



# Annual Report 2023-24



Care



Research



Innovation

## Gothenburg Pain Lab

### ABOUT

Gothenburg Pain Lab is a **research platform** for national and international, interdisciplinary research with a focus on person-centred, acute and chronic pain management. The Lab consists of a core group of researchers affiliated with Gothenburg University and Sahlgrenska University Hospital.

We are based in Gothenburg, Sweden.

### AIM

To **improve pain relief** in acute, chronic and cancer-related pain conditions through **innovative, person-centred, and opioid-sparing treatments**.

OUTREACH,  
ENGAGEMENT  
& LEARNING

### KEY FACTS

#### THE CORE TEAM

5 Senior researchers  
7 postdocs  
8 PhD students  
2 Associated clinicians  
2 Research nurses

**PUBLICATIONS**  
(peer-reviewed,  
international)

**21 (2024)**  
**12 (2023)**

#### RESEARCH

**11 ongoing projects**

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## Introduction

Welcome to Gothenburg Pain Labs (GPL) first annual report 2023-24.

Preparing this report provided us with an opportunity to reflect on the journey of the Gothenburg Pain Lab since its start in 2021 and we are proud to share our progress, achievements and learnings with you.

The story so far...

In 2021, Professor Axel Wolf and Associate Professor Paulin Andréll hatched the idea and vision to create a research network and bring together senior and junior researchers and clinicians to create a community of research practice. Associate Professor Birgit Heckemann joined the duo late in the year and became the driving force behind the public face of GPL, the background organization as well as introducing artistic and creativity as topics in pain research.

The GPL website in its current form was launched in 2022.

The teamwork and all researchers and clinicians make GPL what it is today: a young, but established network that encourages collaboration and promotes new approaches to understanding pain and its treatment with research ranging from hard clinical science to qualitative and creative projects. We unite research expertise in qualitative, quantitative and mixed-methods research and are increasingly gaining experience in patient and public involvement.

Seeing how GPL has grown into a space for mentorship and research has been encouraging. We are delighted to share some highlights of the past two years and look forward to expanding and consolidating GPL in the future.

Birgit, Paulin and Axel



## Outreach, Engagement & Learning

Gothenburg Pain Lab members regularly organize activities focused on education, outreach, and learning. These include regular seminars where researchers present their work, research days to share ongoing projects, and weekly lunch meetings that feature lectures and discussions on various research topics. The events create opportunities to exchange ideas, learn from one another, and stay informed about developments in pain research and treatment.

### **GPL weekly lunch meetings**

The weekly online 1-hour GPL lunch meetings are a platform for collaboration, to increase research knowledge in the group, and to support each other as researchers and colleagues.

Senior and junior researchers and doctoral students attend the meetings. Experienced researchers share insights and methodologies, fostering an open dialogue. Junior researchers can practice presentations or discuss articles. Some sessions, such as research breakfasts and internal research discussions, are exclusive to GPL researchers, while others, including journal clubs and guest speaker presentations, are open to a wider audience.

Events and topics for the lunch meetings in 2023 and 2024 included:

- Journal clubs
- Lectures by invited national and international speakers. The topics ranged from developments in pain treatment to research methodology
- Book clubs
- Discussion space and a forum for junior researchers

### **The GPL Writing Days**

GPL have been organizing annual Writing Days for the members of the core research group since 2022. The GPL Writing Days usually take place in September and comprise three days of fully immersed writing and learning, interspersed with physical exercise in a rural location about an hours' drive from Gothenburg. The days are spent with intensive work on publications, grant applications or PhD theses.

## The Pain Research Network Day

The Pain research day is an annual one-day conference usually taking place in November, which welcomes all pain researchers working in the fields of acute, cancer related, or chronic pain, whether in clinical sciences, epidemiology, or basic sciences. The day provides an arena for networking, by showcasing research groups and ongoing research projects.

### 2024

The Pain Research Network Day celebrated its 5th anniversary. The topic was “Biomarkers in pain research – challenges and possibilities”. The program combined lectures on biomarkers with lectures about a holistic, societal approach to understanding and managing pain, including a lively discussion about how to integrate the biomedical, creative, and holistic perspectives into pain treatment and research.



### 2023

The topic of this Pain Research Network Day was “Patient and public involvement in research”. The day attracted a diverse audience including patient representatives, clinicians and researchers which enabled rich and fruitful discussions and exchanges of perspectives.

## Seminar: Co-creative healthcare and Research: shifting mindsets from mechanistic to creative

A seminar with international speakers, lectures and workshops **18 & 20 November 2024, plus one bonus workshop on 21 November**

The seminar was organized and supported by the Gothenburg University Centre for Person-centred Care; the Department of Anaesthesiology and Intensive Care, Östra Hospital, Gothenburg and the Research Network Gothenburg Pain Lab

### Presenters

- Prof Mark I Johnson, Professor of Pain and Analgesia, Leeds Beckett University, Leeds, UK
- Artist/designer Dila Demir, PhD, the Estonian Academy of the Arts, Tallinn, Estonia
- Balbir Singh, Director, Balbir Singh Dance Company, Leeds, UK

The three days attracted **participants with diverse backgrounds** including nurses, nurse anaesthetists, psychologists, social workers, physiotherapists, occupational therapists, communicators, patient representatives, researchers, managers, practice developers...



From left to right: Balbir Singh, Dila Demir, Birgit Heckemann (moderator), Mark Johnson

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**18th November** (25 Participants)

**Transforming Perspectives on Pain: Flipping, Unmasking, and Rethinking our Approach**

*Prof Mark I. Johnson, Professor of Pain and Analgesia at Leeds Beckett University, UK*

**Creative Treatments - Dissolving the Gap Between Participant and Artist**

*Balbir Singh, Artistic Director, Balbir Singh Dance Company, Leeds, UK*

**Rethinking Chronic Conditions: Creative Practices for Diseased Bodies**

*Dila Demir, PhD, Artist and Researcher, Estonian Academy of Arts, Tallinn, Estonia*



Presentations at Östra Sjukhuset - Sahlgrenska University Hospital (18th November)

Visit our website to read full version of the photo essay



**Workshop 1 - 20th November** (16 Participants)

**Making Pain Creatures: Towards Eliciting Bodily Experiences through Creative Tools**

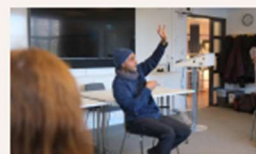
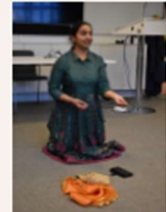
*Dila Demir, PhD, Artist and Researcher, Estonian Academy of Arts, Tallinn, Estonia*



**Workshop 2 - 20th November** (16 Participants)

**Understanding and Expressing one's Experience of Persistent Pain Through a Creative Mindset**

*Balbir Singh, Artistic Director, Balbir Singh Dance Company, Leeds, UK*



# Media Coverage

## The University of Gothenburg Centre for Person-centred Care's Instagram week

During in March 2024, GPL showcased ongoing projects and researcher to followers on the Sahlgrenska University Hospitals Instagram channel. Posts gave followers a behind-the-scenes look at the work being done and aimed to engage the wider community. The GPL posts were among the five posts who reached most people.

(From left till right first and last Instagram posts)

## De fem inläggen med störst räckvidd\*



19 700 i räckvidd



17 400 i räckvidd



13 700 i räckvidd



12 500 i räckvidd



12 500 i räckvidd

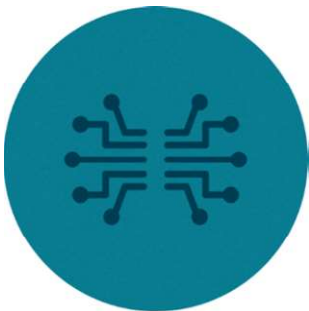
\*Räckvidd betyder hur många personer som har sett inlägget i sitt flöde.

## Research projects



Our research studies cover a broad range of topics related to acute, chronic and cancer-related pain including Transcutaneous Electrical Nerve Stimulation (TENS), sleep and pain, opioid sparing anesthesia, physical activity, and digital health.

Up-to-date information about the eleven projects that are conducted with GPL researchers as Principal Investigators can be found on our website.



## Collaborations

We have ongoing collaborations with national research networks and organizations including the Swedish College of Pain Medicine, The National Register of Pain Rehabilitation, The Swedish Child Pain Association, and the Endometriosis Association.

As we are committed to promoting person-centred care, we collaborate with patient representatives in several of our research projects to ensure our research is relevant and represents patients' real-world needs.

## Funding

Both senior and junior GPL researchers were successful in their applications for competitive national and regional research grants. GPL researcher received grants from, amongst others ALF<sup>1</sup> and Vetenskapsrådet (The Swedish Research Council)<sup>2</sup>.

## Future Plans and Goals

Our future plans and goals are simple:

- To expand the research network by establishing national and international collaborations with other researchers and research groups
- To establish a patient and carer reference group to enhance their involvement in our research.
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<sup>1</sup> ALF is the abbreviation in Swedish of a national agreement between the Swedish government and seven Regions on the education of physicians and clinical research.

<sup>2</sup> Vetenskapsrådet (The Swedish Research Council) is the largest public funding body for research at Swedish universities and higher education institutions.

## Published papers

### 2024

Angelini, E., Wolf, A., Wijk, H., Brisby, H., & Baranto, A. (2024). Evaluating a targeted person-centred pain management intervention programme in lumbar spine surgery – a controlled segment-specific before-and-after interventional design. *BMC health services research*, 24(1), 315. <https://doi.org/10.1186/s12913-024-10769-8>

Bengtsson, Linda, Thörn, Sven-Eggon, Dyrehag, Lars-Erik, Gräbel, Olaf and Andréll, Paulin. "Intrathecal pain treatment for severe pain in patients with terminal cancer: A retrospective analysis of treatment-related complications and side effects" *Scandinavian Journal of Pain*, vol. 24, no. 1, 2024, pp. 20240041. <https://doi.org/10.1515/sjpain-2024-0041>

Bergholtz, J., Wolf, A., Crine, V., Cleeve, H., Santana, M. J., & Björkman, I. (2024). Patient and public involvement in healthcare: a systematic mapping review of systematic reviews – identification of current research and possible directions for future research. *BMJ open*, 14(9), e083215. <https://doi.org/10.1136/bmjopen-2023-083215>

Dahlbäck, A., Heckemann, B., Andréll, P., Åkerlund, S., & Varkey, E. (2024). Can physiotherapy in an interdisciplinary pain rehabilitation setting improve physical function? A long-term mixed methods follow-up study. *Physiotherapy theory and practice*, 1–14. Advance online publication. <https://doi.org/10.1080/09593985.2024.2351978>

Diwan, S., Vilhelmsson, A., Wolf, A., & Jildenstål, P. (2024). Nudging strategies to influence prescribers' behavior toward reducing opioid prescriptions: a systematic scoping review. *The Journal of international medical research*, 52(9), 3000605241272733. <https://doi.org/10.1177/03000605241272733>

GBD 2021 Causes of Death Collaborators (2024). Global burden of 288 causes of death and life expectancy decomposition in 204 countries and territories and 811 subnational locations, 1990-2021: a systematic analysis for the Global Burden of Disease Study 2021. *Lancet (London, England)*, 403(10440), 2100–2132. [https://doi.org/10.1016/S0140-6736\(24\)00367-2](https://doi.org/10.1016/S0140-6736(24)00367-2)

GBD 2021 Diseases and Injuries Collaborators (2024). Global incidence, prevalence, years lived with disability (YLDs), disability-adjusted life-years (DALYs), and healthy life expectancy (HALE) for 371 diseases and injuries in 204 countries and territories and 811 subnational locations, 1990-2021: a systematic analysis for the Global Burden of Disease Study 2021. *Lancet (London, England)*, 403(10440), 2133–2161. [https://doi.org/10.1016/S0140-6736\(24\)00757-8](https://doi.org/10.1016/S0140-6736(24)00757-8)

GBD 2021 Forecasting Collaborators (2024). Burden of disease scenarios for 204 countries and territories, 2022-2050: a forecasting analysis for the Global Burden of Disease Study 2021. *Lancet (London, England)*, 403(10440), 2204–2256. [https://doi.org/10.1016/S0140-6736\(24\)00685-8](https://doi.org/10.1016/S0140-6736(24)00685-8)

Lilja, V., Wallström, S., Saarijärvi, M., Lundberg, M., Segertoft, V. A., & Ekman, I. (2024). Balancing between being the most valuable player (MVP) and passing the ball: a qualitative study of support when living with chronic pain in Sweden. *BMJ open*, 14(1), e079229. <https://doi.org/10.1136/bmjopen-2023-079229>

NIHR Global Health Research Unit on Global Surgery, & STARSurg Collaborative (2024). A prognostic model for use before elective surgery to estimate the risk of postoperative pulmonary complications (GSU-Pulmonary Score): a development and validation study in three international cohorts. *The Lancet. Digital health*, 6(7), e507–e519. [https://doi.org/10.1016/S2589-7500\(24\)00065-7](https://doi.org/10.1016/S2589-7500(24)00065-7)

Olausson, A., Angelini, E., Heckemann, B., Andréll, P., Jildenstål, P., Thörn, S. E., & Wolf, A. (2024). Patients' perioperative experiences of an opioid-free versus opioid-based care pathway for laparoscopic bariatric surgery: A qualitative study. *International journal of nursing studies advances*, 6, 100201. <https://doi.org/10.1016/j.ijnsa.2024.100201>

Schüttengruber, G., Olsson, M. M., Holmberg, C., Großschädl, F., Hessman, E., Sjöblom, H., & Heckemann, B. (2024). Understanding ageism towards older nursing staff and service users: A systematic mapping review from the perspective of clinical leaders and healthcare managers. *Geriatric nursing (New York, N.Y.)*, 58, 171–182. Advance online publication. <https://doi.org/10.1016/j.gerinurse.2024.05.017>

Sjöholm, A., Claeson, M., Paoli, J., & Heckemann, B. (2024). Exploring Patient Pain Experiences during and after Conventional Red Light and Simulated Daylight Photodynamic Therapy for Actinic Keratosis: A Qualitative Interview Study. *Acta dermato-venereologica*, 104, adv19459. <https://doi.org/10.2340/actadv.v104.19459>

Varkey, E., Gottfridsson, R., Grimby-Ekman, A., Bjarnegård Sellius, A., Östman, M., & Andréll, P. (2024). Body awareness, stress and symptoms in autonomic dysfunction in patients with chronic pain: an explorative study. *Journal of rehabilitation medicine. Clinical communications*, 7, 13374. <https://doi.org/10.2340/jrmcc.v7.13374>

Vidaurrezaga Aras, V., Alexiou, E., Nilsson, T., Wolf, A., & Olausson, S. (2024). Factors Influencing Patient Participation in Inpatient Forensic Psychiatric Care – A Mixed-Method Systematic Review. *International Journal of Forensic Mental Health*, 1–16. <https://doi.org/10.1080/14999013.2024.2388091>

Wolf, A. and J. Öhlén, *The first Global Conference on Person-Centred Care: Knowledge (s) and Innovations for Health in Changing Societies. Abstract Book. 2024.*

Wolf, A., Erichsen Andersson, A., Wikström, E., & Bååthe, F. (2024). Untangling the perception of value in value-based healthcare – an interview study. *Leadership in health services (Bradford, England)*, 37(5), 130–141. <https://doi.org/10.1108/LHS-07-2023-0051>

Ögren, C., Varkey, E., Wolf, A., Larsson, C., Ringdal, M., & Andréll, P. (2024). High-frequency, high-intensity TENS compared to standard treatment with opioids for postoperative pain relief after laparoscopic cholecystectomy: A multicentre randomized

controlled trial. *European journal of pain* (London, England), 10.1002/ejp.2308. Advance online publication. <https://doi.org/10.1002/ejp.2308>

Andersson M, Bengtsson P, Karlsson O, Thörn S-E, Thorgeirsdottir L, Bergman L, Oras J, Romlin B. Platelet and coagulation disturbances in women with preeclampsia, monitoring with platelet aggregation and thromboelastometry. (Accepted 12 Nov IJOA 2024)

Leonardsen AL, Wolf A, Nilsson U. Patient-Centeredness in the Perioperative Period-A Rapid Review of Current Research. *J Perianesth Nurs*. 2024 Oct;39(5):915-920.e3. doi: 10.1016/j.jopan.2023.12.028. Epub 2024 Apr 11. PMID: 38613539.

Ringblom A, Ivory J, Adlerberth I, Wold AE, McIntosh C, Wolf A. Wound cleansing solutions versus normal saline in the treatment of diabetic foot ulcers - A systematic review. *J Tissue Viability*. 2024 Nov;33(4):591-597. doi: 10.1016/j.jtv.2024.08.010. Epub 2024 Sep 10. PMID: 39278793.

## 2023

Piasecki A, Ögren C, Thörn SE, Olausson A, Svensson CJ, Platon B, Wolf A, Andréll P. High-frequency, high-intensity transcutaneous electrical nerve stimulation compared with opioids for pain relief after gynecological surgery: a systematic review and meta-analysis. *Scand J Pain*. 2023 Oct 12;24(1). doi: 10.1515/sjpain-2023-0068. PMID: 37819201.

Lundin, Å., Ekman, I., Wallström, S., Andréll, P., & Lundberg, M. (2023). Suffering out of sight but not out of mind - interpreting experiences of sick leave due to chronic pain in a community setting: a qualitative study. *BMJ open*, 13(4), e066617.

<https://doi.org/10.1136/bmjopen-2022-066617>

Hallgren, C., Svensson, C. J., Ullerstam, T., Olin, M., Dezfoolian, H., Kashioulis, P., & Oras, J. (2023). Validating a Simplified Lung Ultrasound Protocol for Detection and Quantification of Pulmonary Edema in Patients With Chronic Kidney Disease Receiving Maintenance Hemodialysis. *Journal of ultrasound in medicine: official journal of the American Institute of Ultrasound in Medicine*, 10.1002/jum.16219. Advance online publication. <https://doi.org/10.1002/jum.16219>

Dahlbäck, A., Andréll, P., & Varkey, E. (2023). Reliability and aspects of validity of the Swedish version of self-efficacy for exercise scale for patients with chronic pain. *Physiotherapy theory and practice*, 39(1), 163–173. <https://doi.org/10.1080/09593985.2021.1999356>.

Amorøe, T. N., Rystedt, H., Oxelmark, L., Dieckmann, P., & Andréll, P. (2023). How theories of complexity and resilience affect interprofessional simulation-based education: a qualitative analysis of facilitators' perspectives. *BMC medical education*, 23(1), 717. <https://doi.org/10.1186/s12909-023-04690-7>

Tin, A. L., Austria, M., Ogbennaya, G., Chimonas, S., Andréll, P., Atkinson, T. M., Vickers, A. J., & Carlsson, S. V. (2023). Pain as bad as you can imagine or extremely severe pain? A randomized controlled trial comparing two pain scale anchors. *Journal of patient-reported outcomes*, 7(1), 123. <https://doi.org/10.1186/s41687-023-00665-w>

Timan, T. J., Karlsson, O., Sernert, N., & Prytz, M. (2023). Standardized perioperative management in acute abdominal surgery: Swedish SMASH controlled study. *The British journal of surgery*, 110(6), 710–716. <https://doi.org/10.1093/bjs/znad081>

HamdanAlshehri, H., Wolf, A., Öhlén, J., Sawatzky, R., & Olausson, S. (2023). Attitudes towards death and dying among intensive care professionals: A cross-sectional design evaluating culture-related differential item functioning of the frommelt attitudes toward care of the dying instrument. *Heliyon*, 9(8), e18864. <https://doi.org/10.1016/j.heliyon.2023.e18864>

Olano-Lizarraga, M., Wallström, S., Martín-Martín, J., & Wolf, A. (2023). Interventions on the social dimension of people with chronic heart failure: a systematic review of randomized controlled trials. *European journal of cardiovascular nursing*, 22(2), 113–125. <https://doi.org/10.1093/eurjcn/zvac051>

Heckemann, B., Graf, T., Ung, E. J., Jakobsson, S., Ragnarsson, O., Olsson, D. S., & Blomdahl, C. (2023). The importance of personal documentation for patients living with long-term illness symptoms after pituitary surgery: A Constructivist Grounded Theory study. *Health expectations : an international journal of public participation in health care and health policy*, 26(1), 226–236. <https://doi.org/10.1111/hex.13648>

Jungstrand, L., Holm, E., Rose, L., Wolf, A., & Ringdal, M. (2023). Family member perspectives on intensive care unit in-person visiting restrictions during the COVID-19 pandemic: A qualitative study. *Intensive & critical care nursing*, 75, 103347. <https://doi.org/10.1016/j.iccn.2022.103347>

Ringblom, A. (2023) IDF2022-0443 Health related quality of life in persons living with a diabetic foot ulcer *Diabetes Research and Clinical Practice*, 197 (11037)

Svensson, C. J., Giang, K. W., Wallert, J., Rück, C., & Lundberg, C. E. (2023). Psychiatric co-morbidity and substance abuse after gastric bypass surgery. *The British journal of surgery*, 110(12), 1618–1622. <https://doi.org/10.1093/bjs/znad179>

## Conference presentations

### 2024

Facilitating co-design processes: Researchers' reflective insights on person-centredness in co-design workshops (oral presentation). Birgit Heckemann, Roger Johannsson, Paula Forslund, Emma Varkey, Paulin Andréll and Katerina Cerná. Gothenburg Sweden: Global Conference on Person-centred Care, May, 13-16 2024

Complications and Side Effects related to Intrathecal Pain Treatment in Terminal Cancer (poster presentation). Linda Bengtsson, Sven-Eggon Thörn, Lars-Erik Dyrehag, Olaf Gräbel, Paulin Andréll. Amsterdam, Netherlands: IASP world congress on pain, August 5-9 2024

Patients' Experiences of Transcutaneous Electrical Nerve Stimulation for Endometriosis-related Pain. (Poster presentation) Josefin Larsson, Birgit Heckemann, Emma Varkey, Axel Wolf, Cecilia Ögren, Karin Sundfeldt, Paulin Andréll. Amsterdam, Netherlands: IASP world congress on pain, August 5-9 2024

Physical activity level and neuropathic pain intensity among patients treated with neurostimulation. (Poster presentation). Raquel Gottfridsson, Kliment Gatzinsky, Emma Varkey, Axel Wolf, Jacqueline Liljencrantz, Paulin Andréll. Amsterdam, Netherlands: IASP world congress on pain August 5-9 2024"

Keynote speech: Unpacking a buzzword: Patient and Public Involvement in healthcare research. Birgit Heckemann Graz, Austria: The 20th European Doctoral Conference in Nursing Science – EDCNS, 20-21 Sep 2024; 2024."

## 2023

Olausson A, Angelini E, Heckemann B, Andréll P, Jildenstål P, Thörn SET, Wolf A. (2023) Patients' experience of an opioid-free versus opioid-based care pathway for bariatric surgery - A qualitative study. The 13th Congress of the European Pain Federation EFIC, Budapest, Hungary 20-22 September

Larsson J, Heckemann B, Varkey E, Wolf A, Jonsvik S, Sundfeldt K, Andréll P. (2023) "Struggling to manage a life with pain. A qualitative interview study exploring patients' experiences of endometriosis-related chronic pain, including impact on physical activity. The 13th Congress of the European Pain Federation EFIC, Budapest, Hungary 20-22 September, **best poster prize**

Ögren C, Varkey E, Wolf A, Ringdal M, Andrell P, Larsson C. (2023) High frequency, high intensity transcutaneous electrical nerve stimulation compared to intravenous opioids for postoperative pain relief after laparoscopic cholecystectomy – a randomized controlled multicenter trial EFIC, Budapest, Hungary 20-22 September.

This report was prepared by GPL senior researchers

Ass. Prof Birgit Heckemann (Coordinator and public relations)

Ass. Prof Paulin Andréll (founder)

Prof Axel Wolf (founder GPL)



<https://gothenburgpainlab.com/>