World Physiotherapy
Europe region

Guidance document –
Green Artificial Intelligence

Professional Practice Working Group (PPWG)

APPROVED
14th & 15th May 2026
Pristina, Kosovo

World Physiotherapy Europe region

GUIDANCE DOCUMENT - GREEN ARTIFICIAL INTELLIGENCE

Europe Region

Professional Practice Working Group (PPWG)

This document aims to guide physiotherapists in fostering awareness regarding Artificial Intelligence (AI) usage and promoting environmentally friendly practices in their digital consumption.

AI is swiftly transforming professional fields including physiotherapy, offering tools for diagnosis, treatment, and patient management[1-3]. However, AI has a dual-edged nature while it holds immense potential for advancing healthcare and sustainable development[1,2,4], its widespread adoption also carries significant environmental implications that demand immediate attention[5].

The environmental footprint of AI and digital technologies arises from several key factors:

- High Energy Consumption: Training complex AI models and operating vast data centres demand substantial energy, leading to increased carbon emissions[3-5].
- Massive Water Consumption: Data centres, particularly for large language models like OpenAI's ChatGPT, use significant amounts of water for cooling due to the immense heat generated by high-performance supercomputing[6]. For example, for every 20 to 50 questions Chat GPT can consume approximately 500ml of fresh, clean water. Total water consumption of different AI models is approximately 3 to 6 million cubic meters per year[6].
- Electronic Waste (E-waste): The continuous development and rapid obsolescence of AI hardware and digital devices contribute to a growing volume of electronic waste[4,5].
- Resource Extraction: Manufacturing AI hardware requires the extraction of rare earth minerals and other natural resources, impacting local ecosystems[4].

On the other side, AI can contribute to sustainability by optimising resource use, improving energy efficiency, and enabling smarter environmental management[1,3]. It supports sustainable practices in industries such as transportation, agriculture and energy through predictive analytics and automation[2,5]. At the same time, responsible AI design can reduce environmental costs while fostering innovation for long-term ecological balance[4,6].

Recommendations for Sustainable AI Use by Physiotherapists

1. Choose the Right Tools
   - Use AI services that run on renewable energy (look for “green cloud” or sustainability commitments).
   - Chose apps with energy-saving or “eco” modes when available.
   - Prefer lighter/lite online tools over heavy platforms that require high computing power.

2. Optimise AI Models
   - Match the model to the task: avoid using a very large one if a simpler option works.
   - Reuse pre-trained models instead of building new ones from scratch.
   - Fine-tune only what you really need to reduce unnecessary training.
   - Whenever possible, use smaller or mobile AI versions (e.g., offline voice typing on your phone).

3. Use AI Wisely
    - Run AI only when it provides real value.
    - Ask short, clear, specific prompts to reduce computing needs. Example: Instead of "Tell me everything about climate change," ask "What are 3 key causes of climate change?"
    - Prefer text-based outputs instead of images, video, or audio, which consume more energy.
    - If you use local servers, schedule heavy tasks during off-peak electricity hours.

4. Raise Awareness
    - Talk with your team about the environmental impact of AI.
    - Promote sustainable AI practices in your workplace, school, or community.
    - Raise awareness not only of the environmental, but also the social impacts of AI, including labour conditions in global AI supply chains.
    - Support the use of AI tools developed and governed in line with ethical principles, respect for human rights, and fair labour standards.

By understanding these ecological consequences and embracing sustainable digital habits, AI can be directed towards a future where technology truly protects the planet, ensuring that advancements in physiotherapy align with broader environmental sustainability goals.

ACKNOWLEDGEMENTS

Members of the Professional Practice Working Group of the Europe Region of World Physiotherapy for the 2024 - 2026 term:

Iva Lončarić-Kelečić (Croatia), Lia Charalambous (Cyprus), Stefan Hegenscheidt (Germany), Fran Theron (Ireland), Nirit Rotem-Lehrer (Israel), Loredana Gigli (Italy), Bogdan-Andrei Vereș (Romania), Marcel Sekereš (Slovakia) (Lead), Helen Sharma (United Kingdom) (co-lead) and Esther-Mary D'Arcy (Chair).

REFERENCES

1. Alhasan K, Chen L. AI in Sustainability: Assessing its Functions and Environmental Impact. In: 2024 IEEE Smart World Congress (SWC). IEEE; 2024. doi:10.1109/SWC62898.2024.00035. Available from: https://ieeexplore.ieee.org/document/10925068
2. Schieferdecker IK. Is Your AI-Based System Five Star Sustainable? In: Steffen B, editor. Bridging the Gap Between AI and Reality. Cham (CH): Springer Nature Switzerland; 2025. p. 3–19.
3. Dhiman R, Miteff S, Wang Y, Ma SC, Amirikas R, Fabian B. Artificial intelligence and sustainability—a review. Analytics. 2024;3(1):140-164. doi:10.3390/analytics3010008.
4. Khajeh Naeeni S, Nouhi N. The environmental impacts of AI and digital technologies. AI and Tech in Behavioral and Social Sciences. 2023;1(4):11-18. doi:10.61838/kman.aitech.1.4.3. Available from: https://journals.kmanpub.com/index.php/aitechbesosci/article/view/1997/2424
5. Adnan M, Xiao B, Ali MU, Bibi S, Yu H, Xiao P, Zhao P, Wang H, An X. Human inventions and its environmental challenges, especially artificial intelligence: New challenges require new thinking. Environmental Challenges. 2024;16:100976. doi:10.1016/j.envc.2024.100976. Available from: https://www.sciencedirect.com/science/article/pii/S2667010024001422
6. Haider I, Bhatti TT. The environmental cost of artificial intelligence [Internet]. Islamabad (PK): Institute of Regional Studies (IRS); 2024. Available from: https://irs.org.pk/Focus/FOct24.pdf