

Title:

Disturbed retrieval network and prospective memory decline in postpartum women

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Supplementary Table 1. Significant regions for the main effect of the task

| Design | Contrast | Region | Side | MNI coordinates | | | Maximum <i>t</i> | No. of voxels | <i>P</i> value |
|---------------|-------------------------------|--|--------------------------|-----------------|-----|------|------------------|---------------|----------------|
| | | | | x | y | z | | | |
| Block | PM block > CTRL block | Inferior parietal lobule | left | -33 | -55 | 37 | 11.06 | 3341 | < .001 |
| | | Frontal inferior operculum | left | -48 | 8 | 28 | 9.37 | 3425 | < .001 |
| | | Supplementary motor area/superior medial frontal gyrus | left | -3 | 17 | 49 | 8.46 | 555 | < .001 |
| | | Frontal inferior operculum | right | 42 | 32 | 28 | 8.12 | 1208 | < .001 |
| | | Cerebellum | right | 9 | -73 | -32 | 7.55 | 2217 | < .001 |
| | | Inferior temporal gyrus | left | -45 | -55 | -11 | 5.33 | 35 | < .001 |
| | | Cerebellum | left | -21 | -40 | -44 | 4.97 | 6 | < .001 |
| | | PM block < CTRL block | Superior occipital gyrus | right | 18 | -100 | 16 | 6.62 | 75 |
| | Middle occipital gyrus | left | -15 | -100 | 13 | 5.88 | 44 | < .001 | |
| Event-related | PM > PM ongoing | Middle temporal gyrus | left | -54 | -58 | 34 | 8.74 | 362 | < .001 |
| | | Angular gyrus | right | 57 | -55 | 37 | 7.21 | 165 | < .001 |
| | | Middle temporal gyrus | left | -63 | -25 | -11 | 7 | 200 | < .001 |
| | | Middle temporal gyrus | right | 69 | -31 | -11 | 6.94 | 155 | < .001 |
| | | Postcentral gyrus | left | -45 | -28 | 61 | 6.58 | 86 | < .001 |
| | | Superiomedial frontal gyrus | left | -6 | 47 | 25 | 6.21 | 393 | < .001 |
| | | Inferior temporal gyrus | left | -54 | -1 | -35 | 6.06 | 55 | < .001 |
| | | Orbitoinferior frontal gyrus | right | 45 | 29 | -14 | 5.38 | 36 | < .001 |
| | | Orbitoinferior frontal gyrus | left | -48 | 32 | -14 | 5.31 | 62 | < .001 |
| | | Inferior temporal gyrus | right | 54 | -4 | -35 | 4.91 | 6 | < .001 |
| | PM < PM ongoing | Supplementary motor area | left | -24 | -4 | 52 | 9.1 | 672 | < .001 |
| | | Middle frontal gyrus | right | 24 | -1 | 49 | 8.8 | 271 | < .001 |
| | | Lingual gyrus | right | 27 | -55 | -8 | 7.07 | 1616 | < .001 |
| | | Superior parietal gyrus | right | 18 | -70 | 46 | 6.18 | 155 | < .001 |
| | | Vermis | | 0 | -55 | -38 | 6.13 | 67 | < .001 |
| | | Insula | right | 33 | 20 | 7 | 5.88 | 121 | < .001 |
| | | Precentral gyrus | left | -57 | 8 | 28 | 5.84 | 95 | < .001 |
| | | Superior parietal gyrus | left | -15 | -67 | 46 | 5.75 | 75 | < .001 |
| | | Putamen | left | -21 | 8 | 1 | 5.55 | 34 | < .001 |
| | | Inferior frontal operculum | right | 45 | 8 | 28 | 5.41 | 24 | < .001 |
| | | Supramarginal gyrus | right | 39 | -40 | 43 | 5.33 | 49 | < .001 |
| | | Cerebellum | left | -15 | -55 | -50 | 5.03 | 7 | < .001 |
| | | Middle frontal gyrus | left | -39 | 59 | 16 | 4.98 | 10 | < .001 |
| | | Inferior parietal gyrus | left | -42 | -40 | 43 | 4.97 | 17 | < .001 |
| | Inferior frontal triangularis | left | -51 | 29 | 25 | 4.73 | 9 | < .001 | |
| | PM > CTRL ongoing | Inferior parietal gyrus | left | -33 | -58 | 40 | 10.33 | 2861 | < .001 |
| | | Inferior frontal operculum | right | 42 | 29 | 31 | 7.54 | 714 | < .001 |
| | | Orbitomedial frontal gyrus | left | -45 | 20 | 28 | 7.49 | 2147 | < .001 |
| | | Superior medial frontal gyrus | | 0 | 38 | 34 | 7.46 | 470 | < .001 |
| | | Cerebellum | right | 9 | -76 | -32 | 6.83 | 771 | < .001 |
| | | Inferior temporal gyrus | left | -63 | -25 | -14 | 5.94 | 170 | < .001 |
| | | Orbitomiddle frontal | right | 48 | 38 | -20 | 5.7 | 38 | < .001 |

| | | | | | | | | |
|---------------------------------|--|-------|-----|-----|-----|-------|------|--------|
| | gyrus | | | | | | | |
| | Inferior temporal gyrus | right | 63 | -22 | -17 | 5.7 | 131 | < .001 |
| | Caudate | right | 21 | -1 | 22 | 5.36 | 81 | < .001 |
| | Cerebellum | left | -39 | -67 | -35 | 5.35 | 66 | < .001 |
| | Inferior temporal gyrus | left | -51 | -49 | -14 | 5.26 | 21 | < .001 |
| | Insula | right | 33 | 23 | -5 | 5.14 | 22 | < .001 |
| | Insula | left | -33 | 23 | -5 | 5.06 | 13 | < .001 |
| | Middle frontal gyrus | right | 30 | 56 | 13 | 5.05 | 14 | < .001 |
| | Inferior frontal triangularis | right | 54 | 20 | -2 | 4.87 | 27 | < .001 |
| | Vermis | right | 3 | -58 | -29 | 4.84 | 9 | < .001 |
| | Vermis | | 0 | -61 | -17 | 4.7 | 2 | < .001 |
| | Inferior occipital gyrus | left | -33 | -91 | -11 | 4.63 | 2 | < .001 |
| | Supramarginal gyrus | left | -60 | -22 | 19 | 4.6 | 3 | < .001 |
| PM < CTRL ongoing | Rectus gyrus | left | -12 | 35 | -17 | 5.3 | 10 | < .001 |
| | Middle occipital gyrus | left | -18 | -97 | 13 | 5.23 | 29 | < .001 |
| | Superior occipital gyrus | right | 18 | -97 | 16 | 4.62 | 1 | < .001 |
| PM ongoing > CTRL ongoing | Inferior parietal lobule | left | -30 | -58 | 40 | 12.63 | 7486 | < .001 |
| | Supplementary motor area/superior medial frontal gyrus | left | -6 | 8 | 55 | 10.7 | 7762 | < .001 |
| PM ongoing < CTRL ongoing | Rectus gyrus | left | -12 | 35 | -17 | 5.56 | 79 | < .001 |
| | Superior frontal gyrus | left | -18 | 41 | 52 | 5.11 | 9 | < .001 |
| | Anterior cingulum | right | 6 | 35 | -8 | 4.71 | 3 | < .001 |

Supplementary Table 2. Significant regions for group x task interaction

| Design | Contrast | Region | Side | MNI coordinates | | | Maximum <i>t</i> | No. of voxels | <i>P</i> value |
|---------------|---|--------------------------|-------|-----------------|-----|----|------------------|---------------|----------------|
| | | | | x | y | z | | | |
| Block | PP (PM-CTRL) < Control (PM-CTRL) | Superior temporal gyrus | left | -57 | -10 | -5 | 3.19 | 69 | .001 |
| | | Hippocampus | right | 27 | -34 | -8 | 3.13 | 28 | .001 |
| | | Superior temporal gyrus | right | 63 | -13 | 4 | 2.95 | 25 | .002 |
| Event-related | PP (PM-PM ongoing) > Control (PM-PM ongoing) | Supramarginal gyrus | left | -42 | -49 | 34 | 3.52 | 74 | < .001 |
| | | Paracentral lobule | left | -9 | -22 | 70 | 3.45 | 38 | < .001 |
| | PP (PM ongoing-CTRL ongoing) < Control (PM ongoing-CTRL ongoing) | Superior parietal lobule | left | -18 | -49 | 70 | 3.18 | 35 | .001 |
| | | Hippocampus | right | 27 | -34 | -5 | 3.1 | 26 | .001 |

Note.- PP, postpartum group.

Supplementary Table 3. Significant group x task interaction regions for PPI analysis

| Contrast | Region | Side | MNI coordinates | | | Maximum t | No. of voxels | P value |
|--|-------------------------------|-------|-----------------|-----|-----|-----------|---------------|---------|
| | | | x | y | z | | | |
| PP (PM-PM ongoing) < Control (PM-PM ongoing) | Superior occipital gyrus | left | -36 | -97 | 16 | 4.47 | 369 | < .001 |
| | Superior medial frontal gyrus | | 0 | 59 | -11 | 4.41 | 582 | < .001 |
| | Superior temporal gyrus | right | 45 | -64 | 25 | 4.02 | 172 | < .001 |
| | Cerebellum | left | -12 | -73 | -35 | 3.52 | 115 | < .001 |
| | Precuneus | right | 9 | -52 | 16 | 3.50 | 120 | < .001 |
| | Hippocampus | right | 21 | -22 | -8 | 3.41 | 56 | < .001 |
| | Inferior parietal lobule | right | 30 | -40 | 52 | 3.40 | 96 | < .001 |
| | Fusiform gyrus | right | 36 | -46 | -14 | 3.32 | 28 | .001 |
| | Cerebellum | left | -48 | -61 | -47 | 3.30 | 34 | .001 |
| | Cerebellum | left | -18 | -79 | -17 | 3.23 | 78 | .001 |
| | Middle occipital gyrus | right | 27 | -88 | 34 | 3.07 | 45 | .001 |
| PP (PM-CTRL ongoing) < Control (PM-CTRL ongoing) | Middle occipital gyrus | left | -48 | -85 | 16 | 3.99 | 472 | < .001 |
| | Middle temporal pole | left | -30 | 5 | -38 | 3.77 | 51 | < .001 |
| | Middle frontal gyrus | right | 48 | -7 | 58 | 3.54 | 40 | < .001 |
| | Vernis | | 0 | -58 | -50 | 3.39 | 40 | < .001 |
| | Lingual gyrus | right | 15 | -58 | -2 | 3.29 | 77 | .001 |
| | Inferior temporal gyrus | left | -51 | -1 | -32 | 3.17 | 30 | .001 |
| | Superior frontal gyrus | right | 24 | -13 | 67 | 3.04 | 27 | .001 |
| | Middle temporal gyrus | right | 51 | -67 | 16 | 2.98 | 29 | .002 |
| PP (PM ongoing-CTRL ongoing) > Control (PM ongoing-CTRL ongoing) | Rectus gyrus | left | -3 | 53 | -23 | 3.33 | 42 | .001 |

Note.- PP, postpartum group.

Supplementary Table 4. Effect of predictors (serum level of estradiol, BDI score, and number of nocturnal awakenings) on PM accuracy through a mediator (FC_PM>PM ongoing) after controlling for age and duration of education.

| | FC_PM>PM ongoing | | | PM accuracy | | |
|----------------------|------------------|------|----------------|-------------|------|----------------|
| | β | SE | <i>P</i> value | β | SE | <i>P</i> value |
| Estradiol (pg/mL) | .006 | .002 | .004 | .001 | .001 | .444 |
| BDI score | .048 | .040 | .228 | .035 | .021 | .094 |
| Number of awakenings | -.147 | .213 | .490 | -.429 | .110 | < .001 |
| FC_PM>PM ongoing | | | | .191 | .081 | .018 |

Note.- β , beta coefficient, FC_PM>PM ongoing, functional connectivity between the right hippocampus and retrieval-related ventral fronto-parietal network in PM trials compared to PM ongoing trials; SE, standard error