## Search strategy in electronic databases, Supplemental Digital Content 1

### Cochrane Library

| Search Name: | Date Run: | Comment: | ID | Search | Hits |
|-------------|-----------|----------|----|--------|------|
| Nonunion    | 14th of April | All blocks | #1 | MeSH descriptor: [Fracture Fixation, Internal] explode all trees | 1296 |
|             |           |          | #2 | fract* fixat* | 4326 |
|             |           |          | #3 | osteosynthes* | 1083 |
|             |           |          | #4 | MeSH descriptor: [Open Fracture Reduction] explode all trees | 25 |
|             |           |          | #5 | open reduction | 887 |
|             |           |          | #6 | MeSH descriptor: [Closed Fracture Reduction] explode all trees | 12 |
|             |           |          | #7 | Closed reduction | 471 |
|             |           |          | #8 | Bone fixa* | 3571 |
|             |           |          | #9 | MeSH descriptor: [Fracture Fixation] explode all trees | 1671 |
|             |           |          | #10 | Fracture reduction | 567 |
|             |           |          | #11 | Skeletal fixa* | 207 |
|             |           |          | #12 | MeSH descriptor: [Fracture Fixation, Intramedullary] explode all trees | 336 |
|             |           |          | #13 | intramedullary nailing | 633 |
|             |           |          | #14 | Intramedul* fract* fixa* | 710 |
|             |           |          | #15 | Osteosynthesis intramedullary | 158 |
|             |           |          | #16 | Intramedullary nail* | 921 |
|             |           |          | #17 | Marrow nail* | 49 |
|             |           |          | #18 | Medullary nail* | 54 |
|             |           |          | #19 | MeSH descriptor: [Bone Screws] explode all trees | 769 |
|             |           |          | #20 | Bone screw* | 2067 |
|             |           |          | #21 | skelet* screw* | 188 |
|             |           |          | #22 | fract* screw* | 1668 |
|             |           |          | #23 | Cannulated screw* | 144 |
|             |           |          | #24 | Compression screw* | 305 |
|             |           |          | #25 | Biodegradable screw* | 70 |
|             |           |          | #26 | Lock* screw* | 302 |
|             |           |          | #27 | Fixati* Screw* | 1875 |
|             |           |          | #28 | MeSH descriptor: [Bone Nails] explode all trees | 419 |
|             |           |          | #29 | bone nail* | 1040 |
|             |           |          | #30 | Nail* fixa* | 977 |
|             |           |          | #31 | skelet* nail* | 99 |
|             |           |          | #32 | fract* nail* | 1434 |
|             |           |          | #33 | bone pin* | 1728 |
| #   | Term                  | Value |
|-----|-----------------------|-------|
| #34 | Pin fixa*             | 324   |
| #35 | skelet* pin*         | 405   |
| #36 | fract* pin*          | 1535  |
| #37 | Rod fixa*            | 96    |
| #38 | Bone rod*            | 1115  |
| #39 | skelet* rod*         | 383   |
| #40 | fract* rod*          | 1064  |
| #41 | Surgical wire        | 574   |
| #42 | Intraosseous wire*   | 9     |
| #43 | Wire* fixat*         | 515   |
| #44 | MeSH descriptor: [Bone Wires] explode all trees | 174   |
| #45 | bone wire*           | 526   |
| #46 | skelet* wire*        | 124   |
| #47 | fract* wire*         | 650   |
| #48 | Kirschner wire*      | 222   |
| #49 | MeSH descriptor: [Bone Plates] explode all trees | 574   |
| #50 | bone plate*          | 5122  |
| #51 | Compression plate*   | 558   |
| #52 | Plate fixa*          | 1310  |
| #53 | fract* plate*        | 3208  |
| #54 | skelet* plate*       | 526   |
| #55 | MeSH descriptor: [Suture Anchors] explode all trees | 64    |
| #56 | Suture anchor*       | 358   |
| #57 | Bone Anchor          | 115   |
| #58 | Anchor fixa*         | 79    |
| #59 | cerclage             | 392   |
| #60 | tension band*        | 338   |
| #61 | #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 OR #20 OR #21 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27 OR #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 | 17713 |
| #62 | MeSH descriptor: [Risk Factors] explode all trees | 23722 |
| #63 | Risk factor*         | 94824 |
| #64 | Population at risk   | 734   |
| #65 | MeSH descriptor: [Risk] explode all trees | 36086 |
| #66 | MeSH descriptor: [Comorbidity] explode all trees | 3434  |
| #67 | comorbid*            | 23601 |
| #68 | Epidemiological data | 6093  |
| #69 | MeSH descriptor: [Morbidity] explode all trees | 14268 |
| #70 | Morbid*              | 46012 |
| #   | Term                                      | Count |
|-----|------------------------------------------|-------|
| #71 | Multidiseas*                              | 27    |
| #72 | Multi-diseas*                             | 18    |
| #73 | MeSH descriptor: [Multiple Chronic Conditions] explode all trees | 27    |
| #74 | Multiple chronic conditions               | 3337  |
| #75 | Multimorbid*                              | 460   |
| #76 | Multi-morbid*                             | 107   |
| #77 | Population Characteristic*               | 18562 |
| #78 | Predict*                                  | 93255 |
| #79 | MeSH descriptor: [Epidemiology] explode all trees | 38    |
| #80 | epidemiolog*                              | 67707 |
| #81 | smoking cessation                         | 10023 |
| #82 | MeSH descriptor: [Smoking Cessation] explode all trees | 3901  |
| #83 | MeSH descriptor: [Smoke] explode all trees | 382   |
| #84 | smoking                                   | 31446 |
| #85 | MeSH descriptor: [Cigarette Smoking] explode all trees | 83    |
| #86 | cigarette smoking                         | 5586  |
| #87 | MeSH descriptor: [Smoking] explode all trees | 5998  |
| #88 | cigar smoking                             | 8     |
| #89 | tobacco smok*                             | 13316 |
| #90 | MeSH descriptor: [Obesity] explode all trees | 13219 |
| #91 | Obesi*                                    | 37149 |
| #92 | Adiposi*                                  | 2724  |
| #93 | Excess body weight                        | 1896  |
| #94 | MeSH descriptor: [Overnutrition] explode all trees | 13235 |
| #95 | Overnutrition                             | 181   |
| #96 | Overweight                                | 16083 |
| #97 | MeSH descriptor: [Body Weight] explode all trees | 26999 |
| #98 | Body weight                               | 61788 |
| #99 | MeSH descriptor: [Diabetes Mellitus] explode all trees | 30348 |
| #100| Diabet*                                   | 93669 |
| #101| MeSH descriptor: [Alcohol] explode all trees | 37147 |
| #102| Alcoholism                                | 7427  |
| #103| Alcohol dependence                       | 5179  |
| #104| Alcohol*                                 | 32197 |
| #105| MeSH descriptor: [Alcoholism] explode all trees | 3501  |
| #106| Alcohol abuse                             | 5308  |
| #107| Alcohol addiction                        | 2785  |
| #108| nonsteroid antiinflammatory agent         | 1686  |
| #109| Anti-Inflammatory Agents, Non-Steroidal   | 7106  |
| #110| MeSH descriptor: [Anti-Inflammatory Agents] explode all trees | 13091 |
| #111| antiinflammatory agent                    | 4767  |
| #112| anti inflamm* drug*                      | 25391 |
| # | MeSH descriptor | explode all trees | Count |
|---|-----------------|-------------------|-------|
| #113 | nonsteroid antiinflammatory agent | | 1686 |
| #114 | MeSH descriptor: [Staphylococcus] | | 1083 |
| #115 | Staphylococcus* | | 4600 |
| #116 | Infect* | | 135439 |
| #117 | bone infection* | | 6015 |
| #118 | Bone tissue infection | | 1335 |
| #119 | MeSH descriptor: [Bone Diseases, Infectious] | | 368 |
| #120 | osteomyelit* | | 639 |
| #121 | #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 OR #115 OR #116 OR #117 OR #118 OR #119 OR #120 | | 552705 |
| #122 | MeSH descriptor: [Fracture Healing] | | 520 |
| #123 | MeSH descriptor: [Fractures, Ununited] | | 148 |
| #124 | Fractures ununited | | 142 |
| #125 | Non-union | | 316 |
| #126 | Nonunion* | | 899 |
| #127 | No* union* | | 4586 |
| #128 | Delayed fracture heal* | | 478 |
| #129 | Fracture heal* impairment | | 442 |
| #130 | MeSH descriptor: [Pseudarthrosis] | | 23 |
| #131 | Pseudoarthro* | | 77 |
| #132 | pseudo arthrosis | | 10 |
| #133 | Delayed union | | 429 |
| #134 | False joint* | | 40180 |
| #135 | Bone heal* fail* | | 2744 |
| #136 | Ununited | | 144 |
| #137 | Deossification | | 0 |
| #138 | #122 OR #123 OR #124 OR #125 OR #126 OR #127 OR #128 OR #129 OR #130 OR #131 OR #132 OR #133 OR #134 OR #135 OR #136 OR #137 | | 47032 |
| #139 | #61 AND #121 AND #138 | | 2419 |
| #140 | #123 OR #124 OR #125 OR #126 OR #127 OR #128 OR #129 OR #130 OR #131 OR #132 OR #133 OR #134 OR #135 OR #136 OR #137 | | 46845 |
| #141 | #61 AND #121 AND #140 | | 2376 |

Embase and Medline
| # | Searches                                                                 | Results |
|---|--------------------------------------------------------------------------|---------|
| 1 | Fracture fixation, internal.mp. or exp osteosynthesis/                   | 43363  |
| 2 | Fracture osteosynthesis*.mp.                                            | 131    |
| 3 | Fracture fixation.mp. or exp fracture fixation/                         | 94577  |
| 4 | Osteosynthesis*.mp.                                                    | 49394  |
| 5 | Open reduction.mp.                                                      | 18568  |
| 6 | Closed reduction.mp.                                                    | 6636   |
| 7 | Bone fixation.mp.                                                       | 952    |
| 8 | Fracture reduction*.mp. or exp fracture reduction/                       | 13114  |
| 9 | Skeletal fixa*.mp.                                                      | 890    |
| 10| Fracture fixation, intramedullary.mp. or exp intramedullary nailing/   | 15366  |
| 11| Intramedul* fract* fixa*.mp.                                           | 50     |
| 12| Osteosynthesis intramedullary.mp.                                       | 15     |
| 13| Intramedullary nail*.mp.                                                | 18958  |
| 14| Marrow nail*.mp.                                                        | 71     |
| 15| Medullary nail*.mp.                                                     | 835    |
| 16| Bone screw*.mp. or exp bone screw/                                      | 36295  |
| 17| skelet* screw*.mp.                                                      | 2      |
| 18| fract* screw*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word] | 128    |
| 19| Cannulated screw*.mp. or exp cannulated screw/                          | 1988   |
| 20| Compression screw*.mp. or exp compression screw/                        | 1849   |
| 21| Biodegradable screw*.mp. or exp biodegradable screw/                    | 218    |
| 22| Lock* screw*.mp. or exp locking screw/                                  | 1906   |
| 23| Fixati* Screw*.mp.                                                     | 601    |
| 24| Bone nail*.mp. or exp bone nail/                                       | 9758   |
| 25| Nail* fixa*.mp.                                                         | 842    |
| 26| skelet* nail*.mp.                                                       | 4      |
| 27| fract* nail*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word] | 91     |
| 28| Bone pin*.mp. or exp bone pin/                                          | 866    |
| 29| Pin fixa*.mp.                                                           | 979    |
| 30| skelet* pin*.mp.                                                        | 37     |
| 31| fract* pin*.mp.                                                         | 86     |
| 32| Rod fixa*.mp.                                                           | 589    |
| 33| Bone rod*.mp.                                                           | 41     |
| 34| skelet* rod*.mp.                                                        | 41     |
| 35| fract* rod*.mp.                                                         | 32     |
| 36| exp surgical wire/ or Surgical wire.mp.                                 | 33832  |
| No. | Term                                                                 | Count |
|-----|----------------------------------------------------------------------|-------|
| 37  | Intraosseous wire*.mp.                                               | 61    |
| 38  | Wire fixation.mp. or exp wire fixation/                              | 3477  |
| 39  | wire* fix*.mp.                                                       | 3618  |
| 40  | Bone wire*.mp. or exp bone wire/                                    | 9072  |
| 41  | skelet* wire*.mp.                                                   | 15    |
| 42  | fract* wire*.mp.                                                    | 52    |
| 43  | Kirschner wires*.mp. or exp Kirschner wire/                         | 8739  |
| 44  | Bone plate*.mp. or exp bone plate/                                  | 19472 |
| 45  | Compression plate*.mp. or exp compression plate/                    | 2801  |
| 46  | Plate fixa*.mp. or exp plate fixation/                              | 9697  |
| 47  | fract* plate*.mp.                                                   | 263   |
| 48  | skelet* plate*.mp.                                                  | 29    |
| 49  | Suture anchor*.mp. or exp suture anchor/                            | 4177  |
| 50  | Bone Anchor.mp.                                                     | 271   |
| 51  | Anchor fixa*.mp.                                                    | 322   |
| 52  | cerclage.mp.                                                        | 5776  |
| 53  | tension band*.mp.                                                   | 1525  |
| 54  | Risk factor*.mp. or exp risk factor/                                | 1339228 |
| 55  | Population at risk.mp.                                              | 5168  |
| 56  | Comorbid*.mp. or exp comorbidity/                                   | 383219 |
| 57  | Epidemiological data.mp. or exp epidemiological data/               | 3539765 |
| 58  | Morbidity.mp. or exp morbidity/                                     | 666297 |
| 59  | Multidisease*.mp.                                                   | 72    |
| 60  | Multi-disease*.mp.                                                  | 190   |
| 61  | Multiple chronic conditions.mp. or exp multiple chronic conditions/  | 3854  |
| 62  | Multimorbid*.mp.                                                    | 6268  |
| 63  | Multi-morbid*.mp.                                                   | 1254  |
| 64  | Population Characteristic*.mp.                                     | 4039  |
| 65  | Predictor.mp.                                                       | 303926 |
| 66  | exp epidemiology/ or Epidemiology.mp.                              | 4050692 |
| 67  | exp smoking/ or exp cigarette smoking/ or Smoking.mp. or exp smoking habit/ or exp cigar smoking/ | 485910 |
| 68  | tobacco smok*.mp.                                                   | 32514 |
| 69  | exp obesity/ or Obesity.mp.                                         | 588843 |
| 70  | Obesi*.mp.                                                          | 548268 |
| 71  | Adiposi*.mp.                                                        | 37912 |
| 72  | Excess body weight.mp.                                              | 2254  |
| 73  | Overnutrition.mp. or exp overnutrition/                             | 530312 |
| 74  | Overweight.mp.                                                      | 105039 |
| 75  | Body weight.mp. or exp body weight/                                 | 647962 |
| 76  | Diabetes mellitus.mp. or exp diabetes mellitus/                     | 1030860 |
| 77  | Diabet*.mp.                                                         | 1173619 |
| Page | Term                                                                 | Count      |
|------|----------------------------------------------------------------------|------------|
| 78   | Alcoholism.mp. or exp alcoholism/                                  | 141603     |
| 79   | Alcohol dependence.mp.                                             | 15431      |
| 80   | Alcohol*.mp.                                                        | 698716     |
| 81   | Alcohol abuse.mp. or exp alcohol abuse/                             | 48826      |
| 82   | Alcohol addiction.mp.                                              | 2320       |
| 83   | Anti-Inflammatory Agents, Non-Steroidal.mp. or exp nonsteroid antiinflammatory agent/ | 753196     |
| 84   | antiinflammatory agent.mp. or exp antiinflammatory agent/          | 1998638    |
| 85   | anti inflamm* drug*.mp.                                            | 50135      |
| 86   | nonsteroid antiinflammatory agent.mp. or exp nonsteroid antiinflammatory agent/ | 753182     |
| 87   | Staphylococcus.mp. or exp Staphylococcus/                           | 272187     |
| 88   | Infect*.mp.                                                         | 2981222    |
| 89   | bone infection*.mp. or exp bone infection/                          | 12978      |
| 90   | Bone tissue infection.mp.                                          | 3          |
| 91   | osteomyelitis/ or Osteomyelitis.mp.                                 | 44195      |
| 92   | Fractures, ununited.mp. or exp fracture nonunion/                   | 26568      |
| 93   | Non-union*.mp.                                                      | 6753       |
| 94   | Nonunion*.mp.                                                       | 20496      |
| 95   | No* union*.mp.                                                      | 6902       |
| 96   | Delayed fracture heal*.mp.                                         | 368        |
| 97   | Fracture heal* impairment.mp.                                      | 10         |
| 98   | Pseudoarthrosis.mp. or pseudoarthrosis/                             | 15206      |
| 99   | pseudo arthrosis.mp.                                                | 216        |
| 100  | Pseudarthro*.mp.                                                    | 16628      |
| 101  | Delayed union.mp.                                                   | 2875       |
| 102  | False joint*.mp.                                                    | 194        |
| 103  | Bone heal* fail*.mp.                                                | 12         |
| 104  | Ununited.mp.                                                        | 996        |
| 105  | Deossification.mp.                                                  | 22         |
| 106  | 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 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 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 | 176797     |
| 107  | 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 | 37901      |
| 108  | 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 | 11167239   |
| 109  | 106 and 107 and 108                                                 | 8848       |
