

Recommendations from Cochrane reviews for improving future trials on anesthesia and pain: a meta-research study

Running head: Improving anesthesia and pain trials

Abstract

Background: Cochrane systematic reviews (CSRs) have a section ‘Implications for research’ where the authors make suggestions for improving future research. We assessed the prevalence and time dynamics of different recommendations in the CSRs about anaesthesia and pain.

Methods: We included all CSRs published by the Cochrane Anaesthesia Group (CA Group) and Cochrane Pain and Palliative Care Group (PaPaS Group) before July 17, 2020. We analysed recommendations for improving future research listed in the ‘Implications for research’ section of these CSRs and categorized recommendations for improvements.

Results: We analyzed 370 reviews. Four categories of recommendations were present in more than 40% of reviews. Most reviews recommended a larger sample size and better outcome choice, study design and choice of future intervention. These recommendations gradually increased in frequency in PaPaS Group and mainly decreased in CA Group.

Conclusions: Recommendations from CSRs offer useful advice for trialists designing new trials.

Keywords: Anaesthesia, Pain, Cochrane Systematic Review, Implications for Research

Background

Systematic reviews are considered the ‘gold standard’ in the evidence hierarchy because they attempt to identify, appraise and synthesise all empirical evidence to answer a specific research question [1, 2]. Cochrane systematic reviews are reviews published in *The Cochrane Database of Systematic Reviews (CDSR)*. They use explicit, systematic methods that aim to minimize bias and produce more trustworthy findings [3]. Cochrane reviews are prepared by Cochrane Review Groups, which provide authors with methodological and editorial support. Cochrane is organised into more than 50 Cochrane Review Groups, each focusing on a specific area of health.

All Cochrane reviews have a section called ‘*Implications for research*’, where authors can present their ideas on how future trials relevant to the topic for the review might be improved [4]. Previous research has shown that this section can be useful for identifying research gaps, providing guidance for trialists [5-7]. However, such a study is not available for the fields of anaesthesia and pain although multiple studies have explored clinical trials and systematic reviews of clinical trials in anaesthesia and pain, indicating deficiencies in trial design, reporting and awareness of authors regarding relevant methodological aspects [8-18].

We examined the ‘*Implications for research*’ section of reviews published by two Cochrane Review Groups with an aim to analyse recommendations for improvements to future trials in anaesthesia and pain. We also aimed to analyse changes over time in the most frequent categories of recommendations, as well as their frequency for pharmaceutical and non-pharmaceutical trials.

Methods

Study design

We conducted a meta-research study. We analysed recommendations for improving future research listed in the ‘Implications for research’ section of Cochrane reviews from the fields of anaesthesia and pain. This was a replication study that used similar methods to the earlier work of Piroasca et al., which focused on two other Cochrane Review Groups [7].

Eligibility criteria

We assessed all Cochrane reviews published before mid 2020 by two Cochrane Review Groups: Cochrane Anaesthesia Group (CA Group) and Cochrane Pain and Palliative Care Group (PaPaS Group). We limited inclusion criteria to reviews from the fields of anaesthesia and pain, as PaPaS reviews also include topics such as palliative and supportive care. However, we did include reviews in the field of palliative care that addressed the treatment of pain in cancer patients. We included only the latest published version of each review, and the full text of eligible reviews was retrieved from the Cochrane Library.

Search

On July 17, 2020 we searched the Cochrane Library using the Advanced search and “Cochrane Group” as a filter.

Screening

One author (RR) screened all retrieved reviews for eligibility, and another author (LP) verified her screening assessments.

Data extraction

From each eligible Cochrane review, we extracted verbatim the content of the ‘*Implications for Research*’ section in the Authors’ conclusions, as well as the year when the current version of the review was published, and the type of intervention (pharmaceutical, other).

Data categorization

Recommendations for improvements to future trials were categorized, starting with the 22 categories defined by Piroasca et al. [7]. We added more categories when we found recommendations that were not covered by the categories previously published by Piroasca et

al [7]. Two investigators (RR and MP) independently categorized the recommendations for each included Cochrane review. Disagreements were resolved via discussion or involvement of other co-authors.

Outcomes

The primary outcome was the frequency of each category of recommendation for improvements to future trials, together and separately for the anaesthesia and pain reviews.

Secondary outcomes were the frequency of each category of recommendation in different time periods and for the two different types of interventions.

Data analysis

We reported data using descriptive analysis, as frequencies and percentages.

Results

Eligibility

We retrieved 140 reviews published by the CA Group from 2003 to 2019, and 320 reviews published by the PaPaS Group from 1999 to 2020. After screening these 460 reviews, 370 reviews were found eligible for our study.

Out of 90 excluded reviews, 45 had been withdrawn (5 from the CA Group and 40 from the PaPaS Group) and 45 investigated topics outside our interest, such as aspects of palliative and supportive care that are not related to pain. The list of excluded reviews, with reasons, is available in Supplementary file 1.

Among the 370 included reviews, 135 (36%) were from the CA Group and 235 (63%) were from the PaPaS Group. The list of included reviews is available in Supplementary file 2.

Frequency of different categories of recommendations

Recommendations for research were categorised into 32 categories. Table 1 shows the frequency of the most common recommendations. The frequency of all recommendations is reported in Supplementary file 3.

The most frequent categories of recommendation, present in more than 40% of reviews in both Cochrane Groups were: larger sample size, better outcome choice, better design, and better choice of future intervention (Table 1). More than 20% of all reviews recommended better reporting, the need for additional research, more investigation of adverse events and safety and better choice of eligibility criteria.

Fifteen percent (35/235) of eligible reviews from the PaPaS Group and 2.2% (3/135) of reviews from the CA Group stated that further research into the topic of the review is not a priority or is unlikely to happen. This recommendation was most commonly explained by noting that good alternative interventions were already available (N=15), or that sufficient evidence was available about the studied intervention (N=9). Details about these recommendations are shown in Supplementary file 4.

The most common categories of recommendation that were more frequent in the PaPaS Group than in the CA Group were: better design, better reporting and use of validated rating scales. Categories of recommendation that were more frequent in the CA Group than in the PaPaS Group were related to adverse events and safety and the need for standardised or clearly defined interventions (Table 1).

Frequency of categories of recommendation throughout different time periods

We analyzed changes over time for the five most frequent categories of recommendations in each Group in two-year periods, as shown in Figures 1 and 2. The data before the year 2013 were analysed together due to the small number of available reviews.

The number of analyzed reviews published by the CA Group over time was: 20 reviews in 2003-2013 (15%), 43 reviews in 2014-2015 (32%), 39 reviews in 2016-2017 (29%), and 33 reviews in 2018-2019 (24%). The need for trials to have larger sample sizes is the only category of recommendation which increased in frequency throughout the years (from 35% of reviews in the first time period to 55% of reviews in the last time period). The frequencies for the other most common categories of recommendation decreased (Figure 1).

The number of analysed reviews from the PaPaS Group published over time was: 85 reviews in 1999-2013 (36%), 61 reviews in 2014-2015 (26%), 65 reviews in 2016-2017 (28%), and 24 reviews in 2018-2019 (10%). An increase in frequency was noted in all of the five commonest categories of recommendations. Categories for better reporting and better outcome choice increased almost threefold, while the other most common categories had an almost twofold increase in frequency (Figure 2).

Frequency of categories of recommendation with regard to a different type of intervention

The five most common categories of recommendation were also analysed with regard to whether the applied intervention was pharmaceutical or non-pharmaceutical (other). As shown in Figure 3, among the reviews published by the CA Group, 71 reviews (53%) had a pharmaceutical intervention and 64 reviews (47%) had a non-pharmaceutical intervention. Compared to reviews with a non-pharmaceutical intervention, reviews with a pharmaceutical intervention had a more frequent recommendation for a larger sample size (51% versus 44%) and better choice of future intervention (39% versus 30%) (Figure 3).

Among the reviews published by the PaPaS Group, 180 reviews (77%) had a pharmaceutical intervention and 55 reviews (23%) had a non-pharmaceutical intervention (Figure 4). Almost all of the commonest categories of recommendations were more frequent in reviews with non-pharmaceutical interventions, with categories for better reporting (60% versus 31%), better design (56% versus 45%) and larger sample size (55% versus 40%) showing the largest difference in frequency (Figure 4).

All raw data collected within this study, with all categorizations, are available in Supplementary file 5 (available online at Open Science Framework: <https://osf.io/6pj4m/>).

Discussion

Our analysis of the implications for research in Cochrane reviews from the fields of anaesthesia and pain showed that four categories of recommendation stood out, having been mentioned in more than 40% of analysed reviews. Those recommendations call for larger sample size, better outcome choice, better design and better choice of future intervention.

The size of the sample affects the quality of research [19]. Turner et al. investigated the effect of size on the results of meta-analyses and defined “adequate power” as $\geq 50\%$ power to detect a 30% relative risk reduction [20]. They concluded that underpowered studies do not affect meta-analyses that include at least two adequately powered studies. However, they also noticed that underpowered studies made up all of the evidence in most Cochrane reviews, with all studies being underpowered in 70% of the meta-analyses [20]. This is reflected in our findings, with the need for future trials to have larger sample sizes being recommended in 45% of the analyzed reviews.

Good choice of outcomes is a crucial factor for a high-quality study. The best design and the most rigorous methods cannot make up for a poor choice of outcomes [21]. There are many guidelines for choosing the right outcomes [22] and an increasing number of research fields have a recommended set of outcomes, known as a core outcome set (COS) [23]. A COS is a pre-agreed minimum of outcomes that should be measured and reported in research in a specific field, so that similar trials can be compared and their results included in a meta-analysis as necessary [23]. It has been previously shown that trials and systematic reviews from the field of anesthesiology are suboptimal when it comes to using existing COS [11-13, 24, 25] and that researchers may not be aware of the existence of a COS [11, 13].

The results of our study show that the need for trials to improve their choice of outcomes is very high; 43% of the reviews recommend a better choice of outcomes, while 11% of the reviews recommend the use of a standardised set of outcomes. A similar result was noted by Piroasca et al. [7], who found that more than half of analysed Cochrane reviews recommended a better choice of outcomes. Additionally, the frequency of that category of recommendation has increased throughout the years in the PaPaS Group. In the CA Group, an increase in the frequency of recommendations for a larger sample size was observed, while other categories of recommendations became less common over time. In the PaPaS Group, however, an increase in frequency was observed in all five most common categories, with an almost

threefold increase in the proportion of reviews recommending better reporting and better choice of outcomes.

Recommendations from systematic reviews should, ideally, improve future research. However, the question is whether trialists read and adhere to the recommendations from Cochrane reviews when designing their new studies. It has, for example, been noted previously that trialists frequently do not mention the use of systematic reviews when reporting the results of their trials in the field of anesthesiology [18].

The calls in the analysed Cochrane reviews for better design and better reporting reflect the findings of multiple studies from the fields of anesthesiology and pain, where deficiencies have been reported and recommendations for improvement advised [10, 14-16, 26-28].

It has been reported that studies of non-pharmaceutical interventions score lower on assessment of methodology than studies of pharmaceutical interventions [29]. Some support for this was found in the PaPaS Group, but not in the CA Group.

The 'Implications for research' section in Cochrane reviews has been analysed in previous studies [7, 21]. The findings from a study conducted by Piroasca et al., which investigated two other Cochrane Review Groups, are similar in part to our results, with better outcome choice, better choice of future intervention and larger size sample among the most frequent recommendations in both studies [7].

On the other hand, a recommendation for longer follow-up, which was found in more than a third of reviews analysed in the study of Piroasca et al. [7], was present in only 23% of the PaPaS Group's reviews and 11% of the CA Group's reviews in our study. This difference may be due to differences in individual areas of research, since the fields of interest for Piroasca et al. [7] were schizophrenia, multiple sclerosis and other rare diseases of the central nervous system, all of which are lifelong diseases.

Our findings regarding differences in the frequency of recommendations for improvement in reviews of pharmaceutical versus non-pharmaceutical interventions were not consistent. In the CA Group, reviews with a pharmaceutical intervention had a more frequent recommendation for larger sample size and better choice of future intervention. On the contrary, in the PaPaS Group, the commonest categories of recommendations were more frequent in reviews with non-pharmaceutical interventions. Further research on a larger sample of reviews may be warranted for exploring any systematic differences in pharmaceutical versus non-pharmaceutical reviews in this respect.

In 2007, Clarke et al. described their analysis of the 'Implications for research' section of Cochrane reviews published in the year 2005 (4). Their primary aim was to determine the frequency of recommendations for future research. A total of 2535 reviews were included and, among other results, 82% of reviews mentioned the need for a better choice of future intervention, which is twice the proportion of reviews in our study (41%). This does not necessarily mean that trials have improved on this aspect over time because there are major differences in the quality and rigour of conduct of primary research in different areas of medicine.

Limitations

Even though our categorisation was done by two authors independently, who then resolved all their disagreements, we cannot exclude the possibility that other authors would have categorised the data in this study differently. For this reason, we are providing our full raw data, with all categorizations, in Supplementary file 5 (available at: <https://osf.io/6pj4m/>). In this way, readers can assess the text of the implications for research of each analysed review, and how we decided to categorize that text.

It is also important to note that we cannot extrapolate the results from our study to reviews in other Cochrane Review Groups due to a lack of diversity of collected data. Cochrane includes more than 50 different Review Groups, each specialised in a certain field, which by itself can be a confounding factor.

Conclusion

Cochrane reviews are not only useful sources of high-quality evidence syntheses, but are also a source of advice for trialists regarding improvements needed in the design and conduct of future trials. The section on implications for research in Cochrane reviews offers insight into shortcomings of the available trials. Thus, trialists should use these recommendations to design better studies in the future. Funders of research could use this information in at least these two fields to encourage authors to respond to particular design challenges highlighted in relevant systematic reviews.

Summary points

- Four categories of recommendation were brought up in more than 40% of reviews: larger sample size, better outcome choice, better design and better choice of future intervention.
- The most frequent recommendation for future trials overall was a larger sample size (45% of reviews).
- The 'Implications for research' section in Cochrane reviews has been analysed in previous studies and two other Cochrane Review Groups were investigated. Results were similar in part to our results, with better outcome choice, better choice of future intervention and larger size sample among the most frequent recommendations in both studies.
- CA Group – an increase in the frequency of recommendations for a larger sample size was observed, while other categories of recommendations became less common over time.
- PaPaS Group – an increase in frequency was observed in all five most common categories, with an almost threefold increase in the proportion of reviews recommending better reporting and better choice of outcomes.

Declarations

Ethics approval and consent to participate

Not applicable. This was a bibliometric study of literature.

Consent to publish

Not applicable.

Availability of data and materials

All raw data collected within the study are reported in Supplementary file 5 (available online at Open Science Framework: <https://osf.io/6pj4m/>).

Competing interests

The authors have no competing interests to declare.

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Authors' Contributions (anonymized for peer-review)

Author 1: Study design, Data analysis, Writing the first draft of the manuscript, Reviewing the manuscript, Approval of the final version of the manuscript

Author 2: Study design, Data analysis, Reviewing the manuscript, Approval of the final version of the manuscript

Author 3: Study design, Data and analysis review, Reviewing the manuscript, Approval of the final version of the manuscript

Author 4: Study design, Data and analysis review, Reviewing the manuscript, Approval of the final version of the manuscript

Author 5: Study design, Data and analysis review, Reviewing the manuscript, Approval of the final version of the manuscript

Author 6: Study design, Data and analysis review, Reviewing the manuscript, Approval of the final version of the manuscript

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Figure legends

Figure 1. The five most frequently used *'Implications for research'* recommendations for the Cochrane Anaesthesia Group published from 2003 to 2019. The percentages shown are the average over a two-year period, except for the data from 2003–2013, which were analysed together due to a smaller amount of conducted research.

Figure 2. The five most frequently used *'Implications for research'* recommendations for the Cochrane Pain and Palliative Care Group published from 1999 to 2019. The percentages shown are the average over a two-year period, except for the data from 1999–2013, which were analysed together due to a smaller amount of conducted research.

Figure 3. The five most frequently used *'Implications for research'* recommendations for the Cochrane Anaesthesia Group with regard to the type of intervention.

Figure 4. The five most frequently used *'Implications for research'* recommendations for the Cochrane Pain and Palliative Care Group with regard to the type of intervention.

List of supplementary files

Supplementary file 1. List of excluded studies, with reasons

Supplementary file 2. List of excluded studies

Supplementary file 3. Frequency of all categories of recommendations

Supplementary file 4. Explanations for statements that further research into the topic of the review is not a priority or is unlikely to happen

Supplementary file 5. Raw data created during the study, including categorizations of recommendations for each included study (available online at Open Science Framework: <https://osf.io/6pj4m/>)

Supplementary file 4. List of studies included in '*Trials of this type are not a priority / are unlikely*' category, corresponding Cochrane Review Group, verbatim and categorization of reasons for their inclusion

Numeral	Title	Cochrane Review Group	Verbatim	Categorization
1.	Infraclavicular brachial plexus block for regional anaesthesia of the lower arm	Cochrane Anaesthesia Group	<p>Ultrasound guidance has largely replaced neurostimulation in modern brachial plexus blockade, and has improved the efficacy of all the commonly-used techniques. Given the high success rates reported in recent studies, it is unlikely that additional comparative trials will lead to a demonstration of a difference in efficacy between the various techniques.</p>	Sufficient evidence about the effects of the intervention
2.	Effects of sevoflurane versus other general anaesthesia on emergence agitation in children	Cochrane Anaesthesia Group	<p>Data on the effects of halothane versus sevoflurane on EA were adequate, and further research is unlikely to generate useful additional findings with respect to EA risk in children. Further investigation of dexmedetomidine and use of propofol-based anaesthesia, as described in the included studies, is also unlikely to generate further useful data, as these interventions have been shown to be clearly effective.</p>	Sufficient evidence about the effects of the intervention
3.	The use of ultrasound guidance for perioperative neuraxial and peripheral nerve blocks in children	Cochrane Anaesthesia Group	<p>The number of trials available is now sufficient to allow us to conclude that ultrasound guidance probably offers some advantages regarding most of our beneficial outcomes: success rate (Analysis 1.1), reduced pain at one hour after surgery (Analysis 1.2), and prolonged block duration (Analysis 1.3). It seems unlikely that additional research will substantially affect these conclusions.</p>	Sufficient evidence about the effects of the intervention

4.	Acupuncture for the prevention of episodic migraine	Cochrane Pain and Palliative Care Group	Although further sham-controlled trials are desirable, we think that such studies should not have the highest priority unless they also address other important questions	No specific reason stated
5.	Acupuncture for the prevention of tension-type headache	Cochrane Pain and Palliative Care Group	We do not consider sham-controlled trials a priority for the future.	No specific reason stated
6.	Gabapentin or pregabalin for the prophylaxis of episodic migraine in adults	Cochrane Pain and Palliative Care Group	While efficacy for high doses of gabapentin has not been ruled out, the evidence for this drug, overall, is not promising and does not lead us to recommend further studies with any degree of priority.	The evidence about the intervention is not promising
7.	Imipramine for neuropathic pain in adults	Cochrane Pain and Palliative Care Group	There are reasonable levels of evidence for the benefit of other anti-epileptic and antidepressant drugs in the treatment of chronic neuropathic pain. Larger, better-designed studies would provide more definitive conclusions on the efficacy of imipramine, but it is unlikely that these will be carried out, given the age of the drug and the alternatives available, or that they could be justified on the basis of the available evidence.	Sufficient evidence about the effects of the intervention
8.	Methadone for cancer pain,	Cochrane Pain and Palliative Care Group	While it would be easy to suggest that further research is needed, in practice this is very unlikely to happen as this is an old drug and funding is not likely to be forthcoming.	Old intervention; monetary reasons

9.	Normobaric and hyperbaric oxygen therapy for the treatment and prevention of migraine and cluster headache	Cochrane Pain and Palliative Care Group	Any further investigations would need to be carefully justified. The effect of differing oxygen dosage and of other therapies administered simultaneously is not known.	Unknown/serious adverse effects
10.	Nortriptyline for neuropathic pain in adults	Cochrane Pain and Palliative Care Group	Larger, better-designed studies would provide more definitive conclusions on the efficacy of nortriptyline and support its continued use in neuropathic pain, but it is unlikely that these will be carried out, given the age of the drug and the alternatives available.	Old intervention; Good alternatives are already available
11.	Phenytoin for neuropathic pain and fibromyalgia in adults	Cochrane Pain and Palliative Care Group	This seems unlikely to occur due to the cost of such studies and the lack of financial incentive behind them, in this case because phenytoin is out of patent and there would be little or no profit to justify the large trial costs.	Intervention out of patent; monetary reasons
12.	Selective serotonin reuptake inhibitors (SSRIs) and serotonin-norepinephrine reuptake inhibitors (SNRIs) for the prevention of migraine in adults	Cochrane Pain and Palliative Care Group	A randomised controlled trial comparing a SSRI or a SNRI versus another drug or another non-pharmacological intervention is not a priority in the migraine research pipeline and might not exert a significant impact on the overall evidence.	No specific reason stated

13.	Selective serotonin reuptake inhibitors (SSRIs) and serotonin-norepinephrine reuptake inhibitors (SNRIs) for the prevention of tension-type headache in adults	Cochrane Pain and Palliative Care Group	However, we think that a small, or large, RCT comparing a SSRI or a SNRI versus another drug or another non-pharmacological intervention is not a priority and might not exert a significant impact on the overall evidence.	No specific reason stated
14.	Single dose oral aceclofenac for postoperative pain in adults	Cochrane Pain and Palliative Care Group	Given the large number of available drugs of this and similar classes which have good evidence of efficacy in acute postoperative pain, there is no urgent research agenda for this drug. This review should not require updating unless a substantial body of new clinical trials on aceclofenac appears, an unlikely eventuality.	Good alternatives are already available
15.	Single dose oral acemetacin for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group	Given the large number of available drugs of this and similar classes, there is no urgent research agenda.	Good alternatives are already available
16.	Single dose oral aspirin for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group	It is unlikely that further studies of this sort will be carried out for aspirin, and we have a sufficiently large body of evidence to be confident with the results for the 600/650 mg dose.	Sufficient evidence about the effects of the intervention

17.	Single dose oral dexibuprofen [S(+)-ibuprofen] for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group	A considerable additional body of clinical trial results would be needed to know whether dexibuprofen has any advantages in efficacy, or faster analgesic onset, or safety over racemic ibuprofen. There seems little need for this research, as emerging evidence is that formulation is likely to be more important than chirality for NSAIDs in acute pain.	Sufficient evidence about the effects of the intervention
18.	Single dose oral dextropropoxyphene, alone and with paracetamol (acetaminophen), for postoperative pain	Cochrane Pain and Palliative Care Group	It is unlikely that new studies in acute pain will feature dextropropoxyphene alone or in combination with paracetamol, and there does not appear to be any pressing need for new studies because there are many alternative analgesics now available.	Good alternatives are already available
19.	Single dose oral diflunisal for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group	Further larger placebo controlled studies of good methodological quality and using clinically relevant outcomes would provide more robust estimates of efficacy, and studies including active comparators would allow head to head comparisons. However, diflunisal is not a frequently prescribed drug in developed countries, and it seems unlikely that such studies will be forthcoming.	Monetary reasons / impractical
20.	Single dose oral etoricoxib for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group	It is unlikely that further studies will be carried out for this dose and in this setting, and if they were, that they would change the result here.	No specific reason stated
21.	Single dose oral fenbufen for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group	Given the large number of available drugs of this and similar classes to treat postoperative pain, there is no urgent research agenda.	Good alternatives are already available

22.	Single dose oral fenoprufen for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group	Given the large number of available drugs of this and similar classes to treat postoperative pain, there is no urgent research agenda, and indeed the most recent studies identified were published in the mid 1980s. More studies could more accurately determine efficacy, but are unlikely to be performed because of well known alternatives.	Good alternatives are already available
23.	Single dose oral indometacin for the treatment of acute postoperative pain	Cochrane Pain and Palliative Care Group	However, it is unlikely that such studies will be performed since indometacin is one of the older NSAIDs on the market; newer, safer, and efficacious NSAIDs have since been developed.	Old intervention; Good alternatives are already available
24.	Single dose oral lornoxicam for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group	Given the large number of available drugs of this and similar classes to treat postoperative pain, there is no urgent research agenda.	Good alternatives are already available
25.	Single dose oral lumiracoxib for postoperative pain in adults	Cochrane Pain and Palliative Care Group	We see no implications for research in the field of single dose acute pain studies.	No specific reason stated
26.	Single dose oral mefenamic acid for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group	Given the large number of available drugs of this and similar classes to treat postoperative pain, there is no urgent research agenda. More studies could more accurately determine efficacy, but are unlikely to be performed because of well known alternatives.	Good alternatives are already available
27.	Single dose oral meloxicam for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group	Given the large number of available drugs of this and similar classes to treat postoperative pain, there is no urgent research agenda.	Good alternatives are already available

28.	Single dose oral nabumetone for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group	Given the large number of available drugs of this and similar classes to treat postoperative pain, there is no urgent research agenda.	Good alternatives are already available
29.	Single dose oral nefopam for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group	Given the large number of available drugs of this and similar classes, there is no urgent research agenda.	Good alternatives are already available
30.	Single dose oral paracetamol (acetaminophen) for postoperative pain in adults	Cochrane Pain and Palliative Care Group	It is unlikely that further studies will alter the estimates for the primary outcome of at least 50% pain relief over four to six hours.	No specific reason stated
31.	Single dose oral rofecoxib for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group	There is no obvious requirement for further research in classical acute pain trials for two reasons. There is already a large body of data providing results unlikely to change with more trials. In addition, the licensed status of rofecoxib in many parts of the world make it unlikely to be used, making new research in the acute pain model unnecessary.	Sufficient evidence about the effects of the intervention; monetary reasons
32.	Single dose oral sulindac for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group	Given the large number of available drugs of this and similar classes to treat postoperative pain, there is no urgent research agenda.	Good alternatives are already available
33.	Single dose oral tenoxicam for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group	Given the large number of available drugs of this and similar classes to treat postoperative pain, there is no urgent research agenda.	Good alternatives are already available
34.	Single dose oral tiaprofenic acid for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group	Given the large number of available drugs of this and similar classes to treat postoperative pain, there is no urgent research agenda.	Good alternatives are already available

35.	Sweet tasting solutions for reduction of needle-related procedural pain in children aged one to 16 years	Cochrane Pain and Palliative Care Group	For school-aged children: Despite the small number of studies examining analgesic efficacy of sweet taste in school-aged children, the available evidence from the two studies included in this review, as well as three studies of sweet taste during CPT (Mennella 2010; Miller 1994; Pepino 2005), suggest that this intervention is not of sufficient benefit to recommend at this time. Further studies of sweet tasting solutions, substances, or foods to reduce procedural pain cannot be recommended as a research priority in this population.	Sufficient evidence about the effects of the intervention
36.	Topical capsaicin (low concentration) for chronic neuropathic pain in adults	Cochrane Pain and Palliative Care Group	Studies using repeated applications of low-concentration capsaicin have not convincingly demonstrated good efficacy. No new studies of low-concentration topical capsaicin have been published since 1997 and been found worthy of inclusion in this review. It seems unlikely that further research with low-concentration creams is worthwhile.	Sufficient evidence about the effects of the intervention
37.	Valproic acid and sodium valproate for neuropathic pain and fibromyalgia in adults	Cochrane Pain and Palliative Care Group	Evidenced-based decisions require further study, but since these drugs are associated with known serious adverse effects, and alternative therapies are available, it is unlikely that any large trials will be conducted.	Unknown/serious adverse effects
38.	Zolmitriptan for acute migraine attacks in adults	Cochrane Pain and Palliative Care Group	Further large, good quality randomised controlled trials making direct comparisons of efficacy and harm between zolmitriptan and other triptans, common analgesics (aspirin, ibuprofen, paracetamol, diclofenac) and ergot derivatives now seem unlikely to be done.	No specific reason stated

Supplementary file 1. List of excluded studies with reasons for exclusion

Title	Reasons for exclusion	Cochrane Review Group
Adjusting the pH of lidocaine for reducing pain on injection	Withdrawn	Cochrane Anaesthesia Group
Drugs for preventing postoperative nausea and vomiting	Withdrawn	Cochrane Anaesthesia Group
Patient controlled intravenous opioid analgesia versus continuous epidural analgesia for pain after intra-abdominal surgery	Withdrawn	Cochrane Anaesthesia Group
Supplemental perioperative steroids for surgical patients with adrenal insufficiency	Withdrawn	Cochrane Anaesthesia Group
Target-controlled infusion versus manually-controlled infusion of propofol for general anaesthesia or sedation in adults	Withdrawn	Cochrane Anaesthesia Group
Anticonvulsant drugs for acute and chronic pain	Withdrawn	Cochrane Pain and Palliative Care Group
Anticonvulsant drugs for migraine prophylaxis	Withdrawn	Cochrane Pain and Palliative Care Group
Anticonvulsants for fibromyalgia	Withdrawn	Cochrane Pain and Palliative Care Group
Aromatherapy and massage for symptom relief in patients with cancer	Withdrawn	Cochrane Pain and Palliative Care Group
Benzodiazepines and related drugs for insomnia in palliative care	Withdrawn	Cochrane Pain and Palliative Care Group
Comparative efficacy of epidural, subarachnoid, and intracerebroventricular opioids in patients with pain due to cancer	Withdrawn	Cochrane Pain and Palliative Care Group
Diclofenac for acute pain in children	Withdrawn	Cochrane Pain and Palliative Care Group
Dipyron for acute primary headaches	Withdrawn	Cochrane Pain and Palliative Care Group
Drugs for preventing migraine headaches in children	Withdrawn	Cochrane Pain and Palliative Care Group
Eletriptan for acute migraine	Withdrawn	Cochrane Pain and Palliative Care Group
EMLA and Amethocaine for reduction of children's pain associated with needle insertion	Withdrawn	Cochrane Pain and Palliative Care Group
Gabapentin for acute and chronic pain	Withdrawn	Cochrane Pain and Palliative Care Group
Hydromorphone for acute and chronic pain	Withdrawn	Cochrane Pain and Palliative Care Group
Interventions for fatigue and weight loss in adults with advanced progressive illness	Withdrawn	Cochrane Pain and Palliative Care Group
Music for pain relief	Withdrawn	Cochrane Pain and Palliative Care Group
Music therapy for end-of-life care	Withdrawn	Cochrane Pain and Palliative Care Group
Non-invasive physical treatments for chronic/recurrent headache	Withdrawn	Cochrane Pain and Palliative Care Group

Non-pharmacological interventions for breathlessness in advanced stages of malignant and non-malignant diseases	Withdrawn	Cochrane Pain and Palliative Care Group
NSAIDs or paracetamol, alone or combined with opioids, for cancer pain	Withdrawn	Cochrane Pain and Palliative Care Group
Nutrition support for bone marrow transplant patients	Withdrawn	Cochrane Pain and Palliative Care Group
Opioid switching to improve pain relief and drug tolerability	Withdrawn	Cochrane Pain and Palliative Care Group
Opioids for the management of breakthrough pain in cancer patients	Withdrawn	Cochrane Pain and Palliative Care Group
Opioids for the palliation of breathlessness in advanced disease and terminal illness	Withdrawn	Cochrane Pain and Palliative Care Group
Oral sumatriptan for acute migraine	Withdrawn	Cochrane Pain and Palliative Care Group
Oxygen therapy for dyspnoea in adults	Withdrawn	Cochrane Pain and Palliative Care Group
Pain management for sickle cell disease in children and adults	Withdrawn	Cochrane Pain and Palliative Care Group
Perioperative ketamine for acute postoperative pain	Withdrawn	Cochrane Pain and Palliative Care Group
Peripheral nerve blocks for postoperative pain after major knee surgery	Withdrawn	Cochrane Pain and Palliative Care Group
Pleurodesis for malignant pleural effusions	Withdrawn	Cochrane Pain and Palliative Care Group
Propranolol for migraine prophylaxis	Withdrawn	Cochrane Pain and Palliative Care Group
Psychotherapy for depression among incurable cancer patients	Withdrawn	Cochrane Pain and Palliative Care Group
Radioisotopes for metastatic bone pain	Withdrawn	Cochrane Pain and Palliative Care Group
Radiotherapy for the palliation of painful bone metastases	Withdrawn	Cochrane Pain and Palliative Care Group
Rizatriptan for acute migraine	Withdrawn	Cochrane Pain and Palliative Care Group
Serotonin receptor antagonists for highly emetogenic chemotherapy in adults	Withdrawn	Cochrane Pain and Palliative Care Group
Single dose dipyrrone for acute postoperative pain	Withdrawn	Cochrane Pain and Palliative Care Group
Spinal cord stimulation for chronic pain	Withdrawn	Cochrane Pain and Palliative Care Group
Topical lidocaine for the treatment of postherpetic neuralgia	Withdrawn	Cochrane Pain and Palliative Care Group
Touch therapies for pain relief in adults	Withdrawn	Cochrane Pain and Palliative Care Group
Transcutaneous electrical nerve stimulation (TENS) for chronic pain	Withdrawn	Cochrane Pain and Palliative Care Group
Benzodiazepines for the relief of breathlessness in advanced malignant and non-malignant diseases in adults	Investigating palliative care	Cochrane Pain and Palliative Care Group
Blood transfusions for anaemia in patients with advanced cancer	Investigating palliative care	Cochrane Pain and Palliative Care Group

Corticosteroids for adult patients with advanced cancer who have nausea and vomiting (not related to chemotherapy, radiotherapy, or surgery)	Investigating palliative care	Cochrane Pain and Palliative Care Group
Corticosteroids for the resolution of malignant bowel obstruction in advanced gynaecological and gastrointestinal cancer	Investigating palliative care	Cochrane Pain and Palliative Care Group
Droperidol for treatment of nausea and vomiting in palliative care patients	Investigating palliative care	Cochrane Pain and Palliative Care Group
Drug therapy for delirium in terminally ill adults	Investigating palliative care	Cochrane Pain and Palliative Care Group
Drug therapy for symptoms associated with anxiety in adult palliative care patients	Investigating palliative care	Cochrane Pain and Palliative Care Group
Drug therapy for the management of cancer-related fatigue	Investigating palliative care	Cochrane Pain and Palliative Care Group
Early palliative care for adults with advanced cancer	Investigating palliative care	Cochrane Pain and Palliative Care Group
Educational interventions for the management of cancer-related fatigue in adults	Investigating palliative care	Cochrane Pain and Palliative Care Group
Effectiveness and cost-effectiveness of home palliative care services for adults with advanced illness and their caregivers	Investigating palliative care	Cochrane Pain and Palliative Care Group
Eicosapentaenoic acid (EPA, an omega-3 fatty acid from fish oils) for the treatment of cancer cachexia	Investigating palliative care	Cochrane Pain and Palliative Care Group
End-of-life care pathways for improving outcomes in caring for the dying	Investigating palliative care	Cochrane Pain and Palliative Care Group
Exercise for cancer cachexia in adults	Investigating palliative care	Cochrane Pain and Palliative Care Group
Exercise for the management of cancer-related fatigue in adults	Investigating palliative care	Cochrane Pain and Palliative Care Group
Ghrelin for the management of cachexia associated with cancer	Investigating palliative care	Cochrane Pain and Palliative Care Group
Haloperidol for the treatment of nausea and vomiting in palliative care patients	Investigating palliative care	Cochrane Pain and Palliative Care Group
Homeopathic medicines for adverse effects of cancer treatments	Investigating palliative care	Cochrane Pain and Palliative Care Group
Impact of morphine, fentanyl, oxycodone or codeine on patient consciousness, appetite and thirst when used to treat cancer pain	Investigating palliative care	Cochrane Pain and Palliative Care Group
Interventions for cough in cancer	Investigating palliative care	Cochrane Pain and Palliative Care Group

Interventions for improving palliative care for older people living in nursing care homes	Investigating palliative care	Cochrane Pain and Palliative Care Group
Interventions for noisy breathing in patients near to death	Investigating palliative care	Cochrane Pain and Palliative Care Group
Interventions for sexual dysfunction following treatments for cancer in women	Investigating palliative care	Cochrane Pain and Palliative Care Group
Interventions for the management of malignant pleural effusions: a network meta-analysis	Investigating palliative care	Cochrane Pain and Palliative Care Group
Interventions for the treatment of metastatic extradural spinal cord compression in adults	Investigating palliative care	Cochrane Pain and Palliative Care Group
Laxatives for the management of constipation in people receiving palliative care	Investigating palliative care	Cochrane Pain and Palliative Care Group
Levomepromazine for nausea and vomiting in palliative care	Investigating palliative care	Cochrane Pain and Palliative Care Group
Medically assisted hydration for adult palliative care patients	Investigating palliative care	Cochrane Pain and Palliative Care Group
Medically assisted nutrition for adult palliative care patients	Investigating palliative care	Cochrane Pain and Palliative Care Group
Megestrol acetate for treatment of anorexia-cachexia syndrome	Investigating palliative care	Cochrane Pain and Palliative Care Group
Mu-opioid antagonists for opioid-induced bowel dysfunction in people with cancer and people receiving palliative care	Investigating palliative care	Cochrane Pain and Palliative Care Group
Neuromuscular electrical stimulation for muscle weakness in adults with advanced disease	Investigating palliative care	Cochrane Pain and Palliative Care Group
Olanzapine for the prevention and treatment of cancer-related nausea and vomiting in adults	Investigating palliative care	Cochrane Pain and Palliative Care Group
Opioids for the palliation of refractory breathlessness in adults with advanced disease and terminal illness	Investigating palliative care	Cochrane Pain and Palliative Care Group
Oral water soluble contrast for malignant bowel obstruction	Investigating palliative care	Cochrane Pain and Palliative Care Group
Palliative pharmacological sedation for terminally ill adults	Investigating palliative care	Cochrane Pain and Palliative Care Group
Pharmacological interventions for pruritus in adult palliative care patients	Investigating palliative care	Cochrane Pain and Palliative Care Group
Pharmacological treatments for fatigue associated with palliative care	Investigating palliative care	Cochrane Pain and Palliative Care Group

Psychosocial interventions for fatigue during cancer treatment with palliative intent	Investigating palliative care	Cochrane Pain and Palliative Care Group
Psychosocial interventions for reducing fatigue during cancer treatment in adults	Investigating palliative care	Cochrane Pain and Palliative Care Group
Selenium for alleviating the side effects of chemotherapy, radiotherapy and surgery in cancer patients	Investigating palliative care	Cochrane Pain and Palliative Care Group
Spiritual and religious interventions for well-being of adults in the terminal phase of disease	Investigating palliative care	Cochrane Pain and Palliative Care Group
Supportive care for patients with gastrointestinal cancer	Investigating palliative care	Cochrane Pain and Palliative Care Group
Surgery for the resolution of symptoms in malignant bowel obstruction in advanced gynaecological and gastrointestinal cancer	Investigating palliative care	Cochrane Pain and Palliative Care Group
Systemic corticosteroids for the management of cancer-related breathlessness (dyspnoea) in adults	Investigating palliative care	Cochrane Pain and Palliative Care Group

Supplementary file 2. Cochrane systematic reviews included in the study

Numeral	Title	Cochrane Review Group
1	Active body surface warming systems for preventing complications caused by inadvertent perioperative hypothermia in adults	Cochrane Anaesthesia Group
2	Adductor canal blocks for postoperative pain treatment in adults undergoing knee surgery	Cochrane Anaesthesia Group
3	Adrenaline with lidocaine for digital nerve blocks	Cochrane Anaesthesia Group
4	Adverse side effects of dexamethasone in surgical patients	Cochrane Anaesthesia Group
5	Air versus saline in the loss of resistance technique for identification of the epidural space	Cochrane Anaesthesia Group
6	Airway physical examination tests for detection of difficult airway management in apparently normal adult patients	Cochrane Anaesthesia Group
7	Alpha-2 adrenergic agonists for the prevention of cardiac complications among adults undergoing surgery	Cochrane Anaesthesia Group
8	Alpha-2 adrenergic agonists for the prevention of shivering following general anaesthesia	Cochrane Anaesthesia Group
9	Anaesthesia for hip fracture surgery in adults	Cochrane Anaesthesia Group
10	Anaesthetic interventions for prevention of awareness during surgery	Cochrane Anaesthesia Group
11	Anaesthetic regimens for day-procedure laparoscopic cholecystectomy	Cochrane Anaesthesia Group
12	Anaesthetic techniques for risk of malignant tumour recurrence	Cochrane Anaesthesia Group
13	Antibiotic prophylaxis for surgical introduction of intracranial ventricular shunts	Cochrane Anaesthesia Group
14	Antifibrinolytic agents for reducing blood loss in scoliosis surgery in children	Cochrane Anaesthesia Group
15	Aromatherapy for treatment of postoperative nausea and vomiting	Cochrane Anaesthesia Group
16	Automated mandatory bolus versus basal infusion for maintenance of epidural analgesia in labour	Cochrane Anaesthesia Group
17	Avoidance versus use of neuromuscular blocking agents for improving conditions during tracheal intubation or direct laryngoscopy in adults and adolescents	Cochrane Anaesthesia Group
18	Bispectral index for improving intraoperative awareness and early postoperative recovery in adults	Cochrane Anaesthesia Group
19	Caudal epidural block versus other methods of postoperative pain relief for circumcision in boys	Cochrane Anaesthesia Group
20	Cerebral near-infrared spectroscopy (NIRS) for perioperative monitoring of brain oxygenation in children and adults	Cochrane Anaesthesia Group
21	Clonidine premedication for postoperative analgesia in children	Cochrane Anaesthesia Group

22	Continuation versus discontinuation of antiplatelet therapy for bleeding and ischaemic events in adults undergoing non-cardiac surgery	Cochrane Anaesthesia Group
23	Continuous interscalene brachial plexus block versus parenteral analgesia for postoperative pain relief after major shoulder surgery	Cochrane Anaesthesia Group
24	Continuous intravenous perioperative lidocaine infusion for postoperative pain and recovery in adults	Cochrane Anaesthesia Group
25	Continuous positive airway pressure (CPAP) during the postoperative period for prevention of postoperative morbidity and mortality following major abdominal surgery	Cochrane Anaesthesia Group
26	Cooling for cerebral protection during brain surgery	Cochrane Anaesthesia Group
27	Cuffed versus uncuffed endotracheal tubes for general anaesthesia in children aged eight years and under	Cochrane Anaesthesia Group
28	Deliberate hypotension with propofol under anaesthesia for functional endoscopic sinus surgery (FESS)	Cochrane Anaesthesia Group
29	Dexamethasone as an adjuvant to peripheral nerve block	Cochrane Anaesthesia Group
30	Dexmedetomidine for the management of awake fiberoptic intubation	Cochrane Anaesthesia Group
31	Different regimens of intravenous sedatives or hypnotics for electroconvulsive therapy (ECT) in adult patients with depression	Cochrane Anaesthesia Group
32	Early versus late removal of the laryngeal mask airway (LMA) for general anaesthesia	Cochrane Anaesthesia Group
33	Effectiveness and risks of cricoid pressure during rapid sequence induction for endotracheal intubation	Cochrane Anaesthesia Group
34	Effects of sevoflurane versus other general anaesthesia on emergence agitation in children	Cochrane Anaesthesia Group
35	Efficacy and safety of sugammadex versus neostigmine in reversing neuromuscular blockade in adults	Cochrane Anaesthesia Group
36	Epidural analgesia for adults undergoing cardiac surgery with or without cardiopulmonary bypass	Cochrane Anaesthesia Group
37	Epidural analgesia for pain relief following hip or knee replacement	Cochrane Anaesthesia Group
38	Epidural analgesia versus patient-controlled intravenous analgesia for pain following intra-abdominal surgery in adults	Cochrane Anaesthesia Group
39	Epidural local anaesthetics versus opioid-based analgesic regimens for postoperative gastrointestinal paralysis, vomiting and pain after abdominal surgery	Cochrane Anaesthesia Group
40	Epidural pain relief versus systemic opioid-based pain relief for abdominal aortic surgery	Cochrane Anaesthesia Group
41	Fast-track cardiac care for adult cardiac surgical patients	Cochrane Anaesthesia Group
42	Femoral nerve blocks for acute postoperative pain after knee replacement surgery	Cochrane Anaesthesia Group
43	High initial concentration versus low initial concentration sevoflurane for inhalational induction of anaesthesia	Cochrane Anaesthesia Group

44	Hyperbaric versus isobaric bupivacaine for spinal anaesthesia for caesarean section	Cochrane Anaesthesia Group
45	Hypertonic salt solution for peri-operative fluid management	Cochrane Anaesthesia Group
46	Incentive spirometry for prevention of postoperative pulmonary complications in upper abdominal surgery	Cochrane Anaesthesia Group
47	Infraclavicular brachial plexus block for regional anaesthesia of the lower arm	Cochrane Anaesthesia Group
48	Inhaled nitric oxide for the postoperative management of pulmonary hypertension in infants and children with congenital heart disease	Cochrane Anaesthesia Group
49	Interventions for protecting renal function in the perioperative period	Cochrane Anaesthesia Group
50	Interventions for treating inadvertent postoperative hypothermia	Cochrane Anaesthesia Group
51	Intra-articular lignocaine versus intravenous analgesia with or without sedation for manual reduction of acute anterior shoulder dislocation in adults	Cochrane Anaesthesia Group
52	Intranasal fentanyl for the management of acute pain in children	Cochrane Anaesthesia Group
53	Intranasal or transdermal nicotine for the treatment of postoperative pain	Cochrane Anaesthesia Group
54	Intraoperative use of low volume ventilation to decrease postoperative mortality, mechanical ventilation, lengths of stay and lung injury in adults without acute lung injury	Cochrane Anaesthesia Group
55	Intravenous nutrients for preventing inadvertent perioperative hypothermia in adults	Cochrane Anaesthesia Group
56	Intravenous versus inhalation anaesthesia for one-lung ventilation	Cochrane Anaesthesia Group
57	Intravenous versus inhalational anaesthesia for paediatric outpatient surgery	Cochrane Anaesthesia Group
58	Intravenous versus inhalational maintenance of anaesthesia for postoperative cognitive outcomes in elderly people undergoing non-cardiac surgery	Cochrane Anaesthesia Group
59	Intravenous versus inhalational techniques for rapid emergence from anaesthesia in patients undergoing brain tumour surgery	Cochrane Anaesthesia Group
60	Injectable local anaesthetic agents for dental anaesthesia	Cochrane Anaesthesia Group
61	Lidocaine for preventing postoperative sore throat	Cochrane Anaesthesia Group
62	Lidocaine for reducing propofol-induced pain on induction of anaesthesia in adults	Cochrane Anaesthesia Group
63	Local anaesthetics and regional anaesthesia versus conventional analgesia for preventing persistent postoperative pain in adults and children	Cochrane Anaesthesia Group
64	Mannitol versus hypertonic saline for brain relaxation in patients undergoing craniotomy	Cochrane Anaesthesia Group
65	Melatonin for pre- and postoperative anxiety in adults	Cochrane Anaesthesia Group
66	Music interventions for preoperative anxiety	Cochrane Anaesthesia Group

67	Needle gauge and tip designs for preventing post-dural puncture headache (PDPH)	Cochrane Anaesthesia Group
68	Neostigmine for reversal of neuromuscular block in paediatric patients	Cochrane Anaesthesia Group
69	Nerve blocks or no nerve blocks for pain control after elective hip replacement (arthroplasty) surgery in adults	Cochrane Anaesthesia Group
70	Neuraxial anaesthesia for lower-limb revascularization	Cochrane Anaesthesia Group
71	Neuraxial blockade for the prevention of postoperative mortality and major morbidity: an overview of Cochrane systematic reviews	Cochrane Anaesthesia Group
72	Nitrates for the prevention of cardiac morbidity and mortality in patients undergoing non-cardiac surgery	Cochrane Anaesthesia Group
73	Nitrous oxide-based techniques versus nitrous oxide-free techniques for general anaesthesia	Cochrane Anaesthesia Group
74	Nitrous oxide-based versus nitrous oxide-free general anaesthesia and accidental awareness during general anaesthesia in surgical patients	Cochrane Anaesthesia Group
75	Noninvasive positive pressure ventilation for acute respiratory failure following upper abdominal surgery	Cochrane Anaesthesia Group
76	Non-pharmacological interventions for assisting the induction of anaesthesia in children	Cochrane Anaesthesia Group
77	Nonsteroidal anti-inflammatory drugs and perioperative bleeding in paediatric tonsillectomy	Cochrane Anaesthesia Group
79	Nurse-led versus doctor-led preoperative assessment for elective surgical patients requiring regional or general anaesthesia	Cochrane Anaesthesia Group
80	Paracervical local anaesthesia for cervical dilatation and uterine intervention	Cochrane Anaesthesia Group
81	Paravertebral block versus thoracic epidural for patients undergoing thoracotomy	Cochrane Anaesthesia Group
82	Peribulbar versus retrobulbar anaesthesia for cataract surgery	Cochrane Anaesthesia Group
83	Perioperative administration of buffered versus non-buffered crystalloid intravenous fluid to improve outcomes following adult surgical procedures	Cochrane Anaesthesia Group
84	Perioperative alcohol cessation intervention for postoperative complications	Cochrane Anaesthesia Group
85	Perioperative angiotensin-converting enzyme inhibitors or angiotensin II type 1 receptor blockers for preventing mortality and morbidity in adults	Cochrane Anaesthesia Group
86	Perioperative beta-blockers for preventing surgery-related mortality and morbidity	Cochrane Anaesthesia Group
87	Perioperative beta-blockers for preventing surgery-related mortality and morbidity in adults undergoing cardiac surgery	Cochrane Anaesthesia Group
88	Perioperative beta-blockers for preventing surgery-related mortality and morbidity in adults undergoing non-cardiac surgery	Cochrane Anaesthesia Group
89	Perioperative dexmedetomidine for acute pain after abdominal surgery in adults	Cochrane Anaesthesia Group

90	Perioperative fluid volume optimization following proximal femoral fracture	Cochrane Anaesthesia Group
91	Perioperative increase in global blood flow to explicit defined goals and outcomes following surgery	Cochrane Anaesthesia Group
92	Perioperative restrictive versus goal-directed fluid therapy for adults undergoing major non-cardiac surgery	Cochrane Anaesthesia Group
93	Perioperative statin therapy for improving outcomes during and after noncardiac vascular surgery	Cochrane Anaesthesia Group
94	Peripheral nerve blocks for hip fractures	Cochrane Anaesthesia Group
95	Pharmacological agents for preventing morbidity associated with the haemodynamic response to tracheal intubation	Cochrane Anaesthesia Group
96	Pharmacological and non-pharmacological interventions for reducing rocuronium bromide induced pain on injection in children and adults	Cochrane Anaesthesia Group
97	Pharmacological interventions for the prevention of acute postoperative pain in adults following brain surgery	Cochrane Anaesthesia Group
98	Physician anaesthetists versus non-physician providers of anaesthesia for surgical patients	Cochrane Anaesthesia Group
99	Positive end-expiratory pressure (PEEP) during anaesthesia for prevention of mortality and postoperative pulmonary complications	Cochrane Anaesthesia Group
100	Postoperative epidural analgesia versus systemic analgesia for thoraco-lumbar spine surgery in children	Cochrane Anaesthesia Group
101	Pre-emptive and preventive opioids for postoperative pain in adults undergoing all types of surgery	Cochrane Anaesthesia Group
102	Premedication for anxiety in adult day surgery	Cochrane Anaesthesia Group
103	Preoperative carbohydrate treatment for enhancing recovery after elective surgery	Cochrane Anaesthesia Group
104	Preoperative inspiratory muscle training for postoperative pulmonary complications in adults undergoing cardiac and major abdominal surgery	Cochrane Anaesthesia Group
105	Processed electroencephalogram and evoked potential techniques for amelioration of postoperative delirium and cognitive dysfunction following non-cardiac and non-neurosurgical procedures in adults	Cochrane Anaesthesia Group
106	ProSeal versus Classic laryngeal mask airway (LMA) for positive pressure ventilation in adults undergoing elective surgery	Cochrane Anaesthesia Group
107	Psychological preparation and postoperative outcomes for adults undergoing surgery under general anaesthesia	Cochrane Anaesthesia Group
108	Pulmonary artery perfusion versus no perfusion during cardiopulmonary bypass for open heart surgery in adults	Cochrane Anaesthesia Group
109	Pulse oximetry for perioperative monitoring	Cochrane Anaesthesia Group
110	Regional analgesia for improvement of long-term functional outcome after elective large joint replacement	Cochrane Anaesthesia Group

111	Rocuronium versus succinylcholine for rapid sequence induction intubation	Cochrane Anaesthesia Group
112	Sedation versus general anaesthesia for provision of dental treatment to patients younger than 18 years	Cochrane Anaesthesia Group
113	Sedative techniques for endoscopic retrograde cholangiopancreatography	Cochrane Anaesthesia Group
114	Single, double or multiple-injection techniques for non-ultrasound guided axillary brachial plexus block in adults undergoing surgery of the lower arm	Cochrane Anaesthesia Group
115	Spectral entropy monitoring for adults and children undergoing general anaesthesia	Cochrane Anaesthesia Group
116	Stimulation of the wrist acupuncture point PC6 for preventing postoperative nausea and vomiting	Cochrane Anaesthesia Group
117	Sub-Tenon's anaesthesia versus topical anaesthesia for cataract surgery	Cochrane Anaesthesia Group
118	Sugammadex, a selective reversal medication for preventing postoperative residual neuromuscular blockade	Cochrane Anaesthesia Group
119	Supplemental oxygen for caesarean section during regional anaesthesia	Cochrane Anaesthesia Group
120	Supplemental perioperative intravenous crystalloids for postoperative nausea and vomiting	Cochrane Anaesthesia Group
121	Supraglottic airway devices versus tracheal intubation for airway management during general anaesthesia in obese patients	Cochrane Anaesthesia Group
122	The effects of high perioperative inspiratory oxygen fraction for adult surgical patients	Cochrane Anaesthesia Group
123	The use of ultrasound guidance for perioperative neuraxial and peripheral nerve blocks in children	Cochrane Anaesthesia Group
124	Thermal insulation for preventing inadvertent perioperative hypothermia	Cochrane Anaesthesia Group
125	Topical anaesthesia alone versus topical anaesthesia with intracameral lidocaine for phacoemulsification	Cochrane Anaesthesia Group
126	Topical anaesthetics for pain control during repair of dermal laceration	Cochrane Anaesthesia Group
127	Total intravenous anaesthesia versus inhalational anaesthesia for adults undergoing transabdominal robotic assisted laparoscopic surgery	Cochrane Anaesthesia Group
128	Tracheal intubation with a flexible intubation scope versus other intubation techniques for obese patients requiring general anaesthesia	Cochrane Anaesthesia Group
129	Transient neurological symptoms (TNS) following spinal anaesthesia with lidocaine versus other local anaesthetics in adult surgical patients: a network meta-analysis	Cochrane Anaesthesia Group
130	Ultrasound guidance for upper and lower limb blocks	Cochrane Anaesthesia Group
131	Use of hyaluronidase as an adjunct to local anaesthetic eye blocks to reduce intraoperative pain in adults	Cochrane Anaesthesia Group
132	Vapocoolants (cold spray) for pain treatment during intravenous cannulation	Cochrane Anaesthesia Group
133	Videolaryngoscopy versus direct laryngoscopy for adult patients requiring tracheal intubation	Cochrane Anaesthesia Group

134	Videolaryngoscopy versus direct laryngoscopy for tracheal intubation in children (excluding neonates)	Cochrane Anaesthesia Group
135	Warming of intravenous and irrigation fluids for preventing inadvertent perioperative hypothermia	Cochrane Anaesthesia Group
136	Acupuncture for cancer pain in adults	Cochrane Pain and Palliative Care Group
137	Acupuncture for neuropathic pain in adults	Cochrane Pain and Palliative Care Group
138	Acupuncture for the prevention of episodic migraine	Cochrane Pain and Palliative Care Group
139	Acupuncture for the prevention of tension-type headache	Cochrane Pain and Palliative Care Group
140	Acupuncture for treating fibromyalgia	Cochrane Pain and Palliative Care Group
141	Adverse events associated with medium- and long-term use of opioids for chronic non-cancer pain: an overview of Cochrane Reviews	Cochrane Pain and Palliative Care Group
142	Adverse events associated with single dose oral analgesics for acute postoperative pain in adults - an overview of Cochrane reviews	Cochrane Pain and Palliative Care Group
143	Aerobic exercise training for adults with fibromyalgia	Cochrane Pain and Palliative Care Group
144	Amitriptyline for fibromyalgia in adults	Cochrane Pain and Palliative Care Group
145	Amitriptyline for neuropathic pain in adults	Cochrane Pain and Palliative Care Group
146	Antidepressants for chronic non-cancer pain in children and adolescents	Cochrane Pain and Palliative Care Group
147	Antidepressants for neuropathic pain	Cochrane Pain and Palliative Care Group
148	Antiepileptic drugs for chronic non-cancer pain in children and adolescents	Cochrane Pain and Palliative Care Group
149	Antiepileptic drugs for neuropathic pain and fibromyalgia - an overview of Cochrane reviews	Cochrane Pain and Palliative Care Group
150	Antiepileptics other than gabapentin, pregabalin, topiramate, and valproate for the prophylaxis of episodic migraine in adults	Cochrane Pain and Palliative Care Group
151	Antioxidants for pain in chronic pancreatitis	Cochrane Pain and Palliative Care Group
152	Antipsychotics for acute and chronic pain in adults	Cochrane Pain and Palliative Care Group
153	Antipsychotics for fibromyalgia in adults	Cochrane Pain and Palliative Care Group
154	Aquatic exercise training for fibromyalgia	Cochrane Pain and Palliative Care Group
155	As required versus fixed schedule analgesic administration for postoperative pain in children	Cochrane Pain and Palliative Care Group
156	Aspirin for acute treatment of episodic tension-type headache in adults	Cochrane Pain and Palliative Care Group
157	Aspirin with or without an antiemetic for acute migraine headaches in adults	Cochrane Pain and Palliative Care Group
158	Bisphosphonates for the relief of pain secondary to bone metastases	Cochrane Pain and Palliative Care Group

159	Botulinum toxin for myofascial pain syndromes in adults	Cochrane Pain and Palliative Care Group
160	Botulinum toxins for the prevention of migraine in adults	Cochrane Pain and Palliative Care Group
161	Breastfeeding for procedural pain in infants beyond the neonatal period	Cochrane Pain and Palliative Care Group
162	Buprenorphine for neuropathic pain in adults	Cochrane Pain and Palliative Care Group
163	Buprenorphine for treating cancer pain	Cochrane Pain and Palliative Care Group
164	Caffeine as an analgesic adjuvant for acute pain in adults	Cochrane Pain and Palliative Care Group
165	Calcitonin for metastatic bone pain	Cochrane Pain and Palliative Care Group
166	Cannabinoids for fibromyalgia	Cochrane Pain and Palliative Care Group
167	Cannabis-based medicines for chronic neuropathic pain in adults	Cochrane Pain and Palliative Care Group
168	Carbamazepine for chronic neuropathic pain and fibromyalgia in adults	Cochrane Pain and Palliative Care Group
169	Celiac plexus block for pancreatic cancer pain in adults	Cochrane Pain and Palliative Care Group
170	Cervico-thoracic or lumbar sympathectomy for neuropathic pain and complex regional pain syndrome	Cochrane Pain and Palliative Care Group
171	Clonazepam for neuropathic pain and fibromyalgia in adults	Cochrane Pain and Palliative Care Group
172	Codeine, alone and with paracetamol (acetaminophen), for cancer pain	Cochrane Pain and Palliative Care Group
173	Cognitive behavioural therapies for fibromyalgia	Cochrane Pain and Palliative Care Group
174	Combination pharmacotherapy for the treatment of fibromyalgia in adults	Cochrane Pain and Palliative Care Group
175	Combination pharmacotherapy for the treatment of neuropathic pain in adults	Cochrane Pain and Palliative Care Group
176	Continuous local anaesthetic wound infusion for postoperative pain after midline laparotomy for colorectal resection in adults	Cochrane Pain and Palliative Care Group
177	Corticosteroids for the management of cancer-related pain in adults	Cochrane Pain and Palliative Care Group
178	Cyclobenzaprine for the treatment of myofascial pain in adults	Cochrane Pain and Palliative Care Group
179	Desipramine for neuropathic pain in adults	Cochrane Pain and Palliative Care Group
180	Diclofenac with or without an antiemetic for acute migraine headaches in adults	Cochrane Pain and Palliative Care Group
181	Drug therapy for preventing post-dural puncture headache	Cochrane Pain and Palliative Care Group
182	Drug therapy for treating post-dural puncture headache	Cochrane Pain and Palliative Care Group
183	Drugs for the acute treatment of migraine in children and adolescents	Cochrane Pain and Palliative Care Group
184	Epidural analgesia for pain relief following hip or knee replacement	Cochrane Pain and Palliative Care Group

185	Exercise for reducing falls in people living with and beyond cancer	Cochrane Pain and Palliative Care Group
186	Exercise for treating fibromyalgia syndrome	Cochrane Pain and Palliative Care Group
187	Fentanyl for neuropathic pain in adults	Cochrane Pain and Palliative Care Group
188	Feverfew for preventing migraine	Cochrane Pain and Palliative Care Group
189	Flexibility exercise training for adults with fibromyalgia	Cochrane Pain and Palliative Care Group
190	Gabapentin for chronic neuropathic pain in adults	Cochrane Pain and Palliative Care Group
191	Gabapentin for fibromyalgia pain in adults	Cochrane Pain and Palliative Care Group
192	Gabapentin or pregabalin for the prophylaxis of episodic migraine in adults	Cochrane Pain and Palliative Care Group
193	Herbal medicinal products or preparations for neuropathic pain	Cochrane Pain and Palliative Care Group
194	High-dose opioids for chronic non-cancer pain: an overview of Cochrane Reviews	Cochrane Pain and Palliative Care Group
195	Hydromorphone for cancer pain	Cochrane Pain and Palliative Care Group
196	Hydromorphone for neuropathic pain in adults	Cochrane Pain and Palliative Care Group
197	Ibuprofen for acute treatment of episodic tension-type headache in adults	Cochrane Pain and Palliative Care Group
198	Ibuprofen with or without an antiemetic for acute migraine headaches in adults	Cochrane Pain and Palliative Care Group
199	Imipramine for neuropathic pain in adults	Cochrane Pain and Palliative Care Group
200	Infraorbital nerve block for postoperative pain following cleft lip repair in children	Cochrane Pain and Palliative Care Group
201	Interventions for the reduction of prescribed opioid use in chronic non-cancer pain	Cochrane Pain and Palliative Care Group
202	Interventions for the symptoms and signs resulting from jellyfish stings	Cochrane Pain and Palliative Care Group
203	Interventions for treating pain and disability in adults with complex regional pain syndrome- an overview of systematic reviews	Cochrane Pain and Palliative Care Group
204	Interventions for treating persistent and intractable hiccups in adults	Cochrane Pain and Palliative Care Group
205	Interventions for treating persistent pain in survivors of torture	Cochrane Pain and Palliative Care Group
206	Interventions to reduce shoulder pain following gynaecological laparoscopic procedures	Cochrane Pain and Palliative Care Group
207	Intraoperative local anaesthesia for reduction of postoperative pain following general anaesthesia for dental treatment in children and adolescents	Cochrane Pain and Palliative Care Group
208	Intravenous lidocaine for the treatment of background or procedural burn pain	Cochrane Pain and Palliative Care Group
209	Intravenous or intramuscular parecoxib for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
210	Ketamine as an adjuvant to opioids for cancer pain	Cochrane Pain and Palliative Care Group

211	Ketoprofen for episodic tension-type headache in adults	Cochrane Pain and Palliative Care Group
212	Ketorolac for postoperative pain in children	Cochrane Pain and Palliative Care Group
213	Lamotrigine for chronic neuropathic pain and fibromyalgia in adults	Cochrane Pain and Palliative Care Group
214	Levetiracetam for neuropathic pain in adults	Cochrane Pain and Palliative Care Group
215	Liposomal bupivacaine infiltration at the surgical site for the management of postoperative pain	Cochrane Pain and Palliative Care Group
216	Liposomal bupivacaine peripheral nerve block for the management of postoperative pain	Cochrane Pain and Palliative Care Group
217	Local anaesthetic sympathetic blockade for complex regional pain syndrome	Cochrane Pain and Palliative Care Group
218	Long-term opioid management for chronic noncancer pain	Cochrane Pain and Palliative Care Group
219	Massage with or without aromatherapy for symptom relief in people with cancer	Cochrane Pain and Palliative Care Group
220	Methadone for cancer pain	Cochrane Pain and Palliative Care Group
221	Methadone for chronic non-cancer pain in adults	Cochrane Pain and Palliative Care Group
222	Methadone for neuropathic pain in adults	Cochrane Pain and Palliative Care Group
223	Milnacipran for neuropathic pain in adults	Cochrane Pain and Palliative Care Group
224	Milnacipran for pain in fibromyalgia in adults	Cochrane Pain and Palliative Care Group
225	Mind and body therapy for fibromyalgia	Cochrane Pain and Palliative Care Group
226	Mirtazapine for fibromyalgia in adults	Cochrane Pain and Palliative Care Group
227	Mixed exercise training for adults with fibromyalgia	Cochrane Pain and Palliative Care Group
228	Morphine for chronic neuropathic pain in adults	Cochrane Pain and Palliative Care Group
229	Multidisciplinary rehabilitation after primary brain tumour treatment	Cochrane Pain and Palliative Care Group
230	Multidisciplinary rehabilitation for fibromyalgia and musculoskeletal pain in working age adults	Cochrane Pain and Palliative Care Group
231	Nalbuphine for postoperative pain treatment in children	Cochrane Pain and Palliative Care Group
232	Naproxen with or without an antiemetic for acute migraine headaches in adults	Cochrane Pain and Palliative Care Group
233	Needle size for vaccination procedures in children and adolescents	Cochrane Pain and Palliative Care Group
234	Non-invasive brain stimulation techniques for chronic pain	Cochrane Pain and Palliative Care Group
235	Non-pharmacological management of infant and young child procedural pain	Cochrane Pain and Palliative Care Group
236	Non-prescription (OTC) oral analgesics for acute pain - an overview of Cochrane reviews	Cochrane Pain and Palliative Care Group
237	Non-steroidal anti-inflammatory drugs (NSAIDs) for cancer-related pain in children and adolescents	Cochrane Pain and Palliative Care Group

238	Non-steroidal anti-inflammatory drugs (NSAIDs) for chronic non-cancer pain in children and adolescents	Cochrane Pain and Palliative Care Group
239	Normobaric and hyperbaric oxygen therapy for the treatment and prevention of migraine and cluster headache	Cochrane Pain and Palliative Care Group
240	Nortriptyline for neuropathic pain in adults	Cochrane Pain and Palliative Care Group
241	Nutritional screening for improving professional practice for patient outcomes in hospital and primary care settings	Cochrane Pain and Palliative Care Group
242	Opioids for cancer pain - an overview of Cochrane reviews	Cochrane Pain and Palliative Care Group
243	Opioids for cancer-related pain in children and adolescents	Cochrane Pain and Palliative Care Group
244	Opioids for chronic non-cancer pain in children and adolescents	Cochrane Pain and Palliative Care Group
245	Opioids for neuropathic pain	Cochrane Pain and Palliative Care Group
246	Oral morphine for cancer pain	Cochrane Pain and Palliative Care Group
247	Oral nonsteroidal anti-inflammatory drugs (NSAIDs) for cancer pain in adults	Cochrane Pain and Palliative Care Group
248	Oral nonsteroidal anti-inflammatory drugs for fibromyalgia in adults	Cochrane Pain and Palliative Care Group
249	Oral nonsteroidal anti-inflammatory drugs for neuropathic pain	Cochrane Pain and Palliative Care Group
250	Oral paracetamol (acetaminophen) for cancer pain	Cochrane Pain and Palliative Care Group
251	Oral tapentadol for cancer pain	Cochrane Pain and Palliative Care Group
252	Oxcarbazepine for neuropathic pain	Cochrane Pain and Palliative Care Group
253	Oxycodone for cancer-related pain	Cochrane Pain and Palliative Care Group
254	Oxycodone for neuropathic pain in adults	Cochrane Pain and Palliative Care Group
255	Oxycodone for pain in fibromyalgia in adults	Cochrane Pain and Palliative Care Group
256	Pain relief for the removal of femoral sheath after percutaneous coronary intervention	Cochrane Pain and Palliative Care Group
257	Paracetamol (acetaminophen) for acute treatment of episodic tension-type headache in adults	Cochrane Pain and Palliative Care Group
258	Paracetamol (acetaminophen) for chronic non-cancer pain in children and adolescents	Cochrane Pain and Palliative Care Group
259	Paracetamol (acetaminophen) with or without an antiemetic for acute migraine headaches in adults	Cochrane Pain and Palliative Care Group
260	Paracetamol (acetaminophen) with or without codeine or dihydrocodeine for neuropathic pain in adults	Cochrane Pain and Palliative Care Group
261	Parasympathomimetic drugs for the treatment of salivary gland dysfunction due to radiotherapy	Cochrane Pain and Palliative Care Group
262	Patient controlled opioid analgesia versus non-patient controlled opioid analgesia for postoperative pain	Cochrane Pain and Palliative Care Group
263	Perioperative intravenous ketamine for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group

264	Perioperative transversus abdominis plane (TAP) blocks for analgesia after abdominal surgery	Cochrane Pain and Palliative Care Group
265	Pharmacologic interventions for treating phantom limb pain	Cochrane Pain and Palliative Care Group
266	Pharmacological interventions for pain in children and adolescents with life-limiting conditions	Cochrane Pain and Palliative Care Group
267	Pharmacological interventions for painful sickle cell vaso-occlusive crises in adults	Cochrane Pain and Palliative Care Group
268	Pharmacotherapy for the prevention of chronic pain after surgery in adults	Cochrane Pain and Palliative Care Group
269	Phenytoin for neuropathic pain and fibromyalgia in adults	Cochrane Pain and Palliative Care Group
270	Physical activity and exercise for chronic pain in adults: an overview of Cochrane Reviews	Cochrane Pain and Palliative Care Group
271	Physiotherapy for pain and disability in adults with complex regional pain syndrome (CRPS) types I and II	Cochrane Pain and Palliative Care Group
272	Positioning and spinal bracing for pain relief in metastatic spinal cord compression in adults	Cochrane Pain and Palliative Care Group
273	Posture and fluids for preventing post-dural puncture headache	Cochrane Pain and Palliative Care Group
274	Pregabalin for neuropathic pain in adults	Cochrane Pain and Palliative Care Group
275	Pregabalin for pain in fibromyalgia in adults	Cochrane Pain and Palliative Care Group
276	Psychological interventions for acute pain after open heart surgery	Cochrane Pain and Palliative Care Group
277	Psychological interventions for needle-related procedural pain and distress in children and adolescents	Cochrane Pain and Palliative Care Group
278	Psychological interventions for parents of children and adolescents with chronic illness	Cochrane Pain and Palliative Care Group
279	Psychological therapies (Internet-delivered) for the management of chronic pain in adults	Cochrane Pain and Palliative Care Group
280	Psychological therapies (remotely delivered) for the management of chronic and recurrent pain in children and adolescents	Cochrane Pain and Palliative Care Group
281	Psychological therapies for the management of chronic and recurrent pain in children and adolescents	Cochrane Pain and Palliative Care Group
282	Psychological therapies for the management of chronic neuropathic pain in adults	Cochrane Pain and Palliative Care Group
283	Psychological therapies for the management of chronic pain (excluding headache) in adults	Cochrane Pain and Palliative Care Group
284	Psychological therapies for the prevention of migraine in adults	Cochrane Pain and Palliative Care Group
285	Resistance exercise training for fibromyalgia	Cochrane Pain and Palliative Care Group
286	Salicylate-containing rubefacients for acute and chronic musculoskeletal pain in adults	Cochrane Pain and Palliative Care Group
287	Selective serotonin reuptake inhibitors (SSRIs) and serotonin-norepinephrine reuptake inhibitors (SNRIs) for the prevention of migraine in adults	Cochrane Pain and Palliative Care Group
288	Selective serotonin reuptake inhibitors (SSRIs) and serotonin-norepinephrine reuptake inhibitors (SNRIs) for the prevention of tension-type headache in adults	Cochrane Pain and Palliative Care Group

289	Serotonin and noradrenaline reuptake inhibitors (SNRIs) for fibromyalgia	Cochrane Pain and Palliative Care Group
290	Single dose dipyron (metamizole) for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
291	Single dose dipyron for acute renal colic pain	Cochrane Pain and Palliative Care Group
292	Single dose intra-articular morphine for pain control after knee arthroscopy	Cochrane Pain and Palliative Care Group
293	Single dose intravenous paracetamol or intravenous propacetamol for postoperative pain	Cochrane Pain and Palliative Care Group
294	Single dose oral aceclofenac for postoperative pain in adults	Cochrane Pain and Palliative Care Group
295	Single dose oral acemetacin for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
296	Single dose oral analgesics for acute postoperative pain in adults - an overview of Cochrane reviews	Cochrane Pain and Palliative Care Group
297	Single dose oral aspirin for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
298	Single dose oral celecoxib for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
299	Single dose oral codeine, as a single agent, for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
300	Single dose oral dexibuprofen [S(+)-ibuprofen] for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
301	Single dose oral dextropropoxyphene, alone and with paracetamol (acetaminophen), for postoperative pain	Cochrane Pain and Palliative Care Group
302	Single dose oral diclofenac for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
303	Single dose oral diflunisal for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
304	Single dose oral dihydrocodeine for acute postoperative pain	Cochrane Pain and Palliative Care Group
305	Single dose oral etodolac for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
306	Single dose oral etoricoxib for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
307	Single dose oral fenbufen for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
308	Single dose oral fenoprofen for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
309	Single dose oral flurbiprofen for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
310	Single dose oral gabapentin for established acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
311	Single dose oral ibuprofen for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
312	Single dose oral ibuprofen plus caffeine for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
313	Single dose oral ibuprofen plus codeine for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
314	Single dose oral ibuprofen plus oxycodone for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
315	Single dose oral ibuprofen plus paracetamol (acetaminophen) for acute postoperative pain	Cochrane Pain and Palliative Care Group

316	Single dose oral indometacin for the treatment of acute postoperative pain	Cochrane Pain and Palliative Care Group
317	Single dose oral ketoprofen or dexketoprofen for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
318	Single dose oral lornoxicam for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
319	Single dose oral lumiracoxib for postoperative pain in adults	Cochrane Pain and Palliative Care Group
320	Single dose oral mefenamic acid for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
321	Single dose oral meloxicam for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
322	Single dose oral nabumetone for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
323	Single dose oral naproxen and naproxen sodium for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
324	Single dose oral nefopam for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
325	Single dose oral oxycodone and oxycodone plus paracetamol (acetaminophen) for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
326	Single dose oral paracetamol (acetaminophen) for postoperative pain in adults	Cochrane Pain and Palliative Care Group
327	Single dose oral paracetamol (acetaminophen) with codeine for postoperative pain in adults	Cochrane Pain and Palliative Care Group
328	Single dose oral piroxicam for acute postoperative pain	Cochrane Pain and Palliative Care Group
329	Single dose oral rofecoxib for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
330	Single dose oral sulindac for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
331	Single dose oral tenoxicam for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
332	Single dose oral tiaprofenic acid for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
333	Single fixed-dose oral dexketoprofen plus tramadol for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
334	Single-dose intravenous diclofenac for acute postoperative pain in adults	Cochrane Pain and Palliative Care Group
335	Spinal cord stimulation for cancer-related pain in adults	Cochrane Pain and Palliative Care Group
336	Sumatriptan (all routes of administration) for acute migraine attacks in adults - overview of Cochrane reviews	Cochrane Pain and Palliative Care Group
337	Sumatriptan (intranasal route of administration) for acute migraine attacks in adults	Cochrane Pain and Palliative Care Group
338	Sumatriptan (oral route of administration) for acute migraine attacks in adults	Cochrane Pain and Palliative Care Group
339	Sumatriptan (rectal route of administration) for acute migraine attacks in adults	Cochrane Pain and Palliative Care Group
340	Sumatriptan (subcutaneous route of administration) for acute migraine attacks in adults	Cochrane Pain and Palliative Care Group
341	Sumatriptan plus naproxen for the treatment of acute migraine attacks in adults	Cochrane Pain and Palliative Care Group

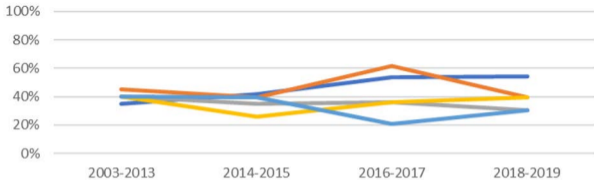
342	Sweet tasting solutions for reduction of needle-related procedural pain in children aged one to 16 years	Cochrane Pain and Palliative Care Group
343	Sweet-tasting solutions for needle-related procedural pain in infants one month to one year of age	Cochrane Pain and Palliative Care Group
344	Systemic administration of local anesthetic agents to relieve neuropathic pain	Cochrane Pain and Palliative Care Group
345	Tapentadol for chronic musculoskeletal pain in adults	Cochrane Pain and Palliative Care Group
346	Topical analgesics for acute and chronic pain in adults - an overview of Cochrane Reviews	Cochrane Pain and Palliative Care Group
347	Topical capsaicin (high concentration) for chronic neuropathic pain in adults	Cochrane Pain and Palliative Care Group
348	Topical capsaicin (low concentration) for chronic neuropathic pain in adults	Cochrane Pain and Palliative Care Group
349	Topical clonidine for neuropathic pain	Cochrane Pain and Palliative Care Group
350	Topical lidocaine for neuropathic pain in adults	Cochrane Pain and Palliative Care Group
351	Topical NSAIDs for acute musculoskeletal pain in adults	Cochrane Pain and Palliative Care Group
352	Topical NSAIDs for chronic musculoskeletal pain in adults	Cochrane Pain and Palliative Care Group
353	Topiramate for the prophylaxis of episodic migraine in adults	Cochrane Pain and Palliative Care Group
354	Tramadol for neuropathic pain in adults	Cochrane Pain and Palliative Care Group
355	Tramadol for postoperative pain treatment in children	Cochrane Pain and Palliative Care Group
356	Tramadol with or without paracetamol (acetaminophen) for cancer pain	Cochrane Pain and Palliative Care Group
357	Transcutaneous electric nerve stimulation (TENS) for cancer pain in adults	Cochrane Pain and Palliative Care Group
358	Transcutaneous electrical nerve stimulation (TENS) for chronic pain - an overview of Cochrane Reviews	Cochrane Pain and Palliative Care Group
359	Transcutaneous electrical nerve stimulation (TENS) for fibromyalgia in adults	Cochrane Pain and Palliative Care Group
360	Transcutaneous electrical nerve stimulation (TENS) for neuropathic pain in adults	Cochrane Pain and Palliative Care Group
361	Transcutaneous electrical nerve stimulation (TENS) for phantom pain and stump pain following amputation in adults	Cochrane Pain and Palliative Care Group
362	Transcutaneous electrical nerve stimulation for acute pain	Cochrane Pain and Palliative Care Group
363	Transdermal fentanyl for cancer pain	Cochrane Pain and Palliative Care Group
364	Triptans for acute cluster headache	Cochrane Pain and Palliative Care Group
365	Valproate (valproic acid or sodium valproate or a combination of the two) for the prophylaxis of episodic migraine in adults	Cochrane Pain and Palliative Care Group
366	Valproic acid and sodium valproate for neuropathic pain and fibromyalgia in adults	Cochrane Pain and Palliative Care Group
367	Venlafaxine for neuropathic pain in adults	Cochrane Pain and Palliative Care Group

368	Vitamin D for the treatment of chronic painful conditions in adults	Cochrane Pain and Palliative Care Group
369	Zolmitriptan for acute migraine attacks in adults	Cochrane Pain and Palliative Care Group
370	Zonisamide for neuropathic pain in adults	Cochrane Pain and Palliative Care Group

Supplementary file 3. Frequency of all categories of recommendations

Categories of recommendation	Overall use of the category N=370 (N/%)	Cochrane Anaesthesia Group N=135 (N/%)	Cochrane Pain and Palliative Care Group N=235 (N/%)
Larger sample size	166 (45)	64 (47)	102 (43)
Better outcome choice	160 (43)	63 (46)	97 (41)
Better design	155 (41)	43 (31)	112 (47)
Better choice of future intervention or comparator	151 (40)	47 (34)	104 (44)
Better reporting	116 (31)	27 (20)	89 (37)
Adverse events / safety	116 (31)	46 (34)	70 (29)
Additional trials needed	92 (24)	34 (25)	58 (24)
Better choice of eligibility criteria	89 (24)	31 (23)	58 (24)
Use of validated rating scales	74 (20)	16 (11)	58 (24)
Ensure blinding	71 (19)	28 (20)	43 (18)
Standardised / clearly defined interventions	70 (18)	30 (22)	40 (17)
Longer follow-up	68 (18)	15 (11)	53 (22)
Higher quality trials needed	61 (16)	25 (18)	36 (15)
Better methodology	54 (14)	23 (17)	31 (13)
Better link to current clinical pathways	52 (14)	20 (14)	32 (13)
Use of cost-effectiveness analysis	43 (11)	18 (13)	25 (10)
Use of a set of standardised outcomes	43 (11)	10 (7,4)	33 (14)
Trials of this type are not a priority or are unlikely	38 (10)	3 (2,2)	35 (15)
More appropriate choice of trial setting	36 (9,7)	14 (10)	22 (9,4)
Better methods of randomisation	34 (9,2)	10 (7,4)	24 (10)
Ensure allocation is concealed	26 (7,0)	12 (8,9)	14 (6,0)
Use of subgroup analysis	25 (6,8)	8 (5,9)	17 (7,2)

Trials more relevant to patients	22 (5,9)	8 (5,9)	14 (6,0)
More complete collection of participant data	22 (5,9)	6 (4,4)	16 (6,8)
Use of pragmatic design	21 (5,7)	1 (0,7)	20 (8,5)
Lower risk of bias	16 (4,3)	9 (6,7)	7 (3,0)
More head-to-head trials	11 (3,0)	1 (0,7)	10 (4,3)
Not using crossover methodology	8 (2,2)	0	8 (3,4)
Trials of this type should not be conducted	7 (1,9)	3 (2,22)	4 (1,7)
Use of intention-to-treat analysis	6 (1,6)	4 (3,0)	2 (0,9)
Predefined outcomes	5 (1,4)	1 (0,7)	4 (1,7)
Other	142 (38)	33 (24)	109 (46)



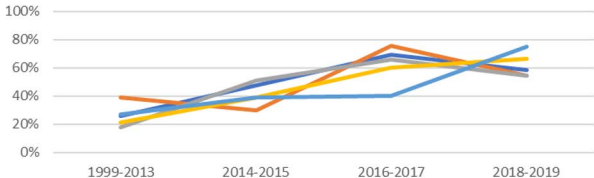
— Larger sample size

— Better outcome choice

— Better choice of future intervention or comparator

— Adverse events / safety

— Better design



— Better design

— Better choice of future intervention or comparator

— Larger sample size

— Better outcome choice

— Better reporting

