

Fine particulate matter air quality targets

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Cystic fibrosis

Cystic Fibrosis Trust is the only UK-wide charity uniting people to stop cystic fibrosis. We fund vital research, improve care, speak out and race towards effective treatments for all. We won't stop until everyone with cystic fibrosis can live without limits.

Cystic fibrosis (CF) is a life-limiting, genetic condition. It impacts physical and mental health and has no cure, affecting over 11,300 people in the UK and, since 2015, around 250-300 patients have been diagnosed with CF every year¹. Despite medical advancements in recent years, in 2023 the median age of death for those with CF was just 46 years old.

Cystic fibrosis affects people with the condition in many ways throughout their lives. The condition primarily affects the lungs and digestive system, causing them to become clogged with thick, sticky mucus. Those living with CF cannot meet each other face to face, due to the risk of cross infection.

Exposure to some types of indoor air pollution, including second-hand smoke and forced hot air has been associated with poorer clinical outcomes in people with CF, compared to people with CF who were not exposed. Higher levels of some outdoor air pollutants have been associated with poorer clinical outcomes in people with CF, including a higher risk of lung disease exacerbations, a faster reduction in lung function and a higher likelihood of acquiring bacteria that can cause serious infections.

As well as affecting you physically, CF affects you financially, with the typical family with CF losing nearly £6,800 per year as a result of necessary extra spending to stay well and having to make different employment decisions.² The inherent cost of CF is only complicated by workplace barriers, with our findings showing that 44% of adults with CF report discrimination in work or job applications and 35% have lost or left a job because of their health.

¹ [UK Cystic Fibrosis Registry 2023 data highlights](#)

² [The Cost of Cystic Fibrosis](#)

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New Proposals for Consultation Questions

Question 1a: To what extent do you agree with the level of ambition proposed for the Annual Mean Concentration Target (AMCT)?

- ☒ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

Question 1b: Please explain your answer.

Cystic Fibrosis Trust strongly support the introduction of a legally binding annual mean concentration target for PM2.5. Evidence summarised in our 2025 review demonstrates that exposure to higher levels of outdoor air pollutants is associated with:

- Faster rates of lung function decline
- Increased likelihood of pulmonary exacerbations
- Greater risk of acquiring or becoming colonised with pathogens such as MRSA, *Pseudomonas aeruginosa* and NTM

For example, higher PM2.5 exposure has been associated with increased risk of acquisition of MRSA and *P. aeruginosa* in children with CF. These infections can significantly worsen long-term outcomes and are often difficult to treat.

Given that CF lung disease is progressive and cumulative, even modest reductions in background PM2.5 concentrations are likely to yield meaningful health benefits over time. We encourage the Welsh Government to maintain ambition and keep the target under review in light of emerging evidence and WHO guidance.

Question 2a: To what extent do you agree with the level of ambition proposed for the Population Exposure Reduction Target (PERT)?

- ☒ Strongly agree

- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

Question 2b: Please explain your answer.

Cystic Fibrosis Trust strongly support the inclusion of a Population Exposure Reduction Target. A population-level approach is essential to ensure improvements are experienced across all communities, including those living near major roads or in urban areas where exposure may be higher.

Residential proximity to major roads and higher pollution levels as environmental factors associated with adverse CF outcomes. Built environment factors have also been linked to rapid lung function decline.

A population exposure reduction target is therefore vital to:

- Address environmental health inequalities
- Reduce cumulative exposure in vulnerable groups
- Protect children and young people with CF, who face lifelong respiratory risk

We would welcome clarity on how reductions will be distributed geographically and how high exposure and high-risk communities will be prioritised.

Question 3a: To what extent do you agree with the proposed arrangements for assessing PM_{2.5} levels and achievement of the targets?

- ☐ Strongly agree
- ☒ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

Question 3b: Please explain your answer.

We broadly agree with the proposed monitoring arrangements. Robust and transparent monitoring is essential for accountability.

However, there are gaps in evidence regarding precise environmental exposure measurement in CF populations. We therefore encourage:

- Continued investment in geographically monitoring
- Integration of pollution data with health outcome surveillance
- Public access to clear, real-time air quality information

Improved data collection will also support future research into how PM2.5 reductions translate into health gains for people with CF.

Question 4a: To what extent do you agree with the provision in the draft regulations to allow the subtraction of the 'natural contribution' to particulate matter where exceedances of a target are due in whole or in part to these natural contributions?

- ☐ Strongly agree
- ☐ Agree
- ☒ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

Question 4b: Please explain your answer.

Cystic Fibrosis Trust recognises the technical rationale for distinguishing between anthropogenic and natural sources when assessing regulatory compliance.

However, from a health perspective, total exposure is what matters. PM2.5, regardless of source, contributes to adverse outcomes in vulnerable individuals.

Any subtraction of "natural contributions" must therefore:

- Be based on transparent and scientifically robust methodology
- Not dilute overall ambition
- Not delay protective action where population health is at risk

Public health protection should remain the primary objective.

Question 5: We have asked some specific questions. If you have any other relevant thoughts or comments on our proposals, please provide them here.

There is a clear association between poorer air quality and increasing morbidity in people with CF .

While individual-level mitigation strategies exist (e.g., monitoring alerts, avoiding peak pollution periods), there is a need for interventions that can protect individuals from environmental exposure. There is a need for Government level policy interventions.

We therefore recommend that PM2.5 targets are supported by:

- Strong cross-government delivery plans (transport, housing, planning and energy policy)
- Expansion of air quality alert systems accessible to vulnerable groups
- Explicit recognition of people with chronic respiratory conditions, like CF, in implementation strategies
- Alignment with broader climate mitigation efforts, given the interaction between climate change and air quality

For people with cystic fibrosis clean air is essential, it is a determinant of lung function, infection risk and life expectancy.

We would welcome ongoing engagement with Welsh Government as these regulations are finalised and implemented.

Responses to the consultation may be published. Your response will be anonymous

However, if you would like your name to be published alongside your response, please tick the box.

☐ I agree to my name being published alongside my response to this consultation.