

## **Supporting references**

The following reference list provides the resources and publications that were used to produce the Health Matters edition on Cold weather and COVID-19.

It also provides sources for the facts and statistics in the infographics.

### **Main sources:**

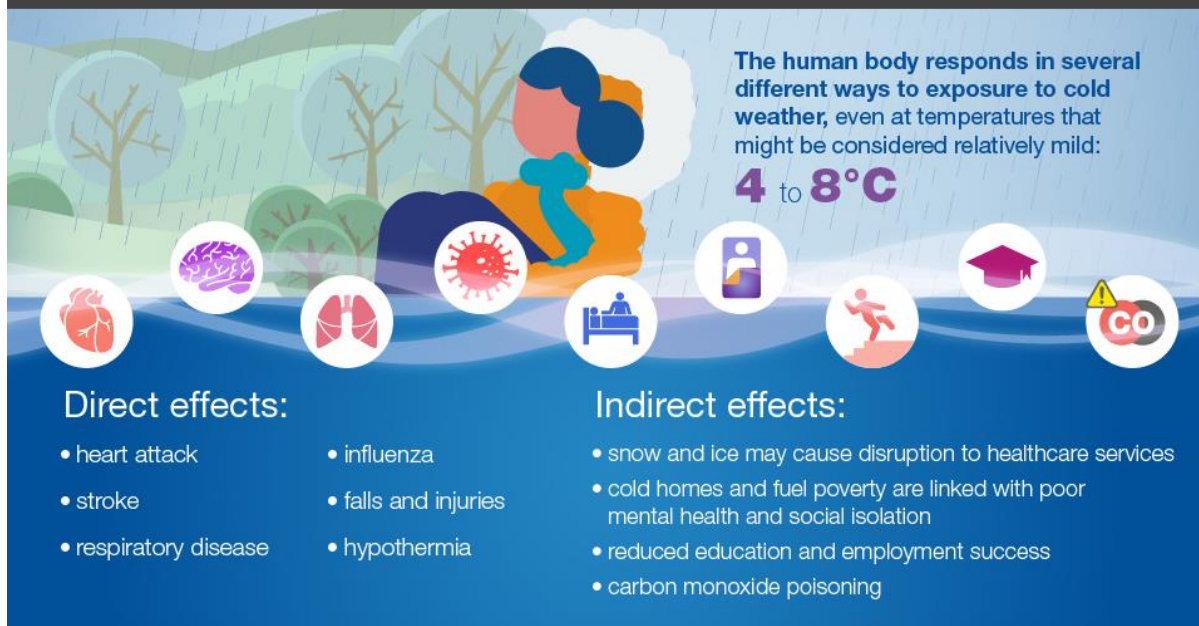
- PHE: [Cold Weather Plan for England](#)
- PHE: [Cold Weather Plan for England - Making the Case: Why long-term strategic planning for cold weather is essential to health and wellbeing](#)
- PHE: [Cold weather health risks and COVID-19: actions to prevent harm](#)
- PHE: [Keep Warm, Keep Well leaflet](#)
- NICE: [Excess winter deaths and illness and the health risks associated with cold homes \[NG6\]](#)
- Met Office: [Cold Weather Alert Service](#)
- E-Learning for Healthcare and PHE: [Helping people living in cold homes](#)
- ONS: [Excess winter mortality in England and Wales: 2018 to 2019 \(provisional\) and 2017 to 2018 \(final\)](#)
- PHE: [Public Health Outcomes Framework](#)
- PHE: [Health Matters: Delivering the flu immunisation programme during the COVID-19 pandemic](#)
- NHS England: [COVID-19 Daily Deaths](#)
- Nature: [Factors associated with COVID-19-related death using OpenSAFELY](#)
- US National Library of Medicine National Institutes of Health: [The cost of emergency hospital admissions for falls on snow and ice in England during winter 2009/10: a cross sectional analysis](#)
- NatCen: [Health, mental health and housing conditions in England \(PDF\)](#)
- NatCen: [Health, mental health and housing conditions in England](#)
- PubMed: [Housing improvements for health and associated socio-economic outcomes](#)
- The Lancet: [COVID-19: a potential public health problem for homeless populations](#)
- MHCLG: [Rough sleepers to be helped to keep safe this winter](#)
- MHCLG: [COVID-19: provision of night shelters](#)
- The Health Foundation: [People are avoiding hospital because they are nervous of catching COVID-19](#)
- BMJ: [Place and causes of acute cardiovascular mortality during the COVID-19 pandemic](#)

### **Other useful resources:**

- NHS: [Who's at higher risk from coronavirus](#)
- ONS: [Deaths involving COVID-19 by local area and socioeconomic deprivation: deaths occurring between 1 March and 31 July 2020](#)
- SAGE: [SPI-B/EMG: COVID-19 housing impacts, 10 September 2020](#)
- New Economics: [Migrants' Access to Healthcare During the Coronavirus Crisis](#)
- The academy of Medical Sciences: [Preparing for a challenging winter 2020/21](#)
- medRxiv: [Interactions between SARS-CoV-2 and Influenza and the impact of coinfection on disease severity: A test negative design](#)
- BMJ: [Features of 20 133 UK patients in hospital with covid-19 using the ISARIC WHO Clinical Characterisation Protocol: prospective observational cohort study](#)
- PHE: [Excess mortality in England, week ending 11 September 2020 - Experimental Statistics](#)
- The Health Foundation: [Public perceptions of health and social care in light of COVID-19 \(July 2020\)](#)
- BMJ: [Place and causes of acute cardiovascular mortality during the COVID-19 pandemic](#)

## Infographics:

### The direct and indirect health effects of winter weather



- PHE: [The Cold Weather Plan for England](#)

### Factors that contribute to excess winter deaths



- PHE: [The Cold Weather Plan for England](#)
- PHE: [Cold weather health risks and COVID-19: actions to prevent harm](#)

## Groups at greater risk of harm from cold weather

Many of these groups are also at greater risk of severe illness from COVID-19



<ul style="list-style-type: none"> <li>• older people, especially those over 65 years old, particularly those who are otherwise frail and/or socially isolated</li> <li>• people with pre-existing chronic medical conditions such as cardiovascular and respiratory conditions (in particular COPD and asthma) and diabetes</li> <li>• children</li> <li>• people with cognitive impairment, mental health conditions or learning difficulties</li> </ul>	<ul style="list-style-type: none"> <li>• people assessed as being at risk of or having had recurrent falls</li> <li>• people who are housebound or otherwise have low mobility</li> <li>• people living in deprived circumstances</li> <li>• people who are living in cold homes and/or are experiencing fuel poverty</li> <li>• people experiencing homelessness or rough sleeping</li> <li>• pregnant women</li> </ul>
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- PHE: [The Cold Weather Plan for England](#)
- NHS England: [Who's at higher risk from coronavirus](#)

## How COVID-19 can amplify cold weather-related health risks

The potential interactions between cold weather and COVID-19 include:



**shared risk factors** amongst population sub-groups affected by both cold temperatures and COVID-19



**clinical impacts** arising due to concurrence of cold weather and COVID-19



**social isolation** and reduced access to support networks and resources



**increased exposure to cold temperatures** due to changes in patterns of energy use at home, fuel poverty and reduced access to warm public spaces

**system level risks** related to concurrency of impacts, change in patterns of health and social care use, access and delivery and health seeking behaviour

- PHE: [The Cold Weather Plan for England](#)
- PHE: [Cold weather health risks and COVID-19: actions to prevent harm](#)

## Cold homes and fuel poverty

More than **90%** of our time is spent indoors

**Fuel poverty is one of the major causes of cold homes**

During the COVID-19 pandemic people will need to spend more time at home leading to higher energy use and costs of heating.

**Some households may find themselves in fuel poverty for the first time** and be unaware of the help that is available.

**When a cold home is also damp, mould is likely to occur.** Cold, damp and mould are all linked to impacts on health.

- PHE and UCL Institute of Health Equity: [Local action on health inequalities: Fuel poverty and cold home-related health problems](#)
- PHE: [The Cold Weather Plan for England](#)
- PHE: [Cold weather health risks and COVID-19: actions to prevent harm](#)

## How local authorities can help prevent cold-related harm



- PHE: [The Cold Weather Plan for England](#)
- PHE: [Cold weather health risks and COVID-19: actions to prevent harm](#)
- NICE: [Excess winter deaths and illness and the health risks associated with cold homes \[NG6\]](#)