Fascial Plane Blocks and Return to Play After Lumbar Spine Surgery: A Gap at the Intersection of Regional Anesthesia and Spine Literature

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Background

Lumbar spine surgery causes significant acute pain, and inadequate analgesia delays mobilization and prolongs opioid exposure. Fascial plane blocks, including the modified thoracolumbar interfascial plane (mTLIP) and erector spinae plane (ESP) blocks, are opioid-sparing regional techniques that target the thoracolumbar fascia and paraspinal musculature. These blocks are increasingly incorporated into Enhanced Recovery After Surgery (ERAS) protocols, yet whether their analgesic benefits extend to functional recovery milestones, such as return to play (RTP) in athletes, remains unexamined. This review synthesizes current evidence and identifies this gap.

Methods

We searched MEDLINE, EMBASE, the Cochrane Library and PubMed using "fascial plane block" OR "erector spinae plane block" OR "TLIP" OR "thoracolumbar interfascial plane block" AND "lumbar spine surgery," combined with each outcome: opioid consumption, perioperative analgesia, ERAS protocols, length of stay, time to mobilization, return to play and return to work. Five meta-analyses and systematic reviews (2016-2024) met inclusion criteria; studies not addressing regional anesthesia outcomes in spine surgery were excluded. For each review, we recorded the design, sample size, comparison groups, main outcome, pooled results and limitations.

No conflicts of interest. IRB-exempt per One Brooklyn Health policy (no patient-identifiable information). No off-label drug use.

Results

Blocks cut opioid use and speed early recovery, but their effect on return to play has never been tested.

1 Do fascial plane blocks reduce opioid use?

15 mg less

morphine in the first 24 h with a TLIP block vs no block, the largest effect of any technique.

Network meta-analysis · 34 RCTs · 2,365 patients · Hong 2023

2 Do patients need less rescue pain medicine?

~50% fewer

patients needed rescue analgesia (RR 0.47), and they used 16 mg less morphine in 24 h.

Meta-analysis · 9 RCTs · 539 patients · Ye 2021

3 Does enhanced recovery get patients moving sooner?

0.92 days

earlier out of bed with ERAS care, and a hospital stay 1.41 days shorter.

Meta-analysis · 59 studies · 15,198 patients · Magableh 2024

4 Why does opioid exposure matter?

~7× odds

of prolonged opioid use after surgery in patients who used opioids around the time of surgery (OR 6.91).

Meta-analysis · 60 cohorts · 13.2 million patients · Luo 2024

5 Do elite athletes return to play after lumbar surgery?

83.5%

returned after microdiscectomy, about the same rate as athletes treated without surgery (p = 0.59).

Meta-analysis · 9 studies · 558 athletes · Overley 2016

6 Do blocks help athletes return to play sooner?

Unknown

No study has measured return to play after a fascial plane block. This is the gap.

None of the five reviews linked a block to an athletic endpoint

Discussion and Conclusions

Summary of evidence. Fascial plane blocks cut 24-h opioid use by about 15-16 mg morphine and halve rescue analgesia; ERAS shortens stay by 1.41 days and gets patients walking 0.92 days sooner; perioperative opioid use is associated with prolonged use (OR 6.91) and reoperation.

Proposed mechanism. Better early analgesia leads to less opioid exposure, earlier mobilization and rehabilitation, and potentially a faster, more reliable return to play.

Limitations. The link is indirect, drawn from heterogeneous meta-analyses of different procedures and populations. Block trials are small with high heterogeneity, and one TLIP trial was retracted. Opioid-outcome data are observational and do not test dose reduction. RTP data are limited to microdiscectomy in elite athletes, without time-to-RTP.

Future directions. Prospective trials in athletes comparing ESP or mTLIP blocks with standard ERAS analgesia, using time to RTP, RTP rate and return to prior performance as endpoints.

Conclusion. A plausible but untested pathway links fascial plane blocks to athletic recovery, a clear gap between the regional anesthesia and spine literature that warrants prospective study.

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