



UNIVERSITY OF
LEICESTER



**University Hospitals
of Leicester**
NHS Trust

**National Centre for
Adherence Testing**

Caring at its best

Non-Adherence to Medications:

**an innovative service for objective diagnosis of
non-adherence for use in clinics**

Lead Investigators

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**Other Investigators and
Team members**

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Prof (Sir) N Samani, Prof T Robinson,
Mrs Carole Jones.

Delivery team

Leicester's Hospitals, NIHR Leicester
Biomedical Research Centre and
University of Leicester.

Product Summary

A test that screens for more than 60 most
commonly prescribed cardiovascular drugs
in urine/blood.

Market status

We have set up a National Centre for
Adherence Testing (NCAT) which tests for
medication adherence in hypertension,
diabetes mellitus, dyslipidaemia,
anticoagulants and other cardiovascular
drugs and receive samples from >25
centres across the UK.

Benefits to patients

Until recently tools to diagnose non-
adherence were subjective. Non-
adherence costs the UK health economy
£4bn. We have developed a simple test
that only requires the patient to provide a
urine sample. It is non-invasive, easy, quick
and robust and prevents unnecessary
investigations and escalations in treatment.

Highlights of the urine antihypertensive
drug screen analysed by HPLC-MS/MS
at the University Hospitals of Leicester
NHS Trust.

What is our evidence?

We have demonstrated that around 30 per cent of patients are non-adherent to their prescribed medications. Furthermore non-adherence is related to the amount of prescribed medications. (see graph below). The more prescribed medications, less the adherent rate. Our data also demonstrate that once the results of the test are discussed with patients who are

non-adherent; their blood pressure control improves on the same or reduced number of medications.

We have also demonstrated by health economic studies that the test is cost-effective with >£1,100 cost saving in investigations costs.



Highlights of the urine drug screen analysed by Liquid Chromatography-Mass Spectrometry (LC-MS)

Sample

Spot urine sample – 2ml
Stable and can be transported by post.

Method

Robust, accurate and relatively cheap.
60 drugs/metabolites tested.
Analysis by LC-MS.
Sample purification by biomedical scientist.
Technically validated by senior biomedical scientist.
Clinically interpreted by consultants.

Clinical aspects

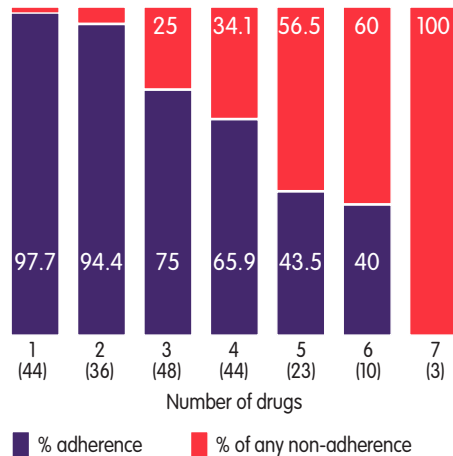
Results lead to constructive discussion with patient.
Helps construct a tailored approach to improve adherence.
Experts across the country who have used the test say that it has changed their practice.
Test correlates clinically.

Ongoing research

Studies in diabetes, heart failure, stroke, hypertension and heart attack with >10 international collaborations. Students (PhD, BSc) and an academic clinical fellow.

Results

% Adherence by Number of Drugs Prescribed all Patients (n)



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www.leicestershospitals.nhs.uk/aboutus/departments-services/pathology/clinical-biochemistry/national-centre-for-drug-adherence-testing-ncat