Supplementary Table 1. Search strategy for each database.

| Database | Order | Keywords |
|---|---|---|
| PubMed | #1 | delirium OR deliri* OR cognitive OR cognitive impairment OR neurocognitive OR mental |
| | #2 | postoperative OR postop* OR postsurg* OR after surg* OR after op* |
| | #3 | #1 AND #2 |
| | #4 | NSAID OR nonsteroidal anti-inflammatory drug OR aspirin |
| | #5 | #3 AND #4 |
| | #6 | randomized controlled trial [pt] |
| | #7 | controlled clinical trial [pt] |
| | #8 | randomized [tiab] OR randomised [tiab] |
| | #9 | placebo [tiab] |
| | #10 | randomly [tiab] |
| | #11 | trial [tiab] |
| | #12 | groups [tiab] |
| | #13 | #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 |
| | #14 | animals [mh] NOT humans [mh] |
| | #15 | #13 NOT #14 |
| | #16 | #5 AND #15 |
| EMBASE | #1 | 'delirium'/exp OR 'delirium' OR 'cognitive'/exp OR 'neurocognitive'/exp OR 'mental'/exp |
| | #2 | 'surgery'/exp OR surg* OR 'operation'/exp OR op* |
| | #3 | 'NSAID'/exp OR 'nonsteroidal anti-inflammatory drug' OR 'aspirin'/exp |
| | #4 | #1 AND #2 AND #3 |
| | #5 | random*:ab,ti OR ((clinical NEXT/1 trial*):de,ab,ti) OR ((double NEXT/1 blind*):ab,ti) OR group* |
| | #6 | #4 AND #5 |
| | #7 | #6 AND [article]/lim |
| CENTRAL | #1 | ("NSAID" OR "aspirin" ):ti,ab,kw (Word variations have been searched) |
| | #2 | (deliri* OR cognitive* OR mental OR neurocognitive*):ti,ab,kw (Word variations have been searched) |
| | #3 | (surg* OR op*):ti,ab,kw (Word variations have been searched) |
| | #4 | #1 AND #2 AND #3 |
| | #5 | #4 in Trials |
| Web of Science | #1 | TS=("NSAID" OR "aspirin") |
| | #2 | TS=(deliri* OR "cognitive disorder" OR cognitive OR "cognitive impairment" OR neurocognitive OR mental) |
| | #3 | TS=(surg* OR ope*) |
| | #4 | #1 AND #2 AND #3 |
| | #5 | TS=(random* OR "clinical NEXT/1 trial*" OR placebo* OR "double NEXT/1 blind*" OR group*) |
| | #6 | #4 AND #5 |