

# PATIENT INTERNET USE IN A COMMUNITY OUTPATIENT ORTHOPAEDIC PRACTICE

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## ABSTRACT

**This study evaluated Internet use among orthopaedic patients in a private practice general orthopaedic setting. Of 154 respondents, twenty percent had used the Internet to research their orthopaedic diagnosis. Search rates were lowest for patients with arthritis and highest for patients with disorders of the spine or back. Seventy percent of these patients who had searched had found their searches helpful, and over 50% of patients who had searched had questions raised that they planned to address with their physicians. Of those patients who did search the Internet, none reported concern regarding the credibility of Internet retrieved material.**

## INTRODUCTION

Internet use in the United States has grown exponentially over the past five years, and access to the Internet has increased yearly. Regular weekly Internet users comprise 40% of the US Population as of October 2000.<sup>1</sup> One of the main uses of the Internet is to retrieve health information.

Internet users searching for health information have a wide variety of options for information retrieval. Health information portals such as Intellihealth<sup>2</sup> or Oncolink<sup>3</sup> can direct patients and provide searching capability within the site. Alternatively, patients may search the Internet using search engines or search directories;

information retrieved in this capacity has been shown to be variable in quality, peer-review, and accuracy.<sup>4,5</sup> This easily available source of information has caused a change in the traditional paradigm of the physician as primary information provider. Orthopaedic surgeons are now asked not only to supply medical information, but also to explain and evaluate Internet-derived information.

Use of the Internet by patients and families in an outpatient orthopaedic tertiary care practice has been studied previously.<sup>6</sup> The goal of our study was two-fold. Our aim was to determine the prevalence of Internet use in an outpatient general orthopaedic setting; we also hoped to determine patient attitudes toward Internet-retrieved health information.

## METHODS

After obtaining Institutional Review Board (IRB) approval, we invited 184 patients visiting an outpatient community orthopaedic practice during the two-day period from October 19, 1998 to October 20, 1998 to participate. We used a questionnaire that had previously been found to be reliable in another outpatient orthopaedic sample.<sup>6</sup> Patients were recruited at time of check-in for their appointment in the outpatient office, and surveys were completed on-site. All patients during the two-day period were invited to participate. Informed consent was obtained and patients were surveyed regarding their Internet use and their attitudes about Internet-retrieved health information. Specifically, the questionnaire was designed to assess study group demographics, access to and usage of the Internet, and opinions about the utility of the Internet in obtaining medical information. We assessed Internet use by respondents, as well as by "surrogate users" for the respondents. Data were analyzed according to diagnosis group, including fracture, internal derangement of the knee, low back pain or spinal complaints, ligament or tendon injury, degenerative joint disease, shoulder injury, or other. All survey responses were sorted and prepared for analysis using the Statistical Analysis System (Cary, North Carolina, USA) statistical package.

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**TABLE 1**  
**Internet Usage by Diagnosis**

Diagnosis	Access to Internet	Self-Use	Self-Use/Access*	Surrogate Use**	Searched***
<b>Fracture (n=53)</b>	38 (72%)	5 (9%)	13%	5 (9%)	8 (15%)
<b>Knee internal derangement (n=21)</b>	11 (52)%	3 (14%)	27%	4 (19%)	6 (27%)
<b>LBP/spine (n=18)</b>	9 (50%)	5 (28%)	56%	3 (18%)	6 (33%)
<b>Ligament/tendon injury (n=12)</b>	10 (83%)	1 (8%)	10%	1 (8%)	2 (17%)
<b>DJD (n=14)</b>	6 (43%)	1 (7%)	17%	1 (8%)	1 (7%)
<b>Shoulder injury (n=13)</b>	7 (54%)	3 (23%)	15%	2 (15%)	4 (31%)
<b>Other (n=22)</b>	15(68%)	2 (9%)	13%	2 (9%)	3 (14%)
<b>Total (n=154)</b>	96 (63%)	20 (13%)	21%	18 (12%)	30 (20%)

\* Percentage of respondents having access to the Internet who used it for medical search related to clinic visit diagnosis.

\*\* Another person performed Internet search for respondent.

\*\*\* Internet search was performed by respondent or by surrogate, in some cases both.

## RESULTS

During a two-day period, 184 patients were seen in this clinic. Of these 184 eligible patients, sixteen patients inadvertently did not receive questionnaires because of clerical error, and eight patients declined participation in the study. Six questionnaires were not returned. There were 154 respondents, for an overall response rate of 84%. Fifty-one percent of the respondents were male (79) and 49% female (75), with a mean age of 47 years (range 17-87). Their diagnoses included fractures (34%), knee internal derangement (14%), low back pain or spine complaints (12%), other ligament or tendon injury (8%), degenerative joint disease (9%), shoulder injury (8%), or other (10%).

Ninety-six patients (63%) had access to the Internet at work or home, and 20 patients (13%) had used the Internet to search for information related to the subject of their office visit that day (Table 1). Eighteen patients reported that someone else ("surrogate user") had searched the Internet for this information; some patients had accessed the Internet both independently and through a surrogate. In total, one-fifth of the patients used the Internet either independently or via a surrogate to obtain medical information related to their orthopaedic diagnosis. Search rates were highest among patients with low back pain or lumbar spine com-

plaints (33%), and lowest among patients with degenerative joint disease (7%).

Twenty-four of the patients who searched the Internet responded to the question, "Do you think the Internet has helped you understand your disease better" (Table 2)? Most (71%) found their searches helpful, and many (50%) responded positively to the question "Did the Internet raise questions for you that you are now planning to raise with your health care provider?"

102 of 137 (75%) of respondents indicated they would "recommend the Internet to others as a source of medical information." Seventy-three patients (50% of all respondents) indicated this despite having not searched the Internet themselves; most of these patients<sup>31</sup> cited the large amount of information available. Reasons given in a write-in section for recommending the Internet are listed in Table 3. When asked if they would use an Internet terminal for medical information if it were available in the clinic waiting room, 64% responded affirmatively.

We also asked patients if they had explored other sources of medical information besides the Internet (Table 4). Eighty-five respondents (55%) did not list any other sources, 52 (34%) had turned to one additional source and 17 (11%) had used multiple additional

**TABLE 2**  
Internet Search Results by Diagnosis,  
among Internet Self-Users

Diagnosis	Found Helpful	Raised Questions for M.D.
Fracture (n=7)	4 (57%)	2 (29%)
Knee internal derangement (n=4)	3 (75%)	2 ((67%)
LBP/spine (n=5)	5 (100%)	4 (80%)
Ligament/tendon injury (n=2)	1 (50%)	1 (50%)
DJD (n=1)	1 (100%)	1 (100%)
Shoulder injury (n=3)	2 (67%)	1 (80%)
Other (n=2)	1 (50%)	1 (50%)
<b>Total (n=24)</b>	<b>17 (78%)</b>	<b>12 (50%)</b>

sources of information. Additional information sources most frequently included physicians, medical textbooks, friend in the medical field, the library, periodicals, and books.

**DISCUSSION**

This is the first report of Internet use by an outpatient community orthopaedic population. While there are a number of descriptions of Internet usage for health concerns among the general population, there have been few studies of Internet use among actual patient populations. Hellowell et al reported that nineteen percent of visitors to a general urology clinic had used the Internet for information related to the subject of their visit.<sup>7</sup> Our findings in the current study are comparable, with twenty percent of the orthopaedic outpatients employing the Internet to search for information. Weissman et al reported that 42% of visitors to an infertility clinic had researched the Internet on their condition.<sup>8</sup> We recently reported on the use of the Internet in a tertiary care outpatient pediatric orthopaedic population. We found that 35% of parents or caregivers had searched the Internet for medical information related to the orthopaedic diagnosis.<sup>6</sup> We anticipated that Internet usage patterns in the community among general orthopaedic populations might differ.

**TABLE 3**  
Patient Comments on Usage of the Internet as  
a Source of Medical Information

Comment	Searched Internet	Did Not Search Internet	Total
<b>Would recommend Internet</b>	<b>29</b>	<b>73</b>	<b>102</b>
Large amount of information available	14	31	45
Convenience of access	2	2	4
Ease of use	4	5	9
Past successful Internet searches	0	6	6
Most current information	0	0	0
Confirm quality of MD's advice	0	2	2
Enhance clinic visit	2	3	5
Supplement information from clinic visit	2	2	4
Locate a qualified MD	0	0	0
Access to chat/support groups	0	1	1
Ability to self-diagnose illnesses	0	1	1
Did not comment	6	23	29
Caution is needed regarding credibility of information	0	2	2
Information is often too technical for patients	0	1	1
<b>Would not recommend Internet</b>	<b>1</b>	<b>34</b>	<b>35</b>
Lack of experience with Internet	0	14	14
Past unsuccessful Internet searches	0	0	0
Other sources found to be more helpful	0	1	1
Should trust information from MD	1	0	1
Cannot trust credibility of information from Internet	0	7	7
Did not comment	0	12	12

Total number of comments may not correspond to total number of respondents (in bold), because some respondents made multiple comments.

Our response rate of 84% was excellent. It is possible that non-respondents were more likely to be less experienced or interested in the Internet, however the actual number of non-respondents was small.

**TABLE 4**  
**Use of Additional Sources of Information,**  
**by Searchers and Non-Searchers**

	Searched Internet	Did Not Search	Total
<b># of Other Sources</b>			
0	16	69	85
1	10	42	52
>1	4	13	17
<b>Other Source</b>			
Doctors*	2 (2)	20 (15)	22 (17)
Library	2	6	8
Books	1	4	5
Medical friend	4	10	14
Medical text	5	14	19
Others with same diagnosis	0	4	4
Support group	0	0	0
Periodicals	1	4	5
Nurses	1	2	3
Non-medical friend	1	2	3
Pamphlets	1	2	3
Television	0	1	1

\* Number in parentheses refers to those who listed M.D. as their only other source of medical information.

The majority of patients who did search the Internet responded that their search had helped them better understand their diagnoses. Furthermore, half of the Internet searchers raised new questions which they planned to take up with their physician.

Most patients would recommend the Internet as a source of medical information, although users of the Internet were more likely (97%) than non-users (68%) to do so. Respondents who had not used the Internet were more likely to raise questions regarding the credibility of information retrieved than those who had actually searched for medical information. Most patients had not consulted other sources for medical information aside from their physicians. Among those who did seek additional information, the Internet was more likely

than any other single source to be used (Table 4). The Internet is rapidly becoming the preferred source for medical information among patients.

Findings from this survey indicate that one-fifth of patients in a community private practice orthopaedic clinic utilized the Internet for medical information; the Internet was more likely to be used than any other additional information source. Patients with a wide variety of diagnoses used the Internet, and most patients found their Internet searches helpful. One half indicated that questions were raised as a result of their searches, which they planned to address with their physicians.

### Impact on Orthopaedic Surgeons

Even in a community private practice setting, one-fifth of patients are consulting the Internet about their orthopaedic diagnoses. Orthopaedic surgeons can increasingly expect patients to retrieve Internet-based information for their review, and to hear questions from patients who are increasingly well informed about their injury or disease. Increased patient access to information will likely translate into increased time demands upon an already busy medical practice.

Patients may choose other providers if an orthopaedic surgeon is unfamiliar with the information or resistant to discussion. Increased time demands are then placed on the surgeon, both in staying current with new technologies and treatments, as well as in addressing this information with clinic patients.

Orthopaedic surgeons who proactively tackle these changes could be rewarded with patients who are better educated regarding their care. These patients often are more diligent in complying with physician's instructions and take a more active role in their treatment and aftercare.

How can physicians meet this challenge? At the very least, by becoming familiar with the Internet, surgeons will gain an understanding of how their patients are finding information. Physician-guided Web searches recommended during the office visit may help patients avoid extraneous- or misinformation. This has the additional benefit of allowing physicians to actively participate in patients' education even after they have left the clinic. Physicians can create their own Websites with links to accurate sources of patient information. The American Academy of Orthopaedic Surgeons<sup>9</sup> sponsors individual surgeon Web pages which can contain links to patient information and be customized for each surgeon's practice and interests. Finally, by influencing our professional societies to produce Web content which is patient-friendly and available, we can remain at the forefront of patient and public education regarding medical information.

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