New research has estimated how the air pollution levels recorded in Derby impact on health in the city. The study estimates how current levels of pollution increase hospital admission rates, the risks of developing cancer, and worsen child health in the city. This study adds to the already compelling case for urgent and ambitious action to address air pollution in Derby.

**KEY POINTS**

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**HOW DERBY’S AIR POLLUTION IMPACTS OUR HEALTH AND PUTS A STRAIN ON THE NHS**

New research conducted by the Environmental Research Group at King’s College London has quantified the likely impacts of air pollution in Derby on a range of important health conditions, including heart attacks, hospitalisations for stroke and emergency asthma admissions amongst adults and children.

The research suggests that each year in Derby, higher air pollution days (compared to low pollution days) are linked to:

- **A 1.8% increase in the risk of having an out of hospital cardiac arrest**
- **An extra 5 children being hospitalised with asthma**
- **Sending up to 13 more people to hospital for stroke**

**THE REPORT ESTIMATES THAT, IN DERBY:**

- Your child is 6.2% more likely to be hospitalised for asthma on days with high nitrogen dioxide pollution compared to days with lower air pollution.

**IF AIR POLLUTION IN DERBY WAS CUT BY JUST ONE FIFTH, EVERY YEAR WE WOULD SEE:**

- 179 fewer children suffering with low lung function
- 3 fewer babies being born underweight
- Fewer children suffering with a chest infection and 85 fewer asthmatic children suffering with bronchitic symptoms (cough and phlegm)
- A decrease in the risk of coronary heart disease by around – % which would result in fewer cases a year
- A decrease in lung cancer cases by around – %, which would result in fewer cases every year
These statements ‘personalise’ the health effects of air pollution. They have been developed from calculations based on three components:


2. A numerical relationship between the air pollutant concentration ('exposure') and the change in the health outcome in question. This numerical relationship is termed the ‘concentration response function’ or CRF, and has been drawn from a comprehensive review of air pollution research. It usually takes the form of a percentage increase in adverse health impacts over the baseline rate.

3. This percentage change in the health outcome due to pollutant exposure is applied to the baseline rate of the outcome or disease.

The result of this is used to develop quantitative statements giving the effect of a given exposure to an air pollutant on a particular health outcome or disease.

For further information on air quality improvement interventions you can read the Public Health England Review of interventions here. The government Clean Air Strategy 2019 is here.

This research was conducted by the Environmental Research Group at King’s College London and was funded by the Clean Air Fund.

**LINKS TO THE CORE REPORT**

Please click here for the core academic report on which this brief is based. Data from the UK Automatic Urban and Rural Network (AURN) are published by Defra here.