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# Planetary Health Report Card (Physiotherapy): Karolinska Institutet

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**Karolinska  
Institutet**

2023-24 Contributing Team:

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## Summary of Findings

Overall	C+
<u>Curriculum</u>	C+
<ul style="list-style-type: none"> <li>The undergraduate physiotherapy program at Karolinska Institutet includes planetary health in the core curriculum, which is integrated longitudinally in the physiotherapy program. However, the teaching and learning activities are dependent on only one teacher within physiotherapy and one within psychology.</li> <li><b>Recommendations:</b> The responsibility to cover planetary health and its connection to patients' health should be assigned to a larger number of teachers. This could also be a way to ensure a deeper knowledge if everything from physiology to patient encounters is addressed by the teachers covering these different topics.</li> </ul>	
<u>Interdisciplinary Research</u>	B
<ul style="list-style-type: none"> <li>KI conducts research on planetary health, though research on sustainable health care is scarce. The division of physiotherapy has only one project focusing on education for sustainable development within physiotherapy. While there are many collaborations at KI, the division of physiotherapy is not involved within this topic.</li> <li><b>Recommendations:</b> Adding sustainability as a prerequisite to research proposals within physiotherapy could facilitate rapid up-scaling of activities related to sustainability and planetary health.</li> </ul>	
<u>Community Outreach and Advocacy</u>	D+
<ul style="list-style-type: none"> <li>KI does not have any collaborations with sustainability-focused community organisations, nor does it organise courses or events targeted at the general public. In its internal communication, KI covers sustainability and planetary health, but not on a regular basis. KI offers some courses directed at students, teachers and professionals inside and outside of the institution.</li> <li><b>Recommendations:</b> KI in general and the division of physiotherapy should set up partnerships with community organisations in Stockholm, Sweden and abroad; co-organise public events/courses that increase public awareness of the health impacts of climate change; and systematically cover sustainability and planetary health in its internal communication.</li> </ul>	
<u>Support for Student-Led Initiatives</u>	B
<ul style="list-style-type: none"> <li>KI recognises sustainability initiatives through its Sustainability Award, and has student representatives on its Council for Environment and Sustainable Development. Medical students interested in planetary health have to pursue independent initiatives outside the medical program. Support is provided to SSD, KI's student-led sustainability organisation.</li> <li><b>Recommendations:</b> KI should continue to provide resources and support to student organisations like SSD that promote sustainability on campus. As KI is a medical university, it may consider collaborating with other universities or organisations to organise other types of activities or initiatives for planetary health.</li> </ul>	
<u>Campus Sustainability</u>	B-
<ul style="list-style-type: none"> <li>Most buildings are energy-efficient, and smaller initiatives such as bicycle repair days exist. A large part of emissions result from procurement and travelling, these thus being focus areas for improvement.</li> <li><b>Recommendations:</b> KI should implement and facilitate a composting system campus wide, mandate that campus restaurants encourage the purchase of more sustainable food (using scores, nudging or more plant-based menus) and render lab spaces more sustainable. Moreover, we would recommend KI make a public statement about fossil fuel divestment.</li> </ul>	

# Statement of Purpose

*Planetary health is human health.*

The Planetary Health Alliance describes planetary health as “a field focused on characterising the human health impacts of human-caused disruptions of Earth's natural systems.” This definition is intentionally broad, intended to encompass the multitude of ways that the environment can affect health, including water scarcity, changing food systems, urbanisation, biodiversity shifts, natural disasters, climate change, changing land use and land cover, global pollution, and changing biogeochemical flows. The health of humanity is dependent on our environment and our environment is changing rapidly and in disastrous ways. Although the World Health Organization has called climate change “the greatest threat to global health in the 21st century,” the writers could find few examples of integration of planetary health into physiotherapy school’s institutional priorities to reflect the urgency of this danger to human health.

As future health professionals, we must be prepared to address the impacts of human-caused environmental changes on our patients’ health. Physiotherapist’s in particular should be adept in considering the environment through which our patients move as the efficacy of physiotherapy treatment is tied to surrounding ecology, including air, water and land. This preparation is in the hands of the institutions providing our physiotherapy training. It is imperative that we hold our institutions accountable for educating physiotherapy students about the health impacts of climate change and other anthropogenic environmental changes, generating research to better understand health impacts and solutions, supporting related student initiatives, embracing sustainable practices as much as possible, and engaging with surrounding communities that are most affected by environmental threats. Because climate change and environmental threats disproportionately affect vulnerable populations (for example, communities of colour, older adults sensitive to health threats, and individuals in low-resource settings), these issues are inherently ones of equity and justice.

With the purpose of increasing planetary health awareness and accountability among physiotherapy schools, we have created a Planetary Health Report Card that physiotherapy students can use to grade and compare their home institutions on an annual basis. This student-driven initiative could be adapted to compare physiotherapy schools nationally and internationally. The current ratings are made on the basis of discrete metrics in five main category areas: 1) planetary health curriculum, 2) interdisciplinary research in health and environment, 3) University support for student planetary health initiatives, and 4) community outreach centred on environmental health impacts 5) physiotherapy school campus sustainability.

# Definitions & Other Considerations

## Definitions:

- **Planetary Health:** is described by the *Planetary Health Alliance* as “the health of human civilization and the state of the natural systems on which it depends”. For example, topics such as climate change, declining biodiversity, shortages of arable land and freshwater, and pollution would all fall under the realm of planetary health. Both planetary health and traditional ‘environmental health’ examine the relationship between human health and the external environment, including extreme temperatures, chemicals, vector-borne diseases, etc. Planetary health explicitly concerns itself with the potential health harms associated with human-caused perturbations of natural systems. Therefore, the human health focus of planetary health makes the field well-adapted for the context of physiotherapy school education. Throughout this report card, we use the term planetary health to refer to this broad swath of topics, but resources do not need to explicitly include the term “planetary health” to satisfy the metric.
- **Education for Sustainable Healthcare (ESH):** is defined as the process of equipping current and future health professionals with the knowledge, attitudes, skills and capacity to provide environmentally sustainable services through health professional education, thus working to decrease the enormous environmental impact of the healthcare industry. Planetary Health Education is an integral part of this education rather than an end in itself. This is because knowledge on Planetary Health is required to be able to fully understand the necessity of sustainable healthcare as well as being part of the broader knowledge needed to fully protect and promote health. In summary, ESH is covered by the three Priority Learning Outcomes of the Centre of Sustainable Healthcare below, and Planetary Health Education is embraced in the first learning objective and is a fundamental requirement to achieve learning outcomes 2 and 3:
  1. Describe how the environment and human health interact at different levels.
  2. Demonstrate the knowledge and skills needed to improve the environmental sustainability of health systems.
  3. Discuss how the duty of a physiotherapist to protect and promote health is shaped by the dependence of human health on the local and global environment.
- **Physiotherapy School vs. Institution:** When “physiotherapy school” is specified in the report card, this only refers to curriculum offered within the physiotherapy program, and resources offered at/for the Division of Physiotherapy or the Department of Neurobiology, Care Sciences and Society, and does not include offerings from other parts of the university (for example, other programs or related departments). In contrast, when “institution” is specified in the report card, we are referring to the university more broadly. Any resource reasonably accessible by physiotherapy students, no matter where in the institution the resource comes from or if it is specifically targeted for physiotherapy students, can meet this metric.
- **Environmental history (Metric 19 in curriculum section):** This is a series of questions providers are taught to ask during physiotherapy encounters that elicit patients’ exposures and environmental risk factors. Historically, this has included consideration of exposures like pesticides, asbestos, and lead, though in the modern era shaped by climate change, it can be expanded to include things like wildfire smoke exposure, air pollution and mold after flooding. Key components include place of residence over the lifecourse, occupational history, food and water sources (e.g. meat from industrial feeding operations, regular fishing

in contaminated water, access to clean drinking water), and exposure to air pollution.

- **Elective:** The word “elective” refers to an optional course or lecture series that a physiotherapy student can opt to take part in but is not a requirement in the core curriculum. Generally, these elective courses take place in the preclinical curriculum but vary by school.
- **Clinical placement:** This is a term used in Sweden to refer to placements in clinical settings that physiotherapy students go on e.g. Acute Care, Inpatient Rehab, Pediatric Clinic.
- **Physiotherapy vs Physical Therapy:** For the purposes of this report card these terms are considered interchangeable. However, physiotherapy will be used primarily.

#### **Other considerations:**

- The scoring in the PHRC regarding the physiotherapy curriculum might not give a complete picture of how planetary health is addressed in the programme. This is because complete in-depth data surrounding how the specific question is mentioned could not be obtained. We as students do not have access to every course site with its lectures and content, thus the assessment has not been done in a fully “systematic” way. Of 23 courses, 14 answered the questions sent to them by email. It is not likely that the score regarding curriculum would be altered even with their answers since there was no learning outcome or content related to sustainability or planetary health in the syllabuses for these courses.
- Question number 15, about plant-based diet has been added to this report since this is relevant for physiotherapists working in a Nordic context, where the Nordic nutrition recommendations are part of the professions practise for unhealthy lifestyle behaviours. This may not be applicable globally.
- This report card has used a version previously published for physiotherapy schools adapted from a version developed for medical schools internationally, future changes to make the report more adapted to the physiotherapy programme should be considered.
- Regarding the curriculum part. The difference between a question being covered in depth, briefly or not covered is sometimes hard to decide. In choosing which score each question would be given, a conservative interpretation has been used consistently.

# Planetary Health Curriculum

***Section Overview:*** This section evaluates the integration of relevant planetary health topics into the physiotherapy school curriculum. Today's physiotherapy students will be on the frontlines of tackling the health effects of climate and other environmental changes. Therefore, it is critical that physiotherapy students are trained to understand the health effects of these changes, as well as planetary health issues and principles more broadly. Topics like the changing geography of vector-borne diseases, the health consequences of air pollution, environmental health inequities, and disaster response principles must be part of every physiotherapy school's core curriculum.

## *Curriculum: General*

<b>1. Did your physiotherapy school offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?</b>	
3	Yes, the physiotherapy school has offered more than one elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the physiotherapy school has offered one elective whose primary focus is ESH/planetary health in the past year.
1	The physiotherapy school does not have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a lecture on planetary health.
0	No, the physiotherapy school has not offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.
Score explanation: This is not applicable since the physiotherapy program does not provide elective courses during the undergraduate physiotherapy program.	

## *Curriculum: Health Effects of Climate Change*

<b>2. Does your physiotherapy school curriculum address the relationship between extreme heat, health risks, and climate change?</b>	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
Score explanation: <ul style="list-style-type: none"> <li>• As part of the course Professional Development - Physiotherapy as a Subject and a Profession (1FY016, 3 credits), given in the first semester, the topic is covered in a full-day interactive lecture called "Health" including discussions, reflections and a small group work with oral</li> </ul>	

presentation. There is a dedicated learning outcome stating students should “discuss factors that influence the relationship between movement, functioning and health, including human rights, *planetary health and sustainable development*”. The lecture includes parts where the topic is either partially or fully in focus, such as social and ecological determinants of health, agenda 2030 and the global goals, planetary boundaries, planetary health, climate crisis is a health crisis, impact on climate changes and biodiversity loss on human health, health consequences of extreme heat nationally and globally (<15 slides).

- As part of the course Healthcare - Physiotherapy in Primary Care (1FY044, 19,5 credits), given in the fifth semester, the topic is covered in a half-day interactive lecture called “*Sustainable health care and unhealthy lifestyle habits*”, including discussions and reflections. There is a dedicated learning outcome stating students should “analyse and critically reflect on the possibilities of health care to work with *sustainable development* within their own profession and the given workplace”. The lecture includes parts where the topic is either partially or fully in focus, such as social and ecological determinants of health, agenda 2030 and the global goals, planetary health climate crisis is a health crisis, impact on climate changes and biodiversity loss on human health, health consequences of extreme heat nationally and globally (<10 slides and 1 short movie).

**3. Does your physiotherapy school curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?**

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation:

- As part of the course Professional Development - Physiotherapy as a Subject and a Profession (1FY016, 3 credits), given in the first semester, the topic is covered in a full-day interactive lecture called “*Health*”, including discussions, reflections and a small group work with oral presentation. There is a dedicated learning outcome stating students should “discuss factors that influence the relationship between movement, functioning and health, including human rights, *planetary health and sustainable development*”. The lecture includes parts where the topic is either partially or fully in focus, such as social and ecological determinants of health, agenda 2030 and the global goals, planetary boundaries, planetary health, climate crisis is a health crisis, impact on climate changes and biodiversity loss on human health, the broad range of health consequences of extreme weather events nationally and globally (<20 slides and 3 short movies).
- As part of the course Healthcare - Physiotherapy in Primary Care (1FY044, 19,5 credits), given in the fifth semester, the topic is covered in a half-day interactive lecture called “*Sustainable health care and unhealthy lifestyle habits*” including discussions and reflections. There is a dedicated learning outcome stating students should “analyse and critically reflect on the possibilities of health care to work with *sustainable development* within their own profession and the given workplace”. The lecture includes parts where the topic is either partially or fully in focus such as social and ecological determinants of health, agenda 2030 and the global

goals, planetary health, climate crisis is a health crisis, the broad range of health consequences of extreme weather events nationally and globally (>10 slides and 2 short movies).

**4. Does your physiotherapy school curriculum address the impact of climate change on the changing patterns of infectious diseases?**

3 This topic was explored in depth by the core curriculum.

2 This topic was briefly covered in the core curriculum.

1 This topic was covered in elective coursework.

0 This topic was not covered.

Score explanation:

- As part of the course Professional Development - Physiotherapy as a Subject and a Profession (1FY016, 3 credits), given in the first semester, the topic is covered in a full-day interactive lecture called “*Health*” including discussions, reflections and a small group work with oral presentation. There is a dedicated learning outcome stating students should “discuss factors that influence the relationship between movement, functioning and health, including human rights, *planetary health and sustainable development*”. The lecture includes parts where the topic is either partially or fully in focus such as social and ecological determinants of health, climate crisis is a health crisis, planetary health, impact on climate changes and biodiversity loss on human health, climate change and infectious diseases nationally and globally (<5 slides).
- As part of the course Healthcare - Physiotherapy in Primary Care (1FY044, 19,5 credits), given in the fifth semester, the topic is covered in a half-day interactive lecture called “*Sustainable health care and unhealthy lifestyle habits*” including discussions and reflections. There is a dedicated learning outcome stating students should “analyse and critically reflect on the possibilities of health care to work with *sustainable development* within their own profession and the given workplace”. The lecture includes parts where the topic is either partially or fully in focus such as social and ecological determinants of health, climate crisis is a health crisis, planetary health, impact on climate changes and biodiversity loss on human health, climate change and infectious diseases nationally and globally (<5 slides and 1 short movie).

**5. Does your physiotherapy school curriculum address the respiratory health effects of climate change and air pollution?**

3 This topic was explored in depth by the core curriculum.

2 This topic was briefly covered in the core curriculum.

1 This topic was covered in elective coursework.

0 This topic was not covered.

Score explanation:



- As part of the course Professional Development - Physiotherapy as a Subject and a Profession (1FY016, 3 credits), given in the first semester, the topic is covered in a full-day interactive lecture called “*Health*” including discussions, reflections and a small group work with oral presentation. There is a dedicated learning outcome stating students should “discuss factors that influence the relationship between movement, functioning and health, including human rights, *planetary health and sustainable development*”. The lecture includes parts where the topic is either partially or fully in focus such as social and ecological determinants of health, climate crisis is a health crisis, planetary health, impact on climate changes and biodiversity loss on human health, air pollution and illness nationally and globally (<5 slides).
- As part of the course Healthcare - Physiotherapy in Primary Care (1FY044, 19,5 credits), given in the fifth semester, the topic is covered in a half-day interactive lecture called “*Sustainable health care and unhealthy lifestyle habits*” including discussions and reflections. There is a dedicated learning outcome stating students should “analyse and critically reflect on the possibilities of health care to work with *sustainable development* within their own profession and the given workplace”. The lecture includes parts where the topic is either partially or fully in focus such as social and ecological determinants of health, climate crisis is a health crisis, planetary health, impact on climate changes and biodiversity loss on human health, air pollution and illness nationally and globally (>5 slides and 1 short movie).

Recommendations:

There are several courses where this topic could be addressed, and together they could give a deepened understanding from physiology to patient care.

- 1FY030, “Healthcare - Clinical Medicine 1”, in the lecture about pulmonary disease.
- 1FY026 “Intervention - Physiotherapy 3”, when discussing physiotherapy interventions for patients with respiratory complications.
- 1FY050, “Examination - Physiology 2”, when learning about pulmonary physiology.

**6. Does your physiotherapy school curriculum address the cardiovascular health effects of climate change, including increased heat?**

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation:

- As part of the course Professional Development - Physiotherapy as a Subject and a Profession (1FY016, 3 credits), given in the first semester, the topic is covered in a full-day interactive lecture called “*Health*” including discussions, reflections and a small group work with oral presentation. There is a dedicated learning outcome stating students should “discuss factors that influence the relationship between movement, functioning and health, including human rights, *planetary health and sustainable development*”. The lecture includes parts where the topic is either partially or fully in focus such as social and ecological determinants of health, climate crisis is a health crisis, planetary health, impact on climate changes and biodiversity loss on human health, heat-related illness nationally and globally (<5 slides)

- As part of the course Healthcare - Physiotherapy in Primary Care (1FY044, 19,5 credits), given in the fifth semester, the topic is covered in a half-day interactive lecture called “*Sustainable health care and unhealthy lifestyle habits*” including discussions and reflections. There is a dedicated learning outcome stating students should “analyse and critically reflect on the possibilities of health care to work with *sustainable development* within their own profession and the given workplace”. The lecture includes parts where the topic is either partially or fully in focus such as social and ecological determinants of health, climate crisis is a health crisis, planetary health, impact on climate changes and biodiversity loss on human health, heat-related illness nationally and globally (<5 slides and 1 short movie).

Recommendations:

There are several courses where this topic could be addressed, and together they could give a deepened understanding from physiology to patient care.

- 1FY030, “Healthcare - Clinical Medicine 1”, in the lectures about stroke and cardiovascular diseases.
- 1FY026, “Intervention - Physiotherapy 3”, when discussing physiotherapy interventions for patients with cardiovascular complications (high blood pressure, risks of training in high temperatures).
- 1FY050, “Examination - Physiology 2”, when learning about circulatory physiology.

**7. Does your physiotherapy school curriculum address the mental health and neuropsychological effects of environmental degradation and climate change, for example as part of the pain curriculum?**

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation:

- As part of the course Professional Development - Physiotherapy as a Subject and a Profession (1FY016, 3 credits), given in the first semester, the topic is covered in a full-day interactive lecture called “*Health*” including discussions, reflections and a small group work with oral presentations. There is a dedicated learning outcome stating students should “discuss factors that influence the relationship between movement, functioning and health, including human rights, *planetary health and sustainable development*”. The lecture includes parts where the topic is either partially or fully in focus such as climate crisis is a health crisis, impact on climate changes and biodiversity loss on mental health, climate emotions (<5 slides, 1 short movie with following reflection).

Recommendations:

There are several courses where this topic could be addressed, and together they could give a deepened understanding from physiology to patient care.

1FY034 “Healthcare - Clinical Medicine 2”, in lecture about anxiety.

1FY024 “Intervention – Psychology”, in lectures about migration and PTSD.

<b>8. Does your physiotherapy school curriculum address the relationships between health, individual patient food and water security, ecosystem health, and climate change?</b>	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p>Score explanation:</p> <p>The topic is only briefly mentioned as a side-topic (for example planetary health, ecosystems and food/water supplies) within a couple of slides, in lectures part of the courses Professional Development - Physiotherapy as a Subject and a Profession (1FY016, 3 credits), Intervention - Physiotherapy 3 (1FY026, 7,5 credits), and the Healthcare - Physiotherapy in Primary Care (1FY044, 19,5 credits). This does not qualify for points.</p>	

<b>9. Does your physiotherapy school curriculum address how patterns of colonialism, extractivism, economic exploitation and marginalisation are responsible for producing climate change resulting in an outsized impact on marginalised populations (e.g. low SES, women, communities of colour, Indigenous communities, children, homeless populations, and older adults)?</b>	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p>Score explanation:</p> <ul style="list-style-type: none"> <li>As part of the course Healthcare - Health Promotion and Global Health, (1FY045, 7,5 credits), given in the fifth semester, the topic is covered in a two-hour lecture and group discussion on “<i>Global health and the SDGs</i>”. There is a dedicated learning outcome stating students should “reflect on the concept of sustainable development and identify possibilities and challenges in achieving the global goals for sustainable development within the profession of physiotherapy”. These parts of the course include social determinants of health, climate footprint between different countries and regions - global north and global south, sustainable development report.</li> </ul>	

<b>10. Does your physiotherapy school curriculum address the unequal regional health impacts of climate change globally?</b>	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.

1	This topic was covered in elective coursework.
0	This topic was not covered.
<p>Score explanation:</p> <ul style="list-style-type: none"> <li>As part of the course Professional Development - Physiotherapy as a Subject and a Profession (1FY016, 3 credits), given in the first semester, the topic is very briefly covered in a full-day interactive lecture called “<i>Health</i>” including discussions, reflections and a small group work with oral presentation. There is a dedicated learning outcome stating students should “discuss factors that influence the relationship between movement, functioning and health, including human rights, <i>planetary health and sustainable development</i>”. The lecture includes parts where the topic is briefly in focus such as climate injustice, vulnerable people and migration due to climate change (&lt;5 slides).</li> <li>As part of the course Healthcare - Physiotherapy in Primary Care (1FY044, 19,5 credits), given in the fifth semester, the topic is very briefly covered in a half-day interactive lecture called “<i>Sustainable health care and unhealthy lifestyle habits</i>” including discussions and reflections. There is a dedicated learning outcome stating students should “be able to discuss the application of behavioural medicine principles to support individuals to a healthy lifestyle as well as analyse and critically reflect on the possibilities of health care to work with <i>sustainable development</i> within their own profession and the given workplace”. There is only 1 slide and two movies describing climate injustice, vulnerable people and migration due to climate change.</li> <li>As part of the course Healthcare - Health Promotion and Global Health, (1FY045, 7,5 credits), given in the fifth semester, the topic is covered in the course introduction and a two-hour lecture and group discussion on “<i>Global health and the SDGs</i>”. There is a dedicated learning outcome stating students should “reflect on the concept of sustainable development and identify possibilities and challenges in achieving the global goals for sustainable development within the profession of physiotherapy”. The lecture and group work includes parts where the topic is either partially or fully in focus such as Agenda 2030 and the global development goals - “health and equity are inseparable”, social determinants of health, health (in)equity in relation to climate footprint.</li> </ul>	

***Curriculum: Environmental Health & the Effects of Anthropogenic Toxins on Human Health***

<b>11. Does your physiotherapy school curriculum address the reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides), for example during paediatric or pelvic health curriculum?</b>	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p>Score explanation:</p> <p>To our knowledge, the reproductive health effects of industry-related environmental toxins are currently not covered in the physiotherapy school curriculum.</p>	

Recommendations:

There is at least one course where this topic could be addressed.

- 1FY030, “Healthcare - Clinical Medicine 1”, in lectures about gynaecology.

**12. Does your physiotherapy school curriculum address important human-caused environmental threats that are relevant to the university’s surrounding community?**

3 This topic was explored in depth by the core curriculum.

2 This topic was briefly covered in the core curriculum.

1 This topic was covered in elective coursework.

0 This topic was not covered.

Score explanation:

To our knowledge, the important human-caused environmental threats that are relevant to the university’s surrounding community are currently not covered in the physiotherapy school curriculum.

**13. To what extent does your physiotherapy school emphasise the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?**

3 Indigenous knowledge and value systems are integrated throughout the physiotherapy school’s planetary health education

2 Indigenous knowledge and value systems as essential components of planetary health solutions are included briefly in the core curriculum.

1 Indigenous knowledge and value systems as essential components of planetary health solutions are included in elective coursework.

0 This topic was not covered.

Score explanation:

- As part of the course Professional Development - Physiotherapy as a Subject and a Profession (1FY016, 3 credits), given in the first semester, the topic is covered in a full-day interactive lecture called “*Health*” including discussions, reflections and a small group work with oral presentation. There is a dedicated learning outcome stating students should “discuss factors that influence the relationship between movement, functioning and health, including human rights, *planetary health and sustainable development*”. The lecture includes parts where the topic is either partially or fully in focus such as nature connectedness, place-attachment, and pro-environmental behaviour, as well as Indigenous people globally, climate change and health (<10 slides).

**14. Does your physiotherapy school curriculum address the outsized impact of anthropogenic environmental toxins on marginalised populations such as those with low SES, women, communities of colour, children, homeless populations, Indigenous populations, and older adults?**

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p>Score explanation:</p> <p>To our knowledge, the outsized impact of anthropogenic environmental toxins on marginalised populations such as those with low SES, women, communities of colour, children, homeless populations, Indigenous populations, and older adults is currently not covered in the physiotherapy school curriculum.</p>	

***Curriculum: Sustainability***

<b>15. Does your physiotherapy school curriculum address the environmental and health co-benefits of a plant-based diet?</b>	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p>Score explanation:</p> <ul style="list-style-type: none"> <li>As part of the course Intervention - Physiotherapy 3 (1FY026, 7,5 credits), given in the third semester, the topic is covered in a half-day lecture called “<i>Unhealthy lifestyle habits and e-health</i>” including discussions and reflections. There is a dedicated learning outcome stating students should “be familiar with key elements of national guidelines for the prevention and treatment of unhealthy lifestyles and justify and give examples of how they can be used in relation to the role of the physiotherapist and future arenas to achieve <i>the global goals for sustainable development</i>”. The lecture includes parts where the topic is either partially or fully in focus such as Agenda 2030 and the global sustainable development goals, planetary-health diet and the new Nordic nutrition recommendations where the climate aspect has been taken into account, advising reduced meat consumption (&lt;5 slides).</li> <li>As part of the course Healthcare - Physiotherapy in Primary Care (1FY044, 19,5 credits), given in the fifth semester, the topic is covered in a half-day interactive lecture called “<i>Sustainable health care and unhealthy lifestyle habits</i>” including discussions and reflections. There is a dedicated learning outcome stating students should “be able to discuss the application of behavioural medicine principles to support individuals to a healthy lifestyle as well as analyse and critically reflect on the possibilities of health care to work with <i>sustainable development</i> within their own profession and the given workplace”. The lecture includes parts where the topic is either partially or fully in focus such as Agenda 2030 and the global sustainable development goals, planetary-health diet and the new Nordic nutrition recommendations where the climate aspect has been taken into account, advising reduced meat consumption (&lt;5 slides).</li> </ul>	

**16. Does your physiotherapy school curriculum address the environmental and health co-benefits of outdoor activity, active transport and immersion in nature?**

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation:

- As part of the course Professional Development - Physiotherapy as a Subject and a Profession (1FY016, 3 credits), given in the first semester, the topic is covered in a full-day interactive lecture called “*Health*” including discussions, reflections and a small group work with oral presentation. There is a dedicated learning outcome stating students should “discuss factors that influence the relationship between movement, functioning and health, including human rights, *planetary health and sustainable development*”. The lecture includes parts where the topic is either partially or fully in focus such as nature connectedness – definitions and health effects (<5 slides).
- As part of the course Intervention - Physiotherapy 2 (1FY023, 15 credits), given in the second semester, the topic is covered in a one-hour lecture including discussions and reflections called “*Sustainable physical activity*”. There is a dedicated learning outcome stating students should “analyse and discuss the promotion of physical activity based on *the global sustainable development goals* and relate this to the role of the physiotherapist in health care”. The lecture has the topic fully in focus and includes physical activity in relation to the global sustainable development goals, planetary-health enhancing physical activity with an analysis of environmental and health impact, active transportation with an analysis of environmental impact, as well as definitions, challenges and possibilities (>15 slides).
- As part of the course Intervention - Physiotherapy 3 (1FY026, 7,5 credits), given in the third semester, the topic is covered in a half-day lecture called “*Unhealthy lifestyle habits and e-health*” including discussions and reflections. There is a dedicated learning outcome stating students should “be familiar with key elements of national guidelines for the prevention and treatment of unhealthy lifestyles and justify and give examples of how they can be used in relation to the role of the physiotherapist and future arenas to achieve *the global goals for sustainable development*”. The lecture includes parts where the topic is either partially or fully in focus such as planetary-health enhancing physical activity and active transportation in relation to national guidelines of physical activity (<5 slides)
- As part of the course Healthcare - Physiotherapy in Primary Care (1FY044, 19,5 credits), given in the fifth semester, the topic is covered in a half-day interactive lecture called “*Sustainable health care and unhealthy lifestyle habits*” including discussions and reflections. There is a dedicated learning outcome stating students should “be able to discuss the application of behavioural medicine principles to support individuals to a healthy lifestyle as well as analyse and critically reflect on the possibilities of health care to work with *sustainable development* within their own profession and the given workplace”. The lecture includes parts where the topic is either partially or fully in focus such as planetary-health enhancing physical activity and active transportation as part of healthy lifestyle and health prevention/treatment (<5 slides).

**17. Does your physiotherapy school curriculum address the carbon footprint of healthcare systems?**

3	This topic was explored in depth by the core curriculum
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation:

- As part of the course Professional Development - Physiotherapy as a Subject and a Profession (1FY016, 3 credits), given in the first semester, the topic is covered in a full-day interactive lecture called “*Health*” including discussions, reflections and a small group work with oral presentation. There is a dedicated learning outcome stating students should “discuss factors that influence the relationship between movement, functioning and health, including human rights, *planetary health and sustainable development*”. The lecture includes parts where the topic is either partially or fully in focus such as Agenda 2030 and the global goals, the healthcare sectors climate footprint, ethical issues on climate mitigation and adaptation from the healthcare, world physiotherapy climate and health policy, principles of sustainable clinical and healthcare practice (<10 slides).
- As part of the course Scientific Work - Research Methods (1FY031, 7,5 credits), given in the fourth semester, the topic is covered by reading and reflecting on an article focusing on the triple-bottom line called “*A Call to Include a Perspective of Sustainable Development in Physical Therapy Research*” as well incorporate social, environmental and economic sustainability in a written discussion on a physiotherapy intervention. There is a dedicated learning outcome stating students should “be able to discuss how *sustainable development* can be included in physiotherapy research based on one’s own values and literature”.
- As part of the course Healthcare - Physiotherapy in Primary Care (1FY044, 19,5 credits), given in the fifth semester, the topic is covered in a half-day interactive lecture called “*Sustainable health care and unhealthy lifestyle habits*” including discussions and reflections. There is a dedicated learning outcome stating students should “analyse and critically reflect on the possibilities of health care to work with *sustainable development* within their own profession and the given workplace”. The lecture includes parts where the topic is either partially or fully in focus such as Agenda 2030 and the global goals, the healthcare sectors climate footprint, ethical issues on climate mitigation and adaptation from the healthcare, world physiotherapy climate and health policy, principles of sustainable clinical and healthcare practice with examples from NHS, triple-bottom line (<10 slides and 1 short movie).
- As part of the course Healthcare - Health Promotion and Global Health, (1FY045, 7,5 credits), given in the fifth semester, the topic is briefly covered in a two-hour lecture and group discussion on “Health promotion”. There is a dedicated learning outcome stating students should “reflect on the concept of sustainable development and identify possibilities and challenges in achieving the global goals for sustainable development within the profession of physiotherapy”. The lecture includes parts where the topic is either partially or fully in focus such as health prevention and the healthcare sector's climate footprint.

**18. Does your physiotherapy school curriculum cover these components of sustainable clinical**



practice in the <u>core</u> curriculum? (1 point each)	
1	Waste production within the healthcare system and strategies for reducing waste in clinical activities, such as in the operating room
1	The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.
1	The impact of anaesthetic gases on the healthcare carbon footprint and ways to reduce anaesthesia environmental impacts, such as total intravenous anaesthesia or choosing less environmentally anaesthetic gas options with reduced greenhouse gas emissions
1	The environmental impact of pharmaceuticals and over-prescribing as a cause of climate health harm. Alternatively teaching on deprescribing where possible and its environmental and health co-benefits would fulfil this metric.
1	The health and environmental co-benefits of non-pharmaceutical management of conditions where appropriate such as exercise or yoga classes for type 2 diabetes; social group activities such as gardening for mental health conditions; active transport such as bicycle schemes for obesity. This is commonly known as social prescribing in the UK.
1	The health and environmental co-benefits of avoiding over-physiotherapyisation, over-investigation and/or over-treatment
<p>Score explanation:</p> <p>1. During the lecture and seminar part of the course Healthcare - Physiotherapy in Primary Care (1FY044, 19,5 credits), students engage in discussions on the health care sector climate footprint and principles of sustainable healthcare practice with examples from the orthopaedic specialty.</p> <p>5. During the lectures part of the courses Intervention - Physiotherapy 2 (1FY023, 15 credits), Theme Intervention – Physiotherapy (1FY026, 7,5 credits), Theme Scientific Work - Research Methods (1FY031, 7,5 credits), Theme Healthcare - Physiotherapy in Primary Care (1FY044, 19,5 credits) and Theme Healthcare - Health Promotion and Global Health, (1FY045, 7,5 credits), the topic covers planetary health, physical activity in relation to the sustainable development goals, planetary health-enhancing physical activity including active transport, planetary health diet, environmental, social and economic impact of a self-chosen physiotherapy intervention.</p> <p>6. During the lecture part of the course Healthcare - Physiotherapy in Primary Care (1FY044, 19,5 credits), the topic covers the healthcare sector's climate footprint and principles of Sustainable clinical and healthcare practice including lean care.</p>	

*Curriculum: Clinical Applications*

<b>19. In training for patient encounters, does your physiotherapy school's curriculum introduce strategies to have conversations with colleagues and patients about the health effects of climate change?</b>	
2	Yes, there are strategies introduced for having conversations with patients about climate change in the core curriculum.

1	Yes, there are strategies introduced for having conversations with patients about climate change in elective coursework.
0	No, there are not strategies introduced for having conversations with patients about climate change
<p>Score explanation:  The topic is only briefly mentioned as a side-topic within a couple of slides, in two lectures part of the course Intervention - Physiotherapy 3 (1FY026, 7,5 credits), and the course Healthcare - Physiotherapy in Primary Care (1FY044, 19,5 credits). This does not qualify for points.</p>	

<b>20. In training for patient encounters, does your physiotherapy school's curriculum introduce strategies for taking an environmental history or exposure history?</b>	
2	Yes, the core curriculum includes strategies for taking an environmental history.
1	Only elective coursework includes strategies for taking an environmental history.
0	No, the curriculum does not include strategies for taking an environmental history.
<p>Score explanation:  To our knowledge, strategies for taking an environmental history or exposure history is currently not covered in the physiotherapy school curriculum.</p>	

*Curriculum: Administrative Support for Planetary Health*

<b>21. Is your physiotherapy school currently in the process of implementing or improving Education for Sustainable Healthcare (ESH) / planetary health education?</b>	
4	Yes, the physiotherapy school is currently in the process of making major improvements to ESH/planetary health education.
2	Yes, the physiotherapy school is currently in the process of making minor improvements to ESH/planetary health education.
0	No, there are no improvements to planetary health education in progress.
<p>Score explanation:  Due to individual teacher efforts and support from the program director for the physiotherapy program, the undergraduate physiotherapy education is making progress in the implementation of sustainable development, planetary health and sustainable healthcare. However, the complexity of the topic and the sometimes lack of knowledge among teachers needs to be recognized, as well as the need for discussions on how to integrate the topic in the best way. The integration of these topics cannot rely on individual efforts.</p>	

A staff member at the division of physiotherapy held a lecture on planetary health in 2023 for teachers and clinical supervisors, and during early 2024 a workshop in Education for sustainable development with focus on environment and climate.

There are currently efforts to expand learning outcomes as well as teaching and learning activities on climate changes consequences on health with focus on respiratory and cardiovascular diseases, during the course “Healthcare - Inpatient Physiotherapy” (1FY027,15 credits), in semester three at the physiotherapy program. Teaching and learning activities on communication on climate change with patients will also expand in semester three and five within already existing learning outcomes (course 1FY026 + 1FY044).

**22. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the core curriculum?**

6	Planetary health/ESH topics are well integrated into the core physiotherapy school curriculum.
4	Some planetary health/ESH topics are appropriately integrated into the core physiotherapy student curriculum.
2	Planetary health/ESH is not integrated and is primarily addressed in (a) standalone lecture(s).
0	There is minimal/no education for sustainable healthcare.

Score explanation:

To our knowledge, planetary health/sustainable healthcare is integrated longitudinally into the core curriculum of the physiotherapy program. Several learning outcomes exist during year 1-3. However, the teaching and learning activities are dependent on only one teacher within physiotherapy and one within psychology. The topic needs to be built-in in several other courses by several teachers as a natural integrated part of the course content.

**23. Does your physiotherapy school employ a member of faculty to specifically oversee and take responsibility for the incorporation of planetary health and sustainable healthcare as a theme throughout the course?**

1	Yes, the physiotherapy school has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare
0	No, the physiotherapy school does not have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare.

Score explanation:

One teacher at the division of physiotherapy was during 2023 responsible for overseeing the incorporation of education for sustainable development including planetary health and sustainable healthcare at the physiotherapy program. The staff member is an assistant senior lecturer, PT and PhD with research focus on education for sustainable development. One teacher is responsible for most of the teaching and learning activities linked to the learning outcomes including sustainable development.

During the writing of this report card, the teacher has been helpful in providing information on teaching and learning activities.

**Section Total (39 out of 69)**

**56,52%**

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*Are there additional curriculum resources offered at your physiotherapy school or institution not yet asked about that you would like to describe? If so, please do so below.*

# Interdisciplinary Research

***Section Overview: This section evaluates the quality and quantity of interdisciplinary planetary health research at the physiotherapy school and broader institution. Interactions between health and the environment are complex and multifactorial. While climate change has been extensively studied from an environmental science perspective, planetary health is an emerging field. As leading health institutions with talented researchers and research resources, physiotherapy schools should fund research studying the health effects of climate change and anthropogenic environmental toxins. This obligation is particularly strong because the public and policymakers are more attentive to climate change when its implications for human health are emphasised.***

<b>1.Are there researchers engaged in planetary health research and healthcare sustainability research at your <u>physiotherapy school</u>?</b>	
3	Yes, there are faculty members at the School of Physiotherapy who have a primary research focus in planetary health <b>or</b> healthcare sustainability.
2	Yes, there are individual faculty members at the School of Physiotherapy who are conducting research related to planetary health or healthcare sustainability, but it is not their primary research focus.
1	There are planetary health and/or healthcare sustainability researchers at the institution, but none associated with the physiotherapy school.
0	No, there are no planetary health and/or healthcare sustainability researchers at the institution or physiotherapy school at this time.
<p>Score explanation:</p> <p>At the division of physiotherapy specifically, there are faculty members who have a research focus in education for sustainable development, including planetary health and sustainable health care. Research results on education for sustainable development in physiotherapy was presented at the biannual <a href="#">physiotherapy conference</a> in 2023. On an institutional level, KI is making efforts to produce planetary health research, but there is yet great potential within the division of physiotherapy to include sustainability perspectives and planetary health considerations in ongoing research as well as further research at the intersection of clinical medicine, planetary health and sustainable health care.</p> <p>In addition, KI is home to the <a href="#">Institute of Environmental Medicine</a> (IMM) which does public health research on heat epidemiology, air pollution, green spaces and links to cardiovascular diseases, respiratory diseases and allergies including extensive national and international collaborations such as <a href="#">EXPANSE</a> (Exposome powered tools for living in an urban setting), <a href="#">SWEDEHEART</a> (Uppsala University) and <a href="#">CHAIR-India</a> (The Consortium for Climate, Health &amp; Air Pollution Research in India). As such, there are researchers at IMM whose primary research focus is in planetary health.</p> <p>KI also contains several other health research organisations such as the <a href="#">Centre of Excellence for Sustainable Health</a>, the <a href="#">Global Public Health</a> (GPH) department and the <a href="#">Centre for Health Crises</a>, all of which investigate public health problems. These centres are not as extensively dedicated to planetary health research but provide a supportive framework for the development of planetary health and sustainability.</p>	

Exemplifying publications from IMM and GPH relating to environmental health and clinical medicine are: [Yu et al. 2023 on lung function and air quality](#) and [Hellden et al. 2021 on pediatrics and climate change](#).

In addition, KI collaborates with the [Swedish Institute for Global Health Transformation](#) (SIGHT), as well as other universities (Uppsala, SU, KTH, Umeå) via workshops, conferences and other events to encourage cooperation in planetary health research. In 2021, the “One KI for Sustainable Development” project allocated resources for a call for research funding to encourage researchers at KI to engage with the Agenda 2030 and to further develop research aimed at meeting the SDGs. Five researchers were awarded funds of SEK 100-320 thousand each. Yet another KI organisation is [CLINTEC](#), a nephrology study division which contains several researchers who investigate the intersect of Planetary Health and kidney disease.

The Grants Office works to inform about funding opportunities linked to sustainable development. Within all of these named frameworks there is a potential to acquire new funding for interdisciplinary planetary health research within and beyond KI. As a possible role model for such activities, within Stockholm Trio Climate and Health involving Bolin Center, KTH Climate Action Center and KI, researchers have arranged several events broaching climate and health and are also planning a large scale study bringing in cross-disciplinary expertise to develop a collaboration center with projects studying climate and health.

In the [2022 update of the climate action plan 2030](#), KI has stated that it targets to increase research in the areas of climate change and health, climate-friendly healthcare, behavioral science research and prevention of ill health linked to climate change by 2024. In conclusion, KI is making significant efforts to produce planetary health research, and there is yet great potential within KI departments conducting medical research to include sustainability perspectives and planetary health considerations in ongoing research as well as further research at the intersect of clinical medicine, planetary health and sustainable health care.

#### Recommendations:

- Establishing further research in planetary health and sustainable healthcare within KI departments conducting medical research
- Acquiring funding for research on sustainable health care, specifically on mitigation, that is, reducing the carbon footprint of the health care sector, within different medical disciplines at KI departments conducting medical research
- Further engagement with KI’s Centre of Excellence for Sustainable Health, Centre for Health Crises, the GlobeLife collaboration between KI and Uppsala University, other Swedish and international collaborations, aiming at deeper engagement with planetary health research
- Adding a planetary health and sustainable health care lens to ongoing research projects at KI departments conducting medical research and at KI generally where appropriate
- Adding environmental sustainability consideration sections as a prerequisites to any future (clinical) research project proposal at departments conducting medical research, similar to considerations on ethics and equity as prerequisites
- Further participation in collaborative engagements between KI departments conducting medical research and other institutes on transdisciplinary planetary health research, e.g. cooperating with KTH Royal Institute of Technology on how to make single-use medical products reusable or at least recyclable

**2. Is there a dedicated department or institute for interdisciplinary planetary health research at your institution?**

3	There is at least one dedicated department or institute for interdisciplinary planetary health research.
2	There is not currently a department or institute for interdisciplinary planetary health research, but there are plans to open one in the next 3 years.
1	There is an Occupational and Environmental Health department, but no interdisciplinary department or institute for planetary health research.
0	There is no dedicated department or institute.

Score explanation:

KI's [Institute for Environmental Medicine](#) (IMM) is directly involved in researching environmental health and the effects of environmental exposures on human health. At IMM, research is conducted in epidemiology, toxicology, physiology, environmental medicine and risk assessment. To our knowledge, IMM is currently actively involved in planetary health research within the realm of clinical medicine (see above).

In addition, IMM has the task to provide authorities with support regarding environmental health risk assessment. Other institutions at KI such as the [Centre of Excellence for Sustainable Health](#), the [Centre for Health Crises](#) and the [Global Public Health department](#) all conduct public health research and provide supportive framework but are not directly dedicated to interdisciplinary planetary health research. In the [2022 update of the climate action plan 2030](#), KI has stated that it targets one or more positions as professor, associate professor, assistant professor or postdoc in one or more of the areas of climate change and health, climate-friendly healthcare, and/or behavioural science research and prevention of ill health linked to climate change by 2024. There is currently still no **central** initiative or funding for positions within this area, but there can still be positions within these areas that have been recruited by the departments. It has not been clearly stated how the Climate Action Plan goals have been followed-up or achieved.

Recommendations:

- Implementing climate action plan for 2030, ensuring climate and planetary health research is included and developed further
- Keeping KI's IMM research department engaged in planetary health research as well as expanding research on planetary health at other institutions such as the Centre of Excellence for Sustainable Health, the Centre for Health Crises and the Global Public Health Department
- Founding an institute dedicated to planetary health and sustainable health care or dedicating a subdepartment to planetary health and another to sustainable healthcare
- Increase transparency and communication of how KI's 2030 Climate Action Plan objectives are being met, or what initiatives are being taken to ensure that they are going to be met. Adjust the Climate Plan if necessary, and be transparent about the hurdles of achieving these goals on time.

**3. Is there a process by which communities disproportionately impacted by climate change and environmental injustice give input or make decisions about the research agenda at your physiotherapy school?**

3	Yes, there is a process in which community members impacted by climate and environmental injustice have decision-making power in the climate + environmental research agenda.
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2	Yes, there is a process in which community members impacted by climate and environmental injustice advise the climate + environmental research agenda.
1	No, but there are current efforts to establish a process for community members to advise or make decisions on the research agenda.
0	There is no process, and no efforts to create such a process.

Score explanation:

We are unaware of any processes directly at the division of physiotherapy by which communities disproportionately impacted by climate change and environmental injustice give input or make decisions about the climate and environmental research agenda at KI. Meanwhile we decided to give a score of 1 due to the following activities at KI as an institution:

Climate change in Uganda is particularly severe, with the country's climate being mostly tropical and climate change generating increasing patterns of extreme weather and seasonal changes. One of KI's largest [international collaborations is with Makerere University in Uganda](#). The partnership is to manifest itself in a [Centre of Excellence for Sustainable Health](#). A delegation from KI travelled to Uganda in May 2022 to cement the 23-year old relationship. Within this strong partnership, disadvantaged communities are included in decision-making processes on the research conducted. However, to our knowledge, there is no ongoing research of the Centre of Excellence for Sustainable Health related to planetary health. Thus community members in Uganda are not directly involved in the climate and environmental research agenda.

The Institute of Environmental Medicine (IMM) has an overseeing board of several national authorities e.g. Public Health Authority, National Board of Health and Welfare etc. and collaborates with international organisations to help support interdisciplinary planetary health research in disproportionately affected communities. In India, where climate change is a serious public health concern particularly on the level of air pollution, the Consortium for Climate, Health & Air Pollution Research in India ([CHAIR-India](#)) links environmental data to health datasets, and studies associations of short- and long-term air pollution and temperature with mortality and cardiometabolic and respiratory disease in rural and urban areas across India. KI has ongoing studies aiming to better understand health effects of air pollution, collaborating with CHAIR-India databases and FORMAS (a sustainable research fund in Sweden). This research will help Indian organisations better understand the health effects of climate change in their own population and environment. However, these Indian communities disproportionately affected by climate change do not hold decision-making power for the planetary health research agenda at KI.

Recommendations:

- Through discussion and eg. interviews, engage the communities disproportionately affected by climate change i.e. Ugandan and Indian collaborators, to determine what they suggest to improve the research agenda at KI based on their unique perspective, education and knowledge about climate change.
- Make co-design components compulsory for research conducted in and about communities disproportionately impacted by climate change and environmental injustice.
- Investigating the effects of climate change on the health of populations in Uganda, with emphasis on remote and vulnerable populations. Researching methods of health-related adaptation to climate change (e.g. related to malnutrition) and assistance in conserving these populations' ways of life and relationship to nature.
- Investigating the effects of global warming and increases in temperature on vulnerable populations such as geriatric populations. Particular emphasis on pharmacology, with certain



drugs (ex. psychiatric drugs) having pharmacological interactions severely altered upon small environmental temperature increases or during excessive heat waves.

- Investigation into health-related [effects of climate change on for example the Sami](#), the indigenous people living in northernmost Scandinavia, and research into methods of assistance in conserving these populations' ways of life and relationship to nature.

**4. Does your institution have a planetary health website that centralises ongoing and past research related to health and the environment?**

3	There is an easy-to-use, adequately comprehensive website that centralises various campus resources related to health and the environment including all of the following: upcoming events, leaders in planetary health at your institution, and relevant funding opportunities.
2	There is a website that attempts to centralise various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive.
1	The institution has an Office of Sustainability website that includes some resources related to health and the environment.
0	There is no website.

Score explanation:

[Pages that directly address KI's environmental impact, current and future efforts](#) to reduce KI's carbon footprint, [options for faculty and students to get involved in sustainable development](#), and [contributions to the field of planetary health research](#) do exist on KI's website as well as partner websites. KI has a Council for Sustainable Development, and two coordinators for sustainable development. KI further has a "[Sustainable Development](#)" website, pooling all work related to the SDGs. This website is comprehensive and easy to use. The Project One KI for Sustainable Development is promoted here which currently leads to a web course in SDGs for all affiliated or employed at KI.

Previous work in this project includes workshops and [conferences on sustainable development](#) which attracted scientists from multiple fields, and two announcements of research grants that ultimately funded researchers from different KI departments. The Sustainable Development website also clearly lists upcoming and past events relating to sustainable development at KI. It also shows news articles about recent advancements in the understanding of planetary health and promotes current sustainability goals at KI. **However**, the website does not have a primary focus on health and the environment or planetary health. As such, researchers, educators and students with a primary interest in planetary health do not easily access work done or learn about opportunities at KI specifically related to this field.

Recommendations:

- Adding a focus on planetary health to the Sustainable Development website with all current information.
- Generating internet pages for KI's direct contributions to planetary health research providing data and publications with easy access. Promoting these pages on KI's official website. Promoting these websites on KI departments' conducting medical research websites
- Linking and emphasising health co-benefits of sustainability efforts on KI's websites related to sustainability efforts, e.g. transitioning from fossil to renewable energy sources at KI improves respiratory and cardiovascular health due to a decrease in air pollution; promoting public transport and bikes at KI improves air quality and cycling can have benefits for physical and

mental health; and, mainstreaming plant-based diets at KI is beneficial to the environment and our health).

**5. Has your institution recently hosted a conference or symposium on topics related to planetary health?**

4	Yes, the <b>physiotherapy school</b> has hosted at least one conference or symposium on topics related to planetary health in the past year.
3	Yes, the <b>institution</b> has hosted at least one conference or symposium on topics related to planetary health in the past year.
2	Yes, the institution has hosted a conference on topics related to planetary health in the past three years.
1	The institution has not hosted any conferences directly, but they have provided financial support for a local planetary health event.
0	No, the institution has not hosted a conference on topics related to planetary health in the past three years.

Score explanation:

KI has hosted the following events in the last year:

- [Global Conversation on Sustainable Health](#)
- [KI's Sustainability Day 2023](#)
- [Student Competition - Climate and Health: A Vision for Stockholm 2029](#)
- [Towards a Sustainable Future – the University and the Wider World](#)
- [Developing Sustainable Cities: Climate and Health](#)

However, there are no apparent conferences in place for Sustainability in Health Care. To our knowledge these events are hosted by KI and not directly the departments conducting medical research. In 2021, the 2<sup>nd</sup> “[KI Conference on Sustainable Development](#)” was hosted by KI, including funding initiatives to encourage KI researchers to engage in SDG-related questions.

Recommendations:

- Allowing and supporting the departments conducting medical research to host events related to planetary health on its own
- Launching conferences with topics related to sustainable health care and emphasising this topic at the many existing conferences at KI departments conducting medical research
- Making planetary health a primary focus at the next and subsequent GlobeLife conferences
- Continuing to develop and host the above-mentioned and similar events

**6. Is your physiotherapy school a member of a national or international planetary health or ESH organisation?**

1	Yes, the physiotherapy school is a member of a national or international planetary health or ESH organisation
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0	No, the physiotherapy school is not a member of such an organisation
<p>Score explanation:</p> <p>KI holds a membership in the Planetary Health Alliance since 2022, along with SU and KTH, and supports the Environmental Physiotherapy Association since 2023. The division of physiotherapy is actively engaging with the Physiotherapy Environmental Association. Plus ENPHE</p> <p>Recommendations:</p> <ul style="list-style-type: none"> <li>● KI actively engaging with the Planetary Health Alliance and regularly reporting on related progress</li> <li>● KI officially endorsing participation in the <a href="#">Planetary Health Report Card</a></li> <li>● KI promoting and adopting the <a href="#">Association for Medical Education in Europe Consensus Statement: Planetary health and education for sustainable healthcare</a></li> <li>● KI becoming an active member of the <a href="#">Global Consortium on Climate and Health Education</a></li> <li>● KI departments conducting medical research actively engaging in the above-mentioned organisations</li> <li>● KI further actively engaging with the Physiotherapy Environmental Association.</li> </ul>	

<b>Section Total (12 out of 17)</b>	<b>70.59%</b>
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*Are there additional research resources offered at your physiotherapy school or institution not yet asked about that you would like to describe? If so, please do so below.*

## Community Outreach and Advocacy

***Section Overview:*** This section evaluates physiotherapy school engagement in community outreach and advocacy efforts associated with planetary health. Researching and teaching planetary health is necessary but not sufficient. It is critical that institutions also directly engage with communities most affected by environmental health harms. Although climate change is a problem largely created by those with power and resources, its impacts fall disproportionately on under-resourced populations and communities of color. Institutions should partner with local communities affected by climate change and pollution to share information about environmental health threats, advocate together for change, and provide opportunities for students to be a part of this work.

1. Does your <b>physiotherapy school</b> partner with community organisations to promote planetary and environmental health?	
3	Yes, the physiotherapy school meaningfully partners with multiple community organisations to promote planetary and environmental health.
2	Yes, the physiotherapy school meaningfully partners with one community organisation to promote planetary and environmental health.
1	The institution partners with community organisations, but the physiotherapy school is not part of that partnership.
0	No, there is no such meaningful community partnership.
<p>Score explanation:</p> <p>We are unaware of any partnership between KI and community organisations affected by climate change.</p> <p>KI has two sustainability related centres that have the potential to establish collaborations with community organisations. The <a href="#">Center of Excellence for Sustainable Health</a> is a collaboration between KI and Makerere University “to develop capacity and mobilise actions to drive the agenda for sustainable health”. It targets managers in healthcare and public health officers. Further collaborations are with Kinshasa School of Public Health, Benadir University and social innovation company Tinkr. The <a href="#">Center for Health Crises</a> is a KI centre focused on research, education and interdisciplinary collaboration with the aim to increase capabilities to handle future health crises. It co-produced season 4 of <a href="#">Riskzonen</a>, a podcast about threats, risk factors and about how society deals with health crises.</p> <p>The <a href="#">environment and climate action plan 2021-2024</a> formulates the following collaborative goals for 2024:</p> <ul style="list-style-type: none"> <li>● By 2024, the climate issue is an integral part of the KI's collaboration with its most important partner, the health sector.</li> <li>● By 2024, the climate issue is addressed in all major collaborative projects in which KI participates.</li> <li>● By 2024, KI contributes with its expertise on health linked to climate in several society-wide projects.</li> <li>● By 2024, KI has an important role in the university sector in working on climate issues.</li> </ul> <p>Now, in 2024, none of the “several society-wide projects” proposed have been identified.</p>	

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<b>2. Does your <u>physiotherapy school</u> or institution offer community-facing courses or events regarding planetary health?</b>	
3	The physiotherapy school or institution offers community-facing courses or events at least once every year.
2	The physiotherapy school or institution offers courses or events open to the community at least once per year, but they are not primarily created for a community audience.
1	The institution has offered community-facing courses or events, but the physiotherapy school was not involved in planning those courses or events.
0	The physiotherapy school or institution has not offered such community-facing courses or events.
<p>Score explanation:</p> <p>KI has participated in and hosted events such as the following ones in the last year that were partly open to the public, however, to our knowledge, few of them were primarily created for a public audience, and none were hosted directly by the by the division of physiotherapy:</p> <ul style="list-style-type: none"> <li>● <a href="#">Global Conversation on Sustainable Health</a></li> <li>● <a href="#">KI's Sustainability Day 2023</a></li> <li>● <a href="#">Student Competition - Climate and Health: A Vision for Stockholm 2029</a></li> <li>● <a href="#">Towards a Sustainable Future – the University and the Wider World</a></li> <li>● <a href="#">Developing Sustainable Cities: Climate and Health</a></li> </ul> <p>KI offers the following courses that are available to access for the public:</p> <ul style="list-style-type: none"> <li>● <a href="#">Innovation for Sustainable Health</a></li> <li>● <a href="#">KI web course: Getting Started with the SDGs</a></li> <li>● <a href="#">Introduction to social, economic and environmental sustainability and health</a></li> <li>● <a href="#">One Health – transformation for sustainability - hybrid summer course</a></li> </ul>	

<b>3. Does your <u>physiotherapy school</u> have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?</b>	
2	Yes, all students regularly receive communication updates dedicated to planetary health and/or sustainable healthcare.
1	Yes, planetary health and/or sustainable healthcare topics are sometimes included in communication updates.
0	Students do not receive communications about planetary health or sustainable healthcare.
<p>Score explanation:</p> <p>The Department of Neurobiology, Care Sciences and Society (NVS), has a newsletter called NVS News where Environment and sustainability are sometimes included. As of June 2023, NVS also has</p>	

set up a [webpage on planetary health](#). At the same time-point NVS started its “[Environmental and Climate Awareness year](#)” where employees will be able to take part in different activities such as a [survey](#), [lectures & workshops](#), [challenges](#) and [written materials](#) at the webpage. However, this is only aimed at staff and PhD students and not physiotherapy students. The KI [doctoral newsletter](#) has included a link to a student-led initiative on Planetary Health and Sustainability Education (PHSE) and encouraged its readers to sign the PHSE open letter in February 2023.

Further, KI’s regular communication channels such as the [KI student newsletter](#), [KI Calendar](#) and NVS newsletter do not have a dedicated space for sustainability issues, they often include seminars or activities related to sustainability or planetary health that have been done or are planned. When specific events or occasions are planned or have taken place, these are featured on KI’s news channels and information is disseminated on public screens on campus. Initiatives such as courses organised by single researchers are applauded, included in and spread via KI’s new channels. An example is the [KI web course: Getting Started with the SDGs](#), offered to researchers and KI affiliates involved in education.

Overall, sustainability is covered on a quite recurrent basis, but planetary health is covered rather sporadically in KI’s news outlets.

**4. Does the institution or any affiliated hospital trust engage in professional education activities targeting individuals post graduation with the aim of ensuring their knowledge and skills in planetary health and sustainable healthcare remain up to date during their professional career?**

2	Yes, the institution or any affiliated hospital trust offers multiple in-person or online courses relating to planetary health and/or sustainable healthcare for post-graduate providers, including at least one with a primary focus of planetary health.
1	Yes, the institution or any affiliated hospital trust offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers
0	There are no such accessible courses for post-graduate providers

Score explanation:

KI offers a freestanding course on basic level: [Introduction to Social, Economic and Environmental Sustainability and Health, 7.5 credits](#). KI also offers a [1-hour online course on the SDGs](#) and on how to implement them in teaching activities. KI targets include the SDGs in its graduate and post-graduate education as part of the Intended Learning Outcomes from 2024 onwards.

However, to our knowledge, only the first course is targeting individuals post-graduation with the aim of ensuring their knowledge and skills in planetary health and sustainable healthcare remain up to date during their professional career.

Additionally, the [Center of Excellence for Sustainable Health](#), established through a collaborative effort between KI and Makerere University, offers training programs aimed at professionals in health, with the goal of enhancing capacity for sustainable development and sustainable health. However, none are focused on planetary health.

Two lecturers at KI, Hanna Karlsson and Sara Widen, have been awarded with [KI's Sustainability Award 2023](#) recently for training teachers to integrate sustainable development into KI's courses and programmes using an innovative approach.

In February 2023 the physiotherapy programme opened its doors for students, clinicians, employees and former employees and teachers, and offered a rich afternoon on the theme [Tradition and renewal - research, teaching and clinical practice](#). [Emma Swärdh](#), assistant senior lecturer, gave a lecture on "How do we make physiotherapy more sustainable? - Planetary health and the sustainable development goals in physiotherapy education".

At the annual kick-off meeting for the physiotherapy programme in august 2023, gathering teachers and clinical supervisors, [Emma Swärdh](#), assistant senior lecturer, gave a lecture on "Planetary health in physiotherapy".

**5. Does your physiotherapy school or its primary affiliated hospital have accessible educational materials for patients about environmental health exposures?**

2	Yes, all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated physiotherapy centres have accessible educational materials for patients.

Score explanation:

To our knowledge, the division of physiotherapy and Karolinska University Hospital currently do not provide dedicated educational materials regarding environmental health exposures to patients.

However, all the hospitals in the area fall under the umbrella of the Region Stockholm, which has a [Center of Occupational and Environmental Health](#) that has easily accessible information about air pollution, noise, chemicals, outdoor tobacco smoke, inequalities regarding environmental health, and further environmental exposures that affect health.

Given that the hospitals in the region have patient materials about environmental health exposures, but KI and Karolinska University Hospital do not, we award one point.

**6. Does your physiotherapy school or its primary affiliated hospital have accessible educational materials for patients about climate change and health impacts?**

2	Yes, all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated hospitals have accessible educational materials for patients.

Score explanation:

To our knowledge, the division of physiotherapy and Karolinska University Hospital currently do not provide dedicated educational materials regarding climate change and its health impact to patients.

However, all the hospitals in the area fall under the umbrella of the Region Stockholm, which has a [center of Occupational and Environmental Health](#) that has easily accessible information about [climate change](#) and about environmental exposures that affect health, such as, for example, air pollution, noise, chemicals, outdoor tobacco smoke and inequalities regarding environmental health.

Given that the hospitals in the region have patient materials about climate change and its health effects, but KI and Karolinska University Hospital do not, we award one point.

<b>Section Total (5 out of 14)</b>	<b>35.71%</b>
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*Are there additional community engagement and advocacy resources offered at your physiotherapy school or institution not yet asked about that you would like to describe? If so, please do so below.*



# Support for Student-Led Planetary Health Initiatives

**Section Overview:** *This section evaluates institutional support for student-led planetary health initiatives, such as funding, fellowships, programming, and student groups. Planetary health is a young field and, as young people facing a future deeply shaped by climate change, students are often some of the first at an institution to engage with it. Institutions should provide support for students to engage in sustainability quality improvement (QI) initiatives, discover mentors in their area of interest, and receive funding for planetary health projects.*

1. Does your <b>institution</b> offer support for physiotherapy students interested in enacting a sustainability initiative/QI project?	
2	Yes, the institution <i>either</i> offers grants for students to enact sustainability initiatives/QI projects <i>or</i> sustainability QI projects are part of the core curriculum.
1	The physiotherapy school encourages sustainability QI projects (to fulfill clinical placement hours or longitudinal requirements) and offers resources to help students succeed in these projects, but there is no student funding available and there is no requirement to participate.
0	No, the institution does not offer opportunities or support for sustainability initiatives or QI projects.
<p>Score explanation:</p> <p>Groups, individuals, students, and staff at KI are eligible to receive <a href="#">the Sustainability Award</a>. A certificate and money are given to the recipient(s) to further develop or improve initiatives at KI. However, to receive the award, candidates have to be nominated by a head of department and directors, so it is a bit unclear how students can be nominated for this award.</p> <p>KI's Centre for Health Crises and Centre of Excellence for Sustainable Health also hosts a student competition for a climate-neutral Stockholm in collaboration with KTH Climate Action Centre and the Bolin Centre at Stockholm University. However, this competition, titled "<a href="#">Climate and Health: A Vision for Stockholm 2029</a>", does not mention any grants available for the winner.</p>	

2. Does your <b>institution</b> offer opportunities for physiotherapy students to do research related to planetary health and/or sustainable healthcare?	
2	The institution has a specific research program or fellowship for students interested in doing planetary health/sustainable healthcare research.
1	There are research opportunities for students to perform research related to planetary health/sustainable healthcare but these require student initiative to seek these out and carry them out in their spare time.
0	There are no opportunities for students to engage in planetary health/sustainable healthcare research.
<p>Score explanation:</p>	

There are opportunities for physiotherapy students to perform research related to planetary health topics. The Institute of Environmental Medicine at Karolinska Institutet ([IMM](#)) or the Centre of Excellence for Sustainable Health ([CESH](#)) are more focussed on research in sustainability. However, these require the students' own initiative and are not a part of the physiotherapy program. There is no specific research program related to planetary health/sustainable healthcare research for physiotherapy students

**3. Does the physiotherapy school or institution have a webpage where physiotherapy students can find specific information related to planetary health and/or sustainable healthcare activities and mentors within the physiotherapy school or institution? For example, projects achieved, current initiatives underway at the physiotherapy school and/or contact of information of potential mentors.**

2	The physiotherapy school or institution has a webpage with specific information related to planetary health or sustainable healthcare that includes up-to-date information on relevant initiatives and contact information of potential mentors.
1	There is a physiotherapy school or institution webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the physiotherapy school, but it lacks key information.
0	There is no physiotherapy-school or institution specific webpage for locating planetary health and/or sustainable healthcare projects or mentors.

Score explanation:

Karolinska Institutet (KI) has [One KI for Sustainable Development webpage](#) that lists all of KI's research, education, documents, and collaborative works regarding sustainability. The page has a news section that focuses on sustainability in KI and is updated at least once a month. The page also contains links to bodies in KI that work on developing sustainable environments, such as the Council for Environment and Sustainable Development and Environmental Coordinators, as well as links to research centres that focus on planetary health and sustainability. However, the physiotherapy program webpage itself, or the webpage for the division of physiotherapy has no information on planetary health/or sustainable healthcare activities or mentoring within the program.

**4. Does your physiotherapy school have registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?**

2	Yes, there is a student organisation with faculty support at my physiotherapy school dedicated to planetary health or sustainability in healthcare.
1	Yes, there is a student organisation at my physiotherapy school dedicated to planetary health or sustainability in healthcare but it lacks faculty support.

0	No, there is not a student organisation at my physiotherapy school dedicated to planetary health or sustainability in healthcare.
<p>Score explanation:</p> <p>Within KI's student union for all educational programs at KI (Medicinska Föreningen), there is an official committee called <a href="#">Students for Sustainable Development</a> at KI (SSD), which is dedicated to engaging students in sustainability-related projects, not only in healthcare but also for general sustainability. SSD also promotes sustainability on social media and on campus, and provides a social platform for students at KI. However, at the division of physiotherapy itself, there is no specific student sustainability group.</p> <p><a href="#">The Council for Environment and Sustainable Development</a> provides funding for the venue for the Sustainable Research Week organised by Students for Sustainable Development in spring 2023. Additionally, the Council reserves seats for SSD members to represent their interests in meetings.</p>	

<p><b>5. Is there a student liaison representing sustainability interests who serves on a <u>physiotherapy school or institutional decision-making council</u> to advocate for curriculum reform and/or sustainability best practices?</b></p>	
1	Yes, there is a student representative that serves on a physiotherapy school or institutional decision-making council/committee.
0	No, there is no such student representative.
<p>Score explanation:</p> <p>In <a href="#">KI's Council for Environment and Sustainable Development</a>, an advisory board to decision-making bodies at Karolinska Institutet, there are student representatives who are elected through the student union, Medicinska Föreningen (MF). Although this Council lacks executive power, it plays a crucial role in disseminating knowledge about sustainability, discussing environmental issues, and preparing sustainability-related proposals for action plans within the university. Additionally, the council also includes a co-opted seat for representatives from Students for Sustainable Development (SSD).</p>	

<p><b>6. In the past year, has the <u>institution</u> had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)</b></p>	
1	Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.
1	Panels, speaker series, or similar events related to planetary health that have students as an intended audience.
1	Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.

1	Cultural arts events, installations or performances related to planetary health that have students as an intended audience.
1	Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.
1	Wilderness or outdoors programs (e.g., that organise hiking, backpacking, kayaking, or other outings for students)

Score explanation:

- **Projects:** no points awarded
- **Speaker series:** Karolinska Institutet (KI), under the Alumni Lecture Series, hosted a lecture on ‘Sitting still- the greatest health issue of our time’.  
An interactive workshop was organised by the KI Lifestyle4Health network on how common public diseases can be prevented.  
The KI [Council for Environment and Sustainable Development](#) organised the KI Sustainability Day 2023 to increase knowledge of sustainability issues and provide tools and inspiration for students and staff at KI to contribute to a sustainable future.  
KI organised The Sustainable Research Week in which keynote speakers, researchers as well as science company representatives from all over the world, shared their knowledge and experience on the role of sustainability in research, current sustainability issues along with possible solutions.
- **Events:** The KI Impact Challenge event is arranged once a year and this year movement and physical activity were in focus. About 45 students from KI were tasked to come up with what is needed to make young people become more physically active.  
The KI Health Promotion team trained a few students from each course to instruct ‘Movements Snacks’, which are short 5-7 minute exercise regimes, for their classes during breaks or between lectures to encourage physical activity among students.  
‘Fix-your-own bike’ workshops were organised in collaboration with Bon Mécanique.
- **Cultural events:** No points awarded.
- **Volunteer opportunities:** No points awarded.
- **Wilderness/outdoor programs:** KI organised a ‘KI Fun Run’.

Section Total (11 out of 15)

73.33%

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*Are there additional student-led initiative resources offered at your physiotherapy school or institution not yet asked about that you would like to describe? If so, please do so below.*

# Campus Sustainability

**Section Overview:** *This section evaluates the support and engagement in sustainability initiatives by the physiotherapy school and/or institution. The healthcare industry is a major contributor to greenhouse gas emissions as well as pollution that harms local, regional, and global ecosystems. While healthcare is, by nature, a resource-intensive endeavor, the healthcare sector is well poised to lead the world to a more sustainable future. This will involve scrutinizing every aspect of how our systems operate, from where we source our energy, to how we build our infrastructure, to what companies we invest in. Our physiotherapy schools, clinics, and hospitals must set the standard for sustainable practices, and show other sectors what is possible when it comes to minimizing environmental impact.*

1. Does your <u>physiotherapy school</u> and/or <u>institution</u> have an Office of Sustainability?	
3	Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is at least one designated staff member for sustainability at the hospital and/or physiotherapy school.
2	There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but no specific staff member in charge of physiotherapy school and/or hospital sustainability.
1	There are no salaried sustainability staff, but there is a sustainability task force or committee
0	There are no staff members or task force responsible for overseeing campus sustainability
<p>Score explanation:</p> <p>There is an <a href="#">Office of Sustainability</a> at KI with one or more full-time staff member(s) dedicated to campus sustainability. This is also true for the University Hospital which has a <a href="#">Sustainability Unit</a>, and environmental coordinators. There are two environmental coordinators currently employed full time at KI. Together with departmental environmental representatives (whose tasks fall within the scope of their employment) and the Council for the Environment and Sustainable Development, they implement the university's sustainability policies.</p> <p>Each department has an <a href="#">environmental and sustainability representative</a>. There is one staff member at the division of physiotherapy that has an assignment of 5% of full-time as an <a href="#">environment and sustainability representative</a> at The Department of Neurobiology, Care Sciences and Society, and works with the department's environmental and climate work and reports to the department's management. There is a <a href="#">council for Environment and Sustainable Development at KI</a>. The Council advises the President on KI:s environmental and sustainability work. <a href="#">Emma Swärdh</a> from the division of Physiotherapy is a member of the council.</p>	
2. How ambitious is your <u>physiotherapy school/institution's</u> plan to reduce its own carbon footprint?	

5	The physiotherapy school/institution has a <b>written and approved plan</b> to achieve carbon neutrality by <b>2030</b>
3	The physiotherapy school/institution has a <b>written and approved plan</b> to achieve carbon neutrality by <b>2040</b>
1	The physiotherapy school/institution has a stated goal of carbon neutrality by <b>2040</b> but has <b>not created a plan</b> to reach that goal or the <b>plan is inadequate</b>
0	The physiotherapy school/institution does <b>not</b> meet any of the requirements listed above
<p>Score explanation:</p> <p>To our knowledge, no goal of carbon neutrality has been stated by the university. However, KI has signed up to the <a href="#">Climate Framework</a> (an agreement between 37 Swedish universities) which states that all participating universities shall have implemented measures in order to be in line with the 1.5 °C target of the Paris Agreement by 2030. A 50% reduction of greenhouse gas emissions should be realised by 2030 according to <a href="#">KI's Climate Strategy 2030</a>. In order to cut back on greenhouse gas emissions, KI has executed an extensive top-down carbon mapping operation over 2019, which was first <a href="#">presented in 2023</a>. Based on this report, the council for environment and sustainable development has declared the following priorities based on the emissions report at <a href="#">KI's Sustainability Day 2023</a>: purchase of goods, travel, and food/catering.</p>	

<b>3. Do buildings/infrastructure used by the <u>physiotherapy school</u> for teaching (not including the hospital) utilize renewable energy?</b>	
3	Yes physiotherapy school buildings are 100% powered by renewable energy
2	Physiotherapy school buildings source >80% of energy needs from off-site and/or on-site renewable energy.
1	Physiotherapy school buildings source >20% of energy needs from off-site and/or on-site renewable energy.
0	Physiotherapy school buildings source <20% of energy needs from off-site and/or on-site renewable energy.
<p>Score explanation:</p> <p>According to the 2022 update to the 2030 climate action plan, KI and Akademiska Hus (property owner) only have contracts for green electricity (100%). This energy is certified with the "<a href="#">Bra Miljöval</a>" mark, which classifies it as renewable energy (excluding nuclear energy). According to the <a href="#">Environment and Climate Action Plan 2021-2024</a> the university buildings are heated with district heating, which is as of now not 100% renewable though. More than 90% of the total energy consumption of KI is estimated to be from renewable sources.</p> <p>In the past years, Akademiska Hus <a href="#">has put up solar panels on roofs</a> on the KI campus in order to produce (a portion) of the energy locally. In the <a href="#">Lokalförsörjningsplan 2023-2026</a> it was stated that 442,700 kWh was produced this way in 2022.</p>	

4. Are sustainable building practices utilised for new and old buildings on the <b>physiotherapy school campus</b> , with design and construction of new buildings and remodelling of old buildings conforming to a published sustainability rating system or building code/guideline?	
3	Yes, sustainable building practices are utilised for new buildings on the physiotherapy school campus and the majority of old buildings have been retrofitted to be more sustainable.
2	Sustainable building practices are utilised for new buildings on the physiotherapy school campus, but most old buildings have not been retrofitted.
1	Sustainable building practices are inadequately or incompletely implemented for new buildings.
0	Sustainability is not considered in the construction of new buildings.
<p>Score explanation:</p> <p>New buildings at the university campus (such as <a href="#">the new hospital buildings</a> and <a href="#">research buildings</a>) have been built in accordance with Miljöbyggnad guidelines and have received overall rating levels of Gold or Silver. According to the <a href="#">Lokalförsörjningsplan 2023-2026</a> renovation projects should have a Miljöbyggnad rating of at least silver, though Akademiska Hus strives for a gold rating. The <a href="#">renovation of the CMB building is an example of this</a>, however this building will be rented out to different companies and not KI. To reduce the need for travel, KI is setting up/has set up hybrid meeting options in most lecture halls and meeting rooms.</p>	

5. Has the physiotherapy school or institution implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental impact of commuting?	
2	Yes, the physiotherapy school or institution has implemented strategies to encourage and provide <b>environmentally-friendly transportation options</b> such as safe active transport, public transport, or carpooling and these options are well-utilised by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default.
1	The physiotherapy school or institution has implemented <b>some</b> strategies to provide environmentally-friendly transportation options, but the options are <b>unsatisfactorily</b> accessible or advertised.
0	The physiotherapy school or institution has <b>not</b> implemented strategies to encourage and provide environmentally-friendly transportation options.
<p>Score explanation:</p> <p>KI is very well connected to public transport and safe active transport (e.g. bike lanes), and almost all students are using these options. <a href="#">A bus connects both campuses (Solna and Flemingsberg) that KI students can use free of charge</a>. KI also offers safe, indoor parking stations for bicycles. <a href="#">KI has organised and offered free bicycle fixing workshops to staff and students, promoting cycling in the spring/summer</a>.</p> <p>KI does not directly subsidise public transportation for its students. However, KI students do benefit from <a href="#">reduced fares on public transportation through Sweden's Mecenat system</a>, recognised by KI.</p>	

Information about environmentally-friendly public transport is provided during orientation, but emphasis is not placed on the importance of using sustainable transportation for planetary health reasons.

**6. Does your physiotherapy school or institution have an organics recycling program (compost) and a conventional recycling program (aluminum/paper/plastic/glass)?**

2	Yes, the physiotherapy school or institution has <b>both</b> compost <b>and</b> recycling programs accessible to students and faculty.
1	The physiotherapy school or institution has <b>either</b> recycling <b>or</b> compost programs accessible to students and faculty, but not both.
0	There is <b>no</b> compost or recycling program at the physiotherapy school or institution.

Score explanation:

KI has [recycling programs accessible to students, faculty](#) and staff and [a compost program is currently being implemented](#). However, the organic recycling is currently only available in a few locations and further rollout should be sped up.

**7. Does the physiotherapy school or institution apply sustainability criteria when making decisions about the campus food and beverage selections (e.g. local sourcing, reduced meat, decreased plastic packaging)?**

3	Yes, the physiotherapy school has adequate sustainability requirements for food and beverages, including meat-free days or no red-meat, and is engaged in efforts to increase food and beverage sustainability.
2	There are sustainability guidelines for food and beverages, but they are insufficient or optional. The physiotherapy school is engaged in efforts to increase food and beverage sustainability.
1	There are sustainability guidelines for food and beverages, but they are insufficient or optional. The physiotherapy school is not engaged in efforts to increase food and beverage sustainability.
0	There are no sustainability guidelines for food and beverages.

Score explanation:

KI emissions from food and restaurants compose around 1500 tons of CO<sub>2</sub>, which accounts for 3-4% of KI's annual emissions (2019). A calculation within the [climate mapping 2019](#) on measures for reduction of KI's climate impact showed that by only serving vegetarian dishes 2 days a week compared to serving only meat and fish dishes, it would be possible to reduce university emissions within the food category by 27%. The university is now promoting sustainable choices by indicating [One Planet Plate](#) compliancy in at least [one of their restaurants](#), though similar policies (CO<sub>2</sub> emissions per dish, more plant-based options, etc.) should be implemented in all campus restaurants. Individual departments and units such as [CNS](#), [CLINTEC](#) and the library also recommend plant-based food.

Even though the general goal of “greatly reducing greenhouse gas emissions from goods, services, food and waste” is stated in the sustainability guidelines, there are no clear aims stated in the Climate



Strategy for 2030 to address sustainability of food and beverage served. No current guidelines exist regarding catering at KI events.

**8. Does the physiotherapy school or institution apply sustainability criteria when making decisions about supply procurement?**

3	Yes, the physiotherapy school has adequate sustainability requirements for supply procurement and is engaged in efforts to increase sustainability of procurement.
2	There are sustainability guidelines for supply procurement, but they are insufficient or optional. The physiotherapy school is engaged in efforts to increase sustainability of procurement.
1	There are sustainability guidelines for supply procurement, but they are insufficient or optional. The physiotherapy school is not engaged in efforts to increase sustainability of procurement.
0	There are no sustainability guidelines for supply procurement.

Score explanation:

While there are extensive plans to set sustainability and climate requirements in all procurements, tenders and purchases, where possible, there are currently no sustainability requirements for supply procurement (e.g. similar to the [requirements for suppliers brought forward by the National Health Service in England](#)). Still, results from KI's climate mapping indicate that the most extensive climate-damaging emissions are coming from the purchase of goods (approximately 45% of emissions). During 2023, on behalf of the Council for Environment and Sustainable Development, a working group has developed proposals to contribute to reducing the negative environmental impacts of KI's consumption of goods and services.

According to the 2022 update of the KI 2030 climate action plan, [KI intends to have knowledge of its emissions from the consumption of goods and services by 2024](#). In the same year, sustainability and climate requirements will be set in all relevant procurements, calls and purchases, where possible. The requirements will be followed up on. Up to this point, it is unclear whether these guidelines will be binding or optional recommendations.

**9. Are there sustainability requirements or guidelines for events hosted at the physiotherapy school?**

2	Every event hosted at the physiotherapy school must abide by sustainability criteria.
1	The physiotherapy school strongly recommends or incentivizes sustainability measures, but they are not required.
0	There are no sustainability guidelines for physiotherapy school events.

Score explanation:

KI has a [guide on "Sustainable meetings"](#) for events hosted at and by KI, including but not limited to aspects such as energy use, purchases, food choices, transport, accessibility and waste management. The guide is based on Agenda 2030, the UN's 17 Global Goals for sustainable development and KI's

guidelines for the environment and sustainable development. Using the guide and [check-list](#) is strongly recommended, however not required.

**10. Does your physiotherapy school or institution have programs and initiatives to assist with making lab spaces more environmentally sustainable?**

2	Yes, the physiotherapy school or institution has programs and initiatives to assist with making lab spaces more environmentally sustainable.
1	There are guidelines on how to make lab spaces more environmentally sustainable, but not programs or initiatives.
0	There are no efforts at the physiotherapy school or institution to make lab spaces more sustainable.

Score explanation:

According to [the carbon mapping KI did in 2019](#), purchase of goods is the largest emission source at KI, with 45% of total emissions. Laboratory equipment as well as chemicals and pharmaceuticals account for the majority of emissions in this category. When it comes to real estate, laboratory energy use contributes the most to KI's emissions, as KI's large laboratory premises for educational and research activities have large energy requirements.

At the [recent KI sustainability day 2023](#) an emphasis was given to sustainable labs, and a pilot cooperation with MyGreenLab was announced for fall 2023. The Sustainable Development and Equal Opportunities Office has provided us information that KI works actively with lab safety and substitution of hazardous chemicals as well as with laboratory waste management. The next step is to focus on resource efficiency (e.g. energy and water).

[Currently, the department of Neurobiology, Care Sciences and Society has a dedicated web page with information on how to make lab spaces more environmentally sustainable](#), and links to their Environment and Sustainability Representative for further questions. However, KI central does not have programs or initiatives to make lab spaces more sustainable.

**11. Does your institution's endowment portfolio investments include fossil-fuel companies?**

4	The institution is entirely divested from fossil fuels and has made a commitment to reinvest divested funds into renewable energy companies or renewable energy campus initiatives.
3	The institution is entirely divested from fossil fuels.
2	The institution has partially divested from fossil fuel companies or has made a commitment to fully divest, but currently still has fossil fuel investments.
1	The institution has not divested from fossil-fuel companies, but faculty and/or students are conducting organised advocacy for divestment.
0	Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that.

Score explanation:

Based on email correspondence with KI staff, we believe the university has divested entirely from fossil fuels. However, no public statement has been made regarding divestment, and we would recommend KI doing so [in line with other Swedish universities](#).

<b>Section Total (20 out of 32)</b>	<b>62.50%</b>
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*Are there additional sustainability resources offered at your physiotherapy school or institution not yet asked about that you would like to describe? If so, please do so below.*

# Grading

## Section Overview

This section focuses on the grading of the report card. The institution received a grade for each of the individual sections as well as an overall institutional grade. Section point totals were tallied, divided by the total points available for the section, and converted to a percentage. The overall institutional grade is a weighted average of the section grades, with curriculum receiving a higher weight owing to its larger number of metrics. Letter grades for each section and the institution overall were then assigned according to the table below.

Letter Grade*	Percentage
A	80% - 100%
B	60% - 79%
C	40% - 59%
D	20% - 39%
F	0% - 19%

## Planetary Health Grades for the Karolinska Institutet School of Physiotherapy

The following table presents the individual section grades and overall institutional grade for the Karolinska Institute School of Physiotherapy on this physiotherapy-school-specific PHRC

Section	Raw Score	Letter Grade
<b>Planetary Health Curriculum (30%)</b>	$(39 / 69) \times 100 = 56,52\%$	C+
<b>Interdisciplinary Research (17.5%)</b>	$(12 / 17) \times 100 = 70,59\%$	B
<b>Community Outreach and Advocacy (17.5%)</b>	$(5 / 14) \times 100 = 35,71\%$	D+
<b>Support for Student-led Planetary Health Initiatives (17.5%)</b>	$(11 / 15) \times 100 = 73,33\%$	B
<b>Campus Sustainability (17.5%)</b>	$(20 / 32) \times 100 = 62,5\%$	B-
<b>Institutional Grade</b>	$(A \times 0.3 + B \times 0.175 + C \times 0.175 + D \times 0.175 + E \times 0.175) = 59\%$	C+