E-cigarettes compared with nicotine replacement therapy within the UK Stop Smoking Services: the TEC RCT

Peter Hajek,1 Anna Phillips-Waller,1* Dunja Przulj,1 Francesca Pesola,2 Katie Myers Smith,1 Natalie Bisal,1 Jinshuo Li,3 Steve Parrott,3 Peter Sasieni,2 Lynne Dawkins,4 Louise Ross,5 Maciej Goniewicz,6 Qi Wu3 and Hayden J McRobbie1

1Health and Lifestyle Research Unit, Wolfson Institute of Preventive Medicine, Queen Mary University of London, London, UK
2King’s Clinical Trials Unit, Institute of Psychiatry, King’s College London, London, UK
3Department of Health Sciences, University of York, York, UK
4Centre for Addictive Behaviours Research, School of Applied Sciences, London South Bank University, London, UK
5Leicester City Council, Leicester, UK
6Department of Health Behavior, Division of Cancer Prevention and Population Sciences, Roswell Park Comprehensive Cancer Center, Buffalo, NY, USA

*Corresponding author a.phillips-waller@qmul.ac.uk

Declared competing interests of authors: Peter Hajek received research funding from, and provided consultancy to, manufacturers of stop smoking medications (Pfizer Inc., New York City, NY, USA). Hayden J McRobbie received a grant from the National Institute for Health Research Health Technology Assessment programme; he also received honoraria for speaking at smoking cessation meetings and attended advisory board meetings organised by Pfizer Inc. and Johnson & Johnson (New Brunswick, NJ, USA). Dunja Przulj received a research grant from Pfizer Inc. Maciej Goniewicz provided consultancy to Johnson & Johnson. Lynne Dawkins reports personal fees from attorneys at law outside the submitted work. Jinshuo Li reports grants from the National Coordinating Centre for Health Technology Assessment (NCCHTA) during the conduct of the study.

Published August 2019
DOI: 10.3310/hta23430
Plain English summary

A large number of smokers in the UK have stopped smoking with the help of e-cigarettes, but it is not known if e-cigarettes are as helpful as stop smoking medications that are provided by the UK Stop Smoking Services (SSSs). This information is needed to decide whether or not SSSs should include e-cigarettes among their treatment options.

A total of 886 smokers who were seeking help with quitting and did not mind whether they would use nicotine replacement therapy (NRT), such as nicotine patches, or e-cigarettes were recruited at three SSSs. The smokers were randomly allocated (by chance) to receive weekly behavioural support and either a NRT of their choice (a single NRT product or product combinations) ($n = 447$) or a starter pack of e-cigarettes ($n = 439$). The trial ran from May 2015 to February 2018.

The participants were followed up for 1 year to see how many stopped smoking in each group.

Smokers using e-cigarettes suffered less cigarette withdrawal discomfort early on and had higher quit rates at all time points. At 1 year, 10% of participants in the NRT trial arm had been abstinent for the whole year, compared with 18% in the e-cigarette arm; regarding abstinence for at least 6 months, the figures were 12% in the NRT arm and 21% in the e-cigarette arm. Of interest, coughs and phlegm production also reduced more in people quitting with e-cigarettes than those quitting with NRT. This supports previous reports suggesting that an ingredient in e-cigarettes (i.e. propylene glycol) may protect vapers from airborne infections.

E-cigarette starter packs cost much less than NRT and so, if SSSs provide them, their use is likely to boost the success rates and reduce the costs of SSSs.
Criteria for inclusion in the Health Technology Assessment journal

Reports are published in Health Technology Assessment (HTA) if (1) they have resulted from work for the HTA programme, and (2) they are of a sufficiently high scientific quality as assessed by the reviewers and editors.

Reviews in Health Technology Assessment are termed ‘systematic’ when the account of the search appraisal and synthesis methods (to minimise biases and random errors) would, in theory, permit the replication of the review by others.

HTA programme

The HTA programme, part of the National Institute for Health Research (NIHR), was set up in 1993. It produces high-quality research information on the effectiveness, costs and broader impact of health technologies for those who use, manage and provide care in the NHS. ‘Health technologies’ are broadly defined as all interventions used to promote health, prevent and treat disease, and improve rehabilitation and long-term care.

The journal is indexed in NHS Evidence via its abstracts included in MEDLINE and its Technology Assessment Reports inform National Institute for Health and Care Excellence (NICE) guidance. HTA research is also an important source of evidence for National Screening Committee (NSC) policy decisions.

For more information about the HTA programme please visit the website: http://www.nets.nihr.ac.uk/programmes/hta

This report

The research reported in this issue of the journal was funded by the HTA programme as project number 12/167/135. The contractual start date was in October 2014. The draft report began editorial review in April 2018 and was accepted for publication in September 2018. The authors have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. The HTA editors and publisher have tried to ensure the accuracy of the authors’ report and would like to thank the reviewers for their constructive comments on the draft document. However, they do not accept liability for damages or losses arising from material published in this report.

This report presents independent research funded by the National Institute for Health Research (NIHR). The views and opinions expressed by authors in this publication are those of the authors and do not necessarily reflect those of the NHS, the NIHR, NETSCC, the HTA programme or the Department of Health and Social Care. If there are verbatim quotations included in this publication the views and opinions expressed by the interviewees are those of the interviewees and do not necessarily reflect those of the authors, those of the NHS, the NIHR, NETSCC, the HTA programme or the Department of Health and Social Care.

© Queen’s Printer and Controller of HMSO 2019. This work was produced by Hajek et al. under the terms of a commissioning contract issued by the Secretary of State for Health and Social Care. This issue may be freely reproduced for the purposes of private research and study and extracts (or indeed, the full report) may be included in professional journals provided that suitable acknowledgement is made and the reproduction is not associated with any form of advertising. Applications for commercial reproduction should be addressed to: NIHR Journals Library, National Institute for Health Research, Evaluation, Trials and Studies Coordinating Centre, Alpha House, University of Southampton Science Park, Southampton SO16 7NS, UK.
NIHR Journals Library Editor-in-Chief

Professor Ken Stein  Professor of Public Health, University of Exeter Medical School, UK

NIHR Journals Library Editors

Professor John Powell  Chair of HTA and EME Editorial Board and Editor-in-Chief of HTA and EME journals. Consultant Clinical Adviser, National Institute for Health and Care Excellence (NICE), UK, and Honorary Professor, University of Manchester, and Senior Clinical Researcher and Associate Professor, Nuffield Department of Primary Care Health Sciences, University of Oxford, UK

Professor Andrée Le May  Chair of NIHR Journals Library Editorial Group (HS&DR, PGfAR, PHR journals) and Editor-in-Chief of HS&DR, PGfAR, PHR journals

Professor Matthias Beck  Professor of Management, Cork University Business School, Department of Management and Marketing, University College Cork, Ireland

Dr Tessa Crilly  Director, Crystal Blue Consulting Ltd, UK

Dr Eugenia Cronin  Senior Scientific Advisor, Wessex Institute, UK

Dr Peter Davidson  Consultant Advisor, Wessex Institute, University of Southampton, UK

Ms Tara Lamont  Director, NIHR Dissemination Centre, UK

Dr Catriona McDaid  Senior Research Fellow, York Trials Unit, Department of Health Sciences, University of York, UK

Professor William McGuire  Professor of Child Health, Hull York Medical School, University of York, UK

Professor Geoffrey Meads  Professor of Wellbeing Research, University of Winchester, UK

Professor John Norrie  Chair in Medical Statistics, University of Edinburgh, UK

Professor James Raftery  Professor of Health Technology Assessment, Wessex Institute, Faculty of Medicine, University of Southampton, UK

Dr Rob Riemsma  Reviews Manager, Kleijnen Systematic Reviews Ltd, UK

Professor Helen Roberts  Professor of Child Health Research, UCL Great Ormond Street Institute of Child Health, UK

Professor Jonathan Ross  Professor of Sexual Health and HIV, University Hospital Birmingham, UK

Professor Helen Snooks  Professor of Health Services Research, Institute of Life Science, College of Medicine, Swansea University, UK

Professor Ken Stein  Professor of Public Health, University of Exeter Medical School, UK

Professor Jim Thornton  Professor of Obstetrics and Gynaecology, Faculty of Medicine and Health Sciences, University of Nottingham, UK

Professor Martin Underwood  Warwick Clinical Trials Unit, Warwick Medical School, University of Warwick, UK

Please visit the website for a list of editors: www.journalslibrary.nihr.ac.uk/about/editors

Editorial contact: journals.library@nihr.ac.uk