**Supplementary Table S1:** Search strategies

**Summary**

|  |  |
| --- | --- |
| Database | # of studies |
|  |  |
| Ovid Embase | 892 |
| Ovid Medline | 582 |
| Ovid PsycINFO | 582 |
| Scopus | 72 |
| EBSCO CINAHL | 558 |
| EBSCO Child Development | 36 |
| Wiley Cochrane Library | 25 |
|  |  |
| Total | 2747 |

**Search Strategies Ovid MEDLINE: Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE® Daily and Ovid MEDLINE® <1946-Present>**

|  |  |  |
| --- | --- | --- |
| **#** | **Searches** | **Results** |
| 1 | Depression/ or Dysthymic Disorder/ | 148061 |
| 2 | depressive disorder/ or depression, postpartum/ or depressive disorder, major/ or depressive disorder, treatment-resistant/ or dysthymic disorder/ or premenstrual dysphoric disorder/ or seasonal affective disorder/ | 120428 |
| 3 | (depress\* or dysthymia or sad or sadness or saddest or sadder or melanchol\* or miser\* or unhappiness or unhappy or emotion\*).tw,kf. | 779348 |
| 4 | mental disorders/ or neurotic disorder/ or Manic disorder/ or psychological distress/ | 236329 |
| 5 | Mood Disorders/ | 15757 |
| 6 | mood\*.tw,kf. | 91730 |
| 7 | dysthymi\*.tw,kf. | 3315 |
| 8 | MDD.tw,kf. | 17926 |
| 9 | ((affective\* or dysphoric\* or mental\* or psychiat\*) adj3 (disorder\* or illness\*)).tw,kf. | 177654 |
| 10 | anxiety disorders/ or anxiety, separation/ or panic disorder/ or phobic disorders/ | 56694 |
| 11 | AD.tw,kf. | 173344 |
| 12 | (panic\* adj3 (attack\* or disorder\*)).tw,kf. | 12359 |
| 13 | (phobic\* or phobia\*).tw,kf. | 13025 |
| 14 | (anxiet\* or anxious\* or hypervigilan\* or nervous\* or angst\* or worry or worries or apprehensi\* or uneasiness or unease or fear or fears or distress\*).tw,kf. | 844531 |
| 15 | autism spectrum disorder/ or autistic disorder/ or Child Development Disorders, Pervasive/ or Neurodevelopmental disorders/ or Neuropsychiatry/ | 50115 |
| 16 | asperger syndrome/ | 1784 |
| 17 | (autism\* or autisti\* or ASD or asp?erger\* or cerebroatrophic hyperammonemia).tw,kf. | 73698 |
| 18 | ((neurodevelopment\* or kanner\* or development\*) adj3 (disorder\* or syndrom\* or delay\*)).tw,kf. | 82860 |
| 19 | Neuropsychiatry.tw,kf. | 3398 |
| 20 | "attention deficit and disruptive behavior disorders"/ or attention deficit disorder with hyperactivity/ or conduct disorder/ | 38538 |
| 21 | (addh or adhd).tw,kf. | 31162 |
| 22 | ((attention\* or conduct\* or behavio?r\* or defiant\*) adj6 disorder\*).tw,kf. | 85835 |
| 23 | (hyperkinetic\* adj3 syndrome\*).tw,kf. | 483 |
| 24 | (hyperactiv\* or neuros?s\* or neurotic\* or mania).tw,kf. | 108080 |
| 25 | (manic adj3 (psychos\* or disorder)).tw,kf. | 2846 |
| 26 | "bipolar and related disorders"/ or bipolar disorder/ or Cyclothymic Disorder/ | 44943 |
| 27 | (bipolar\* or cyclothymi\*).tw,kf. | 75254 |
| 28 | Obsessive-Compulsive Disorder/ | 16247 |
| 29 | (anankastic adj3 personalit\*).tw,kf. | 31 |
| 30 | (obsess\* adj3 compuls\*).tw,kf. | 21499 |
| 31 | OCD.tw,kf. | 11669 |
| 32 | or/1-31 [depression, anxiety, autism, adhd, bipolar, OCD] | 2115557 |
| 33 | Gastrointestinal Microbiome/ or Fecal Microbiota Transplantation/ | 37032 |
| 34 | firmicutes/ or acidaminococcus/ or Bacteroidetes/ or Lactobacillus/ | 21985 |
| 35 | (firmicute\* or acidaminococc\* or Bacteroidete\* or Lactobacillus\*).tw,kf. | 57815 |
| 36 | ((gastro\* or gut\* or gastric\* or intestin\* or stomach\* or fecal\* or faecal or f?ece\* or stool or colon\*) adj4 (microb\* or flora or microflor\* or micro-flor\* or microorgan\* or micro-organ\*)).tw,kf. | 93630 |
| 37 | ((gastro\* or gut\* or gastric\* or intestin\* or stomach\* or fecal\* or faecal or f?ece\* or stool or colon\*) adj4 (Actinobacteri\* or Proteobacteri\* or Escherichi\* or Candida or Saccharomyces or Aspergillus or Penicillium or Rhodotorula or Trametes or Pleospora or Sclerotinia or Bullera or Galactomyces)).tw,kf. | 8514 |
| 38 | ((f?ecal or stool or f?ece\* or microb\*) adj4 (transplant\* or therap\* or transfer\* or infusion\*)).tw,kf. | 13840 |
| 39 | Prebiotics/ or Probiotics/ | 25678 |
| 40 | (probiotic\* or prebiotic\*).tw,kf. | 44535 |
| 41 | or/33-40 [gut microbiome/ probiotics] | 181237 |
| 42 | pediatrics/ | 57760 |
| 43 | young adult/ | 1004085 |
| 44 | adolescent/ | 2201580 |
| 45 | child/ | 1887977 |
| 46 | child, preschool/ | 984931 |
| 47 | infant/ or infant, newborn/ or infant, postmature/ or infant, premature/ or infant, extremely premature/ | 1238470 |
| 48 | (infant\* or baby or babies or newborn\* or neonate or minor or minors or toddler\* or boy or boys or boyhood or girl or girls or girlhood or kid or kids or kiddie or child\* or schoolchild\* or adolescen\* or preadolescen\* or juvenil\* or youth\* or teen\* or preteen\* or pre teen\* or underage\* or under age\* or pubescen\* or prepubescen\* or pre mature\* or premature\* or puberty or pe?diatric\* or school\* or school age\* or schoolage\*).tw,kf. | 3157897 |
| 49 | (young\* adj3 (adult\* or person\* or individual\* or people\* or population\* or man or men or wom?n)).tw,kf. | 284040 |
| 50 | (youngster\* or preschool\* or pre-school\* or kindergarten\* or freshm?n\* or junior\* or soph?more\* or senior\* or highschool\* or high school\* or colleg\* or universit\* or student\* or undergrad\* or grade school\* or elementary school\* or middle school\* or middleschool\* or public school\* or secondary school\* or intermediate school\*).tw,kf. | 965929 |
| 51 | ((grade\* or form\*) adj3 (one or first or two or second or three or third or four\* or fourth or five or fifth or six\* or seven\* or eight\* or nine\* or ninth or ten\* or eleven\* or twelfth or twelve or "1" or "2" or "3" or "4" or "5" or "6" or "7" or "8" or "9" or "10" or "11" or "12")).tw,kf. | 588790 |
| 52 | all age\*.tw,kf. | 48966 |
| 53 | or/42-52 [children] | 6667064 |
| 54 | (systematic review or meta-analysis or review).pt. | 3279288 |
| 55 | meta-analysis/ or systematic review/ or systematic reviews as topic/ or meta-analysis as topic/ or "meta analysis (topic)"/ or "systematic review (topic)"/ or exp technology assessment, biomedical/ or network meta-analysis/ | 337668 |
| 56 | ((systematic\* adj3 (review\* or overview\*)) or (methodologic\* adj3 (review\* or overview\*))).ti,ab,kf,kw. | 305134 |
| 57 | ((quantitative adj3 (review\* or overview\* or synthes\*)) or (research adj3 (integrati\* or overview\*))).ti,ab,kf,kw. | 15105 |
| 58 | ((integrative adj3 (review\* or overview\*)) or (collaborative adj3 (review\* or overview\*)) or (pool\* adj3 analy\*)).ti,ab,kf,kw. | 37614 |
| 59 | (data synthes\* or data extraction\* or data abstraction\*).ti,ab,kf,kw. | 38767 |
| 60 | (handsearch\* or hand search\*).ti,ab,kf,kw. | 10938 |
| 61 | (mantel haenszel or peto or der simonian or dersimonian or fixed effect\* or latin square\*).ti,ab,kf,kw. | 34625 |
| 62 | (met analy\* or metanaly\* or technology assessment\* or HTA or HTAs or technology overview\* or technology appraisal\*).ti,ab,kf,kw. | 11836 |
| 63 | (meta regression\* or metaregression\*).ti,ab,kf,kw. | 13974 |
| 64 | (meta-analy\* or metaanaly\* or systematic review\* or biomedical technology assessment\* or bio-medical technology assessment\*).mp,hw. | 448792 |
| 65 | (medline or cochrane or pubmed or medlars or embase or cinahl).ti,ab,hw. | 327587 |
| 66 | (cochrane or (health adj2 technology assessment) or evidence report).jw. | 21228 |
| 67 | (comparative adj3 (efficacy or effectiveness)).ti,ab,kf,kw. | 17139 |
| 68 | (outcomes research or relative effectiveness).ti,ab,kf,kw. | 11035 |
| 69 | ((indirect or indirect treatment or mixed-treatment or bayesian) adj3 comparison\*).ti,ab,kf,kw. | 4233 |
| 70 | (multi\* adj3 treatment adj3 comparison\*).ti,ab,kf,kw. | 288 |
| 71 | (mixed adj3 treatment adj3 (meta-analy\* or metaanaly\*)).ti,ab,kf,kw. | 177 |
| 72 | ((umbrella or scoping or narrative or literature or integrative or rapid or overview or mapping) adj3 review\*).ti,ab,kf,kw. | 424893 |
| 73 | ((evidence or knowledge) adj2 synthes\*).ti,ab,kw,kf. | 14729 |
| 74 | "Review Literature as Topic"/ | 9382 |
| 75 | or/54-74 [type] | 3612380 |
| 76 | 32 and 41 and 53 and 75 | 582 |

**Embase Classic+Embase <1947 to 2023 February 07>**

|  |  |  |
| --- | --- | --- |
| **#** | **Searches** | **Results** |
| 1 | depression/ or dysthymia/ | 468983 |
| 2 | adolescent depression/ or agitated depression/ or atypical depression/ or chronic depression/ or depressive psychosis/ or endogenous depression/ or involutional depression/ or major depression/ or masked depression/ or melancholia/ or minor depression/ or "mixed anxiety and depression"/ or organic depression/ or post-stroke depression/ or postoperative depression/ or premenstrual dysphoric disorder/ or reactive depression/ or recurrent brief depression/ or seasonal affective disorder/ or subsyndromal depression/ or treatment resistant depression/ or postnatal depression/ | 101223 |
| 3 | (depress\* or dysthymia or sad or sadness or saddest or sadder or melanchol\* or miser\* or unhappiness or unhappy or emotion).tw,kf. | 861101 |
| 4 | mental disease/ or adjustment disorder/ or anxiety disorder/ or autism/ or behavior disorder/ or dissociative disorder/ or emotional disorder/ or experimental mental disease/ or mental instability/ or neurosis/ | 538799 |
| 5 | mood disorder/ or affective neurosis/ or major affective disorder/ or mania/ or minor affective disorder/ | 80178 |
| 6 | mood\*.tw,kf. | 137716 |
| 7 | dysthymi\*.tw,kf. | 4547 |
| 8 | MDD.tw,kf. | 26622 |
| 9 | ((affective\* or dysphoric\* or mental\* or psychiat\*) adj3 (disorder\* or illness\*)).tw,kf. | 238562 |
| 10 | anxiety/ or fear/ or performance anxiety/ or social anxiety/ | 348264 |
| 11 | anxiety disorder/ or acute stress disorder/ or anxiety neurosis/ or distress syndrome/ or generalized anxiety disorder/ or "mixed anxiety and depression"/ or panic/ or phobia/ or separation anxiety/ | 196904 |
| 12 | AD.tw,kf. | 253404 |
| 13 | (panic\* adj3 (attack\* or disorder\*)).tw,kf. | 16711 |
| 14 | (phobic\* or phobia\*).tw,kf. | 18548 |
| 15 | (anxiet\* or anxious\* or hypervigilan\* or nervous\* or angst\* or worry or worries or apprehensi\* or uneasiness or unease or fear or fears or distress).tw,kf. | 1157671 |
| 16 | autism/ or asperger syndrome/ or childhood disintegrative disorder/ or "pervasive developmental disorder not otherwise specified"/ or rett syndrome/ | 90382 |
| 17 | neuropsychiatry/ | 9710 |
| 18 | (autism\* or autisti\* or ASD or asp?erger\* or cerebroatrophic hyperammonemia).tw,kf. | 99503 |
| 19 | ((neurodevelopment\* or kanner\* or rett or development\* or disintegrative) adj3 (disorder\* or syndrom\* or delay\*)).tw,kf. | 120548 |
| 20 | Neuropsychiatry.tw,kf. | 5336 |
| 21 | attention deficit disorder/ or conduct disorder/ | 73041 |
| 22 | (addh or adhd).tw,kf. | 45363 |
| 23 | ((attention\* or conduct\* or behavio?r\* or defiant\*) adj6 disorder\*).tw,kf. | 118248 |
| 24 | (hyperkinetic\* adj3 syndrome\*).tw,kf. | 789 |
| 25 | (hyperactiv\* or neurotic\* or mania).tw,kf. | 140362 |
| 26 | (manic adj3 (psychos\* or disorder)).tw,kf. | 3338 |
| 27 | bipolar disorder/ or bipolar i disorder/ or bipolar ii disorder/ or bipolar mania/ or cyclothymia/ or "mixed mania and depression"/ or rapid cycling bipolar disorder/ or bipolar depression/ | 78493 |
| 28 | (bipolar\* or cyclothymi\*).tw,kf. | 112579 |
| 29 | Obsessive-Compulsive Disorder/ | 30154 |
| 30 | (anankastic adj3 personalit\*).tw,kf. | 46 |
| 31 | (obsess\* adj3 compuls\*).tw,kf. | 29471 |
| 32 | OCD.tw,kf. | 17206 |
| 33 | or/1-32 [depression, anxiety, autism, adhd, bipolar, OCD] | 2917858 |
| 34 | intestine flora/ or colon flora/ or fecal microbiota transplantation/ | 95716 |
| 35 | firmicutes/ or bacteroidetes/ or Lactobacillus/ | 53183 |
| 36 | (firmicute\* or acidaminococc\* or Bacteroidete\* or Lactobacillus\*).tw,kf. | 66788 |
| 37 | ((gastro\* or gut\* or gastric\* or intestin\* or stomach\* or fecal\* or faecal or f?ece\* or stool or colon\*) adj4 (microb\* or flora or microflor\* or micro-flor\* or microorgan\* or micro-organ\*)).tw,kf. | 118702 |
| 38 | ((gastro\* or gut\* or gastric\* or intestin\* or stomach\* or fecal\* or faecal or f?ece\* or stool or colon\*) adj4 (Actinobacteri\* or Proteobacteri\* or Escherichi\* or Candida or Saccharomyces or Aspergillus or Penicillium or Rhodotorula or Trametes or Pleospora or Sclerotinia or Bullera or Galactomyces)).tw,kf. | 10402 |
| 39 | ((f?ecal or stool or f?ece\* or microb\*) adj4 (transplant\* or therap\* or transfer\* or infusion\*)).tw,kf. | 19618 |
| 40 | prebiotic agent/ or probiotic agent/ | 55168 |
| 41 | (probiotic\* or prebiotic\*).tw,kf. | 54674 |
| 42 | or/34-41 [gut microbiome] | 248178 |
| 43 | pediatrics/ | 99464 |
| 44 | young adult/ or adolescent/ | 2187007 |
| 45 | child/ | 2306951 |
| 46 | preschool child/ | 685868 |
| 47 | infant/ or baby/ or newborn/ or prematurity/ | 1332559 |
| 48 | (infant\* or baby or babies or newborn\* or neonate or minor or minors or toddler\* or boy or boys or boyhood or girl or girls or girlhood or kid or kids or kiddie or child\* or schoolchild\* or adolescen\* or preadolescen\* or juvenil\* or youth\* or teen\* or preteen\* or pre teen\* or underage\* or under age\* or pubescen\* or prepubescen\* or pre mature\* or premature\* or puberty or p?ediatric\* or school\* or school age\* or schoolage\*).tw,kf. | 4281366 |
| 49 | (young\* adj3 (adult\* or person\* or individual\* or people\* or population\* or man or men or wom?n)).tw,kf. | 392395 |
| 50 | (youngster\* or preschool\* or pre-school\* or kindergarten\* or freshm?n\* or junior\* or soph?more\* or senior\* or highschool\* or high school\* or colleg\* or universit\* or student\* or undergrad\* or grade school\* or elementary school\* or middle school\* or middleschool\* or public school\* or secondary school\* or intermediate school\*).tw,kf. | 1549389 |
| 51 | ((grade\* or form\*) adj3 (one or first or two or second or three or third or four\* or fourth or five or fifth or six\* or seven\* or eight\* or nine\* or ninth or ten\* or eleven\* or twelfth or twelve or "1" or "2" or "3" or "4" or "5" or "6" or "7" or "8" or "9" or "10" or "11" or "12")).tw,kf. | 833552 |
| 52 | all age\*.tw,kf. | 71237 |
| 53 | or/43-52 [Children] | 8055014 |
| 54 | (systematic review or meta-analysis or review).pt. | 3056592 |
| 55 | meta-analysis/ or systematic review/ or systematic reviews as topic/ or meta-analysis as topic/ or "meta analysis (topic)"/ or "systematic review (topic)"/ or exp technology assessment, biomedical/ or network meta-analysis/ | 602181 |
| 56 | ((systematic\* adj3 (review\* or overview\*)) or (methodologic\* adj3 (review\* or overview\*))).ti,ab,kf,kw. | 375856 |
| 57 | ((quantitative adj3 (review\* or overview\* or synthes\*)) or (research adj3 (integrati\* or overview\*))).ti,ab,kf,kw. | 17673 |
| 58 | ((integrative adj3 (review\* or overview\*)) or (collaborative adj3 (review\* or overview\*)) or (pool\* adj3 analy\*)).ti,ab,kf,kw. | 53474 |
| 59 | (data synthes\* or data extraction\* or data abstraction\*).ti,ab,kf,kw. | 47901 |
| 60 | (handsearch\* or hand search\*).ti,ab,kf,kw. | 13373 |
| 61 | (mantel haenszel or peto or der simonian or dersimonian or fixed effect\* or latin square\*).ti,ab,kf,kw. | 45923 |
| 62 | (met analy\* or metanaly\* or technology assessment\* or HTA or HTAs or technology overview\* or technology appraisal\*).ti,ab,kf,kw. | 19828 |
| 63 | (meta regression\* or metaregression\*).ti,ab,kf,kw. | 17315 |
| 64 | (meta-analy\* or metaanaly\* or systematic review\* or biomedical technology assessment\* or bio-medical technology assessment\*).mp,hw. | 711598 |
| 65 | (medline or cochrane or pubmed or medlars or embase or cinahl).ti,ab,hw. | 428917 |
| 66 | (cochrane or (health adj2 technology assessment) or evidence report).jw. | 30649 |
| 67 | (comparative adj3 (efficacy or effectiveness)).ti,ab,kf,kw. | 25638 |
| 68 | (outcomes research or relative effectiveness).ti,ab,kf,kw. | 16393 |
| 69 | ((indirect or indirect treatment or mixed-treatment or bayesian) adj3 comparison\*).ti,ab,kf,kw. | 7407 |
| 70 | (multi\* adj3 treatment adj3 comparison\*).ti,ab,kf,kw. | 428 |
| 71 | (mixed adj3 treatment adj3 (meta-analy\* or metaanaly\*)).ti,ab,kf,kw. | 256 |
| 72 | ((umbrella or scoping or narrative or literature or integrative or rapid or overview or mapping) adj3 review\*).ti,ab,kf,kw. | 523596 |
| 73 | ((evidence or knowledge) adj2 synthes\*).ti,ab,kw,kf. | 16846 |
| 74 | literature/ | 51807 |
| 75 | or/54-74 [type] | 3944952 |
| 76 | 33 and 42 and 53 and 75 | 892 |

**Interface - EBSCOhost Research Databases**  
**Search Screen - Advanced Search**  
**Database - CINAHL Plus with Full Text**

|  |  |
| --- | --- |
| **#** | **Query** |
| S50 | S30 AND S40 AND S49 |
| S49 | S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 |
| S48 | TI all age\* OR AB all age\* |
| S47 | TI ((grade\* or form\*) N2 (one or first or two or second or three or third or four\* or fourth or five or fifth or six\* or seven\* or eight\* or nine\* or ninth or ten\* or eleven\* or twelfth or twelve or "1" or "2" or "3" or "4" or "5" or "6" or "7" or "8" or "9" or "10" or "11" or "12") ) OR AB ((grade\* or form\*) N2 (one or first or two or second or three or third or four\* or fourth or five or fifth or six\* or seven\* or eight\* or nine\* or ninth or ten\* or eleven\* or twelfth or twelve or "1" or "2" or "3" or "4" or "5" or "6" or "7" or "8" or "9" or "10" or "11" or "12") |
| S46 | TI (youngster\* or pre#school\* or kindergarten\* or freshm?n\* or junior\* or soph#more\* or senior\* or high#school\* or colleg\* or universit\* or student\* or undergrad\* or (grade or elementary or public or secondary or intermediate) school\* or middle#school\*) OR AB (youngster\* or pre#school\* or kindergarten\* or freshm?n\* or junior\* or soph#more\* or senior\* or high#school\* or colleg\* or universit\* or student\* or undergrad\* or (grade or elementary or public or secondary or intermediate) school\* or middle#school\*) |
| S45 | TI (young\* N2 (adult\* or person\* or individual\* or people\* or population\* or m?n or wom?n) ) OR AU (young\* N2 (adult\* or person\* or individual\* or people\* or population\* or m?n or wom?n) |
| S44 | TI (infant\* or baby or babies or newborn\* or neonate or minor or minors or toddler\* or boy or boys or boyhood or girl or girls or girlhood or kid or kids or kiddie or child\* or school#child\* or adolescen\* or preadolescen\* or juvenil\* or youth\* or teen\* or pre#teen\* or under#age\* or pubescen\* or prepubescen\* or pre#mature\* or puberty or p#ediatric\* or school\* or school#age\*) OR AB (infant\* or baby or babies or newborn\* or neonate or minor or minors or toddler\* or boy or boys or boyhood or girl or girls or girlhood or kid or kids or kiddie or child\* or school#child\* or adolescen\* or preadolescen\* or juvenil\* or youth\* or teen\* or pre#teen\* or under#age\* or pubescen\* or prepubescen\* or pre#mature\* or puberty or p#ediatric\* or school\* or school#age\*) |
| S43 | (MH "Adolescence") OR (MH "Child") OR (MH "Child, Preschool") OR (MH "Minors (Legal)") OR (MH "Infant") OR (MH "Infant, Newborn") OR (MH "Infant, Postmature") OR (MH "Infant, Premature") |
| S42 | (MH "Young Adult") |
| S41 | (MH "Pediatrics") |
| S40 | S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 |
| S39 | TI (pr#biotic\*) OR AB (pr#biotic\*) |
| S38 | (MH "Prebiotics") OR (MH "Probiotics") |
| S37 | TI ( (f#ecal or stool or f#ece\* or microb\*) N3 (transplant\* or therap\* or transfer\* or infusion\*) ) OR AB ( (f#ecal or stool or f#ece\* or microb\*) N3 (transplant\* or therap\* or transfer\* or infusion\*) ) |
| S36 | TI ( (gastro\* or gut\* or gastric\* or intestin\* or stomach\* or f#ecal\* or f#ece\* or stool or colon\*) N3 (Actinobacteri\* or Proteobacteri\* or Escherichi\* or Candida or Saccharomyces or Aspergillus or Penicillium or Rhodotorula or Trametes or Pleospora or Sclerotinia or Bullera or Galactomyces) ) OR AB ( (gastro\* or gut\* or gastric\* or intestin\* or stomach\* or f#ecal\* or f#ece\* or stool or colon\*) N3 (Actinobacteri\* or Proteobacteri\* or Escherichi\* or Candida or Saccharomyces or Aspergillus or Penicillium or Rhodotorula or Trametes or Pleospora or Sclerotinia or Bullera or Galactomyces) ) |
| S35 | TI ( (gastro\* or gut\* or gastric\* or intestin\* or stomach\* or f#ecal\* or f#ece\* or stool or colon\*) N3 (microb\* or flora or micro#flor\* or micro#organ\*) ) OR AB ( (gastro\* or gut\* or gastric\* or intestin\* or stomach\* or f#ecal\* or f#ece\* or stool or colon\*) N3 (microb\* or flora or micro#flor\* or micro#organ\*) ) |
| S34 | TI ( firmicute\* or acidaminococc\* or Bacteroidete\* or Lactobacillus\*) OR AB ( firmicute\* or acidaminococc\* or Bacteroidete\* or Lactobacillus\* ) |
| S33 | (MH "Lactobacillus") |
| S32 | (MH "Fecal Microbiota Transplantation") |
| S31 | (MH "Gut Microbiota") |
| S30 | S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 |
| S29 | TI OCD OR AB OCD |
| S28 | TI ( (obsess\* N2 compuls\*) OR AB ( (obsess\* N2 compuls\*) |
| S27 | TI (anankastic N2 personalit\*) OR AB (anankastic N2 personalit\*) |
| S26 | (MH "Obsessive-Compulsive Disorder") |
| S25 | (manic N2 (psychos\* or disorder)) OR AB (manic N2 (psychos\* or disorder)) |
| S24 | TI (bipolar\* Or cyclothymi\*) OR AB (bipolar\* or cyclothymi\*) |
| S23 | (MH "Affective Disorders, Psychotic") OR (MH "Bipolar Disorder") |
| S22 | TI (hyperactiv\* OR neuros?s\* OR neurotic\* OR mania) OR AB (hyperactiv\* OR neuros?s\* OR neurotic\* OR mania) |
| S21 | TI (hyperkinetic\* N2 syndrome\*) OR AB (hyperkinetic\* N2 syndrome\*) |
| S20 | TI ( (attention\* or conduct\* or behavio#r\* or defiant\*) N5 disorder\*) ) OR AB ( (attention\* or conduct\* or behavio#r\* or defiant\*) N5 disorder\*) |
| S19 | TI ( (addh or adhd or add) ) OR AB ( addh or adhd or add ) |
| S18 | (MH "Attention Deficit Hyperactivity Disorder") OR (MH "Child Behavior Disorders") |
| S17 | TI Neuropsychiatr\* OR AB Neuropsychiatr\* |
| S16 | TI ((neuro#development\* or kanner\* or development\* or rett or disintegrative) N2 (disorder\* or syndrom\* or delay\*) ) OR AB ((neuro#development\* or kanner\* or development\* or rett or disintegrative) N2 (disorder\* or syndrom\* or delay\*) ) |
| S15 | TI ( (autism\* or autisti\* or ASD or asp#erger\* OR cerebroatrophic hyperammonemia) ) OR AB ( autism\* or autisti\* or ASD or asp#erger\* OR cerebroatrophic hyperammonemia ) |
| S14 | (MH "Child Development Disorders, Pervasive") OR (MH "Asperger Syndrome") OR (MH "Pervasive Developmental Disorder-Not Otherwise Specified") OR (MH "Autistic Disorder") |
| S13 | TI (anxiet\* or anxious\* or hypervigilan\* or nervous\* or angst\* or worry or worries or apprehensi\* or uneasiness or unease or fear or fears ) OR AB ( anxiet\* or anxious\* or hypervigilan\* or nervous\* or angst\* or worry or worries or apprehensi\* or uneasiness or unease or fear or fears ) |
| S12 | TI ( phobic or phobia\* ) OR AB ( phobic or phobia\* ) |
| S11 | TI ( panic\* N2 (attack\* or disorder\*) ) OR AB ( panic\* N2 (attack\* or disorder\*) ) |
| S10 | TI AD OR AB AD |
| S9 | (MH "Anxiety Disorders") OR (MH "Generalized Anxiety Disorder") OR (MH "Obsessive-Compulsive Disorder") OR (MH "Panic Disorder") OR (MH "Phobic Disorders") OR (MH "Separation Anxiety") |
| S8 | TI ( (affective\* or dysphoric\* or mental\* or psychiat\*) N3 (disorder\* or illness\*) ) OR AB ( (affective\* or dysphoric\* or mental\* or psychiat\*) N3 (disorder\* or illness\*) ) |
| S7 | TI (MDD) OR AB (MDD) |
| S6 | TI dysthymi\* OR AB dysthymi\* |
| S5 | TI mood\* OR AB mood\* |
| S4 | (MH "Affective Disorders") OR (MH "Neurotic Disorders") OR (MH "Psychological Distress") OR (MH "Cyclothymic Disorders") |
| S3 | (MH "Mental Disorders") OR (MH "Mental Disorders, Chronic") OR (MH "Mental Disorders Diagnosed in Childhood") |
| S2 | TI (depress\* OR dysthmia OR sad OR sadness OR saddest OR sadder OR melanchol\* OR miser\* OR unhapp\* or emotion\* or distress\*) OR AB ( depress\* OR dysthmia OR sad OR sadness OR saddest OR sadder OR melanchol\* OR miser\* OR unhapp\* or emotion\* or distress\* ) |
| S1 | (MH "Depression") OR (MH "Depression, Postpartum") OR (MH "Depression, Reactive") OR (MH "Dysthymic Disorder") OR (MH "Premenstrual Dysphoric Disorder") OR (MH "Seasonal Affective Disorder") |

**Interface - EBSCOhost Research Databases**  
**Search Screen - Advanced Search**  
**Database - Child Development & Adolescent**

|  |  |
| --- | --- |
| **#** | **Query** |
| S29 | (S22 AND S28) |
| S28 | S23 OR S24 OR S25 OR S26 OR S27 |
| S27 | TI ((probiotic\* or prebiotic\*)) OR AB ((probiotic\* or prebiotic\*)) |
| S26 | TI (((f?ecal or stool or f? ece\* or microb\*) N4 (transplant\* or therap\* or transfer\* or infusion\*))) OR AB (((f?ecal or stool or f?ece\* or microb\*) N4 (transplant\* or therap\* or transfer\* or infusion\*))) |
| S25 | TI (((gastro\* or gut\* or gastric\* or intestin\* or stomach\* or fecal\* or faecal or f?ece\* or stool or colon\*) N4 (Actinobacteri\* or Proteobacteri\* or Escherichi\* or Candida or Saccharomyces or Aspergillus or Penicillium or Rhodotorula or Trametes or Pleospora or Sclerotinia or Bullera or Galactomyces))) OR AB (((gastro\* or gut\* or gastric\* or intestin\* or stomach\* or fecal\* or faecal or f?ece\* or stool or colon\*) N4 (Actinobacteri\* or Proteobacteri\* or Escherichi\* or Candida or Saccharomyces or Aspergillus or Penicillium or Rhodotorula or Trametes or Pleospora or Sclerotinia or Bullera or Galactomyces))) |
| S24 | TI (((gastro\* or gut\* or gastric\* or intestin\* or stomach\* or fecal\* or faecal or f?ece\* or stool or colon\*) N4 (microb\* or flora or microflor\* or micro-flor\* or microorgan\* or micro- organ\*))) OR AB (((gastro\* or gut\* or gastric\* or intestin\* or stomach\* or fecal\* or faecal or f?ece\* or stool or colon\*) N4 (microb\* or flora or microflor\* or micro-flor\* or microorgan\* or micro- organ\*))) |
| S23 | TI ((firmicute\* or acidaminococc\* or Bacteroidete\* or Lactobacillus\*)) OR AB ((firmicute\* or acidaminococc\* or Bacteroidete\* or Lactobacillus\*)) |
| S22 | S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 |
| S21 | TI ((ocd or obsessive- compulsive disorder or obsessive compulsive disorder)) OR AB ((ocd or obsessive-compulsive disorder or obsessive compulsive disorder)) |
| S20 | TI (obsess\* N3 compuls\*) OR AB (obsess\* N3 compuls\*) |
| S19 | TI (anankastic N3 personalit\*) OR AB (anankastic N3 personalit\*) |
| S18 | TI ( bipolar\* or cyclothymi\* ) OR AB ( bipolar\* or cyclothymi\* ) |
| S17 | TI ((manic N3 (psychos\* or disorder))) OR AB ((manic N3 (psychos\* or disorder))) |
| S16 | TI ( Hyperactiv\* OR neuros?s\* OR neurotic\* OR mania ) OR AB ( Hyperactiv\* OR neuros?s\* OR neurotic\* OR mania ) |
| S15 | TI (hyperkinetic\* N3 syndrome\*) OR AB (hyperkinetic\* N3 syndrome\*) |
| S14 | TI (((attention\* or conduct\* or behavio?r\* or defiant\*) N6 disorder\*)) OR AB (((attention\* or conduct\* or behavio?r\* or defiant\*) N6 disorder\*)) |
| S13 | TI ((addh or adhd)) OR AB ((addh or adhd)) |
| S12 | TI neuropsychiatry OR AB neuropsychiatry |
| S11 | TI (((neurodevelopment\* or kanner\* or rett or disintegrative) N3 (disorder\* or syndrom\* or delay\*)) ) OR AB (((neurodevelopment\* or kanner\* or development\* or rett or disintegrative) N3 (disorder\* or syndrom\* or delay\*))) |
| S10 | TI ((autism\* or autisti\* or ASD or asp?erger\* or cerebroatrophic hyperammonemia)) OR AB ((autism\* or autisti\* or ASD or asp?erger\* or cerebroatrophic hyperammonemia)) |
| S9 | TI ((anxiet\* or anxious\* or hypervigilan\* or nervous\* or angst\* or worry or worries or apprehensi\* or uneasiness or unease or fear or fears or distress\*)) OR AB ((anxiet\* or anxious\* or hypervigilan\* or nervous\* or angst\* or worry or worries or apprehensi\* or uneasiness or unease or fear or fears or distress\*)) |
| S8 | TI ((phobic\* or phobia\*)) OR AB ((phobic\* or phobia\*)) |
| S7 | TI ((panic\* N3 (attack\* or disorder\*))) OR AB ((panic\* N3 (attack\* or disorder\*))) |
| S6 | TI AD OR AB AD |
| S5 | TI (((affective\* or dysphoric\* or mental\* or psychiat\*) N3 (disorder\* or illness\*))) OR AB (((affective\* or dysphoric\* or mental\* or psychiat\*) N3 (disorder\* or illness\*))) |
| S4 | TI ((mdd or major depressive disorder or major depression)) OR AB ((mdd or major depressive disorder or major depression)) |
| S3 | TI dysthymi\* OR AB dysthymi\* |
| S2 | TI mood\* OR AB mood\* |
| S1 | TI ((depress\* or dysthymia or sad or sadness or saddest or sadder or melanchol\* or miser\* or unhappiness or unhappy or emotion\*)) OR AB ((depress\* or dysthymia or sad or sadness or saddest or sadder or melanchol\* or miser\* or unhappiness or unhappy or emotion\*)) |

**APA PsycInfo <1806 to January Week 5 2023>**

|  |  |  |
| --- | --- | --- |
| **#** | **Searches** | **Results** |
| 1 | gastrointestinal system/ | 1683 |
| 2 | (firmicute\* or acidaminococc\* or Bacteroidete\* or Lactobacillus\*).ti,ab. | 320 |
| 3 | ((gastro\* or gut\* or gastric\* or intestin\* or stomach\* or fecal\* or faecal or f?ece\* or stool or colon\*) adj4 (microb\* or flora or microflor\* or micro-flor\* or microorgan\* or micro-organ\*)).ti,ab. | 1855 |
| 4 | ((gastro\* or gut\* or gastric\* or intestin\* or stomach\* or fecal\* or faecal or f?ece\* or stool or colon\*) adj4 (Actinobacteri\* or Proteobacteri\* or Escherichi\* or Candida or Saccharomyces or Aspergillus or Penicillium or Rhodotorula or Trametes or Pleospora or Sclerotinia or Bullera or Galactomyces)).ti,ab. | 31 |
| 5 | ((f?ecal or stool or f?ece\* or microb\*) adj4 (transplant\* or therap\* or transfer\* or infusion\*)).ti,ab. | 249 |
| 6 | (probiotic\* or prebiotic\*).ti,ab. | 537 |
| 7 | 1 or 2 or 3 or 4 or 5 or 6 | 3241 |
| 8 | pediatrics/ | 30106 |
| 9 | adolescent development/ | 52677 |
| 10 | childhood development/ | 78825 |
| 11 | developmental stages/ or early adolescence/ or emerging adulthood/ or neonatal period/ or puberty/ | 21421 |
| 12 | elementary school students/ or intermediate school students/ or primary school students/ or middle school students/ | 56066 |
| 13 | kindergarten students/ or preschool students/ | 18484 |
| 14 | preschool students/ or nursery school students/ | 13162 |
| 15 | junior high school students/ | 11726 |
| 16 | (infant\* or baby or babies or newborn\* or neonate or minor or minors or toddler\* or boy or boys or boyhood or girl or girls or girlhood or kid or kids or kiddie or child\* or schoolchild\* or adolescen\* or preadolescen\* or juvenil\* or youth\* or teen\* or preteen\* or pre teen\* or underage\* or under age\* or pubescen\* or prepubescen\* or pre mature\* or premature\* or puberty or p?ediatric\* or school\* or school age\* or schoolage\*).ti,ab. | 1321740 |
| 17 | (young\* adj3 (adult\* or person\* or individual\* or people\* or population\* or man or men or wom?n)).ti,ab. | 131975 |
| 18 | (youngster\* or preschool\* or pre-school\* or kindergarten\* or freshm?n\* or junior\* or soph?more\* or senior\* or highschool\* or high school\* or colleg\* or universit\* or student\* or undergrad\* or grade school\* or elementary school\* or middle school\* or middleschool\* or public school\* or secondary school\* or intermediate school\*).ti,ab. | 867529 |
| 19 | ((grade\* or form\*) adj3 (one or first or two or second or three or third or four\* or fourth or five or fifth or six\* or seven\* or eight\* or nine\* or ninth or ten\* or eleven\* or twelfth or twelve or "1" or "2" or "3" or "4" or "5" or "6" or "7" or "8" or "9" or "10" or "11" or "12")).ti,ab. | 136886 |
| 20 | all age\*.ti,ab. | 11327 |
| 21 | 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 | 1921452 |
| 22 | 7 and 21 | 582 |

## Elsevier Scopus

((TITLE-ABS-KEY((depress\* or dysthymia or sad or sadness or saddest or sadder or melanchol\* or miser\* or unhappiness or unhappy or emotion\* or distress\*))) OR (TITLE-ABS-KEY((mood\* OR dysthymi\* OR MDD))) OR (TITLE-ABS-KEY(((affective\* or dysphoric\* or mental\* or psychiat\*) NEAR/3 (disorder\* or illness\*)))) OR (TITLE-ABS-KEY(AD)) OR (TITLE-ABS-KEY((panic\* NEAR/3 (attack\* or disorder\*)))) OR (TITLE-ABS-KEY((phobic\* or phobia\*))) OR (TITLE-ABS-KEY((anxiet\* or anxious\* or hypervigilan\* or nervous\* or angst\* or worry or worries or apprehensi\* or uneasiness or unease or fear or fears))) OR (TITLE-ABS-KEY((autism\* or autisti\* or ASD or asp?erger\* or "cerebroatrophic hyperammonemia"))) OR (TITLE-ABS-KEY(((neurodevelopment\* or kanner\* or development\* or rett or disintegrative) NEAR/3 (disorder\* or syndrom\* or delay\*)))) OR (TITLE-ABS-KEY(Neuropsychiatry)) OR (TITLE-ABS-KEY((addh or adhd))) OR (TITLE-ABS-KEY((attention\* or conduct\* or behavio?r\* or defiant\*) NEAR/6 (disorder\*))) OR (TITLE-ABS-KEY((hyperkinetic\* near/3 syndrome\*))) OR (TITLE-ABS-KEY(hyperactiv\* OR neuros?s\* OR neurotic\* OR mania)) OR (TITLE-ABS-KEY((manic NEAR/3 (psychos\* or disorder)))) OR (TITLE-ABS-KEY(bipolar\* or cyclothymi\*)) OR (TITLE-ABS-KEY((anankastic) near/3 (personalit\*))) OR (TITLE-ABS-KEY((obsess\*) NEAR/3 (compuls\*))) OR (TITLE-ABS-KEY(OCD))) AND ((TITLE-ABS-KEY(((gastro\* or gut\* or gastric\* or intestin\* or stomach\* or fecal\* or faecal or f?ece\* or stool or colon\*) NEAR/4 (microb\* or flora or microflor\* or micro-flor\* or microorgan\* or micro-organ\*)))) OR (TITLE-ABS-KEY(((gastro\* or gut\* or gastric\* or intestin\* or stomach\* or fecal\* or faecal or f?ece\* or stool or colon\*) NEAR/4 (Actinobacteri\* or Proteobacteri\* or Escherichi\* or Candida or Saccharomyces or Aspergillus or Penicillium or Rhodotorula or Trametes or Pleospora or Sclerotinia or Bullera or Galactomyces)))) OR (TITLE-ABS-KEY(((f?ecal or stool or f?ece\* or microb\*) NEAR/4 (transplant\* or therap\* or transfer\* or infusion\*)))) OR (TITLE-ABS-KEY((probiotic\* or prebiotic\*)))) AND ((TITLE-ABS-KEY((infant\* or baby or babies or newborn\* or neonate or minor or minors or toddler\* or boy or boys or boyhood or girl or girls or girlhood or kid or kids or kiddie or child\* or schoolchild\* or adolescen\* or preadolescen\* or juvenil\* or youth\* or teen\* or preteen\* or pre teen\* or underage\* or under age\* or pubescen\* or prepubescen\* or pre mature\* or premature\* or puberty or p?ediatric\* or school\* or school age\* or schoolage\*))) OR (TITLE-ABS-KEY((youngster\* or preschool\* or pre-school\* or kindergarten\* or freshm?n\* or junior\* or soph?more\* or senior\* or highschool\* or high school\* or colleg\* or universit\* or student\* or undergrad\* or grade school\* or elementary school\* or middle school\* or middleschool\* or public school\* or secondary school\* or intermediate school\*))) OR (TITLE-ABS-KEY(((grade\* or form\*) NEAR/3 (one or first or two or second or three or third or four\* or fourth or five or fifth or six\* or seven\* or eight\* or nine\* or ninth or ten\* or eleven\* or twelfth or twelve or "1" or "2" or "3" or "4" or "5" or "6" or "7" or "8" or "9" or "10" or "11" or "12")))) OR (TITLE-ABS-KEY("all age\*")) OR (TITLE-ABS-KEY((young\*) near/3 (adult\* OR person\* OR individual\* OR people\* OR population\* OR man OR men OR wom?n))))

Wiley Cochrane Library

#1 [mh ^Depression] or [mh ^"Dysthymic Disorder"] 16028

#2 [mh ^"depressive disorder"] or [mh ^"depression, postpartum"] or [mh ^"depressive disorder, major"] or [mh ^"depressive disorder, treatment-resistant"] or [mh ^"dysthymic disorder"] or [mh ^"premenstrual dysphoric disorder"] or [mh ^"seasonal affective disorder"] 14894

#3 (depress\* or dysthymia or sad or sadness or saddest or sadder or melanchol\* or miser\* or unhappiness or unhappy or emotion\* or distress\*):ti,ab,kw 148657

#4 [mh ^"mental disorders"] or [mh ^"neurotic disorder"] OR [mh ^"Manic disorder"] OR [mh ^"psychological distress"] 8484

#5 [mh ^"Mood Disorders"] 1004

#6 mood\*:ti,ab,kw 24722

#7 dysthymi\*:ti,ab,kw 1030

#8 MDD:ti,ab,kw 4370

#9 ((affective\* or dysphoric\* or mental\* or psychiat\*) NEAR/3 (disorder\* or illness\*)):ti,ab,kw 25759

#10 [mh ^"anxiety disorders"] or [mh ^"anxiety, separation"] or [mh ^"panic disorder"] or [mh ^"phobic disorders"] 7052

#11 AD:ti,ab,kw 23022

#12 (panic\* NEAR/3 (attack\* or disorder\*)):ti,ab,kw 2619

#13 (phobic\* or phobia\*):ti,ab,kw 3888

#14 (anxiet\* or anxious\* or hypervigilan\* or nervous\* or angst\* or worry or worries or apprehensi\* or uneasiness or unease or fear or fears):ti,ab,kw 102683

#15 [mh ^"autism spectrum disorder"] or [mh ^"autistic disorder"] or [mh ^"Child Development Disorders, Pervasive"] or [mh ^"Neurodevelopmental disorders"] or [mh ^Neuropsychiatry] 2553

#16 [mh ^"asperger syndrome"] 82

#17 (autism\* or autisti\* or ASD or asp?erger\* or cerebroatrophic hyperammonemia):ti,ab,kw 5437

#18 ((neurodevelopment\* or kanner\* or development\* or rett or disintegrative) NEAR/3 (disorder\* or syndrom\* or delay\*)):ti,ab,kw 4672

#19 Neuropsychiatry:ti,ab,kw 240

#20 [mh ^"attention deficit and disruptive behavior disorders"] or [mh ^"attention deficit disorder with hyperactivity"] or [mh ^"conduct disorder"] 3825

#21 (addh or adhd):ti,ab,kw 5518

#22 ((attention\* or conduct\* or behavio?r\* or defiant\*) NEAR/6 disorder\*):ti,ab,kw 18009

#23 (hyperkinetic\* NEAR/3 syndrome\*):ti,ab,kw 53

#24 (hyperactiv\* or neuros#s\* OR neurotic\* OR mania):ti,ab,kw 11751

#25 (manic NEAR/3 (psychos\* or disorder)):ti,ab,kw or [mh ^"manic disorder"] 3443

#26 [mh ^"bipolar and related disorders"] or [mh ^"bipolar disorder"] or [mh ^"Cyclothymic Disorder"] 3262

#27 bipolar\*:ti,ab,kw 9745

#28 [mh ^"Obsessive-Compulsive Disorder"] 1250

#29 (anankastic NEAR/3 personalit\*):ti,ab,kw 2

#30 (obsess\* NEAR/3 compuls\*):ti,ab,kw 3473

#31 OCD:ti,ab,kw 1843

#32 (or # 1- # 31) 265643

#33 [mh ^"Gastrointestinal Microbiome"] or [mh ^"Fecal Microbiota Transplantation"] 1328

#34 [mh ^firmicutes] or [mh ^acidaminococcus] or [mh ^Bacteroidetes] or [mh ^Lactobacillus] 878

#35 (firmicute\* or acidaminococc\* or Bacteroidete\* or Lactobacillus\*):ti,ab,kw 6346

#36 ((gastro\* or gut\* or gastric\* or intestin\* or stomach\* or fecal\* or faecal or f?ece\* or stool or colon\*) NEAR/4 (microb\* or flora or microflor\* or micro-flor\* or microorgan\* or micro-organ\*)):ti,ab,kw 12420

#37 ((gastro\* or gut\* or gastric\* or intestin\* or stomach\* or fecal\* or faecal or f?ece\* or stool or colon\*) NEAR/4 (Actinobacteri\* or Proteobacteri\* or Escherichi\* or Candida or Saccharomyces or Aspergillus or Penicillium or Rhodotorula or Trametes or Pleospora or Sclerotinia or Bullera or Galactomyces)):ti,ab,kw 664

#38 ((f?ecal or stool or f?ece\* or microb\*) NEAR/4 (transplant\* or therap\* or transfer\* or infusion\*)):ti,ab,kw 10285

#39 [mh ^Prebiotics] or [mh ^Probiotics] 3099

#40 (probiotic\* or prebiotic\*):ti,ab,kw 10002

#41 (or #33-#40) 27820

#42 [mh ^pediatrics] 830

#43 [mh ^"young adult"] 82229

#44 [mh ^adolescent] 121346

#45 [mh ^child] 61951

#46 [mh ^"child, preschool"] 34907

#47 [mh ^infant] or [mh ^"infant, newborn"] or [mh ^"infant, postmature"] or [mh ^"infant, premature"] or [mh ^"infant, extremely premature"] 39490

#48 (infant\* or baby or babies or newborn\* or neonate or minor or minors or toddler\* or boy or boys or boyhood or girl or girls or girlhood or kid or kids or kiddie or child\* or schoolchild\* or adolescen\* or preadolescen\* or juvenil\* or youth\* or teen\* or preteen\* or pre teen\* or underage\* or under age\* or pubescen\* or prepubescen\* or pre mature\* or premature\* or puberty or p?ediatric\* or school\* or school age\* or schoolage\*):ti,ab,kw 440832

#49 (young\* NEAR/3 (adult\* or person\* or individual\* or people\* or population\* or man or men or wom?n)):ti,ab,kw 113552

#50 (youngster\* or preschool\* or pre-school\* or kindergarten\* or freshm?n\* or junior\* or soph?more\* or senior\* or highschool\* or high school\* or colleg\* or universit\* or student\* or undergrad\* or grade school\* or elementary school\* or middle school\* or middleschool\* or public school\* or secondary school\* or intermediate school\*):ti,ab,kw 174924

#51 ((grade\* or form\*) NEAR/3 (one or first or two or second or three or third or four\* or fourth or five or fifth or six\* or seven\* or eight\* or nine\* or ninth or ten\* or eleven\* or twelfth or twelve or "1" or "2" or "3" or "4" or "5" or "6" or "7" or "8" or "9" or "10" or "11" or "12")):ti,ab,kw 87003

#52 (all age\*):ti,ab,kw 285871

#53 (or #42-#52) 778541

#54 #32 AND #41 AND #53 1204

Cochrane systematic reviews only = 25

**Supplementary Table S2:**Systematic Review Study Characteristics for included observational research, n=23

| Author, Year | MH Disorder | Study Design |  | Number of Studies in Review | Age Rage (years) | Mental Health Diagnostic Tool | Microbiota Assessment Tool | Microbiota Composition Changes | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Andreo-Martinez et al., 20191 | Autism | Observation |  | 3 | Not Reported | Not Reported | Fecal samples and GI biopsy examined using 16S rRNA | **** Candida | |
| Andreo-Martinez et al., 20202 | Autism | Observation |  | 21 | Not Reported | Not Reported | Fecal samples and GI biopsy examined using 16S rRNA pyrosequencing, qPCR, culture | **** Candida, Roseburia  **** Prevotella, Dialister, Streptococcus, Coprococcus, Bilophila  Inconsistent: Lactobacillus, Veillonella, Bacteroidetes/Firmicutes ratio | |
| Andreo-Martinez et al., 20223 | Autism | Observation |  | 18 | Not Reported | Not Reported | Not Reported | **** Streptococcus, Bifidobacterium  **No difference:** Bacteroidetes, Firmicutes, Proteobacteria, Actinobacteria | |
| Argou-Cardozo et al., 20184 | Autism | Observation |  | 9 | Not Reported | Not Reported | Stool, urinary samples and intestinal biopsies examined using culture methods, RT-PCR, FISH, gas chromatography/mass spectrometry-based urinalysis | **** Clostridium | |
| Bezawada et al., 20195 | Autism | Observation |  | 28 | 2-18 | Diagnostic and Statistical Manual of Mental Disorders, editions IV or V, Autism Diagnostic Interview-Revised, Autistic Diagnostic Observation Schedule, Childhood Autism Rating Scale, Pervasive Developmental Disorders Autism Society Japan Rating Scale, Modified Checklist for Autism in Toddlers, Autism Treatment Evaluation Checklist, Pervasive Developmental Disorder Behaviour Inventory, INCLEN Diagnostic Tool for ASD, Indian Scale for Assessment of Autism and ICD-10 | Fecal samples and mucosal biopsies examined using qPCR, 16S rRNA sequencing, FISH, shotgun metagenomic sequencing | **** Lactobacillus, Desulfovibrio, Clostridia  **Inconsistent:** Prevotella, Akkermansia muciniphila, Bifidobacterium, Sutterella | |
| Bundgaard-Nielsen et al., 20206 | Autism, ADHD | Observation |  | 24 | 2-18 | Not Reported | 454 FLX pyrosequencing, 16S rRNA, Illumina | *Autism:*  **** Proteobacteria, Bacteroides, Barnesiella, Clostridium, Roseburia, Lactobacillus  **** Dialister, Faecalibacterium, Prevotella, Streptococcus  **Inconsistent:** Bacteroidetes, Firmicutes, Bifidobacterium, Coprococcus | *ADHD:*  **** Bacteroides, Bifidobacterium  **** Dialister, Faecalibacterium, Prevotella, Lactobacillus |
| Cao et al., 20137 | Autism | Observation |  | 15 | Not Reported | DSM and ICD | Fecal samples, ileal and cecal biopsies and digestive fluids examined using FISH, QPCR, culture methods, high throughput SOLiD sequencing, bTEFAP | **** Cocci peptostreptococcus  **Inconsistent**: Clostridium, Bifidobacteria | |
| Herman et al., 20228 | Autism | Observation |  | 9 | Not Reported | Not Reported | Not Reported | **** Candida consistently in studies however not sig. | |
| Ho et al., 20209 | Autism | Observation |  | 26 | 1-18 | Not Reported | Not Reported | **** Clostridiales clusters, Clostridium perfringens, Prevotella, Desulfovibrio  **** Bifidobacterium  **Inconsistent**: Bacteroidetes, Prevotella, Firmicutes, Sutterella, | |
| Iglesias-Vazquez et al., 202010 | Autism | Observation |  | 18 | 2-18 | Not Reported | Stool samples examined using culture, PCR, pyrosequencing | **** Bacteroidetes, Bacteriodes, Parabacteroides, Firmicutes, Faecalibacterium, Clostridium, Phascolarctobacterium, Proteobacteria, Tenericutes  **** Coprococcus, Bifidobacterium  **No difference:** Anaerostipes, Anaerotruncus, Blautia, Ruminococcus, Veillonella, Dialister, Dorea, Roseburia, Sutterella, Actinobacteria, Cyanobacterium, Fusobacteria, Verrucomicrobia, Akkermansia | |
| Jurek et al., 202011 | Autism, ADHD | Observation |  | 31 | 0.75-27 | Autism Diagnostic Interview-Revised (ADI-R), Autism Diagnostic Observation Schedule 12, Childhood Autism Rating Scale (CARS), Kiddie Schedule for Affective Disorders and Schizophrenia (K-SADS), Autism Behavior Checklist (ABC), Child Behavior Checklist (CBCL), Autism Treatment Evaluation Checklist (ATEC), Pervasive Developmental Disorder-Behavior Inventory (PDD-BI) | Stool samples, urine samples, and intestinal biopsies examined using culture, FISH, qPCR, 16S rRNA, microbiome shotgun sequencing, metaproteomics, multi-omics. | **** Firmicutes/Bacteroidetes ratio, Lactobacillus  **** Dialister, Faecalibacterium, Fusobacterium, Prevotella  **Inconsistent:** Actinobacterium, Proteobacteria, Bacterioides, Bifidobacterium, Streptococcus | |
| Lacorte et al., 201913 | Autism, ADHD | Observation |  | 10 | 0-18 | Not Reported | Stool samples and biopsy specimens examined using 16S r RNA | Not Reported | |
| Langmajerova et al., 202314 | ADHD | Observation |  | 21 (19 on ADHD; of these 9 looked at the gut microbiome) | 8 - 20.5 | Various including: DSM-IV; K-SADS-PL; CPRS; FBB-HKS; Diva 2.0; ADHD-RS | 16S rRNA gene sequencing (V1-V2 region); 16S rRNA gene sequencing (V3-V4 region); shotgun metagenomics sequencing | ****Bacteroides (or species within this genus, mainly B. uniformis), Prevotellaceae, Prevotella  ****Faecalibacterium (or specisies within this genus, mainly F. prausnitzii) | |
| Martinez-Gonzalez et al., 201915 | Autism | Observation |  | 16 | 2-18 |  |  | **** Candida  **** Prevotella, Veillonella, Streptococcus  **Inconsistent:** Bacteroidetes, Firmicutes, Actinomyces, Dorea, Lactobacillus, Faecalibacterium prausnitzii, Bacteroidetes/Firmicutes ratio | |
| Nitschke et al., 202016 | Autism | Observation |  | 19 | Not Reported | Not Reported | Not Reported | **** Candida, Faecalibacterium, Lactobacillus, Prevotella, Firmicutes  **** Akkermansia | |
| Nogay et al., 202117 | Autism | Observation |  | 14 | 2-18 | Not Reported | Stool samples and biopsy specimens from cecum and ileum. | Not Reported | |
| Payen et al., 202218 | ADHD | Observation |  | 10 (5 looked at the gut microbiome) | 4-19 | Not Reported | Fecal samples examined using 16s rRNA | **** Actinobacteria (mainly Bifidobacterium)  **No difference**: Bacteroidetes, Firmicutes | |
| Soltysova, et al., 202219 | Autisum, ADHD, Depression | Observation |  | 55 (of these: 41 on Austism; 7 on ADHD; 3 on depression) | 2 - 27.1 | Various including: DSM-5; ADOS-2; CARS; CBCL; ADI-R; DSM 4-TR | 16S rRNA (in most cases) | **** Clostridium, Bacteroides, Odoribacter, Bacillus, Clostridiales, Dorea  ****Bifidobacterium,****Faecalibacterium, Bilophila, Akkermansia, Actinomyces, Coprococcus, Dialister, Phascolarctobacterium, Streptococcus, Veillonella | |
| Srikantha et al., 201920 | Autism | Observation |  | 136 |  | Not Reported | Not Reported | **** Clostridium, Betaproteobacteria, Enterobacteriaceae, Faecalibacterium, Corynebacterium, Lactobacillus, Dorea, Roseburia, Anaerofilum, Turicibacter, Burkholderia, Sutterella, Prevotella copri, Prevotella oris, B. intestinihominis, F. prausnitzii, P. excrementihominis, A. muciniphila  **** Prevotellaceae, Fusobacterium, Bifidobacterium, Streptococcus, Sporobacter, Subdoligranulum, Coprococcus, Neisseria, E. coli | |
| Sukmajaya et al., 202121 | ADHD | Observation |  | 6 | 0-18 | K-SADS, K-SADS-PL, K-SADS-E | 16s RNA, DNA amplification, shotgun metagenomic sequencing | **** Bifidobacterium  **** Dialister, Faecalibacterium | |
| West et al., 202222 | Autism | Observation |  | 10 | 2 - 17 | Not Reported | 16S HTS, MTG | ****Clostridium\_M bolteae t\_\_180407  ****Bacteroides stercoris t\_\_190463, Granulicatella elegans, Massilioclostrium coli | |
| Xu et al., 201923 | Autism | Observation |  | 9 | 6-11 | International Statistical Classification of Disease and Related Health Problems, Tenth Revision or ASD reported by parents | Fecal samples examined using FISH, pyrosequencing, QPCR or PCR | **** Faecalibacterium, Lactobacillus, Ruminococcus, Clostriium  **** Akkermansia, Bacteroides, Bifidobacterium, E. coli, Enterococcus | |
| Zafar et al., 202124 | Autism | Observation |  | 8 | 2-18 | Not Reported | Fecal samples and GI biopsy examined using 16S rRNA | **** Clostridium, Actinomyces, Proteobacteria  **** Bacteroides  **Inconsistent**: Parabacteroides, Bifidobacteria, Lactobacillus, Prevotella, Bacteroidetes/Firmicutes ratio | |

**Supplementary Table S3:** Systematic Review Study Characteristics for included interventional research, n=16

| Author, Year | MH Disorder | Included Study Designs | Number of Studies in Review | Age Rage (years) | Mental Health Diagnostic Tool | Microbiota Sequencing |
| --- | --- | --- | --- | --- | --- | --- |
| Alvares et al., 202125 | Autism | RCT | 2 | 1.5 - 15 | Various including: Autism Behavior Checklist-Taiwan (ABC-T); Social Responsiveness Scale (SRS); Child Behavior Checklist (CBCL); Autism Diagnostic Observation Schedule Calibrated Severity Score (ADOS-CSS); etc. | Not Reported |
| Amadi et al., 202226 | Autism | Intervention | 21 (8 probiotic, 2 prebiotic, 1 combo) | 1.5 - 16 | Not Reported | Not Reported |
| Basso et al., 202212 | Anxiety | Intervention | 17 (11 probiotic, 6 prebiotic) | 6-25 | Various including: State-Trait Anxiety Inventory;  Beck Anxiety inventory; Child Behavior Checklist;  Penn State Worry Questionnaire (PSWQ);  Depression Anxiety Stress Scale (DASS-42) | Not Reported |
| Brzoska-Konkol et al., 2022 | Autism | Intervention | 14 (some studies not yet complete) | 1.5 - 75 | Not Reported | Not Reported |
| Diaz Vargas et al., 2022 | Autism | Intervention | 16 (1 probiotic, 1 combination, 1 prebiotic + gluten-free and casein free diet) | 0-19 | Not Reported | Not Reported |
| Lasheras et al, 202127 | Autism | Intervention | 9 (3 out of 9 looked at probiotics - others were Vancomycin + probiotics and vitamin A) | 2-11 | Not Reported | Not Reported |
| Ligezka et al., 202128 | Autism, ADHD | RCT | 7 (2 probiotic, 2 prebiotic, 1 combo) | 0-16 | Various including: Parent Assessment of Early Behavior Patterns; Children’s Global Assessment Scale (CGAS)39; ADHD Rating Scale IV (ADHD-RS-IV)- clinician; Autism Treatment Evaluation Checklist (ATEC); Autism spectrum quotient (AQ); Empathy and systemising quotient (EQ-SQ); Spence’s Children Anxiety Scale-Prwnt version (SCAS-); etc. | FISH-FCM, 16s RNA, H-NMR |
| Martinez-Gonzalez et al., 202029 | Autism | Intervention | 16 (4 prebiotic, 8 probiotic, 4 MTT) | 1-17 | Not Reported | Not Reported |
| Mitchell et al.,30 | Autism | Intervention | 13 (2 synbiotic, 3 prebiotic, 8 probiotic) | 0-18 | Not Reported | Not Reported |
| Ng et al., 201931 | Autism | Intervention | 8 | 0-16 | Not Reported | Not Reported |
| Nogay et al., 202232 | Autism | Intervention | 55 (7 probiotic, 2 prebiotic, 1 combo of both) | 4-16 | Not Reported | Not Reported |
| Patel et al., 202233 | Autism | Intervention | 9 (5 of which are SR’s) | 0-18 | Not Reported | Not Reported |
| Prosperi et al., 202234 | Autism | Intervention | 19 (9 probiotics, 4 prebiotic, 3 combo, 3 FMT) | 1-17 | Various including: ATEC, ABC, CARS, ADOS, ADI, CGI | FISH; NGS |
| Rosi et al., 202035 | ADHD | Intervention | 42 (1 on probiotics) | 0-6 months, follow up at 13 years | ICD-10 diagnostic criteria | FISH; qPCR; blood group sector type |
| Tan et al., 202136 | Autism | Intervention | 13 (8 probiotics; 2 prebiotics; 2 combo of both; 1 FMT) | 3-16 | Various including: validated self-report and/or clinician administered questionnaires including ASD-specific instruments; autism treatment evaluation checklist; generic measures | Not Reported |
| Yang et al., 202037 | Autism | Intervention | 16 (8 probiotic, 2 prebiotic, 2 combo of both) | 1-16 | Various including: ABC (autistic behaviour checklist); SRS; CBC; PRAS; ANP-IV; ABC (aberrant behaviour checklist); CARS; ATEC | Not Reported |

**Supplementary Table S4:** Intervention Details for included interventional research, n=16

| Author, Year | Pooled Sample Size | Intervention | Dosage | Duration Range | Outcomes | |
| --- | --- | --- | --- | --- | --- | --- |
| Psychiatric | Microbiota |
| Alvares et al., 202125 | 134 | Probiotics: Lactobacillus plantarum PS128; probiotic mixture Vivomixx | Not Reported | 4 weeks – 6 months | Low efficacy | Not Reported |
| Amadi et al., 202226 | 474 | Probiotics: strains varied but mainly on bacterial genera Lactobacillus and Bifidobacterium  Prebiotics: B-GOS; partially hydrolyzed guar gum  Synbiotic: Bifidobacterium infantis and bovine colostrum product (BCP) | Not Reported | 28 days – 6 months | Improved | Reported restored gut microbiota equilibrium |
| Basso et al., 202212 | Not Reported | Probiotics: Saccharomyces boulardii; Lactobacillus casei Shirota; Lactobacillus plantarum DR7 or PS128; Lactobacillus rhamnosus; combination of Lactobacilli, Bifidobacteria and/or Streptococcus | Daily dose up to 1 x 1011 CFU | 14-56 days | Improved | Not Reported |
| Brzoska-Konkol et al., 202238 | 1007 | Probiotics (various strains of  Lactobacillus, Bifidobacterium, and Streptococcus) | Not Reported | Not Reported | Mixed | Not Reported |
| Diaz Vargas et al., 202239 | 105 | Probiotics: B. fragilis (PS128(  Synbiotic: Bifidobacterium infantis and bovine colostrum product (BCP)  Prebiotic: GOS and gluten free and casein free diet | Probiotic: 425 +/- 25 mg  Synbiotic: 0.15 g/lb of weight/day  Prebiotic: not reported | 4 – 12 weeks | Improved | Not Reported |
| Lasheras et al, 202127 | 68 | Probiotc  Lactobacillus plantarum  Lactobacillus acidophilus  Lactobacillus strains + 2 Bifidobacterium + 1 Streptococcu | Lactobacillus plantarum WCSF1 (4.5N x 10^10 CFU/g)  Lactobacillus acidophilus (strain Rosell; 11.5 x 10^9 CFU/g)  Capsule of 3 Lactobacillus strains + 2 Bifidobacterium + 1 Streptococcus | 1-3 weeks | Improved | Lactobacilli  Enterococci  Clostridium cluster XIVa  Desulfovibrio  Lactobacillus  Bifidobacterium  Firmicutes  Clostridium clusters I and II" |
| Ligezka et al., 202128 | 184 | Probiotics: various Lactobacillus strains  Prebiotics: B-GOS  Synbiotic: Bifidobacterium infantis and bovine colostrum product (BCP) | Not Reported | 6 weeks – 6 months | Mixed | Not Reported |
| Martinez-Gonzalez et al., 202029 | 660 | Probiotics: strains varied but mainly on bacterial genera Lactobacillus and Bifidobacterium  Prebiotics: carrot powder; partially hydrolyzed guar gum; galactooligosaccharides | Probiotics:  varied from 1-3 x/day dose varied: 3 x 1010 CFU; 5 x 109 CFU/g; 4.5 x 1010 CFU; 100 x 106 CFU; 20 thousand million CFU  Prebiotics: 6 g daily; 200000 IU daily; 1.8 g frequency unknown | Probiotics: 2 - 12 months  Prebiotics: unknown or 6 months | Improved | Probiotics:  **** Firmicutes, Desulfovibrio  **Inconsistent:** Bifidobacterium, Lactobacillus  Prebiotics:  **** Blautia, Acidaminococcus, Lachnospiraceae, Bacteroidetes/Firmicutes ratio  **** Streptococcus, Odoribacter, Eubacterium |
| Mitchell et al., 202230 | Not Reported | Probiotics  (various strains of  Lactobacillus, Bifidobacterium, and Streptococcus) | Take daily  Dose varied from 2 x 1010 CFU; 1010 CFU; 3 x 108 CFU; 5 x 1 g of 100 x 106 CFU; 90 x 1010 CFU; 2 x 450 billion CFU for first month followed by x 1 for 5 months; 5 x 109 CFU’s 2 x daily; 1 x 1010 CFU | 3 weeks - 7 months | Improved | **** Bifidobacterium & Lactobacillus  **** Clostridium & Desulfovibrio  **Inconsistent:** Bifidobacterium |
| Ng et al., 201931 | Not Reported | Probiotics: strains varied but mainly on bacterial genera Lactobacillus and Bifidobacterium  Prebiotics: bovine colostrum product (BCP), maltodextrin | Probiotics: varied from 1-3 x/d doses not reported  Prebiotics: 1.8 g/d or unknown | Probiotics: 21 days – 2 years  Prebiotics: 6-12 weeks | Mixed | Not Reported |
| Nogay et al., 202232 | Not Reported | Probiotics: strains varied but mainly on bacterial genera Lactobacillus  Prebiotics: partially hydrolyzed guar gum (PHGG), galacto-oligosaccharide 40 | Probiotics: not reported  Prebiotics: 6 g/d PHGG; 1.8 g/d GOS | 3-8 weeks | Mixed | Not Reported |
| Patel et al., 202233 | 473 | Probiotics  Prebiotis | Not Reported | Not Reported | Improved | Not Reported |
| Prosperi et al., 202241 | 801 | Probiotics: strains varied but mainly on bacterial genera Lactobacillus and Bifidobacterium  Synbiotic: Lact acidophilus + Lact rhamnosus + Bifid longum and dried carrot; B. infantis + BCP; 4 strains (Bifid infantis and lactis, Lact rhamnosus and paracasei) + FOS  Prebiotic: partically hydrolyzed guar gum | Probiotics ranged from: 0.5 to 90 x 109 CFU, 1, 2 or 3 times/ day  Synbiotic: 1 g = 100 x 106 CFU for each species 5 g/day; PRO 20 billion CFU/day + BCP 5.1-10.8 g/day; 1010 CFU/pack/day  Prebiotic: 6 g/day | 21 days – 6 months | Mixed | Not Reported |
| Rosi et al.,  202035 | 75 typically developing children | Probiotic: Lactobacillus rhamnosus GG | 1 x 1010 CFU/d | 4 weeks before delivery + for 6 months after delivery | Improved | **** Bifidobacterium |
| Tan et al., 202136 | 481 | Probiotics: strains varied but mainly BifidobactIum*,* Lactobacillus, and Lacticaseibacillus  Prebiotics: partially hydrolyzed guar gum; exclusion diet + GOS mixture or unrestricted diet + B-GOS® mixture  Synbiotic:  Probiotics (four strains: *B. infantisBi-26, L. rhamnosusHN001, B. lactisBL-04, L.paracaseiLPC-37*) + FOS Probiotic (*B. longumsupbsp. infantis*) + BCP (Oligosaccharides) | Probiotics ranged from 0.5 – 900 billion CFU/d  Prebiotics: 1.8 g/d  Synbiotic: daily | Probiotics: varied from 3 weeks – 3 months  Prebiotics: varied from 6 weeks – 15 months  Synbiotic: varied from 1 - 3.6 months | Improved | Not Reported  Minor adverse effects: mainly diarrhea in 4 probiotic, 1 prebiotic, and 1 synbiotic study. |
| Yang et al., 202037 | 518 | Probiotics: strains varied but mainly on bacterial genera Lactobacillus and Bifidobacterium  Prebiotics: B-GOS mixture; hydrolyzed guar gum | Probiotics: varied from 1-3 x/d, dose varied from 5 x 109 CFU; 100 x 106 CFU; 3 x 1010 CFU; 1010 CFU; 2 billion CFU; 20 billion CFU;  Prebiotics: 1.8 g/d, 6 g/d | Probiotics: varied from 4 – 15.4 weeks  Prebiotics: 4-6 weeks | Improved | Probiotics:  **** Bifidobacteria Lactobacillus Lactobacillus/Enterococci B. longum Bifidobacteriales  **** Firmicutes Desulfovibrio Clostridium Bacteroides fragilis |

**Supplementary Table S5.** Quality Assessment (AMSTAR-2) of included systematic reviews, n=40

| **Study** | **AMSTAR-2 ITEMS** | | | | | | | | | | | | | | | | **Quality Rating** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** |
| Iglesias-Vazquez, 202010 | Y | Y | Y | PY | Y | Y | PY | PY | Y | N | Y | Y | Y | Y | Y | Y | High quality |
| Xu, 201923 | Y | Y | Y | PY | Y | Y | PY | Y | Y | N | Y | Y | Y | Y | Y | Y | High quality |
| Andreo-Martinez, 20202 | Y | PY | Y | PY | Y | Y | PY | Y | Y | N | No MA | No MA | Y | Y | No MA | N | Moderate quality |
| Andreo-Martinez, 20223 | Y | PY | Y | PY | Y | Y | PY | PY | Y | N | Y | Y | Y | Y | Y | N | Moderate quality |
| Cao, 20137 | Y | PY | Y | PY | Y | Y | PY | PY | Y | N | No MA | No MA | Y | Y | No MA | Y | Moderate quality |
| Jurek, 202011 | Y | Y | Y | PY | Y | Y | PY | PY | Y | N | No MA | No MA | Y | Y | No MA | Y | Moderate quality |
| Lacorte, 201913 | Y | PY | Y | PY | Y | Y | PY | Y | Y | N | No MA | No MA | Y | Y | No MA | Y | Moderate quality |
| Langmajerova 202314 | Y | Y | Y | PY | Y | Y | Y | Y | Y | N | No MA | No MA | Y | Y | No MA | Y | Moderate quality |
| Martinez-Gonzalez, 201915 | Y | PY | Y | PY | Y | Y | PY | PY | Y | N | No MA | No MA | Y | Y | No MA | Y | Moderate quality |
| Payen, 202218 | Y | Y | Y | PY | Y | N | PY | PY | Y | N | Y | Y | Y | Y | Y | Y | Moderate quality |
| Bezawada, 202042 | Y | PY | Y | PY | Y | Y | PY | PY | Y | N | No MA | No MA | N | Y | No MA | Y | Low quality |
| Bundgaard-Nielsen, 20206 | Y | Y | Y | PY | Y | N | PY | PY | Y | N | No MA | No MA | N | Y | No MA | Y | Low quality |
| Sukmajaya, 202121 | Y | N | Y | PY | Y | Y | PY | Y | Y | N | No MA | No MA | Y | Y | No MA | Y | Low quality |
| Andreo-Martinez, 20191 | Y | PY | Y | PY | N | N | PY | PY | N | N | No MA | No MA | N | N | No MA | N | Critically Low quality |
| Argou-Cardozo, 20184 | Y | PY | Y | PY | Y | Y | PY | PY | N | N | No MA | No MA | N | Y | No MA | Y | Critically Low quality |
| Herman, 20228 | Y | PY | Y | PY | N | N | PY | PY | N | N | No MA | No MA | N | N | No MA | Y | Critically Low quality |
| Ho, 20209 | Y | N | Y | PY | Y | N | PY | PY | N | N | No MA | No MA | N | Y | No MA | Y | Critically Low quality |
| Nitschke, 202016 | Y | PY | Y | Y | N | N | PY | PY | N | N | No MA | No MA | N | Y | No MA | Y | Critically Low quality |
| Nogay, 202117 | Y | N | Y | N | N | N | PY | PY | N | N | No MA | No MA | N | N | No MA | Y | Critically Low quality |
| Soltysova, 202219 | Y | N | Y | PY | N | N | PY | PY | N | N | No MA | No MA | N | N | No MA | Y | Critically Low quality |
| Srikantha, 201920 | Y | PY | N | PY | N | N | PY | PY | N | N | No MA | No MA | N | N | No MA | Y | Critically Low quality |
| West, 202222 | Y | N | Y | PY | N | N | N | PY | N | N | Y | N | N | Y | N | Y | Critically Low quality |
| Zafar, 202124 | Y | N | Y | PY | N | N | PY | PY | N | N | No MA | No MA | N | N | No MA | N | Critically Low quality |
| Alvares, 202125 | Y | PY | Y | PY | Y | Y | PY | Y | Y | N | No MA | No MA | Y | Y | No MA | Y | Moderate quality |
| Basso, 202212 | Y | Y | Y | PY | Y | Y | PY | PY | Y | N | No MA | No MA | Y | Y | No MA | Y | Moderate quality |
| Ligezka, 202128 | Y | PY | Y | PY | Y | Y | PY | PY | Y | N | No MA | No MA | Y | Y | No MA | Y | Moderate quality |
| Martinez-Gonzalez, 202029 | Y | PY | Y | PY | Y | Y | PY | PY | Y | N | No MA | No MA | Y | Y | No MA | Y | Moderate quality |
| Prosperi, 202234 | Y | PY | Y | PY | Y | Y | PY | Y | Y | N | No MA | No MA | Y | Y | No MA | Y | Moderate quality |
| Tan, 202136 | Y | PY | Y | PY | Y | Y | PY | PY | Y | N | No MA | No MA | Y | Y | No MA | Y | Moderate quality |
| Yang, 202037 | Y | PY | Y | PY | Y | Y | PY | PY | Y | N | No MA | No MA | Y | Y | No MA | Y | Moderate quality |
| Amadi, 202226 | Y | PY | Y | PY | N | N | PY | PY | Y | N | No MA | No MA | N | Y | No MA | N | Low quality |
| Ng, 201931 | Y | PY | Y | PY | Y | Y | PY | Y | N | N | No MA | No MA | Y | Y | No MA | Y | Low quality |
| Brzoska-Konkol, 202238 | Y | N | Y | PY | N | N | N | Y | N | N | No MA | No MA | N | N | No MA | Y | Critically Low quality |
| Diaz Vargas, 202239 | Y | N | Y | PY | Y | Y | N | PY | N | N | No MA | No MA | N | Y | No MA | Y | Critically Low quality |
| Lasheras, 202127 | Y | PY | Y | PY | Y | Y | PY | PY | N | N | No MA | No MA | N | N | No MA | Y | Critically Low quality |
| Mitchell, 202230 | Y | PY | Y | PY | N | N | N | PY | N | N | No MA | No MA | N | Y | No MA | N | Critically Low quality |
| Nogay, 202232 | Y | N | Y | N | Y | Y | PY | PY | N | N | No MA | No MA | N | Y | No MA | Y | Critically Low quality |
| Patel, 202233 | Y | PY | Y | PY | N | N | PY | PY | N | N | No MA | No MA | Y | N | No MA | Y | Critically Low quality |
| Rosi, 202035 | Y | PY | Y | PY | Y | N | PY | PY | N | N | No MA | No MA | N | Y | No MA | Y | Critically Low quality |

Note: Included observational reviews are in white and interventional reviews are in grey. Abbreviations: Y = Yes; N = No; PY = Partial Yes; No MA = no meta-analysis performed.

**Supplementary Figure S1:**

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|  |  |
| --- | --- |
| *High quality* | No or one non-critical weakness, i.e. provides an accurate and comprehensive summary of the results of the available studies that address the question of interest |
| *Moderate quality* | More than one non-critical weakness, but no critical flaws, i.e. may provide an accurate summary of the results of the available studies that were included in the review |
| *Low quality* | One critical flaw with or without non-critical weaknesses, i.e. may not provide an accurate and comprehensive summary of the available studies that address the question of interest |
| *Critically low quality* | More than one critical flaw with or without non-critical weaknesses, i.e. should not be relied on to provide an accurate and comprehensive summary of the available studies |

**Supplementary Figure S2:** Results of Overlap analysis of included observational SRs (n=23)

Table

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Timeline

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**Supplementary Figure S3:** Results of Overlap Optimization analysis of Observational SRs (n=10)

Table

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**Supplementary Figure S4:** Results of Overlap analysis of included interventional SRs (n=16)

Table

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Chart

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**Supplementary Figure S5:** Results of Overlap Optimization analysis of included interventional SRs (n=7)

Table

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**Table

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