

Planetary Health: why not empower the Sports and Exercise Medicine community to play the game of life well?

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ABSTRACT

Human activities affect the planet by altering natural cycles. They contribute to climate change and pollution, posing challenges to ecosystems, biodiversity, human well-being and health. There is a need to consider Planetary Health, which is described as a solutions-oriented, transdisciplinary field and social movement focused on analysing and addressing the impacts of human disruptions to the Earth's natural systems on human health and all life on Earth. This viewpoint discusses the responsibilities, choices, potential roles and practical initiatives concerning Planetary Health for the Sports and Exercise Medicine (SEM) community. Practices in both medicine and sport impact the environment. We can shift our human and SEM activities and adopt a Planetary Health approach. Our role as the SEM community is to protect and promote the health of athletes and populations. This also involves caring for the environment, given the close link between environmental and human health. Therefore, as an SEM community, we are concerned about the health of our ecosystems and the importance of respecting planetary boundaries. Our scientific expertise, inspirational leadership and ethics should encourage us to raise awareness and become exemplary torchbearers. We must embrace the challenge of addressing humanity's planetary crises to rise to the occasion, uphold our values and strengthen our connection with nature: 'faster, higher, stronger—all together'.

WHERE DO WE STAND IN THE GAME OF LIFE?

Human activities impact the planet by altering natural cycles and are responsible for climate change and pollution, which pose challenges to ecosystems, biodiversity, and human health and well-being (figure 1).¹⁻⁴ It is now essential to consider Planetary Health, which is described as a solutions-oriented, transdisciplinary field and social movement focused on analysing and addressing the effects of human disruptions to the Earth's natural systems on human health and all life on Earth.¹

Do we, as the Sports and Exercise Medicine (SEM) community, have a role to

WHAT IS ALREADY KNOWN ON THIS TOPIC

- ⇒ Human activities impact the planet by altering natural cycles and are responsible for climate change and pollution, which pose challenges to ecosystems, biodiversity, and human health and well-being.
- ⇒ Both the origins of our Sports and Exercise Medicine discipline (ie, medicine and sports) produce large ecological footprints.
- ⇒ On the one hand, as with other human activities, continuing this SEM approach, which favours anthropocentric extractivism, will worsen ecological and social consequences. On the other hand, we can redirect our human and SEM activities and embrace a Planetary Health approach.

WHAT THIS STUDY ADDS

- ⇒ If we recognise that we are facing a global health emergency of a climate and nature crisis, we should adopt an eco-ethical attitude and make a great turnaround right now.
- ⇒ We could i) quantify and report carbon footprint, ii) explore to better understand how our medical, research, and sports practices impact the environment and how to mitigate them, iii) educate populations, iv) optimise the health system by reducing its ecological footprint, v) adopt a responsible and inspiring approach, and vi) promote a sustainable future and advocate for equitable policies.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

- ⇒ As the Sports and Exercise Medicine community, we could play a key role in the expected virtuous transformation and enhance well-being by adopting the Planetary Health paradigm. The population's faith in healthcare professionals and their qualities (eg, benevolence, goodwill), allied to the popularity of sports and its values (eg, courage, perseverance, fairness), can be an asset in this challenge.

play in Planetary Health? What decisions should we make? What options do we have? This viewpoint discusses the responsibilities, choices, potential roles and practical

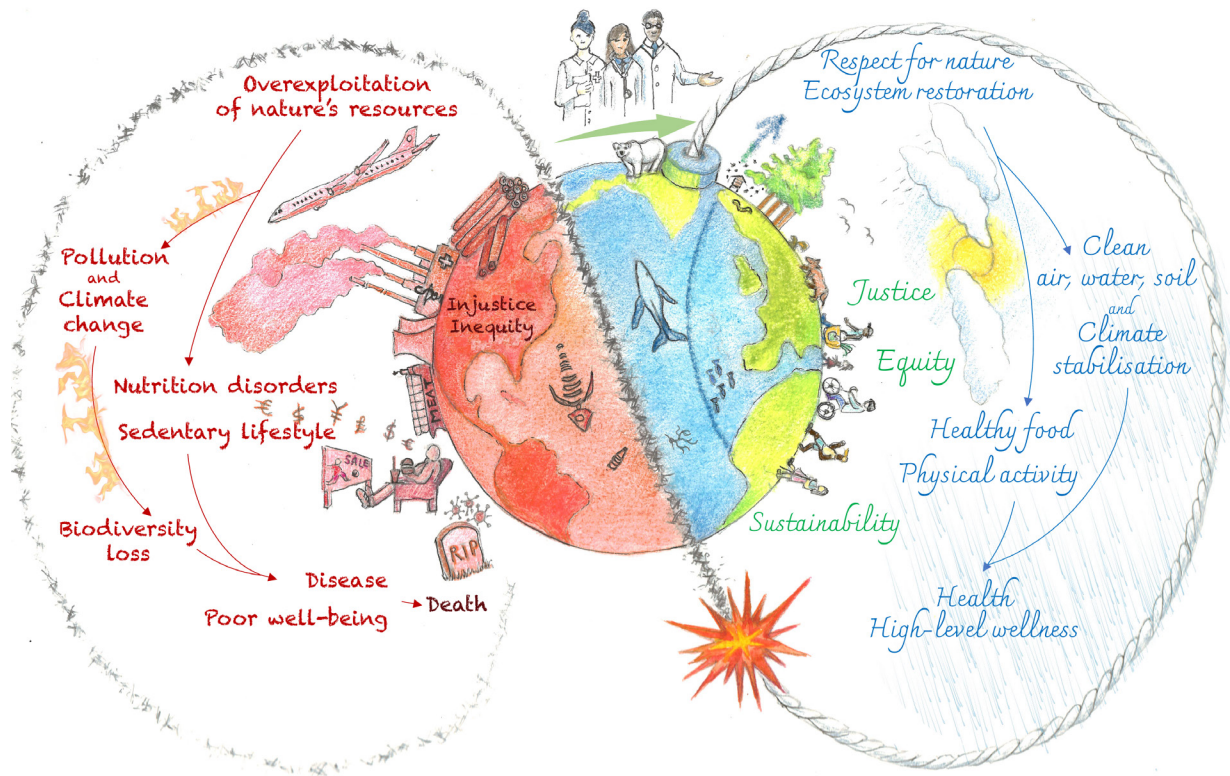


Figure 1 Illustration of the challenges of Planetary Health highlighting the potential role of the Sports and Exercise Medicine community in promoting the transition from a self-destructive anthropocentric world (left side of the Earth) to a sustainable world based on the paradigm of Planetary Health (right side of the Earth). The left side of the Earth represents the vicious cycle of over-exploitation of Earth's natural resources, leading to several negative consequences, including disease and death. Extractivism depletes resources and leads to pollution, especially the greenhouse gases responsible for global warming. The right side of the Earth represents the virtuous cycle of respecting natural ecosystems that leads to good health. Living within planetary boundaries (implying inter-species, intra- and inter-generational justice) is the only option for a sustainable world. It requires respect for ecosystems to ensure a clean environment, stabilise the climate and revive biodiversity, and lifestyle changes (including plant-based diets and physical activity, mainly through active transport) and whose co-benefits improve the wellness of humanity and other 'beings'. Current human lifestyles, particularly in wealthier countries, are leading to uncontrollable disasters (red shades on the left symbolise the danger and global warming, with heat fanning the flames). In contrast, responsible lifestyles (blue shades on the right evoke the colour of our planet, and green shades represent ecology and hope) are urgently needed to halt the destruction (the bomb planet reflects the United Nations Secretary-General's metaphor).

initiatives related to Planetary Health for the SEM community.

WHAT IS OUR RESPONSIBILITY AS THE SPORTS AND EXERCISE MEDICINE COMMUNITY?

As the SEM community, we have a responsibility to address environmental degradation. Both the origins of our SEM discipline (ie, medicine⁵ and sports^{6,7}) produce large ecological footprints.

For example, elite athletes have one of the largest individual carbon footprints, mainly due to transport.⁷ There are concerns about the sustainability of mega-sporting events, such as the Olympic Games,⁸ which are undeniably a considerable nuisance. Each edition generates millions of metric tons of CO₂ emissions, leading to hundreds of deaths this century.⁹ Sports infrastructure and equipment are also well-documented sources of pollution.^{10,11} In addition, healthcare systems are increasing greenhouse gas

(GHG) emissions, accounting for nearly 5% of global GHG emissions.^{5,12} Beyond a certain threshold—exceeded by most developed countries that emit over 90% of total GHG—health benefits do not increase.^{12,13} Maintaining certain practices raises ethical concerns in an era of impending scarcity, where sufficiency is part of the solution. Furthermore, some sports medicine practices (such as surgeries, medications, supplements or techniques to enhance or sustain high-level performance) often diverge from sustainable development goals.

WHAT CHOICES DO WE, AS THE SPORTS AND EXERCISE MEDICINE COMMUNITY, HAVE?

On the one hand, as with other human activities, continuing this SEM approach, which favours anthropocentric extractivism, will worsen ecological and social consequences (figure 1).^{13,12} A passive approach to Planetary Health (eg, wait-and-see, do nothing) will push

humanity into a high-risk zone and encourage crossing irreversible tipping points.⁴

On the other hand, we can redirect our human and SEM activities and embrace a Planetary Health approach.^{1 4} Various healthcare communities and sports organisations have proposed this, resulting in the implementation of operational plans (eg, <https://unfccc.int/climate-action/sectoral-engagement/sports-for-climate-action>). Nevertheless, the dissemination of this knowledge, the increase in awareness and the progression towards action must be revisited to meet the scale of change required, and it seems that the prevalent wait-and-see mentality demands a radical shift. Therefore, if we pivot our SEM activities and adopt a Planetary Health framework, akin to athletes in any sport, we must enhance our commitment to achieve success (figure 1).

WHY SHOULD THE SPORTS AND EXERCISE MEDICINE COMMUNITY PLAY A ROLE IN PLANETARY HEALTH?

First, as the SEM community, we are contributing to the ecological footprint,^{5 6} which is the deterioration of living conditions on Earth that every human must preserve.

Second, environmental disturbances harm human organisms and deteriorate the areas where physical activities are practised.

Third, our role is also to protect and promote the health of athletes and the populations. Air and water quality, diet and sleep play a key role in health and performance.^{14–17} we are thus concerned about the health of our ecosystems. Over three decades, global warming has led to a 28% increase in the hours during which ambient heat posed at least a moderate risk of heat stress during light outdoor exercise. Additionally, high night-time temperatures have disrupted sleep worldwide.¹² Pollution has the same origin as global warming, and their harmful effects are cumulative, which seem omnipresent in the environment and within our organisms,^{18 19} causing severe organ dysfunctions that negatively impact performance. Pollution necessitates adapting practices to preserve athletes' health while directly exacerbating sedentary behaviour,²⁰ whereas physical activity is essential for the future.²¹ The climate disasters that disrupt certain global events will worsen,^{22 23} resulting in consequences for infrastructures and venues that threaten many competitions and sports, particularly winter sports.²⁴

Finally, the leaders we are could play a key role in the expected virtuous transformation:²⁵ the population's faith in healthcare professionals and their qualities (eg, benevolence, goodwill), allied to the popularity of sports and its values (eg, courage, perseverance, fairness), can be an asset in this challenge.²⁶

WE, THE SPORTS AND EXERCISE MEDICINE COMMUNITY, CAN CHOOSE TO STEP UP AND ACT BEFORE TIME RUNS OUT!

Therefore, we can either persist in transgressing planetary boundaries or enhance well-being by adopting the Planetary Health paradigm.

If we recognise that we are facing a global health emergency of a climate and nature crisis,² we should adopt an eco-ethical attitude and make a great turnaround right now.⁴ The following points reflect our suggestions for potential practical initiatives at both the community and individual levels:

- *Quantify and report*: systematically calculate and edit the carbon footprint (and, in the future, the ecological footprint) of all SEM activities (eg, scientific studies within publications and medical activities in institutional reports).
- *Explore*: conduct research to better understand how our medical, research and sports practices impact the environment and how to mitigate them.
- *Educate*: devote time to informing the SEM community, from students to the most seasoned professionals, about current Planetary Health issues, challenges, opportunities and their role in becoming effective change agents. For instance, we could organise webinars and workshops or create educational materials everyone can use, including a wealth of lectures in the SEM curriculum. Additionally, we might publish guides on sustainable practices, train SEM and other professionals with a transdisciplinary and inclusive approach, and establish indicators and targets to monitor progress. Raise awareness among all individuals about the significant benefits of physical activity²¹ emphasises the environmental co-benefits (eg, reduced reliance on curative care, active transport leading to pollution reduction, material sobriety and well-being) and advocates for everyone to promote health through exercise and sustainable diets.
- *Medical practice*: optimise the health system by reducing its ecological footprint.^{5 12} Eliminate harmful over-treatment and low-value care (ie, care with minimal expected benefits) at the individual level while curtailing the most environmentally damaging activities (eg, unnecessary surgeries, inappropriate radiological investigations, discarded medications, high-tech rehabilitation equipment, the consumption of animal proteins and all forms of waste). Emphasise preventive measures based on scientific evidence and sustainable care innovations that include natural treatments (eg, physical activity, optimised sleep and nutrition, eco-friendly devices), psychological interventions, and medical or surgical procedures with low life-cycle environmental emissions, favouring low-tech medicine.²⁷ Promote efficiency and sufficiency in sports medicine.²⁸
- *Take a stance*: adopt a responsible and inspiring approach (eg, reduce air travel, reduce single-use plastics and shift towards a more plant-based diet). Acknowledge maladaptive actions and condemn them. Condemn fallacious attitudes, such as greenwashing, techno-solutionism and reassurances, which contribute to misinformation regarding the wait-and-see mentality and oppose eco-destructive actions, including projects that lead to biodiversity loss or

denouncing sponsorship from major polluters.⁷ Promote ‘eco-ethical’ leadership²⁹ that embodies the virtues of physical activity.

- *Promote a sustainable future and advocate for equitable policies:* embrace a systemic approach with a multi-disciplinary team; envision a sustainable and equitable world co-created with other medical specialties, scientific disciplines, professional organisations and communities within our societies; and forge connections with other societies that can enrich and broaden our perspectives. Engage political decision-makers, sports figures and institutions with decision-making and media influence to ensure that science and health steer their efforts, making them a priority. Stay aware of the unintended consequences of prioritising performance without recognising its negative aspects.

CONCLUSION: ACHIEVE OUR GOALS!

As part of the SEM community and those we work with, we discussed how we need to change our ways and follow Planetary Health principles. This is because we are responsible for protecting all living things (figure 1). Our scientific knowledge, leadership and ethics should inspire us to spread awareness and become great advocates for this cause. Let’s take on the challenge of solving humanity’s planetary problems, so we can rise to the occasion, live up to our values and strengthen our connection with nature: ‘faster, higher, stronger—all together!’

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