Domain	Description
	Table S1 Canadian Institute of Health Economics quality appraisal checklist (modified)
1	Was the hypothesis/aim/objective of the study clearly stated (e.g., PICO)?
2	Was the study concluded prospectively (stated as such)?
3	Were the cases collected in more than one centre?
4	Were patients recruited consecutively?
5	Were the characteristics of the patients included in the study described?
6	Were the eligibility criteria (i.e., inclusion ad exclusion criteria) for entry in the study clearly stated?
7	Did patients enter the study at a similar point in the disease?
8	Was the intervention of interest clearly described?
9	Were additional interventions (co-interventions) clearly described?
10	Were relevant outcome measures established a priori?
11	Were the relevant outcomes measured using appropriate objective/subjective methods?
12	Were the relevant outcome measures made before and after the intervention?
13	Were the statistical tests used to assess the relevant outcomes appropriate?
14	Was follow-up long enough for important events and outcomes to occur?
15	Were losses to follow-up reported?
16	Did the study provided estimates of random variability in the data analysis of relevant outcomes?
17	Were the adverse events reported?
18	Were the conclusions of the study supported by results?
19	Were conflicts of interest reported?

Table S2 Individual study quality assessment based on the Canadian Institute of Health Economics Quality Appraisal Checklist

Author, year	Title	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total	
Aljassim, 2011	Dilatation of the pulmonary autograft and native aorta after the Ross procedure: a comprehensive echocardiographic study	1	0	0	0	1	0	1	1	0	0	1	1	1	0	0	🔴	7
Bansal, 2015	Age-Related Outcomes of the Ross Procedure Over 20 Years	1	0	0	1	1	0	1	1	1	0	0	1	1	1	0	🔴	9
Brown, 2011	The Ross full root replacement in adults with bicuspid aortic valve disease	1	0	1	1	1	1	1	1	1	0	0	1	1	1	0	🟡	11
Buratto, 2018	Improved Survival After the Ross Procedure Compared with Mechanical Aortic Valve Replacement	1	0	1	0	1	1	1	1	1	1	0	1	1	1	0	🟡	11
Chauvette, 2020	The Ross procedure is a safe and durable option in adults with infective endocarditis: a multicentre study	1	1	1	1	1	0	1	1	1	0	1	1	1	1	1	🟢	13
Christ, 2019	Long-term results after the Ross procedure with the decellularized AutoTissue Matrix P R bioprosthesis used for pulmonary valve replacement	1	1	0	0	1	0	1	1	1	1	1	1	1	1	1	🟡	12
El-Hamamsy, 2010	Long-term outcomes after autograft versus homograft aortic root replacement in adults with aortic valve disease: a randomised controlled trial	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	🟢	13
Escarain, 2015	Ross procedure in adults: is reoperation a real concern?	1	0	0	1	1	0	1	1	1	0	1	1	1	1	0	🟡	10
Etnel, 2018	Fresh decellularized versus standard cryopreserved pulmonary allografts for right ventricular outflow tract reconstruction during the Ross procedure: A propensity-matched study	1	0	0	1	1	1	1	1	0	0	0	1	1	1	1	🟡	10
Frigiola, 2008	The Ross procedure in adults: long-term follow-up and echocardiographic changes leading to pulmonary autograft reoperation	1	0	0	0	1	1	1	1	0	0	0	1	1	1	0	🔴	8
Guerreiro, 2019	Long-term assessment of the Ross procedure in adults: Clinical and echocardiographic follow-up at 20 years	1	0	0	1	1	1	1	1	1	1	1	0	1	1	1	🟡	12
Juthier, 2015	Stentless porcine bioprosthesis in pulmonary position after ross procedure: midterm results	1	0	0	1	1	1	0	1	1	0	0	1	1	0	0	🔴	8
Loobuyck, 2020	Active aortic endocarditis in young adults: long-term results of the Ross procedure	1	0	0	0	1	0	1	1	1	0	1	1	1	1	0	🔴	9
Martin, 2017	Clinical Outcomes Following the Ross Procedure in Adults: A 25-Year Longitudinal Study	1	1	0	0	1	1	1	1	1	0	1	1	1	1	0	🟡	11
Mastrobuoni, 2016	The Ross procedure in young adults: over 20 years of experience in our Institution	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	🟢	13
Mazine, 2016	Long-Term Outcomes of the Ross Procedure Versus Mechanical Aortic Valve Replacement: Propensity-Matched Cohort Study	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	🟡	12
Oeser, 2019	Long-term performance of pulmonary homografts after the Ross procedure: experience up to 25 years	1	0	0	1	1	1	1	1	1	0	1	1	1	1	1	🟡	12
Pardo Gonzalez, 2017	Pulmonary homograft stenosis in the Ross procedure: Incidence, clinical impact and predictors in long-term follow-up	1	1	0	1	1	0	1	1	0	1	1	1	1	1	1	🟡	12
Pergola, 2020	The long term results of the Ross procedure: The importance of candidate selection	1	0	0	0	1	0	1	1	1	1	1	1	1	1	0	🟡	10
Ryan, 2011	The Ross procedure performed for aortic insufficiency is associated with increased autograft reoperation	1	1	0	1	0	1	1	1	0	0	1	1	1	1	0	🟡	10
Settepani, 2005	The Ross operation: an evaluation of a single institution's experience	1	0	0	0	1	0	1	1	1	0	1	1	1	1	0	🔴	9
Sharifulin, 2019	Factors impacting long-term pulmonary autograft durability after the Ross procedure	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	🟢	13
Sievers, 2016	A multicentre evaluation of the autograft procedure for young patients undergoing aortic valve replacement: update on the German Ross Registry	1	1	1	0	1	0	0	0	1	1	1	1	1	1	1	🟡	11

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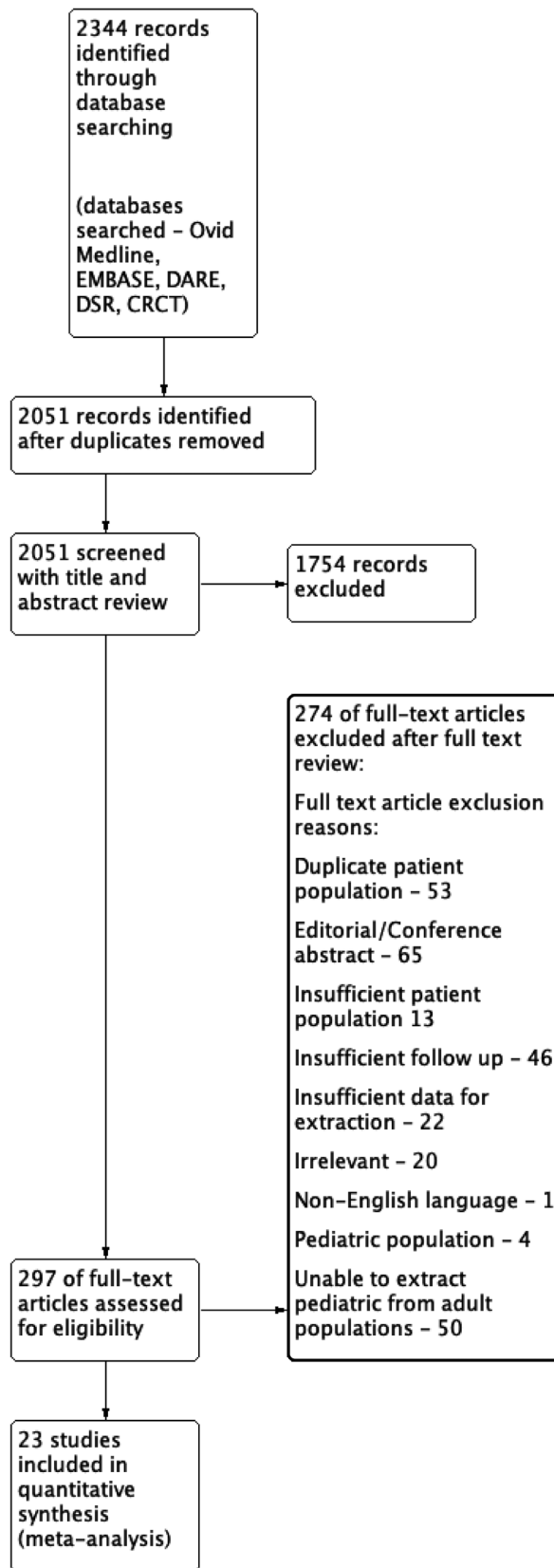
Figure S1 PRISMA diagram detailing meta-analysis strategy for the analysis of the Ross procedure in adult patients.