

Locally developed software diagnoses jaw pains

PHOTO: SERENE LUO

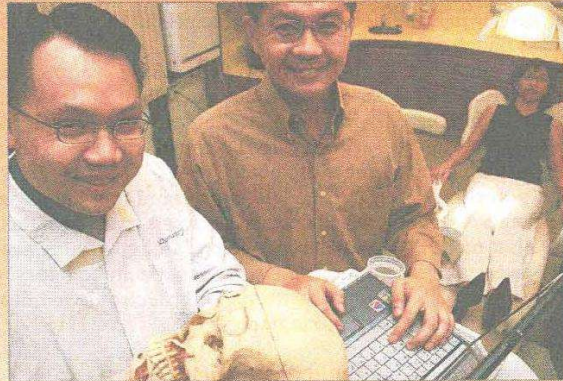
People suffering from jaw joint disorders often can't open their mouths more than two fingers wide. Their cheeks ache and they have bad headaches. Sometimes, patients get it worse if they are stressed, because people involuntarily clench or grind their teeth if under pressure.

They shuttle between specialists, from neurosurgeons, orthopaedics to ear-nose-throat doctors to find a cure, but they only cure the symptoms, not the root of the problem.

That's because they could have temporomandibular disorders (TMD), but the awareness of it here is low, although as many as 75 per cent of the population worldwide has a symptom at one point or another. About five per cent of them have TMD so severely that they cannot lead normal lives.

Said Dr Adrian Yap, an associate professor at the National University of Singapore (NUS): "TMD is not very well covered in the Asian syllabus, and the awareness of it is very low in Asia, unlike in the United States."

This means that TMD is rarely diag-



The software developed by Dr Yap, (left) and NUS spin-off company, KooPrime, is easy for patients to diagnose possible temporomandibular disorders. At right is Mr Lim, KooPrime's chief executive.

nosed in patients here, and only experienced doctors may be able to spot it, Dr Yap, also a consultant at National University Hospital, said.

Now, a new computer-aided diagnostic software program may change that.

The software, which Dr Yap — with an NUS spin-off company, KooPrime — has developed, is easy to access: patients simply click or key in their answers to the questions on a notebook or a tablet computer.

Immediately, the system can give two diagnoses — on the patient's physical problem and on his psychological and pain-handling status. The doctor is then able to prescribe treatments for his jaw problem, as well as suggest psychological help to deal with this stress-related disorder.

Currently, the only available diagnostic system for TMD is in the US, where doctors administer a set of internationally recognised questions with pen and

paper. Data is collected and entered manually into a mainframe computer.

If a doctor in Singapore wanted to get a diagnosis, he would have to post the forms to the US and wait months for a reply, if he even got one at all.

The system that is developed here is based on the same set of questions, explained KooPrime's chief executive, Mr Lim Teck Sin, who said more diagnostic systems could be developed in the same fashion, as long as there are parameters.

The software system, which comes in English, Chinese and Bahasa Melayu, is now being used by researchers in Australia, Malaysia, Brazil and Hong Kong. The same parameters are used, so data collected from these countries can be collated and compared for further research.

"Systems like this one cut off the problem of human subjectivity," said Dr Yap. "Now we can get a diagnosis without too much personal expertise needed. This is a prototype of what is to come in the future of medical diagnostics." —

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