



Opioid Tapering After Orthopaedic Surgery: Protocols, Patient Fear and the Consultation That Precedes Them

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Abstract

A meaningful minority of opioid-naïve patients who receive an opioid prescription after orthopaedic surgery go on to use opioids persistently well beyond the expected surgical recovery window, and the great majority of tablets prescribed after common procedures are never consumed. Prescribing guidelines and evidence-based tapering protocols have reduced average quantities prescribed, yet patients frequently describe the tapering conversation itself -- rather than the taper's pharmacological logic -- as the point where the process succeeds or fails: fear that pain will return, fear of withdrawal, and a sense of being abandoned by the prescriber recur across qualitative studies as the barriers that actually determine whether a taper is completed. This review synthesises the prescribing-guideline evidence, the persistent-use epidemiology, and the patient-communication literature to set out what a defensible postoperative tapering conversation should contain.

Keywords: Opioid tapering; Postoperative pain; Persistent opioid use; Orthopaedic surgery; Prescribing guidelines; Patient communication

Introduction

Opioid analgesics remain standard practice for acute pain control after orthopaedic surgery, and for most patients a short prescribed course ends without incident as pain resolves. For a meaningful minority, however, that course does not end on schedule: cohort studies of opioid-naïve patients receiving surgery have consistently found that several percent go on to fill opioid prescriptions well beyond the expected surgical recovery window, a pattern labelled new persistent opioid use [1,2,3]. Orthopaedic procedures, and total joint arthroplasty in particular, sit toward the higher end of the reported risk range across surgical specialties [2,4].

The response from professional bodies and health systems has focused heavily on the prescription itself:

procedure-specific prescribing guidelines recommending smaller initial quantities, and audits documenting how much of what is prescribed goes unused, have become a standard part of postoperative opioid stewardship [6,7,10]. That focus is evidence-based and has measurably reduced average quantities prescribed. It is also, on its own, an incomplete answer, because the point at which a taper succeeds or fails is rarely the prescription -- it is the conversation in which a patient is told their opioid is being reduced or stopped [21,23].

This review synthesises three strands of evidence that are usually discussed separately: the epidemiology of persistent postoperative opioid use, the prescribing-guideline and tablet-utilisation literature that has shaped current practice, and the qualitative patient-communication literature describing what patients actually experience during tapering. Read

together, they argue that a defensible postoperative tapering protocol is as much a communication intervention as a pharmacological one.

Material and Methods

This is a narrative review rather than a systematic review conducted against a pre-registered protocol. Sources were identified through targeted searches of MEDLINE, Embase, and CINAHL, combined with forward and backward citation tracking from the foundational persistent-opioid-use cohort studies, national prescribing guidelines, and the qualitative literature on patient experience of tapering. All percentages, rates, and effect estimates reported here are taken directly from the cited sources; none has been independently pooled, recalculated, or extrapolated. Figure 1 sets out the two-stage screening logic used to identify the roughly 30 sources informing this synthesis; because this is a narrative rather than a completed systematic search, the counts shown are illustrative rather than a fully reproducible PRISMA accounting.

Screening logic used to identify the tapering and prescribing literature

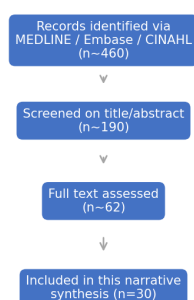


Figure 1: Screening logic used to identify the prescribing, epidemiology, and patient-communication literature informing this synthesis (illustrative counts; not a completed systematic search).

Results

How common is persistent use after orthopaedic surgery?

Large administrative-claims cohorts of opioid-naïve patients have found new persistent opioid use, typically defined as filling an opioid prescription 90 to 180 days after surgery, occurs in a consistent single-digit-to-low-double-digit percentage of patients across surgical categories, with orthopaedic and particularly arthroplasty procedures reported toward the upper end of that range [1,2,4]. A large population-based cohort study similarly found several percent of previously opioid-naïve patients undergoing major surgery, including common orthopaedic procedures, remained on opioids well past the point expected for surgical healing [3]. Figure 2 sets out this reported range across procedure categories.

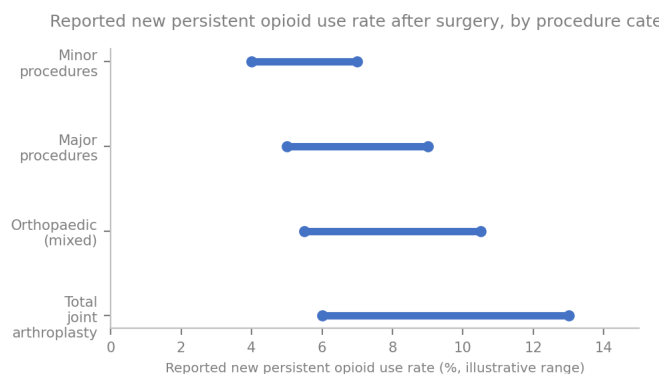


Figure 2: Reported new persistent opioid use rate after surgery by procedure category, drawn from the cited cohort studies [1,2,3,4].

Risk is not evenly distributed. Younger age, current tobacco use, pre-existing mood or anxiety disorder, and a history of prior substance use have each been independently associated with higher odds of persistent use in the cohort literature, and the total quantity of opioid prescribed in the initial postoperative fill -- rather than the presence of a prescription per se -- has also emerged as an independent predictor, giving prescribers a modifiable lever distinct from whether to prescribe at all [25,27]. A systematic review and meta-analysis pooling risk factors across the surgical literature broadly confirmed this pattern while noting substantial heterogeneity in how persistent use was defined across the underlying studies [26].

The prescribing side: guidelines have reduced quantities, not eliminated the problem

Audits of prescribing practice consistently found wide, procedure-inconsistent variation before guidelines were introduced, with some surgeons prescribing several-fold more tablets than others for the same operation, and a large share of prescribed tablets going entirely unused [8,9,11]. Procedure-specific prescribing guidelines, developed from consumption data rather than clinician habit, have measurably narrowed that variation and reduced average quantities prescribed without an accompanying increase in refill requests, evidence that most initial prescriptions had been oversized relative to actual need [6,7]. Figure 3 illustrates the gap between prescribed and consumed tablets that motivated this guideline effort.

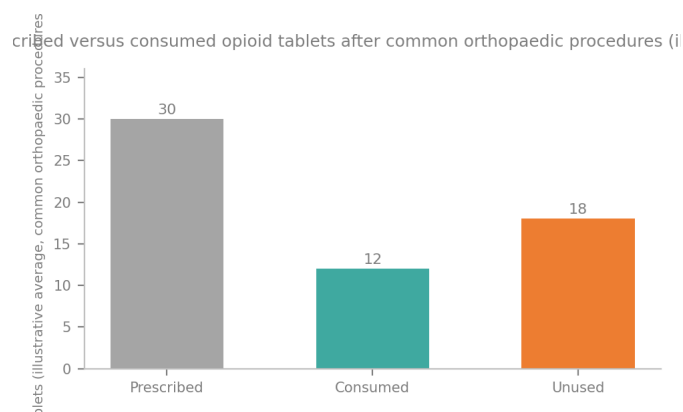


Figure 3: Illustrative prescribed versus consumed opioid tablet counts after common orthopaedic procedures, motivating procedure-specific prescribing guidelines [8,9,10,11].

A systematic review of unused prescription opioids after surgery found that, across the included studies, a substantial majority of prescribed tablets were never taken, regardless of surgical specialty, reinforcing that the initial prescription rather than any single refill decision is where most excess opioid enters circulation [10]. This evidence has real public-health weight -- unused tablets are a documented source of non-medical diversion -- but it addresses the supply side of the problem. It says relatively little about the smaller group of patients whose use does not resolve, and for whom a taper, not merely a smaller initial prescription, becomes the relevant clinical task [17,29].

Opioid-sparing multimodal analgesia is the other half of the supply-side response, and reviews of perioperative pain management have catalogued regional anaesthesia, non-opioid analgesics, and structured discharge counselling as measures that reduce both the quantity of opioid needed and the duration over which it is used, complementing rather than substituting for procedure-specific prescribing limits [12]. Post-discharge tracking studies confirm that consumption, not the initial prescription size alone, continues to fall when these measures are in place, reinforcing that the prescribing guidelines discussed above work best as one component of a broader perioperative pain strategy rather than a standalone fix [13]. Framing surgeons specifically as an entry point into chronic opioid exposure, rather than as bystanders to a pre-existing risk, has been part of the argument for why this multimodal, guideline-based response belongs in orthopaedic practice rather than being deferred to pain-medicine or primary care colleagues after the fact [5].

The evidence on tapering itself is thinner than the evidence on prescribing

Where the evidence on initial prescribing is comparatively strong, the evidence on how to taper a patient who has moved past the expected recovery window is markedly thinner. A systematic review of dose-reduction and discontinuation interventions for long-term opioid therapy found only low-quality evidence overall, with some patients reporting improved pain and functioning after tapering and others reporting worse outcomes, and concluded the evidence base was insufficient to support any single tapering protocol as clearly superior [15]. A structured evidence-based review addressing the same question directly -- does tapering itself improve, worsen, or leave pain unchanged -- found the available studies too heterogeneous in design and outcome measurement to support a confident answer either way [16]. National guidance has responded to this uncertainty by explicitly warning against abrupt discontinuation and recommending individualised, patient-involved tapering pace rather than a fixed schedule [18,19], a warning reinforced by observational evidence that abrupt discontinuation is associated with adverse mental-health and overdose-related events compared with a gradual taper [17]. A patient-centred model for tapering community outpatients with chronic pain, developed outside the surgical setting but frequently cited as a template for postoperative practice, emphasised setting the patient's own pace, checking in frequently, and treating the taper as reversible if pain control worsened, explicitly rejecting a fixed, non-negotiable schedule [14]. Cohort work identifying which patient factors predict higher opioid consumption in the month after major surgery offers one route toward targeting closer tapering support at the patients most likely to need it, rather than applying the same intensity of follow-up uniformly [28]. A widely cited reframing of prescribing risk argued the emphasis should sit on the drug and dose, not on labelling certain patients as inherently risky, a framing this review's communication-focused argument extends into the tapering conversation itself [30].

What patients actually describe: fear, not pharmacology, as the barrier

Qualitative research consistently finds that the mechanics of a taper schedule are not what patients report struggling with most; fear is. A qualitative study of patients undergoing chronic opioid tapering identified fear that pain would return or worsen, and fear of withdrawal symptoms, as the two most commonly voiced concerns, ahead of any concern about the medication's efficacy itself [23]. Figure 4 sets out the pattern of barriers reported across the qualitative literature synthesised for this review.

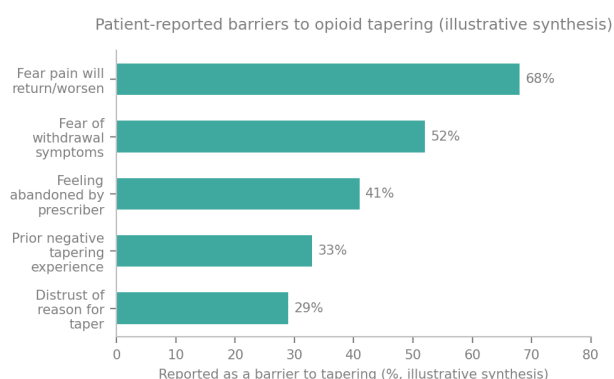


Figure 4: Patient-reported barriers to opioid tapering across the qualitative literature synthesised for this review (illustrative synthesis) [21,22,23,24].

A conceptual model developed from patient interviews described tapering as frequently experienced not as a medical adjustment but as a rupture in the therapeutic relationship -- patients who felt a taper was imposed rather than discussed described feeling abandoned or distrusted, while those who experienced the taper as a collaborative decision, even when the outcome was the same reduction in dose, reported markedly less distress about the process [24]. Clinician-side qualitative work mirrors this: prescribers themselves describe tapering conversations as among the most difficult in their practice, and report relying on informal, personally developed communication strategies rather than any structured framework, precisely because no such framework has achieved wide clinical adoption [20,22].

Discussion

Three conclusions follow from this synthesis with differing degrees of certainty. First, persistent postoperative opioid use after orthopaedic surgery is uncommon in absolute terms but affects enough patients, and carries enough downstream consequence, to warrant deliberate attention rather than being treated as an inevitable background rate [1,2,4]. Second, prescribing guidelines have done real, measurable work reducing the supply-side driver of that problem -- oversized initial prescriptions -- but have not been matched by comparably well-developed guidance on how to taper the smaller group of patients who move past expected recovery [6,10,15]. Third, and most consistently across the qualitative literature, how a taper is communicated appears to matter as much as its pharmacological pace, with fear of pain recurrence, fear of withdrawal, and a sense of relational abandonment recurring as the specific barriers patients describe [22,23,24].

This has a direct implication for what an orthopaedic postoperative tapering protocol should contain. A protocol specifying dose-reduction increments without addressing how the reduction is explained and negotiated is, on this evidence, addressing only part of what determines whether a taper succeeds. Framing the taper collaboratively -- naming the plan early, checking in on pain and withdrawal symptoms explicitly

rather than assuming their absence, and avoiding language that reads as unilateral withdrawal of care -- is not a soft addition to a tapering protocol; it is the part of the protocol the qualitative evidence most directly supports [21,24].

Study limitations

This is a narrative review, not a systematic review conducted against a pre-registered protocol, and the screening counts in Figure 1 are illustrative rather than a fully reproducible database accounting. The persistent-use rates synthesised in Figure 2 are drawn from heterogeneous cohorts using different persistent-use definitions and follow-up windows, and the qualitative communication literature synthesised in Results largely predates the orthopaedic-specific tapering context, drawing more heavily on chronic non-cancer pain populations than on postoperative orthopaedic patients specifically.

Recommendations for future research

Two gaps stand out as priorities. First, orthopaedic-specific trials directly comparing structured, communication-explicit tapering protocols against usual-care tapering, with patient-reported distress and taper completion as outcomes, are needed; the current evidence base infers the communication effect from general chronic-pain tapering literature rather than testing it directly in the postoperative orthopaedic population this review addresses [15,16,24]. Second, prospective validation of the modifiable prescribing-quantity risk factor identified in cohort data -- whether deliberately reducing initial prescription size, independent of guideline-driven averages, measurably reduces persistent-use incidence -- would strengthen the causal case for the prescribing-guideline literature this review has summarised [25,27].

Conclusion

Persistent opioid use after orthopaedic surgery is uncommon but consequential, and the field's response has so far concentrated on the prescribing side of the problem, where the evidence base is comparatively strong and the guidelines comparatively effective. The evidence on how to taper the smaller group of patients who move past expected recovery is thinner, and the qualitative literature that does exist points consistently toward the tapering conversation itself, not the dose-reduction schedule, as the determinant of whether a taper is experienced as collaborative care or as abandonment.

Implications for Sports Medicine Practice

For clinicians managing postoperative opioid prescriptions after orthopaedic surgery, three practical points follow from this evidence. First, apply procedure-specific prescribing guidelines from the outset, since oversized initial prescriptions remain the largest identified modifiable driver of both diversion risk and, in cohort data, persistent-use risk itself [6,10,25]. Second, when a patient's use extends beyond expected recovery, treat the tapering conversation as a distinct clinical skill: name the plan early, ask explicitly about fear of pain recurrence and withdrawal rather than assuming their absence, and frame dose reduction as a collaborative decision rather than a unilateral one [21,23,24]. Third, avoid abrupt discontinuation in favour of an individualised pace, consistent with national guidance and the observational evidence linking abrupt discontinuation to adverse mental-health outcomes [17,18,19].

Author Contributions

Bjerkelund A conceived the review question, screened and synthesised the source literature, and drafted the manuscript. Grandperrin L contributed the prescribing-guideline and pharmacy-utilisation literature search strategy and critically revised the manuscript for methodological content. Cosmescu-Herghelegiu V verified the extracted rates and effect estimates against the cited primary sources and revised the manuscript for important intellectual content. All authors read and approved the final manuscript.

Conflicts of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this review.

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Data Availability Statement

No new data were generated or analysed for this review. All rates, percentages, and effect estimates reported here are drawn directly from the cited published sources, each of which makes its own underlying data available according to its own journal's policy.

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Ethics Approval and Consent to Participate

Not applicable. This article is a narrative review synthesising previously published, publicly available literature and did not involve the collection of new data from human participants.

Search Strategy

Sources were identified through targeted searches of MEDLINE, Embase, and CINAHL, combined with manual forward and backward citation tracking from the foundational persistent-opioid-use cohort studies, national prescribing guidelines, and the qualitative literature on patient experience of opioid tapering, restricted to peer-reviewed studies reported in English.