

Under The Weather? New Tongue Scanning Software May Explain Why.

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<http://www.asianscientist.com/health-medicine/tongue-scanning-software-hot-cold-zheng-2012/>

AsianScientist (May 28, 2012) - University of Missouri researchers have developed computer software to analyze the flow and balance of positive and negative energies in the body simply by scanning one's tongue.

"Knowing your *zheng* classification can serve as a pre-screening tool and help with preventive medicine," said Dong Xu, chair of MU's computer science department in the College of Engineering and study co-author.

"Our software helps bridge Eastern and Western medicine, since an imbalance in *zheng* could serve as a warning to go see a doctor. Within a year, our ultimate goal is to create an application for smartphones that will allow anyone to take a photo of their tongue and learn the status of their *zheng*."

The software analyzes images based on the tongue's color and coating to distinguish between tongues showing signs of "hot" or "cold" *zheng*. Shades of red and yellow are associated with hot *zheng*, whereas a white coating on the tongue is a sign of cold *zheng*.

"Hot and cold *zheng* doesn't refer directly to body temperature," said Xu, "rather, it refers to a suite of symptoms associated with the state of the body as a whole."

For example, a person with cold *zheng* may feel chills and coolness in the limbs and show a pale flushing of face. Their voice may have a high pitch. Other symptoms of cold *sheng* are clear urine and loose stool. They also may prefer hot foods and drinks and desire warm environments.

In Chinese traditional medicine both hot and cold *zheng* can be symptoms of gastritis, an inflammation of the stomach lining frequently caused by bacterial infection.

For the study, 263 gastritis patients and 48 healthy volunteers had their tongues analyzed. The gastritis patients were classified by whether they showed infection by a certain bacteria, known as *Helicobacter pylori*, as well as the intensity of their gastritis symptoms.

In addition, most of the gastritis patients had been previously classified with either hot or cold *zheng*. This allowed the researchers to verify the accuracy of the software's analysis.

"Our software was able to classify people based on their *zheng* status," said study co-author Ye Duan, associate professor of computer science at MU.

Duan hopes that the software may someday be used with webcams or smartphone applications to monitor one's own *zheng* and receive early warnings on possible ailments.

The article can be found at: [Kanawong R et al. \(2012\) Automated Tongue Feature Extraction for ZHENG Classification in Traditional Chinese Medicine.](#)

Source: [University of Missouri.](#)

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