DETAILED SEARCH STRATEGY (from inception until May 30th, 2016)

**Pubmed/MEDLINE**


#2: ("Depression"[Mesh] OR "Depressive Disorder"[Mesh] OR "Depressive Disorder, Major"[Mesh]) Field: Title/Abstract

#3: #1 AND #2

**EMBASE Classic plus EMBASE through OVID (from 1947) and PsycInfo through OVID (from 1806)**

#1: (interleukin-2 or IL-2 or interleukin-1 or IL-1 or IL-4 or Interleukin-4 or IL-6 or Interleukin-6 or IL-8 or Interleukin-8 or IL-10 or Interleukin-10 or IFN-gamma or interferon gamma or TNF-alpha or tumor necrosis factor-alpha or IL-2 receptor or CCL-2 or CCL-3 or CXCL-8 or CCL-11 or CCL-10 or chemokine).ti,ab,kw

#2: (depression or major depression or depressive disorder).ti,ab,kw

#3: #1 and #2
## Supplementary Table S1. Excluded studies, with reasons.

<table>
<thead>
<tr>
<th>Reference</th>
<th>Reason for exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postal and Appenzeller, 2015 (1)</td>
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<tr>
<td>Oglodek, 2014 (2)</td>
<td>Insufficient data for analysis</td>
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<tr>
<td>Campos, 2014 (3)</td>
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</tr>
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<td>Camacho, 2014 (4)</td>
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<td>Chocano-Bedoya, 2014 (5)</td>
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<td>Anderson, 2013 (6)</td>
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<td>Maes, 2014 (7)</td>
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<td>Mitchell, 2013 (8)</td>
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<td>Doyle, 2013 (9)</td>
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<td>Yoshimura, 2013 (12)</td>
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<td>Poleshuck, 2013 (13)</td>
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<td>Rotter, 2013 (14)</td>
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<td>Gazal, 2013 (16)</td>
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<td>Levandovski, 2013 (17)</td>
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<td>Duivis, 2013 (18)</td>
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<td>Isung, 2012 (19)</td>
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<td>Belzeaux, 2012 (20)</td>
<td>Did not measure cytokines</td>
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<td>Anisman and Hayley, 2012 (21)</td>
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<td>Cattaneo, 2013 (22)</td>
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<td>Raison, 2013 (23)</td>
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<td>Maes, 2012 (24)</td>
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<td>Eyre and Baune, 2012 (25)</td>
<td>Not an original study</td>
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<td>Abbasi, 2012 (26)</td>
<td>Not diagnostic study</td>
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<td>Miller and Cole, 2012 (27)</td>
<td>Not diagnostic study</td>
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<td>Silic, 2012 (28)</td>
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<td>Elomaa, 2012 (29)</td>
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<td>Dome, 2012 (30)</td>
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<td>Caserta, 2011 (31)</td>
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<td>Haastrup, 2012 (32)</td>
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<td>Yoon, 2012 (33)</td>
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<td>Martinez, 2012 (34)</td>
<td>Measured cytokines in CSF</td>
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<td>Grassi-Oliveira, 2011 (35)</td>
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<td>Clark, 2013 (36)</td>
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<td>Azar, 2012 (37)</td>
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<td>Hennessy, 2011 (38)</td>
<td>Animal study</td>
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<td>Rethorst, 2011 (39)</td>
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<td>Su, 2011 (40)</td>
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<td>Fluitman, 2011 (41)</td>
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<td>Janelidze, 2011 (42)</td>
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<td>Lehto, 2010 (43)</td>
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Chen, 2010 (44) Not diagnostic study
Jazayeri, 2010 (45) Not diagnostic study
Himmerich, 2010 (46) Not diagnostic study
Hallberg, 2010 (47) Insufficient data for analysis
Zeugmann, 2010 (48) Insufficient data for analysis
Koo, 2010 (49) Not major depressive disorder
Baune, 2010 (50) Did not measure cytokines
Eisenberger, 2010 (51) Not major depressive disorder
Himmerich, 2010 (52) Not major depressive disorder
Gabbay, 2009 (53) Insufficient data for analysis
Hwang, 2009 (54) Did not measure cytokines
Lehto, 2010 (55) Not an original study
Koo and Duman, 2009 (56) Not an original study
Bob, 2010 (57) No control group
Ovaskainen, 2009 (58) Not major depressive disorder
Capuron, 2009 (59) Clinical or psychiatric comorbidities
Podlipny, 2010 (60) Not major depressive disorder
Fazzino, 2009 (61) Not diagnostic study
Milaneschi, 2009 (62) Not major depressive disorder
Dimopoulos, 2008 (63) Clinical or psychiatric comorbidities
Vaccarino, 2008 (64) Clinical or psychiatric comorbidities
Himmerich, 2008 (65) Clinical or psychiatric comorbidities
Wojciak, 2007 (66) Clinical or psychiatric comorbidities
Mesquita, 2008 (67) Animal study
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Stewart, 2008 (69) Not major depressive disorder
Humphreys, 2006 (70) Small sample size (< 10)
Hashioka, 2007 (71) Not major depressive disorder
Rothenhausler, 2006 (72) Insufficient data for analysis
Pace, 2006 (73) Not an original study
Pucak and Kaplin, 2005 (74) Not major depressive disorder
Ushiroyama, 2005 (75) Not major depressive disorder
Fitzgerald, 2006 (76) Not diagnostic study
Miller, 2005 (77) Not major depressive disorder
Kubera, 2005 (78) In-vitro study
Hestad, 2005 (79) Not an original study
Alesci, 2005 (80) Small sample size (< 10)
Schlatter, 2004 (81) In-vitro study
Ushiroyama, 2004 (82) Not diagnostic study
Himmerich, 2004 (83) Not major depressive disorder
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Schuld, 2003 (93) Previous administration of corticosteroid
Penninx, 2003 (94) Clinical or psychiatric comorbidities
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Maes, 1999 (107) Did not measure cytokines
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Reyes-Ortiz, 1999 (109) Not an original study
Anisman, 1999 (110) In-vitro study
Brambilla and Maggioni, 1998 (111) Small sample size (< 10)
Landmann, 1997 (112) In-vitro study
Brambilla, 1997 (113) Not major depressive disorder
Frommberger, 1997 (114) Small sample size (< 10)
Seidel, 1996 (115) In-vitro study
Maes, 1995 (116) Insufficient data for analysis
Bauer, 1995 (117) Small sample size (< 10)
Weizman, 1994 (118) In-vitro study
Maes, 1993 (119) In-vitro study
Maes, 1993 (120) Did not measure cytokines
Maes, 1991 (121) In-vitro study
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Bahrini, 2015 (124) Abstract. Data unavailable
Beasley, 2014 (125) Abstract. Data unavailable
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Fasick, 2015 (128) Not an original study
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Brunoni, 2014 (137) Not diagnostic study
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McDade, 2013 (154) Not major depressive disorder
Goldschmied, 2013 (155) Abstract. Data unavailable
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Cho, 2014 (157) Not major depressive disorder
Arts, 2014 (158) Abstract. Data unavailable
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Pallavi, 2014 (161) Abstract. Data unavailable
Toups, 2014 (162) Insufficient data for analysis
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Hennings, 2013 (167) Clinical or psychiatric comorbidities
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Yoshimura and Nakamura, 2013 (174) Abstract. Data unavailable
Schilling Panizzutti, 2013 (175) Not major depressive disorder
Hughes, 2013 (176) Abstract. Full text available.
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Zeugmann, 2013 (178) Not major depressive disorder
Byrne, 2013 (179) Not major depressive disorder
Park and Baek, 2013 (180) Not major depressive disorder
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Niedzwiecki, 2013 (184) Abstract. Data unavailable
Magalhaes, 185) Abstract. Data unavailable
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Caruncho and Rivera-Baltanas, 2010 (237) Not an original study
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Berthold-Losleben and Himmerich, 2008 (262) Not an original study
Kim, 2007 (263) Study sample treated with monoclonal antibody
Kim, 2007 (264) Not major depressive disorder
Schlatter, 2006 (265) In-vitro study
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Not an original study
Clinical or psychiatric comorbidities
In-vitro study
Insufficient data for analysis
Insufficient data for analysis
Insufficient data for analysis
Insufficient data for analysis
Not major depressive disorder
Clinical or psychiatric comorbidities
Clinical or psychiatric comorbidities
Small sample size (< 10)
Not an original study
Insufficient data for analysis
Clinical or psychiatric comorbidities
Did not measure cytokines
Previous administration of corticosteroid
Clinical or psychiatric comorbidities
Insufficient data for analysis
Not an original study
Not major depressive disorder
Insufficient data for analysis
Did not measure cytokines
Did not measure cytokines
Not major depressive disorder
Not an original study
Did not measure cytokines
Not diagnostic study
Not major depressive disorder
Not major depressive disorder
Not an original study
Not major depressive disorder
Clinical or psychiatric comorbidities
Not major depressive disorder
Insufficient data for analysis
Not diagnostic study
Previous administration of corticosteroid
Not major depressive disorder
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Su, 2009 (317) Not major depressive disorder
Dinan, 2009 (318) Not an original study
Capuron, 2008 (319) Insufficient data for analysis
Aguilar-Zavala, 2008 (320) Not major depressive disorder
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Nunes, 2002 (323) Insufficient data for analysis
Darko, 1988 (324) In-vitro study
Lanquillon, 2000 (325) In-vitro study
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Sluzewskas, 1997 (327) Not major depressive disorder
Berk, 1997 (328) Not major depressive disorder
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Zubareva, 2001 (332) Small sample size (< 10)
Kubera, 2000 (333) Data unavailable
Castilla-Cortazar, 1998 (334) In-vitro study
Zhang, 2015 (335) Clinical or psychiatric comorbidities
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Catena-Dell’Osso, 2011 (337) Not an original study
Sun, 2010 (338) Not diagnostic study
Himmerich, 2009 (339) Not an original study
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Adler, 2008 (341) Not an original study
Craddock and Thomas, 2006 (342) Not an original study
Qi, 2005 (343) Insufficient data for analysis
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Androsova, 2001 (345) Clinical or psychiatric comorbidities
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West and Maes, 1999 (347) Not an original study
Jozuka, 2000 (348) Not major depressive disorder
Liu, 2015 (349) Not diagnostic study
Liu, 2015 (350) MDD diagnosis not using DSM, ICD or a validated screening instrument (CCMD-3 Chinese criteria)
Arts, 2015 (351) Not major depressive disorder
Liu, 2015 (352) MDD diagnosis not using DSM, ICD or a validated screening instrument (CCMD-3 Chinese criteria)
Hashimoto, 2015 (353) Insufficient data for analysis
Demir, 2015 (354) Did not measure cytokines
Walker, 2015 (355) Animal study
Moreira, 2015 (356) Not diagnostic study
Yu, 2015 (357) Not diagnostic study
Vinberg, 2015 (358) Abstract. Data unavailable
Nassan, 2015 (359) Abstract. Data unavailable
Sharma, 2015 (360) - Abstract. Data unavailable
Goldsmith, 2015 (361) - Abstract. Data unavailable
Haroon, 2015 (362) - Abstract. Data unavailable
Costi, 2015 (363) - Abstract. Data unavailable
Dunjic-Kostic, 2015 (364) - Abstract. Data unavailable
Mischoulon, 2015 (365) - Abstract. Data unavailable
Gazal, 2015 (366) - Clinical or psychiatric comorbidities
Maclukiewicz, 2015 (367) - Did not measure cytokines/chemokines
Becking, 2015 (368) - No control group
Rethorst, 2015 (369) - Not diagnostic study
Brown, 2016 (370) - Not major depressive disorder
Rethorst, 2015 (371) - Not diagnostic study
Schmidt, 2016 (372) - Insufficient data for analysis
Dahl, 2016 (373) - Not diagnostic study
Del Grande da Silva, 2016 (374) - Not diagnostic study
Rapaport, 2016 (375) - Not diagnostic study
Euteneuer, 2016 (376) - Not diagnostic study
Glaus, 2016 (377) - Abstract. Data unavailable
Kiraly, 2016 (378) - Abstract. Data unavailable
Oses, 2016 (379) - Not diagnostic study
Park, 2016 (380) - Clinical or psychiatric comorbidities
Goldsmith, 2016 (381) - Not major depressive disorder
Baune, 2016 (382) - Abstract. Data unavailable
Schmidt, 2016 (383) - Not diagnostic study
Lai, 2016 (384) - Not major depressive disorder
Vogelzangs, 2014 (385) - Clinical or psychiatric comorbidities
Euteneuer, 2012 (386) - Clinical or psychiatric comorbidities
Euteneuer, 2011 (387) - Clinical or psychiatric comorbidities
Pike and Irwin, 2006 (388) - Clinical or psychiatric comorbidities
Bai, 2015 (389) - Clinical or psychiatric comorbidities
Danneh, 2014 (390) - Clinical or psychiatric comorbidities
Rawdin, 2013 (391) - Clinical or psychiatric comorbidities
Wolkowitz, 2011 (392) - Clinical or psychiatric comorbidities
Marques-Deak, 2007 (393) - Clinical or psychiatric comorbidities
Shelton, 2015 (394) - Clinical or psychiatric comorbidities
Manoharan, 2016 (395) - Clinical or psychiatric comorbidities
Teunissen, 2016 (396) - Clinical or psychiatric comorbidities
Cassano, 2016 (397) - Clinical or psychiatric comorbidities
## Supplementary Table S2. Characteristics of included studies.

<table>
<thead>
<tr>
<th>Reference (Country)</th>
<th>Age/ gender matched</th>
<th>Healthy controls</th>
<th>MDD</th>
<th>Diagnostic criteria (Structured interview)</th>
<th>Depression severity (Scale)</th>
<th>Sample source (Assay type)</th>
<th>Quality score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcocer-Gomez, 2014 (Spain)</td>
<td>Y</td>
<td>20 N 57.0 ± 3.0</td>
<td>40  N/A 54.0 ± 9.8</td>
<td>N/A 92.5/NA</td>
<td>DSM-IV (NA)</td>
<td>41.5 ± 8.3 (BDI)</td>
<td>Serum (ELISA)</td>
</tr>
<tr>
<td>Al-Hakeim, 2015 (Iraq)</td>
<td>Y</td>
<td>30 NA 43.3/6.7</td>
<td>30  N/A 44.6 ± 1.8</td>
<td>N/A 73.8/28.8</td>
<td>DSM-IV (NA)</td>
<td>NA</td>
<td>Serum (ELISA)</td>
</tr>
<tr>
<td>Baek and Park, 2013 (South Korea)</td>
<td>Y</td>
<td>80 N 44.5 ± 1.6</td>
<td>80  N/A 44.6 ± 1.8</td>
<td>N/A 73.8/28.8</td>
<td>DSM-IV (NA)</td>
<td>35.4 ± 0.8 (CES-D-K)</td>
<td>Serum (ELISA)</td>
</tr>
<tr>
<td>Bahrini, 2016 (Tunisia)</td>
<td>Y</td>
<td>30 N 39.2 ± 9.2</td>
<td>65  N/A 39.7 ± 12.9</td>
<td>N/A 58.5/38.5</td>
<td>DSM-IV (MINI)</td>
<td>21.7 ± 4.7 (HAM-D 17)</td>
<td>Plasma (ELISA)</td>
</tr>
<tr>
<td>Bai, 2014 (Taiwan)</td>
<td>Y</td>
<td>126 N 41.9 ± 10.0</td>
<td>109 N 42.0 ± 13.8</td>
<td>N/A 76.1/NA</td>
<td>DSM-IV (MINI)</td>
<td>27.0 ± 12.1 (BDI-II)</td>
<td>Serum (ELISA)</td>
</tr>
<tr>
<td>Basterzi, 2005 (Turkey)</td>
<td>Y</td>
<td>23 N 33.6 ± 12.5</td>
<td>23  N/A 33.8 ± 12.8</td>
<td>N/A 87.0/NA</td>
<td>DSM-IV (NA)</td>
<td>20.9 ± 3.8 (HAM-D 17)</td>
<td>Serum (ELISA)</td>
</tr>
<tr>
<td>Boettger, 2010 (Germany)</td>
<td>N</td>
<td>15 N 40.3 ± 11.9</td>
<td>15  N/A 40.7 ± 12.7</td>
<td>N/A 66.7/NA</td>
<td>DSM-IV (SCID)</td>
<td>25.1 ± 6.7 (HAM-D 21)</td>
<td>Whole blood (ELISA)</td>
</tr>
<tr>
<td>Camardese, 2011 (Italy)</td>
<td>N</td>
<td>20 N 40.1 ± 11.0</td>
<td>24  N/A 46.8 ± 13.0</td>
<td>N/A 66.7/NA</td>
<td>DSM-IV-TR (MINI)</td>
<td>17.8 ± 5.5 (HAM-D 21)</td>
<td>Serum (ELISA)</td>
</tr>
<tr>
<td>Carvalho, 2013 (United Kingdom)</td>
<td>N</td>
<td>21 N 45.9 ± 2.4</td>
<td>19  N/A 49.7 ± 3.8</td>
<td>N/A 73.7/NA</td>
<td>ICD-10 (SCID)</td>
<td>21.7 ± 2.0 (HAM-D)</td>
<td>Serum (N/A)</td>
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<tr>
<td>Study</td>
<td>N</td>
<td>Sex</td>
<td>Age Mean ± SD</td>
<td>Age Range</td>
<td>Depression Score</td>
<td>Anxiety Score</td>
<td>Suicide Score</td>
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<td>Crnkovic, 2012 (407) (Croatia)</td>
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<td>36</td>
<td>44.4/NA</td>
<td>57.9/NA</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>Dahl, 2014 (408) (Norway)</td>
<td>N</td>
<td></td>
<td>34</td>
<td>38.3 ± 13.9</td>
<td>55.9/NA</td>
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Continuous variables are presented as mean ± SD.
Supplementary Table S3. Meta-regressions of inflammatory markers in subjects with MDD versus healthy controls (HC).

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**IL-6**

| Variable                                      | N     |          | Meta-regression | Meta-regression |
| BMI mean (MDD)                               | 22    | 879    | 930          | -0.048 | -0.215 | 0.119  | 0.575     | 1.979  | 0.927  | 0.354 |
| BMI mean (HC)                                | 20    | 818    | 831          | -0.040 | -0.177 | 0.097  | 0.563     | 1.879  | 1.067  | 0.286 |
| BMI difference (MDD-HC)                      | 20    | 818    | 831          | 0.053 | -0.213 | 0.318  | 0.697     | 0.873  | 3.780  | < 0.001 |
| % Smokers (MDD)                              | 10    | 440    | 506          | 0.020 | 0.004  | 0.037  | 0.017     | 0.194  | 0.647  | 0.518 |
| % Smokers (HC)                               | 10    | 440    | 513          | 0.020 | 0.002  | 0.038  | 0.032     | 0.282  | 1.194  | 0.233 |
| Publication year                             | 42    | 1620   | 1457         | -0.071 | -0.148 | 0.006  | 0.070     | 143.482 | 1.820  | 0.069 |
| Sample size                                  | 42    | 1620   | 1457         | -0.003 | -0.009 | 0.004  | 0.447     | 0.884  | 2.963  | 0.003 |
| Age mean (MDD)                               | 39    | 1518   | 1367         | 0.027 | -0.001 | 0.055  | 0.062     | -0.503 | -0.803 | 0.422 |
| Age mean (HC)                                | 39    | 1518   | 1367         | 0.028 | -0.001 | 0.057  | 0.056     | -0.491 | -0.812 | 0.417 |
| Age difference (MDD-HC)                      | 39    | 1518   | 1367         | -0.004 | -0.100 | 0.092  | 0.937     | 0.642  | 3.625  | < 0.001 |
| Gender % female (MDD)                        | 41    | 1598   | 1434         | 0.004 | -0.008 | 0.015  | 0.506     | 0.355  | 0.883  | 0.377 |
| Gender % female (HC)                         | 39    | 1530   | 1389         | 0.004 | -0.008 | 0.016  | 0.549     | 0.434  | 1.076  | 0.282 |
| Gender % female difference (MDD-HC)          | 39    | 1530   | 1389         | 0.001 | -0.019 | 0.021  | 0.928     | 0.660  | 4.969  | < 0.001 |
| Depression severity                          | 35    | 1367   | 1235         | 0.004 | -0.008 | 0.016  | 0.526     | 0.189  | 0.268  | 0.789 |
| Country latitude                             | 41    | 1598   | 1434         | 0.002 | -0.008 | 0.013  | 0.637     | 0.524  | 2.368  | 0.018 |
| % drug free                                  | 30    | 1156   | 1095         | -0.004 | -0.012 | 0.004  | 0.373     | 0.875  | 2.435  | 0.015 |

**TNF-α**
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| **IFN-γ**      |      |      |      |        |        |        |       |       |       |       |
| BMI mean (MDD)  | 11   | 513  | 606  | 0.207  | 0.013  | 0.401  | 0.037 | -5.346| -2.130| 0.033 |
| BMI mean (HC)   | 10   | 480  | 552  | 0.138  | 0.014  | 0.262  | 0.029 | -3.654| -2.227| 0.026 |
| BMI difference (MDD-HC) | 10   | 480  | 552  | -0.221 | -0.488 | 0.047  | 0.106 | -0.243| -0.839| 0.401 |
| Publication year | 17   | 700  | 770  | 0.181  | 0.047  | 0.315  | 0.008 | -364.147| -2.647| 0.008 |
| Sample size     | 17   | 700  | 770  | 0.011  | 0.004  | 0.018  | 0.002 | -1.439| -3.859| < 0.001|
| Age mean (MDD)  | 17   | 700  | 770  | 0.062  | 0.005  | 0.120  | 0.034 | -2.970| -2.484| 0.013 |
| Age mean (HC)   | 17   | 700  | 770  | 0.062  | 0.005  | 0.120  | 0.034 | -2.873| -2.494| 0.013 |
| Age difference (MDD-HC) | 17   | 700  | 770  | 0.001  | -0.209 | 0.211  | 0.991 | -0.484| -1.592| 0.111 |
| Gender % female (MDD) | 17   | 700  | 770  | -0.002 | -0.026 | 0.023  | 0.891 | -0.366| -0.415| 0.678 |
| Gender % female (HC) | 15   | 632  | 725  | -0.003 | -0.030 | 0.024  | 0.822 | -0.266| -0.286| 0.775 |
| Gender % female difference (MDD-HC) | 15   | 632  | 725  | 0.001  | -0.054 | 0.056  | 0.966 | -0.471| -1.462| 0.144 |
| Depression severity | 15   | 590  | 660  | -0.004 | -0.026 | 0.019  | 0.751 | -0.186| -0.153| 0.878 |
| Country latitude | 17   | 700  | 770  | 0.003  | -0.011 | 0.018  | 0.670 | -0.560| -1.783| 0.075 |
| % drug free     | 14   | 551  | 621  | -0.014 | -0.040 | 0.012  | 0.294 | 0.657 | 0.537 | 0.591 |
| Quality score   | 17   | 700  | 770  | -0.375 | -0.870 | 0.120  | 0.138 | 1.001 | 0.976 | 0.329 |

<p>| <strong>IL-10</strong>      |      |      |      |        |        |        |       |       |       |       |
| BMI mean (MDD)  | 10   | 371  | 481  | -0.253 | -0.542 | 0.037  | 0.087 | 7.294 | 1.870 | 0.062 |
| Publication year | 17   | 608  | 675  | 0.007  | -0.091 | 0.106  | 0.883 | -14.479| -0.143| 0.886 |</p>
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### IL-4

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### sIL-2 receptor

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Abbreviations: BMI = body-mass index; CI = confidence interval; ES = effect size; HC = healthy controls; MDD = major depressive disorder; Statistically significant results are in bold
Supplementary Table S4. Subgroup analyses of cytokines and chemokines in individuals with MDD versus healthy controls (HC).

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Abbreviations: CI = confidence interval; ES = effect size; Statistically significant results are in bold

a In Z-test of overall effect
b In Q-test of heterogeneity
Supplementary Figure S1. Forest plot of studies that investigated IL-1β.
Supplementary Figure S2. Forest plot of studies that investigated IL-2.
Supplementary Figure S3. Forest plot of studies that investigated IL-4.
Supplementary Figure S4. Forest plot of studies that investigated soluble IL-6 receptor (sIL-6 receptor).
Supplementary Figure S5. Forest plot of studies that investigated IL-8.
Supplementary Figure S6. Forest plot of studies that investigated IL-5.
Supplementary Figure S7. Forest plot of studies that investigated CCL-3.
Supplementary Figure S8. Forest plot of studies that investigated IL-17.
Supplementary Figure S9. Forest plot of studies that investigated TGF-β1.

Study | Hedges's g (95% CI)
---|---
Myint, 2005 | -1.16 (-1.69, -0.63)
Sutcigil, 2007 | -4.26 (-5.29, -3.23)
Kim, 2008 | 0.88 (0.47, 1.28)
Overall | -1.47 (-3.87, 0.93)
Supplementary Figure S10. Funnel plot of studies that investigated TNF-α.
Supplementary Figure S11. Funnel plot of studies that investigated IFN-γ.
Supplementary Figure S12. Funnel plot of studies that investigated IL-4.
Supplementary Figure S13. Funnel plot of studies that investigated CCL-2.
Supplementary Figure S14. Funnel plot of studies that investigated IL-13.
Supplementary Figure S15. Sensitivity analysis for the meta-analysis of studies that investigated IL-6.
Supplementary Figure S16. Sensitivity analysis for the meta-analysis of studies that investigated TNF-α.
Supplementary Figure S17. Sensitivity analysis for the meta-analysis of studies that investigated IFN-γ.
Supplementary Figure S18. Sensitivity analysis for the meta-analysis of studies that investigated IL-10.
Supplementary Figure S19. Sensitivity analysis for the meta-analysis of studies that investigated soluble IL-2 receptor (sIL-2 receptor).
Supplementary Figure S20. Sensitivity analysis for the meta-analysis of studies that investigated CCL-2.
Supplementary Figure S21. Sensitivity analysis for the meta-analysis of studies that investigated IL-13.
Supplementary Figure S22. Sensitivity analysis for the meta-analysis of studies that investigated IL-18.
Supplementary Figure S23. Sensitivity analysis for the meta-analysis of studies that investigated IL-12.
Supplementary Figure S24. Sensitivity analysis for the meta-analysis of studies that investigated IL-1 receptor antagonist (IL-1Ra).
Supplementary Figure S25. Sensitivity analysis for the meta-analysis of studies that investigated sTNF receptor 2.
IL-6

Supplementary Figure S26. Cumulative meta-analysis of studies that investigated IL-6.
Supplementary Figure S27. Cumulative meta-analysis of studies that investigated TNF-α.
Supplementary Figure S28. Cumulative meta-analysis of studies that investigated IFN-γ.
**Supplementary Figure S29** Cumulative meta-analysis of studies that investigated IL-10.

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<td>O'Brien, 2007</td>
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<td>Dhabhar, 2009</td>
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<td>Boettger, 2010</td>
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<td>Hocaoglu, 2012</td>
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<td>Fornaro, 2013</td>
<td>0.20 (-0.33, 0.72)</td>
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<td>Carvalho, 2013</td>
<td>0.26 (-0.24, 0.75)</td>
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<td>Hernandez, 2013</td>
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<td>Spanemberg, 2014</td>
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<td>Ho, 2015</td>
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Supplementary Figure S30. Cumulative meta-analysis of studies that investigated soluble IL-2 receptor (sIL-2 receptor).
Supplementary Figure S31. Cumulative meta-analysis of studies that investigated CCL-2.
Supplementary Figure S32. Cumulative meta-analysis of studies that investigated IL-13.
Supplementary Figure S33. Cumulative meta-analysis of studies that investigated IL-18.
Supplementary Figure S34. Cumulative meta-analysis of studies that investigated IL-12.

IL-12

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Supplementary Figure S35. Cumulative meta-analysis of studies that investigated IL-1 receptor antagonist (IL-1Ra).
Supplementary Figure S36. Cumulative meta-analysis of studies that investigated soluble TNF receptor 2 (sTNF receptor 2).
Supplementary references

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