

# 2022 年三軍總醫院第二次實證醫學類文獻查證 競賽



三軍總醫院

第一組

# 我們的團隊



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# 臨床場景



## 病人狀況

1. 35歲黃女士，曾接受兩劑moderna疫苗
2. 懷孕39周至醫院待產，PCR=12確診新冠病毒

## 瞭解病人的主要問題

1. 擔心將**新冠病毒**傳給胎兒，造成胎兒感染？
2. 確診新冠病毒後是否能**母乳哺餵**？

## 尊重病人的治療意願

1. **胎兒出生**後是否能**接受**任何**治療**？

# 背景知識

## 病人族群及疾病

### [疾病] Covid-19 (+) in pregnant patients

#### ✓ 特性

1. 懷孕女性確診新冠病毒其表現症狀與一般受感染成人相同
2. 建議無症狀/輕微症狀懷孕女性在家自主隔離; 若有較為嚴重症況或出現呼吸道併發症及需住院接受治療

#### ✓ 治療

透過SDM，需考慮產婦狀況的嚴重程度、潛在風險因素、胎齡、潛在的產婦益處

1. 一般症狀緩解(acetaminophen 2g/天)
2. 抗病毒藥物/單株抗體治療

(目前在COVID-19的藥物無孕婦相關離床試驗)

Remdesivir /Tocilizumab

\*\*切注意胎兒監測

### ≡ DynaMed®

#### COVID-19 and Pregnant Patients

Management of COVID-19 Infection in Pregnant Patients > Overview

#### Determination of Outpatient, Inpatient, or Intensive Care Management of COVID-19 Infection in Pregnant Patients

- outpatient monitoring with a 14-day self-quarantine can be considered for pregnant patients with COVID-19 who have mild symptoms or are asymptomatic (SMFM 2021 Feb 2 PDF [📄](#)) - see [Outpatient and Inpatient Monitoring and Management of COVID-19 Infection in Pregnant Patients](#) for outpatient care protocols
- inpatient monitoring indicated for pregnant patients
  - indications for pregnant patients
    - elevated risk due to presence of severe COVID-19 symptoms or if clinical or social risk factors of COVID-19 infection and evidence of respiratory compromise or complications in an ambulatory setting (SMFM 2021 Feb 2 PDF [📄](#))
    - clinical findings that warrant pharmacological treatments (SMFM 2021 Feb 2 PDF [📄](#))
  - should be considered for
    - high-risk obstetric comorbidities
    - an inability to tolerate oral intake



# 背景知識

## 病人族群及疾病

### [疾病] Covid-19 (+) in pregnant patients\_breastfeeding

#### ✓ 特性

1. 目前無證據顯示covid-19會透過母乳傳播。
2. 可以進行母乳餵養，若暫時分居之母嬰，應由母親擠乳汁後，由健康的護理人員將母乳喂給新生兒。

≡ DynaMed<sup>®</sup>

#### COVID-19 and Pregnant Patients

Management of COVID-19 Infection in Pregnant Patients > Overview

- [breastfeeding](#) for patients with suspected or confirmed COVID-19
  - for mother/infant pairs who are rooming-in, breastfeeding can be considered with use of proper hand washing and other preventative measures to decrease risk of exposure for infant
  - for mother/infant pairs who are temporarily separated, mothers who wish to breastfeed should be encouraged to express their breastmilk to establish and maintain milk supply and expressed milk should be fed to newborn by a healthy caregiver

# 背景知識

## 病人族群及疾病

[治療] newborn/ pediatric

### COVID-19 (+) treatment

#### 特性

1. 兒童與新生兒在COVID-19的治療目前無大型臨床試驗，基本是根據症狀給予治療用藥
2. 可能導致MIS-C發生，因此需更加密切注意感染



#### 治療

1. 一般症狀緩解
2. 中重症用藥

Dexamethasone

Remdesivir/ Tocilizumab

UpToDate<sup>®</sup>

[Why UpToDate?](#) [Product](#) [Editorial](#) [Subscription Options](#)

#### Remdesivir: Pediatric drug information

##### Dosing: Neonatal

**COVID-19 (hospitalized patients); treatment: Note:** Initiate as soon as possible after diagnosis of symptomatic COVID-19.

Neonates weighing <3.5 kg: **Note:** Very limited data available; optimal dose not defined; contacting Gilead before use is highly recommended (1-833-445-3230 or via email at [GileadClinicalTrials@gilead.com](mailto:GileadClinicalTrials@gilead.com)). Population not included in former FDA emergency use authorization or product labeling (FDA 2022). Dosing provided is based on 4 reported cases.

Lyophilized powder: IV: Loading dose: 2.5 to 5 mg/kg on day 1, followed by 1.25 mg/kg/dose once daily. Dosing based on 5 reported cases (GA: 31 to 34 weeks; PNA: 8 days to 6 weeks) in which patients received remdesivir for 4 to 11 days. All patients were extubated and discharged from the hospital after receiving remdesivir; no adverse effects were noted (Frauenfelder 2020; Saikia 2021a; Saikia 2021b; Sarhan 2022).

# 根據臨床問題形成 PICO

選擇此 PICO 原因

- ✓ 這是病人最關心
- ✓ 最可能面對的問題
- ✓ 最關乎病人的生活品質



	PICO 1	PICO 2
P	新生兒感染covid-19	新生兒
I	Antiviral / 單株抗體COVID-19藥物治療	母體確診新冠病毒垂直感染胎兒
C	保守治療/症狀緩解藥物	NA
O	好處:症狀緩解/ 住院率/ MIS-C發生率 壞處:藥物副作用/ 不良反應/ 併發症	感染因子風險分析 母嬰血液垂直感染 新生兒確診數/ 存活率
類型	治療型問題	病因型問題



# 關鍵字

先以『P』AND『I』做搜尋，並利用OR增加搜尋廣度，再依據結果適當加入『C』和『O』進一步搜尋。

## 清楚描述我們所選的 PICO

8

	中文關鍵字	英文關鍵字	同義字 / MeSH / Emtree
<b>P</b>	新生兒	Infant, Newborn SARS-CoV-2 offspring neonate	Infant, Newborn Offspring neonate Pregnancy Outcome / epidemiology* SARS-CoV-2*
<b>I</b>	母體確診新冠病毒垂直感染胎兒	COVID-19 (+) Vertical Transmission	COVID-19 / diagnosis COVID-19 / transmission* COVID-19 Nucleic Acid Testing Transmission, Vertical* Infectious Disease Transmission, Vertical* Pregnancy Complications, Infectious*
<b>C</b>	NA	NA	NA
<b>O</b>	感染因子風險: 母嬰血液垂直感染 新生兒確診數 PCR陽性/ 存活率	Vertical Transmission Survival Newborn COVID-19 cases PCR(+)	Pregnancy Outcome* Pregnancy Complications, Infectious / diagnosis Pregnancy Complications, Infectious / virology* Delivery of Health Care Pediatrics / statistics & numerical data Transmission, Vertical* COVID-19 Nucleic Acid Testing* / methods Positive Reactions



# 檢索策略及資料庫

搜尋資料庫：

「二級資料庫」Cochrane →

「一級資料庫」Embase、PubMed、華藝線上圖書館

限制研究類型 (治療/預防型問題)

Systematic Review (Meta-Analysis)[Major]、  
Randomized Controlled Trial

限制有全文可閱讀、限制年份

最符合我們的 PICO



# Secondary Database Cochrane Library

## 使用檢索功能提升搜尋效率

10



English English Sign In

Cochrane Reviews Trials Clinical Answers About Help About Cochrane

### Advanced Search

Search Search manager Medical terms (MeSH) PICO search<sup>BETA</sup>

COVID-19 Vertical Transmission  
AND Newborn

輸入關鍵字

『COVID-19 Vertical Transmission  
AND Newborn』

Search limit

### Filter your results

Year

Year first published

2022 ..... 1  
2021 ..... 3  
2020 ..... 5  
2019 ..... 0  
2018 ..... 0

Custom Range:

2017 to 2022

Apply Clear

Cochrane Reviews 0  
Cochrane Protocols 0  
Trials 9  
Editorials 0  
Special Collections 0  
Clinical Answers 0  
More

使用Limit功能

鎖定『Review、Trials』之文章  
限定『2017-2022』文章

# Primary Database Pubmed

## 使用檢索功能提升搜尋效率

NIH National Library of Medicine  
National Center for Biotechnology Information

Log in

PubMed Advanced Search Builder

PubMed.gov  
User Guide

Add terms to the query

All Fields

**COVID-19 AND Vertical Transmission\* AND Newborn**

TEXT AVAILABILITY

Abstract

Free full text

Full text

ARTICLE ATTRIBUTE

Associated data

ARTICLE TYPE

Books and Documents

Clinical Trial

Meta-Analysis

Randomized Controlled Trial

Review

Systematic Review

PUBLICATION DATE

1 year

5 years

10 years

Custom Range

- ✓ 輸入關鍵字、同義字、MeSH
- ✓ 適當使用布林邏輯『AND』、『OR』
- ✓ 適當使用截切字元 \*

限定適當文章類型

『Meta-Analysis』、『Systematic Reviews』

『Randomized Controlled Trial』

限定適當搜尋範圍

限定『5年』內之文章

限定『Full text』有全文可供評讀

限定『Humans』species

# Primary Database Embase

## 使用檢索功能提升搜尋效率



Embase

[Search](#) [Emtree](#) [Journals](#) [Results](#) [My tools](#)

PICO Search

[Quick](#) [PICO](#) [PV Wizard](#) [Medical device](#) [Advanced](#) [Drug](#) [Disease](#) [Device](#) [Citation information](#)

Evidence Based Medicine

- Cochrane Review
- Systematic Review
- Meta Analysis

Date limits

 Publication Years from:

2017 ▼ to 2022 ▼

Population

Newborn

Interventio

COVID-19 AND Vertical Transmission\*

Comparison

e.g. placebo

Outcome

e.g. risk

 /mj  /de  /exp/mj  /exp  /br

- ✓ 使用 PICO Search 輸入關鍵字
- ✓ 使用預設搜尋exp.
- ✓ 利用內建的 Synonyms 系統擴大搜尋範圍
- ✓ 適當使用布林邏輯『AND』『OR』, Truncation\*

限定適當文章類型

『Meta-Analysis』、『Systematic Reviews』、『Randomized Controlled Trial』

限定適當搜尋範圍

限定『2017-2022』之文章

# Primary Database 華藝線上圖書館

## 使用檢索功能提升搜尋效率

13

文獻搜尋的方法與技巧



Language ▾

國軍醫院聯合圖書館-國防醫學院, 您好!

瀏覽

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| 文章 | 出版品 |

母嬰垂直感染 **AND** 新生兒



更多選項 ▾



查詢歷史

年代

語言

2021年以後

繁體中文 (1,079)

2019年以後

簡體中文 (4,159)

2017年以後

英文 (138)

其他 (3)

✓ 輸入關鍵字、同義字

✓ 適當使用布林邏輯『**AND**』、『**OR**』

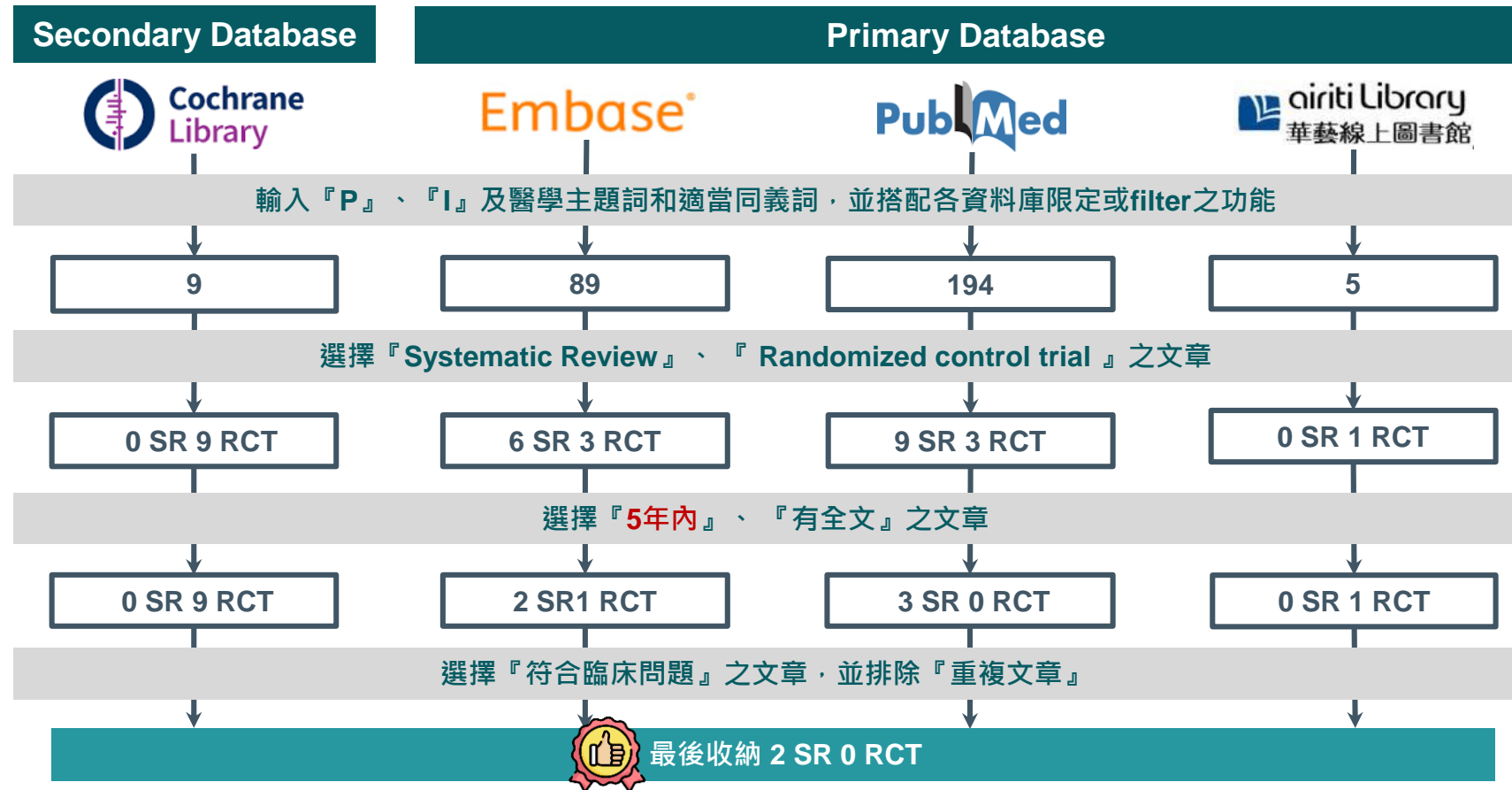
限定語言

『**繁體中文**』、『**簡體中文**』

限定適當搜尋範圍


年代『**2017-2022**』之文章

# 搜尋流程綜覽



# 各資料庫收納文獻結果



來源	標題	年份
	SARS-CoV-2 positivity in offspring and timing of mother-to-child transmission: living systematic review and meta-analysis[2022]	<b>2022</b>
	Effects of the COVID-19 pandemic on maternal and perinatal outcomes: a systematic review and meta-analysis[2021]	<b>2021</b>

# 比較收納文獻

挑選文獻的歷程與理由，與能否回答臨床提問。



16

文獻搜尋的方法與技巧

	SARS-CoV-2 positivity in offspring and timing of mother-to-child transmission: living systematic review and meta-analysis[2022]	我們的 PICO 相符合 評比
<b>M</b>	Systematic review and meta-analysis	●
<b>P</b>	Newborn/ offspring	●
<b>I</b>	Vertical Transmission	●
<b>C</b>	NA	●
<b>O</b>	COVID-19 PCR(+) Vertical Transmission Newborn Survival	●



# 比較收納文獻

挑選文獻的歷程與理由，與能否回答臨床提問。

17

	Effects of the COVID-19 pandemic on maternal and perinatal outcomes: a systematic review and meta-analysis 2021	我們的 PICO	評比
<b>M</b>	Systematic review and meta-analysis	Systematic review and meta-analysis	●
<b>P</b>	Newborn/ offspring	Newborn/ offspring	●
<b>I</b>	Pregnancy positive / Vertical Transmission	Vertical Transmission	●
<b>C</b>	NA	NA	●
<b>O</b>	pontaneous preterm birth labour induction; modes of delivery neonatal intensive care unit admission	COVID-19 PCR(+) Vertical Transmission Newborn Survival	●

# 收納文獻比較總整理

選出可以回答臨床提問的最佳文獻

這篇文獻「納入的理由」

- 最符合臨床問題
- 發表年份較新
- 最佳的研究設計(SR- cohort)
- 有全文可供評讀

## 收納文章

SARS-CoV-2 positivity in offspring and timing of mother-to-child transmission: living systematic review and meta-analysis[2022]

Effects of the COVID-19 pandemic on maternal and perinatal outcomes: a systematic review and meta-analysis[2021]

M P I C O



# 嚴格評讀之文獻及評讀工具

thebmj

covid-19

Research ▾

Education ▾

News & Views ▾

Campaigns ▾

Jobs ▾

## Research

### SARS-CoV-2 positivity in offspring and timing of mother-to-child transmission: living systematic review and meta-analysis

BMJ 2022 ; 376 doi: <https://doi-org.utorpa.ndmctsggh.edu.tw/10.1136/bmj-2021-067696> (Published 16 March 2022)

Cite this as: *BMJ* 2022;376:e067696



我們的文獻評讀工具是

**Critical Appraisal Skills Programme (2018)  
Systematic Review Checklist**

**CASP**  
Critical Appraisal  
Skills Programme



## Did the review address a clearly focused question? 此篇系統性文獻回顧是否問了一個清楚、明確的問題？

### OBJECTIVES

To assess the rates of SARS-CoV-2 positivity in babies born to mothers with SARS-CoV-2 infection, the timing of mother-to-child transmission and perinatal outcomes, and factors associated with SARS-CoV-2 status in offspring.

### DESIGN

Living systematic review and meta-analysis.

### DATA SOURCES

Major databases between 1 December 2019 and 3 August 2021.

### STUDY SELECTION

Cohort studies of pregnant and recently pregnant women (including after abortion or miscarriage) who sought hospital care for any reason and had a diagnosis of SARS-CoV-2 infection, and also provided data on offspring SARS-CoV-2 status and risk factors for positivity. Case series and case reports were also included to assess the timing and likelihood of mother-to-child transmission in SARS-CoV-2 positive babies.

### WIN ON THIS TOPIC

SARS-CoV-2 infection, the virus and viral fragments in maternal blood, placenta, amniotic fluid, and breast milk,

Two reviewers independently extracted data and assessed study quality. A random effects model was used to synthesise data for rates, with associations reported using odds ratios and 95% confidence intervals. Narrative syntheses were performed when meta-analysis was inappropriate. The World Health Organization classification was used to categorise the timing of mother-to-child transmission (in utero, intrapartum, early postnatal).

### RESULTS

472 studies (206 cohort studies, 266 case series and case reports; 28 952 mothers, 18 237 babies) were included. Overall, 1.8% (95% confidence interval 1.2% to 2.5%; 140 studies) of the 14 271 babies born to mothers with SARS-CoV-2 infection tested positive for the virus with reverse transcriptase polymerase chain reaction (RT-PCR). Of the 592 SARS-CoV-2 positive babies with data on the timing of exposure and type and timing of tests, 14 had confirmed mother-to-child transmission: seven in utero (448 assessed), two intrapartum (18 assessed), and five during the early postnatal period (70 assessed). Of the 800 SARS-CoV-2 positive babies with outcome data, 20 were stillbirths, 23 were neonatal deaths, and eight were early pregnancy losses; 749 babies were alive at the end of follow-up. Severe maternal covid-19 (odds ratio 2.4, 95% confidence interval 1.3 to 4.4), maternal

	此篇研究
P	Newborn/ offspring
I	Vertical Transmission
C	NA
O	COVID-19 PCR(+) Vertical Transmission Newborn Survival

✓ 作者清楚地說明了  
PICO，因此評讀  
結果為Yes。



YES

• NO

• UNCLEAR



## Did the authors look for the right type of papers? 作者是否收納適當的研究類型？

### STUDY SELECTION

**Cohort studies** of pregnant and recently pregnant women (including after abortion or miscarriage) who sought hospital care for any reason and had a diagnosis of SARS-CoV-2 infection, and also **provided data on offspring SARS-CoV-2 status and risk factors for positivity.** Case series and case reports were **also included** to assess the timing and likelihood of mother-to-child transmission in SARS-CoV-2 positive babies.



YES



NO



UNCLEAR

# 3 Do you think all the important, relevant studies were included?

## 所有重要且相關的研究都被納入?

### Search strategy

We searched major databases, preprint servers, and websites that serve as repositories for covid-19 studies, including Medline, Embase, Cochrane database, WHO COVID-19 database, Living Overview of the Evidence platform, China National Knowledge Infrastructure

(CNKI), and Wanfang databases (1 December 2019 to 3 August 2021) for studies (cohort, case series, and case report) on SARS-CoV-2 infection in pregnant and recently pregnant women (including after abortion or miscarriage). No language restrictions were applied. Our searches were coordinated with the EPPI-Centre, the WHO (World Health Organization) Library, and the Cochrane Gynaecology and Fertility group (see supplementary appendix 2).

### 優點

- ✓ 作者盡可能搜尋了各種一級和二級資料庫：
- ✓ 作者更進一步搜尋**相關文章的出處**。
- ✓ **沒有語言限制**與否並無說明



## 4

# Did the review's authors do enough to assess quality of the included studies?

## 作者是否有評估收納研究文獻的品質？

Appendix 5: Quality assessment for risk of bias in non-comparative cohort studies using the tool by Hoy et al

Study	External Validity				Internal validity						Summary
	Representativeness	Sampling frame	Selection	Non-response	Data collection	Case definition	Measurement	Differential verification	Adequate follow up	Appropriate numerator and denominator	Summary
2020 July Informe Epidemiológico Embarazadas y Puerperas sem28, 2020	LOW	HIGH	LOW	LOW	LOW	HIGH	LOW	LOW	HIGH	LOW	LOW
Abdulghani SH 2021	HIGH	HIGH	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW
Abedzadeh-Kalahroudi M 2021	HIGH	HIGH	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW
Adhikari EH 2020	HIGH	HIGH	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW
Agarwal N 2021	HIGH	HIGH	LOW	LOW	LOW	LOW	LOW	LOW	HIGH	LOW	LOW
Ajith S 2021	HIGH	HIGH	LOW	LOW	LOW	HIGH	LOW	LOW	LOW	HIGH	MODERATE
Al-Matary A 2021	HIGH	HIGH	LOW	LOW	LOW	LOW	LOW	LOW	HIGH	LOW	LOW
Alay I 2020	HIGH	HIGH	LOW	LOW	LOW	LOW	LOW	LOW	HIGH	LOW	LOW
Aliaga CD (1) 2020	HIGH	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW
Alnashry LM 2021	HIGH	HIGH	LOW	LOW	LOW	HIGH	LOW	LOW	LOW	LOW	LOW
Anand P 2020	HIGH	HIGH	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW
Angelidou A 2021	HIGH	HIGH	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW
Antsaklis P 2021	HIGH	HIGH	LOW	LOW	LOW	LOW	LOW	LOW	HIGH	LOW	LOW
Arakaki T 2021	LOW	LOW	LOW	HIGH	LOW	LOW	LOW	LOW	HIGH	LOW	LOW
Argueta LB 2021	HIGH	HIGH	LOW	LOW	LOW	HIGH	LOW	LOW	LOW	LOW	LOW



YES

• NO

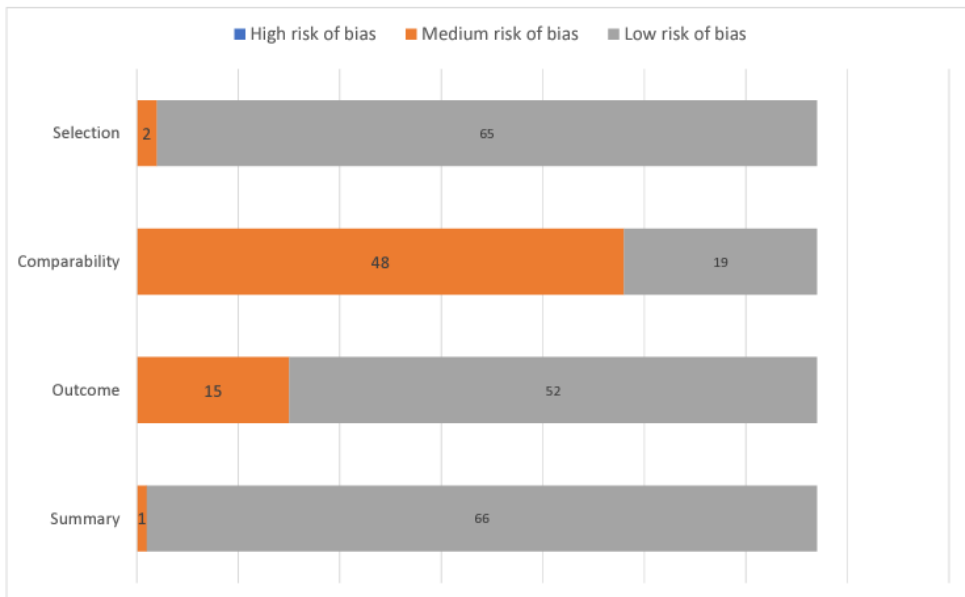
• UNCLEAR



## Did the review's authors do enough to assess quality of the included studies?

作者是否有評估收納研究文獻的品質？

Appendix 5: Quality assessment for risk of bias in comparative cohort studies using the Newcastle-Ottawa Scale



YES

• NO

• UNCLEAR



## 5

If the results of the review have been combined, was it reasonable to do so?

作者是否有把各個研究的結果合併起來？這樣的合併是合理的嗎？

#### Data analysis

We summarised the SARS-CoV-2 positivity rates in offspring identified by RT-PCR or anti-SARS-CoV-2 IgM assays, or both, as a proportion of all babies born to mothers with SARS-CoV-2 infection in cohort studies. After transforming data using Freeman-Tukey double arcsine transformation, we used **DerSimonian and Laird random effects meta-analysis to calculate rates and corresponding 95% confidence intervals**. Heterogeneity was reported as  $I^2$  and  $\tau^2$  estimates. Sensitivity analysis for SARS-CoV-2 positivity rates in babies was done by restricting the analysis to studies at low risk of bias, babies tested at less than 24 hours after birth, and babies born to women with SARS-CoV-2 infection diagnosed antenatally. The rates of SARS-CoV-2 positivity were also evaluated by subgroups of studies involving babies and mothers from various World Bank regions.

To summarise the associations between **maternal and perinatal characteristics and SARS-CoV-2 status in exposed babies, we pooled comparative dichotomous data as odds ratios and 95% confidence intervals using random effects meta-analysis**. When meta-analysis was considered inappropriate because of excessive clinical or statistical heterogeneity or when SARS-CoV-2 positive offspring were selectively reported in the cohort studies, we used a **narrative descriptive approach to summarise the evidence**, such as for clinical outcomes in test positive babies and test positivity in various biological samples. All statistical analyses were performed using Stata (version 16).

- ✓ 採用 **random-effects model** 進行
- ✓ 過度的臨床或統計異質性 → 敘述性描述性方法



## 5

If the results of the review have been combined, was it reasonable to do so?

作者是否有把各個研究的結果合併起來？這樣的合併是合理的嗎？

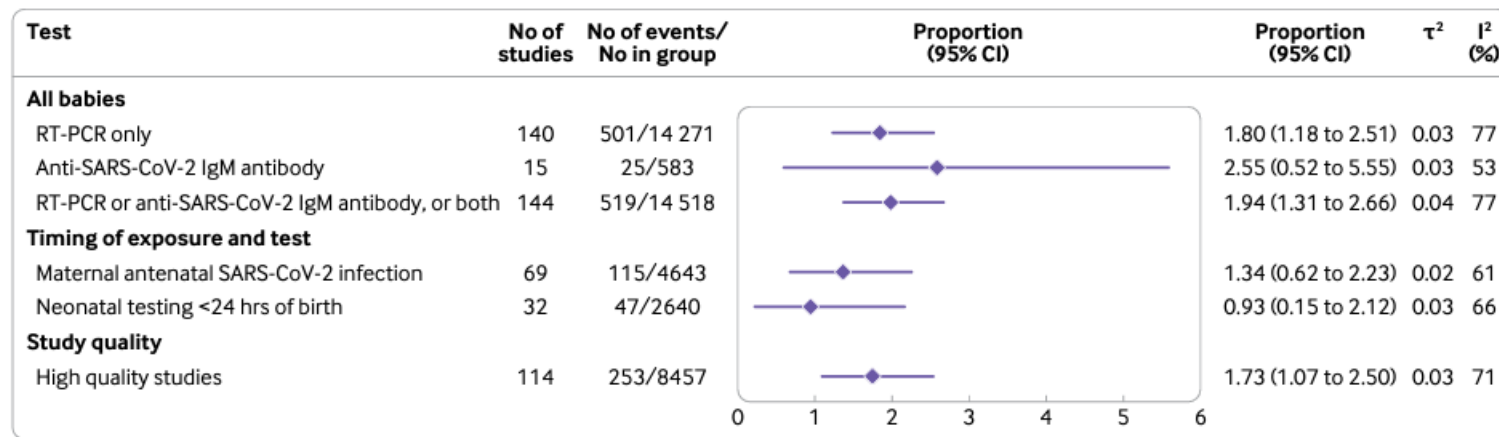


Fig 2 | Rates of SARS-CoV-2 positivity in babies (including fetuses) born to mothers seeking hospital care for any reason and having active or recently diagnosed SARS-CoV-2 infection. RT-PCR=reverse transcriptase polymerase chain reaction

- ✓ 本篇採用 **random-effects model** 進行 meta-analysis 是**不合理的** (異質性 > 25%) 。

- YES
- NO
- ✓ UNCLEAR

## 5

If the results of the review have been combined, was it reasonable to do so?

作者是否有把各個研究的結果合併起來？這樣的合併是合理的嗎？

Table 3 | Maternal and perinatal factors associated with SARS-CoV-2 positivity in offspring

Risk factors	No of studies	No of mother-baby dyads	No of test positive babies* / No without risk factors	No of test positive babies* / No without risk factors	Odds ratio (95% CI)	I <sup>2</sup> (%)
<b>Maternal factors</b>						
Severe covid-19	22	2842	18/331	125/2511	2.36 (1.28 to 4.36)	10
Maternal death	7	725	6/15	28/710	14.09 (4.14 to 47.97)	0
Admission to ICU	19	2851	7/92	123/2759	3.46 (1.74 to 6.91)	0
<b>Timing of maternal infection</b>						
Postnatal v antenatal	12	750	19/122	54/628	4.99 (1.24 to 20.13)	65
3rd v 1st or 2nd trimester	13	1422	104/1403	2/19	0.29 (0.08 to 1.10)	0
<b>Intrapartum factors</b>						
Preterm v term	40	4126	55/618	203/3508	1.47 (0.99 to 2.17)	2
Mode of delivery	49	4814	159/2429	99/2385	1.38 (0.97 to 1.95)	18
<b>Postnatal care</b>						
Not separated at birth v separated	11	1617	42/658	48/959	1.37 (0.47 to 3.98)	64
Breastfed v not breastfed	13	1545	43/783	39/762	0.74 (0.34 to 1.62)	29

ICU=intensive care unit; CI=confidence interval.

\*Reverse transcriptase polymerase chain reaction

- ✓ 本篇採用 **random-effects model** 進行 meta-analysis 是 **有些不合理的** (異質性 > 25%)。



6

**What are the overall results of the review?**

這篇回顧呈現了什麼結果？

7

**How precise are the results?**

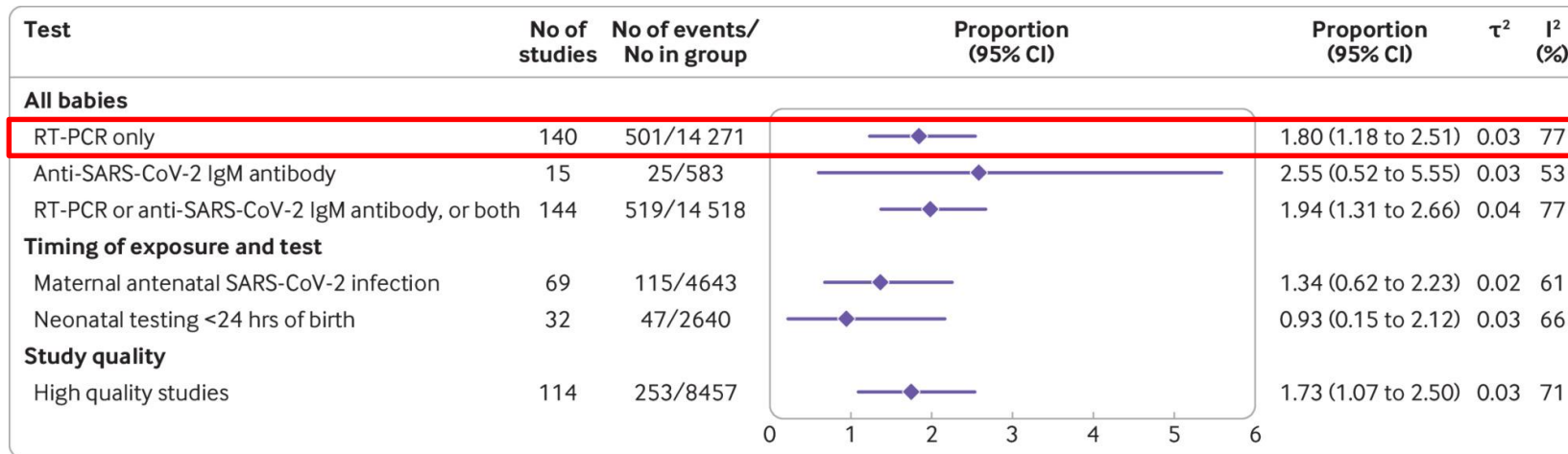
結果精準嗎？



## 結果：有多少新生兒確診

29

嚴格的文獻評讀



母體感染COVID-19後生產，有1.8% 的新生兒RT-PCR陽性  
 95% confidence interval 1.2% to 2.5%  
 140 studies of the 14 271 babies

## 結果：確診新生兒的結果 (outcome of SARS-CoV-2 positive babies)

**Table 2** Outcomes in SARS-CoV-2 positive babies born to mothers with covid-19 in all studies (cohort, case series, and case reports). Values are numbers (percentages) unless stated otherwise

Outcome in offspring	Test positive term babies ( $\geq 37$ weeks)				Test positive preterm babies and early pregnancy ( $< 37$ weeks)				Test positive babies (gestation not known)			All SARS-CoV-2 positive babies			
	Mild maternal disease (n=152)	Severe maternal disease* (n=10)	Severity not known (n=55)	Total (n=217)	Mild maternal disease (n=95)	Severe maternal disease* (n=26)	Severity not known (n=22)	Total (n=143)	Mild maternal disease (n=95)	Severity not known (n=533)	Total (n=628)	Mild maternal disease (n=342)	Severe maternal disease* (n=36)	Severity not known (n=610)	Total (n=988)
Alive at end of follow-up	145 (71)	10 (5)	50 (24)	205	61 (62)	21 (21)	17 (17)	99	86 (19)	359 (81)	445	292 (40)	31 (41)	426 (57)	749
Miscarriage or abortion					8 (100)	-	-	8				8 (100)	-	-	8
Stillbirth	-	-	-	-	16 (84)	2 (11)	1 (5)	19	-	1 (100)	1	16 (80)	2 (10)	2 (10)	20
Neonatal death	4 (100)	-	-	4	8 (62)	2 (15)	3 (23)	13	1 (17)	5 (83)	6	13 (57)	2 (9)	8 (35)	23
Not known	3 (38)	-	5 (63)	8	2 (50)	1 (25)	1 (25)	4	8 (5)	168 (95)	176	13 (7)	1 (0.5)	174 (93)	188

# 結果：確診新生兒的結果-計算生存率 (outcome of SARS-CoV-2 positive babies)

31

嚴格的文獻評讀

**Table 2** Outcomes in SARS-CoV-2 positive babies born to mothers with covid-19 in all studies (cohort, case series, and case reports). Values are numbers (percentages) unless stated otherwise

Outcome in offspring	Test positive term babies (≥37 weeks)				Test positive preterm babies and early pregnancy (<37 weeks)				Test positive babies (gestation not known)			All SARS-CoV-2 positive babies			
	Mild maternal disease (n=152)	Severe maternal disease* (n=10)	Severity not known (n=55)	Total (n=217)	Mild maternal disease (n=95)	Severe maternal disease* (n=26)	Severity not known (n=22)	Total (n=143)	Mild maternal disease (n=95)	Severity not known (n=533)	Total (n=628)	Mild maternal disease (n=342)	Severe maternal disease* (n=36)	Severity not known (n=610)	Total (n=988)
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足月生產生存率  $205/217 * 100\% = 94.47\%$

## 結果：新生兒確診的相關風險分析

Risk factors	No of studies	No of mother-baby dyads	No of test positive babies*/No with risk factors	No of test positive babies*/No without risk factors	Odds ratio (95% CI)	$I^2$ (%)
<b>Maternal factors</b>						
Severe covid-19	22	2842	18/331	125/2511	2.36 (1.28 to 4.36)	10
Maternal death	7	725	6/15	28/710	14.09 (4.14 to 47.97)	0
Admission to ICU	19	2851	7/92	123/2759	3.46 (1.74 to 6.91)	0
<b>Timing of maternal infection</b>						
Postnatal v antenatal	12	750	19/122	54/628	4.99 (1.24 to 20.13)	65
3rd v 1st or 2nd trimester	13	1422	104/1403	2/19	0.29 (0.08 to 1.10)	0
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Admission to ICU	19	2851	7/92	123/2759	3.46 (1.74 to 6.91)	0

### 研究結果

Severe covid-19  
OR=2.36  
95%CI [1.28-4.36]

### 結論

母體嚴重感染COVID-19使新生兒確診的風險是一般人的2.36倍

## 結果：母嬰血液傳染

Risk factors	No of studies	No of mother-baby dyads	No of test positive babies*/No with risk factors	No of test positive babies*/No without risk factors	Odds ratio (95% CI)	I <sup>2</sup> (%)
<b>Timing of maternal infection</b>						
Postnatal v antenatal	12	750	19/122	54/628	4.99 (1.24 to 20.13)	65
3rd v 1st or 2nd trimester	13	1422	104/1403	2/19	0.29 (0.08 to 1.10)	0

研究  
結果

產後感染和產前感染相比OR=4.99；95%CI [1.24,20.13]

## 結論

新生兒產後感染的風險是產前的4.99倍

研究  
結果

第三孕期和第一二孕期相比OR=0.29；95%CI [0.08-1.10]

## 結論

第三孕期感染的風險是第一二孕期的0.29倍

## 結果：哺乳傳染

Risk factors	No of studies	No of mother-baby dyads	No of test positive babies*/No with risk factors	No of test positive babies*/No without risk factors	Odds ratio (95% CI)	$I^2$ (%)
Breastfed v not breastfed	13	1545	43/783	39/762	0.74 (0.34 to 1.62)	29

### 研究結果

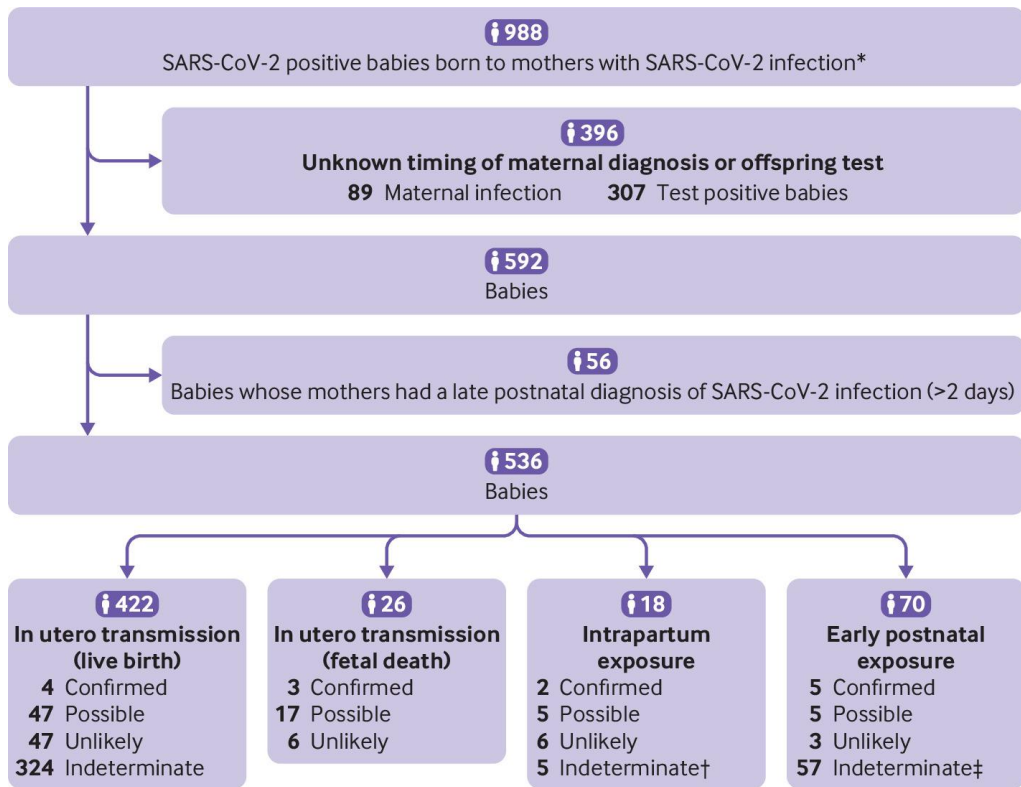
哺乳和不哺乳相比OR=0.74 ; 95%CI [0.34-1.62]

### 結論

COVID-19經由哺乳傳染的風險與不哺乳相比是0.74倍

## 8

## Can the results be applied to the local population? 此研究是否可應用到你的病患？



- ✓ PICO 相符
- ✓ 產前母親確診
- ✓ 新生兒有早期接觸病毒的風險
- ✓ 探討母親疾病嚴重度



YES

• NO

• UNCLEAR



Were all important outcomes considered?

是否所有重要的臨床結果都被考量到？

✓ 結果：

新生兒確診數

新生兒確診存活率

感染風險因子(母親疾病嚴重程度、產前產後、哺乳)

✓ 無評估：新生兒是否可能有後遺症



YES



NO



UNCLEAR

Study	Present study			
	No. reports	No. patients	Prevalence (%)	<i>I</i> <sup>2</sup> (%)
Male	11	27	46 (22-66)	33.7
Asymptomatic	11	433	6 (5-13)	24.3
Mild	10	395	54 (49-59)	0
Moderate	10	395	36 (27-45)	4
Severe	12	499	7 (4-11)	34.3
Critical	11	404	14 (13-34)	37.3
Death	0	0	NA	NA
Fever	11	24	53 (30-76)	0
Cough	9	19	30 (2-58)	0

有7%的小於一歲的孩子確診  
COVID-19後會發展為重症  
症狀如：發燒、咳嗽、拉肚子

Cui X, Zhao Z, Zhang T, Guo W, Guo W, Zheng J, Zhang J, Dong C, Na R, Zheng L, Li W, Liu Z, Ma J, Wang J, He S, Xu Y, Si P, Shen Y, Cai C. A systematic review and meta-analysis of children with coronavirus disease 2019 (COVID-19). *J Med Virol*. 2021 Feb;93(2):1057-1069. doi: 10.1002/jmv.26398. Epub 2020 Sep 28. PMID: 32761898; PMCID: PMC7436402.

## 10

## Are the benefits worth the harms and costs?

### 這些好處隨之而來的傷害和花費是否值得？

- ♥+ 風險利益
- ♥+ 病人觀點
- ♥+ 成本效益

病人在意：小孩是否會因母親確診而有確診風險；哺乳是否會增加小孩確診風險

	孕期	哺乳	母親疾病嚴重度
評估	第三孕期	考慮哺乳	輕微，但傳染力高
風險	嬰兒存活率高	不影響感染風險	嬰兒感染風險低



## 10

Are the benefits worth the harms and costs?

這些好處隨之而來的傷害和花費是否值得？

PICU日額	5000台幣/日
抗病毒藥物Remdesivir	療程5~10天，新生兒可以使用，副作用未知，健保給付
小孩症狀	有7%的小於一歲的孩子確診COVID-19後會發展為重症，症狀有發燒、咳嗽、拉肚子

• YES

• NO



UNCLEAR



# 綜整評讀結果

SR	問題	評讀結果
有效性	1 清楚明確的問題？	●YES ○NO ○UNCLEAR
	2 收納適當的研究類型？	●YES ○NO ○UNCLEAR
	3 包含所有重要、相關的研究？	●YES ○NO ○UNCLEAR
	4 評估收納研究的品質？	●YES ○NO ○UNCLEAR
	5 是否合併？合併的合理性？	○YES ○NO ●UNCLEAR
重要性	6 適當的呈現結果？	●YES ○NO ○UNCLEAR
	7 結果精準嗎？	○YES ○NO ●UNCLEAR
應用性	8 應用到臨床情境？	●YES ○NO ○UNCLEAR
	9 所有重要的臨床結果都被考量到？	●YES ○NO ○UNCLEAR
	10 好處是否值得其帶來的傷害和花費？	○YES ○NO ●UNCLEAR

## 由證據到給病人的建議回覆

黃女士您好，關於您孕期確診是否會傳染給孩子，我們已充分了解您的擔憂，為您查找文獻資料庫。

目前的研究顯示，有1.8%的孩子出生後感染COVID-19，其中，是產後感染的風險會大於產前感染。所以，經由血液傳染給孩子的機會是比較低的。孩子出生後，我們盡早隔離，孩子的確診機率就會降低許多。

另外，哺乳是可以的，COVID19不會經由哺乳傳染，所以您還是可以親餵。

