The research commercialisation office of the University of Oxford, previously called **Isis Innovation**, has been renamed **Oxford University Innovation**

All documents and other materials will be updated accordingly. In the meantime the remaining content of this Isis Innovation document is still valid.

URLs beginning www.isis-innovation.com/... are automatically redirected to our new domain, www.innovation.ox.ac.uk/...

Phone numbers and email addresses for individual members of staff are unchanged

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P1vital –
A precision medicine approach to treating depression

Depression affects 1 in 10 adults and places a huge burden on healthcare resources, but its treatment is managed by trial and error.

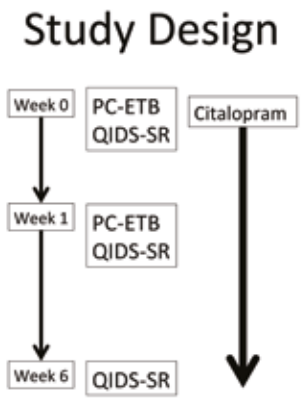
This project will develop an online computerised test to manage the treatment of depression more effectively, returning patients to good mental health sooner than conventional methods.

The Problem with Antidepressants

Antidepressants are widely prescribed for the treatment of depression but it can take 4-6 weeks after starting treatment before a patient feels any better. Furthermore, many patients do not respond to the first drug they are prescribed and have to try several different drugs, one after the other, before an effective treatment is found. This often results in delays of many months before patients return to good mental health.

Using the e-Health Emotional Test Battery to Predict Antidepressant Response

Antidepressant medication improves mood by causing patients to interpret emotional information in a more positive way. The e-Health Emotional Test Battery (eH-ETB) is a computer-based test designed specifically to measure this change in processing of emotional information. We assessed whether the eH-ETB could be used to predict, after only 7 days of treatment, whether a patient's mood would improve after 6 weeks of antidepressant treatment, which would significantly reduce the time to remission for depressed patients.



Study Method

74 depressed patients were recruited from 10 GP practices. Patients completed the eH-ETB before starting the antidepressant citalopram and then again 7-9 days later. Depressive symptoms were measured using the QIDS-SR questionnaire before treatment, at 7-9 days, and after 6 weeks of treatment. eH-ETB and QIDS-SR scores from the baseline and day 7-9 were combined using a machine learning algorithm to predict whether the patient would respond to treatment at 6 weeks (treatment response = >50% reduction in QIDS-SR score from baseline to week 6).

	Patient Responded to Treatment	Patient Did Not Respond to Treatment
PC-ETB Predicted Patient Would Respond	13	5
PC-ETB Predicted Patient Would Not Respond	9	31

Results

We obtained complete data from 58 patients. Citalopram only improved mood in 37% of patients treated.

78% of patients with a negative eH-ETB test did not respond to treatment.

72% of patients with a positive eH-ETB test did respond to treatment.

The eH-ETB system shows considerable promise as a tool to improve the treatment of depression by reducing the time for the majority of patients to return to good mental health.

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