

Highlights 2024

Amsterdam Movement Sciences research institute 2024



MOVE BETTER | MOVE LONGER | MOVE AGAIN

The AMS Organization

Professor dr. Richard Jaspers, Faculty of Behavioural and Movement Sciences, VU Amsterdam, and Professor dr. Hans Tol, Amsterdam UMC, location AMC, both scientific directors AMS.



Welcome to Amsterdam Movement Sciences

Amsterdam Movement Sciences is the research hub of the Amsterdam metropolitan region dedicated to understanding how people move—and why it matters. Since its founding in 2016, the institute has grown into a vibrant network of clinicians and researchers from diverse fields, including rehabilitation, orthopaedics, trauma surgery, sports medicine, sports science, endocrinology, plastic surgery and rheumatology.

At its core, Amsterdam Movement Sciences explores how movement shapes our health and lives. By uncovering the fundamentals of how we move, the institute aims to improve both physical and mental performance—in health as well as disease and injury—helping people stay active, independent, and engaged in society for longer.

This magazine showcases some of the most exciting discoveries and real-world impact achieved in 2024, including:

- Breakthrough insights into recovery after injury and disease

- Innovations in improving athletic and everyday performance
- New perspectives on movement as a key driver of overall health

In 2024, the institute also underwent its first external audit since its establishment. The results were encouraging: the audit committee praised the institute's outstanding achievements in translational research and its tangible societal impact. At the same time, they encouraged us to expand our vision—placing even greater emphasis on movement as a fundamental determinant of health.

We embrace this challenge. Because movement is not just what we study—it's what inspires us.

At Amsterdam Movement Sciences, we are driven by one simple goal: helping people move better, for longer, and when needed, move again.

Enjoy reading.

Key publications



Appelman B, Charlton BT, Goulding RP, Kerkhoff TJ, Breedveld EA, Noort W, Offringa C, Bloemers FW, van Weeghel M, Schomakers BV, Coelho P, Posthuma JJ, Aronica E, Joost Wiersinga W, van Vugt M, RCI Wüst (2024). Muscle abnormalities worsen after post-exertional malaise in long COVID. *Nature Communications* 15(1):17.

Prestigious (Inter-)national Research Grants and Prizes

Individual Grants



- VENI for **Janneke Schwaner** (Human Movement Sciences, VU): '*Mechano-sensory properties of skeletal muscles in agile locomotion*'. The grant was awarded to explore how the brain and muscles work together during movement on complex terrain.



- VENI for **Helga Haberfehlner** (Rehabilitation medicine, Amsterdam UMC): '*Multimodal learning for automated assessment and monitoring of dystonia in childhood*'. Helga's project aims to capture the fluctuations of symptoms in children with Dystonia throughout the day.

Grants



- NWA-ORC Grant for the DE-ESCALATING Consortium of dr. **Vana Hutter**, dr **Yannick Hill** and dr **Raoul Oudejans** (all of VU Amsterdam). The grant of €7.2 million studies how situations, individuals, and their interactions contribute to aggression between citizens and workers in law enforcement, healthcare, public transport, and service provision. Based on video analysis, stress measurements and motivation of citizens and professionals, strategies are developed to prevent or reduce conflicts.

Societal Impact

- During Amsterdam's Museum Night, Wendy Scholten-Peeters and her team investigated **the effect of humour on pressure pain thresholds** at NEMO Science Museum. The visitors to the museum participated in a simple experiment: their pressure pain thresholds were measured before and after attending a stand-up comedy show. "A pressure algometer was used to apply pressure on the participants' right arm," Scholten-Peeters explained. "We measured the amount of pressure at which visitors began to experience the transition from pressure to pain." The Comedy Train performed the show, and a total of 344 people participated in the experiment. The experiment aimed to raise awareness about the factors that can influence pain. Participants were not selected according to strict criteria, and confounding factors such as alcohol consumption were not controlled. Nevertheless, the experiment yielded valuable insights. Pain thresholds varied widely among individuals, from less than 20 Newtons to over 100 Newtons. "Notably, people who reported laughing heartily during the show often exhibited a higher pain post-show pain threshold," Scholten-Peeters observed. In contrast, those who were less enthusiastic about the humour showed little to no change in their pain threshold. The Museum Night experiment demonstrates that while laughter may not be the ultimate pain medicine, it can be surprisingly effective. *Curious about what the experiment looked like?*



Scan the QR code to watch it on YouTube.

https://youtu.be/tCBhLRH2XeM?si=LQT_-CSximpvyrN

- The AMS Societal Outreach Award 2024 was won by Ingrid Kouwijzer. Ingrid runs the large national multicenter study "The HandbikeBattle" with the aim to study **the longitudinal effects of training on fitness, physical health, daily functioning and quality of life in wheelchair users**. The study is performed by, and in collaboration with therapists and physicians from 12 Dutch rehabilitation centers. Results, such as fitness reference values and training apps, are directly implemented in the clinical setting.



- Ibrahim Korkmaz (Dutch Burn Center and Amsterdam UMC) was as a researcher one of the faces for the **Burns fundraising week** in October 2024. The Dutch Burns foundation annually collects funds for research on burn wounds. Ibrahim specializes in translational burn research and collaborates with multidisciplinary clinical and laboratory teams with a focus on wound healing, burn wound regeneration, inflammation, and scarring. A central theme in his work is the use of systems biology to integrate clinical, laboratory, and computational data.



- The annual fundraising event **Amsterdam UMC run** for ICU Patient Rehabilitation research is organized by researchers and enthusiasts at the department of rehabilitation medicine at Amsterdam UMC. The run is held in the spring every year, and the track goes through the lush green neighbourhood of Amsterdam UMC, including the hospital! Each year there are about 1,500 participants, and the raised funds go towards improving the recovery of ICU patients.



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Appointed professors and PIs

Appointed professors 2024 & Inaugural lectures



- i. **Marelise Eekhoff**, Amsterdam UMC, was appointed full professor of *Rare bone diseases*;



- iv. **Wendy Scholten Peeters**, Vrije Universiteit, was appointed full professor of *Working Mechanisms and Management*



- ii. **Bart Visser**, Vrije Universiteit, was appointed endowed professor to the chair *Self-Management Support for Vital Movement*;

Musculoskeletal Physiotherapy;



- v. **Astrid Bakker**, ACTA, full professor of *Bone and Mechanobiology* gave her inaugural lecture titled *Hard Hoofd* in 2024.



- iii. **Sidney Rubinstein**, Vrije Universiteit, was appointed endowed professor to the chair *Optimizing management of musculoskeletal health*;

PI round 2024 Amsterdam UMC



Dr. Eric Voorn (Rehabilitation medicine) and **Dr. Hinke Kruizenga** (Internal Medicine: Nutrition and Dietetics) were appointed PIs in the Amsterdam UMC PI round 2024.

AMS People



The new Scientific director of AMS was officially appointed in April 2024: **Hans Tol** of the department of Orthopedic Surgery and Sports Medicine, AUMC. Professor Tol replaced Professor Mario Maas (department of Radiology and Nuclear Medicine, AUMC) who had been a scientific director in the period 2017 – 2024.



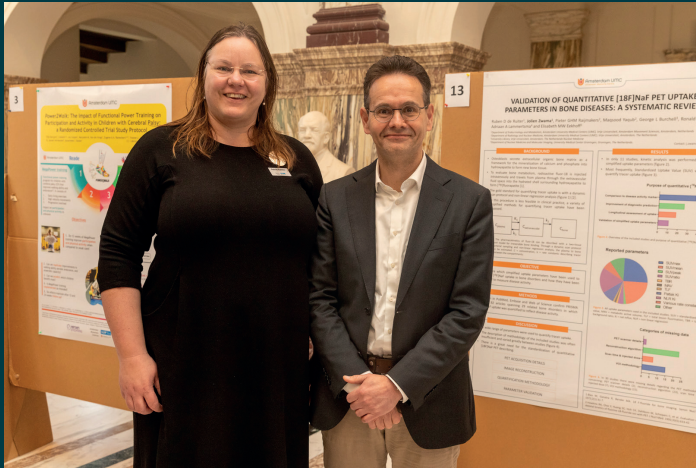
Professor dr. Annemieke Buizer and her CP (Cerebral Palsy) team won in 2024 the Amsterdam UMC Power Prize. The prize was awarded during the New Year's gathering at Amsterdam UMC and recognizes teams that go beyond their own departments, foster collaboration across various fields and thereby increase their impact. The Amsterdam UMC CP team exemplifies this approach with great dedication and enthusiasm. Their strength lies in cross-departmental, multidisciplinary collaboration spanning pediatric rehabilitation, neurology, neuro-surgery, radiology, orthopedics and plastic surgery. But their collaboration doesn't end within the walls of the hospital. Working together regionally, nationally, and internationally is second nature, all with one shared goal: *to improve care, development opportunities, and the quality of life of children with CP.*



Jari Dahmen (Orthopedic Surgery and Sports Medicine) was recognized as 'Elite Reviewer' by the Journal of Bone and Joint Surgery (JBJS). The recognition was presented by professor Mohit Bhandari, Editor-in-Chief of JBJS, who recognized Jari's significant contribution to the peer review process of one of the leading orthopedic scientific journals. Peer reviewing is essential for maintaining the quality and integrity of academic research in general and orthopedic research as in this case.



Dr. Rob Wust: (VU Amsterdam) was the AMS face in the media for his (and his collaboration partners) Long Covid research. He had recently published a groundbreaking article in Nature Communications revealing new insights into post-COVID fatigue. Their study shows that long COVID induces profound changes in the body, *including severe muscle damage, mitochondrial problems, and microclots*, which help explain the impact of physical exertion. These findings have attracted wide international attention, with coverage in major outlets such as The Guardian, The Washington Post, The New York Times, BBC World Service, and National Geographic. In the Netherlands, the research was featured in leading newspapers including de Volkskrant, NRC, Financieel Dagblad, Trouw, and de Telegraaf, as well as on national television programmes such as NOS Journaal and Nieuwsuur.



7th AMS Annual Research Meeting

The keynote speakers were Professors Astrid Bakker and Peter Bisschop, who spoke on the topic of *more healthy and productive years for Perimenopausal women*, as part of the menopause consortium, for which they were given an NWO grant of €9.4 million in 2023.



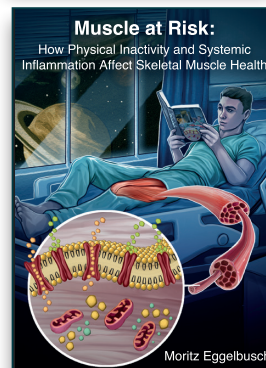
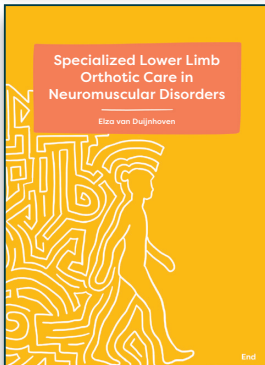
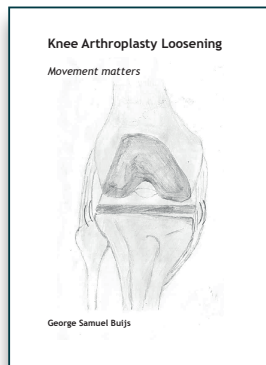
AMS awards at the 7th AMS Annual Research Meeting

The Award for Societal Outreach was won by Dr. Ingrid Kouwijzer (VU Amsterdam) for her work with the handbikebattle project, which investigates *the effects of training for an athletic challenge in individuals with chronic disability*. Her award-winning study concluded that training together with peers can reduce feelings of helplessness and enhance perceived benefits in this group. Especially individuals with mental health problems may benefit from peer-supported training for an athletic challenge, as it can positively influence illness cognitions and, ultimately, improve quality of life.

Key numbers 2024

Dissertations

68



Output

KEY numbers*	2024
Scientific (refereed) publications	1041
Non-refereed publications**	48
PhD theses***	68
Professional publications	21
Books & chapters	7
Total per year	1185

* Output registered in the PURE output registration system, and affiliated to AMS

** From 2023 this also includes letters / comments and editorials

*** PhD theses defended at either Vrije Universiteit Amsterdam or University of Amsterdam

Persons

AMS membership base	2024
Scientific core staff*	122
Other scientific staff**	187
PhD candidates***	280
Total	589

* includes external PhD candidates, MD PhD, and other academic staff doing a PhD.

** Scientific Core Staff: Includes Prof, UHD (associate prof), UD (asst. prof), Endowed prof

*** Other scientific staff :Includes Research associates, other academic staff, med. Specialists, lecturers and visiting fellows.

Funding

All Funding by AMS researchers	2024
Personal and collaborative grants	€17,916,783



Contact



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