

Speech monitoring could track Parkinson's

November 17 2010



Speech records can help track the progress of Parkinson's disease. Photo: Jenny Downing

(PhysOrg.com) -- The severity of Parkinson's disease symptoms could be accurately monitored remotely through analysing a patient's speech patterns, a new Oxford University study suggests.

The research, by scientists from Oxford University and Denver, Colorado, examined almost 6,000 speech recordings from 42 people with Parkinson's. The team found that their new algorithms were able to use this speech data to estimate overall symptom severity with an accuracy very close to assessments made by clinicians.

A report of the research is published in this week's *Interface*, a journal of the Royal Society.

‘Currently, monitoring requires frequent visits to hospital where people with Parkinson’s are physically examined by expert clinicians in order to assess their symptom severity, putting a strain on both patients and hospital resources,’ said Dr Max Little of Oxford’s Department of Physics, an author of the report. ‘We believe that this technology could help to alleviate the burden on health systems, such as the NHS, and make it feasible to run large-scale clinical trials for the investigation of novel Parkinson’s disease treatments.’

The researchers compared estimates made using the new technique with assessments made by clinicians rated on the standard measure for Parkinson’s severity – the Unified Parkinson’s Disease Rating Scale (UPDRS). They found that, based on around 140 speech samples from each of the 42 patients, the estimates made using the algorithms differed from clinicians UPDRS ratings by around 2 points out of 55. The full UPDRS scale is 0-176, but the research only looked at those in the early stages of the disease in the range 0-55 (the team believe these results can be replicated with at least the same accuracy with people in the later stages of the disease).

The study provides good evidence that speech impairment and the average overall severity of other Parkinson’s [disease symptoms](#) are very closely linked, suggesting that symptom severity can be measured just by analysing a person’s [speech](#).

‘This sort of remote monitoring – or ‘telemonitoring’ – of people’s health is particularly important for people with Parkinson’s who may find it difficult to make frequent hospital visits,’ said Dr Little. ‘The hope is that our research could pave the way for very large clinical studies of new treatments for Parkinson’s where the sort of frequent monitoring required would not otherwise be affordable.’

Provided by Oxford University

Citation: Speech monitoring could track Parkinson's (2010, November 17) retrieved 2 May 2024 from <https://medicalxpress.com/news/2010-11-speech-track-parkinson.html>

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