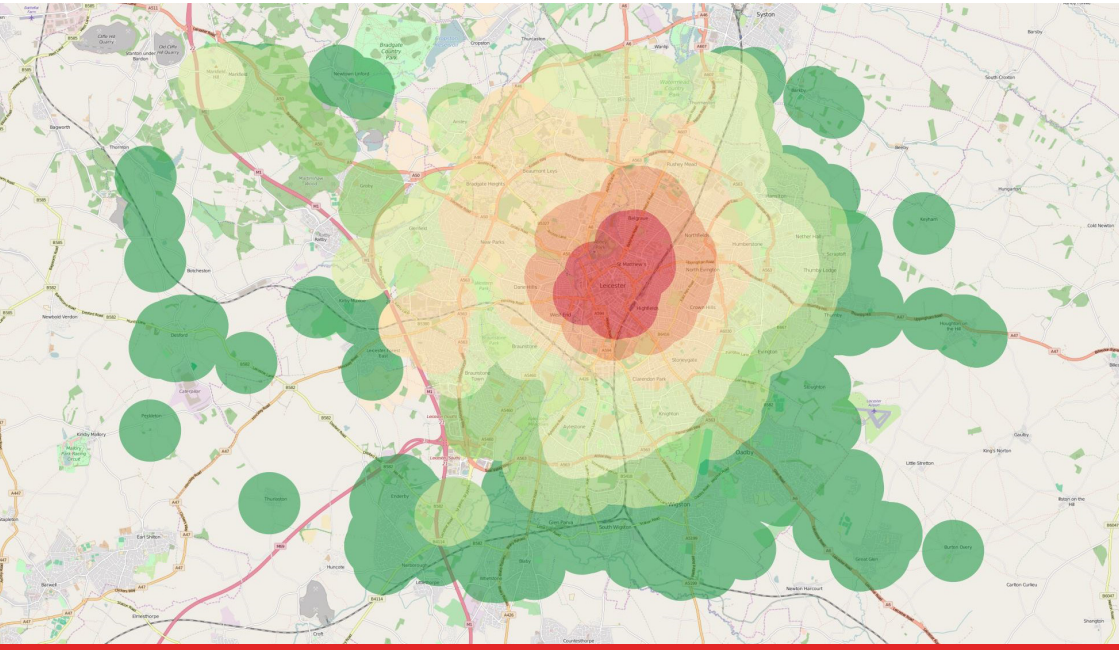
CLAHRC East Midlands
August 2018

National Institute for Health Research

CLAHRCBITE

Brokering innovation through evidence

Air pollution and type 2 diabetes: The Champions Study



Results

We found that demographic factors largely explained the association between air pollution and the risk of type 2 diabetes.

Who needs to know?

- The scientific community
- The public

What did we do:

Using three large diabetes screening studies in Leicestershire, we matched 10,443 participants' home postcodes to the exposure of outdoor nitrogen dioxide and particulate matter concentrations. Our outcome measure was the diagnosis of type 2 diabetes, and we adjusted the models for potential confounders this included demographic factors (age, sex, ethnicity, smoking, area social deprivation, urban or rural location), lifestyle factors (body mass index and physical activity), and neighbourhood green space.

What we found and what does this mean:

We found in the unadjusted models nitrogen dioxide and particulate matter concentrations were associated with type 2 diabetes, but when the effects of lifestyle and demographic factors were considered, the evidence for direct association with air pollution was inconclusive. This meant further research is required in order to untangle the true confounders connected to long-term exposures of air pollution.

What next:

The world's air pollution is constantly rising meaning our health is becoming at a greater risk. We hope to carry out high-quality longitudinal studies to improve our understanding of the association between air pollution and type 2 diabetes.

Evidence:

O'Donovan G, Chudasama Y, Grocock S, Leigh R, Dalton AM, Gray LJ, et al. The association between air pollution and type 2 diabetes in a large cross-sectional study in Leicester: The CHAMPIONS Study. Environ Int. 2017;104:41-7. http://dx.doi.org/10.1016/j.envint.2017.03.027

What is NIHR CLAHRC EM?

NIHR Collaborations for Leadership in Applied Health Research and Care (CLAHRCs) are collaborations between the NHS, universities and local organisations. Our goals are to conduct applied health research across the East Midlands and translate our research findings into improved outcomes for the public.

@clahrc_em www.clahrc-em.nihr.ac.uk clahrc-em@leicester.ac.uk

This research was supported by the National Institute for Health Research (NIHR) Collaboration for Leadership in Applied Health Research and Care East Midlands (CLAHRC EM).