

Air Quality

Part of the Protecting our Health in a Changing
Climate: Health Needs Assessment (HNA)



A collaboration between the Place Making and Knowledge Intelligence and Evidence teams within the Public Health, Communities and Public Safety directorate.

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Air Quality

Air quality trends and future risks in Suffolk:

Changes in climate and local environmental conditions can influence both indoor and outdoor air quality. This chapter considers how changes in climate, housing conditions, ventilation, and other factors may affect indoor and outdoor air quality, and their implications for health.

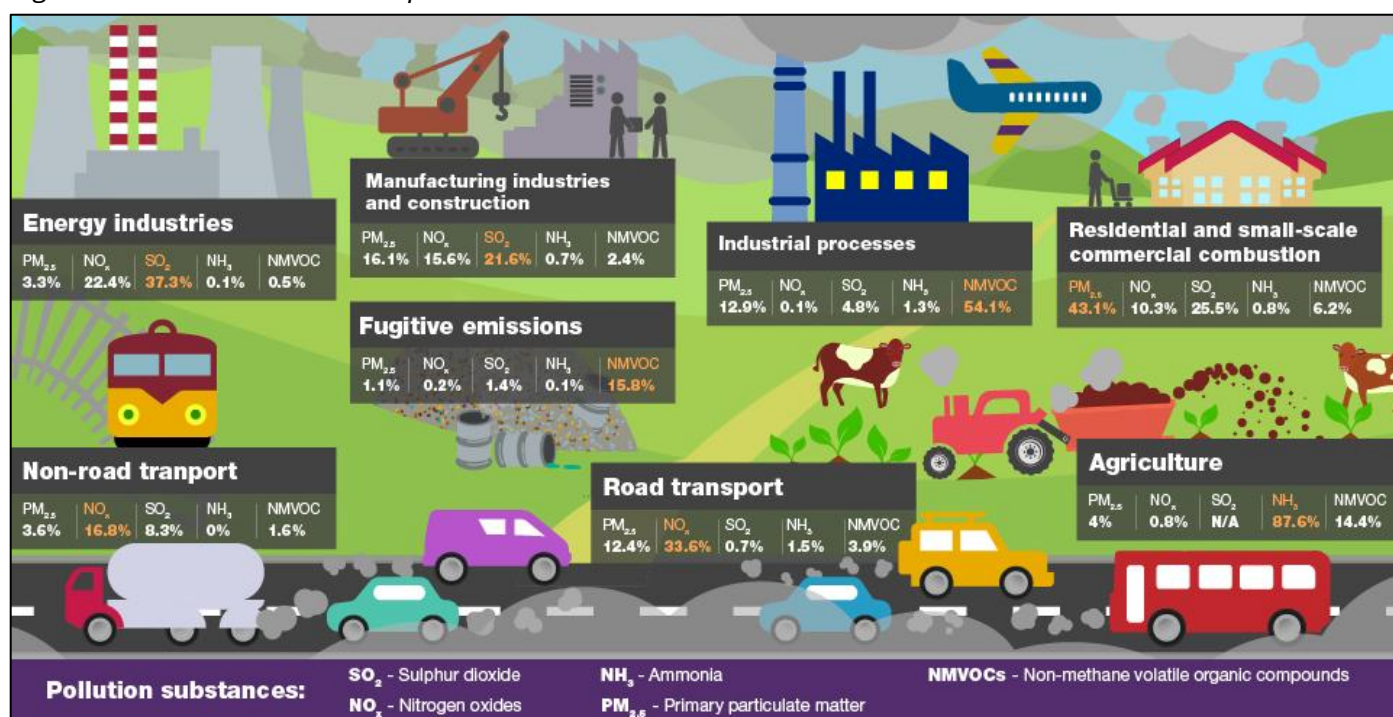
Due to shifts in technology and stricter road transport and industry emissions regulation, outdoor air quality has improved in recent years ([DEFRA, 2025](#)). However, despite these improvements, rising temperatures, hotter summers, wildfires, drought, and longer pollen seasons have the potential to worsen air quality and increase exposure to pollutants, particularly for vulnerable groups. Even relatively small increases in air pollution can have important health implications, particularly for children, older people, and those with existing health conditions.

There is no safe level of air pollution: evidence from the past decade shows that even low concentrations can harm health. Air pollution remains the greatest environmental risk to human health, with long-term exposure being attributed to an estimated 30,000 deaths in the UK each year ([Royal College of Physicians, 2025](#)).

Sources of air pollution:

Air pollution comes from both human and natural sources, including fossil fuel transport, power generation, manufacturing, agriculture, domestic heating and cooking (including domestic burning), and wildfire smoke ([National Institute of Environmental Health Sciences](#)). These sources release pollutants such as particulate matter, nitrogen oxides, and black carbon, which worsen indoor and outdoor air quality and harm health in the short and long term. The sources of outdoor air pollution are shown below in figure 1.

Figure 1: Sources of outdoor air pollution



Source: [Public Health England](#) (now UKHSA)



Outdoor air quality:

Air Quality Management Areas (AQMA) are declared where the national objective of $40\mu\text{g}/\text{m}^3$ for Nitrogen Dioxide (NO_2) is being, or is likely to be, consistently exceeded. In 2022, Suffolk had eight AQMAs, comprising of four in Ipswich, and one each in Sudbury, Bury St Edmunds, Great Barton, and Stratford St Andrew, respectively. Recent trends in Nitrogen Dioxide (NO_2) reported by district and borough councils within Suffolk show a general reduction across all areas in Suffolk. This situation is mirrored in the national figures. Currently, as of Spring 2026, the number of declared AQMAs had reduced to three, all in Ipswich. This indicates that while these improvements are positive, NO_2 levels remain relatively higher in Ipswich than other areas in Suffolk.

Suffolk's Particulate Matter ($\text{PM}_{2.5}$) levels also show a general reduction across all areas in Suffolk ([Fingertips – air pollution: fine particulate matter \(concentrations of \$\text{PM}_{2.5}\$ \) 2024](#)). Suffolk's average $\text{PM}_{2.5}$ levels are similar ($7.0\mu\text{g}/\text{m}^3$) to England ($7.1\mu\text{g}/\text{m}^3$). $\text{PM}_{2.5}$ levels in West Suffolk, Babergh, Mid Suffolk, and East Suffolk are also similar ($7.0\mu\text{g}/\text{m}^3$). However, mirroring the pattern seen for NO_2 , Ipswich has the highest $\text{PM}_{2.5}$ levels in Suffolk ($7.4\mu\text{g}/\text{m}^3$).

How is outdoor air quality affected by a changing climate?

Changes in weather patterns and environmental conditions can influence air quality in ways that have direct implications for health, service demand, and day-to-day living conditions. Understanding these interactions can help communities and services prepare for the health impacts associated with hotter, drier, and more extreme weather conditions. The sections below highlight some of the ways a changing climate may affect air quality and, in turn, influence health risks for Suffolk residents.

Atmospheric conditions and 'pollution traps':

Slow-moving air, which often occurs during hot and sunny weather, can increase local air pollution levels by trapping and concentrating pollution close to the ground. Additionally, when existing air pollutants such as nitrogen oxides in the atmosphere react with sunlight, they create other forms of air pollution such as ground-level ozone which can trigger respiratory inflammation. During the 2022 UK heatwaves, significant increases in ground-level ozone levels were observed ([National Centre for Atmospheric Science](#)).

Drought and dust:

Drought conditions, which are expected to become more frequent as temperatures increase, can also negatively impact air quality. Extended periods of dry weather increase the amount of airborne dust and particulate matter in the atmosphere, and heighten the risk of wildfires ([World Health Organisation](#)).

Wildfires and smoke:

More frequent hot and dry conditions increase the likelihood of wildfires. Alongside the risk of physical injury and death, wildfire smoke contains a range of pollutants including particulate matter, nitrogen oxides and carbon monoxide that are associated with respiratory and cardiovascular effects ([UKHSA – HECC 2023](#)). Wildfires can also have longer-lasting mental health impacts, including increased risks of anxiety, depression, and post-traumatic stress disorder ([UKHSA](#)).

Wildfire incidents are becoming more frequent in the UK ([UKHSA](#)). During the 2022 heatwaves, the Suffolk Fire and Rescue Service attended five times more wildfires than in 2021 ([East Anglian Daily Times](#)). In 2022, fire and rescue services in England and Wales responded to a record number of wildfire incidents. This record was again surpassed in 2025, when they responded to almost 1,000 wildfire incidents ([UKHSA](#)).

More recently, during the widespread drought conditions experienced across England in summer 2026, a major incident was declared following a large wildfire at Dunwich Heath in Suffolk ([Suffolk County Council](#)). This



illustrates how prolonged periods of hot, dry weather can increase wildfire risk in Suffolk and contribute to poorer air quality through increased smoke and particulate matter emissions.

Airborne allergens and longer pollen seasons:

Warmer temperatures are expected to change the timing, type, and concentration levels of pollen, leading to earlier and longer growing and flowering seasons, and increasing health impacts from pollen ([UKHSA](#)). Pollen is an organic form of particulate matter that can impact air quality and can cause respiratory conditions such as hay fever and allergic reactions. Pollen can also bind with other air pollutants to further exacerbate allergies and increase respiratory impacts ([UKHSA](#)).

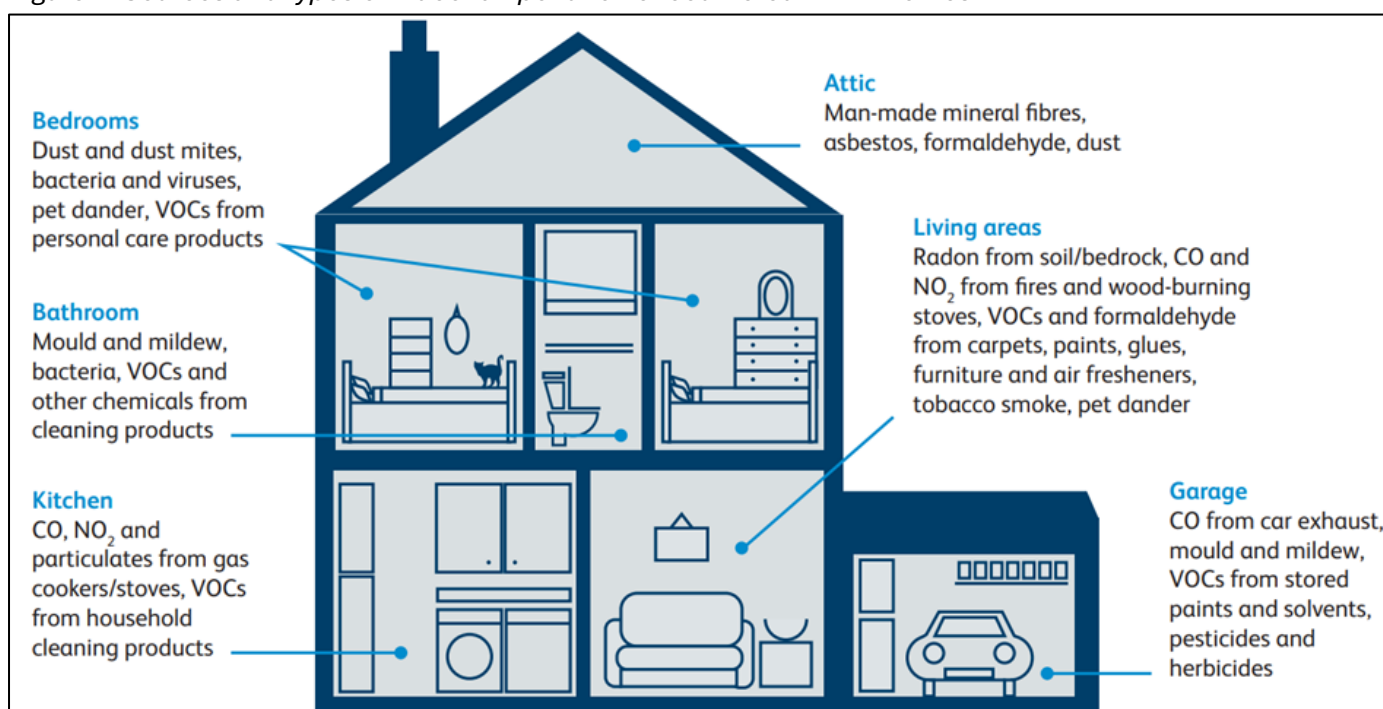
The health impacts of pollen can also be exacerbated by thunderstorms, which break pollen into smaller particles that can cause significant respiratory distress known as thunderstorm asthma ([UKHSA](#)). While this phenomenon is relatively rare, the warming trend in the UK is expected to increase the frequency and intensity of thunderstorms which, alongside an increase in pollen levels, may increase the frequency of thunderstorm asthma events ([UKHSA](#)).

Indoor air quality:

Indoor air quality is an important aspect of overall air pollution exposure and is closely linked to climate-related factors such as temperature, housing conditions, and ventilation. As outdoor air quality improves, the relative proportion of health impacts associated with indoor air pollution increases ([DHSC, 2022](#)). Since individuals spend between 80 and 90% of their time indoors, the quality of the air inside our homes, schools, offices, hospitals, and other public spaces can have a significant impact on our health ([UK Parliament, 2023](#)).

Indoor air quality can be impacted by pollutants released indoors from everyday activities such as heating and cooking (particularly with solid fuels), household cleaning and personal hygiene products, and smoking, as well as from pets, dust mites, furniture, and building materials ([AQEG, 2022](#)). This is shown in figure 2 below.

Figure 2: Sources and types of indoor air pollution encountered within homes



Source: [Royal College of Physicians](#)



Poor indoor air quality is also closely linked to poor quality housing and fuel poverty, both of which are affected by climate-related factors such as temperature extremes and changes in heating, ventilation, and energy use. Inadequate insulation, ventilation, and heating and cooking systems can worsen indoor air quality, particularly during cold temperatures. For example, carbon monoxide poisoning and issues arising from damp and mould are more likely to occur during cold spells, due to inadequate ventilation ([Suffolk Housing and Health Needs Assessment, 2024](#)).

Those in fuel poverty may also be more likely to burn solid fuels as an alternative source of heat (domestic burning); however this is a significant source of particulate matter that can negatively impact the air quality both indoors and outdoors ([Defra, 2022](#)). In addition to particulate matter, domestic burning emits a range of other pollutants including black carbon, volatile organic compounds (VOCs), and carbon monoxide, which have been linked to adverse respiratory and cardiovascular health outcomes ([UK Parliament POST](#)).

Interactions between indoor and outdoor air quality:

Outdoor air quality can also affect indoor air quality, with both positive and negative effects. When outdoor air quality is good, ventilation can improve indoor air quality by reducing pollution concentrations. However, when outdoor air quality is poor, for example, in areas close to roads with heavy traffic or affected by wildfire smoke, ventilation can allow ingress of outdoor pollutants inside, which can worsen indoor air quality. Poor quality housing is more likely to be situated close to roads with heavier traffic, and therefore those living in them are likely to be more exposed to both poor indoor and outdoor air quality ([AQEG, 2022](#)). Similarly, emissions generated indoors – such as from domestic burning – can also contribute to outdoor air pollution and affect the air quality for communities in the surrounding areas ([Global Action Plan](#)).

Health impacts of air pollution:

Air pollution is the greatest environmental risk to human health, and responsible for an estimated 30,000 deaths per year ([Royal College of Physicians, 2025](#)).

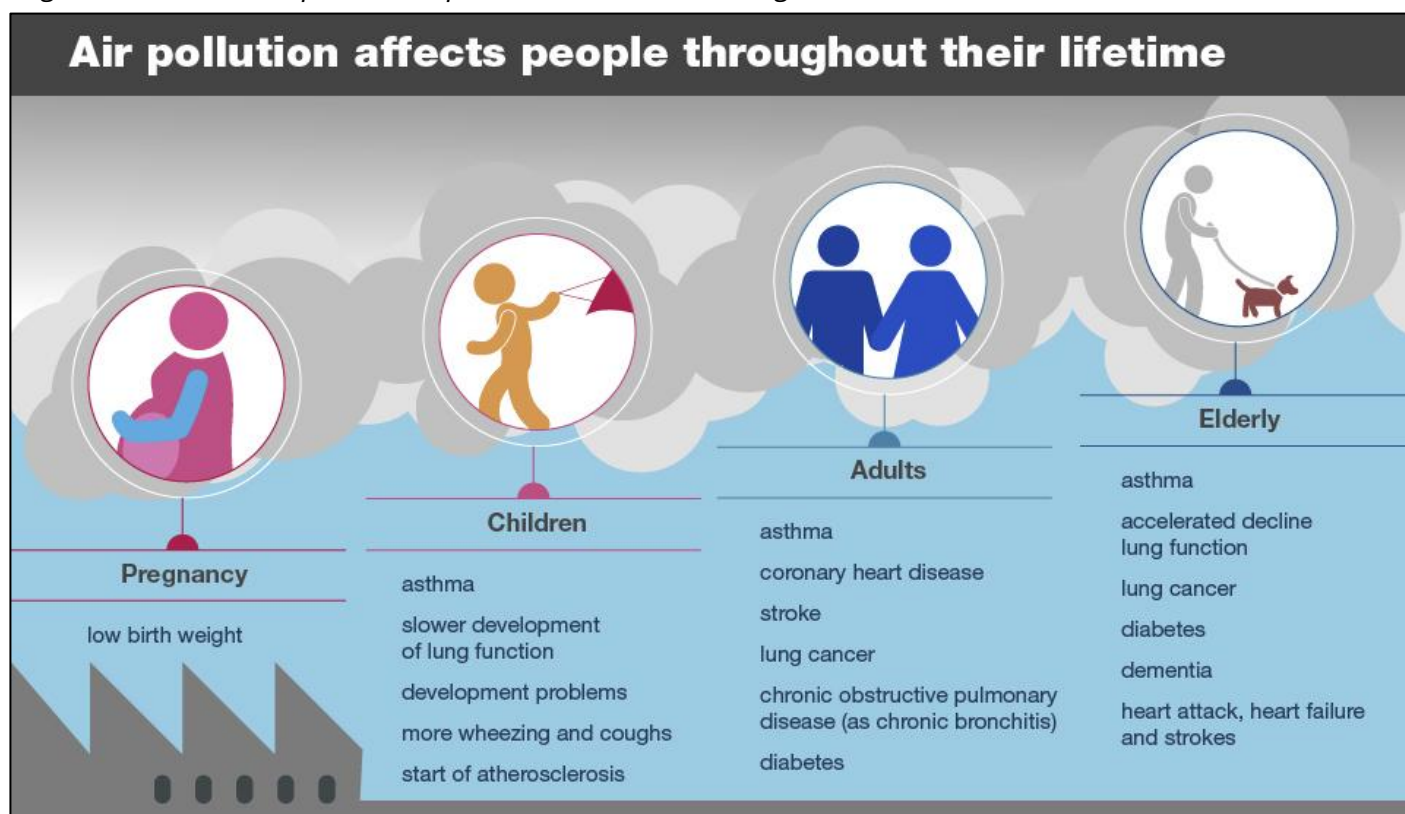
Long-term exposure to air pollution is associated with conditions such as cardiovascular and respiratory disease, lung cancer, low birth weight and premature birth, dementia, stroke, diabetes, and reduced life expectancy ([OHID, 2022](#)).

Short-term exposure to air pollution can exacerbate respiratory conditions such as asthma and Chronic Obstructive Pulmonary Disease (COPD). Children, older residents, pregnant people, and people with existing health conditions are more susceptible to air pollution-related diseases ([WHO](#)).

The air breathed each day shapes the health of Suffolk's residents across all stages of life, as shown in figure 3 below.



Figure 3: The health impacts of air pollution across all life stages



Source: [Public Health England](#)

While the UK has set regulations and targets for various pollutants, and levels are reducing, evidence suggests that for some pollutants – including particulate matter and nitrogen dioxide – there are no thresholds below which adverse effects do not occur ([WHO](#)).

Air pollution can also impact health and social care by increasing demand on health and social care services: exacerbations of respiratory conditions such as asthma and COPD create an estimated 20,000 hospital admissions annually in the UK ([Asthma and Lung UK](#)). The short-term and long-term health effects of air pollution are also estimated to be responsible for more than three million lost working days every year ([Global Action Plan, 2020](#)), leading to lost productivity. Similarly, children's school attendance can also be disrupted, impacting educational attainment and future employment potential ([Clean Air Fund](#)).

In 2019, the costs to the UK associated with health and social care, poor quality of life, and lost work productivity were estimated to be between £27billion and £50billion ([Imperial College London, 2025](#)). However, while the health impacts of air pollution are significant, exposure and associated risks can be reduced through a combination of preventative measures, early detection, and effective management of health conditions.

At-risk groups in Suffolk:

Although air pollution poses a health risk to everyone, some groups are more vulnerable to its effects ([OHID, 2022](#)). These groups include:

Older people, pregnant people, children and babies:

Evidence indicates that babies, children, pregnant people, and older adults (those aged 65 years and over) are more susceptible to the effects of air pollution ([Imperial College London](#)). As people age, lung function declines,



increasing the risks from air pollution in later life. Older people are also more likely to have pre-existing or chronic health conditions which are exacerbated by air pollution ([Public Health England](#)). Air pollution can suppress lung development in babies and young children, and can affect foetal development during pregnancy, leading to low birth weight and premature births ([Imperial College London](#)).

Suffolk births data indicates there were 6,583 live births in Suffolk in 2024 ([Nomis](#)). 2024 data also shows that when looking at term babies (Live births with a recorded birth weight under 2500g and a gestational age of at least 37 complete weeks), 3.0% of babies were recorded as having a low birth weight in Suffolk ([Fingertips](#)).

The 2024 mid-year population estimates that 21.3% (around 1 in 5) Suffolk residents were aged 0-19 years old, lower than the East of England (23.3%) and England (23.1%) but still equating to over 167,000 residents. The same estimates indicate 4.7% of the population are aged 0-4 years, equating to 37,000 children. This percentage is again lower than the East of England (5.3%) and England (5.2%).

Suffolk's population is older compared to other areas. Almost a quarter (24.2%) of the Suffolk population – about one in four people – is aged 65 years and over, which is higher than the East of England (20%) and England figures (18.7%) ([Suffolk Observatory](#)). Within Suffolk, East Suffolk (28.3%), Babergh (27%), and Mid Suffolk (25.3%) have the highest proportions of people aged 65 years and over. This means that Suffolk – particularly East Suffolk, Babergh and Mid Suffolk – may have a greater level of population risk related to air pollution than other areas.

Suffolk's population is also ageing: in 20 years, the proportion of those aged 65 years and over is predicted to increase to one in three people ([Suffolk in 20 years](#)). This means that the public health impacts associated with air pollution in Suffolk could increase in the future. More information on age data across Suffolk can be found in the temperature section.

Pre-existing health conditions:

Health conditions such as heart or respiratory disease can be exacerbated by poor air quality, therefore people with these conditions are particularly at risk of experiencing disproportionate health impacts of air pollution. Many areas within Suffolk have a statistically significantly higher prevalence of people with these conditions than the England average, which suggests that Suffolk may experience greater public health impacts associated with air pollution than other areas. For example:

- The prevalence of coronary heart disease (CHD) in Suffolk is 3.6% ([CHD: QOF prevalence 2024/25 – Fingertips](#)), which is statistically significantly higher than the England average (3.0%). Suffolk also has a higher prevalence than all county councils in the East of England region (except Norfolk, which has the same prevalence as Suffolk).
- The prevalence of asthma in Suffolk is 7.7% ([Asthma: QOF prevalence \(6+yrs\) 2024/25 – Fingertips](#)), which is statistically significantly higher than the England average (6.6%). Suffolk has the second highest prevalence of asthma of all county councils in the East of England region. Within Suffolk, all districts (other than Ipswich (6.7%), which is similar to England) have a statistically significantly higher prevalence of asthma than England (between 7.7% and 8.5%).
- The prevalence of Chronic Obstructive Pulmonary Disease (COPD) in Suffolk is 2.1% ([COPD: QOF prevalence 2024/25 – Fingertips](#)), which is statistically significantly higher than the England average (1.9%). Suffolk has the third-highest prevalence of COPD of all county councils in the East of England region. Within Suffolk, East Suffolk (2.5%) and West Suffolk (2.3%) both have a statistically significantly higher prevalence of COPD than England. Babergh (2.0%) and Mid Suffolk (1.9%) are similar to England. Ipswich (1.6%) is statistically significantly lower than England.



Table 1 below takes Quality and Outcomes Framework (QoF) data from 2024/25 for asthma, CHD and COPD at GP practice level in Suffolk. It identifies the 10 Suffolk GP practice areas with the highest prevalence of each condition, and highlights (in orange) when a GP practice has 2 or more prevalences in the top 10.

Analysis of this practice-level prevalence for asthma, CHD and COPD highlights that prevalence varies geographically across Suffolk, with several of the practices appearing in more than one top-ten list located in East and West Suffolk. These patterns may reflect a range of factors including demographic profile, underlying health need, and environmental exposure. Table 1 below provides further information about the top ten GP practices with the highest recorded prevalence of asthma, COPD or CHD.

Table 1: Top ten GP practices with the highest recorded prevalence of Asthma, CHD or COPD – Quality and Outcomes Framework (QoF) 2024-2025 in Suffolk

Shading: Purple = East Suffolk, Green = West Suffolk, Grey = Mid Suffolk, Blue = Babergh

GP	Local Authority	Nearest town / large settlement	Asthma %	CHD %	COPD %
Hadleigh Boxford Group Practice	Babergh	Hadleigh	9.8		
Bridge Road Surgery	East Suffolk	Oulton Broad / Lowestoft	9.5	4.5	3.2
Stanton Surgery	West Suffolk	Stanton (near Bury St Edmunds)	9.2		
Debenham Group Practice	Mid Suffolk	Debenham	9.2		
Glemsford Surgery	Babergh	Glemsford (near Sudbury)	9.2		3.1
Wickhambrook Surgery	West Suffolk	Wickhambrook	9.2		
Longshore Surgeries	East Suffolk	Kessingland (Lowestoft area)	9.1	5.4	3.2
Botesdale Health Centre	Mid Suffolk	Botesdale (near Diss)	9.1		
Woolpit Health Centre	Mid Suffolk	Woolpit (near Stowmarket/Bury St Edmunds)	9.1		
Ixworth Surgery	West Suffolk	Ixworth (near Bury St Edmunds)	8.9		
The Peninsula Practice	East Suffolk	Alderton (near Woodbridge)		5.5	
Grove Medical Centre	East Suffolk	Felixstowe		5.3	
Forest Surgery	West Suffolk	Brandon		5.1	4.6
Howard House Surgery	East Suffolk	Felixstowe		5.0	
Beccles Medical Centre	East Suffolk	Beccles		4.9	
Sole Bay Health Centre	East Suffolk	Reydon / Southwold		4.8	
Cutlers Hill Surgery	East Suffolk	Halesworth		4.6	
Little St John Street Surgery	East Suffolk	Woodbridge		4.6	
High Street Surgery	East Suffolk	Lowestoft			4.0
Andaman Surgery	East Suffolk	Lowestoft			4.0
Kirkley Mill Health Centre	East Suffolk	Lowestoft			3.3
Alexandra & Crestview Surgeries	East Suffolk	Lowestoft			3.3
Brandon Medical Practice	West Suffolk	Brandon			3.1
Victoria Road Surgery	East Suffolk	Oulton Broad / Lowestoft			3.1
England Prevalence			6.6	3.0	1.9

Source: QoF taken from [Suffolk Place Based Needs Assessments](#) (PBNA)



Socioeconomic deprivation, housing quality, and fuel poverty:

People experiencing socioeconomic deprivation are more likely to be exposed to poor air quality, and experience greater health impacts as a result ([Public Health England](#)). This is because they are more likely to live, work or study in areas of higher outdoor air pollution, such as close to busy roads or in areas of high housing density ([University of York](#)), and more likely to live in poor quality housing which has inefficient heating, insulation, ventilation, or cooking systems that worsen their indoor air quality ([Ferguson et al, 2021](#)).

The latest Index of Multiple Deprivation (IMD) 2025 data shows that Suffolk remains relatively less deprived compared to England. While Suffolk is relatively less deprived than England overall, 23 LSOAs are among the most deprived 10% nationally and are concentrated in Ipswich, Lowestoft, and Stowmarket. More broadly, 53 LSOAs fall within the most deprived 20% nationally (including the 23 areas in the most deprived 10%), and are located in parts of Ipswich, Lowestoft, Beccles, Felixstowe, Stowmarket, and Bury St Edmunds ([Healthy Suffolk – Indices of Deprivation 2025](#)). This suggests that there are areas within Suffolk that are likely to have higher public health need associated with air quality than other areas.

Those in fuel poverty may also be more likely to burn solid fuels for heating or cooking, which is a major source of particulate matter. Overall in Suffolk, 11.1% of households currently live in fuel poverty, which is slightly lower than England (11.4%). However, East Suffolk (11.8%), Ipswich (11.5%) and Babergh (11.4%) have the highest rates of fuel poverty in Suffolk ([Fuel poverty \(low income, low energy efficiency methodology\), 2023 – Fingertips](#)). Poor quality housing, which is often associated with inadequate heating, insulation, and ventilation, can also worsen indoor air quality and increase the risk of damp and mould, further exacerbating negative health impacts. The [Suffolk Housing and Health Needs Assessment \(2024\)](#) estimates that more than 12,600 households in Suffolk experience damp and mould problems.

Ethnic minority status:

Research shows that some ethnic minority groups are more likely to be exposed to higher levels of air pollution, regardless of their level of socioeconomic deprivation. This is partly because these populations are more likely to live in urban areas, near major roads, or in locations where pollution associated with road traffic or domestic combustion tend to be higher ([National Centre for Atmospheric Science](#)). While Suffolk has a lower proportion of residents from ethnic minority groups (12.7%) compared to England and Wales (25%), there are some MSOAs across Suffolk – in areas such as Ipswich, Newmarket, and Bury St Edmunds – where populations are more diverse ([Healthy Suffolk](#)). These patterns are important in understanding how air pollution-related health risks may be distributed across different communities. Climate-related effects on air quality may compound existing inequalities over time.

Health and social care, and educational settings:

Workplaces in any sector which are located in an area of poor outdoor air quality pose a health risk to those working within them. However, health and social care or educational settings are more likely to have a higher proportion of people who are at particular risk of health impacts from air pollution (e.g. patients already experiencing poor health, or the very old, or children).

Particulate matter and inequalities in exposure

This section focuses primarily on PM_{2.5} (fine particulate matter) as a key indicator of air quality and health risk. However, it is important to note that many other pollutants—such as nitrogen dioxide (NO₂), ozone, carbon monoxide, and airborne allergens—also contribute to health impacts and are likely to follow the same pattern of increasing inequalities in the future. The emphasis on PM_{2.5} is intended to simplify presentation and reflect available data but does not set out to capture the full complexity of air pollution either nationally or in Suffolk.



Particulate matter (PM_{2.5}) is already a key driver of health inequalities. Although average exposure has fallen, exposure is not distributed equally. People experiencing greater deprivation are more likely to live close to major roads or in areas of higher housing density, where emissions from transport, heating and other sources may be greater. Climate-related changes, including rising temperatures, more frequent heatwaves, drought conditions, and wildfire smoke may increase PM_{2.5} levels and exposure, potentially amplifying existing inequalities over time ([National Centre for Atmospheric Science](#)). Those living close to busy roads, in poor quality housing, or with fewer resources to adapt to these environmental changes, are therefore likely to be disproportionately affected.

In a 2024 report the [Institute for Fiscal Studies \(IFS\)](#) noted that air pollution in England, specifically levels of PM_{2.5} (tiny particles - smaller than 2.5 micrometres that penetrate deep into the lungs), had halved since 2003., but that inequalities in exposure still persist. The same report found:

- **Ethnic minorities** were still exposed to levels of air pollution 6% higher than average levels for White populations in 2023, but this was down from 13% in 2003 – partly due to ethnic minorities moving away from polluted areas, and because areas with large ethnic minority populations have experienced substantial reductions in air pollution.
- **Lower-income areas** have persistently higher levels of air pollution than more affluent areas. In 2023, individuals in the top 20% most deprived areas experienced 8% higher average PM_{2.5} concentrations than those in the bottom 20%. However, there is no clear trend in this gap over the last two decades.
- **Almost everywhere in England is now below England's 2040 target for PM_{2.5}** – but this is still falling short of the WHO's recommended limit. 96% of people still live in areas above the WHO's more stringent recommended limit.

2024 research from the [Health Foundation](#) also indicated:

- **Younger people** are more likely to live in neighbourhoods with higher air pollution levels, compared with older people.
- **Non-disabled people** are slightly more likely than disabled people to live in the neighbourhoods with the highest levels of air pollution.

The IFS report also provided MSOA level analysis on exposure to PM_{2.5} concentrations and change between 2003 and 2023 (see Table 2 below). The data indicates that, consistent with national findings, estimated PM_{2.5} exposure decreased across Suffolk over this period, although geographical variation remains. Internal analysis matched these MSOAs to their Index of Multiple Deprivation 2025 decile, where decile 1 is the most deprived, and identified a modest association between higher deprivation and higher mean PM_{2.5} exposure.

Table 2: Top 10 MSOAs in Suffolk with the highest PM_{2.5} exposure in 2023 with IMD decile (2025)

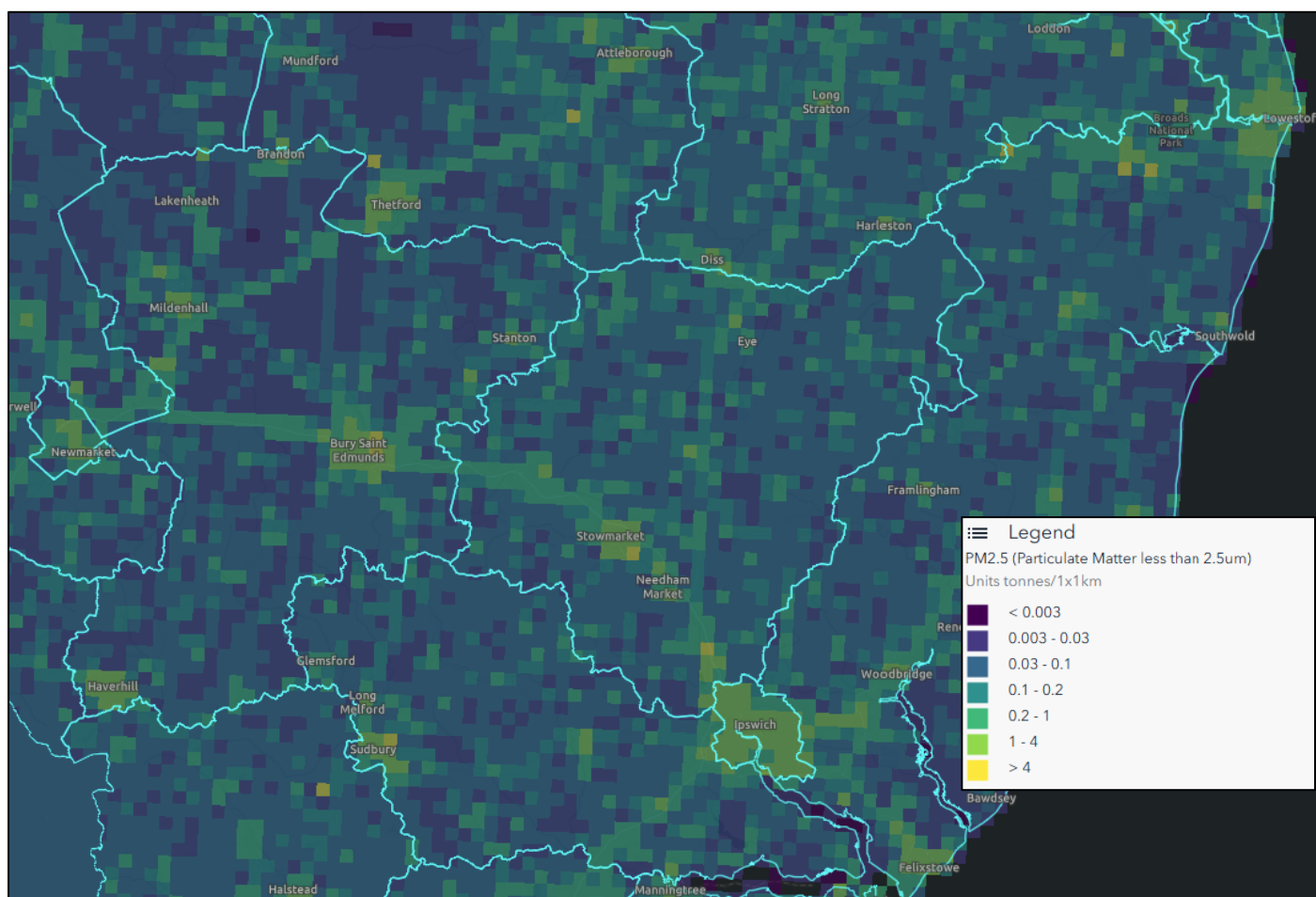
MSOA code	Name	Postcodes	2003	2023	IMD Decile 2025
E02006250	Westgate Ipswich	IP1	16.4	7.6	2
E02006251	Ipswich Central Ipswich	IP11, IP7, IP8, IP10, IP2, IP5, IP4, IP3, IP1, IP6, IP9	16.2	7.6	3
E02006252	California Ipswich	IP5, IP3, IP4	15.9	7.6	7
E02006254	Gipping & Chantry Park Ipswich	IP2, IP1	16.1	7.5	2
E02006247	Whitehouse Ipswich	IP1, IP8	15.9	7.5	3
E02006246	Castle Hill Ipswich	IP1	15.9	7.5	9
E02006305	Lowestoft Central Waveney	NR32	15.1	7.4	1
E02006255	Holywells Ipswich	IP3	16.0	7.4	6
E02006277	Moreton Hall St Edmundsbury	IP33, IP32, IP28, IP29, IP30, IP31	15.8	7.4	10
E02006278	Bury St Edmunds Central St Edmundsbury	IP33, IP31, IP29, IP30, IP28, IP32	16.0	7.4	6

Source: [IFS](#)



Separately, Figure 4 presents estimated PM_{2.5} emissions by 1 km² grid square. It shows higher estimated emissions around some urban areas and sections of the main road network, including the A12 and A14. This provides local context for one of the possible pathways through which inequalities in exposure may arise, particularly where communities experiencing greater deprivation are located close to significant emission sources.

Figure 4: Estimated PM_{2.5} emissions in Suffolk, by 1x1km grid square, 2023 (note: purple & blue shading indicate relatively lower levels of PM_{2.5} emissions, while yellow shading indicates relatively higher levels of PM_{2.5} emissions)



Source: [National Atmospheric Emissions Inventory \(NAEI\)](#)

Conclusion:

Air quality is a key pathway in which a changing climate will directly affect people's health in Suffolk. While air quality in Suffolk has improved over recent years, with most areas now meeting national standards for key pollutants, climate-related changes may offset some of this progress by increasing the frequency and severity of factors that worsen air quality. Ipswich has the highest level of NO₂ and PM_{2.5} within Suffolk, while areas of East Suffolk contain populations with comparatively high prevalence of some respiratory and cardiovascular conditions. These overlapping factors may contribute to additional levels of risk.

The changing climate is expected to exacerbate several drivers of poor air quality in Suffolk, including higher temperatures, more frequent heatwaves, longer pollen seasons, drought-related dust, and an increased risk of wildfire smoke. These changes have the potential to increase exposure to air pollutants and airborne allergens,



particularly for groups that are already more vulnerable, such as older people, children, those with pre-existing health conditions, and people living in more deprived communities. Existing health inequalities are expected to widen as a result of a changing climate, unless action is taken.

Evidence shows that more deprived communities and some ethnic minority groups are at greater risk of both outdoor and indoor air pollution. These factors intersect with the changing climate, as both hot and cold extremes can worsen indoor air quality and disproportionately affect those living in poorer quality housing.

In summary, while air pollution emissions are reducing, changing environmental conditions are likely to continue to influence air quality in Suffolk through a range of pathways. These changes have implications for population health, service demand, and wider resilience. Addressing air quality alongside these environmental changes provides an opportunity to improve health outcomes, reduce inequalities, and support more resilient communities and local systems.

Further local information on air quality in Suffolk:

A number of local documents and resources provide further detail on air quality in Suffolk, including:

- the [Suffolk Air Quality Profile](#) (2021)
- [The Suffolk County Council Air Quality Strategy](#) and Action Plan (2023, updated in 2025).
- Dedicated [air quality resource on the Healthy Suffolk website](#)