Supplementary Materials

Table S1. Search strategy in PubMed.

Search	Query	Results
#4	#1 AND (#2 OR #3)	1,450
#3	"Comorbidity"[Mesh] OR Comorbidit*[tiab] OR "Co morbidit*"[tiab] OR "underlying dis*"[tiab] OR "co existing dis*"[tiab] OR "co occurring dis*"[tiab] OR "concurrent dis*"[tiab] OR "underlying condition*"[tiab] OR "co-existing condition*"[tiab] OR "co-occurring condition*"[tiab] OR "concurrent condition*"[tiab] OR Multimorbidit*[tiab] OR "Multi morbidit*"[tiab]	297,875
#2	"Diabetes Mellitus"[Mesh] OR "Hypoglycemic Agents"[Mesh] OR "Hypoglycemic Agents" [Pharmacological Action] OR Prediabete*[tw] OR diabetes[tw] OR NIDDM[tw] OR IDDM[tw] OR T1DM[tw] OR T2DM[tw] OR diabetic*[tw] OR insulin*[tw] OR metformin*[tw] OR rosiglitazon*[tw] OR troglitazon*[tw] OR pioglitazon*[tw] OR hypoglycem*[tw] OR hypoglycaem*[tw]	1,082,697
#1	"COVID-19 Vaccines"[Mesh] OR ((Covid*[tw] OR corona*[tw] OR ncov[tw] OR "SARS CoV"[tw] OR SARSCoV*[tw] OR Coronavirus[tw] OR Pfizer[tw] OR comirnaty[tw] OR spikevax[tw] OR moderna[tw] OR "mRNA 1273"[tw] OR "Ad26.COV*"[tw] OR Janssen[tw] OR Johnson[tw] OR 78436735*[tw] OR BNT162*[tw]) AND (vaccin*[tw]))	31,885

Table S2: Search strategy in Embase.com.

Search	Query	Results
#5	#4 NOT ('chapter'/it OR 'conference abstract'/it OR 'conference paper'/it OR 'conference review'/it OR 'editorial'/it OR 'erratum'/it OR 'letter'/it OR 'note'/it OR 'review'/it OR 'short survey'/it)	1,301
#4	#1 AND (#2 OR #3)	2,516
#3	'comorbidity'/exp OR (Comorbidit* OR 'Co morbidit*' OR 'underlying dis*' OR 'co existing dis*' OR 'co occurring dis*' OR 'concurrent dis*' OR 'underlying condition*' OR 'co-existing condition*' OR 'co-occurring condition*' OR 'concurrent condition*' OR Multimorbidit* OR 'Multi morbidit*'):ti,ab,kw	522,745
#2	'diabetes mellitus'/exp OR 'antidiabetic agent'/exp OR (Prediabete* OR diabetes OR NIDDM OR IDDM OR T1DM OR T2DM OR diabetic* OR insulin* OR metformin* OR rosiglitazon* OR troglitazon* OR pioglitazon* OR hypoglycem* OR hypoglycaem*):ti,ab,kw	1,721,381
#1	'SARS-CoV-2 vaccine'/exp OR ((Covid* OR corona* OR ncov OR 'SARS CoV' OR SARSCoV* OR Coronavirus OR Pfizer OR comirnaty OR spikevax OR moderna OR 'mRNA 1273' OR 'Ad26.COV*' OR Janssen OR Johnson OR 78436735* OR BNT162*) AND (vaccin*)):ti,ab,kw	33,038

Table S3: Search strategy in Clarivate Analytics/Web of Science Core Collection.

Search	Query	Results
#4	#1 AND (#2 OR #3)	1,187
#3	TS=(Comorbidit* OR "Co morbidit*" OR "underlying dis*" OR "co existing dis*" OR "co occurring dis*" OR "concurrent dis*" OR "underlying condition*" OR "co-existing condition*" OR "co-occurring condition*" OR "concurrent condition*" OR Multimorbidit* OR "Multi morbidit*")	251,769
#2	TS=(Prediabete* OR diabetes OR NIDDM OR IDDM OR T1DM OR T2DM OR diabetic* OR insulin* OR metformin* OR rosiglitazon* OR troglitazon* OR pioglitazon* OR hypoglycem* OR hypoglycaem*)	1,216,530
#1	TS=((Covid* OR corona* OR ncov OR "SARS CoV" OR SARSCoV* OR Coronavirus OR Pfizer OR comirnaty OR spikevax OR moderna OR "mRNA 1273" OR "Ad26.COV*" OR Janssen OR Johnson OR 78436735* OR BNT162*) AND (vaccin*))	28,036

Table S4: Search strategy in Wiley/Cochrane Library.

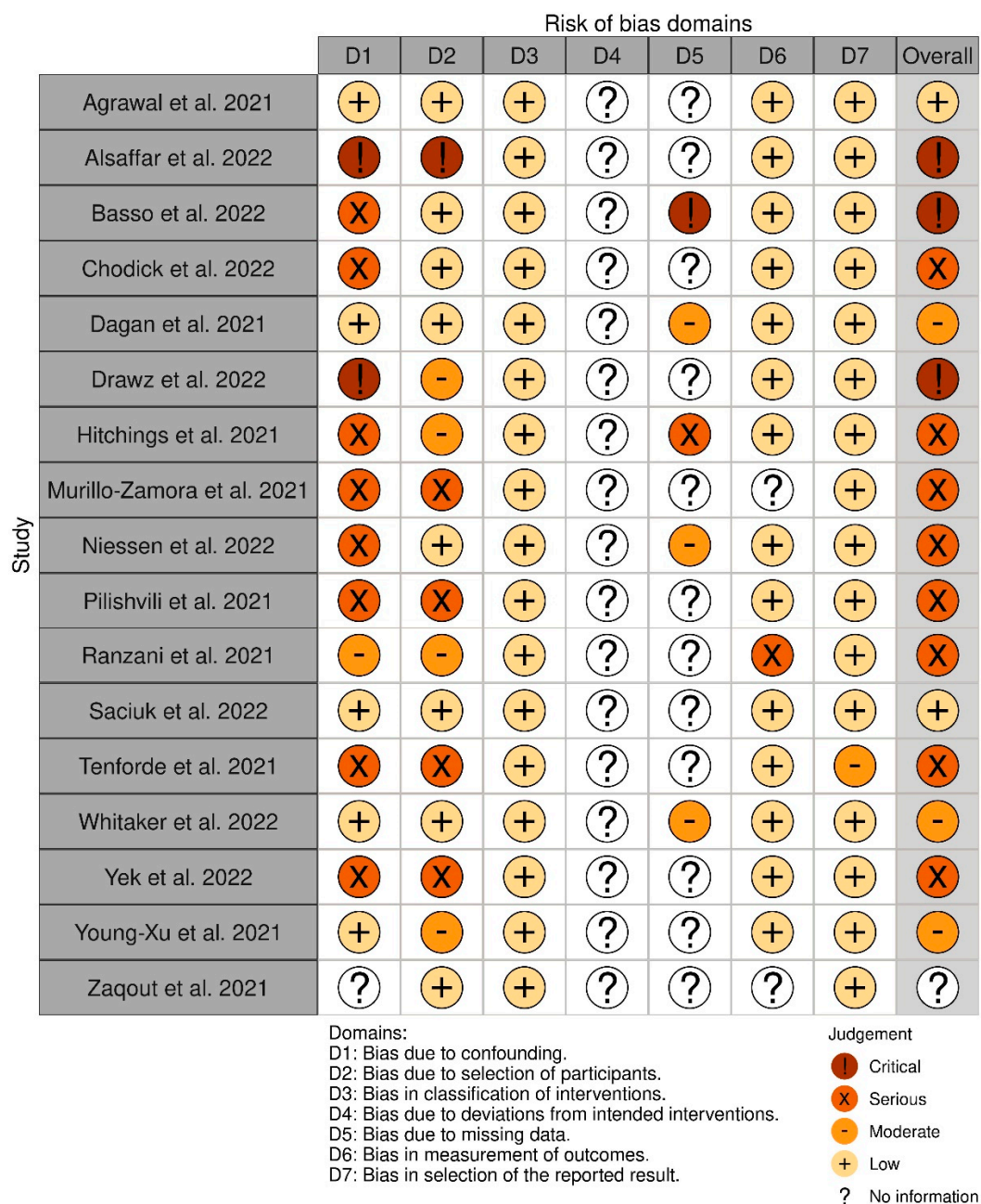| Search	Query	Results
#4	#1 AND (#2 OR #3)	110
#3	(Comorbidit* OR "Co NEXT morbidit*" OR "underlying NEXT dis*" OR "co existing NEXT dis*" OR "co occurring NEXT dis*" OR "concurrent NEXT dis*" OR "underlying NEXT condition*" OR "co-existing NEXT condition*" OR "co-occurring NEXT condition*" OR "concurrent NEXT condition*" OR Multimorbidit* OR "Multi NEXT morbidit*"):ti,ab,kw	22,363
#2	(Prediabete* OR diabetes OR NIDDM OR IDDM OR T1DM OR T2DM OR diabetic* OR insulin* OR metformin* OR rosiglitazon* OR troglitazon* OR pioglitazon* OR hypoglycem* OR hypoglycaem*):ti,ab,kw	131,680
#1	((Covid* OR corona* OR ncov OR "SARS NEXT CoV" OR SARSCoV* OR Coronavirus OR Pfizer OR comirnaty OR spikevax OR moderna OR "mRNA NEXT 1273" OR "Ad26.COV*" OR Janssen OR Johnson OR 78436735* OR BNT162*) AND (vaccin*)):ti,ab,kw	1,402

Risk of bias domains

Study	D1	D2	D3	D4	D5	D6	D7	Overall
Agrawal et al. 2021	+	+	+	?	?	+	+	+
Alsaffar et al. 2022	!	!	+	?	?	+	+	!
Basso et al. 2022	X	+	+	?	!	+	+	!
Chodick et al. 2022	X	+	+	?	?	+	+	X
Dagan et al. 2021	+	+	+	?	-	+	+	-
Drawz et al. 2022	!	-	+	?	?	+	+	!
Hitchings et al. 2021	X	-	+	?	X	+	+	X
Murillo-Zamora et al. 2021	X	X	+	?	?	?	+	X
Niessen et al. 2022	X	+	+	?	-	+	+	X
Pilishvili et al. 2021	X	X	+	?	?	+	+	X
Ranzani et al. 2021	-	-	+	?	?	X	+	X
Saciuk et al. 2022	+	+	+	?	?	+	+	+
Tenforde et al. 2021	X	X	+	?	?	+	-	X
Whitaker et al. 2022	+	+	+	?	-	+	+	-
Yek et al. 2022	X	X	+	?	?	+	+	X
Young-Xu et al. 2021	+	-	+	?	?	+	+	-
Zaqout et al. 2021	?	+	+	?	?	?	+	?

Domains:
D1: Bias due to confounding.
D2: Bias due to selection of participants.
D3: Bias in classification of interventions.
D4: Bias due to deviations from intended interventions.
D5: Bias due to missing data.
D6: Bias in measurement of outcomes.
D7: Bias in selection of the reported result.

Judgement
! Critical
X Serious
- Moderate
+ Low
? No information

Figure S1. Risk of bias by domain and overall, for each study separately.

Bias due to confounding
Bias due to selection of participants
Bias in classification of interventions
Bias due to deviations from intended interventions
Bias due to missing data
Bias in measurement of outcomes
Bias in selection of the reported result
Overall risk of bias

0% 25% 50% 75% 100%

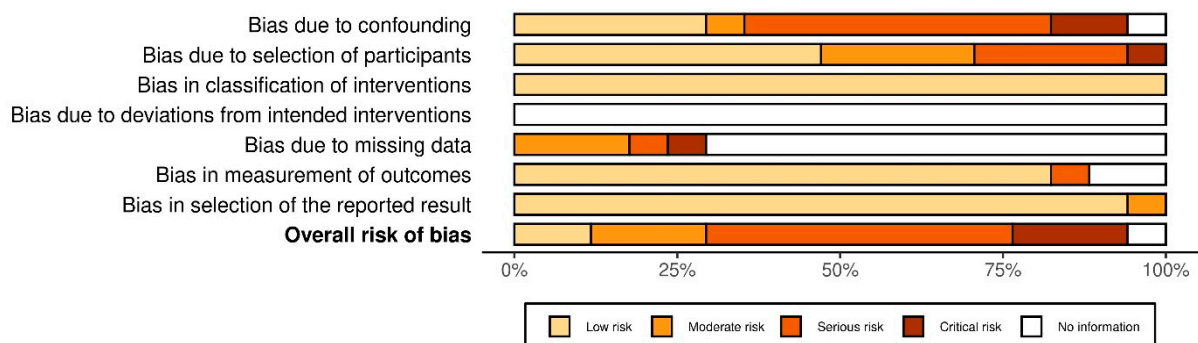Low risk   Moderate risk   Serious risk   Critical risk   No information

Figure S2. Risk of bias in included studies, by domain and overall.