# Healthy Places in the Anthropocene: Rethinking Human Health in an Era of Ecological Crisis

# 人类世下的健康场所：生态危机时代重新审视人类健康

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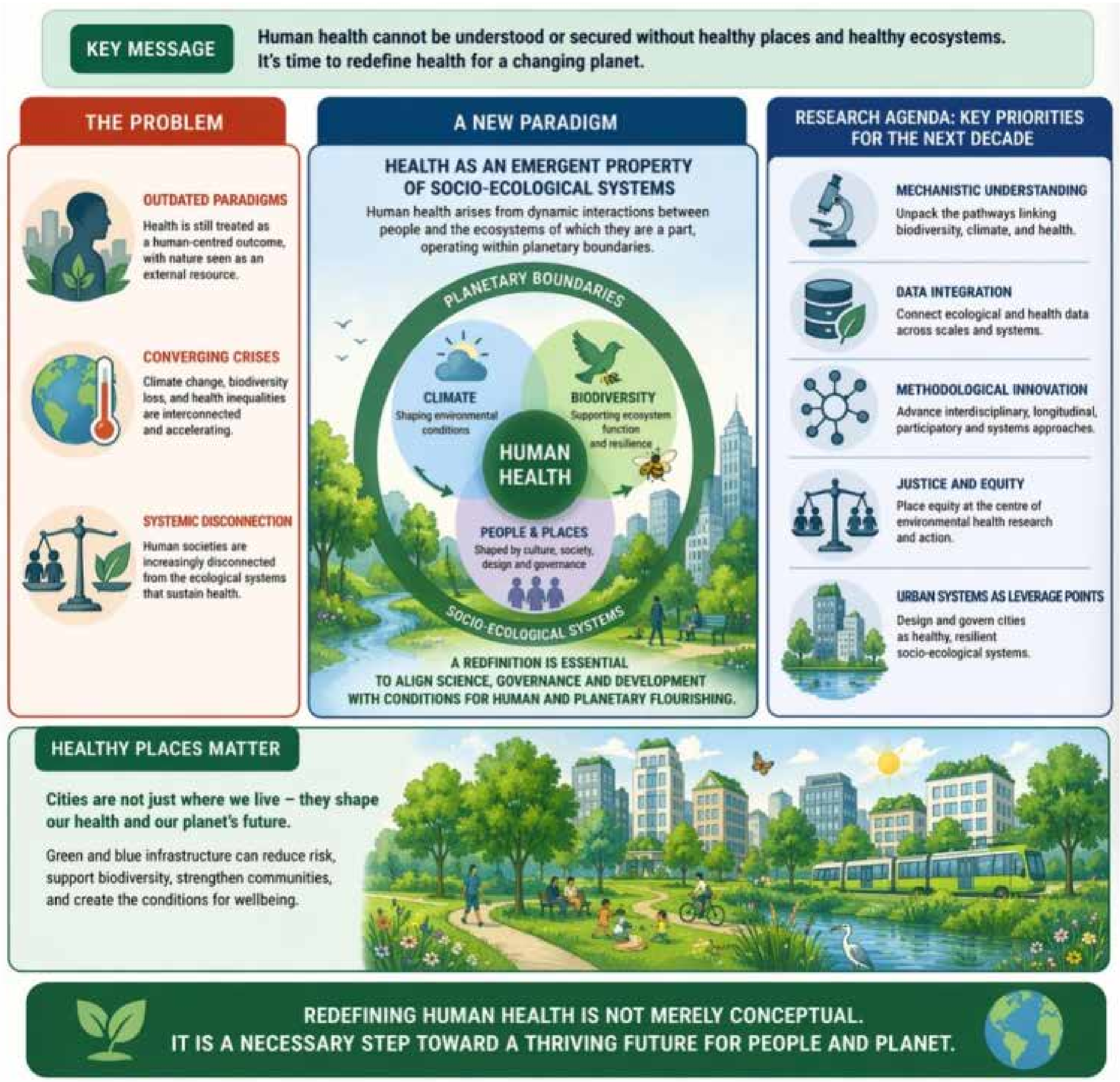
## Abstract

The dominant paradigms through which human health is conceptualised and studied are no longer fit for purpose. While decades of research have established the health benefits of natural spaces, this body of work remains largely embedded within an anthropocentric framework that treats nature as an external input to human wellbeing rather than a system of which humans are an integral part. At the same time, humanity faces converging crises of climate change, biodiversity loss, and widening health inequalities – crises that are deeply interconnected and rooted in a systemic disconnection between human societies and ecological systems. This paper argues that addressing these challenges requires more than incremental advances in evidence; it demands a fundamental redefinition of human health. I propose that health should be understood as an emergent property of dynamic interactions between humans and the ecological systems of which they are a part, operating within planetary boundaries. Building on this premise, the paper identifies key research gaps for the coming decade, including mechanistic understanding of biodiversity–health pathways, integration of ecological and health data, methodological innovation, and the incorporation of justice and equity considerations. It further highlights the central role of urban systems and spaces as leverage points for transformation. Redefining human health is not merely conceptual – it is a necessary step to align science, governance, and societal development with the conditions required for both human and planetary flourishing.

**摘要：**当前用于界定、研究人类健康的主流理论范式已不再适用。数十年研究证实自然环境对人体健康具备积极效益，但这类研究大多仍局限于人类中心主义框架：仅将自然视作提升人类福祉的外部资源，而非人类本身深度依存的共生系统。与此同时，人类正遭遇多重叠加危机——气候变化、生物多样性衰退、健康不平等加剧，各类危机彼此深度关联，根源在于人类社会与生态系统的系统性割裂。本文提出，应对上述难题不能仅依靠研究证据的小幅迭代，而是需要对人类健康进行根本性重新定义。本文主张：健康是人类与所属生态系统动态交互催生的衍生属性，且所有交互活动均需限定在地球承载力边界之内。基于该核心观点，本文梳理未来十年核心研究空白，涵盖生物多样性影响健康的内在机制、生态数据与健康数据融合、研究方法创新、公平正

义维度纳入研究体系四大方向。文章同时指出，城市体系与城市空间是实现系统性转型的关键抓手。重新定义人类健康并非单纯理论层面的调整，而是使科研、治理与社会发展适配人类与地球共同繁荣所需生态条件的必经之路。

*Graphical Abstract (AI-generated):*



### *1. INTRODUCTION*

Over the past decades, a rapidly expanding body of research has demonstrated that exposure to natural environments is beneficial for human health and wellbeing (Konijnendijk Devokta, D., Mansourian, S., Wildburger, C. (eds.), 2023). The foundational attention restoration and stress recovery theories (Kaplan and Kaplan, 1989; Ulrich et al., 1991), have been supported by empirical studies showing improvements in cognitive functioning (Davis et al., 2021), emotional regulation (White et al., 2013), and physiological stress markers (Egorov et al., 2020) following interaction with nature. The more recent Biopsychosocial resilience theory suggests that nature supports individuals build and maintain resilience resources of fundamental importance for health and wellbeing (White et al., 2023). Epidemiological research has consistently linked access to green space with numerous health outcomes, including reduced mortality (Chi et al., 2025), improved birth outcomes (Donovan et al., 2025), and lower prevalence of mental disorders (Ye et al., 2025). Experimental and quasi-experimental studies have further provided evidence for causal pathways, including reductions in stress and anxiety (Litt et al., 2023), improvements in mood (Navarrete-Hernandez et al., 2024), and reduced rumination (Bratman et al., 2015). Emerging research suggests that biodiverse environments may improve immune system function through an impact on the human microbiome (Lehtimäki et al., 2018; Nurminen et al., 2018; Roslund et al., 2020).

Western empirical science findings aside, other knowledge systems have long recognised that human health is embedded in nature. Traditional Ecological Knowledge (TEK) systems have for millennia articulated relational understandings of health, grounded in reciprocity, balance, and interdependence between humans and the natural world (Berkes, Colding and Folke, 2000; Finn, Herne and Castille, 2017). These perspectives are increasingly echoed in contemporary frameworks such as One Health and Planetary Health (Whitmee et al., 2015; Khan et al., 2018) and global scientific assessments have further reinforced this understanding, highlighting that biodiversity underpins the ecosystem services that sustain human life (MA, 2005; Diaz Settele, J., Brondizio, E., et al., 2019).

Despite this convergence of evidence and conceptual frameworks, a fundamental disconnect remains. Much of contemporary research continues to operate within an implicit anthropocentric worldview, in which nature is framed primarily as a resource or intervention – something external that can be used to improve human health. Within this paradigm, research questions are often framed in terms of optimisation: how much exposure to nature is needed to obtain health benefits (Wood et al., 2017), which types of environments are most beneficial (Elsadek, Liu and Lian, 2019), or how can park design maximise human health gains (Olsen et al., 2019)? These questions are not without merit; they contribute to our understanding of greenspace-health relationships and provide guidance for optimised land use. They may, however, be increasingly inadequate in the context of the unprecedented challenges we face today.

We are living in an era defined by the convergence of multiple global crises: climate change, biodiversity loss, and new disease scenarios with widening health inequalities. These crises are deeply interconnected manifestations of a broader systemic issue – namely, the progressive disconnection between human societies and the ecological systems upon which they depend (Richardson, 2025)(IPBES, 2024). The idea of people's domination over nature has been expressed through patterns of production, consumption, and urban development that prioritise short-term gains over long-term sustainability (Naess, 1990)(Raworth, 2017; Basso and Trapp, 2025). It has enabled significant improvements in certain aspects of human wellbeing (You et al., 2010, UNDE, 2003, Deaton, 2024), but has come at considerable environmental cost (MA, 2008). Humanity has now transgressed seven out of nine planetary boundaries – core processes that regulate the state of the Earth system – placing both ecological and social systems under increasing strain (Sakschewski, Caesar, Andersen, Bechthold et al., 2025 ). The consequences of this trajectory are becoming increasingly visible, (IPCC, 2023; Reisinger et al., 2025).

We have, in effect, been improving health in ways that systematically undermine the conditions that make health possible. This is a predictable outcome of a conceptual framework that treats humans as separate from nature, and health as an individual attribute rather than a systemic condition.

In this context, the central challenge for research is not merely to generate more evidence on the health benefits of nature. Rather, it is to interrogate and transform the underlying assumptions that shape how health is conceptualised, studied, and governed. This requires a shift from reductionist, discipline-bound approaches toward integrative, systems-based perspectives that recognise the co-dependence of human and ecological systems – in line with Indigenous Peoples' views that the health of the land and Peoples are synonymous (ECOSOC, 2023).

This paper argues that redefining human health in western science and policy approaches is a necessary step to safeguard the planet. Without such a redefinition, research will remain fragmented, interventions will remain partial, and policies will fail to address root causes.

In the following sections, I examine contemporary challenges related to human health, biodiversity loss, and climate change, highlighting their interconnected nature. I identify key research gaps that must be addressed in the coming decade and propose a conceptual shift in how health is defined and operationalised. Ultimately, I argue that aligning our understanding of health with the realities of the Anthropocene is essential for both scientific progress and societal resilience.

## *2. CONTEMPORARY CHALLENGES*

### 2.1 Human Health

The World Health Organization's definition of health as "a state of complete physical, mental, and social well-being" (WHO, 1948) represented a significant departure from earlier biomedical models that focused primarily on the absence of disease. Despite its conceptual breadth, however, this definition has not been fully operationalised in practice. Health systems and research agendas remain heavily oriented toward biomedical interventions and individual-level risk factors. This misalignment has become increasingly problematic in the context of contemporary disease patterns. Today, the global burden of disease is dominated by non-communicable diseases, the majority of which are preventable (Hay et al., 2025). These conditions are closely linked to environmental and social determinants, including diet, physical activity, air quality, and access to nature. Yet, interventions continue to focus disproportionately on individual behaviour change and clinical treatment, rather than on the structural conditions that shape these behaviours (Woolf, 2019).

In general, environmental determinants of health are becoming increasingly prominent, why the topic of healthy spaces is central. Air pollution remains one of the leading environmental risk factors globally, contributing to millions of premature deaths each year (HEI, 2025) and infectious disease dynamics are also evolving in ways that reflect environmental change. Mental health disorders are also on the rise. While some of this increase may be attributed to improved recognition and diagnosis, there is growing evidence that environmental factors play a significant role (van den Bosch and Meyer-Lindenberg, 2019).

Because of social and environmental injustices, disadvantaged populations are disproportionately exposed to harmful environments and lack access to health-promoting resources (Marmot, 2010; Sabedotti et al., 2026). Differences in life expectancy between socio-economic groups can be substantial, even within relatively small geographic areas (Lee and Han, 2025). Importantly, these disparities are neither biologically determined nor inevitable, but reflect modifiable policy choices and structural arrangements (Di Cesare et al., 2013; Ottersen et al., 2014).

Despite these challenges, significant gaps remain in our understanding of how health is shaped by environmental and social systems. For instance, research has historically focused on certain populations, often excluding women, minority groups, and communities in the Global South (National Academies of Sciences and Medicine, 2022)(Turba et al., 2026). As a result, our understanding of health processes is incomplete and potentially biased, which is problematic in the context of environmental exposures because responses may vary significantly across different contexts.

Taken together, these observations suggest that health cannot be fully understood or addressed within existing, narrow frameworks. A broader, systems-based perspective that recognises the interconnectedness of biological, social, and ecological processes is needed.

### 2.2 Biodiversity Loss

Biodiversity is the variety of all living things on Earth together with the ecosystems they form and the genetic variations within them. It underpins the functioning of ecosystems and the services they provide (MA, 2005). These services – also referred to as Nature's Contributions to People (IPBES, 2019) – include food production, water purification, climate regulation, and cultural and recreational benefits and they are the conditions that make human life possible. Nevertheless, biodiversity is declining at an unprecedented rate (Bar-On, Phillips and Milo, 2018). Human activities, including deforestation, urban expansion, pollution, overexploitation of natural resources, and climate change, are driving widespread ecosystem degradation. The scale and speed of these changes have led to what is often described as a sixth mass extinction, distinguished from previous extinction events by its anthropogenic origin (Pievani, 2014).

Diverse ecosystems are generally more resilient to disturbances, more capable of maintaining function under stress, and better able to recover from shocks (Soliveres et al., 2016). This resilience also has direct implications for human health. For example, ecosystems with high biodiversity can regulate air and water quality, reducing exposure to pollutants. Wetlands can filter contaminants and buffer against flooding. Urban forests can regulate microclimates, mitigating temperature extremes. Biodiverse agricultural systems tend to be more resilient to pests, supporting food security (CBD, 2022). When biodiversity is lost, these regulatory functions are compromised. Importantly, these impacts are not evenly distributed. Populations that are directly dependent on local ecosystems, particularly in low-income and rural contexts, are often the most affected. The effects of biodiversity loss are, however, interconnected and global. Disruptions in one region can propagate through supply chains, economic systems, and migration patterns, affecting populations far removed from the original source of change (WWF, 2024).

The implications of biodiversity loss represent a fundamental threat to human health and wellbeing (Haines-Young and Potschin, 2010), although both direct and indirect impacts remain insufficiently understood.

#### 2.2.1. Biodiversity and Infectious Disease Dynamics

Biodiversity plays a complex role in shaping infectious disease dynamics. For example, higher biodiversity can reduce disease transmission through mechanisms such as the dilution effect, where a greater diversity of species reduces the likelihood of pathogens encountering suitable hosts (Civitello et al., 2015). Anthropogenic changes, such as deforestation, habitat fragmentation, and urban expansion, can disrupt these dynamics, creating new interfaces between humans, livestock, and wildlife. These interfaces increase the likelihood of zoonotic spill-over events, in which pathogens jump from animal hosts to humans (Plowright et al., 2021). The emergence of diseases such as Ebola and COVID-19 has highlighted the global implications of such processes. Our understanding of these dynamics remains incomplete, however, and further research is needed to, for instance, identify interventions that reduce spill-over without unintended consequences. This requires close collaboration between ecologists, epidemiologists, public health experts, and social scientists.

#### 2.2.2. Biodiversity and Physical and Mental Health

Apart from infectious diseases, other physical health aspects are also impacted by biodiversity loss. The human body hosts a vast and complex community of microorganisms, collectively known as the human microbiome, which plays a critical role in immune system function, metabolism, and overall health (Gomaa, 2020). There is growing evidence that exposure to diverse environmental microbiota, particularly in early life, is essential for the development and regulation of this system (Hanski et al., 2012). This evidence supports the biodiversity or hygiene hypothesis, which posits that reduced exposure to environmental microbial diversity may contribute to immune system dysregulation (Rook, 2013). While this hypothesis is supported by epidemiological and experimental evidence (Kondrashova et al., 2013), significant gaps remain. For instance, we do not yet fully understand how different types of environmental biodiversity (soil, vegetation, animal-associated microbes) contribute to human microbial exposure, how these exposures vary across different environments and lifestyles, how they interact with other factors, or how changes in the microbiome translate into long-term health outcomes. Furthermore, most studies have been conducted in high-income settings, raising questions about generalisability.

The implications of biodiversity loss for mental health remain poorly understood. It is highly plausible, though, that the degradation of familiar landscapes, loss of species, and perceived decline of the natural world contribute to feelings of grief and anxiety (Albrecht et al., 2007), increasing the risk for depression and other mental disorders. Conversely, emerging research suggests that more biodiverse environments may provide greater psychological benefits (Hammoud et al., 2024). Understanding how biodiversity influences mental health, and how its loss affects psychological wellbeing, represents an important but underdeveloped area of research.

2.2.3. Biodiversity in Cities

As urbanisation continues, the relationship between biodiversity and human health must increasingly be understood within urban contexts. Cities are often seen as biodiversity-poor environments, characterised by habitat fragmentation and ecological simplification (Theodorou, 2022), which may be one of the reasons behind the exponential increase in allergies and other immune system related disorders in urbanising societies (Lehtimäki et al., 2018). Cities, however, may also represent important sites of both biodiversity conservation and human–nature interaction (Ventura, Strubbe and Shwartz, 2024). Urban green and blue spaces can support biodiversity while providing human health benefits, but vegetation cover does not necessarily equate to ecological function. Monocultures or poorly designed green spaces may provide limited biodiversity benefits, while more diverse and structurally complex environments may support richer ecosystems (Kowarik, 2011). Key research gaps include a better understanding of how urban design influences ecological connectivity, developing metrics for biodiversity at the city scale, and assessing how nature-based solutions (NbS) impact both biodiversity and health outcomes. Addressing these gaps is essential for designing cities that function as integrated socio-ecological systems (Qureshi, Breuste and Lindley, 2010), rather than as environments that merely incorporate fragments of nature.

**2.3 Climate Change**

Climate change represents one of the most profound and far-reaching challenges of the 21st century. It is a systemic phenomenon that interacts with and amplifies vulnerabilities across ecological, social, and economic systems and threatens life on Earth as we know it. It is caused by human-induced emissions of greenhouse gases (GHG), which have led to unequivocal warming of the climate system. This warming drives changes in temperature, precipitation, and the frequency and intensity of extreme weather events with direct and indirect consequences for both ecosystem functioning and human health (Masson-Delmotte V, Zhai P, Pirani A, Connors SL, et al., 2021). Further, the climate and biodiversity crises are coupled. For example, with a warming climate, species have to move to find habitat suitable to their thermal performance range and when suitable habitats shrink species get extinct (Pörtner et al., 2023). On the other hand, biodiversity loss accelerates climate change through, for instance, loss of biomass and thereby reduced carbon stocks (IPCC, 2023).

Despite increasing awareness, current responses to climate change remain insufficient. Mitigation efforts have not achieved the reductions in emissions required to limit warming to safe levels (Matthews and Wynes, 2022). Adaptation strategies are often reactive and focused on short-term risk reduction (Mimura, N., R.S. Pulwarty, D.M. Duc, I. Elshinnawy, M.H. Redsteer et al. 2014). NbS offer significant potential, but their implementation is often limited by lack of ecological understanding, insufficient funding, and absence of long-term monitoring (Dunlop et al., 2024; UNEP, 2026). There is also a tendency to prioritise technical solutions over systemic change (Biermann, 2021). This reflects a broader pattern: we are attempting to address a systemic crisis with incremental adjustments, something that will inevitably have detrimental impacts on ecosystems and human health now and in the future.

2.3.1. Direct and indirect Human Health Impacts

Heatwaves are becoming more frequent, more intense, and longer-lasting, leading to heat stress, dehydration, and exacerbation of cardiovascular and respiratory conditions. Mortality rates increase significantly during extreme heat events, particularly among vulnerable populations such as the elderly, children, and those with pre-existing health conditions (Perkins-Kirkpatrick et al., 2026). Mental health is also negatively impacted by heat (Rhiannon et al., 2023). Urban areas are especially affected due to the urban heat island effect, where built surfaces absorb and retain heat, leading to higher temperatures compared to surrounding areas (Oke, 1973). The increasing frequency and severity of extreme events such as floods, storms, and droughts also cause immediate injury and death, as well as long-term physical and mental health impacts through trauma, displacement, loss of livelihoods, and disruption of infrastructure (Ebi et al., 2021).

Climate change also affects health through indirect pathways. For instance, changes in temperature and precipitation can reduce crop yields, affecting food availability and nutrition (Fanzo et al., 2018). Water systems are similarly affected, with implications for both drinking water and sanitation (Howard et al., 2026). Changes in temperature and humidity can alter the habitats of disease vectors such as mosquitoes, potentially expanding the range of diseases such as malaria and dengue fever (Ortiz-Prado et al., 2026). In addition, higher temperatures can increase the formation of ground-level ozone, which has adverse effects on respiratory health (Jacob and Winner, 2009). These indirect effects are often more complex and difficult to predict than direct impacts and thus require integrated research approaches.

2.3.2. Climate Change and Inequality

A defining feature of climate change is its unequal distribution of impacts. Populations in low-income countries, who have contributed least to GHG emissions, are often the most affected, resulting in an enormous global inequality (Althor, Watson and Fuller, 2016). Within countries, disadvantaged communities are more exposed to climate risks and have fewer resources to adapt (Zahnow et al., 2025). Climate change is therefore a multifaceted problem – including environmental, social, and ethical issues.

## 3. INTERCONNECTED CRISES AND RESEARCH PRIORITIES

The challenges outlined in the previous sections – human health, biodiversity loss, and climate change – have traditionally been treated as separate domains, each with its own research community, policy frameworks, and intervention strategies. In reality, these challenges are deeply interconnected, though, something that has been recognised within various frameworks, such as planetary health (Whitmee et al., 2015) and the Climate-Biodiversity-Health nexus (Newell, 2023), but actual operationalisation and implementation of system science approaches are still lacking. This may be due to insufficient conceptualisation in research design and metrics, where, for example, human health is still measured without considering environmental indicators as part of the outcome.

What we are witnessing is a system out of balance. Yet, our research systems are not designed to understand or address such complexity and funding structures reinforce separation rather than integration (Du, Head and Brede, 2025). Even when interdisciplinary initiatives are established, they often struggle to move beyond superficial collaboration, lacking shared conceptual frameworks and common languages (Newman, 2024). This fragmentation is not simply inefficient; it is limiting our ability to generate knowledge that is meaningful and actionable. We must therefore shift research efforts toward relational approaches that focus on interactions, feedbacks, and emergent properties. It also requires recognising that solutions must be co-produced across fields, sectors, and knowledge systems. The coming decade presents a critical opportunity to reorient research in this direction.

### 3.1 Mechanistic Understanding

A central limitation of current research is the predominance of associative evidence. While we have accumulated extensive knowledge about correlations between environmental factors and health outcomes, our understanding of the mechanisms underlying these relationships remains incomplete. This matters because interventions based on incomplete understanding risk being ineffective or even counterproductive. To move forward, research must focus on elucidating mechanistic pathways across systems.

Important areas include:

• understanding how biodiversity loss alters host–pathogen dynamics and zoonotic spill-over risks

• mapping how environmental microbial diversity shapes the human microbiome and immune system function and neurodevelopment

• investigating how climate variables interact with ecological and social factors to influence health

Such work requires integrating methods from ecology, epidemiology, microbiology, and social sciences, as well as developing new conceptual models that capture non-linear and multi-scalar dynamics.

**3.2 Measurement and Data Integration**

Currently, measurement systems are fragmented; health metrics focus on disease outcomes and individual risk factors, while environmental metrics often focus on isolated variables such as temperature or species counts. An important attempt to overcome this fragmentation has been introduced through the Planetary Health Watch (Haines, Hanson and Ranganathan, 2018), but also within this framework environmental metrics are kept separate from health outcomes. There is a need to develop integrated metrics and data systems that capture relationships rather than isolated variables by, for example, incorporate biodiversity indicators into human health composite metrics

Ultimately, measurements must shift from static indicators toward dynamic systems intelligence, enabling an ability to understand and respond to changes in interconnected systems. Combined with a new approach of assessing human health by measuring the health of surrounding ecological systems, this would provide grounds for a much-needed transformative change in how we see ourselves as part of the Earth system. This would also imply that having a high ecological footprint indicates an unhealthy condition, which should be addressed and physicians should be provided with adequate tools and interventions for these “eco-disorders”. Given that individuals of low income or people in the Global South tend to have lower ecological footprint than wealthier counterparts, such an approach would also contribute to reducing health inequalities.

**3.3 Methodological Innovation**

Addressing interconnected challenges requires methodological approaches that can capture complexity across scales. Traditional research designs must be complemented by approaches that can account for interactions, feedback loops, and context. A number of systems science frameworks and disciplines does exist, including General Systems Theory (von Bertalanffy, 1950), Earth System Science (Lawton, 2001), Ecological Law (Garver, 2013), Doughnut Economics (Raworth, 2017), the Exposome (Buck Louis and Sundaram, 2012), Planetary Boundaries (Rockstrom  Steffen, K., Noone, A., Persson, F.S., Stuart Chapin III, F., Lambin, E. et al., 2009), Planetary Health (Whitmee et al., 2015), and One Health (Zinsstag et al., 2020), but we are still struggling to remove the barrier that our anthropocentric dogma entails and this prevents us from developing research methods that can produce new knowledge for decisive actions to protect our planet.

**3.4 Equity and Justice**

Equity is not an add-on to research on health and environment – it is central to it (Gupta et al., 2023). The uneven distribution of environmental risks and benefits are shaped by structural factors, including governance systems and historical processes. Research must explicitly address these dimensions. This includes identifying mechanisms that lead to unequal outcomes and developing strategies to ensure that benefits are equitably distributed.

Interventions that fail to consider equity can produce unintended consequences. For example, urban greening may improve environmental conditions but also lead to increased property values and displacement of existing residents (Quinton, Nesbitt and Sax, 2022). Justice-oriented research must therefore engage with questions of power, participation, and governance. It must also recognise the value of diverse knowledge systems. TEK, for example, offers insights into sustainable resource management and human–nature relationships that are often overlooked in western science approaches (Berkes, Colding and Folke, 2000).

### *4. REDEFINING HUMAN HEALTH*

**The arguments presented throughout this paper converge on a central conclusion:**

The current definition of human health is no longer sufficient.

Existing definitions recognise that health is multidimensional, but they remain anchored in the Anthropocene, implicitly centring on the individual and being detached from ecological realities. These definitions do not incorporate the idea that humans are part of ecological systems and therefore they do not address that health gains can be achieved in ways that are ecologically unsustainable. A new definition is therefore required.

**I propose that:**

Human health is an emergent property of socio-ecological systems, reflecting the capacity of these systems to sustain conditions in which humans and other forms of life can thrive. Simply put, human health equals living in harmony with nature, within planetary boundaries.

This definition has several important implications. First, it shifts the focus from individuals to systems. Health is no longer understood solely as an attribute of individuals, but as a property that emerges from interactions between people and their environments. Second, it integrates ecological integrity into the concept of health. Biodiversity, ecosystem function, and environmental quality become central components and that should be measured as indicators of human health. Third, it introduces the principle of reciprocity. Humans are not only beneficiaries of ecosystem services, but active participants in shaping ecosystems (Comberti et al., 2015). Sustainable practices, conservation, and restoration are therefore integral to maintaining health. Fourth, it aligns health with planetary boundaries. Health cannot be pursued in ways that undermine the systems that sustain it. Finally, it complements the recently proposed idea of a Nature Positive approach, positioning human development as being entrenched in nature rather than a competing interest with it (Locke et al., 2026).

**Perhaps most importantly, this definition challenges a fundamental assumption:**

That human health can be improved independently of ecological health. This assumption is no longer tenable.

### *5. Conclusion*

We do not lack evidence on the determinants of health. We lack a framework that aligns this knowledge with the realities of the world we inhabit. Addressing today's major, interconnected challenges requires a transformation in how we think about and define human health. This is a necessary step toward aligning research, policy, and practice with the conditions required for long-term wellbeing of the planet and its current and future inhabitants.

The question we face is not whether we can continue improving health within the current system. The question is whether that system can continue to sustain health at all. Because in a world where the systems that support life are failing, health is not something we can optimise – it is something we must fundamentally rethink.

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