A computer program has been released that enables patients with depression to track their mental health, assisting in the tailoring of treatments to each individual's needs.

"Ultimately, we hope to assist patients with depression to monitor the progress of their illness in a similar way that a patient with diabetes monitors their blood sugar levels with a small portable device," says Dr Roland Goecke of the University of Canberra.

"Psychologists and psychiatrists look for facial expressions, a lack of expression, longer response times and a reduced facial repertoire to identify depression," Goecke says. "The goal is to develop a diagnostic aid using these." Towards this goal, patients are played a series of film clips designed to elicit both positive and negative responses. A computer program analysing the facial responses of 40 patients and 40 healthy controls has been able to diagnose depression with 80% accuracy.

Goecke says this can now be used as a sort of second opinion by a doctor, but the medium-term aim is for patients to only need to see doctors every 6 weeks, with the program providing monitoring in between.

"At the moment patients are asked to self-journal, which is hard to do if you are severely depressed," Goecke notes.

The accuracy of the program may be improved if an individual patient's status can be used as a benchmark. Patients are now being observed every 6 weeks and Goecke hopes this longitudinal data could eventually help to make the program more accurate. He also hopes to expand the markers used for diagnosis.

Depression is increasingly being recognised as a cluster of diseases, which complicates analysis. "At the moment we have looked at unipolar with and without melancholia, and bipolar, but with only 40 patients between the three categories we don't have sufficient data to distinguish," Goecke says.