



What Are People Asking About Regional Anesthesia? An Analysis of Google Search Questions and Website Quality

Renee Ren^{1,2}, Junying Wang¹, Tina Chen¹, Mia Zonies¹, Alexandra Sideris^{1,3}, Jiabin Liu MD^{1,3}, Stavros Memtsoudis^{1,3}, Jashvant Poeran^{1,3}

¹Pain Prevention Research Center Department of Anesthesiology, Critical Care & Pain Management, Hospital for Special Surgery, New York, NY, USA; ²Icahn School of Medicine at Mount Sinai, New York, NY, USA; ³Department of Anesthesiology, Weill Cornell Medicine, New York, NY, USA



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INTRODUCTION

- Patients frequently turn to **online-based information** to better understand treatments and manage expectations, which can affect consultation dynamics, anxiety, and satisfaction.
- Quality of anesthesia-specific information has **low readability** and the most common questions asked by people and potential patients are not characterized.
- To address this gap in knowledge, we aimed to **systematically evaluate** types of regional anesthesia questions, identify frequently presented websites, and assess information quality using **validated scoring tools**.

METHODS

- IRB approval was not required, as data is publicly accessible.
- On November 14th 2025, the search terms: “**regional nerve block**”, “**regional anesthesia**”, “**peripheral nerve block**”, “**pain block**”, “**neuraxial anesthesia**”, “**epidural anesthesia**”, “**spinal anesthesia**” were entered into Google Web Search using a clean-install Chrome browser.
- The top 200 questions in the “People Also Ask” section and its associated website was collected using the Instant Google Scraper tool, totaling **1400** question+website combinations.
- Question themes were categorized and evaluated using Rothwell’s classification model.
 - A pre-trained LLM (facebook/bart-large-mnli) was applied to assign above categories in a zero-shot classification framework.
- Quality was assessed with JAMA Benchmark Criteria and BriefDISCERN questionnaires by **three independent evaluators**.
- After excluding questions unrelated to regional anesthesia, **1251** question+websites were included for final analysis.
- Google’s AI function automatically answered 50.68% of the 1251 questions, so the first website link was utilized for analysis.
- Descriptive statistics characterized outcomes.

Most questions focused on risks and details surrounding medications, awareness/sedation, block duration, recovery process.

Table 1. The Most Common Questions

Rank	Question	Count
1	Who should not get spinal anesthesia?	14
2-4	Who is not a good candidate for spinal anaesthesia?	13
	Which is safer, regional or general anesthesia?	13
	How long does a nerve block stay in your system?	13
5	Who is not a candidate for regional anesthesia?	12
6-7	What should I expect during regional anesthesia?	11
	What are the disadvantages of a nerve block?	11
	What are the 4 P's of spinal anesthesia?	10
8-9	Who is not a good candidate for an epidural?	10
	Is regional anesthesia better than general?	9
10-12	Are you awake under regional anesthesia?	9
	How long does it take to recover from regional anesthesia?	9
	What surgeries use regional anesthesia?	8
	How long does regional anesthesia stay in your system?	8
	What is the recovery like after regional anesthesia?	8
	What does regional anesthesia feel like?	8
13-17	Are you awake for a nerve block injection?	8

Table 3. Breakdown of Website Types and Themes

Website Theme and Example of Websites	Number (%) of Websites
Academic www.nysora.com/techniques/spinal-anesthesia-2 www.hss.edu/health-library/conditions-and-treatments www.medstarhealth.org	687 (54.91%)
Government (websites ending in “.gov” and/or maintained by a national government) pmc.ncbi.nlm.nih.gov www.healthdirect.gov.au https://medlineplus.gov	243 (19.42%)
Social Media and Publicly Editable Sources www.reddit.com www.youtube.com https://en.wikipedia.org/wiki/Spinal_anesthesia	140 (11.19%)
Medical Practice https://intermountainhealthcare.org www.advancedboneandjoint.com https://newyorkspinespecialist.com	133 (10.63%)
Commercial www.aetna.com/cpb/medical/data/800_899/0863.html# www.medicalnewstoday.com/articles/nerve-block www.milestonescientific.com	48 (3.84%)

Table 2. Breakdown of Question Themes

Question Theme and Examples of Questions	N (%)
Risks and Complications How painful is spinal anesthesia? Can a nerve block cause nausea? Can epidurals cause problems later in life?	353 (28.22%)
Technical Details (medications, sedation, how long the block lasts, anatomy, etc) Are you awake during epidural anesthesia? What do they inject during a nerve block? In which place is spinal anesthesia given?	264 (21.10%)
Indications for Use What are the contraindications for neuraxial anesthesia? Why would someone need a nerve block? What surgeries require regional anesthesia?	138 (11.03%)
Definition What is a regional anesthesia? What is a spinal headache? What are the most common regional blocks?	135 (10.79%)
Comparisons Which is safer, regional or general anesthesia? Is a nerve block better than general anesthesia? Is spinal anesthesia the same as epidural?	134 (10.71%)
Recovery and Post-Procedure Instructions How long to rest after an epidural? Can I drive home after a nerve block? Can you walk after a knee nerve block?	114 (9.11%)
Potential Benefits and Advantages What are the advantages of peripheral nerve block? Do you get immediate relief from a nerve block? What are the success rates of regional anesthesia?	83 (6.63%)
Other (Availability, Cost, and the Healthcare Provider) Does insurance pay for nerve blocks? Can you sue an anesthesiologist for a bad epidural? Can CRNAS do regional blocks?	30 (2.40%)

References
and Funding
Information:



RESULTS

- Of 1400 imported question+website combinations, there were 590 unique questions and 311 unique websites.
- 52.9% of questions were categorized as “fact”, 21.2% “value”, 15.4% “policy”, and 10.6% “other/unrelated to regional anesthesia”.
- Of 1251 relevant question+website combinations, most questions pertained to **risks/complications** (n=353, 28.22%), followed by **technical details** (264, 21.10%), and **indications** (138, 11.03%; **Table 2**).
- 134 questions compared regional anesthesia techniques to each other (n=81), to general anesthesia (n=45), or to steroid/cortisone injections (n=8).
- Most websites were **academic** (n=687, 54.92%), **government** (n=243, 19.42%), and **public/social media** sources (n=140, 11.19%; **Table 3**).
- Median (IQR) **JAMA score was 2** (1–3), where most websites scored “1” for authorship and currency criteria.
- On average, medical practice websites scoring lowest (0.87±1.12) and government websites scoring highest (2.95±1.35).
- The median **BriefDISCERN score was 22** (18-27), and all website categories exceeded the threshold score of 16, indicating overall “good” website information quality.
- Most websites were able to explain the process of the anesthesia technique/treatment (mean±SD score 4.33±1.31 out of 5), and its benefits (4.22±1.28) or risks (3.98±1.51), but often **did not cite information** sources (2.56±1.82).

DISCUSSION

- We provide a novel, comprehensive snapshot of **online discussions** about **regional anesthesia**, spanning nerve blocks for orthopedic surgeries and pain management, to neuraxial techniques for obstetric anesthesia.
- While overall information quality was “good,” **poor citation practices** indicate that information could be inconsistently framed.
- Most questions focused on risks and details surrounding **medications, awareness/sedation, block duration, recovery process**.
- This highlights opportunities for anesthesiologists to proactively address common concerns and better align patient education with online resources.