1. Supplementary Materials

File S1. Pubmed literature search terms

#1 Search ("vitamin d"[MeSH Terms] OR "ergocalciferols"[MeSH Terms] OR vitamin d[Text Word] OR "calcifediol"[MeSH Terms] OR calcifediol[Text Word] OR "25-hydroxyvitamin D"[All Fields] OR 25 hydroxyvitamin d[Text Word] OR "cholecalciferol"[MeSH Terms] OR cholecalciferol[Text Word] OR "vitamin d deficiency"[MeSH Terms] OR vitamin d deficiency[Text Word])

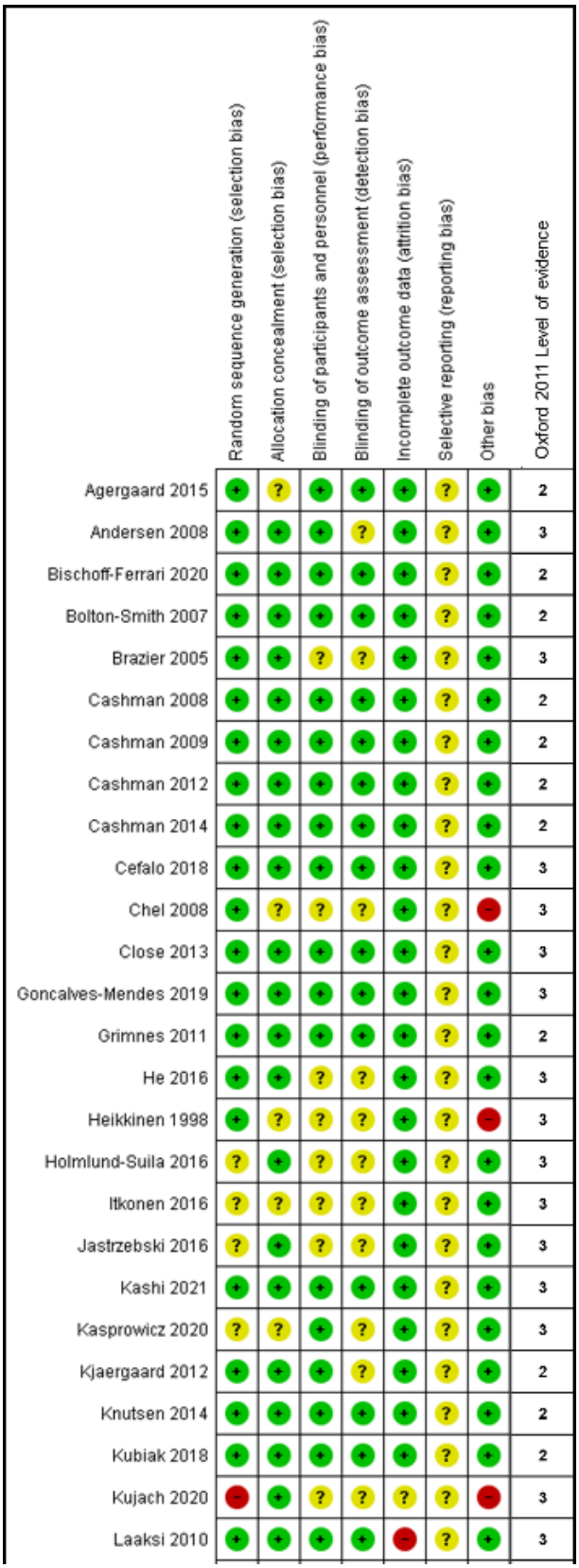
#2 Search ("dietary supplements"[MeSH Terms] OR dietary supplement[Text Word])

#3 Search (#1 AND #2)

These results were then pre-filtered in PUBMED by any type of study type:

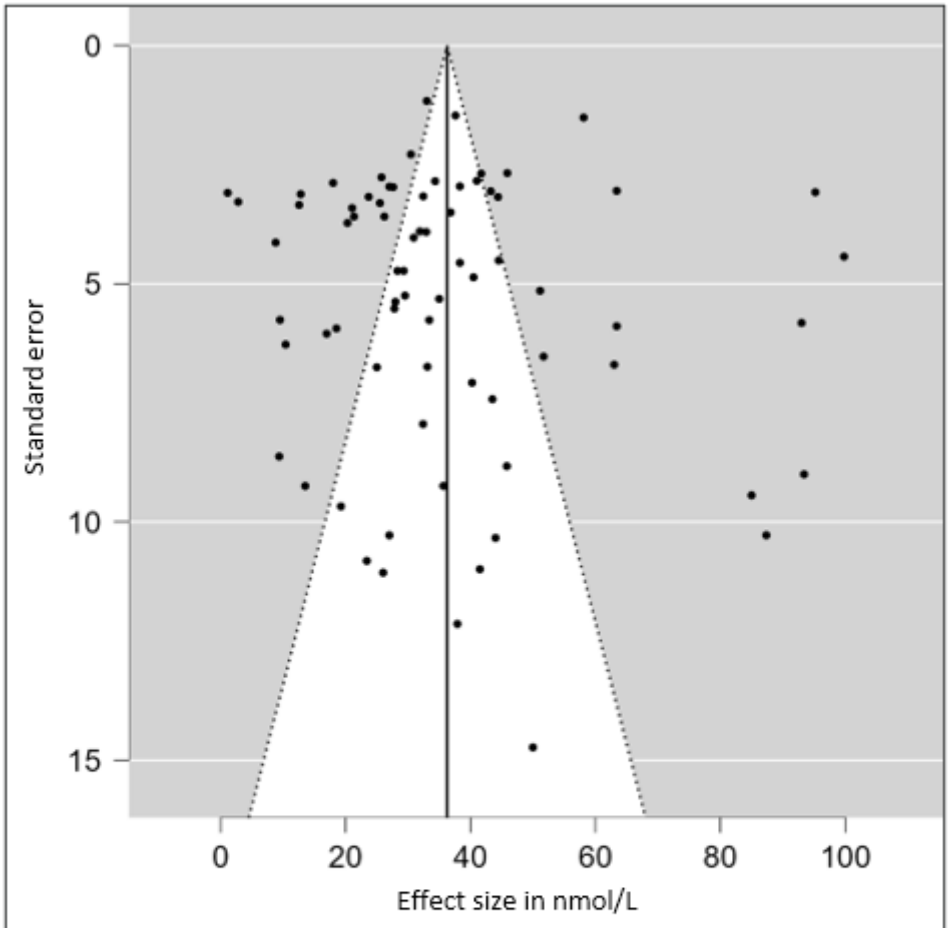
Clinical Study, Clinical Trial, Clinical Trial, Phase I, Clinical Trial, Phase II, Clinical Trial, Phase III, Clinical Trial, Phase IV, Comparative Study, Controlled Clinical Trial, Dataset, Evaluation Study, Multicenter Study, Observational Study, Pragmatic Clinical Trial, Randomized Controlled Trial, Research Support, American Recovery and Reinvestment Act, Research Support, N.I.H., Extramural, Research Support, N.I.H., Intramural, Research Support, Non-U.S. Gov't, Research Support, U.S. Gov't, Non-P.H.S., Research Support, U.S. Gov't, P.H.S., Research Support, U.S. Gov't, Twin Study, Validation Study.

Figure S1. Risk of bias and Level of evidence evaluation.




Lehmann 2015 2
Lerchbaum 2017 2
Lerchbaum 2019 2
Lithgow 2018 2
Maboshe 2021 2
Martineau 2015 2
Mielgo-Ayuso 2018 2
Nygaard 2014 2
O'Sullivan 2011 2
Ooms 1995 3
Osmancevic 2016 3
Prietl 2014 2
Sneve 2008 3
Trummer 2020 2
Urbain 2011 3
Vaes 2018 2
Välimäki 2016 3
Viljakainen 2009 3
Wamberg 2013 3
Wood 2012 2
Wyon 2016 2
Wyon 2021 2
Zittermann 2009 2

Figure S2. Funnel plot of the overall population.



Regression test for funnel plot - asymmetry ("Egger's Test")

	z	p
sei	1.314	0.189

Figure S3. Forest Plot Northern latitude <50 nmol/L ethnic minorities vs. northern European population in 18-59 year olds.

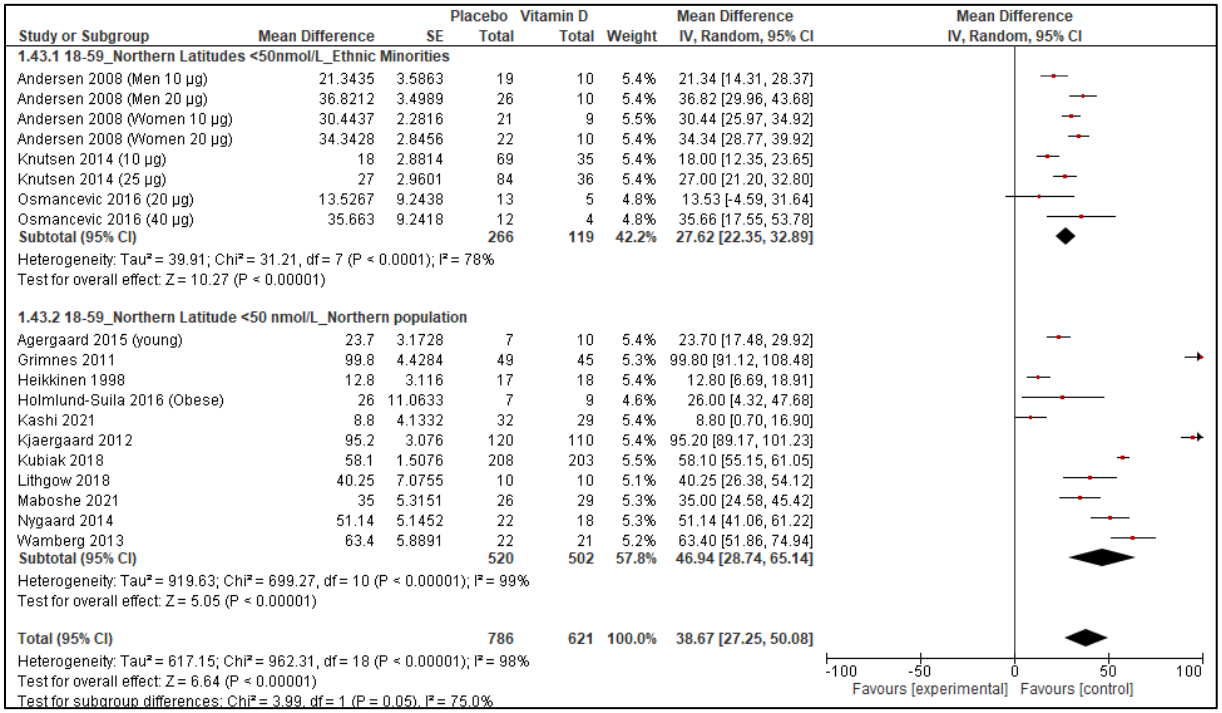


Table S1. Subgroup characteristics +/- calcium addition.

Subgroup (number of study arms)	Baseline 25(OH)D in nmol/L*	Dose µg/d*	Weighted mean difference in nmol/L	Serum increment in nmol/L per 2,5 µg/d Vit.D[ł]
Calcium addition (n=11)	50.67	41.91	31.70	1.68
No Calcium addition (n=62)	38.90	44.93	37.17	1.73
Calcium addition <50 nmol/L (n=3)	29.19	21.80	27.51	3.72
No Calcium addition <50 nmol/L (n=38)	32.54	64.68	39.52	1.62
Calcium addition ≥50 nmol/L (n=8)	58.90	50.00	33.31	1.34
No Calcium addition ≥50 nmol/L (24)	62.00	56.39	32.34	1.05
Calcium addition 18-59 Jahre (n=6)	47.28	51.82	34.90	1.50
No Calcium addition 18-59 Jahre (n=48)	44.78	72.24	37.69	1.23
Calcium addition ≥60 Jahre (n=6)	53.68	28.03	27.80	2.31
No Calcium addition ≥60 Jahre (n=14)	38.87	28.02	35.80	3.18

*: Weighted mean is the product of percentage weighting of studies and corresponding parameter

ł Increment 25(OH)D in nmol/L per 2.5µg/d (100 IU/d) was calculated as follows: [(Achieved weighted mean 25(OH)D concentration - Baseline weighted mean 25(OH)D concentration)/vitamin D dose µg/d)] × 2,5