

Supplemental Material

Appendix 1 – Search strategy

Cochrane Library, Issue 5 of 12, 2022

[Cardiac Surgery]

- #1 MeSH descriptor: [Cardiovascular Surgical Procedures] explode all trees 21119
- #2 MeSH descriptor: [Cardiopulmonary Bypass] this term only 2801
- #3 ((thorax or thoracic) NEAR (operation* or elective* or surgery or surgeries or surgical)):ti,ab,kw 4872
- #4 ((cardiac or cardio* or coronary or heart or epicardi* or myocardi* or pericardi* or transmyocardi*) NEAR (bypass* or graft* or graR* or operation* or elective* or surgery or surgeries or surgical or procedure* or intervention* or implant* or prosthesis* or transplant* or replacement* or repair* or revasculari* or re-vasculari*)):ti,ab,kw 68175
- #5 (CBG or CABG):ti,ab,kw 6086
- #6 (cardiomyoplast* or "maze procedure*" or pericardiectomy* or pericardiocentesis* or pericardiotomy*):ti,ab,kw 260
- #7 ((implant* NEAR/2 cardio*)):ti,ab,kw 2671
- #8 MeSH descriptor: [Heart Valves] explode all trees and with qualifier(s): [surgery - SU] 752
- #9 ((cardi* or heart* or aortic* or mitral* or pulmonary or tricuspid) NEAR valv* NEAR (bypass or plasty or graft* or graR* or operat* or elective or surgery or surgeries or surgical or procedure* or intervention* or implant* or prosthesis* or transplant* or replac* or repair* or revascular* or re-vascular*)):ti,ab,kw 5072
- #10 (("saphenous vein" or "radial artery") NEAR harvest*):ti,ab,kw 193
- #11 (#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10) 79424

[Delirium]

- #12 MeSH descriptor: [Delirium] explode all trees 972
- #13 (deliri* or deleri*):ti,ab,kw 4351
- #14 ("acute brain syndrome" or "acute confusion*" or "acute organic psychosyndrom*" or "acute organic psycho-syndrom*" or "acute psycho-organic syndrom*" or "organic mental disorder*"):ti,ab,kw 47

- #15 (acute NEAR cereb* NEAR insufficien*):ti,ab,kw 11
- #16 ((cloud* or diminish*) NEAR/3 (state* or conscious*)):ti,ab,kw 31
- #17 ((exog* or toxic*) NEAR psycho*):ti,ab,kw 122
- #18 (toxic* NEAR confus*):ti,ab,kw 19
- #19 obnubila*:ti,ab,kw 3
- #20 (cognitive NEAR/2 (dysfunction* or declin* or fail*)):ti,ab,kw 7517
- #21 ((disturbed or disturbances or disordered or abnormal* or change*) NEAR/2 (attention or "brain function" or cognition or cognitive or consciousness or neurobehavi* or neuro-behavi* or perception*)):ti,ab,kw 4135
- #22 (mental* NEAR (confus* or deteriorat*)):ti,ab,kw 497
- #23 encephalopath*:ti,ab,kw 3623
- #24 (agitat* or restless*):ti,ab,kw 7727
- #25 (#12 OR #13 #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24) 25642
- #26 (#11 AND #25) 1630
- #27 (nenocat* or newborn* or infant* or child* or pediatric* or paediatric*):ti 113944
- #28 #26 not #27 1521

12 Reviews, 1507 trial records

MEDLINE(R) ALL (Ovid) <1946 to May 23, 2022>

- 1 exp Cardiovascular Surgical Procedures/ 433803
- 2 Cardiopulmonary Bypass/ 24739
- 3 ((thorax or thoracic) adj3 (operation? or elective? or surgery or surgeries or surgical)).mp. 42177
- 4 ((cardiac or cardio* or coronary or heart or epicardi* or myocardi* or pericardi* or transmyocardi*) adj3 (bypass* or graft* or graR* or operation? or elective? or surgery or surgeries or surgical or procedure? or intervention? or implant* or prosth* or transplant* or replacement? or repair* or revasculari?ation or re-vasculari?ation)).mp. 397642
- 5 (CBG or CABG).tw,kf. 21911

- 6 (cardiomyoplast* or maze procedure? or pericardiectom* or pericardiocentes* or pericardiotom*).mp. 7775
- 7 (cardio* adj3 implant*).mp. 16783
- 8 exp Heart Valves/su [Surgery] 38967
- 9 ((cardi* or heart* or aortic* or mitral* or pulmonary or tricuspid) adj5 valv* adj5 (bypass or plasty or graft* or graR* or operat* or elective or surgery or surgeries or surgical or procedure? or intervention? or implant* or prosth* or transplant* or replac* or repair* or revasc* or re-vasc*)).mp. 91169
- 10 ((saphenous vein or radial artery) adj3 harvest*).mp. 867
- 11 or/1-10 648183
- 12 exp delirium/ 11575
- 13 (deliri* or deleri*).tw,kf. 19368
- 14 (acute brain syndrom* or acute* confusion* or acute organic psychosyndrom* or acute organic psycho-syndrom* or acute psycho-organic syndrom* or organic mental disorder*).tw,kf. 1592
- 15 (acute adj3 cereb* adj3 insufficien*).tw,kf. 91
- 16 ((cloud* or diminish*) adj3 (state* or conscious*)).tw,kf. 889
- 17 ((exog* or toxic*) adj3 psycho*).tw,kf. 1366
- 18 (toxic* adj3 confus*).tw,kf. 104
- 19 obnubila*.tw,kf. 58
- 20 (cognitive adj2 (dysfunction* or declin* or fail*)).tw,kf. 49896
- 21 ((disturbed or disturbances or disordered or abnormal* or change*) adj2 (attention or "brain function" or cognition or cognitive or consciousness or neurobehavi* or neuro-behavi* or perception*)).tw,kf. 24124
- 22 (mental* adj3 (confus* or deteriorat*)).tw,kf. 3183
- 23 encephalopath*.mp. 63456
- 24 (agitat* or restless*).tw,kf. 31887
- 25 or/12-24 187104
- 26 randomized controlled trial.pt. 568807
- 27 controlled clinical trial.pt. 94878
- 28 (randomi#ed or randomi#ation or randomi#ing).tw,kf. 744943

29 (RCT or "at random" or (random* adj3 (administ* or allocat* or assign* or class* or cluster or control* or crossover or cross-over or determine* or divide* or division or distribut* or expose* or fashion or number* or place* or pragmatic or quasi or recruit* or split or substitut* or treat*))).tw,kf. 661758

30 randomly.ab. 382757

31 placebo.tw,kf. 234784

32 clinical trials as topic.sh.199919

33 trial.ti. 262759

34 or/26-33 1551310

35 exp animals/ not humans.sh. 5009122

36 (exp Animals, Laboratory/ or exp Animal Experimentation/ or exp Models, Animal/) not humans.sh. 1053254

37 34 not (35 or 36) 1427431

38 11 and 25 and 37 827

39 (exp child/ or exp infant/) not adult/ 1876597

40 ((child* or infant* or newborn* or neonat* or newborn? or p?ediatric*) not adult*).ti. 1324433

41 38 not (39 or 40) 794

An additional search for retractions and/or errata was conducted.

42 (retracted publication or "retraction of publication").pt. 22473

43 (retracted or retraction).ti. 15226

44 published erratum.pt. 116203

45 (erratum or errata).ti. 31351

46 or/42-45 147905

47 46 and (11 and 25) 8

48 47 not 41 5

Embase (Ovid) <1974 to 2022 May 23>

- 1 exp cardiovascular surgery/ 795415
- 2 ((cardiac or cardio* or coronary or heart or epicardi* or myocardi* or pericardi* or transmyocardi*) adj3 (bypass* or graft* or graR* or operation? or elective? or surgery or surgeries or surgical or procedure? or intervention? or implant* or prosthesis* or transplant* or replacement? or repair* or revasculari?ation or re-vasculari?ation)).mp. 631659
- 3 (cardiomyoplast* or maze procedure? or pericardiectom* or pericardiocentes* or pericardiotom*).mp. 16076
- 4 extracorporeal circulation/ or cardioplegia/ or cardiopulmonary bypass/ or heart left ventricle bypass/ 73604
- 5 coronary artery bypass graft/ or coronary artery bypass surgery/ or coronary artery recanalization/ or coronary reperfusion/ or coronary stenting/ or heart muscle revascularization/ or off pump coronary surgery/ 135271
- 6 (CBG or CABG).tw,kf. 39369
- 7 (implant* adj3 cardio*).mp. 57669
- 8 heart valve surgery/ or exp heart valve prosthesis/ or exp heart valve replacement/ or exp mitral valve surgery/ or exp valvuloplasty/ 115864
- 9 ((cardi* or heart* or aortic* or mitral* or pulmonary or tricuspid) adj5 valv* adj5 (bypass or plasty or graft* or graR* or operat* or elective or surgery or surgeries or surgical or procedure? or intervention? or implant* or prosthesis* or transplant* or replac* or repair* or revasc* or re-vasc*)).mp. 137422
- 10 ((saphenous vein or radial artery) adj3 harvest*).mp. 1088
- 11 thorax surgery/ 36480
- 12 ((thorax or thoracic) adj3 (operation? or elective? or surgery or surgeries or surgical)).mp. 64808
- 13 or/1-12 1095198
- 14 exp delirium/ 36951
- 15 *Delirium, Dementia, Amnesic, Cognitive Disorders/ and surgery.fs. 934
- 16 (deliri* or deleri*).tw,kf. 29658
- 17 (acute brain syndrom* or acute* confusion* or acute organic psychosyndrom* or acute organic psycho-syndrom* or acute psycho-organic syndrom* or organic mental disorder*).tw,kf. 2423
- 18 (acute adj3 cereb* adj3 insufficien*).tw,kf. 116
- 19 ((cloud* or diminish*) adj3 (state* or conscious*)).tw,kf. 1177
- 20 ((exog* or toxic*) adj3 psycho*).tw,kf. 1211

- 21 (toxic* adj3 confus*).tw,kf. 162
- 22 obnubila*.tw,kf. 117
- 23 (cognitive adj2 (dysfunction* or declin* or fail*)).tw,kf. 75126
- 24 ((disturbed or disturbances or disordered or abnormal* or change*) adj2 (attention or "brain function" or cognition or cognitive or consciousness or neurobehavi* or neuro-behavi* or perception*)).tw,kf. 34869
- 25 (mental* adj3 (confus* or deteriorat*)).tw,kf. 4480
- 26 encephalopath*.mp. 103806
- 27 (agitat* or restless*).tw,kf. 50274
- 28 or/14-27 297183
- 29 intensive care/ 136783
- 30 ((intensive adj2 care) or ICU).tw,kf. 333077
- 31 exp Postoperative Period/ 563230
- 32 postoperative complication/ or postoperative cognitive dysfunction/ 372710
- 33 (postop* or post-op* or postsurg* or post-surg*).mp. 1345396
- 34 ((post* or after or following) adj4 (CBG or CABG or bypass* or graft* or graR* or operation* or elective or surgery or surgeries or surgical or angioplast* or atherectom* or implant* or prosthesis* or transplant* or replacement* or repair* or revasculari* or re-vasculari*)).tw,kf. 1299725
- 35 (post* adj3 complication?).tw,kf. 181976
- 36 ((manag* or prevent* or reduc*) adj4 (adverse or complication*)).tw,kf. and surgery.af. 67822
- 37 ((prevent* or reduc*) adj4 (adverse effect? or adverse event? or adverse outcome?)).tw,kf. 20644
- 38 (emergent or emerging).tw,kf. 411380
- 39 Adverse Drug Reaction.fs. 1305420
- 40 Drug Toxicity.fs. 572732
- 41 Side Effect.fs. 954409
- 42 or/29-41 4738846
- 43 13 and 28 and 42 7767
- 44 postoperative delirium/ 3295

- 45 ((emergent or emerging or prevent* or postop* or post-op*) adj3 (deliri* or deleri*)).tw,kf. 5137
- 46 exp delirium/pc 1617
- 47 or/44-46 6946
- 48 13 and 47 1598
- 49 43 or 48 7786
- 50 randomized controlled trial/ 709462
- 51 randomization.de. 93803
- 52 *clinical trial/ 17636
- 53 placebo.de. 380496
- 54 placebo.tw,kf. 341593
- 55 trial.ti. 358697
- 56 (randomi#ed or randomi#ation or randomi#ing).tw,kf. 1068743
- 57 (RCT or "at random" or (random* adj3 (administ* or allocat* or assign* or class* or cluster or control* or crossover or cross-over or determine* or divide* or division or distribut* or expose* or fashion or number* or place* or pragmatic or quasi or recruit* or split or substitut* or treat*))).tw,kf. 903993
- 58 controlled clinical trial/ and (Prevention or Rehabilitation or Therapy).fs. 110688
- 59 or/50-58 1876029
- 60 ((animal or nonhuman) not (human and (animal or nonhuman))).de. 6129945
- 61 59 not 60 1700328
- 62 49 and 61 1129
- 63 (exp child/ or exp infant/) not adult/ 2115718
- 64 ((child* or infant* or neonat* or newborn? or p?ediatric*) not adult*).ti. 1532782
- 65 62 not (63 or 64) 1081

An additional search for retractions and/or errata was conducted.

- 66 retracted article/ 11113
- 67 (retracted or retraction).ti. 14314
- 68 erratum.pt. 253441

69 (erratum or errata).ti. 170511
 70 tombstone.pt. 4171
 71 or/66-70 265614
 72 71 and (13 and 28) 16
 73 72 not 65 11

APA PsycInfo (Ovid) <1806 to May Week 3 2022>

1 heart surgery/ 1573
 2 exp cardiovascular disorders/ and (bypass* or graft* or graR* or operation? or elective? or surgery or surgeries or surgical or procedure? or intervention? or implant* or prosth* or transplant* or replacement? or repair* or revasculari?ation or re-vasculari?ation).ti,id,hw. 5356
 3 ((thorax or thoracic) adj3 (operation? or elective? or surgery or surgeries or surgical)).tw,id,hw. 143
 4 ((cardiac or cardio* or coronary or heart or epicardi* or myocardi* or pericardi* or transmyocardi*) adj3 (bypass* or graft* or graR* or operation? or elective? or surgery or surgeries or surgical or procedure? or intervention? or implant* or prosth* or transplant* or replacement? or repair* or revasculari?ation or re-vasculari?ation)).tw,id,hw. 5085
 5 (CBG or CABG).tw,id. 575
 6 (cardiomyoplast* or maze procedure? or pericardiectom* or pericardiocentes* or pericardiotom*).tw,id,hw. 92
 7 (implant* adj3 cardio*).tw,id,hw. 360
 8 ((cardi* or heart* or aortic* or mitral* or pulmonary or tricuspid) adj3 valv*).tw,id,hw. 629
 9 (saphenous vein or radial artery).tw,id,hw. 77
 10 or/1-9 9729
 11 delirium/ 3774
 12 (deliri* or deleri*).tw,id. 8087
 13 (acute brain syndrom* or acute* confusion* or acute organic psychosyndrom* or acute organic psycho-syndrom* or acute psycho-organic syndrom* or organic mental disorder*).tw,id. 977
 14 (cereb* adj3 insufficien*).tw,id. 247

- 15 ((cloud* or diminish*) adj3 (state* or conscious*)).tw,id. 387
- 16 toxic psychoses/ 220
- 17 ((exog* or toxic*) adj3 psycho*).tw,id. 713
- 18 (toxic* adj3 confus*).tw,id. 38
- 19 obnubila*.tw,id. 17
- 20 (cognitive adj2 (dysfunction* or declin* or fail*)).tw,id. 25413
- 21 ((disturbed or disturbances or disordered or abnormal* or change*) adj2 (attention or brain function or cognition or cognitive or consciousness or neurobehavi* or neuro-behavi* or perception*)).tw,id. 19863
- 22 (mental* adj3 (confus* or deteriorat*)).tw,id. 1698
- 23 encephalopathies/ or toxic encephalopathies/ 3544
- 24 encephalopath*.mp. 6926
- 25 distress/ or agitation/ or restlessness/ 28235
- 26 (agitat* or restless*).tw,id. 13404
- 27 or/11-26 98901
- 28 10 and 27 664
- 29 clinical trials.sh. 12061
- 30 (randomi#ed or randomi#ation or randomi#ing).ti,ab,id. 100052
- 31 (RCT or at random or (random* adj3 (administ* or allocat* or assign* or class* or control* or crossover or cross-over or determine* or divide* or division or distribut* or expose* or fashion or number* or place* or recruit* or split or substitut* or treat*))).ti,ab,id. 116798
- 32 (control* and (trial or study or group) and (placebo or waitlist* or wait* list* or ((treatment or care) adj2 usual))).ti,ab,id,hw. 32527
- 33 ((single or double or triple or treble) adj2 (blind* or mask* or dummy)).ti,ab,id. 28132
- 34 trial.ti. 35090
- 35 placebo.ti,ab,id,hw. 42728
- 36 treatment outcome.md. 22524
- 37 treatment effectiveness evaluation.sh. 26706
- 38 or/29-37 216556
- 39 28 and 38 95

40 (prevent* adj3 (deliri* or deleri*)).tw,id. 353

41 10 and 40 21

42 39 or 41 111

43 ((child* or infant* or newborn* or neonat* or p?ediatric*) not adult*).ti,id,hw. 555127

44 42 not 43 109
