

# Complex epilepsy



## Group Leader

Morten I. Lossius, Consultant neurologist, National Centre for Epilepsy (NCE), Oslo University Hospital (OUH) ([mortenl@ous-hf.no](mailto:mortenl@ous-hf.no)) and Professor, University of Oslo (UiO) ([morten.lossius@medisin.uio.no](mailto:morten.lossius@medisin.uio.no))

## Group Members

### Senior researchers

- Marit Bjørnvold, MD, PhD, NCE
- Cecilie Johannessen Landmark, MSc/PhD, NCE, Dept. of pharmacology and Oslo Met. University
- Kristin Alfstad, MD, PhD, NCE
- Karl Otto Nakken, MD, PhD, NCE
- Magnhild Kverneland, MSc, PhD, NCE
- Kari Modalsli Aaberg, MD, PhD, NCE
- Hilde Karterud, Cand.san., PhD, NCE
- Oliver Henning, MD, Dr. Philos., NCE
- Erik Sætre, MD, PhD, NCE
- Annette Holth Skogan, ClinNeuro.Psych, PhD, NCE
- Lisa E. Hauger, Clin. Psych. PhD, NCE
- Silje Alvestad, MD, PhD, NCE
- Sigrid Pedersen, MSc, PhD, NCE
- Torleiv Svendsen, MD, PhD, NCE and UiO
- Antonia Villagran, MD, PhD, NCE and UiO
- Ellen Molteberg, MD, PhD, NCE and UiO

### PhD candidates

- Eli B. Kyte, Clin.neuro.Psych, NCE and UiO
- Rune Markhus, MD, NCE
- Konstantin H. Kostov, MD, NCE and UiO
- Gernot Hlauschek, MD, NCE and UiO
- Merete Tschamper, MSc, NCE and UiO
- Truls Vikin, MD, NCE and UiO
- Fridny Heimsdottir, MD, NCE and UiO

### Associated group members

- Anette Huuse Farmen, MD/PhD, Innlandet Hospital Trust and UiO
- Marte Syvertsen, MD/PhD, Vestre Viken Hospital Trust and UiO
- Kaja Kristine Selmer, MD/PhD, OUH and UiO
- Ine Cockerell, MSc, OUH and UiO
- Margrete Larsen Burns, MD, PhD, Dept.of Pharmacology, NCE, OUS

## Research profile and aims

- Clinical research in patients with difficult-to-treat epilepsy, with particular focus on:
- Characterization of epilepsy syndromes (genotype/phenotype)
- Clinical pharmacology of antiseizure medications
- Diagnostic and treatment options; EEG, pharmacotherapy, surgery, VNS, ketogenic diets
- Psychosocial, psychiatric and neurocognitive aspects
- Psychogenic non-epileptic seizures

## Dissertations 2024

Antonia Villagran: "Functional / dissociative seizures: Epidemiological and clinical aspects". Supervisor: Morten I. Lossius. Co-supervisor: Roderick Duncan.

Ellen Molteberg: "Endocrine effects of modified Atkins diet in adult patients with drug-resistant epilepsy". Supervisor: Erik Taubøll. Co-supervisor: Per Medbøe Thorsby and Karl O. Nakken

## Ongoing projects

PhD candidates in the PhD program, University of Oslo:

**Eli B. Kyte:** "Impact of epilepsy surgery on cognition, psychiatry and quality of life at the commencement of aging" Supervisor: **Kristin Å. Alfstad**. Co-supervisors: **Morten I. Lossius and Annette H. Skogan**.

**Merete Tschamper:** "Childhood epilepsy and parental health literacy" Supervisor: Marie Hamilton Larsen, Co-supervisors: Astrid K. Wahl, Rita Jakobsen.

**Konstantin H. Kostov:** "Clinical outcomes and determinants of effectiveness of vagus nerve stimulation in a large national refractory epilepsy population" Supervisor: **Morten I. Lossius**, Co-supervisor: Jukka Peltola

**Gernot Hluschek:** "Identifying novel imaging and clinical biomarkers of epileptogenesis poststroke". Supervisor: **Morten I. Lossius**, Co-supervisors: Patrick Kwan and Meng Law

**Truls Vikin:** «Epilepsy in children-how are they doing?». Supervisor: **Kari M. Aaberg**, Co-supervisors; **Morten I. Lossius**

**Guro Minken:** «Monitoring cognition in brain tumor patients undergoing awake brain surgery" Supervisor: **Annette Holth Skogan**. Co-supervisor: Einar Osland Vik-Mo, Andreas Espinoza, Awais Mughal Ahmad

**Fridny Heimisdottir:** "FORCE: FOcal Refractory Childhood Epilepsy A study of surgical treatment in Norway – aetiology and predictive factors". Supervisor: **Kaja K. Selmer** Co-supervisors: **Kristin Å. Alfstad**, Inger-Lise Mero.

## Post doc

Silje Alvestad: *“Scandinavian multi-registry study of antiepileptic drug teratogenicity: The SCAN-A study”*. Co-workers: Marte Bjørk, Torbjørn Tomson, Jacob Christensen.

**Kari M. Aaberg:** *«Development in childhood epilepsy»*. Co-workers: **Morten I. Lossius**

**Hilde Nordahl Karterud:** *“A follow-up study of adolescents with psychogenic non-epileptic seizures (PNES)”* Co-workers: **Merete Tschamper, Oliver Henning**

## Other projects

**Kristin Å. Alfstad:** *“Risk factors for psychiatric symptoms and executive problems in youth with epilepsy”*. Co-worker: Morten I. Lossius

**EpilepsiNett:** *«Can we close the gap? Socioeconomic differences and health inequality in young people with epilepsy. An EpilepsiNett project of health registry data and clinical cohorts*

**Kristin Å. Alfstad, Kari M. Aaberg,** Marte Bjørk, Marte Roa Syversen, Eline Dahl-Hansen, Maryam Shirzadi, Jeanette Koht

**Magnhild Kverneland:** *“Who should be treated with ketogenic diet for epilepsy”*. Co-worker: **Kaja K. Selmer**

**Erik Sætre:** *“Mortality in Epilepsy”*. Co-worker: Michael Abdelnoor

**Lisa Evju Hauger:** *“Adapted fMRI paradigms for pediatric patients and adults with cognitive impairment* Co-workers: **Annette Holth Skogan,** Markus H Sneve.

**Lisa Evju Hauger:** *“EpiTrack jr., Quality Assurance Study.* Co-workers: **Morten I. Lossius, Annette H. Skogan, Kari M. Aaberg.**

**Halvor Torgersen:** *“EpiTrack, Quality Assurance Study “*. Co-worker: **Annette H. Skogan.**

**Guro Minken:** *«Development of a pediatric language protocol for awake brain surgery»*. Co-workers: **Annette H. Skogan, Fridny Heimisdottir,** Ingeborg Ribu, Silje Systad, Christiane Sørensen, DuLIP gruppen.

**Kathrine C. Haavardsholm:** *“Long term effect of ketogenic diet in children with epilepsy”* Co-workers: Anette Ramm- Pettersen, **Kaja K. Selmer,** Mahtab Zamani, Karolina Skagen, Mona Skjelland

## PhD-candidates in the PhD program at University of Oslo, associated to the group

**Ine Cockerell:** *“Treatment and follow-up in patients with tuberous sclerosis”*

Supervisor: Terje Nærland. Co-supervisors: **Cecilie J. Landmark**, Caroline Lund and Ketil Heimdal

## National network

EpilepsiNett: National Network for Evidence-based Epilepsy Care.

Chairperson: Marte Syversen. Management team: **Morten I. Lossius**, Nils Erik Gilhus, Marte Bjørk, **Kristin Å. Alfstad**, Jørn Mandla Sibeko.

## International networks

EpiCARE: European Reference Network (ERN) on rare and complex epilepsies. Lead (**Morten I. Lossius**) of working group 18 (Beyond seizures) including **Kristin Å. Alfstad** and **Oliver Henning**. Executive committee member: **Morten I. Lossius**

BIOJUME – the biology of juvenile myoclonic epilepsy. Members of consortium: **Marte Syvertsen and Kaja Selmer**

## International projects

*“EURAP study”. An International Antiepileptic Drugs and Pregnancy Registry”* (International concerted Action on the Teratogenesis of Anti-epileptic Drugs) (<http://www.eurapinternational.org/>).

Silje Alvestad, international steering committee and Torill Martinez, national coordinator.

*“Ultra-long subcutaneous EEG monitoring: reliability, safety and impact on clinical management in uncontrolled epilepsies.”* **Kristin Å. Alfstad**, **Oliver Henning**, **Margrete Halvorsen Bø**, Arild Egge, Oslo University hospital, Guido Rubboli, University of Copenhagen, Danish Epilepsy Centre, Dianalund, Denmark and Sándor Benizky, Aarhus University Hospital and Danish Epilepsy Centre, Dianalund, Denmark.

*“Nordic prospective observational study of outcomes after rare epilepsy surgery procedures”* **Fridny Heimisdottir**, **Kristin Å. Alfstad** and Tove Hallbook, University of Gothenburg and Sahlgrenska Hospital, Sweden

*“Children with refractory epilepsy and use of the newest antiepileptic drugs”*. Scandinavian project between the National Centre for Epilepsy in Norway and Danish Epilepsy Centre, Dianalund, Denmark; Margrete Larsen Burns, Marina Nikoronova, Danish Epilepsy Centre, Dianalund; responsible in Denmark, **Cecilie Johannessen Landmark**, project leader.

*“Nordic Delphi Consensus on VNS guidelines”* An international multicenter project. The aim of the project is to find Consensus for mutual clinical VNS guidelines in the Nordics for drug resistant epilepsy patients. **Oliver Henning**, project leader, **Hrisimir Kostov**, Thorsten Gerstner, Stein-Helge Tingvoll, Susanne Ingebrigtsen, Atle Lillebø, Omar Hikmat (Norway), Dragan Marsanovic, Kern Olofsson, Anne Sabbers, Ioannis Tsiropoulos, Noemi Becser Andersen (Denmark). Liisa Metsähonkala, Reina Roivainen, Salla Lamouso, Jukka Peltola (Finland), Sintia Kolbjør, Lisa Gordon, Helena Gauffin, Jeohan Lundgren, Elinor Ben-Menachem, Fredrik Asztely, (Sweden).

## Expert groups and international commissions

- NorEpiNet. **Kathrine Cammermeyer Haavardsholm, Magnhild Kverneland**
- EpiCARE. Special Interest group on Ketogenic Diet. **Ellen Molteberg, Magnhild Kverneland**
- ILAE Dietary Therapy Task Force of the medical Therapies Commission. **Magnhild Kverneland**
- Cannabidiol International Expert group (CBD). **Cecilie Johannessen Landmark**

Treatment strategies on pediatric epilepsies annual educational courses:

[https:// www.epiped-course.com](https://www.epiped-course.com) (EpiPed.) **Cecilie Johannessen Landmark**

- Epilepsy Education Task Force, Botanical Medicines Task Force and Pediatric treatment task force, all initiated by the International League Against Epilepsy (EpiED) **Cecilie Johannessen Landmark**
- Faculty member, Eilat Educational course: Pharmacological treatment of epilepsy. **Cecilie Johannessen Landmark:**

<https://www.ilae.org/congresses/10th-eilat-educational-course-pharmacological-treatment-of-epilepsy>

- Faculty member, annual course Baltic sea summer school for epilepsy: **Oliver Henning and Cecilie Johannessen Landmark:**

<https://www.ilae.org/congresses/ilae-sponsored-meetings-and-courses/baltic-sea-summer-school-on-epilepsy-bssse>

- Nordic Expert Group on Epilepsy and Dementia. **Erik Sætre**
- NorEpiNet Nordic network for precision medicine, leader and steering group member **Kaja Selmer and Cecilie Johannessen Landmark**
- Commission on Epidemiology, International League Against Epilepsy. **Kari Modalsli Aaberg**

## Most important national and international collaborators

### National

- 1.Amanuensis Maryam Shirzadi, St. Olavs Hospital and NTNU, Trondheim
- Prof. Nils Erik Gilhus, Haukeland University Hospital and OIB
- Assoc. prof. Marte Bjørk, Haukeland University Hospital and UiB
- Marte Syvertsen, MD, PhD, Viken Hospital Trust and UiO
- Assoc. prof. Sverre Myren NTNU, Møre and Romsdal Hospital Trust
- Prof. Erik Taubøll, OUH and UiO

### International

- Prof. Sándor Beniczky, Danish Epilepsy Centre, Dianalund, Aarhus University, Denmark
- Prof. Torbjörn Tomson, Karolinska Institute Stockholm, Sweden
- Jacob Christensen, PhD, University of Aarhus, Denmark
- Ass. Prof. Rikke Steensbjerre Møller University of Southern Denmark, Denmark
- Prof. Guido Rubboli, Danish Epilepsy Centre, Dianalund, University of Copenhagen, Denmark
- Prof. Jukka Peltola, Tampere University Hospital, Finland
- Prof. Anne Sabers, University of Copenhagen, Denmark
- Lars Pinborg, Copenhagen University Hospital, Denmark
- Prof. Richard Chin, Muir Maxwell Epilepsy Centre and University of Edinburgh
- MD Roderick Duncan, MD, DB Medical Research Centre, Christchurch, New Zealand
- Prof. Christoph Helmstaedter, Bonn University Hospital, German
- Prof. Marina Nikorova, Danish Epilepsy Centre, Dianalund, Denmark

## Scientific production of the research group in 2024

**Total: 37**

**Peer reviewed original research articles: 27**

**Other publications: 10**

### 3 Selected publications:

Battino D, Tomson T, Bonizzoni E, Craig J, Perucca E, Sabers A, Thomas S, Alvestad S, Perucca P, Vajda F, EURAP Collaborators (2024) Risk of Major Congenital Malformations and Exposure to Antiseizure Medication Monotherapy *JAMA Neurol*, 81 (5), 481-489  
DOI [10.1001/jamaneurol.2024.0258](https://doi.org/10.1001/jamaneurol.2024.0258), PubMed 384979

Karterud HN, Otto Nakken K, Lossius MI, Tschamper M, Ingebrigtesen T, Henning O (2024) Young people diagnosed with psychogenic nonepileptic seizures (PNES) years ago - How are they now? *Epilepsy Behav*, 157, 109874  
DOI [10.1016/j.yebeh.2024.109874](https://doi.org/10.1016/j.yebeh.2024.109874), PubMed [38851124](https://pubmed.ncbi.nlm.nih.gov/38851124/)

Razaz N, Igland J, Bjørk MH, Joseph KS, Dreier JW, Gilhus NE, Gissler M, Leinonen MK, Zoega H, Alvestad S, Christensen J, Tomson T (2024) Risk of Perinatal and Maternal Morbidity and Mortality Among Pregnant Women With Epilepsy *JAMA Neurol*, 81 (9), 985-995  
DOI [10.1001/jamaneurol.2024.2375](https://doi.org/10.1001/jamaneurol.2024.2375), PubMed [39102246](https://pubmed.ncbi.nlm.nih.gov/39102246/)

### On-going funding

South-Eastern Norway Regional Health Authority : 1 PhD , 2 post doc 6 yrs

Stiftelsen Dam (Norwegian Foundation for Health and Rehabilitation): 3PhD

### Other financial support:

- Norwegian chapter of ILAE
- Norwegian Epilepsy society
- Norwegian National Advisory Unit on Rare Disorders
- Unifor

