

Public Interest in Regional and General Anesthesia: A 15-Year Analysis of U.S. Google Trends Data (2010-2024)



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Introduction

Both regional anesthesia (RA) and general anesthesia (GA) have been established techniques in all surgical specialties. While GA has traditionally dominated practice, in recent years, we have witnessed a rise in clinical application of RA techniques with new practice paradigms in perioperative medicine (i.e., Enhanced Recovery After Surgery (ERAS) protocols, opioid-sparing approaches). It is unclear, if in parallel with increased clinical practice of these techniques, public interest has changed. Web-based tools can track and report the relative search volume (RSV) of specific queries entered by users across the internet. This study used a publicly available web-based tool to assess public interest over the last 15 years (2010–2024) to determine the most searched anesthesia-related topics for patients.

Objectives

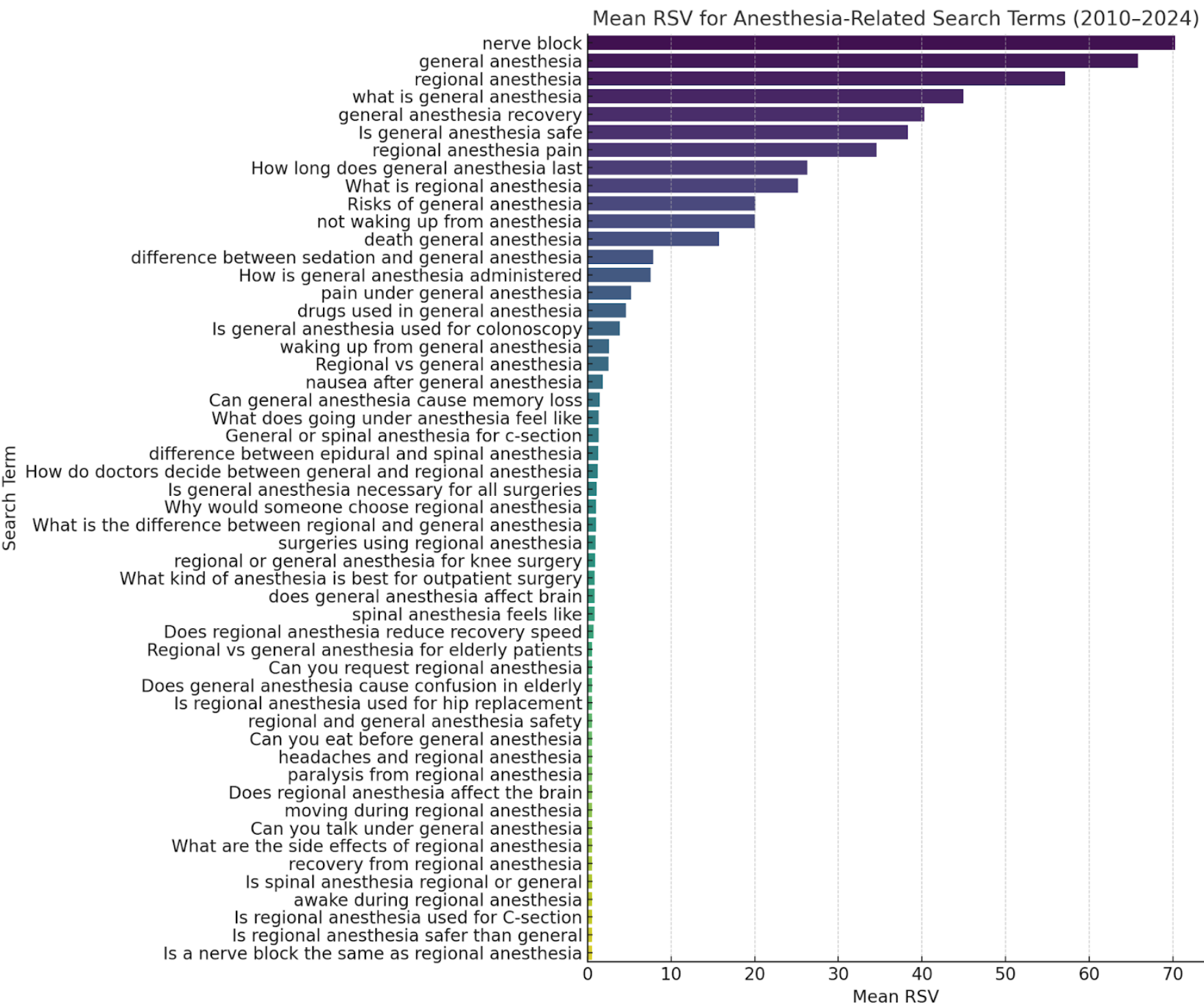
- To evaluate changes in U.S. public interest in RA versus GA using data from a publicly available web-based tool during 2010–2024.
- To identify the most frequently searched anesthesia-related terms and assess how public awareness aligns with evolving clinical practice.
- To visualize search patterns through statistical and graphical methods to better understand patient education needs and perceptions.

Methods

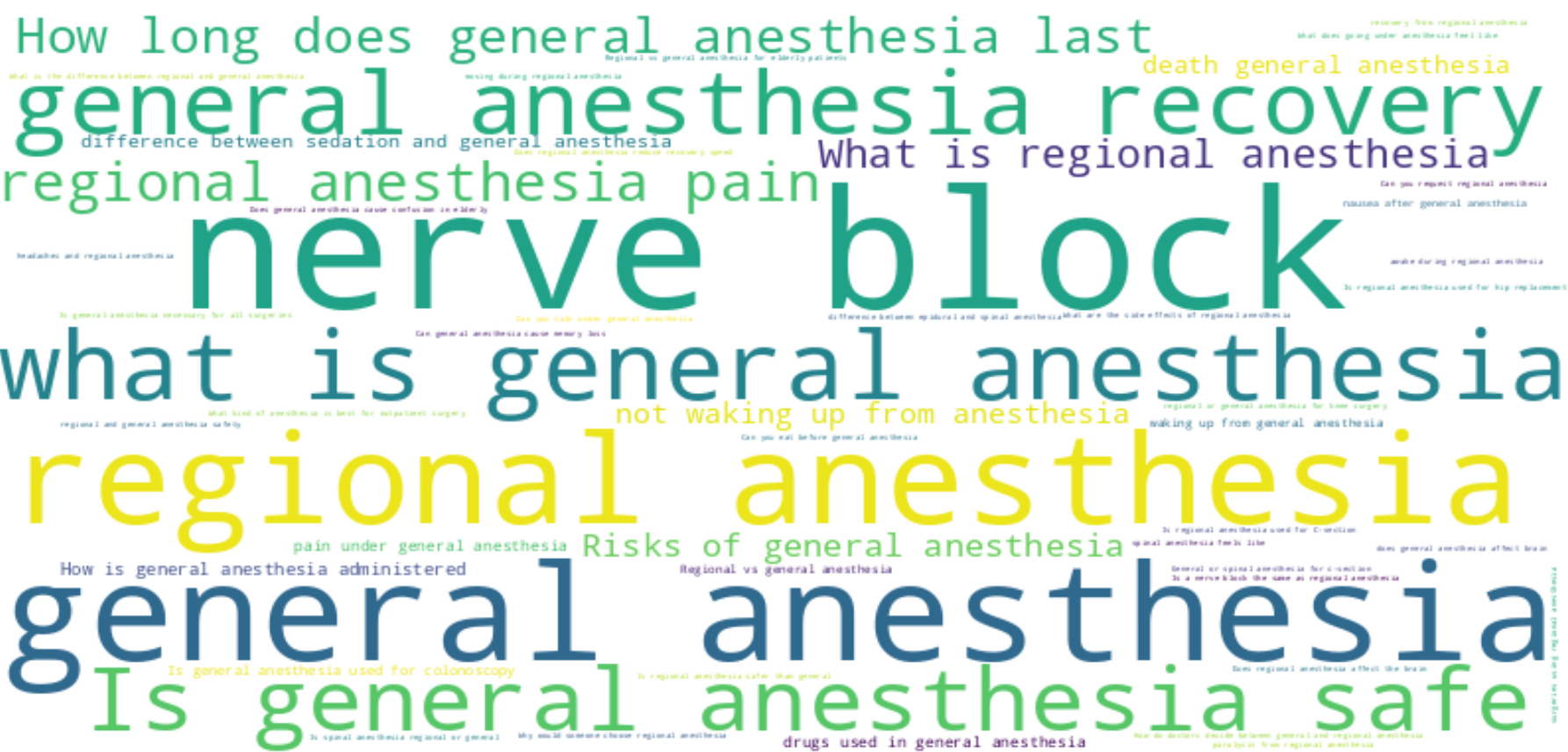
A retrospective longitudinal study was conducted from January 2010 to December 2024, utilizing Google Trends (Google Trends, Alphabet Inc., Mountain View, CA). ChatGPT (ChatGPT, OpenAI Inc., San Francisco, CA) was used to compile a list of common search terms associated with GA and RA (52 total). Some of the search terms included "nerve block", "regional anesthesia vs general", "awake during surgery", and "general anesthesia recovery." The RSV values were extracted and averaged for all search terms. Descriptive statistics were used to compare the mean RSVs across all search terms. Data were visualized using bar charts and a word cloud to highlight the relative weight of public interest in each term.

Results

The mean RSV for the search term “nerve block” for 2010–2024 (70.3) was, on average, the highest of all terms, followed by “general anesthesia” (65.9), “epidural” (60.3), “regional anesthesia” (57.1), and "spinal anesthesia" (51.8) indicating interest from the broader public. Many of the commonly searched queries correspond with awareness and recovery concerns like “what is general anesthesia” (45.0) and “awake during surgery” (38.3). The visual representation of the mean RSVs from the wider array of terms emphasize sustained public interest in GA and more engagement with RA techniques and terminology.



•**Figure 1.** Mean RSV for anesthesia-related terms (2010–2024). “Nerve block” and “general anesthesia” were the most frequently searched terms, indicating sustained public interest in both RA and GA topics.



•**Figure 2.** Word cloud illustrating the most frequently searched anesthesia-related terms (2010–2024). Larger words indicate higher RSV, highlighting strong public interest in both RA and GA topics.

Discussion

Public interest in GA and RA has remained steady over the past 15 years. Although GA continues as the dominating search volume for anesthetic topics, RA techniques had a significant search volume, particularly for nerve blocks and epidurals which indicates greater public interest and awareness (3). Limitations include that a single search engine was used, and there was no demographic filtering. Educational resources, as well as preoperative counseling, should integrate the growing influence of public interest in regional anesthesia information to contribute to patient-centered decision making and informed consent (1,2).

Future Directions

- Demographic and regional insights: Incorporate geographic and population-level analysis to identify which patient groups show the highest anesthesia-related search interest.
- Patient educational materials: Develop hospital brochures addressing frequently searched anesthesia questions to improve patient understanding and reduce preoperative uncertainty.
- Cross-platform validation: Extend analysis beyond a single web-based tool to include other well-known web-based and social-media platforms offering similar RSV analytics for comprehensive understanding of public engagement.
- Impact of outreach and media: Examine whether educational initiatives, guideline updates, or media coverage influence shifts in anesthesia-related search behavior.

References

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