

Clinical Guidelines for Facet Blocks and Radiofrequency Ablation for Low Back & Neck Pain

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How Many Prognostic Blocks Should One Do Before RF Ablation?

- ▶ Define Goals: may differ for pts, payers, organizations and providers
 - ▶ We prioritized patient access to care
- ▶ SIS & ASIPP recommend 2 blocks
- ▶ Screening test for RFA should have high sensitivity and NPV
 - ▶ Lord et al. CJP 1995 (cervical MBB, n=50, concordant response):
 - ▶ Sens 54%, Spec 88%, PPV 88%, NPV 68%
 - ▶ Derby et al. Pain Phys 2013, n=229 lumbar MBB
 - ▶ Sens 55%, Spec 77%, PPV 78%, NPV 53%
- ▶ Boswell et al. Pain Physician 2015: False-positive rate of cervical facet blocks: 27%-63%
 - ▶ Must be lower in neck
 - ▶ *Inconsistent* with prevalence rate of 36%-67%
- ▶ Stojanovic et al. CJP 2010: 127 pts, retrospective study on L-RFA
 - ▶ Identical 47% success rates for >80% relief on 2 blocks and those with >50 <80% on 2 blocks or 1 block
- ▶ Cohen et al. RAPM 2015: 511 pts, multi-center, case-control, L-RFA
 - ▶ 63% success rate with single blocks vs. 70% with double blocks
- ▶ Derby et al. Pain Med 2013: 51 pts, L-RFA, retrospective study on L-RFA
 - ▶ 63.2% success rate in single-block pts vs. 84.6% in the 13 double-block pts

How Many Prognostic Blocks Should One Perform Before Cervical Medial Branch RF Ablation?

► High success rates with 0-Blocks

► van Eerd et al. Pain Pract 2014: C-RFA, 65 pts, observational study

► 55% RFA success rate with 0 blocks

► McCormick et al. Pain Med 2018: Knee RFA, 54 pts, RCT

► 64% success rate in 0-block vs. 59% in single-block group

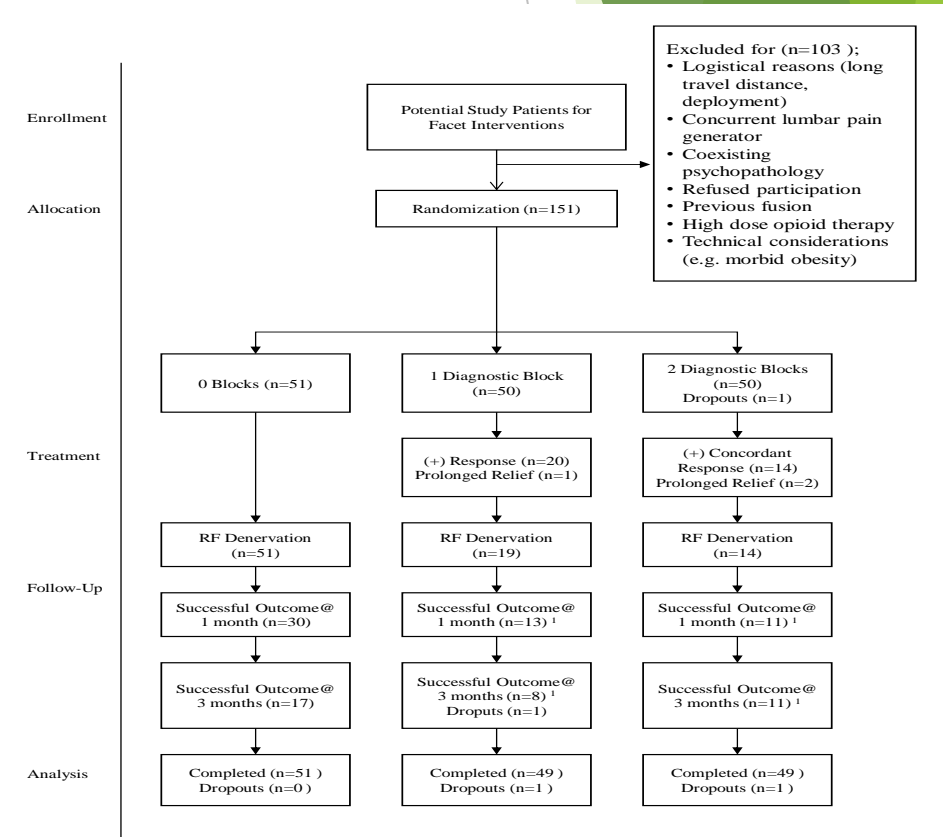
► Controlled studies report high success rates in C-spine regardless of # of blocks

► Lord et al. NEJM 1996 (3 blocks): 7/12 (58%) RFA success rate at 3-mo vs. 1/12 (8.3%) in control group

► Stovner et al. Cephalalgia 2004 (0 blocks): 4/6 in RFA had 3-mo success vs. 2/6 in control group

► Van Eerd et al. Spine 2021 (0 blocks, n=76): 56% success rate in RFA group vs. 51% in sham group @ 6-mo

► Cohen et al. Anesthesiology 2010: RCT in 151 pts



Successful Outcomes by Treatment Group

	0-Block (RF)	Single-Block	Double-Block	P-Value
Successful Outcome @ 1-Month (%)	30 (58.8)	13 (26.0)	11 (22.5)	< 0.001
Success at 1-month among persons with RF	30 (58.8, n = 51)	12 (63.2, n = 19)	9 (64.3, n = 14)	0.905
Successful Outcome @ 3-Months	17 (33.3)	8 (16.0)	11 (22.0)	0.115
Success at 3- months among persons with RF	17 (33.3, n = 51)	7 (38.9, n = 18)	9 (64.3, n = 14)	0.111

Cost Per Successful Treatment

	0-Block (RF)	Single-Block	Double-Block
Cost Per Successful Treatment	\$6286.03	\$17,142.11	\$15,241.31
Cost Per Successful Treatment Excluding Medication Costs and Missed Work Days	\$6053.68	\$16,236.12	\$14,237.76
Total Cumulative Costs for Facility Fees	\$63,936	\$86,247	\$103,563
Total Cumulative Costs for Diagnostic Blocks	\$0	\$29,294.38	\$42,718.26
Total Cumulative Costs for RF Denervation	\$38,976.51	\$14,345.46	\$10,323.10
Estimated Cost of Missed Work Days	\$7650	\$10,050	\$13,350
Estimated Savings on Medications	\$3700	\$2800	\$2300

Extrapolation of L-z Guidelines to Cervical Region

- ▶ L-z guidelines: Grade C evidence, low-to-moderate certainty for single blocks
- ▶ Pre-test probability of facet pathology in chronic neck pain greater than for LBP
 - ▶ Whiplash injuries may damage z-joints
 - ▶ Greater surface area relative to discs, and greater motion in the neck
- ▶ Lower incidence of false-positive blocks (main rationale for double blocks), possibly higher false-negative rate
- ▶ Reported FP rate of 27-63% cannot be accurate if upper range of 25-66% prevalence rate is correct
 - ▶ Cohen et al. 2020: 7% (6/86) incidence of missed nerves despite accurate needle placement
- ▶ Lord et al. 1995: 34 of 50 pts with whiplash classified as 'negative' based on concordant response to lidocaine & bupivacaine. When criterion changed to reproducible relief with lidocaine & bupivacaine but not with saline, 11 were considered FN (32.4%)
- ▶ Higher technical and clinical success rates in c-spine based on direct and indirect comparisons
 - ▶ Less nerve variability and smaller size
 - ▶ Lower false-negative rate for diagnostic blocks
 - ▶ Possibly less psychopathology

Level of Evidence

- ▶ We recommend a single block for clinical practice
 - ▶ Double-blocks will result in a higher success rate (and should be used in clinical trials designed to determine efficacy)
 - ▶ 0 blocks will result in highest overall success rate & lowest overall costs in U.S.
 - ▶ Ultimate decision on # of blocks should be tailored to individuals
- ▶ **GRADE C RECOMMENDATION, LOW-TO-MODERATE LEVEL OF CERTAINTY FOR L-SPINE**
- ▶ **GRADE B RECOMMENDATION, LOW-TO-MODERATE LEVEL OF CERTAINTY FOR C-SPINE**

What Should the Cutoff be for Designating a Block as Positive & is There Evidence for Non-Pain Score Outcomes?

- ▶ SIS guidelines specify that complete relief in a “distinct topographical area” is necessary for a positive block
- ▶ ASIPP guidelines specify there is stronger evidence for 75% relief than 50%
- ▶ NASS guidelines state there is ‘insufficient evidence’ for the use of $\geq 50\%$ pain relief cutoffs with MBB for diagnosing facet joint pain
- ▶ IMMPACT guidelines and most FDA studies designate 30% relief as “clinically meaningful”
- ▶ Cervical disc and z-joint pain comparable in prevalence
 - ▶ Rydman et al. Spine J 2019: 55% prevalence of z-joint vs. 45% disc pathology in non-recovered pts with whiplash
- ▶ Factors that can affect block results: placebo response, extravasation of LA into other tissues, superficial anesthesia, sedation, blockade of non-MB nerves that innervate erector spinae and deep intrinsic muscles
- ▶ Non-pain measures: Function and QoL scales and analgesic consumption require longer amounts of pain relief than LA provide
 - ▶ May be useful with ultra long-acting formulations
- ▶ Predictive modeling: Pain relief, # of blocks, imaging requirements, etc. predicated on demographic & clinical variables
 - ▶ McCormick used 2 lumbar MBB in individuals who had “only” 50-74% pain relief after 1st block
 - ▶ No difference in outcomes between # of blocks

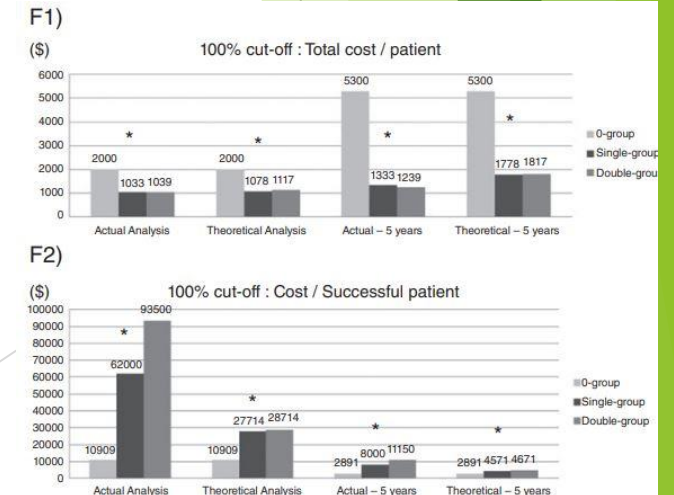
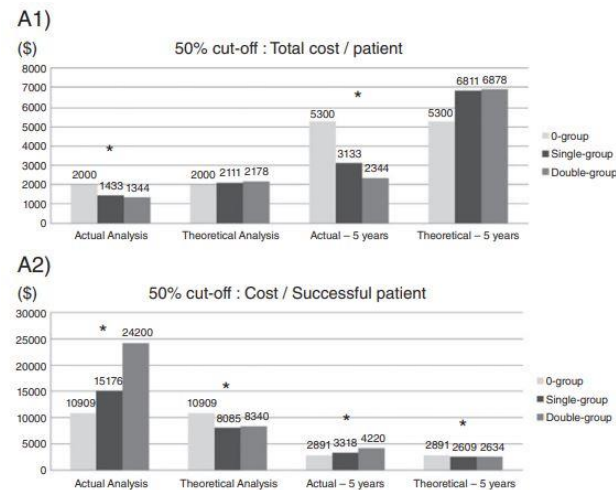


Ideal Medial Branch Cutoff for RFA Selection

- ▶ Holz & Sehgal. Pain Physician 2013
 - ▶ 112 C- (28%) and L- (72%) MBB, 50 with 3-mo RFA outcome data
 - ▶ No difference between concordant (both $\geq 70\%$ relief) & non-concordant response
 - ▶ Highest benefit noted in pts who obtained 100% relief with lidocaine lasting > 8 h

3-Month Outcome Variable	Concordant	Discordant	P-Value
Pain Relief (%)	53.1	44.4	0.47
Mean Improvement in Function	- 12.9	- 15.1	0.72

- ▶ Derby et al. Pain Med 2013: Retrospective actual and theoretical cost-effective analysis in 180 pts who underwent lumbar MBB
 - ▶ Total cost per patient: In theoretical analysis, single blocks most cost-effective at higher cutoffs ($\geq 80\%$) while 0-blocks are most cost-effective at lower cutoffs ($< 80\%$)
 - ▶ Cost per successful treatment: Actual 5-year analysis showed 0 blocks is most cost-effective. Theoretical 5-year analysis showed 0 blocks most cost-effective at cutoffs $\geq 80\%$, but single or double blocks at cutoffs between 50% & 79%.



Interventional Pain Outcomes Stratified by Diagnostic Block “Cutoff” Threshold

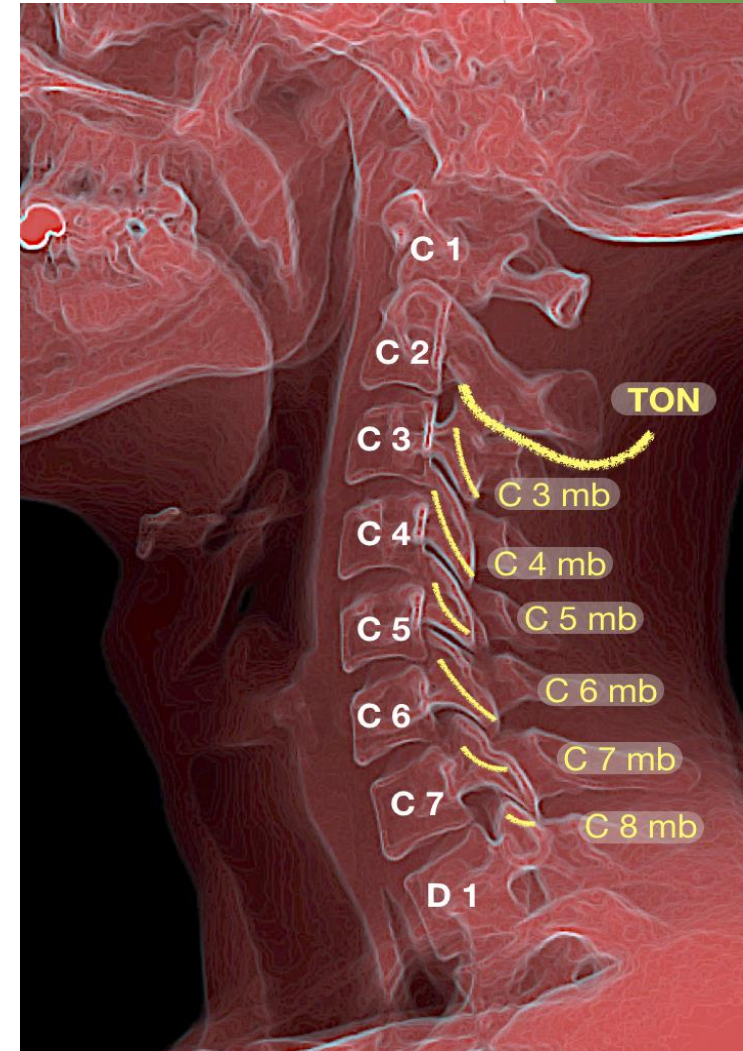
Author	# of Pts	Procedure	Comparison	Results
Cohen et al. 2007	92	Cervical facet RF	> 50% vs. > 80%	56% success rate in > 50% group vs. 58% in > 80% group
Erdek et al. 2010	50	Celiac plexus neurolysis	> 50% vs. > 80%	56% success rate in > 50% group vs. 54% in > 80% group
Cohen et al. 2007	262	Lumbar facet RF	> 50% vs. > 80%	52% success rate in > 50% group vs. 56% in > 80% group
Stojanovic et al. 2010	77	Lumbar facet RF	> 50% vs. > 80%	47% success rates in both groups
Williams et al. 2011	244	Spinal cord Stimulation	< 50% vs. > 50% vs. > 75%	18% in < 50% vs. 90% in > 50% vs. 71% in > 75% groups
Cohen et al. 2009	77	SI joint RF	> 50% vs. > 80%	51% success rate in > 50% group vs. 49% in > 80% group
Huang et al. 2012	101	Pulsed RF of occipital nerves	< 50% vs. > 50% vs. > 80%	50% in < 50% vs. 48% in > 50% vs. 58% in > 75% groups
McGreevy 2013	32	Superior hypogastric neurolysis	% pain relief	Mean pain relief of 75% for (+) outcomes vs. 82% for (-) outcomes
Holt & Sehgal 2016	50	Lumbar & cervical facet	Both blocks \geq 80% vs. 1 of 2 blocks \geq 80%	53.1% for concordant relief vs. 44.4% for discordant (P=NS)
Derby et al. 2012	51	Lumbar RF	> 50% vs. > 80%, both 1 & 2 blocks	56% success in > 50% group vs. 84% in > 80% group

Studies Evaluating Cervical Facet RFA Success Rates Stratified by Pain Relief from MBB

Author	Patient Population	Design	Results	Comments
Cohen et al. 2007	92 pts	Retrospective, 6-mo f/u	56% success rate in pts who rec'd 50-79% relief from single MBB vs. 58% for those who obtained \geq 80% relief	Multicenter study
Burnham et al. 2020	50 pts who obtained \geq 80% relief from MBB	Cross-sectional, 6-mo f/u	54% success rate in pts who obtained 80-99% pain relief from MBB and those who obtained 100% relief	Dual MBB. Follow-up calls conducted at various points after 6-mo
Holz & Sehgal 2016	112 pts with lumbar and cervical pain (28% cervical)	Retrospective, 3-mo f/u	48% avg. pain relief. No correlation between percent or duration of pain relief after MBB and pain relief after RFA. Individuals with 100% relief from lidocaine lasting > 8h responded best	Dual MBB, 70% relief was cutoff for (+) block
Shin et al.	28 pts	Observational, 3,6 & 12-mo f/u	No correlation between categorical pain relief on prognostic blocks (25%, 50%, 75%, 80% and 100%) and pain relief after RFA	Dual comparative MBB

Extrapolation to Lumbar Guidelines to Cervical Region

- ▶ Facet joints play a more prominent role in chronic neck pain than in the low back
 - ▶ Greater surface area, greater movement especially at C2-3 and C5-6
 - ▶ Higher density of nociceptors in facet joint capsule & bone in neck than low back
 - ▶ Higher procedure-related pain scores for cervical than lumbar procedures
 - ▶ **Form theoretical basis for requiring higher thresholds in neck than low back**
- ▶ Clinically meaningful pain relief similar in neck and low back
 - ▶ Most patients will obtain greater pain relief for MBB than RFA (greater spread)



Level of Evidence

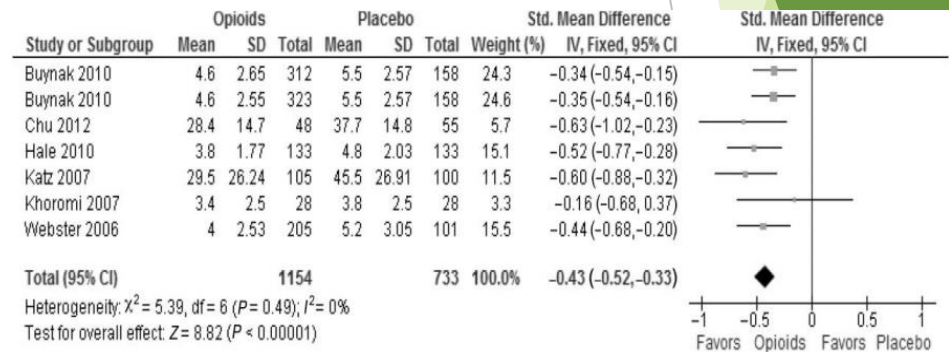
- ▶ We recommend that 50% pain relief be used as a cutoff for a ‘+’ block
 - ▶ Higher cutoffs will yield higher success rates, but a significant proportion (> 50%) of individuals will be denied a beneficial procedure

- ▶ **GRADE B RECOMMENDATION, MODERATE LEVEL OF CERTAINTY FOR L-SPINE**
- ▶ **GRADE C RECOMMENDATION, LOW-TO-MODERATE LEVEL OF CERTAINTY FOR C-SPINE**

Use of Sedation: Why Might Sedation Reduce Pain? Opioids

- ▶ L-z joint guidelines: Grade B evidence, low-to-moderate level of certainty to avoid sedation
- ▶ Reduce Spinal Pain: Moderate evidence opioids reduce pain, weak evidence they improve function
- ▶ Interfere with ability to engage in normal activities (inaccurate pain diaries)
- ▶ Euphoria, anxiolysis

Effect of Opioids on LBP



Chapparo et al. Spine 2014

Use of Sedation is Balancing Act

Pro-Sedation

Patient comfort
(less pain,
anxiety)
More \$\$
Reduce patient
movement/Vaso
vagal events
Decrease false-
negative rate



Anti-Sedation

Reduce false-
positive rate
(more accurate
assessment)
-Improved
treatment
outcomes
Reduce risks
Reduce costs

Effect of Sedation on Pain Relief after Diagnostic Facet Blocks

- ▶ Manchikanti et al. Pain Physician 2004
- ▶ 180 pts randomized to receive 1-5 mL of saline, 1 mg/mL midazolam or 50 mcg/mL fentanyl
 - ▶ Patients had a diagnosis of cervical facet joint pain & most were undergoing “therapeutic” MBB
 - ▶ “Double-Blinded”: 70% of people in midazolam grp rec’d ≥ 3 mg, 72% in fentanyl group rec’d ≥ 150 mcg.
 - ▶ 40% relaxed in saline group, 88% in midazolam and 95% in fentanyl group
- ▶ Assessed pain *before* block
 - ▶ 8%, 13% and 27% in saline, midazolam & fentanyl groups obtained $\geq 50\%$ pain relief
 - ▶ 5%, 8% and 8% obtained $> 80\%$ pain relief
- ▶ Performed same study for lumbar MBB with similar % relaxed but lower proportion obtaining pain relief
 - ▶ 7%, 5% and 13% in saline, midazolam & fentanyl groups obtained $\geq 50\%$ pain relief
 - ▶ 2%, 5% and 7% obtained $\geq 80\%$ pain relief

Do Patients Want or Need Sedation?

▶ Cucuzella et al. Spine J 2006

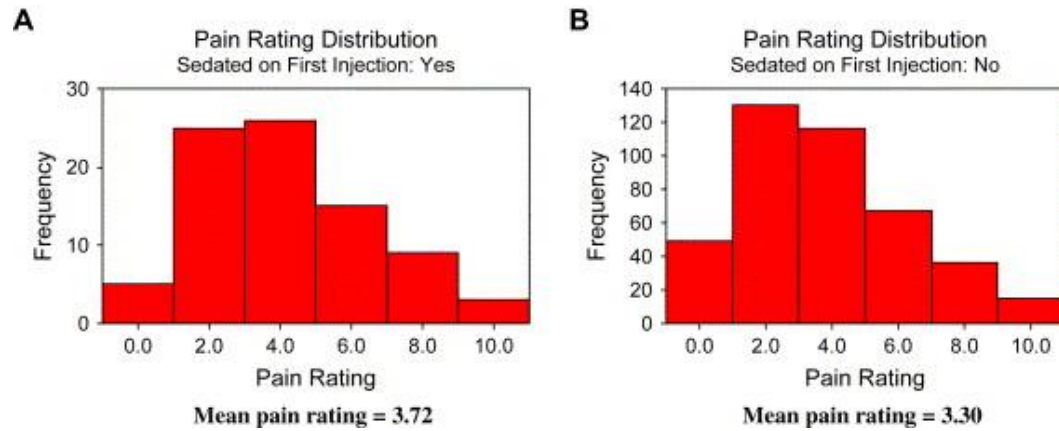
- ▶ Survey in 500 pts who underwent ESI or facet inj.
- ▶ Sedation with 2-5 mg IV diazepam
- ▶ 17% of pts requested sedation & 28% would request it before 2nd injection
- ▶ High pain and anxiety levels predicted need for sedation
- ▶ No difference between facet and epidural injections

▶ Kim et al. Spine 2007

- ▶ Survey by same pvt. practice group in 301 pts undergoing ESI or facet injections
- ▶ Discussed beforehand whether pts wanted oral or IV sedation
- ▶ 58% of pts chose to be sedated
- ▶ Those who chose to be sedated were more anxious
- ▶ Diazepam controlled anxiety 90% of time
- ▶ Concluded sedation is not routinely required before spinal injections

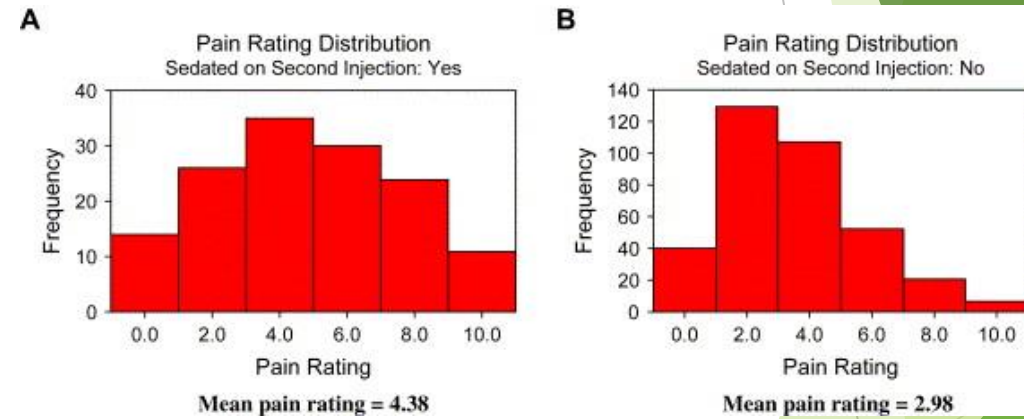
Procedure-Related Pain With & Without Sedation

First Injection



Cuczella et al. 2006
P=0.12 favoring 'no sedation'

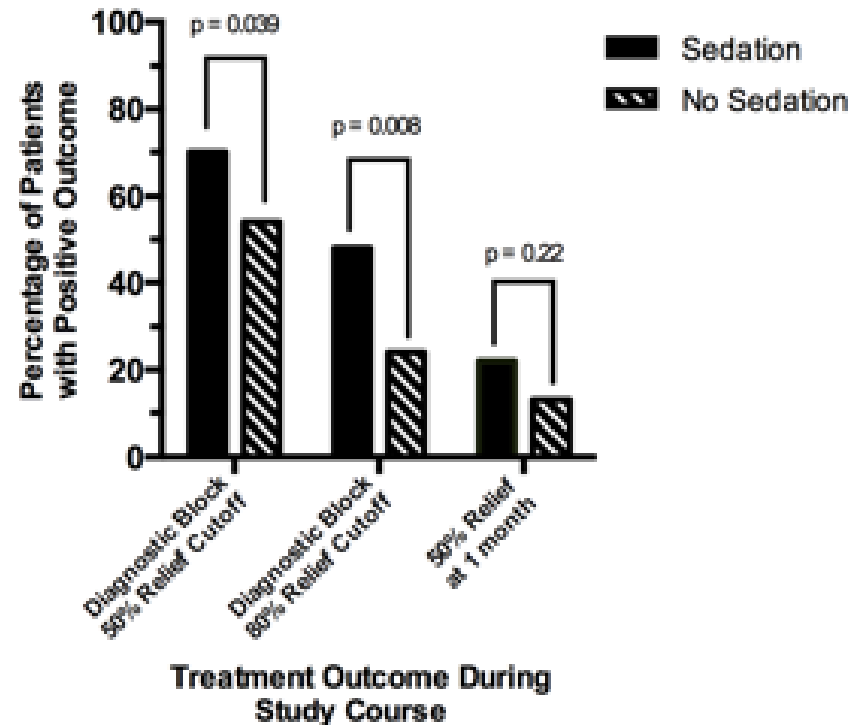
Second Injection

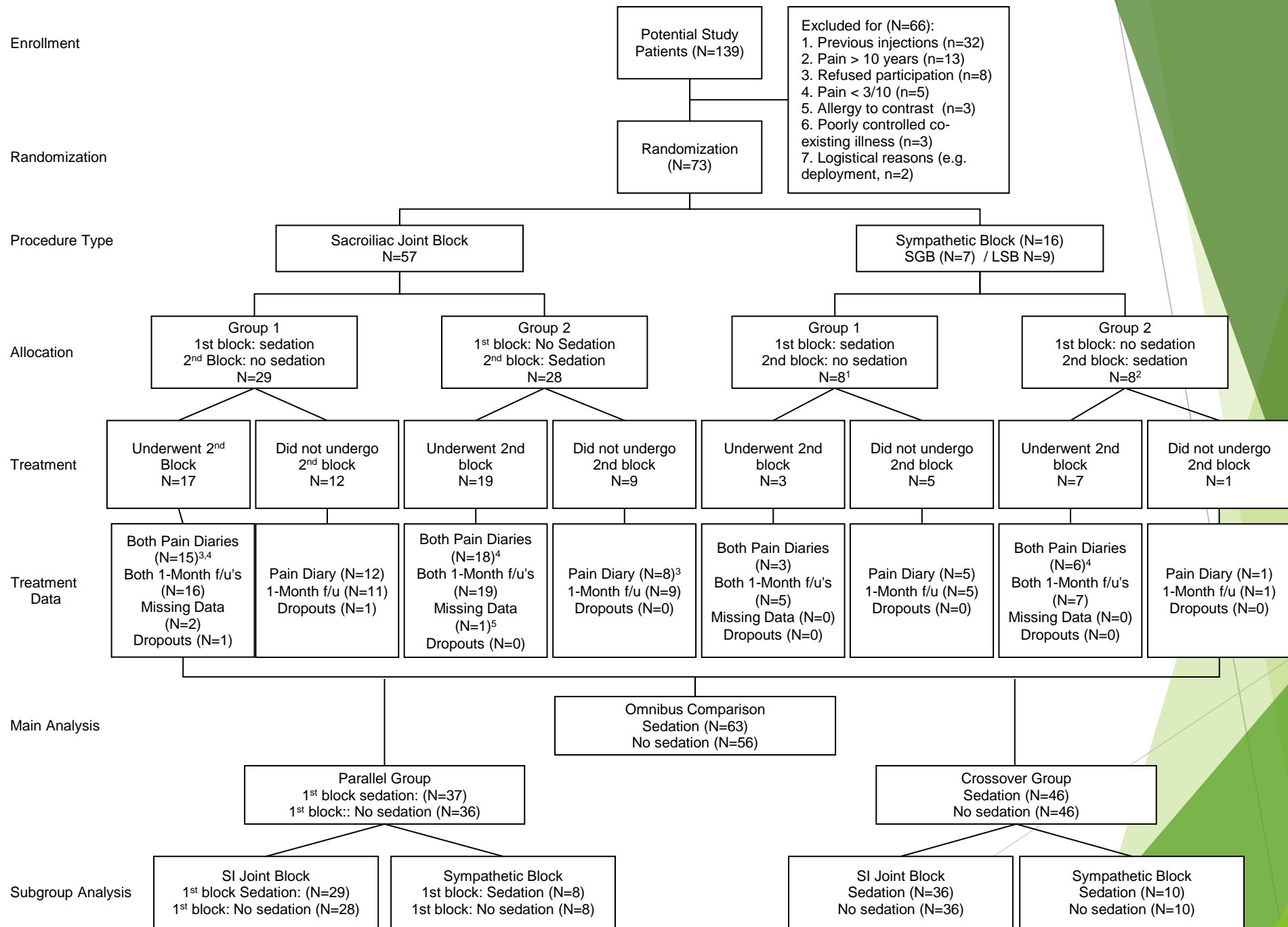


P<0.01 favoring 'no sedation'

Effect of Sedation on Diagnostic Blocks

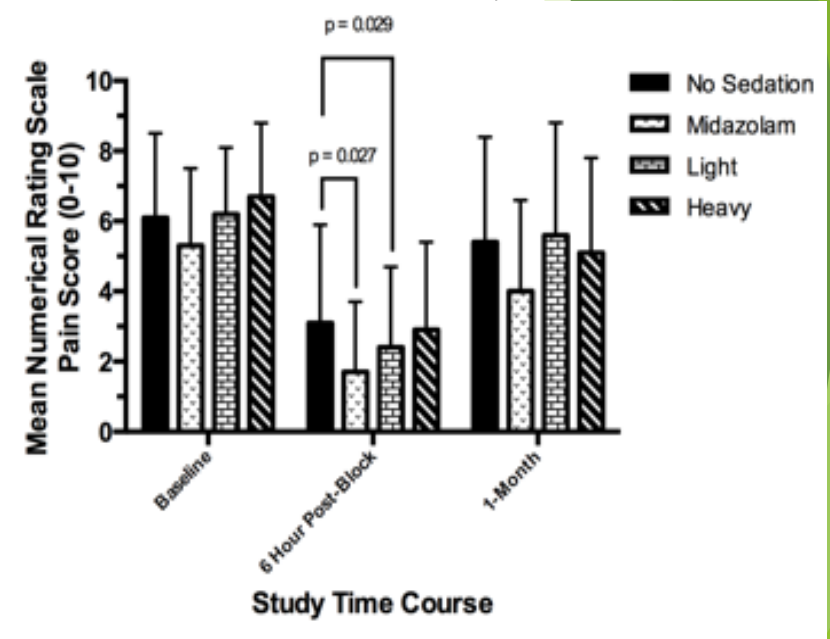
- ▶ Cohen et al. Pain Med 2014
 - ▶ Randomized, open-label crossover trial examining sedation on diagnostic accuracy of SIJ and sympathetic blocks (n=73)
 - ▶ Parallel (n=73), omnibus (n=119) and crossover (n=43) group comparisons for diagnostic value (e.g. pain diaries) showed increased rate of positive blocks and decreased procedure-related pain
 - ▶ No difference in procedure-related satisfaction or 1-month treatment outcomes





Treatment Results

- ▶ Crossover: 6-hour pain diary: mean 2.2 (2.3) sedation vs. 3.4 (2.8) no sedation; $p=0.001$
- ▶ Overall: 6-hr pain diary mean 2.4 (2.3) vs. 3.1 (2.8); $p=0.003$
 - ▶ No difference between SIJ and sympathetic blocks
- ▶ No difference in satisfaction scores
- ▶ Procedure-related pain (overall): mean 2.8 (2.6) sedation vs. 5.8 (2.6); $p<0.0001$



Clinical Practice Guidelines

SIS Fact Finder for Patient Safety: Conscious Sedation

- ▶ Myth: Conscious sedation is typically needed when performing most interventional pain procedures (e.g. epidural steroid injections, sacroiliac injections, medial branch blocks, and radiofrequency denervation).
- ▶ Fact: Sedation is not intrinsically necessary for interventional spine procedures. The decision to use sedation should be made on a case-by-case basis

ASA & ASRA Standards & Guidelines

- ▶ The majority of minor procedures, under most routine circumstances, do not require anesthesia care other than local anesthesia (ESI, TPIs, SIJ injections, bursal injections, occipital nerve blocks, **facet injections**).
- ▶ CMS will no longer cover routine sedation for lumbar facet blocks without a specific indication

Extrapolation to Cervical Spine

- ▶ Incidence of vasovagal reactions higher in C-spine vs. L-spine
 - ▶ Trentman et al. 2009: 8% vs. 1% for ESI
 - ▶ Walega et al. 2015: 10% vs. 3% for ESI
 - ▶ No difference in anxiety scores, movement or vocalizations. CESI pts more likely to request additional LA
- ▶ Greater density of nociceptors in cervical z-joints
- ▶ Neck pain associated with anxiety
 - ▶ One study found over two-thirds of neck pain pts had anxiety disorder
- ▶ Rathmell et al. 2011: ASA closed claims analysis for cervical procedures
 - ▶ Cervical procedures represented 22% of 294 claims from 2005-8
 - ▶ GA or sedation associated with 67% of claims associated with SCI vs. 19% not associated with SCI
 - ▶ 25% of pts with SCI were unresponsive vs. 5% of pts who did not have SCI

Level of Evidence

- ▶ We conclude that sedation should not be routinely administered for diagnostic or prognostic facet injections in the absence of reasonable indications. When sedation is used, patients should be educated on the increased risk of a false-positive block, and the lowest doses of short-acting sedatives, ideally without opioids, should be given.

- ▶ **GRADE B
RECOMMENDATION, LOW-TO-MODERATE LEVEL OF CERTAINTY FOR LUMBAR BLOCKS, MODERATE LEVEL OF CERTAINTY FOR CERVICAL BLOCKS**

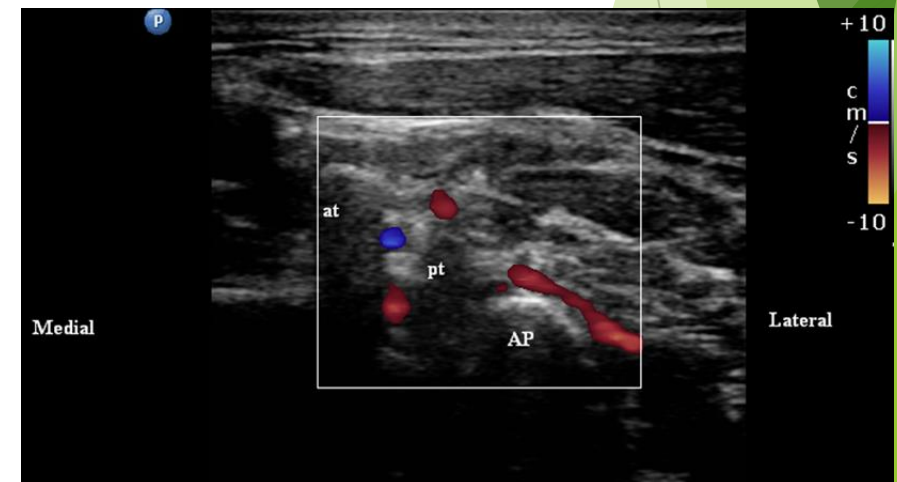
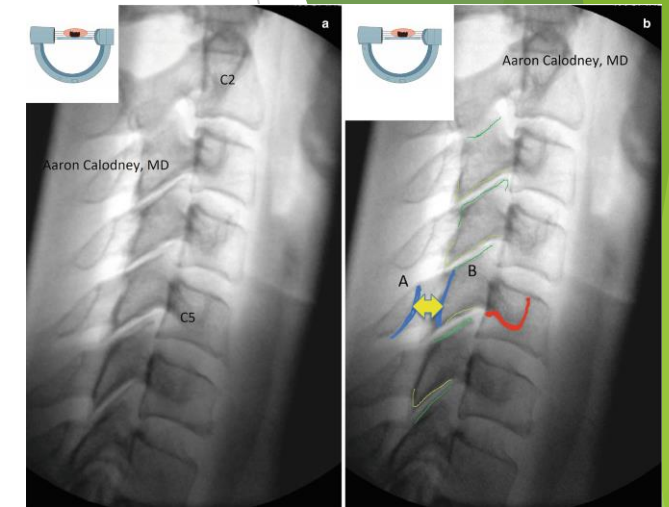


Complication Mitigation: Vascular Uptake

- ▶ Manchikanti et al. 2012: Observational study on complications after 3370 cervical facet blocks (20,544 levels)
 - ▶ Local bleeding 66.9%
 - ▶ Oozing 28.9%
 - ▶ Intravascular penetration 20.0%
 - ▶ Local hematoma 2.3%
 - ▶ Profuse bleeding 0.7%
 - ▶ Nerve root irritation 0.15%
 - ▶ Serious complications 0%
- ▶ ASRA multispecialty working group anticoagulation guidelines rate cervical MBB and RFA as “intermediate risk”
- ▶ Ehsanian et al. 2020: Retrospective study of 275 spinal blocks performed with continued anticoagulation (26 cervical MBB, 7 cervical RFA, 3 cervical IA facet block)
 - ▶ Reported 0% complications
- ▶ Neither study reported needle size
- ▶ Jeon & Kim 2015: In 178 cervical MBB performed in 72 pts, intravascular uptake noted in 10.7% using DSA vs. 1.7% with static images
- ▶ With DSA as gold standard, sensitivity of real-time fluoroscopy images, spot images and aspiration 58%, 35% and 20% sensitive

Vascular Compromise with Cervical MBB

- ▶ Park et al. 2017: Compared 68 US-guided and 58 fluoroscopically-guided cervical MBB
 - ▶ 12% of FI-guided vs. 0% of US-guided MBB were associated with intravascular needle placement
 - ▶ Vascular structures overlaid the articular pillars in 9%, 16%, 16%, 12%, 32%, and 46% of the C2-C3 joint, and C3, C4, C5, C6, and C7 articular pillar levels, respectively
- ▶ Elgeuta et al. 2018: Loop of vertebral artery originating between C1-2 coursed over anterolateral aspect of inferior C2 articular pillar in 56% and over SAP of C3 in 0.4% in 500 CT angiograms
- ▶ Finlayson et al. 2013-16: Arteries overlying block areas for TON (10%), and C5-7 medial branches(16-40%) common



Prevention of Neuritis in Cervical Spine

- ▶ In lumbar facet guidelines, Grade C rec, low level of certainty for post-RF steroids to prevent neuritis
- ▶ Post-procedure neuritis may be more common on upper cervical RFA procedures than lumbar
 - ▶ Incidence > 50% for TON, may persist in 19% of pts for longer than 1 month
 - ▶ Experienced as numbness, dysesthesia, pruritis, from inflammation of cutaneous branches
- ▶ Dobrogowski et al. 2005: RCT in 45 pts found pentoxifylline or steroid reduced post-procedure pain compared to saline after lumbar medial branch RFA
- ▶ Singh et al. 2019: Retrospective study in 164 pts found no difference in post-lumbar RFA neuritis between steroids and saline
 - ▶ No difference between pts taking adjuvants vs. those not taking them
- ▶ Welsh et al. 2014: Retrospective study in 215 pts found gabapentin taken for > 2 weeks before lumbar or cervical RFA decreased neuritis (7.1% vs. 13.2%) but the difference was non-significant (OR 0.51, 95% CI: 0.15, 1.54)
- ▶ Ma et al. 2011: RCT in 66 pts found 3 and 7-day course of diclofenac *after* lumbar medial branch RFA found decreased post-procedure pain for up to 60 days



Level of Evidence

- ▶ Post-RF injection of soluble (in neck) steroids, 2-week course of gabapentin, and 3-7-day course of NSAID may prevent neuritis
- ▶ Recommend checking for intravascular placement using real-time contrast injection or DSA, reviewing radiological imaging or viewing a 'scout' ultrasound image before cervical MBB, and placing RF cannula in the posterior 2/3 of the C2-3 joint for TON neurotomy.

- ▶ **GRADE I RECOMMENDATION FOR GABAPENTIN IN C-SPINE; GRADE C RECOMMENDATION, LOW LEVEL OF CERTAINTY IN L- AND C-SPINE FOR POST-RF STEROIDS AND SHORT COURSE OF NSAIDS**
- ▶ **GRADE B RECOMMENDATION, MODERATE LEVEL OF CERTAINTY FOR USING REAL-TIME CONTRAST INJECTION OR DSA FOR PREVENTING VASCULAR UPTAKE; GRADE C RECOMMENDATION, LOW LEVEL OF CERTAINTY FOR VIEWING RADIOLOGICAL IMAGING OR US SCOUT FILM BEFORE CERVICAL MBB AND PLACING RF CANNULA IN POSTERIOR 2/3 OF C2-3 FACET JOINT FOR TON NEUROTOMY**

Performing Bilateral Cervical Procedures & Number of Levels

- ▶ Cervical medial branches innervate the semispinalis capitis (C2 and 3) & cervicis muscles, multifidi and cutaneous areas
 - ▶ Important neck stabilizers
 - ▶ Density of muscle spindles greater in c-spine than low back
- ▶ Cervical facet joint pain more likely to be unilateral than lumbar facet joint pain
- ▶ Ahmed et al. 2012: Bilateral C2-3, 3-4 and 6-7 RFA separated by 1 week resulted in inability to extend neck, cervical kyphosis, cervical paraspinal muscle denervation on EMG and atrophy on MRI
- ▶ Stoker et al. 2013: Head-drop 3 mo after left-sided TON and C3-4, with RFA with MRI evidence of splenius cervicis & capitus atrophy
 - ? Baseline anterocollis
- ▶ Surgery required in both cases
- ▶ Neither case used sensory or motor stimulation
- ▶ SIS guidelines: Recommend staged cervical MBBs (e.g. left then right, upper then lower) to identify painful joints. Recommend against performing bilateral RFA or multiple joints w/o careful consideration, and to not perform bilateral TON RFA because of ataxia risk
- ▶ CMS permits no more than 4 joints treated per session



Level of Evidence

- ▶ Bilateral cervical MBB, including TON, can be performed at the same visit if it is deemed that the benefits outweigh the risks. We recommend against routinely performing bilateral cervical medial branch RFA or > 2 levels at the same visit

- ▶ **GRADE C RECOMMENDATION,
LOW LEVEL OF CERTAINTY**



Take-Home Points

- ▶ The use of double blocks will reduce access to care and overall success rate, while resulting in higher costs
- ▶ The use of cutoff thresholds > 50% will reduce access to care, has not been proven to increase success rates, & will lead to many people who might otherwise benefit not receiving treatment
- ▶ Sedation should not be routinely administered during diagnostic procedures
- ▶ There is limited evidence for post-RF steroids or a short course of NSAIDs to prevent neuritis; in c-spine, soluble steroids should be used in high-risk patients
- ▶ Strongly consider radiological imaging before cervical MBB for safety and procedural planning