

Patient-Directed Online Education for Carpal Tunnel Syndrome and Release: What Do Patients Ask and How Reliable is the Information?

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INTRODUCTION:

Self-directed education on symptoms, diagnoses, and treatment options are frequently performed by patients on popular search engines like Google and Yahoo. Every one in three patients will bring questions to their surgeon generated by online investigations. While easily accessible, the validity and reliability of the resources are indeterminate. This study analyzed most commonly asked questions from the Google search engine to determine the type and quality of online education resources utilized by patients regarding carpal tunnel syndrome and release.

METHODS:

Three separate terms were searched on the Google search engine related to carpal tunnel diagnosis (carpal tunnel, carpal tunnel syndrome, carpal tunnel disease) and surgery (carpal tunnel release, carpal tunnel surgery, carpal tunnel release surgery). Google's result pages were extracted and compiled via the "People also ask" function for frequent questions and associated webpages. Questions were categorized using Rothwell's classification with further topical subcategorization (**Table I**). Webpages were evaluated by JAMA Benchmark Criteria for source quality (**Table II**).

RESULTS:

Six hundred questions were extracted between the two search strings: 1) 300 questions from Carpal Tunnel Diagnosis and 2) 300 questions from Carpal Tunnel Surgery. The most common questions asked by patients for carpal tunnel diagnosis was "how do I know if I have carpal tunnel or tendonitis," and "what causes carpal tunnel to flare up?" For carpal tunnel surgery, patients most frequently asked "how long after hand surgery can I drive" and "how do you wipe after carpal tunnel surgery?"

The most common questions for Carpal Tunnel Diagnosis by Rothwell classification was Policy (51.3%), Fact (40.7%), and Value (8%) with highest subcategories being Indications/Management (46%) and Technical Details (27%). For Carpal Tunnel Surgery most common questions entailed Fact (54.3%), Policy (34.3%), and Value (11%) with the highest subcategories as Technical Details (31.3%) and Indications/Management (26.3%) (**Table III**).

For Carpal Tunnel Diagnosis, the most common webpages were Academic (29.7%), Medical Practice (22.7%), and Commercial (12%). The most common webpages frequented by patients for Carpal Tunnel Surgery were Medical Practice (32%), Academic (26.3%), and Commercial (9.3%) (**Table IV**).

The mean JAMA score for all 600 webpages was 1.43. The websites with the highest mean JAMA scores were Journal websites (mean = 3.91). The websites with the lowest mean JAMA scores were Single Surgeon Practice websites (mean = 0.28) and Legal websites (mean = 0.52).

DISCUSSION AND CONCLUSION:

The most commonly Googled questions by patients pertaining to carpal tunnel syndrome and release include indications/management and technical details. Information is primarily provided by academic webpages and medical practices. Interestingly, one of the most frequented webpages, medical practices, had one of the lowest JAMA scores, indicating poor reliability and accuracy of content. Understanding the type and quality of information patients are accessing facilitates counseling and informed decision making regarding carpal tunnel syndrome and release.

Table I: Description and examples of each type of Rothwell classification category and sub-category for Carpal Tunnel Syndrome

| Rothwell's Classification | Examples |
|---------------------------|---|
| Fact | Ask whether something is true, and to what extent E.g. How do they test for carpal tunnel? What is the best position to sleep in with carpal tunnel syndrome? How long should I keep my hand elevated after carpal tunnel surgery? Why is carpal tunnel worse at night? |
| Technical Details | What foods should I avoid if I have carpal tunnel? Is carpal tunnel treatment expensive? |
| Policy | Ask whether a certain course of action should be taken to solve a problem E.g. What is the fastest way to get rid of carpal tunnel? How do you stop carpal tunnel from getting worse? |
| Indications/Management | What happens if you don't fix carpal tunnel? |
| Risks/Complications | Ask for evaluation of an idea, object, or event E.g. How painful is carpal tunnel surgery? |
| Value | What is the most effective pain relief for carpal tunnel? Does surgery permanently fix carpal tunnel? When is carpal tunnel bad enough for surgery? |

Table II: Description of JAMA Benchmark criteria scoring system

| JAMA Criteria | Benchmark (each criteria received 1 point for a maximum of 4 points) |
|---------------|--|
| Authorship | Clearly identifiable author and contributors with affiliations and relevant credentials present |
| Attribution | References and sources clearly listed with any copyright information disclosed |
| Currency | Clearly identifiable posting date of any content as well as date of any revisions |
| Disclosure | Website ownership clearly disclosed along with any sponsorship, advertising, underwriting, and financial support |

Table III: Rothwell Classification Category and Sub-category for Carpal Tunnel Syndrome and Release

| Category | Syndrome | Release |
|------------------------|----------|---------|
| Fact | n=122 | n=163 |
| Timings of Recovery | 16 | 29 |
| Specific Activities | 11 | 15 |
| Technical Details | 81 | 94 |
| Restrictions | 8 | 21 |
| Cost | 6 | 5 |
| Policy | n=154 | n=103 |
| Indications/Management | 138 | 79 |
| Risks/Complications | 16 | 24 |
| Value | n=24 | n=33 |
| Pain | 15 | 26 |
| Evaluation of Surgery | 7 | 7 |
| Longevity | 2 | 0 |

Table IV: Website Classification for Carpal Tunnel Syndrome and Release

| Website Classification | Syndrome | Release |
|-------------------------|----------|---------|
| Academic | 89 | 79 |
| Commercial | 36 | 28 |
| Government | 21 | 26 |
| Journal | 25 | 19 |
| Legal | 15 | 12 |
| Medical Info Site | 27 | 28 |
| Medical Practice | 68 | 96 |
| Nonmedical Media Site | 4 | 2 |
| Single Surgeon Personal | 15 | 10 |