetitions ACTIVE	0	MULTI-PHASE		B2000_90dir_AP
000	SAT		Seperate Series Mask Phase	0	000
B2	Tag Type	None	Mask Phase Mask Pause	0	B2
	Fat/Water Saturation	Fat		0	
	TRICKS		DIFFUSION Optimized TE	Yes	
	Pause On/Off	On	Diffusion Directions	Tensor	
	Auto Subtract Auto SCIC	0 Off	Number of Diffusion Directions	90	
	OTHERS		Number of T2 Images	1	
	Protocol Notes	Ensure Autoshim is off and	Dual Spin Echo	Off	
		check "Retain HOS shim" Copy the coverage of b300	Diffusion Tenser Processing Output	No Selection	
		(i.e. slice number) Phase acceleration = 2, MB	Recon All Images	Off	
		factor = 3, TE = 81.9 CV Change	CONTRAST		
	CV Change: image_size = 140 CV Check: pepolar=1 Sometimes this sequence is "buggy" and need to re- enter perameters	Contrast Yes/No	No		

Protocol: pediatric_head_Research-DSBBEP-20180523_20180523135942153_6

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	PATIENT POSITION		IMAGING PARAMETERS		
	Patient Entry	Head First	Imaging Mode	2D	
	Patient Position	Supine	Pulse Sequence	Spin Echo	
	Coil Configuration	Nova 32ch-Brain	Imaging Options	EDR, Cla, EPI, DIFF, ARC,	
	Plane	OBLIQUE		HB	
	Series Description	B1000_6dir_TOPUP_PA	SCAN RANGE		
	SCAN TIMING		FOV	25.2	
	TE	81.9	Slice Thickness	1.8	
	Number of Echoes	1	Slice Spacing	0.0	
	TR	4100.0	ACQ TIMING		
	Number of Shots	1	Freq	140	
	IMAGE ENHANCE		Phase	140	
	Filter Choice	None	Freq DIR	R/L	
			Phase FOV	1.00	
	GATING/TRIGGER	0"	Auto Shim	Off	
PA	Auto Trigger Type	Off	Phase Correction	Yes	PA
린	FMRI		USER CVS		B1000_6dir_TOPUP_PA
TOPUP	PSD Trigger	Internal	User CV5	1.00	P
잍	View Order	Bottom/Up	User CV17	1.00	_TC
6dir	# of Repetitions REST	0	MULTI-PHASE		di.
	# of Repetitions ACTIVE	0	Seperate Series	0	0_6
B1000	SAT		Mask Phase	0	00
B1	Tag Type	None	Mask Pause	0	B1
	Fat/Water Saturation	Fat	DIFFUSION		
	TRICKS		Optimized TE	Yes	
	Pause On/Off	On	Diffusion Directions	Tensor	
	Auto Subtract	0	Number of Diffusion	6	
	Auto SCIC	Off	Directions		
	OTHERS		Number of T2 Images	3	
	Protocol Notes	Ensure Autoshim is off and	Dual Spin Echo	Off	
		check "Retain HOS shim" Copy the coverage of B300	Diffusion Tenser Processing Output	No Selection	
		(i.e. slice number) Phase acceleration = 2, MB	Recon All Images	Off	
		factor = 3 CV Change:	CONTRAST		
		pepolar=0 image_size = 140	Contrast Yes/No	No	

	Protocol: pediatric_hea	d_Research-DSBBEP-20180	523_2018052313594215	3_6	
	PATIENT POSITION		IMAGING PARAMETERS		
	Patient Entry Patient Position	Head First Supine	Imaging Mode Pulse Sequence	3D SPGR	
	Coil Configuration	Nova 32ch-Brain	Imaging Options	EDR, Fast, ARC, PROMO, IrP	
	Plane Series Description	SAGITTAL MP2RAGE_PROMO	PSD Name	research/mp2rage	
	SCAN TIMING		SCAN RANGE		
	Flip Angle	7	FOV	23.0	
	TE	Min Full	Slice Thickness	0.9	
	Number of Echoes	2	Location per Slab	164	
	TI	700	Overlap Locations	0	
	Blood Suppression TI	2000	ACQ TIMING		
	Receiver Bandwidth	62.50	Freq	256	
	IMAGE ENHANCE		Phase	170	
	Filter Choice	None	Freq DIR	S/I	
	GATING/TRIGGER		NEX	1.00	
0	Auto Trigger Type	Off	Phase FOV	1.00	0
S		Oli	Auto Shim	Auto	OM
MP2RAGE_PROMO	FMRI		Phase Correction	No	MP2RAGE_PROMO
Ш	PSD Trigger	Internal	terleaved User CV6		
AG	Slice Order	Interleaved		2.00	AG
2R,	View Order	Bottom/Up	User CV8	1.00	2R,
MP	# of Repetitions REST	0	User CV9	24.00	MP
_	# of Repetitions ACTIVE	0	User CV10	24.00	
	SAT		User CV20	5.00	
	Tag Type	None	User CV23	100.00	
	TRICKS		User CV24	5000.00	
	Pause On/Off	On	MULTI-PHASE		
	Auto Subtract	0	Seperate Series	0	
	Auto SCIC	Off	Trigger Delay without AV	0	
	OTHERS		Mask Phase	0	
	Protocol Notes	Check slice thickness=0.9	Mask Pause	0	
		Freq. $FOV = 23.0$	DIFFUSION		
		Frequency Step: 256 Phase: 170	Recon All Images	On	
		DO NOT CLOSE POST-	CONTRAST		
		PROCESSING COMMAND WINDOW AFTER SCAN IS	Contrast Yes/No	No	
		DONE!! -> Minimize and continue			

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	Protocol: pediatric_hea	d_Research-DSBBEP-201	80523_20180523135942	2153_6	
	PATIENT POSITION		IMAGING PARAMETER	RS	
	Patient Entry	Head First	Imaging Mode	3D	
	Patient Position	Supine	Pulse Sequence	Cube T2 FLAIR	
	Coil Configuration	Nova 32ch-Brain	Imaging Options	EDR, Fast, T2P, ARC,	
	Plane	SAGITTAL	DOD 11	PROMO, IrP	
	Series Description	3D_SAG_Cube_T2FLAIR_P	PSD Name	research/3dfse_promo2	
		ROMO	SCAN RANGE		
	SCAN TIMING		FOV	23.0	
	TE	120.0	Slice Thickness	0.9	
	Number of Echoes	1	Location per Slab	194	
	TR	6800.0	Overlap Locations	0	
	TI	1770	ACQ TIMING		
3D_SAG_Cube_T2FLAIR_PROMO	Echo Train Length	200	Freq	256	Ĭ
RO	Receiver Bandwidth	31.25	Phase	256	T2FLAIR_PROMO
٦	IMAGE ENHANCE		Freq DIR	S/I	٦
AIR	Filter Choice	None	Fat Shift DIR	Normal (S)	AR
딮	GATING/TRIGGER		NEX	1.00	딮
_T2	Auto Trigger Type	Off	Phase FOV	1.00	<u> </u>
pe	FMRI		Auto Shim	Auto	pe
D _.	PSD Trigger	Internal	Phase Correction	No	SAG_Cube_
o o	View Order	Bottom/Up	USER CVS		Θ̈́
S	# of Repetitions REST	0	User CV5		
3D	# of Repetitions ACTIVE	0	User CV23	1.00	3D_
	SAT		MULTI-PHASE		
	Tag Type	None	Seperate Series	0	
	Fat/Water Saturation	Fat	Mask Phase	0	
	TRICKS		Mask Pause	0	
	Pause On/Off	On	DIFFUSION		
	Auto Subtract	0	Recon All Images	On	
	Auto SCIC	2	CONTRAST		
			Contrast Yes/No	No	
				110	

	Protocol: pediatric_hea	d_Research-DSBBEP-20180	523_2018052313594215	53_6	
	PATIENT POSITION		IMAGING PARAMETERS		
	Patient Entry Patient Position Coil Configuration Plane	Head First Supine Nova 32ch-Brain AXIAL	Imaging Mode Pulse Sequence Imaging Options PSD Name	2D Gradient Echo EDR, MPh, EPI, ARC, HB multiband/mux_epi	
	Series Description	fMRI_N-Back_AP	SCAN RANGE		
	SCAN TIMING Flip Angle	52	FOV Slice Thickness	24.0 3.0	
	TE	30.0	Slice Spacing	0.0	
	Number of Echoes TR	1 600.0	ACQ TIMING Freq	80	
	Number of Shots IMAGE ENHANCE	1	Phase	80 R/L	0
	Filter Choice	None	Freq DIR NEX	1.00	
, A-A-F	GATING/TRIGGER	011	Phase FOV Auto Shim	1.00 Auto	, A-A-F
-Вас	Auto Trigger Type FMRI	Off	Phase Correction	Yes	-Bac
fMRI_N-Back_AP	PSD Trigger View Order	Internal Bottom/Up	USER CVS User CV0	1.00	fMRI_N-Back_AP
ţ	# of Repetitions REST # of Repetitions ACTIVE	0	MULTI-PHASE Slice per Location	510	ţ
	SAT		Phase Acquisition Order	Interleaved	
	Tag Type	None	Delay after Acquisition Seperate Series	Minimum O	
	TRICKS Pause On/Off	On	Delay after Acquisition without AV	2	
	Auto Subtract	0	Mask Phase	0	
	Auto SCIC OTHERS	Off	Mask Pause DIFFUSION	0	
	Protocol Notes	Multi-Phase Tab	Recon All Images	On	
		Total Phases: 510 User CVs	CONTRAST		
		Check CV pepolar = 1	Contrast Yes/No	No	

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	Protocol: pediatric_hea	d_Research-DSBBEP-20180	523_2018052313594215	3_6	
	PATIENT POSITION		IMAGING PARAMETERS		
	Patient Entry	Head First	Imaging Mode	2D	
	Patient Position	Supine	Pulse Sequence	Gradient Echo	
	Coil Configuration	Nova 32ch-Brain	Imaging Options	EDR, MPh, EPI, ARC, HB	
	Plane	AXIAL	PSD Name	multiband/mux_epi	
	Series Description	fMRI_Semantic_Decision_A	SCAN RANGE		
			FOV	24.0	
	SCAN TIMING		Slice Thickness	3.0	
	Flip Angle	52	Slice Spacing	0.0	
	TE	30.0	ACQ TIMING		
	Number of Echoes	1	Freq	80	
	TR 600.0	Phase	80		
	Number of Shots	1	Freq DIR	R/L	ЧЬ
AP	IMAGE ENHANCE		NEX	1.00	
	Filter Choice	None	Phase FOV	1.00	رَ
isio	GATING/TRIGGER		Auto Shim	Auto	isio
Semantic_Decision_	Auto Trigger Type	Off	Phase Correction	Yes	fMRI_Semantic_Decision_AP
. <u>2</u> l	FMRI		USER CVS		.ည <u></u>
lani	PSD Trigger	Internal	User CV0	1.00	lani
em	View Order	Bottom/Up	MULTI-PHASE		em
	# of Repetitions REST	0	Slice per Location	510	8
fMRI	# of Repetitions ACTIVE	0	Phase Acquisition Order	Interleaved	MR
-	SAT		Delay after Acquisition	Minimum	Ŧ
	Tag Type	None	Seperate Series	0	
	TRICKS		Delay after Acquisition without AV	2	
	Pause On/Off	On	Mask Phase	0	
	Auto Subtract	0	Mask Pause	0	
	Auto SCIC	Off	DIFFUSION		
	OTHERS		Recon All Images	On	
	Protocol Notes	Multi-Phase Tab Total Phases: 510	CONTRAST		
		User CVs Check CV pepolar = 1	Contrast Yes/No	No	

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PATIENT POSITION Patient Entry Patient Entry Patient Entry Patient Position Coil Configuration Plane Series Description Flip Angle Flip Angle TR Number of Schots Number of Shots I IMAGING PARAMETERS Imaging Mode Pulse Sequence Imaging Options EDR, MPh, EPI, ARC, HB PSD Name multiband/mux_epi SCAN TIMING Flip Angle TR 600.0 Number of Shots I IMAGING PARAMETERS Imaging Mode 2D Pulse Sequence Imaging Options EDR, MPh, EPI, ARC, HB PSD Name multiband/mux_epi SCAN RANGE FOV 24.0 Slice Thickness 3.0 Slice Spacing 0.0 ACQ TIMING Freq Phase Phase 80 Phase 80 Freq DIR NEX 1.00 Phase FOV Auto Shim Auto Phase FOV 1.00 Auto Shim Auto Phase Correction Yes User CVS WERCVS WERCVS SAT Tag Type None IMAGING PARAMETERS Imaging Mode 2D Pulse Sequence Gradient Echo Imaging Mode 2D Pulse Sequence Imaging Mode 2D Pulse Sequence Imaging Mode 2D Pulse Sequence Gradient Echo Imaging Mode 2D Pulse Sequence Gradient Echo Imaging Mode 2D Pulse Sequence Imaging Mote 1D Pulse Sequence Imaging Mot	
Patient Position Coil Configuration Nova 32ch-Brain Plane AXIAL Series Description Flip Angle TE Number of Schots IMAGE ENHANCE Filter Choice None GATING/TRIGGER Auto Trigger Type Off PSD Trigger Auto Trigger Type Off Phase Correction FMRI PSD Name Pulse Sequence Imaging Options EDR, MPh, EPI, ARC, HB PSD Name multiband/mux_epi SCAN RANGE FOV 24.0 Slice Thickness 3.0 Slice Spacing 0.0 ACQ TIMING Freq Phase 80 Phase 80 Phase 80 Phase 80 Phase FOV 1.00 Phase FOV 1.00 Auto Shim Auto Phase Correction Yes FMRI PSD Trigger Internal View Order Bottom/Up # of Repetitions REST # of Repetitions ACTIVE Superate Sequence Gradient Echo Imaging Options EDR, MPh, EPI, ARC, HB PSD Name multiband/mux_epi SCAN RANGE FOV 24.0 Slice Spacing 0.0 ACQ TIMING Freq DIR R/L NEX 1.00 Phase FOV 1.00 Auto Shim Auto Phase Correction Yes USER CVS User CV0 1.00 MULTI-PHASE Slice per Location Phase Acquisition Order Interleaved Delay after Acquisition Minimum Seperate Series 0	
Coil Configuration Plane AXIAL Series Description fMRI_RVL_Fingertap_Tonoto pic_AP SCAN TIMING Flip Angle 52 TE 30.0 Number of Echoes 1 TR 600.0 Number of Shots 1 IMAGE ENHANCE Filter Choice None GATING/TRIGGER Auto Trigger Type Off PSD Trigger Internal View Order Bottom/Up # of Repetitions REST 0 Tag Type None Imaging Options EDR, MPh, EPI, ARC, HB PSD Name multiband/mux_epi SCAN RANGE FOV 24.0 Slice Thickness 3.0 Slice Spacing 0.0 ACQ TIMING Freq 80 Phase 80 Phase 80 Phase 80 Phase FOV 1.00 Auto Shim Auto Shim Auto Series Description internal View Order Bottom/Up Phase Correction Yes MULTI-PHASE Slice per Location 490 Phase Acquisition Order Interleaved Minimum Separate Series 0	
Plane	
Series Description	
Poic_AP SCAN RANGE FOV 24.0	
SCAN TIMING Flip Angle 52 TE 30.0 Number of Echoes 1 TR 600.0 Number of Shots 1 IMAGE ENHANCE Filter Choice None GATING/TRIGGER Auto Trigger Type Off PSD Trigger View Order Bottom/Up # of Repetitions REST 0 # of Repetitions ACTIVE 0 Slice Thickness 3.0 Slice Spacing 0.0 ACQ TIMING Freq 80 Freq DIR R/L NEX 1.00 Phase FOV 1.00 Auto Shim Auto Phase FOV 1.00 USER CVS USER CVS Slice Spacing 0.0 MCQ TIMING Freq B0 ACQ TIMING Freq DIR R/L NEX 1.00 Phase FOV 1.00 Auto Shim Auto Phase Correction Yes USER CVS Slice per Location 490 Phase Acquisition Order Interleaved Delay after Acquisition Minimum Seperate Series 0	
Flip Angle TE 30.0 Number of Echoes 1 TR 600.0 Number of Shots 1 IMAGE ENHANCE Filter Choice None GATING/TRIGGER Auto Trigger Type PSD Trigger View Order # of Repetitions REST # of Repetitions ACTIVE Flip Angle 30.0 ACQ TIMING Freq 80 Phase 80 Freq DIR NEX 1.00 Phase FOV 1.00 Auto Shim Auto Phase FOV 1.00 WULTI-PHASE Slice per Location Phase Acquisition Order Phase Acquisition Order Interleaved Delay after Acquisition Minimum Seperate Series 0	
TE Number of Echoes 1 TR 600.0 Number of Shots 1 IMAGE ENHANCE Filter Choice None GATING/TRIGGER Auto Trigger Type Off Phase FOV 1.00 ACQ TIMING Freq 80 Phase 80 Freq DIR R/L NEX 1.00 Phase FOV 1.00 Auto Shim Auto Phase Correction Yes FMRI PSD Trigger Internal View Order Bottom/Up # of Repetitions REST 0 # of Repetitions ACTIVE 0 SAT Tag Type None MULTI-PHASE Seperate Series 0	
TR 600.0 Number of Shots 1 MAGE ENHANCE Filter Choice None Phase FOV 1.00	
Number of Shots 1 Mage Enhance Filter Choice None Phase FOV 1.00	4
Number of Shots 1 IMAGE ENHANCE Filter Choice None GATING/TRIGGER Auto Trigger Type Off Phase FOV Auto Shim Auto Phase Correction Yes FMRI PSD Trigger Internal View Order # of Repetitions REST # of Repetitions ACTIVE SAT Tag Type None Freq DIR NEX 1.00 NHEX USEX 1.00 Phase FOV 1.00 Auto Shim Auto View Order Phase Correction Yes WULTI-PHASE Slice per Location Phase Acquisition Order Interleaved Delay after Acquisition Minimum Seperate Series 0	
Filter Choice None Phase FOV 1.00 GATING/TRIGGER Auto Trigger Type Off Phase Correction Yes FMRI PSD Trigger Internal User CV0 1.00 View Order Bottom/Up # of Repetitions REST 0 # of Repetitions ACTIVE 0 SAT Tag Type None NEX 1.00 Phase FOV 1.00 Wutto Shim Auto Nex 1.00 Phase Correction Yes User CVS Sice per Location 490 Phase Acquisition Order Interleaved Delay after Acquisition Minimum Seperate Series 0	
Filter Choice None GATING/TRIGGER Auto Trigger Type Off Phase FOV Auto Shim Auto Phase Correction Yes FMRI PSD Trigger View Order # of Repetitions REST # of Repetitions ACTIVE SAT Tag Type None NEX 1.00 Phase FOV Auto Shim Auto View Order Phase Correction Yes MULTI-PHASE Slice per Location Phase Acquisition Order Interleaved Delay after Acquisition Minimum Seperate Series 0	A
FMRI PSD Trigger Internal User CV0 1.00 View Order Bottom/Up # of Repetitions REST 0 # of Repetitions ACTIVE 0 SAT Tag Type None USER CVS User CV0 1.00 MULTI-PHASE Slice per Location 490 Phase Acquisition Order Interleaved Delay after Acquisition Minimum Seperate Series 0	Dic.
FMRI PSD Trigger Internal User CV0 1.00 View Order Bottom/Up # of Repetitions REST 0 # of Repetitions ACTIVE 0 SAT Tag Type None USER CVS User CV0 1.00 MULTI-PHASE Slice per Location 490 Phase Acquisition Order Interleaved Delay after Acquisition Minimum Seperate Series 0	fMRI_RvL_Fingertap_Tonotopic_AP
FMRI PSD Trigger Internal User CV0 1.00 View Order Bottom/Up # of Repetitions REST 0 # of Repetitions ACTIVE 0 SAT Tag Type None USER CVS User CV0 1.00 MULTI-PHASE Slice per Location 490 Phase Acquisition Order Interleaved Delay after Acquisition Minimum Seperate Series 0	
# of Repetitions REST 0 # of Repetitions ACTIVE 0 Slice per Location 490 Phase Acquisition Order Interleaved Delay after Acquisition Minimum Tag Type None Seperate Series 0	
# of Repetitions REST 0 # of Repetitions ACTIVE 0 Slice per Location 490 Phase Acquisition Order Interleaved Delay after Acquisition Minimum Tag Type None Seperate Series 0	l tag
# of Repetitions REST 0 # of Repetitions ACTIVE 0 Slice per Location 490 Phase Acquisition Order Interleaved Delay after Acquisition Minimum Tag Type None Seperate Series 0	ge
# of Repetitions REST 0 # of Repetitions ACTIVE 0 Slice per Location 490 Phase Acquisition Order Interleaved Delay after Acquisition Minimum Tag Type None Seperate Series 0	造
SAT Tag Type None Delay after Acquisition Seperate Series 0	7
ray Type None Seperate Series	٣
ray Type None Seperate Series	AR I
	#
TRICKS Delay after Acquisition 2 without AV	
Pause On/Off On Mask Phase 0	
Auto Subtract 0 Mask Pause 0	
Auto SCIC Off DIFFUSION	
OTHERS Recon All Images On	
Protocol Notes Multi-Phase Tab Total Phases: 490 CONTRAST	
User CVs Contrast Yes/No No Check CV pepolar = 1	

	Protocol: pediatric_head_Research-DSBBEP-20180523_20180523135942153_6								
	PATIENT POSITION		IMAGING PARAMETERS						
	Patient Entry Patient Position Coil Configuration Plane Series Description Head First Supine Nova 32ch-Brain AXIAL 3D_AX_ASL	Supine	Imaging Mode Pulse Sequence Imaging Options	3D 3DASL EDR, Fast, Spiral					
		· - ··· · -	SCAN RANGE FOV	24.0					
	SCAN TIMING		Slice Thickness	4.0					
	Number of Echoes	1	ACQ TIMING						
	Receiver Bandwidth IMAGE ENHANCE	62.50	Freq Phase	512 8					
	Filter Choice	None	Freq DIR	R/L					
	GATING/TRIGGER	0#	NEX Auto Shim	3.00 Auto					
	Auto Trigger Type	Off	Phase Correction	No					
3D_Ax_ASL	PSD Trigger View Order	Internal Bottom/Up	USER CVS User CV1 1.00	1.00	3D_Ax_ASL				
	# of Repetitions REST	0	MULTI-PHASE		¥				
	# of Repetitions ACTIVE	0	Seperate Series	0	3D				
	SAT		Delay after Acquisition without AV	0					
	Tag Type Fat/Water Saturation	None Fat	Mask Phase	0					
		ral	Mask Pause	0					
	TRICKS	0	DIFFUSION						
	Pause On/Off Auto Subtract	On O	Recon All Images	On					
	Auto SCIC	Off	CONTRAST						
	OTHERS		Contrast Yes/No	No					
	Protocol Notes	Please ensure that brain is not crookedly aligned (i.e. looks straight in the coronal view) -> crooked brain will have biased ASL tagging Get full brain coverage from top of brain to bottom of cerebellum							

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	Protocol: pediatric_head_Research-DSBBEP-20180523_20180523135942153_6								
	PATIENT POSITION		IMAGING PARAMETERS						
	Patient Entry	Head First	Imaging Mode	2D					
	Patient Position	Supine	Pulse Sequence	Gradient Echo					
	Coil Configuration	Nova 32ch-Brain	Imaging Options	EDR, MPh, EPI, ARC, HB					
	Plane	AXIAL	PSD Name	multiband/mux_epi					
	Series Description	fMRI_Resting_State_Present AP	SCAN RANGE						
	SCAN TIMING	_	FOV	24.0					
	Flip Angle	52	Slice Thickness	3.0					
	TE	30.0	Slice Spacing	0.0					
	Number of Echoes	1	ACQ TIMING						
	TR	600.0	Freq	80					
	Number of Shots	1	Phase	80					
АР		,	Freq DIR	R/L	State_Present_AP				
	IMAGE ENHANCE		NEX	1.00					
ent	Filter Choice	None	Phase FOV	1.00					
Present	GATING/TRIGGER		Auto Shim	Auto					
Р	Auto Trigger Type	Off	Phase Correction	Yes					
State	FMRI		USER CVS		State				
o D	PSD Trigger	Internal	User CV0	1.00	g_6				
fMRI_Resting_	View Order	Bottom/Up	MULTI-PHASE		fMRI_Resting_				
Res	# of Repetitions REST	0	Slice per Location	360	Res				
	# of Repetitions ACTIVE	0	Phase Acquisition Order	Interleaved	 				
ĮM.	SAT		Delay after Acquisition	Minimum	fMF				
	Tag Type	None	Seperate Series	0					
	TRICKS		Delay after Acquisition without AV	2					
	Pause On/Off	On	Mask Phase	0					
	Auto Subtract	0	Mask Pause	0					
	Auto SCIC	Off	DIFFUSION						
	OTHERS		Recon All Images	On					
	Protocol Notes	Multi-Phase Tab	CONTRAST	<u></u>					
		Total Phases: 360 User CVs	CONTRAST Contrast Yes/No	No					
		Check CV pepolar = 1	CONTrast Tes/NO	IVU					