

Supplementary file 2. MEDLINE, EMBASE, CINAHL, and CENTRAL

search strategy

Ovid MEDLINE

Search terms for design

- 1.randomized controlled trial.pt.
- 2.controlled clinical trial.pt.
- 3.randomized controlled trial.sh.
- 4.random allocation.sh.
- 5.double blind method.sh.
- 6.single blind method.sh.
- 7.clinical trial.pt.
- 8.exp clinical trial/
- 9.(clin\$ adj25 trial\$).ab,ti.
- 10.((singl\$ or doubl\$ or trebl\$ or tripl\$) adj25 (blind\$ or mask\$)).ab,ti.
- 11.placebos.sh.
- 12.placebo\$.ab,ti.
- 13.random\$.ab,ti.
- 14.research design.sh.
- 15.comparative study.sh.
- 16.exp evaluation studies/
- 17.follow up studies.sh.

18.prospective studies.sh.

19.(control\$ or prospectiv\$ or volunteer\$).ab,ti.

Search terms for Osteoarthritis

20.exp osteoarthritis/

21.osteoarthriti\$.ab,sh,ti.

22.osteoarthro\$.ab,sh,ti.

23.gonarthriti\$.ab,sh,ti.

24.gonarthro\$.ab,sh,ti.

25.coxarthriti\$.ab,sh,ti.

26.coxarthro\$.ab,sh,ti.

27.arthros\$.ab,ti.

28.arthrot\$.ab,ti.

29.((knee\$ or hip\$ or joint\$) adj3 (pain\$ or ach\$ or discomfort\$)).ab,ti.

30.((knee\$ or hip\$ or joint\$) adj3 stiff\$).ab,ti.

Search terms for Opioids

31.exp Analgesics, Opioid/

32.exp Narcotics/

33.acetyldihydrocodeine.tw.

34.alfentanil.tw.

35.allylprodine.tw.

36.alphamethylfentanyl.tw.

37.alphaproline.tw.

38.benzylmorphine.tw.

39.betaprodine.tw.
40.bezitriamide.tw.
41.buprenorphine.tw.
42.butorphanol.tw.
43.bremazocine.tw.
44.carfentan\$.tw.
45.codeine.tw.
46.contin.tw.
47.dextromoramide.tw.
48.dextropropoxyphene.tw.
49.dezocine.tw.
50.diacetylmorphine.tw.
51.diamorphine.tw.
52.dihydrocodeine.tw.
53.dihydromorphine.tw.
54.dihydromorphone.tw.
55.diphenoxylate.tw.
56.dipipanone.tw.
57.enadoline.tw.
58.ethylketazocine.tw.
59.ethylmorphine.tw.
60.etonitazene.tw.
61.etorphine.tw.

62.fentanyl.tw.

63.heroin.tw.

64.hydrocodone.tw.

65.hydromorphin\$.tw.

66.hydromorphone.tw.

67.ketazocine.tw.

68.ketobemidone.tw.

69.lefetamine.tw.

70.levomethadon.tw.

71.levomethadyl.tw.

72.levomethorphan\$.tw.

73.levorphanol.tw.

74.loperamide.tw.

75.meperidine.tw.

76.meptazinol.tw.

77.methadone.tw.

78.methadyl.tw.

79.methylmorphine.tw.

80.morphin\$.tw.

81.nalbuphine.tw.

82.narcotic\$.tw.

83.nicocodeine.tw.

84.nicomorphine.tw.

85.normorphine.tw.
86.noscapin\$.tw.
87.ohmefentanyl.tw.
88.opiate\$.tw.
89.opioid\$.tw.
90.opium.tw.
91.oripavine.tw.
92.oxycodone.tw.
93.oxycontin.tw.
94.oxymorphone.tw.
95.papaveretum.tw.
96.papaverin.tw.
97.pentazocine.tw.
98.percocet.tw.
99.peronine.tw.
100. pethidine.tw.
101.phenazocine.tw.
102.phencyclidine.tw.
103.pholcodine.tw.
104.piritramid\$.tw.
105.prodine.tw.
106.promedol.tw.
107.propoxyphene.tw.

108.remifentanil.tw.

109.sufentanil.tw.

110.tapentadol.tw.

111.thebaine.tw.

112.tilidine.tw.

113.tramadol.sh,tw.

114.ultracet.sh,tw.

Combining terms

115.31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44
or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or
59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73
or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or
88 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100 or 101 or
102 or 103 or 104 or 105 or 106 or 107 or 108 or 109 or 110 or 111 or 112 or 113 or
114

116.20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30

117.1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16
or 17 or 18 or 19

118.115 and 116 and 117

119.animal/

120.animal/ and human/

121.119 not 120

122.118 not 121

123.remove duplicates from 122

Ovid EMBASE

Search terms for design

1.randomized controlled trial.sh.

2.randomization.sh.

3.double blind procedure.sh.

4.single blind procedure.sh.

5.exp clinical trials/

6.(clin\$ adj25 trial\$).ab,ti.

7.((singl\$ or doubl\$ or trebl\$ or tripl\$) adj25 (blind\$ or mask\$)).ab,ti.

8.placebo.sh.

9.placebo\$.ab,ti.

10.random\$.ab,ti.

11.methodology.sh.

12.comparative study.sh.

13.exp evaluation studies/

14.follow up.sh.

15.prospective study.sh.

16.(control\$ or prospectiv\$ or volunteer\$).ab,ti.

Search terms for Osteoarthritis

17.exp osteoarthritis/

18.osteoarthriti\$.ab,sh,ti.

19.osteoarthro\$.ab,sh,ti.

20.gonarthriti\$.ab,sh,ti.

21.gonarthro\$.ab,sh,ti.

22.coxarthriti\$.ab,sh,ti.

23.coxarthro\$.ab,sh,ti.

24.arthros\$.ab,ti.

25.arthrot\$.ab,ti.

26.((knee\$ or hip\$ or joint\$) adj3 (pain\$ or ach\$ or discomfort\$)).ab,ti.

27.((knee\$ or hip\$ or joint\$) adj3 stiff\$).ab,ti.

Search terms for Opioids

28.exp Analgesics, Opioid/

29.exp Narcotic Analgesic Agent/

30.acetyldihydrocodeine.tw.

31.alfentanil.tw.

32.allylprodine.tw.

33.alphamethylfentanyl.tw.

34.alphaprodine.tw.

35.benzylmorphine.tw.

36.betaprodine.tw.

37.bezitriamide.tw.

38.buprenorphine.tw.

39.butorphanol.tw.

40.bremazocine.tw.

41.carfentan\$.tw.

42.codeine.tw.
43.contin.tw.
44.dextromoramide.tw.
45.dextropropoxyphene.tw.
46.dezocine.tw.
47.diacetylmorphine.tw.
48.diamorphine.tw.
49.dihydrocodeine.tw.
50.dihydromorphine.tw.
51.dihydromorphone.tw.
52.diphenoxylate.tw.
53.dipipanone.tw.
54.enadoline.tw.
55.ethylketazocine.tw.
56.ethylmorphine.tw.
57.etonitazene.tw.
58.etorphine.tw.
59.fentanyl.tw.
60.heroin.tw.
61.hydrocodone.tw.
62.hydromorphin\$.tw.
63.hydromorphone.tw.
64.ketazocine.tw.

65.ketobemidone.tw.

66.lefetamine.tw.

67.levomethadon.tw.

68.levomethadyl.tw.

69.levomethorphan\$.tw.

70.levorphanol.tw.

71.loperamide.tw.

72.meperidine.tw.

73.meptazinol.tw.

74.methadone.tw.

75.methadyl.tw.

76.methylmorphine.tw.

77.morphin\$.tw.

78.nalbuphine.tw.

79.narcotic\$.tw.

80.nicocodeine.tw.

81.nicomorphine.tw.

82.normorphine.tw.

83.noscapin\$.tw.

84.ohmefentanyl.tw.

85.opiate\$.tw.

86.opioid\$.tw.

87.opium.tw.

88.oripavine.tw.
89.oxycodone.tw.
90.oxycontin.tw.
91.oxymorphone.tw.
92.papaveretum.tw.
93.papaverin.tw.
94.pentazocine.tw.
95.percocet.tw.
96.peronine.tw.
97.pethidine.tw.
98.phenazocine.tw.
99.phencyclidine.tw.
100. pholcodine.tw.
101.piritramid\$.tw.
102.prodine.tw.
103.promedol.tw.
104.propoxyphene.tw.
105.remifentanil.tw.
106.sufentanil.tw.
107.tapentadol.tw.
108.thebaine.tw.
109.tilidine.tw.
110.tramadol.sh,tw.

111.ultracet.sh,tw.

Combining terms

112 .28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41
or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or
56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70
or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or
85 or 86 or 87 or 88 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99
or 100 or 101 or 102 or 103 or 104 or 105 or 106 or 107 or 108 or 109 or 110 or 111

113.17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27

114.1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16

115.112 and 113 and 114

116.animal/

117.animal/ and human/

118.116 not 117

119.115 not 118

120.remove duplicates from 119

CINAHL through EBSCOhost

Search terms for design

1. (MH "Clinical Trials+")
2. (MH "Random Assignment")
3. (MH "Double-Blind Studies") or (MH "Single-Blind Studies")
4. TX (clin\$ n25 trial\$)

5. TX (sing\$ n25 blind\$)
6. TX (sing\$ n25 mask\$)
7. TX (doubl\$ n25 blind\$)
8. TX (doubl\$ n25 mask\$)
9. TX (trebl\$ n25 blind\$)
10. TX (trebl\$ n25 mask\$)
11. TX (tripl\$ n25 blind\$)
12. TX (tripl\$ n25 mask\$)
13. (MH “Placebos”)
14. TX placebo\$
15. TX random\$
16. (MH “Study Design+”)
17. (MH “Comparative Studies”)
18. (MH “Evaluation Research”)
19. (MH “Prospective Studies+”)
20. TX (control\$ or prospectiv\$ or volunteer\$)
21. S1 or S2 or (...) or S20

Search terms for Osteoarthritis

22. osteoarthriti\$
23. (MH “Osteoarthritis”)
24. TX osteoarthro\$
25. TX gonarthriti\$
26. TX gonarthro\$

- 27. TX coxarthriti\$
- 28. TX coxarthro\$
- 29. TX arthros\$
- 30. TX arthrot\$
- 31. TX knee\$ n3 pain\$
- 32. TX hip\$ n3 pain\$
- 33. TX joint\$ n3 pain\$
- 34. TX knee\$ n3 ach\$
- 35. TX hip\$ n3 ach\$
- 36. TX joint\$ n3 ach\$
- 37. TX knee\$ n3 discomfort\$
- 38. TX hip\$ n3 discomfort\$
- 39. TX joint\$ n3 discomfort\$
- 40. TX knee\$ n3 stiff\$
- 41. TX hip\$ n3 stiff\$
- 42. TX joint\$ n3 stiff\$
- 43. S22 or S23 or S24(...)or S42

Search terms for Opioids

- 44. MH “ Analgesics, Opioid”
- 45. MH “Narcotics”
- 46. TX acetyldihydrocodeine
- 47. TX alfentanil
- 48. TX allylprodine

49. TX alphamethylfentanyl
50. TX alphaprodine
51. TX benzylmorphine
52. TX betaprodine
53. TX bezitriamide
54. TX buprenorphine
55. TX butorphanol
56. TX bremazocine
57. TX carfentan\$
58. TX codeine
58. TX contin
60. TX dextromoramide
61. TX dextropropoxyphene
62. TX dezocine
63. TX diacetylmorphine
64. TX diamorphine
65. TX dihydrocodeine
66. TX dihydromorphine
67. TX dihydromorphone
68. TX diphenoxylate
69. TX dipipanone
70. TX enadoline
71. TX ethylketazocine

- 72. TX ethylmorphine
- 73. TX etonitazene
- 74. TX etorphine
- 75. TX fentanyl
- 76. TX heroin
- 77. TX hydrocodone
- 78. TX hydromorphin\$
- 79. TX hydromorphone
- 80. TX ketazocine
- 81. TX ketobemidone
- 82. TX lefetamine
- 83. TX levomethadon
- 84. TX levomethadyl
- 85. TX levomethorphan\$
- 86. TX levorphanol
- 87. TX loperamide
- 88. TX meperidine
- 89. TX meptazinol
- 90. TX methadone
- 91. TX methadyl
- 92. TX methylmorphine
- 93. TX morphin\$
- 94. TX nalbuphine

- 95. TX narcotic\$
- 96. TX nicocodeine
- 97. TX nicomorphine
- 98. TX normorphine
- 99. TX noscapin\$
- 100. TX ohmefentanyl
- 101. TX opiate\$
- 102. TX opioid\$
- 103. TX opium
- 104. TX oripavine
- 105. TX oxycodone
- 106. TX oxycontin
- 107. TX oxymorphone
- 108. TX papaveretum
- 109. TX papaverin
- 110. TX pentazocine
- 111. TX percocet
- 112. TX peronine
- 113. TX pethidine
- 114. TX phenazocine
- 115. TX phencyclidine
- 116. TX pholcodine
- 117. TX piritramid\$

- 118. TX prodine
- 119. TX promedol
- 120. TX propoxyphene
- 121. TX remifentanyl
- 122. TX sufentanyl
- 123. TX tapentadol
- 124. TX thebaine
- 125. TX tilidine
- 126. TX tramadol
- 127. TX ultracet
- 128. S44 or S45 or(...)S127

Combining terms

- 129. S21 and S43 and S128

CENTRAL

Search terms for Osteoarthritis

- #1. MeSH descriptor Osteoarthritis explode all trees
- #2. (osteoarthritis* OR osteoarthro* OR gonarthriti* OR gonarthro* OR coxarthriti* OR coxarthro* OR arthros* OR arthrot* OR ((knee* OR hip* OR joint*) near/3 (pain* OR ach* OR discomfort*)) OR ((knee* OR hip* OR joint*) near/3 stiff*)) in Trials

Search terms for Opioids

- #3. MeSH descriptor Analgesics, Opioid explode all trees
- #4. MeSH descriptor Narcotics explode all trees

#5. (acetyldihydrocodeine OR alfentanil OR allylprodine OR alphamethylfentanyl OR alphaprodine OR benzylmorphine OR betaprodine OR bezitriamide OR buprenorphine OR butorphanol OR bremazocine OR carfentan* OR codeine OR contin OR dextromoramide OR dextropropoxyphene OR dezocine OR diacetylmorphine OR diamorphine OR dihydrocodeine OR dihydromorphine OR dihydromorphone OR diphenoxylate OR dipipanone OR enadoline OR ethylketazocine OR ethylmorphine OR etonitazene OR etorphine OR fentanyl OR heroin OR hydrocodone OR hydromorphin* OR hydromorphone OR ketazocine OR ketobemidone OR lefetamine OR levomethadon OR levomethadyl OR levomethorphan* OR levorphanol OR loperamide OR meperidine OR meptazinol OR methadone OR methadyl OR methylmorphine OR morphin* OR nalbuphine OR narcotic* OR nicocodeine OR nicomorphine OR normorphine OR noscapin* OR ohmefentanyl OR opiate* OR opioid* OR opium OR oripavine OR oxycodone OR oxycontin OR oxymorphone OR papaveretum OR papaverin OR pentazocine OR percocet OR peronine OR pethidine OR phenazocine OR phencyclidine OR pholcodine OR piritramid* OR prodine OR promedol OR propoxyphene OR remifentanyl OR sufentanil OR tapentadol OR thebaine OR tilidine OR tramadol OR ultracet) in Trials

Combining terms

#6. (#1 OR #2)

#7. (#3 OR #4 OR #5)

#8. (#6 AND #7) in Clinical Trials