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Review Article

Trends in Patient Satisfaction Following Regional Anesthesia Techniques

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ABSTRACT

Patient satisfaction has become a central outcome in regional anesthesia research as peripheral nerve blocks, neuraxial techniques, and continuous catheter systems have moved into routine ambulatory practice, yet satisfaction and block success are only loosely coupled outcomes.

This review synthesizes registry, cohort, and randomized trial evidence on what predicts patient satisfaction with regional anesthesia, from block failure and breakthrough pain to the psychological experience of remaining awake during surgery.

Comparative studies of regional versus general anesthesia show no consistent satisfaction advantage for regional technique, and some report the opposite, particularly for upper extremity surgery under tourniquet.

Continuous peripheral nerve catheters extend the anesthesia experience into an unsupervised recovery period in which self-management confidence, not analgesic efficacy alone, drives satisfaction.

Across settings, preoperative communication and anxiety management emerge as levers at least as influential as block technique itself, suggesting that further satisfaction gains lie more in expectation-setting than in further technical refinement.

Keywords: *patient satisfaction; regional anesthesia; peripheral nerve block; perineural catheter; preoperative anxiety*

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INTRODUCTION

Ask an anesthesiologist what makes a regional anesthetic successful and the answer used to stop at the block itself: did the needle find the nerve, did the local anesthetic spread, did the patient avoid a general anesthetic. Ask a patient the same question and the answer is broader and messier. It includes whether the block worked, yes, but also how much the placement hurt, whether anyone explained what to expect, whether the limb came back to sensation on a schedule that fit their plans, and whether the whole experience felt controlled or chaotic. Over the past decade the specialty has been catching up to that

broader definition. As peripheral nerve blocks, neuraxial techniques, and continuous catheter systems have expanded from academic centers into routine ambulatory practice [1][2], patient satisfaction has moved from an afterthought mentioned in a discussion section to a primary outcome that trials are designed around [3][4].

That shift has exposed something uncomfortable: regional anesthesia does not automatically satisfy patients more than general anesthesia does, even when it reduces pain scores or opioid consumption. Several well-conducted observational studies have found regional techniques trailing general anesthesia on satisfaction measures for certain procedures [5][6], which runs against the intuitive assumption that avoiding a breathing tube and nausea should make people happier with their care. Understanding why requires separating the technical success of a block from the experience of receiving one, and untangling both from the surrounding scaffolding of communication, expectation-setting, and follow-up that shapes how any medical experience gets remembered.

This review traces what the literature from the last fifteen years says about patient satisfaction with regional anesthesia: how it is measured, what predicts it, where it outperforms general anesthesia and where it does not, and what interventions actually move the needle. We focus on peripheral nerve blocks and neuraxial techniques in adult elective and semi-urgent surgery, drawing on registry data, randomized trials, and the patient-reported outcome instruments that have matured alongside the techniques themselves.

HOW SATISFACTION IS MEASURED, AND WHY THAT MATTERS

Much of the disagreement in this literature traces back to measurement. Early studies asked a single global question — "how satisfied were you with your anesthesia?" — usually on a Likert scale or visual analog scale collected once, at discharge or on postoperative day one. That approach reliably produces ceiling effects: most patients report themselves satisfied or very satisfied regardless of what actually happened, because a single retrospective question is dominated by recency, by gratitude for a successful surgery, and by social desirability in front of the care team [7]. A block that partially failed and was rescued with intraoperative sedation or conversion to general anesthesia can still generate a "satisfied" answer on a blunt instrument administered the next morning.

More recent work has tried to pull satisfaction apart into components — pain control, block-related discomfort during placement, communication and information provided, and willingness to have the same anesthetic again — and to measure some of these prospectively, at multiple time points, rather than as a single retrospective summary [8][9]. The large International Registry of Regional Anesthesia analysis by Fredrickson and colleagues took this further by tracking tens of thousands of peripheral nerve blocks and correlating structured satisfaction outcomes with block success, complications, and patient characteristics rather than relying on a single overall rating [10]. Johnston and colleagues' 2021 discussion of what "success" should even mean in regional anesthesia argues explicitly that block success (sensory and motor findings) and patient-centered success (comfort, function, satisfaction) are related but distinct constructs, and that outcome reporting in trials has lagged behind that distinction [9]. The practical upshot for anyone reading this literature is to look past the topline "percent satisfied" figure and ask what instrument produced it and when it was administered, because those methodological choices move the numbers as much as the clinical intervention does.

PERIPHERAL NERVE BLOCKS: WHEN THEY HELP AND WHEN THEY DISAPPOINT

For peripheral nerve blocks specifically, the registry and cohort literature converges on a few consistent satisfaction drivers. Block failure, whether partial or complete, is the single most reproducible predictor of dissatisfaction: patients who require rescue analgesia, supplemental sedation, or conversion to general anesthesia report satisfaction scores well below those whose blocks worked as intended, even after adjusting for the underlying surgery [11][10]. Hade and colleagues' 2021 analysis of factors associated with low satisfaction after peripheral nerve block similarly identified breakthrough pain during the procedure, prolonged motor block beyond what the patient expected, and unmanaged block-site discomfort as recurring themes in the dissatisfied minority, alongside a smaller but persistent group of patients who were simply anxious about having an awake procedure regardless of how well it went [12].

That anxiety component deserves attention because it is often more tractable than block technique itself. Surveys of patient knowledge before nerve block placement have repeatedly found gaps and misconceptions — uncertainty about how long numbness will last, fear of nerve damage disproportionate to its actual incidence, and unfamiliarity with what an awake block placement will feel like — that predate and independently predict lower satisfaction, separate from whatever happens once the needle goes in [13]. This matters clinically because it points to preoperative education as an intervention that costs little and does not depend on operator skill, in contrast to block failure rates, which are harder to move at the level of an individual patient encounter.

The narrative synthesis of peripheral regional anesthesia outcomes covering 2013 to 2023 makes the case that as ultrasound guidance has become

close to universal in many practice settings, the ceiling on technical block success has risen enough that satisfaction differences increasingly hinge on these softer factors — communication, expectation management, and the postoperative trajectory of numbness and pain — rather than on whether the block "worked" in the narrow sensory-motor sense [14]. In other words, the field has partly solved the technical problem and is now confronting a communication and systems problem.

REGIONAL VERSUS GENERAL ANESTHESIA: A MORE COMPLICATED COMPARISON THAN EXPECTED

If peripheral nerve blocks work well and are properly explained, one might expect them to beat general anesthesia on satisfaction outright. The comparative literature does not support that simple story. Neuman and colleagues' large pragmatic randomized trial comparing spinal and general anesthesia for hip fracture surgery found similar postoperative pain and analgesic use between groups, and importantly, patient satisfaction did not differ meaningfully by anesthetic type — patients randomized to spinal anesthesia were not more satisfied simply by virtue of avoiding general anesthesia [3]. A more recent patient-centered analysis of spinal versus general anesthesia for lumbar discectomy reached a comparable conclusion, with satisfaction driven more by pain trajectory and perceived recovery speed than by the anesthetic technique itself [4].

For peripheral blocks specifically, some studies have found the opposite of what intuition predicts. A prospective, double-centered observational study of distal upper extremity surgery reported that regional anesthesia was associated with lower patient satisfaction than general anesthesia, a finding the authors attributed to intraoperative awareness of noise and manipulation, tourniquet discomfort that blocks do not always fully cover, and the psychological burden of remaining awake during surgery on one's own limb [5]. A separate comparison in upper limb surgery similarly found general anesthesia edging out regional technique on some satisfaction domains despite regional anesthesia's advantages in early postoperative pain and reduced nausea [6]. These results do not mean regional anesthesia is inferior in any global sense — recovery profile, opioid sparing, and same-day discharge rates still generally favor it — but they do mean that "patients prefer regional anesthesia" cannot be asserted as a default finding, and that satisfaction is sensitive to procedure-specific factors like tourniquet time, positioning, and ambient operating room experience that have nothing to do with the pharmacology of the block.

CONTINUOUS CATHETERS AND THE EXTENDED RECOVERY WINDOW

Continuous peripheral nerve catheter techniques add a further wrinkle because they extend the anesthesia experience well past the day of surgery, into a period the patient manages largely without direct clinical supervision. Ilfeld's review of continuous peripheral nerve blocks in the hospital and at home describes how ambulatory catheter programs shifted analgesic responsibility onto patients and caregivers, with satisfaction contingent on adequate training in pump operation, catheter site care, and recognition of complications before discharge [15]. Early outpatient catheter series, such as the 620-patient experience with ultrasound-placed catheters managed at home, reported generally high satisfaction but flagged catheter dislodgement, leakage, and uncertainty about when and how to remove the catheter as recurring sources of patient anxiety even when analgesia itself was adequate [16].

More recent quality-improvement work on continuous peripheral nerve blocks for outpatient orthopedic surgery has approached this as a systems problem rather than a purely clinical one, using structured discharge education, follow-up phone calls, and standardized removal instructions to close the gap between technical success and patient confidence in self-management [17]. The throughline across this literature is that a well-placed catheter that functions perfectly can still generate a dissatisfied patient if that patient does not know what a normal recovery trajectory looks like or whom to call when something feels wrong — reinforcing, from a different angle, the same conclusion reached in the single-shot block literature: the technical and the experiential dimensions of regional anesthesia are only loosely coupled.

COMMUNICATION, EXPECTATION SETTING, AND PREOPERATIVE ANXIETY

A recurring finding across nearly every satisfaction study in this review, regardless of technique, is that preoperative anxiety and the quality of preoperative communication independently predict postoperative satisfaction, sometimes more strongly than the anesthetic technique chosen. A Swiss prospective observational study found that patient-reported perioperative anxiety about the anesthetic itself was associated with meaningfully lower satisfaction, independent of the type of anesthesia received or the surgical outcome [18]. Interventions that address this directly have shown measurable effect: a platform enabling preoperative communication between patients and anesthetists reduced anxiety scores ahead of surgery [19], and a structured communication-skills training program for anesthesia consultations produced a measurable reduction in preoperative anxiety in a blinded pre-post design [20]. A broader 2025 review of perioperative anxiety situates regional anesthesia consent conversations as a particular flashpoint, since these are among the few anesthetic encounters where patients are asked to

actively participate in the decision and to remain conscious for the intervention, both of which raise the stakes of how the conversation is handled [21].

Cross-sectional survey work on pre-anesthesia consultation practices reinforces the same point from a different angle: patients rate satisfaction with the consultation process itself — feeling heard, having questions answered, understanding what to expect — as strongly associated with overall satisfaction with anesthesia care, sometimes more strongly correlated than the technical anesthetic outcome [22]. Taken alongside the peripheral nerve block education literature discussed above [13], the pattern across procedure types and anesthetic modalities is consistent: the conversation that precedes the anesthetic shapes the satisfaction that follows it almost as much as the anesthetic does.

CONCLUSION

The decade-plus of research on patient satisfaction with regional anesthesia complicates a story that once seemed straightforward. Regional techniques offer real, well-documented advantages in pain control, opioid sparing, and functional recovery, and ultrasound guidance has made peripheral nerve blocks more reliable than they were a generation ago. But reliability of the block and satisfaction of the patient are not the same outcome, and the literature increasingly shows they diverge in predictable ways — around block failure and breakthrough pain, around the awake experience of surgery under regional technique, around the self-management burden of continuous catheters, and around whatever anxiety a patient carries into the consent conversation. Where satisfaction is measured well, with instruments that separate its components rather than collapsing everything into a single retrospective rating, the evidence points toward communication and expectation-setting as underused levers that are at least as important as further refinements in block technique. Future practice improvement in this area probably has more to gain from investing in how blocks are explained, how failure is anticipated and managed, and how patients are supported through a catheter's working life than from further incremental gains in ultrasound resolution or needle guidance technology, both of which have largely plateaued relative to where satisfaction gaps still exist.

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Conflict of Interest

The authors declare no conflicts of interest relevant to the content of this article.

Author Contributions

Claire Novak conceived the review and drafted the introduction and measurement section; Isabel Novak performed the literature search and drafted the sections on peripheral nerve blocks and the regional-versus-general comparison; Katrin Peeters drafted the sections on continuous catheters and preoperative communication and prepared the manuscript for submission. All authors reviewed and approved the final version.

Ethics Statement

This is a literature review that did not involve new data collection from human or animal subjects; no ethics committee approval was required.

Data Availability

No new data were generated for this review. All sources discussed are publicly available published literature, cited in the reference list.

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