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Microsoft Examines Causes of 'Cyberchondria'

By [JOHN MARKOFF](#)

If that [headache](#) plaguing you this morning led you first to a Web search and then to the conclusion that you must have a [brain tumor](#), you may instead be suffering from cyberchondria.

On Monday, [Microsoft](#) researchers [published the results](#) of a study of health-related Web searches on popular search engines as well as a survey of the company's employees.

The study suggests that self-diagnosis by search engine frequently leads Web searchers to conclude the worst about what ails them.

The researchers said they had undertaken the study as part of an effort to add features to Microsoft's search service that could make it more of an adviser and less of a blind information retrieval tool.

Although the term "cyberchondria" emerged in 2000 to refer to the practice of leaping to dire conclusions while researching health matters online, the Microsoft study is the first systematic look at the anxieties of people doing searches related to health care, Eric Horvitz said.

Mr. Horvitz, an artificial intelligence researcher at Microsoft Research, said many people treated search engines as if they could answer questions like a human expert.

"People tend to look at just the first couple results," Mr. Horvitz said. "If they find 'brain tumor' or '[A.L.S.](#),' that's their launching point."

Mr. Horvitz is a computer scientist and has a medical degree, and his fellow investigator, Ryen W. White, is a specialist in information retrieval technology.

They found that Web searches for things like headache and [chest pain](#) were just as likely or more likely to lead people to pages describing serious conditions as benign ones, even though the serious illnesses are much more rare.

For example, there were just as many results that linked headaches with brain tumors as with caffeine withdrawal, although the chance of having a brain tumor is infinitesimally small.

The researchers said they had not intended their work to send the message that people should ignore symptoms. But their examination of search records indicated that researching particular symptoms often led quickly to anxiousness.

They found that roughly 2 percent of all Web queries were health-related, and about 250,000 users, or about a quarter of the sample, engaged in a least one medical search during the study.

About a third of the subjects "escalated" their follow-up searches to explore serious illnesses, the researchers

said.

Of the more than 500 Microsoft employees who answered a survey on their medical search habits, more than half said that online medical queries related to a serious illness had interrupted their day-to-day activities at least once.

Mr. Horvitz said that in addition to his interest in creating a Web search tool that would give more reliable answers, the research was driven by clear memories from his medical school education of what was often referred to as "second-year syndrome" or "medical schoolitis."

He said he remembered "sitting on a cold seat with my legs dangling off the examination table," convinced that he was suffering from a rare and incurable skin disease.

While the doctor was out of the room, Mr. Horvitz said, he took a look at his medical chart and saw that the doctor's notes read, "Eric is in medical school, and he has been reading a lot."

The researchers said that Web searchers' propensity to jump to awful conclusions was basic human behavior that has been noted by research scientists for decades.

In 1974, the [psychologists](#) Amos Tversky and Daniel Kahneman wrote a seminal paper about decisions that are based on beliefs about the likelihood of uncertain events, like the outcome of an election or the future value of the dollar.

They said that people usually employ common sense rules to aid in decisions. The rules can be quite useful, but they also frequently lead to systematic errors in judgment.

The Microsoft researchers noted that reliance on the rankings of Web search results contributes a similar bias to the judgments people make about illness.

At the same time, Mr. Horvitz said he believed that the Web would evolve to offer more reliable information.

In the 1990s, Microsoft researchers built a health advisory system for [pregnancy](#) and child care. Mr. Horvitz said that in the future it would be possible to create search engines that were able to detect medical queries and offer advice that did not automatically make Web searchers fear the worst.

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