

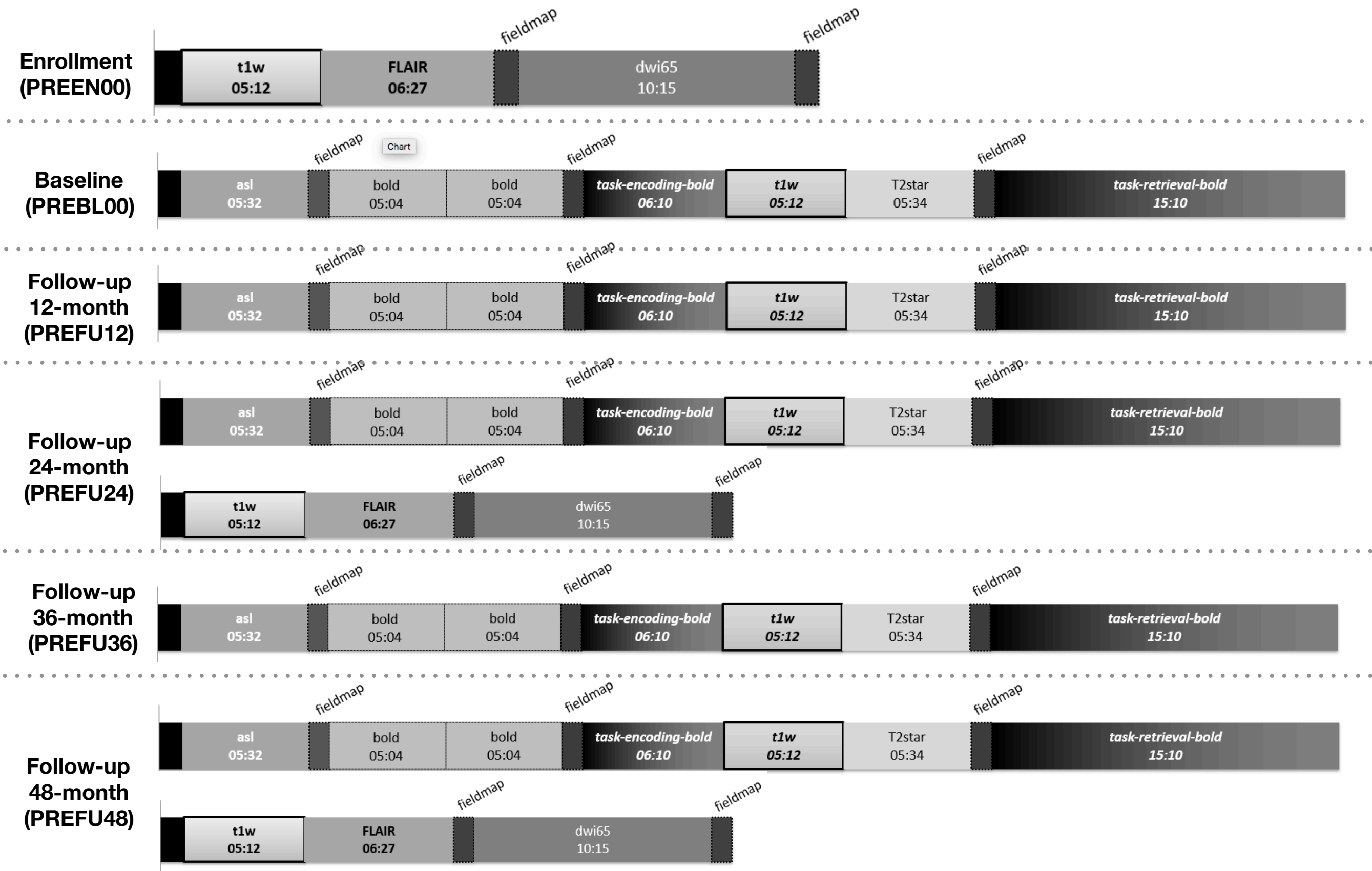


PREVENT-AD Magnetic Resonance Imaging (MRI) protocols

Quick summary

- MRI scanner: Siemens Tim Trio
- 3 different sets of MRI protocol used depending on the cohort and the head coil used:
 - Observational cohort original MRI protocol with the 12-ch coil (see page 3)
 - Observational cohort new MRI protocol with the 32-ch coil (see page 4)
 - INTREPAD trial cohort MRI protocol with the 12-ch coil (see page 5)
- Details for the task fMRI (see page 7)

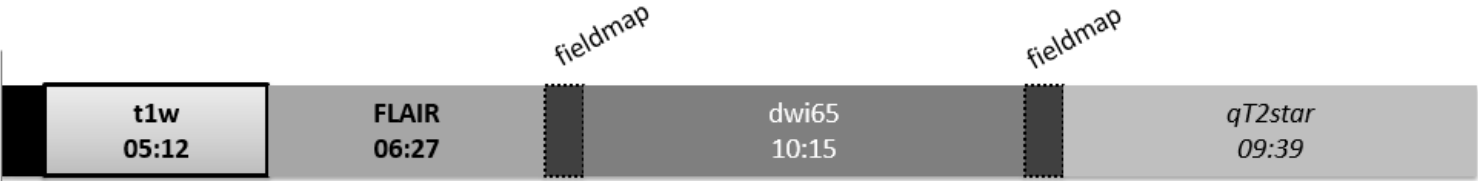
Original MRI protocols used in the observational cohort with the 12ch coil (PRE)



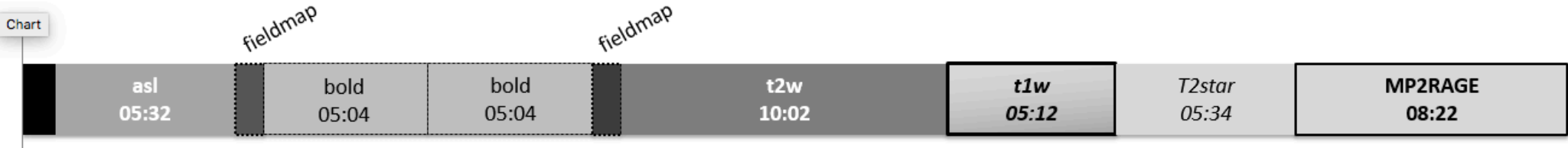
Legend:
asl = resting state single echo pCASL; bold = resting state BOLD fMRI; dwi65 = 65-direction DWI; t1w = ADNI MPRAGE protocol; T2star = GRE T2 star; task-encoding-bold = Encoding part of the task fMRI paradigm; task-retrieval-bold = Retrieval part of the task fMRI paradigm

New MRI protocols used in the observational cohort with the 32ch coil (PRE)

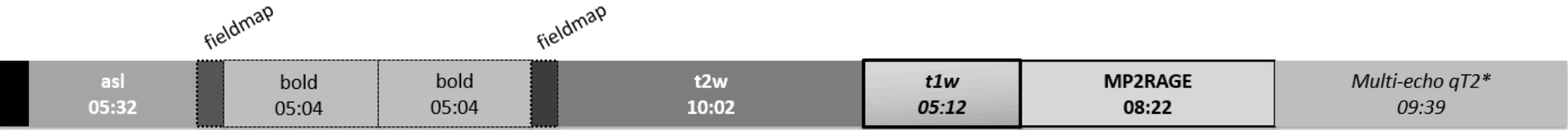
**Enrollment
(PREEN00)**



**Baseline
(PREBL00)**

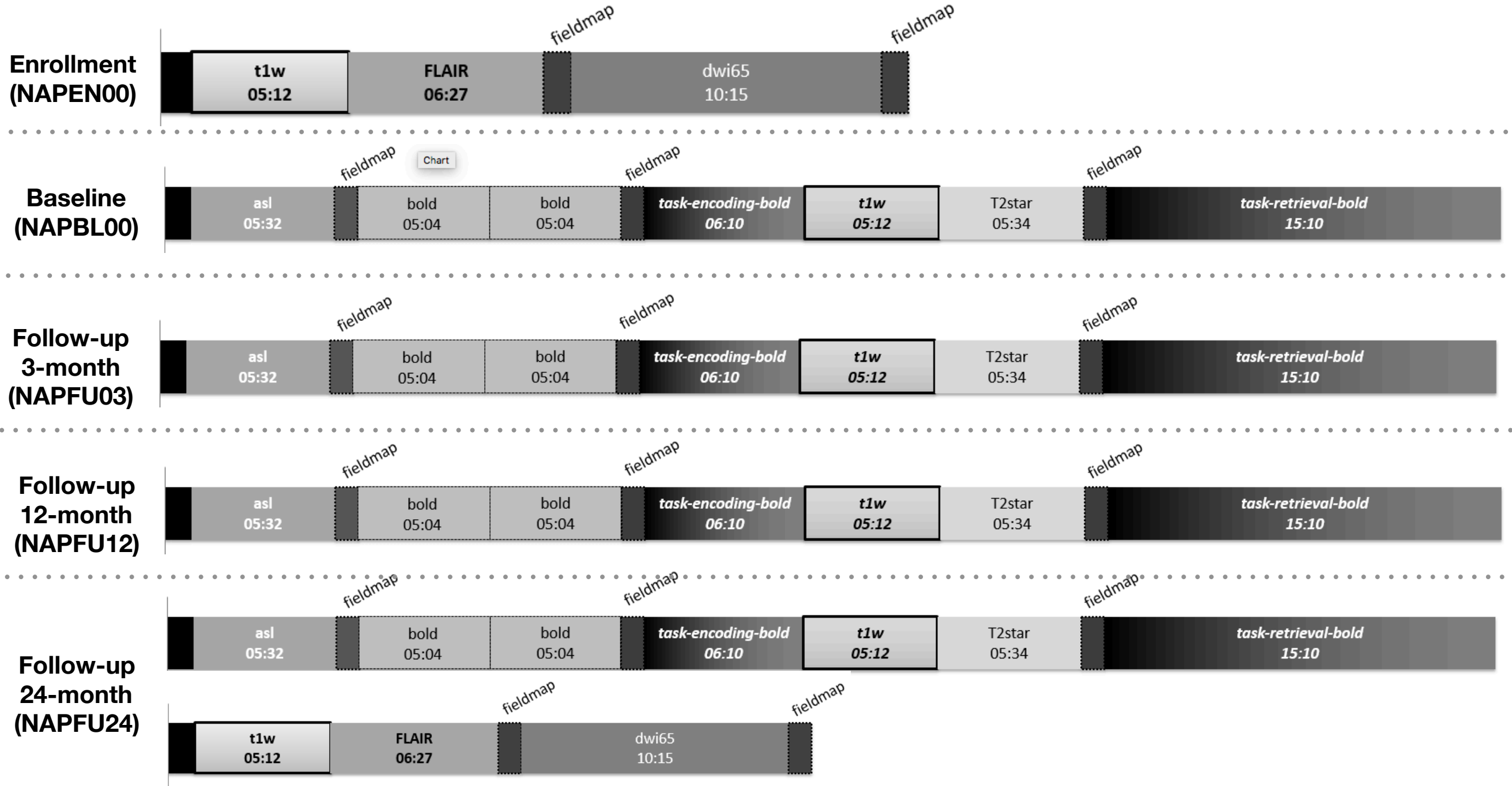


**Follow-up
12-month
(PREFU12)**



Legend:
asl = resting state single echo pCASL; bold = resting state BOLD fMRI; dwi65 = 65-direction DWI; t1w = ADNI MPRAGE protocol; T2star = GRE T2 star; qT2star = 12-echo T2 star

MRI protocols used in the INTREPAD trial with the 12ch coil (NAP)



For follow-up 36 and 48-month, please refer to the diagram for the observation cohort with the 12ch coil.

Legend:

asl = resting state single echo pCASL; bold = resting state BOLD fMRI; dwi65 = 65-direction DWI; t1w = ADNI MPRAGE protocol; T2star = GRE T2 star; task-encoding-bold = Encoding part of the task fMRI paradigm; task-retrieval-bold = Retrieval part of the task fMRI paradigm

Sequence descriptions

Modality	TR (ms)	TE (ms)	TI (ms)	α	In-plane resolution (mm)	Slice thickness (mm)	Matrix Size	Number of volumes
Structural modalities								
t1w	2300	30	-	9°	1 x 1	1	256 x 256	-
FLAIR	5000	388	1800	-	1 x 1	1	256 x 256	-
T2star	650	20	-	20°	0.8 x 0.8	2	256 x 256	-
qT2star	44	2.84-39.8	-	-	1 x 1	1	192 x 192	-
t2w	2500	198	-	-	0.64 x 0.64	0.64	320 x 320	-
MP2RAGE	5000	2.91	700/2500	4/5°	1 x 1	1	256 x 256	-
dwi65	9300	92	-	-	2 x 2	2	96 x 96	65
Functional modalities								
single-echo asl	4000	10	-	90°	4 x 4	7	64 x 64	80
bold	2000	30	-	90°	4 x 4	4	64 x 64	150
encoding-bold/ retrieval-bold	2000	30	-	90°	4 x 4	4	64 x 64	183/453
multi-echo asl	4120	8.4	30	90°	4.5 x 4.5	5	64 x 64	264

Legend:

TR = repetition time; TE = Echo Time; TI = Inversion Time; α = Flip Angle; t1w = MPRAGE (Magnetization Prepared Rapid Acquisition Gradient Echo); FLAIR = FLuid Attenuated Inversion Recovery; T2star = GRAdient Echo T2*; qT2star = 12-Echo T2* (2.84, 6.2, 9.56, 12.92, 16.28, 19.64, 23, 26.36, 29.72, 33.08, 36.44 and 39.8 ms);

Task fMRI paradigm

1. Encoding task:

- 48 unique stimuli were presented either to the left or right side of a central fixation cross
- Subjects were asked to memorize the presented stimuli as well as their location on the screen
- Duration: 6 minutes

2. 11-minute break (during which structural images were acquired)

3. Retrieval task:

- 96 stimuli presented one at a time in the centre of the computer screen
- Subjects were asked to make an old/new item recognition judgment, as well as, a spatial context judgment to indicate whether the remembered image was originally presented on the 'LEFT' or 'RIGHT' side of the screen
- Duration: 15 minutes