# Supporting Information

## Brewer et al. 10.1073/pnas.1112029108

**Fig. S1.** (*A*) Full results of general linear modeling (GLM) contrasts: relative brain activation in meditators > controls, collapsed across all meditations. (*B–D*) Full results of GLM contrasts: relative brain activation in meditators > controls, during Concentration meditation (*B*), Loving-Kindness meditation (*C*), and Choiceless Awareness meditation (*D*). (*E* and *F*) Full results of functional connectivity contrasts: regions more strongly connected with the posterior cingulate cortex seed during baseline for meditators > controls (*E*) and during meditation for meditators > controls (*F*). (*G* and *H*) Full results of functional connectivity contrasts: regions more strongly connected with the medial prefrontal cortex seed during baseline for meditators > controls (*G*) and during meditation for meditators > controls (*H*). Images are shown from $z = -40$ to +65 in steps of 3. The left side of the brain is on the left. All results are whole brain FWE-corrected at $P < 0.05$.

Fig. S1

**Table S1. Neural activation in meditators > controls during meditation relative to baseline**

| Brain area | BA | L/R | *x* | *y* | *z* | *k* | Maximum |
|---|---|---|---|---|---|---|---|
| All meditations ($P < 0.01$, $k = 43$) | | | | | | | |
| Posterior cingulate/precuneus | 31 | L/R | 15 | −63 | 24 | 200 | −4.60 |
| Superior/medial temporal gyrus/uncus | 38 | R | 21 | 9 | −33 | 69 | −3.73 |
| Superior temporal gyrus | 39 | R | 57 | −57 | 21 | 46 | −3.66 |
| Medial frontal gyrus* | 10 | L | −6 | 57 | 3 | 33 | −3.30 |
| Choiceless Awareness ($P < 0.01$, $k = 43$) | | | | | | | |
| Uncus/superior/medial temporal gyrus | 36/38 | L | −27 | −6 | −36 | 49 | −3.48 |
| Loving-Kindness ($P < 0.01$, $k = 43$) | | | | | | | |
| Inferior temporal/parahippocampal/uncus | 20/36/28 | R | 33 | −6 | −39 | 78 | −4.58 |
| Posterior cingulate/precuneus | 7/30/31 | L/R | −12 | −66 | 33 | 301 | −4.35 |
| Inferior parietal lobule | 40 | R | 54 | −36 | 45 | 125 | −3.83 |
| Inferior temporal/parahippocampal/amygdala | 28/20 | L | −27 | −12 | −30 | 180 | −3.50 |
| Concentration ($P < 0.01$, $k = 43$) | | | | | | | |
| Posterior cingulate/precuneus | 23 | L/R | −6 | −60 | 18 | 167 | −4.97 |
| Middle temporal/angular gyrus | 39 | L | −48 | −72 | 30 | 43 | −3.54 |

Neural activation in meditators > controls during meditation relative to baseline. Coordinates are in Montreal Neurological Institute (MNI) space; BA, Brodmann area; *k*, cluster size; L/R, left vs. right hemisphere; Maximum, *t* value at peak voxel. Results are $P < 0.05$ FWE-corrected (height + extent).
*Indicates regions of a priori interest, reported at uncorrected threshold of $P < 0.01$ (one-tailed).

**Table S2. Functional connectivity with posterior cingulate cortex seed region**

| Brain area | BA | L/R | *x* | *y* | *z* | *k* | Maximum |
|---|---|---|---|---|---|---|---|
| Baseline ($P < 0.01$, $k = 43$) | | | | | | | |
| Meditators > controls | | | | | | | |
| Middle occipital gyrus | 19 | L | −45 | −87 | 21 | 221 | 6.71 |
| Middle/superior occipital gyrus | 19 | R | 39 | −84 | 21 | 174 | 6.38 |
| Rostral superior frontal gyrus | 11 | L | −27 | 60 | −12 | 126 | 5.40 |
| Dorsal anterior cingulate gyrus | 24 | | 0 | 6 | 30 | 92 | 4.90 |
| Inferior temporal/fusiform gyrus | 37 | L | −51 | −60 | −15 | 116 | 4.43 |
| Middle/inferior frontal gyrus | 46 | L | −48 | 36 | 15 | 104 | 4.33 |
| Postcentral gyrus/inferior parietal lobule | 2/40 | R | 72 | −21 | 27 | 154 | 4.32 |
| Inferior/middle frontal gyrus | 46 | R | 42 | 21 | 24 | 118 | 4.11 |
| Precuneus/cuneus | 19/7 | L | 30 | −66 | 39 | 64 | 4.07 |
| Middle/superior temporal gyrus | 21/22 | R | 60 | −39 | −3 | 108 | 4.03 |
| Superior temporal/postcentral gyrus/insula | 41/40/13 | L | −51 | −18 | 9 | 116 | 3.93 |
| Lingual gyrus | 74 | R | 27 | −60 | −3 | 154 | 3.84 |
| Precuneus | 7 | L | −24 | −66 | 27 | 193 | 3.76 |
| Posterior cingulate | | L | −18 | −66 | 6 | 63 | 3.68 |
| Controls > meditators | | | | | | | |
| Dorsal caudate | | R | 12 | −24 | 27 | 234 | −4.06 |
| All meditations ($P < 0.01$, $k = 43$) | | | | | | | |
| Meditators > controls | | | | | | | |
| Posterior cingulate/precuneus | 30/31 | R | 18 | −60 | 24 | 169 | 4.98 |
| Middle temporal gyrus | 21 | R | 69 | −39 | −12 | 130 | 4.39 |
| Cingulate gyrus | 24 | | 0 | 6 | 27 | 62 | 4.37 |
| Inferior parietal/superior temporal | 40 | R | 66 | −30 | 42 | 95 | 3.98 |
| Inferior parietal lobule/insula | 40/13 | L | −48 | −36 | 24 | 61 | 3.51 |
| Cuneus/precuneus | 30/7 | L | −15 | −66 | 12 | 98 | 3.50 |
| Middle/inferior frontal gyrus* | 46 | L | −45 | 27 | 18 | 42 | 3.12 |
| Controls > meditators | | | | | | | |
| Caudate | | R | 21 | −30 | 27 | 70 | −4.02 |

Functional connectivity with posterior cingulate cortex seed region. Coordinates are in MNI space; BA, Brodmann area; *k*, cluster size; L/R, left vs. right hemisphere; Maximum, *t* value at peak voxel. Results are $P < 0.05$ FWE-corrected (height + extent).
*Indicates regions of a priori interest, reported at uncorrected threshold of $P < 0.01$ (one-tailed).

**Table S3. Functional connectivity with medial prefrontal cortex seed region**

| Brain area | BA | L/R | *x* | *y* | *z* | *k* | Maximum |
|---|---|---|---|---|---|---|---|
| Baseline ($P < 0.01$, $k = 43$) | | | | | | | |
| Meditators > controls | | | | | | | |
| Fusiform/inferior temporal gyrus | 37/20 | L | −48 | −54 | −21 | 125 | 5.86 |
| Uncus/inferior temporal gyrus | 20 | L | −24 | −3 | −36 | 132 | 4.39 |
| Inferior parietal lobule | 1 | R | 63 | −24 | 42 | 58 | 4.20 |
| Cerebellum/inferior occipital | | R | 27 | −69 | −24 | 87 | 3.92 |
| All meditations ($P < 0.01$, $k = 43$) | | | | | | | |
| Meditators > controls | | | | | | | |
| Superior temporal gyrus | 41 | R | 42 | −42 | 12 | 159 | 8.05 |
| Uncus/inferior/middle temporal | 20 | L | −27 | −6 | −36 | 495 | 6.39 |
| Fusiform/middle (posterior) temporal | 37 | L | −54 | −54 | −15 | 499 | 5.44 |
| Middle/inferior temporal/uncus | 21/20/36 | R | 39 | −6 | −33 | 232 | 5.08 |
| Cerebellum | 38 | R | 18 | −69 | −24 | 259 | 4.78 |
| Inferior temporal gyrus | 37 | R | 45 | −42 | −12 | 51 | 4.62 |
| Posterior insula | 40 | R | 48 | −30 | 24 | 53 | 3.53 |
| Insula/superior/transverse temporal | 13/22/41 | L | −39 | −6 | −9 | 84 | 3.49 |
| Fusiform/lingual gyrus | 37 | R | 30 | −48 | −15 | 102 | 3.34 |
| Controls > meditators | | | | | | | |
| Middle frontal gyrus | 9 | R | 24 | 24 | 24 | 90 | −3.82 |

Functional connectivity with medial prefrontal cortex seed region. Coordinates are in MNI space; BA, Brodmann area; k, cluster size; L/R, left vs. right hemisphere; Maximum = *z* value at peak voxel. All results are $P < 0.05$ FWE-corrected.

**Table S4. Demographics**

| Demographics | Meditators ($n$ = 12) $n$ (%) | Controls ($n$ = 12) $n$ (%) | Total ($n$ = 24) $n$ (%) | $F$ or $\chi^2$ | df | $P$ |
|---|---|---|---|---|---|---|
| Sex | | | | | | |
| Male | 5 (41.7) | 6 (50) | 11 (45.8) | 0.168 | 1 | 0.682 |
| Female | 7 (58.3) | 6 (50) | 13 (54.2) | | | |
| Race | | | | | | |
| White | 12 (100) | 12 (100) | 24 (100) | | | |
| Age | 51.5 ± 6.8 | 49.4 ± 6.2 | 50.5 ± 6.5 | 0.608 | 1, 22 | 0.444 |
| Education level | | | | | | |
| College or more | 10 (83.3) | 8 (66.7) | 18 (75) | 1.422 | 2 | 0.491 |
| Partial college | 2 (16.7) | 3 (25) | 5 (20.8) | | | |
| High school | 0 | 1 (8.3) | 1 (4.2) | | | |
| Employment status | | | | | | |
| Full time | 9 (75) | 8 (66.7) | 17 (70.8) | 0.202 | 1 | 0.653 |
| Less than full time | 3 (25) | 4 (33.3) | 7 (29.2) | | | |