

## Supplementary Online Content

Belden AC, Barch DM, Oakberg TJ, et al. Anterior insula volume and guilt: neurobehavioral markers of recurrence after early childhood major depressive disorder. *JAMA Psychiatry*. Published online November 12, 2014. doi:10.1001/jamapsychiatry.2014.1604.

**eFigure 1.** Preschool Depression Study Design and Outcomes

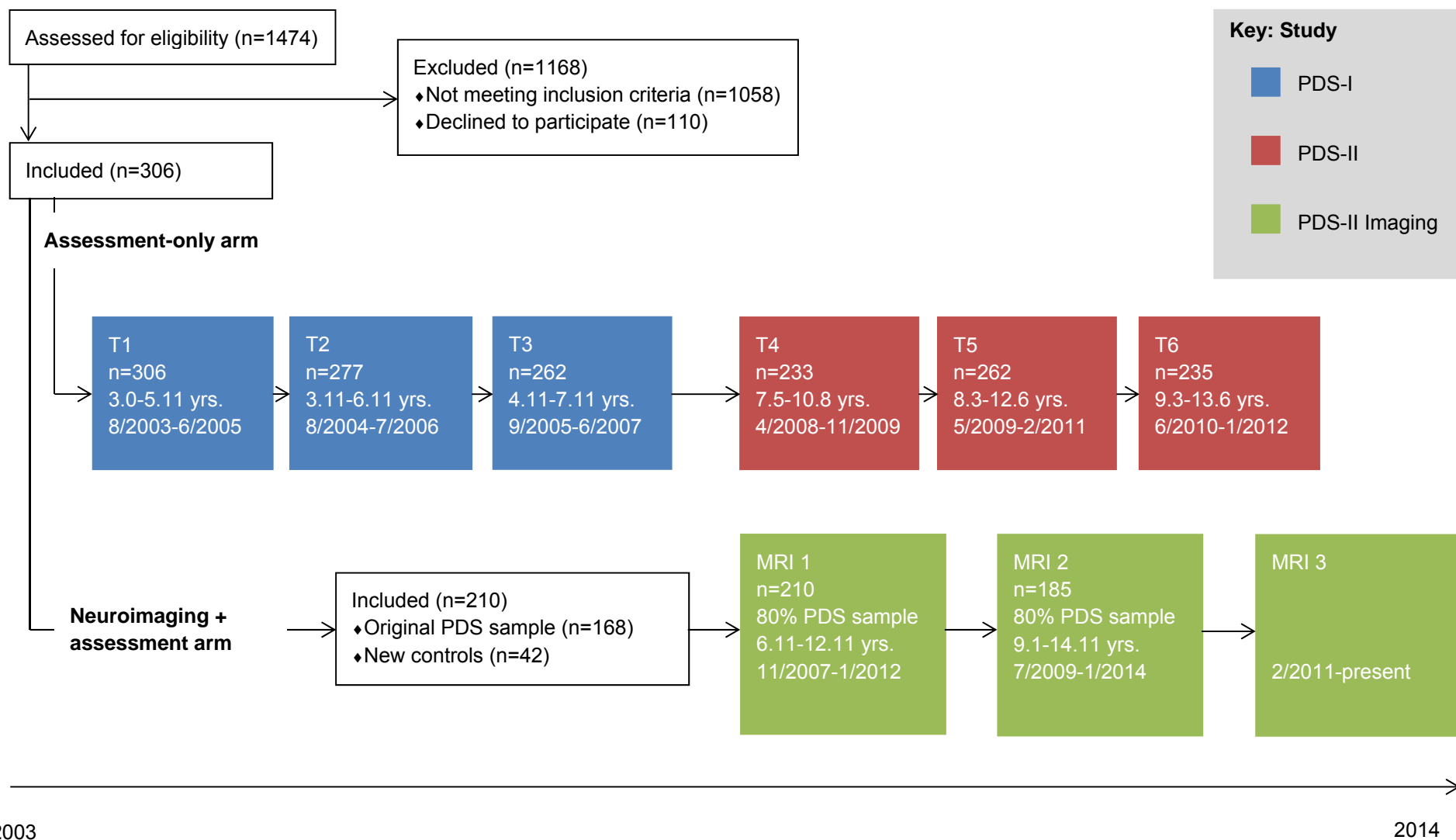
**eFigure 2.** PO-MDD vs. Non PO-MDD Subgroups and WBA Anterior Insula Volume

**eTable 1.** Demographics, Clinical, and Scanning Characteristics of the Non PO-MDD Group

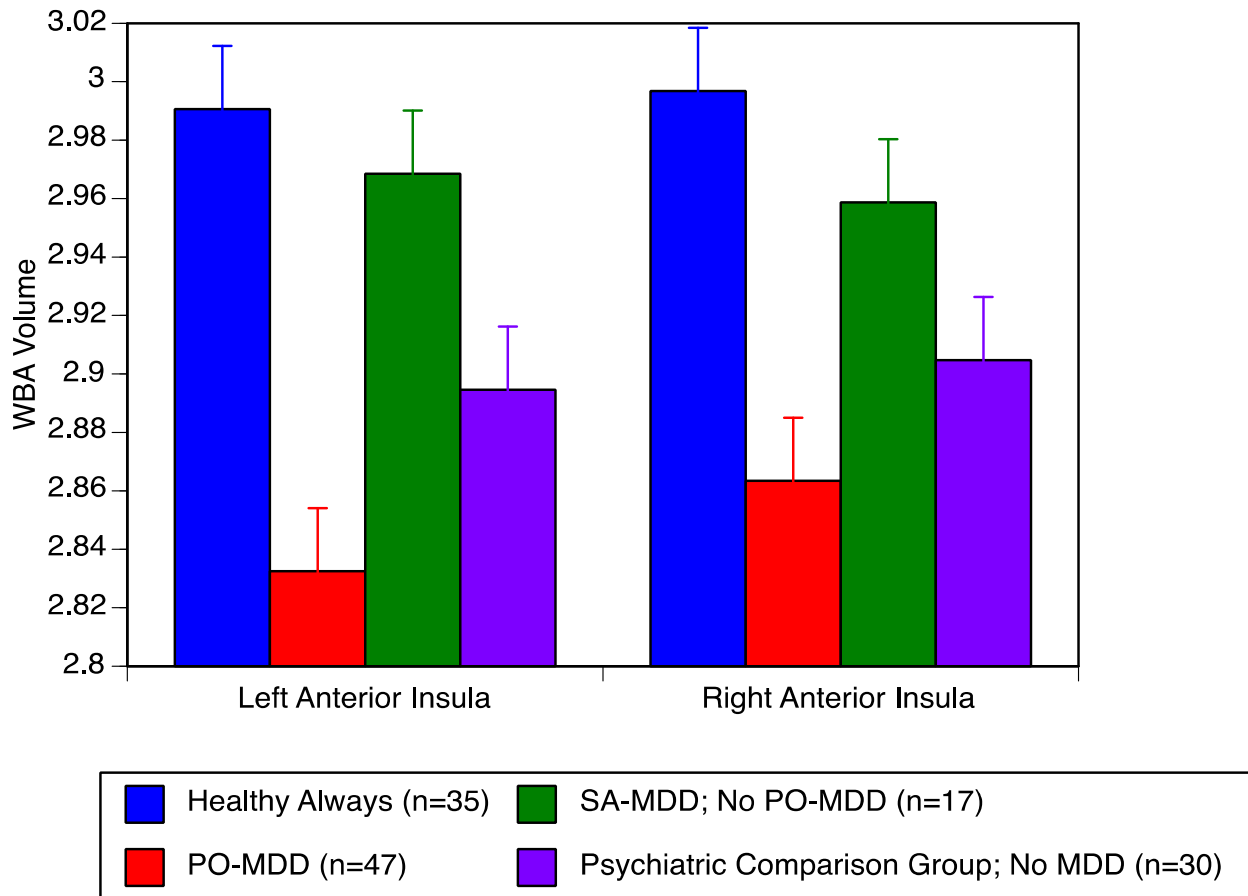
**eTable 2.** Effect of Potential Covariates on AI Volume

This supplementary material has been provided by the authors to give readers additional information about their work.

**eFigure 1. Preschool Depression Study Design and Outcomes**



**eFigure 2. PO-MDD vs. Non PO-MDD Subgroups and WBA Anterior Insula Volume**



**eTable 1. Demographic, Clinical, and Scanning Characteristics of the Non PO-MDD Group**

|   | Non PO-MDD Group                                  |   |  |
|---|---|---|--|
|   | <i>SA-MDD &amp; No<br/>PO-MDD</i><br><br>(n = 17) | <i>Psychiatric<br/>Comparison</i><br><br>(n = 30) | <i>Healthy<br/>Always</i><br><br>(n =35) |
| <b>Child Demographic Factors</b>          |   |   |  |
| Gender (% Female)                         | 53%(9)  | 43%(13)   | 57%(20)                                  |
| Age at Baseline; Mean(SD)                 | 4.7(.7)   | 4.2(.8)   | 4.3(.7)                                  |
| Age at Scan; Mean(SD)                     | 9.8(1.1)  | 10.1(1.4)   | 9.5(1.3)                                 |
| IQ; Mean(SD)                              | 105(17)   | 109(11)   | 112(15)                                  |
| Pubertal Status at Scan (% Pre Pubertal)  | 59%(10)   | 47%(14)   | 56%(19)                                  |
| Ethnicity (% Caucasian)                   | 65%(11)   | 67%(20)   | 69%(24)                                  |
| Handedness (% right handed)               | 88%(15)   | 93%(28)   | 94%(33)                                  |
| Psychotropic Use Ever (% Yes)             | 41%(7)  | 10%(3)  | 3%(1)                                    |
| Psychotropic Use w/in 48hrs of Scan; %(n) | 24%(4)  | 0   | 0  |
| <b>Family Demographic Factors</b>         |   |   |  |
| Gross Income at Scan 1 (% < 60K)          | 59%(10)   | 40%(12)   | 49%(17)                                  |
| Education (% ≥ 4-year degree)             | 35%(6)  | 67%(20)   | 60%(21)                                  |
| <b>Clinical Variables</b>                 |   |   |  |
| Endorsed Pathological Guilt; %(n)         | 35%(6)  | 20%(6)  | 11%(4)                                   |
| Endorsed Somatic Symptoms; %(n)           | 88%(15)   | 73%(22)   | 77% (27)                                 |
| Endorsed Vegetative Symptoms; %(n)        | 18%(3)  | 7%(2)   | 6%(2)                                    |
| Anxiety Ever Baseline to Scan 1; %(n)     | 53%(9)  | 73%(22)   | 0  |
| MDD at Scan1; %(n)                        | 65%(11)   | 0   | 0  |

|   |          |           |           |
|---|----------|-----------|-----------|
| MDD Diagnosed After Scan 1; %(n)                      | 35%(6)   | 11%(3)    | 0         |
| <b>Scan and Diagnostic Timing</b>                     |          |           |           |
| Years from Baseline to Scan 1;<br>Mean(SD)            | 5.1(.83) | 5.8(1.22) | 5.11(.87) |
| Scan 1 until MDD DX after Scan 1 in<br>days; Mean(SD) | 349(137) | 885(398)  | N/A       |

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**eTable 2. Effect of Potential Covariates on AI Volume**

| Potential Covariate Variables | L/R Anterior Insula Volume |           |             |
|-------------------------------|----------------------------|-----------|-------------|
|                               | Wilks Lambda               | Alpha     | Effect Size |
| Puberty                       | $\Lambda = .0009$          | $p = .41$ | $d = .12$   |
| Income                        | $\Lambda = .0009$          | $p = .49$ | $d = .10$   |
| Caregiver Education           | $\Lambda = .0008$          | $p = .36$ | $d = .13$   |
| Handedness                    | $\Lambda = .0009$          | $p = .47$ | $d = .11$   |
| Psychotropic Rx Use Ever      | $\Lambda = .0006$          | $p = .07$ | $d = .20$   |