

# Climate and health

Rising to the mental health  
challenge of climate change



## **Climate and health: rising to the mental health challenge of climate change**

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### **Green Alliance**

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# Summary

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**Many assume the issue centres on ‘climate anxiety’ but the range of mental health impacts is much wider.”**

The UK is already experiencing the effects of climate change. It is disrupting lives, livelihoods and affecting people’s physical health. But the toll it takes on our mental health is under reported and significant.

When the relationship between climate change and mental health is discussed, many assume the issue centres on ‘climate anxiety’ but, while this is a problem, the range of mental health impacts is much wider.

Climate change and extreme weather events like flooding and heatwaves can increase levels of psychological distress in the UK, causing some to develop serious problems such as post-traumatic stress disorder (PTSD) and depression. The impacts of climate change can also worsen symptoms of existing mental health conditions, leading to surges in demand for psychiatric care, as well as affecting the performance of healthcare facilities and medication.

Such problems are only likely to increase in severity and frequency as global temperatures continue to rise and the UK is not well prepared to deal with them.

Treatment of mental health issues is already comparatively under resourced in the NHS. Without greater acknowledgement by the government of climate change's growing threat to society and the resilience of the economy, people in the UK will increasingly suffer the consequences.

To guard against this and ensure the population's mental health is not undermined, policy makers need to do more to incorporate it into their emergency and climate adaptation planning.

We recommend the government focuses on three main actions:

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Improving understanding of the links between climate change and mental health.

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Embedding consideration of mental health into local and national climate adaptation plans.

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Including mental health in the UK's international climate commitment.

# The risks are being ignored

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**Coping with the unexpected financial strains of devastating damage to homes or businesses can lead to stress and depression.”**

Climate change is a ‘threat multiplier’. While physical health risks of rising global temperatures are now apparent, from a peak in heat related deaths when temperatures in the UK first exceeded 40°C in the summer of 2022, to the increased global spread of infectious diseases, mental health impacts are less frequently recognised. But a growing body of research suggests that, among its many impacts on society, climate change is directly harming people’s mental health in a range of ways.

Feelings of grief, anger and anxiety are increasingly being reported as awareness of the climate crisis grows. This has been called ‘climate anxiety’ or ‘eco anxiety’. Researchers say it is linked to a perceived lack of agency and the inadequate response of governments to the unfolding emergency. For most people, this is a normal, adaptive emotional response.

However, for some, it can go further and lead to significant levels of psychological distress or impaired functioning, requiring support.

Extreme weather can cause a range of mental health problems and worsen pre-existing conditions. Losing treasured belongings in floods and coping with the unexpected financial strains of devastating damage to homes or businesses can lead to stress and depression.<sup>1</sup> The average cost of flooding to a home in England is estimated at around £30,000 and those affected can wait many months to return home or may be displaced from their communities.<sup>2</sup>

**“  
Those with  
existing mental  
health problems  
or a lack of social  
support, are more  
vulnerable.”**

Some groups are more at risk of developing mental health problems during extreme weather events. Risk factors include the severity of the disaster and whether people witnessed a traumatic incident. Women, people of lower socioeconomic, minority or ethnic status, as well as those with existing mental health problems or a lack of social support, are more vulnerable.<sup>3,4</sup>

Some medications for mental health problems can affect the body's ability to regulate temperature, making it more difficult to cope with extreme heat. Heatwaves are associated with an elevated risk of suicide.<sup>5</sup> Extreme heat also hinders educational attainment, lowering lifetime earning potential which can, in turn, increase the risk of mental health problems.<sup>6,7</sup>

Despite a growing body of evidence, these risks are still regularly overlooked. In the course of our research we identified major gaps in understanding. More research is needed, for instance, into mechanisms through which events like heatwaves create mental health problems and the combined psychological effects of factors like heat, humidity and air pollution. The extent to which mental health treatment and support is being adapted to a changing climate and adequately targeted at higher risk groups also warrants further research.

**See the annex on page 18 outlining the direct and indirect mental health impacts of climate change.**

# Our weather is changing



Global surface temperatures have already increased by at least 1.1°C above pre-industrial levels (measured as an average between in 2011-2020) and are pushing towards the 1.5°C globally agreed threshold of the 2015 Paris Agreement.<sup>8</sup>

The UN estimates that the world is currently on track for between 2.5°C and 2.9°C global temperature rise by the end of the century if existing climate action pledges are met. There is a risk that temperature rises could be significantly higher.<sup>9</sup>

Globally, 2023 was the hottest year ever recorded by a significant margin. In 2023, the Northern Hemisphere experienced its warmest summer in 2,000 years.<sup>10,11</sup>



# How climate change can affect mental health



# Impacts are wide ranging

## Impaired sleep and cognitive function

Overheating reduces sleep quality, leading to impaired cognitive function.<sup>12</sup>

## Increased suicide risk

For every 1°C above 18°C, there is a 2.8 to five per cent increase in the incidence of suicide.<sup>13</sup>

## Higher hospital admissions and mortality

There are more hospital admissions due to psychotic episodes at higher temperatures and a higher risk of mortality during heatwaves (although the reasons for this are not well understood).<sup>14,15,16,17,18</sup>



## Impact on those with dementia

Residents of nursing homes suffer greater agitation and disruptiveness at high temperatures, with a 4.5 per cent increase in dementia related admissions to hospital with every 1°C increase above 17°C. These heat related admissions are predicted to rise 300 per cent by 2040.<sup>19</sup>

## Medicines and heat

Impairment in the body's thermoregulation and, therefore, ability to cope with heat, can be caused by medicines like tricyclic antidepressants and some antipsychotics.<sup>20</sup> Most medicines, including those taken for mental health problems, should be kept below 25°C, which becomes more difficult in a hotter climate.<sup>21</sup>

### **Educational attainment**

There is a ten per cent lower likelihood of students passing an exam at 32°C than at 22°C degrees.<sup>22</sup> Poorer education outcomes have been linked to long term impacts on earning potential across a lifetime, which in turn can affect mental health long term.<sup>23</sup>



### **Alcohol and substance misuse**

Extreme heat events correlate with higher hospital admissions from alcohol and substance misuse.<sup>24</sup>

### **Anxiety, anger and depression**

There is evidence of an increase in both psychiatric and neurological problems following extreme weather events in the UK. Property damage, displacement and dealing with the effects of extreme weather, especially of recurrent episodes like flooding, can be a significant

mental and financial burden, causing PTSD, depression, anxiety and alcohol abuse.<sup>25,26</sup> Extreme heat coincides with an increase in aggression, which can lead to domestic violence and crime.<sup>27</sup>

# Unequal vulnerability

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**Half of the poorest households in England live in properties likely to overheat.”**

Mental health problems in the UK are linked to inequality. People living in the most deprived areas of England are twice as likely to be in contact with mental health services than those living in the least deprived areas.

Black and minority ethnic communities in Britain are two and a half times more likely to experience poverty than white people, rising to 2.7, 3.3 and 4.2 times more likely among black, Pakistani and Bangladeshi people, respectively.<sup>28</sup>

Extreme weather impacts can exacerbate these inequalities. They disproportionately affect the physical, economic and mental health of those with existing health conditions and those on low incomes or living in poverty, who are less able to prepare, respond and recover.

Half of the poorest households in England live in properties likely to overheat, three times more than the wealthiest households.<sup>29</sup> In 2020, low income households were eight times more likely to live in tidal floodplains than more affluent households.

Social and private renters with limited financial means have little power to adapt their homes and 61 per cent of low income renters have no contents insurance, making them vulnerable to the financial impacts of flooding.

Homeless people are particularly susceptible. Being without shelter and unable to adapt temporary accommodation like tents or vehicles can make them prone to overheating. In addition, half of rough sleepers have existing mental health problems which can be made worse by exposure to extreme heat.<sup>30,31</sup>

Like housing, the state of public buildings, including schools and prisons, can play a significant role in determining the level of heat exposure.<sup>32,33,34</sup> Recent analysis found more than three quarters of prisons in England and Wales face a ‘high risk’ of overheating in summer over the next 15 years.<sup>35</sup> There is an association between extreme heat and greater suicide risk among prisoners.<sup>36</sup> Half of prisons also face ‘high’ and 41 per cent face ‘very high’ flooding risk over the next 15 years.



# Action needed



# The UK is unprepared

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**The UK is not acting fast enough to manage the risks.”**

Mental health impacts of rising global temperatures are recognised by the Intergovernmental Panel on Climate Change, but global action has been slow, including by the UK. The UN’s annual climate negotiations only included a health day in the official agenda for the first time in 2023. Just five out of the 193 climate action plans (Nationally Determined Contributions) that countries submitted under the Paris climate agreement mention mental health. The UK has not referenced the issue in its action plan submitted to the UN.<sup>37,38</sup>

The UK has taken a lead in bringing down its carbon emissions. By contrast, its progress on preparing for and adapting to the inevitable impacts of climate change has been poor. The Climate Change Committee, which reports to parliament on the government’s progress in reducing emissions and adapting to climate change, has warned the UK is not acting fast enough to manage the risks. Under the UK’s Climate Change Act, the government is required to produce a risk assessment and publish a National Adaptation Programme (NAP) every five years. The NAP3 covers the period 2023 to 2028 but makes no mention of mental health.<sup>39</sup>

This is reflected in parliamentary discourse. A 2022 analysis of UK parliamentary debates showed that speeches by MPs and peers rarely made the link between climate change and mental health. Between 1995 and 2020, only 41 speeches in parliament linked the issues, out of a total of 20,000 speeches made either on mental health or climate issues.<sup>40</sup> Those that did make the connection were largely concerned with flooding and anxiety.

On flooding, local authorities have tended to focus on incident management, with few supporting residents with long term mental health impacts.<sup>41</sup>

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**The UK Health Security Agency identified mental health as an area that needed more research.”**

However, there have been positive developments. More is beginning to happen in government departments and agencies. The UK Health Security Agency is working in partnership with academics to understand the health impacts of climate change and it has been charged with ensuring government bodies in England have a joined up response to environmental hazards, although there is limited evidence of success so far. The agency's third report on the health effects of climate change identified mental health as an area that needed more research.<sup>42</sup>

The Department for Environment Food and Rural Affairs (Defra) and the Environment Agency have started costing the impacts of flooding and coastal erosion on mental health. In 2020, the Environment Agency launched a campaign to highlight these impacts. It published guidance for those living in risk areas to help them prepare for and minimise harms from flooding. In 2021, the former Department for Levelling Up, Housing and Communities (now the Ministry for Housing, Communities and Local Government) considered mental health and wellbeing in its appraisal of grant-in-aid government funding applications for flood recovery.

In a changing climate, as extreme weather events become more frequent and severe, more people in the UK will need mental health and psychosocial support, which the government must prepare better for.



# A cost that can't be ignored

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**Climate change puts even higher demand on already stretched services.”**

An inadequate policy response to the influence of climate change on mental health reflects the wider inequality that exists between mental and physical healthcare and the funding they receive.

In 2016, mental health problems accounted for nearly a third of NHS England's disease burden but only 13 per cent of its spending.<sup>43</sup> In recent years, the situation is likely to have worsened as mental health services have struggled to cope with the greater demand caused by the Covid-19 pandemic and rising costs from inflation.<sup>44</sup>

## **The economic cost of mental health problems**

Mental health problems cost the UK an estimated £180 billion in 2022 in care costs, sickness absence, staff turnover and unemployment.<sup>64</sup> This cost exceeded the entire NHS budget for England of £153 billion in the same year, with some of the cost borne by stretched local authorities.

The state of mental health services is already a major concern. The most recent government survey of Mental Health and Wellbeing in England was ten years ago, in 2014. It found one in six people aged 16 and over had experienced symptoms of a common mental health problem.<sup>45</sup> As these problems are under reported, this was likely to be an underestimate.

Climate change puts even higher demand on already stretched services, while reducing the system's ability to cope and respond. Damage to infrastructure from extreme weather can disrupt emergency responses and mental health service provision, increasing the burden on informal societal support and charities, which may not be able to meet rising demands.<sup>46</sup>

# Building resilience

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**The health challenges created by climate change have to be met if the government is to futureproof the NHS.”**

The government was elected in July 2024 on a manifesto with five missions for national renewal. One of those was health, with a pledge to create an NHS fit for the future and ensure that mental health is given the same level of care and attention as physical health. To fulfil that mission, the government and its agencies will need to pay much more attention to the significant and rising health impacts of climate change across different areas of policy making, and that must include mental health.

The health challenges created by climate change have to be met if the government is to futureproof the NHS. By integrating mental health considerations into emergency planning and national and local adaptation strategies, the government and local authorities can build resilience, reduce inequalities and better protect those communities most vulnerable to climate impacts.

# How to improve the response

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**Local leaders should be enabled to develop their own adaptation plans, including around mental health risks.”**

## **Increase understanding of the links between climate change and mental health**

Although there is clear evidence of the impacts of climate change on mental health, there are still significant knowledge gaps. More research is needed into the links and effective solutions.

## **Include mental health in emergency response strategies**

Responses to flooding and other extreme weather caused by climate change often focus on avoiding loss of life or damage to property, rather than the longer term mental health problems they can cause. National government, government agencies and local policy makers should develop responses that include suitable support to help people recover and avoid long term problems.

## **Embed mental health in local and national climate adaptation plans**

The UK has no plan to address, mitigate or build resilience to the growing impacts of climate change on the nation's mental health. The National Adaptation Programme should consider this as part of UK disaster risk reduction and preparedness more broadly and local leaders should be enabled to develop their own adaptation plans, including around mental health risks.

## **Make an international commitment**

The government should step up its commitment to act by integrating action on mental health into the UK's next Nationally Determined Contribution, as countries like Albania and Saint Kitts and Nevis have already done.

# Annex

## Direct and indirect mental health impacts of climate change

Heatwaves	
Direct impacts	
Impaired sleep and cognitive function	Sleep deprivation from worsening sleep quality and quantity leading to impaired cognitive function. <sup>47</sup>
Increased risk of suicides and suicidal behaviour	For every 1°C above 18°C, there is a 2.8 to five per cent increase in the incidence of suicide. <sup>48</sup>
Exacerbation of psychotic disorders	Increased hospital admissions at higher temperatures and higher risk of mortality during heat waves (although reasons for this are not well understood). <sup>49,50,51,52,53</sup>
Impact on those with dementia	Agitation and disruptiveness in nursing homes. 4.5 per cent increase in risk of dementia admission with every 1°C increase above 17°C, with heat related admissions predicted to increase by 300 per cent by 2040. <sup>54</sup>
Impacted physiology of individuals with pre-existing mental illnesses	Impairments in thermoregulation caused by certain medicines such as tricyclic antidepressants and some antipsychotics. <sup>55</sup>
Indirect impacts	
Lower educational attainment	There is a ten per cent lower likelihood of students passing an exam at 32°C than at 22°C degrees.
Medical storage issues	Most medicines, including those taken for mental health problems, should be kept below 25°C, which will become more difficult in a hotter climate. <sup>56</sup>
Alcohol and substance misuse	Extreme heat events correlate with an increased risk of hospital admissions from alcohol and substance misuse. <sup>57</sup>
PTSD, depression, anxiety and stress caused by extreme events	Although less common than from storms, property damage, making repairs and dealing with insurers following damage caused by extreme heat or wildfires can be a significant mental and financial burden. <sup>58</sup>
Crime and violence	Hotter temperatures as associated with an increase in crime, aggression and domestic violence. <sup>59,60</sup>

## Floods and storms

### Direct impacts

Depression, anxiety, PTSD and substance and alcohol abuse from witnessing severe events

Flooding is likely to increase the risk of developing or worsening symptoms.<sup>61</sup> There is evidence demonstrating an increase in both psychiatric and neurological problems following damaging extreme weather events in the UK. Recurring disasters, such as being flooded multiple times, have a bigger psychological impact.<sup>62</sup>

### Indirect impacts

Depression, anxiety and PTSD from temporary or permanent forced displacement caused by flooding.<sup>63</sup>

Flooding often results in residents having to move out of their homes, displacing them from their community. This can put a strain on relationships.

PTSD, depression, anxiety and stress caused by dealing with the aftermath of flooding.

Property damage, making repairs, dealing with insurers and disrupted access to utilities (eg electricity) following damage caused by flooding can be a significant mental and financial burden.

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