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# BMJ Paediatrics Open

## The Climate crisis and child health inequity

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## The climate crisis and child health inequity

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**Keywords:** climate change; child health; inequity

**Word count:** 1149

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3 The climate crisis, i.e. global heating and its multiple consequences, is the greatest threat to the  
4 future of the world's children. [1] The environments in which they grow up are being degraded, food  
5 insecurity and poverty are increasing, extreme weather events are more frequent and millions are  
6 forced to migrate. [2] The physical and mental health impacts of global heating, including  
7 malnutrition, vector- and water-borne diseases, respiratory diseases, adverse perinatal outcomes  
8 and psychological stress and mental illness, are already evident and are predicted to increase as the  
9 world undergoes further heating in the next decades.[2]  
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12 Children are vulnerable to global heating for various reasons. Due to their incomplete physiological  
13 and cognitive development they have higher exposure to air, food and water per unit body weight,  
14 putting them at higher risk of climate-related health burdens than adults. This biological vulnerability  
15 is aggravated by interaction with social vulnerability. Hazardous environmental and social conditions  
16 for poor and marginalized children in majority world countries, including lacking access to essential  
17 determinants of health such as clean water and adequate nutrition, are particularly severe for  
18 developing bodies and minds. The social vulnerability of children is further exacerbated by their  
19 dependence on parents and/or caregivers. Finally, there is an emerging recognition that global  
20 heating is a greater threat to children not simply due to their physiological and developmental  
21 vulnerability but because their health across their whole life course will be adversely affected by  
22 increasing temperatures. This intergenerational inequity has contributed to the global movement for  
23 climate change action among children and young people that has forced global heating up the  
24 international policy agenda, epitomised by the Fridays for Future movement and other political  
25 initiatives.  
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30 The climate crisis is unjust, with countries contributing least suffering the most. This *between-*  
31 *country inequity* is driven by an interaction of geography, resources and political power. Existing  
32 inequities in child health comparing the majority world countries and rich nations are exacerbated  
33 by global heating [3]. This global injustice ensures that children in majority world countries are not  
34 only more exposed to the direct effects of global heating on their health but are unable to benefit  
35 from the advances in living conditions afforded by the availability over decades of abundant energy  
36 resources. The *within-country inequity* caused by climate change is evident in all countries of the  
37 world. As populations in rich nations are increasingly exposed to the effects of global heating as  
38 shown by recent wildfires in Australia and California and extreme heat along the west coast of North  
39 America, the disadvantaged and indigenous communities suffer the most. Poor housing conditions,  
40 degraded environments and climate-driven crop failures increasing food prices hit the poorest  
41 population groups hardest.  
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45 The fact that the climate crisis is a human-made emergency reminds us that the way forward will be  
46 determined by human action or inaction. As a public health crisis, climate change has a strong  
47 inherent potential to exacerbate existing health inequity with severe consequences for today's  
48 children and future generations. Health inequity is often framed within theories on 'social  
49 determinants of health', which point to the contribution of socioeconomic conditions to existing  
50 differences in health. However, similar to many other public health issues, the relationship between  
51 the climate crisis and child health inequity could be more appropriately understood as a result of  
52 'political determinants of health' (4). Overlapping with the concept of 'the causes of the causes', a  
53 theoretical framework considering the political determinants of health acknowledges the fact that  
54 political decisions form a basis for both health inequities and the social inequalities driving them (5).  
55 It also integrates responsibility and accountability into the equation, highlighting that health equity  
56 does not appear out of thin air or as an effect of poor individual choices, but is a result of a rigged  
57 system that needs to be fixed. This being said, the magnitude of the climate crisis calls for  
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3 interventions that go far beyond what we usually mean when suggesting policy implications of public  
4 health research. There will is no silver bullet intervention that will 'solve' climate change, but there  
5 are radical measures that, if taken in a coordinated and decisive response, have the potential to  
6 change the direction and let us stay within the 1.5 °C-target set by the Paris Agreement [5].  
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8  
9 The challenge to stay within the 1.5 °C-target is to confront the need to keep fossil fuels in the  
10 ground. Further mining of coal and drilling for oil undermines any chance of realizing this target.  
11 Huge vested financial interests are under threat and they have shifted from denial to climate delay  
12 and 'greenwashing' to defend their interests. Protection of the planet and future public and child  
13 health will require health professionals, and paediatricians in particular, to actively contribute to  
14 practices, policies and programmes robust enough to ensure reduction of global heating is not  
15 derailed in the interest of profit. This implies a major active role for paediatricians as the health  
16 professionals directly concerned with the health of child populations, both in the role as clinical  
17 practitioners contributing to a mitigation of the adverse effects of climate change, but also as public  
18 health educators and advocates. In every country in the world, children's physical and mental health  
19 is being adversely affected by global heating. To respond adequately to these effects, working  
20 practices at the level of the individual consultation and at local community, national and  
21 international levels will need to undergo a fundamental shift.  
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25 At the international and national levels, the responsibility will fall on paediatric societies and leading  
26 national paediatricians. They have a major role as advocates for urgent policy change to protect  
27 children and their health as well as educators of their members and others. International and  
28 national societies have published declarations and position statements recommending policy  
29 measures to reduce global heating and protect child populations from its effect. For example, the  
30 International Society for Social Pediatrics and Child Health (ISSOP)'s Declaration  
31 (<https://www.issop.org/2021/03/28/issop-declaration-on-climate-change/>) has been adopted by  
32 the International Pediatric Association (IPA) and disseminated widely. Other initiatives such as  
33 webinar series (see <https://www.youtube.com/channel/UCIkPU1qjQsn7Zj3dkgioTQ>) and meetings  
34 with policy makers have been undertaken. To protect the health of child populations much more will  
35 be needed in the coming years.  
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39 Children and young people have become leaders in the climate change movement and paediatric  
40 organizations and individual paediatricians should not only actively support national and local groups  
41 but should seek to work closely with them in hospitals and clinics and in local communities. Adopting  
42 climate friendly policies in clinics and hospitals contributes to reduce carbon emissions and acts as  
43 an example to young people and their families (<https://holisticprimarycare.net/topics/greening-your-practice/>). Consultations with children and their families can be opportunities to discuss issues  
44 such as air pollution, heat exposure and climate anxiety.  
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48 In conclusion, global heating is an existential threat to child health in general and to children with  
49 little resources in particular. Paediatricians and their organizations can contribute to confronting  
50 vested interests and promoting policies to limit carbon emissions.  
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3 Patient and public involvement not appropriate as this is an editorial  
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22 change, sustainable development, and efforts to eradicate poverty.  
23 <https://www.ipcc.ch/sr15/chapter/spm/>  
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**Keywords:** climate change; child health; inequity

**Word count:** 1239

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3 The climate crisis, i.e. global heating and its multiple consequences, is one of the greatest threats to  
4 the future of the world's children [1]. At the same time, the causal chains that connect climate change  
5 and children's health are long and complex. Some threats can be directly attributed to climate change  
6 (e.g. extreme weather events), some are mediated through changes in ecological systems (e.g.  
7 distribution and burden of vector-borne diseases) and others are channelled through factors related  
8 to resource distribution, social organisation and institutional arrangements (e.g. food insecurity and  
9 forced migration) [2, 3]. Climate change could be described as a 'creeping crisis' as it evolves over  
10 time, reveals itself in different ways and resists adequate responses [4]. As such, the adverse impact  
11 on child health through mediated factors can be challenging to pinpoint, although the occurrence of  
12 'climate shocks' and its direct effects are making these causal chains less uncertain.  
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16 Children are particularly vulnerable to climate change for various reasons. Due to their incomplete  
17 physiological and cognitive development they have higher exposure to air, food and water per unit  
18 body weight, putting them at higher risk of climate-related health burdens than adults [5]. This  
19 biological vulnerability is aggravated by interaction with social vulnerability. Hazardous environmental  
20 and social conditions for poor and marginalized children in majority world countries, including lacking  
21 access to essential determinants of health such as clean water and adequate nutrition, are particularly  
22 severe for developing bodies and minds. The social vulnerability of children is further exacerbated by  
23 their dependence on parents and/or caregivers. Finally, there is an emerging recognition that climate  
24 change is a greater threat to children not simply due to their physiological and developmental  
25 vulnerability, but because their health across their whole life course will be adversely affected by  
26 increasing temperatures. This intergenerational inequity has contributed to the global movement for  
27 climate change action among children and young people that has forced the climate crisis up the  
28 international policy agenda, epitomised by the Fridays for Future movement and other political  
29 initiatives.  
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33 The climate crisis is unjust, with countries contributing least suffering the most [6]. This *between-*  
34 *country inequity* is driven by an interaction of geography, resources and political power. Existing  
35 inequities in child health comparing the majority world countries and rich nations are exacerbated by  
36 climate change [7]. This global injustice ensures that children in majority world countries are not only  
37 more exposed to the direct effects of climate change on their health but are unable to benefit from  
38 the advances in living conditions afforded by the availability over decades of abundant energy  
39 resources. The *within-country inequity* caused by climate change is evident in all countries of the  
40 world. As populations in rich nations are increasingly exposed to the effects of climate change as  
41 shown by recent wildfires in Australia and California and extreme heat along the west coast of North  
42 America, the disadvantaged and indigenous communities suffer the most. Poor housing conditions,  
43 degraded environments and climate-driven crop failures increasing food prices hit the poorest  
44 population groups hardest.  
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48 The fact that the climate crisis is a human-made emergency reminds us that the way forward will be  
49 determined by human action or inaction. As a public health crisis, climate change has a strong inherent  
50 potential to exacerbate existing health inequity with severe consequences for today's children and  
51 future generations. Health inequity is often framed within theories on 'social determinants of health',  
52 which point to the contribution of socioeconomic conditions to existing differences in health.  
53 However, similar to many other public health issues, the relationship between the climate crisis and  
54 child health inequity could be more appropriately understood as a result of 'political determinants of  
55 health' [8]. Overlapping with the concept of 'the causes of the causes', a theoretical framework  
56 considering the political determinants of health acknowledges the fact that political decisions form a  
57 basis for both health inequities and the social inequalities driving them [9]. It also integrates  
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3 responsibility and accountability into the equation, highlighting that health equity does not appear  
4 out of thin air or as an effect of bad luck or poor individual choices, but is a result of a rigged system  
5 that needs to be fixed. This being said, the magnitude of the climate crisis calls for interventions that  
6 go far beyond what we usually mean when suggesting policy implications of public health research.  
7 There will be no silver bullet intervention that will 'solve' climate change, but there are radical  
8 measures that, if taken in a coordinated and decisive response, have the potential to change the  
9 direction and let us stay within the 1.5 °C-target set by the Paris Agreement [8].  
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12 The number of climate-related political determinants of health are numerous, yet dependency on  
13 fossil fuels is undoubtedly principal among these. Further mining of coal and drilling for oil undermines  
14 any chance of realizing the Paris Agreement target. Huge vested financial interests are under threat  
15 and they have shifted from denial to climate action delay and 'greenwashing' to defend their interests.  
16 The features of a 'creeping crisis' imply a significant challenge to decisive counteraction. With complex  
17 casual pathways and a gradual accustoming to the unsustainable status quo, business will continue as  
18 usual as long as it is not held accountable. Here, professional alliances can be formed to challenge the  
19 hazardous practices of today. Health professionals, and paediatricians in particular, have the chance  
20 to contribute to policies robust enough to ensure climate change action is not derailed in the interest  
21 of profit. This implies a major active role for paediatricians as the health professionals directly  
22 concerned with the health of child populations, both in the role as clinical practitioners contributing  
23 to a mitigation of the adverse effects of climate change, but also as public health educators and  
24 advocates. Paediatricians will bear witness to one of the most appalling consequences of the climate  
25 crisis – increased suffering and deaths of children born into a heating world – and to speak openly and  
26 clearly about this will be a significant contribution and call for action.  
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31 At the international and national levels, the responsibility will fall on paediatric societies and leading  
32 national paediatricians. They have a major role as advocates for urgent policy change to protect  
33 children and their health as well as educators of their members and others. International and national  
34 societies have published declarations and position statements recommending policy measures to  
35 target climate change and protect child populations from its effect. For example, the International  
36 Society for Social Pediatrics and Child Health (ISSOP)'s Declaration  
37 (<https://www.issop.org/2021/03/28/issop-declaration-on-climate-change/>) has been adopted by the  
38 International Pediatric Association (IPA) and disseminated widely. Other initiatives such as webinar  
39 series (<https://www.youtube.com/channel/UClkPU1qjQsn7Zj3dkgjoTQ>) and meetings with policy  
40 makers have been undertaken. To protect the health of child populations much more will be needed  
41 in the coming years. Children and young people have become leaders in the climate change  
42 movement. Paediatric organizations and individual paediatricians should actively support national and  
43 local groups, work closely with them in hospitals and clinics and in local communities and ensure their  
44 voices and views are incorporated in decision-making processes, for example, in the design of climate  
45 friendly policies in clinics and hospitals. Consultations with children and their families can be  
46 opportunities to discuss issues such as air pollution, heat exposure and climate anxiety  
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51 In conclusion, the climate crisis is an existential threat to child health in general and to children with  
52 little resources in particular. Paediatricians and their organizations can contribute to confronting  
53 vested interests and promoting policies to limit carbon emissions.  
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