

Personal profile

Birthdate	03. July 1965
Gender	Female
Nationality	Norwegian
Marital status	married to Andreas Aase children Atle (born 1997) and Anders (born 2002)
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Current employment	Research Scientist, Department of Circulation and Medical Imaging NTNU Faculty of Medicine Trondheim, NORWAY



Current research profile

In my current research I use tools from functional genomics on tissues from the circulatory system (blood vessels, heart and lungs) and skeletal muscles from rats and on blood from human divers to map and interpret gene expression changes after hyperbaric exposure in air and water. This work has been funded by a 3- year researcher grant from Samarbeidsutvalget NTNU/Helse Midt-Norge (June 2009 – May 2012) with additional funding through grants from FUGE Midt-Norge and the NTNU Department of Circulation and Medical Imaging. As principal investigator I have been in charge of project concepts, protocols, funding and ethical approvals. The work is performed at the NTNU Medical Faculty (rat studies and genetic analyses) and at the University of Split in Croatia (human diving).

Prior academic and leadership experience

2000-2009: Leader of the Medical Genetics Section at St. Olav's Hospital

The position included leadership of the genetic laboratory and from 2003 also for the genetic outpatient clinic, during which time we established genetic diagnostics and counseling services. During this period, I led the work that resulted in a license for physicians at St. Olav's Hospital to practice medical genetics in the Midt-Norge region according to the Norwegian Biotechnology act. Prior to this, I was laboratory chief engineer 1998 - 1999.

1999-2000: Molecular Biologist at Rigshospitalet, Copenhagen, Denmark

Establishing Preimplantation Genetic Diagnosis (PGD) at the Dept. of Medical Genetics and the Fertility Clinic, and performing their first PGD treatments for cystic fibrosis, Huntington's disease and spinal muscular atrophy.

1994-1996: Post doc in France and Norway

at Ecole Supérieure de Biotechnologie de Strasbourg (May 1994-July 1995) and UNIGEN Molekylærbiologisk Felleslaboratorium NTNU, Trondheim. The project *Generering av knockout-mus for DNA alkylglycosylaser* (generating knock-out mice for DNA alkyl-glycosylases) was funded by the Norwegian Research Council.

Higher education

Forensic genetics expert witness Rettsmedisinsk Kommisjon (Norwegian Board of Forensic Science) 2007

Dr ing (PhD) Norwegian Institute of Technology, NTH - UNIGEN Center for Molecular Biology 1994

Doctoral thesis *Heterogeneity in the incorporation and excision of uracil in DNA*, ISBN 82-7119-591-3. Performed at the DNA Repair Group led by professor Hans E Krokan

Civil Engineer Norwegian Institute of Technology, NTH - Biophysical and Medical Technology 1989

Diploma thesis *Automatization of Pressure Chamber: Monitoring and Control of Hyperbaric Environment for Animal Research*. Results in Proceedings of the European Undersea Biomedical Society, Eilat, Israel, 1989.

University level teaching experience

Genetic Prenatal Diagnosis	NTNU, Faculty of Medicine	2000 - 2008
Lectures in national course for continuing education in ultrasound diagnostics for midwives.		
Gene Toxicology and Mutagenesis	Norwegian Institute of Technology, NTH	1992 - 1993
PhD-level course. My lectures covered biological consequences of exposure to ionizing radiation.		
Courses in Biochemistry and Molecular Genetics	Norwegian Institute of Technology, NTH	1989 – 1993
Laboratory lectures and tutoring for undergraduate biotechnology and biochemistry students		
Mathematics I and II	Norwegian Institute of Technology, NTH	1986 – 1988
Math I: Tutoring and marking assignment for undergraduate students, including some small group lectures. Math II: Tutoring and marking second yr student assignments. Plenary presentations and small group lectures.		

PhD and master supervision

Supervisor for master students Kristin Svee (*Genetisk disposisjon for dykkersyke?* completed in 2010) and Corina Syversen (*CYP2C19 – genvariant CYP2C19*17 og rask omsetting av legemidler*, completed in 2011).

Co-supervisor for PhD students Trine Andreassen (*Pharmacokinetic, pharmacodynamic and pharmacogenetic aspects of oxycodone treatment in cancer pain*, completed in 2011) and Arve Jørgensen (*Effects of exercise and hyperbaric oxygen preconditioning in relation to diving and bubble formation*, ongoing)

Co-supervisor for several students at Hans Krokan's DNA repair group at UNIGEN and Alf Brubakks's group of biomedical engineering at the Faculty of Medicine 1990 - 1993.

PhD and master evaluations

Administrator of PhD evaluation committees for Dorte Stensvold (thesis *Physical activity, cardiovascular health and longevity in patients with metabolic syndrome*, defended June 2011) and Caroline Hild Pettersen (submitted thesis *The effect of omega-3 polyunsaturated fatty acids on human cancer cells – molecular mechanisms involved* to be defended June 2012).

External examiner for several master- and medical student research theses from the NTNU Faculty of Medicine and Faculty of Natural Sciences and Technology 2002 - 2009.

Official board affiliations

Active member of Rettsmedisinsk Kommisjon (the Norwegian Board of Forensic Medicine) since 2007

Member of several work groups in planning of the new St. Olav Trondheim University Hospital (2001 – 2005)

Deputy member Preimplantasjonsdiagnostiknemnda/The Norwegian PGD Board (2008-2010)

Deputy member NTNU- HiST Program Board for MSc in molecular medicine (2005 -2006)

Deputy member The Norwegian Appeal Board regulating medical treatment abroad and PGD (2004 – 2007)

Journal peer reviewer

Has served as peer reviewer for Molecular Human Reproduction (Oxford Journals) and Pharmacogenetics (Lippincott, Williams & Wilkins).

References

Hans Einar Krokan, Professor Medical Faculty, Department of Cancer Research and Molecular Medicine, hans.krokan@ntnu.no, phone (+47) 725 73074

Harald Aarset, Head of the Department of Pathology and Medical Genetics St. Olav's Hospital University Hospital, harald.aarset@stolav.no, phone (+47) 725 73052

Søren Ziebe, Head of Laboratory, Fertility Clinic Rigshospitalet, University Hospital of Copenhagen, soeren.ziebe@rh.regionh.dk, phone (+45) 35 451370

Peer reviewed publications

Andreassen, Trine N; **Eftedal, Ingrid**; Klepstad, Pål; Davies, Andrew; Bjordal, Kristin; Lundström, Staffan; Kaasa, Stein; Dale, Ola. *Do CYP2D6 genotypes reflect oxycodone requirements for cancer patients treated for cancer pain? A cross-sectional multicentre study.* *Eur J Clin Pharmacol.* 2012 Jan;68 (1):55-64

Møllerløkken, Andreas; **Eftedal, Ingrid**. *Individual risk of decompression sickness: Possible effects of genomic or epigenomic variation altering gene expression.* In: *The future of diving: 100 years of Haldane and beyond.* Smithsonian Institution Press 2009 ISBN 0-9788460-5-2. s. 53-58

Eftedal, Ingrid; Schwartz, Marianne; Bendtsen, Helle; Andersen, Anders Nyboe; Ziebe, Søren. *Single intragenic microsatellite preimplantation genetic diagnosis for cystic fibrosis provides positive allele identification of all CFTR genotypes for informative couples.* *Molecular human reproduction* 2001 ;Volum 7.(3) s. 307-312

Sunde, Arne; **Eftedal, Ingrid**. *Embryonale stamceller og terapeutisk kloning.* *Tidsskrift for Den norske legeforening* 2001; Volum 121. s. 2407-2412

Haug, Terje; Skorpen, Frank; Kvaløy, Kirsti; **Eftedal, Ingrid**; Lund, Henning; Krokan, Hans Einar. *Human uracil-DNA glycosylase gene : sequence organization, methylation pattern, and mapping to chromosome 12q23-q24.1.* *Genomics* 1996; Volum 36. s. 408-416

Lund, Henning; **Eftedal, Ingrid**; Haug, Terje; Krokan, Hans Einar. *Pseudogenes for the human uracil-DNA glycosylase on chromosomes 14 and 16.* *Biochemical and Biophysical Research Communications - BBRC* 1996; Volum 224. s. 265-270

Nilsen, Hilde; Yazdankhah, Siamak Pour; **Eftedal, Ingrid**; Krokan, Hans Einar. *Sequence specificity for removal of uracil from U.A pairs and U.G mismatches by uracil-DNA glycosylase from Escherichia coli, and correlation with mutational hotspots.* *FEBS Letters* 1995; Volum 362. s. 205-209

Slupphaug, Geir; **Eftedal, Ingrid**; Kavli, Bodil; Bharati, Sangeeta; Helle, Nils M; Haug, Terje; Levine, David William; Krokan, Hans Einar. *Properties of a recombinant human uracil-DNA glycosylase from the UNG gene and evidence that UNG encodes the major uracil-DNA glycosylase.* *Biochemistry* 1995 ;Volum 34. s. 128-138

Bjelland, Svein; Eide, Lars; Time, Rune W; Stote, Roland; **Eftedal, Ingrid**; G. Volden Gunnar; E. Seeberg, Erling. *Oxidation of thymine to 5-formyluracil in DNA: Mechanisms of formation, structural implications, and base excision by human cell free extracts,* *Biochemistry* 1995, 34, 14758-64

Eftedal, Ingrid; Volden, Gunnar; Krokan, Hans Einar. *Excision of uracil from double-stranded DNA by uracil-DNA glycosylase is sequence specific,* *Ann N Y Acad Sci.* 1994, 726, 312-14

Slupphaug, Geir; Alseth, Ingrid; **Eftedal, Ingrid**; Volden, Gunnar; Krokan, Hans Einar. *Low incorporation of dUMP by some thermostable DNA polymerases may limit their use in PCR amplifications,* *J. Anal. Biochem.* 1993, 211, 164-9

Eftedal, Ingrid; Guddal, Per Henrik; Slupphaug, Geir; Volden, Gunnar; Krokan, Hans Einar. *Consensus sequences for good and poor removal of uracil from double stranded DNA by uracil-DNA glycosylase,* *Nucleic Acids Res.* 1993, 21, 2095-101

Other publications relevant to diving physiology

Eftedal, Ingrid; Hjelde, Astrid; Jørgensen, Arve; Brubakk, Alf O. Plasminogen activator inhibitor protein is a biomarker of decompression stress in rats. 36th Annual Meeting of the European Underwater and Baromedical Society; 2010-09-14 - 2010-09-18

Jørgensen, Arve; **Eftedal, Ingrid**; Brubakk, Alf O. HYPERBARIC OXYGEN PREBREATHING DOES NOT REDUCE VASCULAR BUBBLE FORMATION IN DECOMPRESSED RATS. 36th Annual Meeting of the European Underwater and Baromedical Society; 2010-09-14 - 2010-09-18