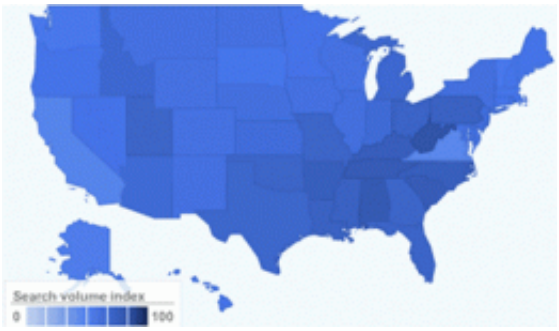
Kidney stones' seasonality reflected in Google searches

August 25 2011, By Jeffrey Norris



Google Insights for Search heat map displays relative volume of kidney stone searches from 2005 through 2009.

(Medical Xpress) -- You might save yourself a lot of pain and trouble during the dog days of summer by drinking to your health – with a long, cool glass of water. The incidence of kidney stones – which can cause the kind of pain some women have compared to giving birth – peaks in summer months when temperatures soar and perspiration drips.

Now it turns out that these seasonal variations in kidney stone incidence are reflected in Google search engine queries, according to research by UCSF urologist Benjamin Breyer, MD, and colleagues that is featured on the cover of this month's issue of the scientific journal *Urology*.

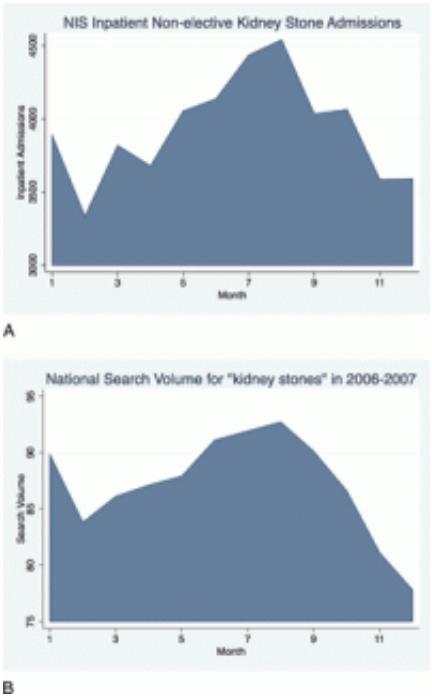
"Kidney Stones" Best Search Term

"Kidney stones vary by season and region – they are more common in warmer places and during hotter times of the year," Breyer says. Large kidney stones cause pain as they pass through the ureter, and many require surgery to remove. Keeping hydrated helps prevent the crystallization of stones.

Nationwide, about 13 percent of men and 7 percent of women in the United States suffer kidney stones during their lives, and half who experience one will develop another.

Not surprisingly, some people with pain or other symptoms of a kidney stone go online to see what more they can learn. As a UCSF clinical instructor in urology, Breyer, now a UCSF assistant professor, along with urology resident Michael Eisenberg, MD, now an assistant professor at Stanford University, used an online tool called Google Insights for Search to see if the varying popularity of search terms would reflect seasonal and geographic differences in kidney stone prevalence.

"Kidney stones" was the best search term they found to mirror trends obtained from hospital data.



Google Insight for Search output for the search term "kidney stones" and hospital admissions for kidney stones recorded in the Nationwide Inpatient Sample trace a seasonal trend.

In addition to variations due to weather, genetics, diet and obesity also contribute to the likelihood that one develops kidney stones. The impact of kidney stones varies not only by season, but also by geographic location. A region where rates are high throughout the Southeast has been dubbed “the stone belt.”

The researchers compared monthly Google search volume for the nation, for individual states and for two metropolitan areas with high rates of Internet use – New York and Seattle – to kidney stone diagnosis data from the National Inpatient Sample, which gathers discharge reports from nonfederal hospitals in 40 states.

Nationwide, trends over the course of a year in the relative popularity of

searches for “kidney stones” roughly mirrored changes in actual hospital admissions for kidney stones.

Similarly, Google searches for “kidney stones” ranked higher as a percentage of total searches in regions of the country where kidney stones actually were more common in the hospital discharge records.

In addition, the researchers found that variations in search volume in Seattle and New York over several years reflected seasonal temperature changes.

Google Insights for Search provides search volume data for selected terms over specific geographic regions and time ranges. Breyer notes that the out-of-the-box search tool is much less sophisticated than the company’s Google Flu Trends. Flu Trends incorporates many search terms into a complicated algorithm and is updated daily, according to Google – more often than some nations update their epidemiologic data for influenza.

But Breyer views even relatively simple search tools as being useful for research. “There are ways to harvest this information that may represent incidence of disease,” he says.

Other maladies fluctuate seasonally as well. In the United States, diabetes, heart attacks and hypertension are more burdensome in the winter months, Breyer says. Breyer and Eisenberg previously used Google search terms to track these variations.

Analysis of search data should allow researches to explore new ideas about possible links between illnesses and changes in our surroundings, Breyer says.

“I think it represents a really exciting way to study the pathophysiology

of disease.”

Provided by University of California, San Francisco