

Sustainability in research

Today's research for people, planet and future generations – two-pager

At Amsterdam UMC, we are committed to improving health today while preserving opportunities for healthy living of generations to come, as demonstrated by our strategy 'A healthy future for all'. This commitment includes recognizing and addressing the impact of climate change and environmental degradation on health, and the contribution of the healthcare and research sectors – including the practices of their employees and researchers – to these challenges. As a university medical center, we acknowledge that the inevitable transition to a sustainable healthcare system and society is a shared responsibility; and that scientific research plays a pivotal role in this transition. We aim to become an international forerunner in developing the necessary knowledge that enables the sustainability transition in healthcare.

To safeguard a future of high-quality, accessible, effective and affordable care, we need research that offers insight into reducing the environmental footprint of healthcare, research, and preventive approaches, provides evidence-based strategies for adaptation, and strengthens health system resilience. We will need to take a critical look at our own research practices, as well as create opportunities for new research questions and transdisciplinary collaborations.

We distinguish **three focus areas** in which research can support environmental sustainability:

1. **Sustainable research conduct:** all researchers can make more sustainable choices in setup, execution, and methodologies.
2. **Sustainability as a co-benefit:** researchers can include environmental outcomes in their research.
3. **Sustainability as the primary focus:** researchers can focus on reducing environmental impacts of healthcare and research, adapting to changing health needs because of climate change, or other planetary health topics.

To work on these focus areas, we have developed the Sustainable Research Cycle on the next page. This offers more practical insights to be implemented in the research process.

By the end of 2028, Amsterdam UMC aims to:

1. Have **training available for all researchers** on sustainable research conduct and to **support researchers in implementing sustainability** as a topic in their research.
2. Support sustainable research through **focusing our internal research grant programs on sustainable research** and **implementing sustainability principles in supporting services** for researchers.
3. Increase the proportion of Amsterdam UMC **publications that explicitly address environmental sustainability** in their methodology or results **to 50%** of all publications.
4. Reduce **carbon emissions from research-related activities by a minimum of 30%**, including at least laboratory consumables, data storage, energy use, and academic travel, using 2018 as a reference.

Following this position paper, a knowledge agenda will be co-created with Amsterdam UMC researchers and partners, to define the knowledge gaps that we will prioritize in our sustainable research and research on sustainability. We will also continue to provide more guidance in the practical implementation of sustainability in research.





THREE WAYS TO INTEGRATE SUSTAINABILITY INTO YOUR RESEARCH

SUSTAINABILITY AS THE PRIMARY FOCUS
SUSTAINABILITY AS A CO-BENEFIT
SUSTAINABLE RESEARCH CONDUCT

- Share learnings, process limitations, and future directions to inform sustainability-focused research;
- Assess how your research findings have (had) downstream environmental sustainability impacts;
- Evaluate the environmental footprint of the research process;
- Share lessons learned across departments and institutions;

- Translate and share insights in actionable guidance for sustainable transformation;
- Disseminate findings beyond your academic field;
- Share results and supporting materials in open-access venues;
- Avoid unnecessary storage;

- Ensure methodological transparency;
- Highlight actionable findings;
- Reflect on equity implications;
- Clearly report the measured environmental outcomes alongside your primary research findings;
- Document code, data, and methods to support reproducibility;
- Ensure outputs are reusable for future systematic reviews and meta-analyses;

- Frame research questions around mitigation, adaptation, or planetary health;
- Choose to address a pressing issue (high-impact diseases, procedures, and healthcare activities;)
- Consider scalability and real-world implementation.

- Add environmental sustainability impacts as an outcome;
- Perform a sustainability check: weighing potential impact on health and environmental costs of the study.

- Start with a systematic review to ensure relevance and prevent duplication;
- Devise a research question that is related to a knowledge gap;
- Involve stakeholders to improve relevance and impact.

- Choose the most efficient methods for evaluating the environmental impact (e.g., LCA);
- Consult experts on each aspect of your study.

- Design for measurable environmental outcomes;
- Aim to generate actionable recommendations with systemic impact.

- Choose lean methods;
- Design data collection and material use to minimise waste;
- Reuse existing data and resources where possible.

- Consult methodology and sustainability experts;
- Apply standardised environmental impact categories and reporting formats.

- Track sustainability goals during conduct and adapt to needs;
- Engage experts and stakeholders.

- Apply Reduce–Reuse–Recycle principles;
- Minimise travel and site visits;
- Use shared infrastructure.

