**Supporting Information**

Box S1. Search strategy and results in observational studies

Box S2. Search strategy and results in clinical trials

Box S3. PICOS criteria for inclusion of studies

**Box S1 Database search strategy and results of observational studies**

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| --- | --- | --- | --- |
| **Database**  |  **Search strategy** | **Items****found** | **Items****selected** |
| PubMed :http://www.ncbi.nlm.nih.gov/pubmed | (((depression) OR (depressive symptoms) OR (Major Depressive Disorder)) AND ((vitamin D) OR (25-hydroxyvitamin D) OR (25-hydroxycholecalciferol) OR ((25(OH)D)) AND ((aged) OR (aging) OR (“older adults”) OR (“older people”) OR (elderly))) | 610 | 22 |
| Web of science- http://apps-webofknowledge.ez10.periodicos.capes.gov.br/WOS\_GeneralSearch\_input.do?product=WOS&search\_mode=GeneralSearch&SID=3DPjTQtaLeODIEzPIty&preferencesSaved= | ("vitamin d" OR 25-hydroxycholecalciferol OR 25(OH)D OR 25-hydroxyvitamin D) AND (depression OR "depressive symptoms" OR "Major Depressive Disorder") AND (aged OR aging OR “older adults” OR “older people” OR elderly) | 651 | 7 |
| Science Direct: http://www.sciencedirect.com/ | (depression OR "depressive symptoms") AND ("25-hydroxyvitamin D" OR "vitamin D" OR "25-hydroxycholecalciferol") AND (“older adults” OR “older people” OR elderly) | 6,173 | 0 |
| Scopus: http://www.scopus.com/ | ( TITLE-ABS-KEY ( "depressive symptoms" OR depression ) AND TITLE-ABS-KEY ( "vitamin D" OR "25-Hydroxyvitamin D" OR 25-hydroxycholecalciferol ) AND TITLE-ABS-KEY ( elderly OR aged OR "older adults" OR "older people" ) | 1,074 | 5 |
| Embase - https://www.embase.com/#search | ('major depression':ti,ab,kw OR depression:ti,ab,kw) AND ('vitamin d':ti,ab,kw OR calcifediol:ti,ab,kw OR '25 hydroxyvitamin d':ti,ab,kw OR 'vitamin d deficiency':ti,ab,kw) AND ('older adults':ti,ab,kw OR aged:ti,ab,kw OR 'older people':ti,ab,kw) | 301 | 0 |
| From article references | - | **-** | 9 |

**Box S2 Database search strategy and results of clinical trial studies**

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| **Database**  |  **Search strategy** | **Items found** | **Items selected** |
| PubMed :http://www.ncbi.nlm.nih.gov/pubmed | ((depression OR "depressive symptoms" OR "major depressive disorder") AND ("vitamin D" OR Cholecalciferol OR Ergocalciferol OR "vitamin D3" OR "vitamin D2")) AND ("older adults" OR elderly OR "older people") | 569 | 13 |
| Web of science- http://apps-webofknowledge.ez10.periodicos.capes.gov.br/WOS\_GeneralSearch\_input.do?product=WOS&search\_mode=GeneralSearch&SID=3DPjTQtaLeODIEzPIty&preferencesSaved= | depress\*) AND TÓPICO: ("vitamin D" OR Cholecalciferol OR Ergocalciferol OR "vitamin D3" OR "vitamin D2") AND TÓPICO: ("older adults" OR elderly OR "older people") | 253 | 2 |
| Scopus: http://www.scopus.com/ | ( TITLE-ABS-KEY ( "depressive symptoms" OR depression OR “major AND depressive AND disorder” ) AND TITLE-ABS-KEY ( "vitamin D" OR cholecalciferol OR ergocalciferol OR "vitamin D3" OR "vitamin D2") AND TITLE-ABS-KEY ( elderly OR aged OR "older adults" OR "older people" ) ) | 159 | 4 |
| Science Direct: http://www.sciencedirect.com/ | (depression OR "depressive symptoms") AND (Cholecalciferol OR "vitamin D3" OR "vitamin D2") AND (“older adults” OR “older people” OR elderly) | 1132 | 0 |
| Embasehttps://www.embase.com/#search | (depression:ti,ab,kw OR 'major depression':ti,ab,kw) AND ('vitamin d':ti,ab,kw OR colecalciferol:ti,ab,kw OR ergocalciferol:ti,ab,kw) AND ('older adults':ti,ab,kw OR aged:ti,ab,kw OR 'older people':ti,ab,kw) | 281 | 3 |
| From article reference | - | **-** | 1 |

**Box S3. PICOS criteria for inclusion of studies**

|  |  |
| --- | --- |
| **Parameter** |  **Inclusion criteria** |
| Population | Older adults |
| Intervention | Vitamin D (for clinical studies) |
| Comparator  | No comparators were identified for this study |
| Outcome  | Depression, depressive symptoms |
| Study design  | Observational studies (cohort, cross-sectional and case-control studies) and Clinical trials published before April 30, 2021 |