



**FROM BOOTCAMP TO BEDSIDE:
BRIDGING THE CLINICAL
AND RESEARCH GAP
BETWEEN EXERTIONAL HEAT
STROKE, RHABDOMYOLYSIS,
AND RYR-1-RD**

MARCH 26, 2026

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Time	Topic/Session	Speaker
Session 1: EHS Prevention, Recognition, & Acute Treatment		
8:00 am - 8:20 am	Role of RyR1 and Dysregulation of Calcium Homeostasis in EHS	Michael F. Goldberg, MD, MPH
8:20 am - 8:40 am	Society Guidelines of the Treatment of EHS (ACSM)	Francis G. O'Connor, MD, MPH
8:40 am - 9:00 am	Triggers & Primary Prevention of EHS	David DeGroot, PhD, FACSM
9:00 am - 9:20 am	Monitoring of Temperature & Diagnosis of EHS	Coen Bongers, PhD
9:20 am - 9:30 am	Patient Perspective	Sean Duffy
9:30 am - 9:50 am	Management of EHS in the Military & Sports	Rebecca L. Stearns, PhD, ATC, FNATA
9:50 am - 10:05 am	Dantrolene for the Treatment of EHS	Mike Greenberg, MD
10:05 am - 11:05 am	DISCUSSION ON SESSION 1: EHS Prevention, Recognition, & Acute Treatment	
11:05 am - 12:00 pm	LUNCH BREAK	
Session 2: EHS Assessment of Genetic Susceptibility and How to Restart Duty & Sports		
12:00 pm - 12:20 pm	RYR1-Related Diseases: MHS, Exertional Rhabdomyolysis, & Exertional Heat Stroke	Luuk van den Bersselaar, MD, PhD & Nick Kruijt, MD, PhDc
12:20 pm - 12:40 pm	Implications of Prior EHS for Military Recruitment and Retention	Francis G. O'Connor, MD, MPH
12:40 pm - 1:20 pm	Heat Tolerance Testing in Practice: Pros & Cons	Francis G. O'Connor, MD, MPH & David DeGroot, PhD, FACSM
1:20 pm - 1:30 pm	Patient Perspective	Robert Hanich, MD, FACC
1:30 pm - 1:50 pm	Genetic Risk Factors/Genetic Testing for EHS	Erik-Jan Kamsteeg, PhD, MS
1:50 pm - 2:10 pm	Follow Up After EHS	Nick Kruijt, MD, PhDc
2:10 pm - 2:30 pm	How to Relate Information to the Patient Community	Stacey Watt, MD, MBA, MHPE, FASA
2:30 pm - 3:00 pm	DISCUSSION ON SESSION 2: EHS Assessment of Genetic Susceptibility and How to Restart Duty & Sports	
3:00 pm - 4:00 pm	DISCUSSION ON FULL WORKSHOP & CONCLUSION	

From Bootcamp to Bedside: Bridging the Clinical and Research Gap Between Exertional Heat Stroke, Rhabdomyolysis, and RYR-1-RD

Co-Directors

The RYR-1 Foundation extends its deepest gratitude to the Co-Directors of From Bootcamp to Bedside: Bridging the Clinical and Research Gap Between Exertional Heat Stroke, Rhabdomyolysis, and RYR-1-RD for their leadership, insight, and generous contributions of time and knowledge. This important workshop would not have been possible without their dedication.



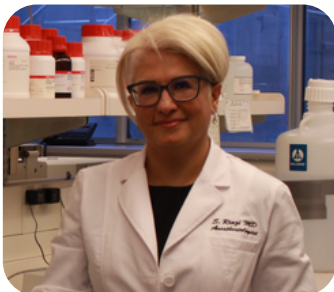
Nick Kruijt, MD, PhDc

Nick Kruijt, MD, is a general practitioner and PhD-candidate in Nijmegen, the Netherlands. His research at Radboud University Medical Center focuses on rhabdomyolysis, exertional heat stroke, and RYR1-related disorders. Previous work on the topic focused on the interaction between genetic susceptibility and external triggers, and on long-symptoms and quality of life after rhabdomyolysis or heat stroke.



Nicol C. Voermans, MD, PhD

Dr. Voermans's research at the Radboud University Medical Centre focuses on genotype-phenotype coupling and trial-readiness of rare inherited myopathies. As a clinical neurologist trained in neuromyology and experienced in translational research, she is well prepared to bridge the gap between the neuromuscular bench and bedside. Dr. Voermans has focused on congenital myopathies, with a special interest in the clinical presentations and pathophysiology of RYR-1-related diseases. She has focussed on the wide spectrum of RYR-1-related diseases throughout life, including intermittent phenotypes such as exertional rhabdomyolysis. She is a medical advisor of the congenital myopathies group of the Dutch patient organization for neuromuscular disorders. Dr. Voermans has extended her scope to include other congenital myopathies and facioscapulohumeral muscular dystrophy. Dr. Voermans is honored to serve as a member of the Scientific Advisory Board of The RYR-1 Foundations.



Sheila Riaz, MSc, MD, FRCPC

Dr. Riaz is a Professor at the Department of Anesthesia, clinician-scientist at Toronto General research institute, and a staff anesthesiologist at University Health Network. Dr. Riaz also directs the only Canadian diagnostic center for malignant hyperthermia (MH), where she assesses at-risk individuals and provides genetic testing and caffeine-halothane contracture test (CHCT). Her research interests include the pathophysiology of MH, links with exertional heat illnesses, and phenotypic variability in MH susceptible patients. Dr. Riaz has received several teaching and research awards and has secured funding from Canadian and American grant agencies. She is also the chair of the MH International Professional Advisory Council, the board of directors of the Malignant Hyperthermia Association of the United States (MHAUS), and an associate editor at the Canadian Journal of Anesthesia. Dr. Riaz is honored to serve as a member of the Scientific Advisory Board of The RYR-1 Foundations.

Expert Speakers



Coen Bongers, PhD

Dr. Coen Bongers is a thermophysiologicalist working at the Department of Physiology of the Radboud University Medical Center. His research focuses on the prevalence, prevention and treatment of exertional heat stroke. In addition, he works closely together with organizers of sporting events to improve their heat protocols, implement heat-mitigation strategies and reduce the incidence of heat-related illnesses.



LTC David W. DeGroot, PhD, FACSM

Dr. DeGroot is the Director of the US Army Heat Center at Martin Army Community Hospital, Fort Benning, GA. He directs efforts aimed to identify, develop, and disseminate best practices for the prevention, treatment, and return to duty of exertional heat illness patients. LTC DeGroot's research focuses on environmental physiology, injury prevention and human performance optimization. He is a member of the American Physiological Society and is a Fellow of the American College of Sports Medicine. He is the author of over 100 research articles, government technical reports, book chapters and conference presentations. LTC DeGroot has received research awards from the ACSM Environmental Physiology Interest Group and the APS Environmental and Exercise Physiology Section. He is a recipient of The Army Surgeon General's 'A' proficiency designator and is a member of the Order of Military Medical Merit.



Mike Greenberg, MD

Mike Greenberg, MD, an emergency physician by training, is the Vice President of Medical Affairs at Eagle Pharmaceuticals where he is responsible for data generation, scientific, and clinical information exchange and drug safety across Eagle's acute care/hospital and hematology/oncology portfolios. In addition to his experience as an emergency physician and medical affairs professional, Dr. Greenberg has also worked with the Federal Agency for Healthcare Research and Quality (AHRQ) to raise awareness of comparative effectiveness research, and has acted as a consultant to teams focusing on Risk Evaluation and Mitigation Strategies (REMS) and Drug Safety Communications at the FDA Center for Drug Evaluation and Research (CDER). Mike earned his medical degree at the State University of New York Upstate Medical University and completed a residency in Emergency Medicine at the University of Massachusetts.



Erik-Jan Kamsteeg, MSc, PhD

Dr. Kamsteeg obtained his PhD in Medical Sciences at the Radboudumc. His research career was in renal disease, a subject he continued working on for two years at the Yale School of Medicine and another two years after returning to Nijmegen. He was trained as a Clinical Laboratory Geneticist from 2005-2009 at the Department of Human Genetics in Nijmegen. As a staff member, he is at present heading a team of clinical laboratory specialists and technicians involved in genetic diagnostics of sensory disorders, renal disorders and neurological disorders. In diagnostics and research he is personally focusing on neurological disorders. He has co-authored >60 peer-reviewed papers on neurological disorders. During the past four years, clinical genome sequencing was broadly adopted for these disorders in his team, and is now the major test in numbers. He is a faculty member of the Nijmegen 'Expertise Center for Genetic Movement Disorders' and the 'European Malignant Hyperthermia Group'.

Expert Speakers



Francis G. O'Connor, MD, MPH

COL(Ret) Francis G. O'Connor is currently the Medical Director, Consortium for Health and Military Performance, and a Professor in the Department of Military and Emergency Medicine, USUHS. A retired Colonel from the United States Army Medical Corps, he began his career as a graduate from the United States Military Academy. Dr. O'Connor earned his degree in Medicine from the State University of New York and obtained a Master's in Public Health from Uniformed Services University of the Health Sciences (USUHS). He completed a residency in Family Medicine at St. Joseph's Hospital Health Center in Syracuse and a Sports Medicine Fellowship at the Nirschl Orthopedic and Sports Medicine Center. He is board certified in Family Medicine, Sports Medicine and certified in Musculoskeletal Ultrasound. COL O'Connor has been a leader in sports medicine education and research for the military for over 25 years.



Rebecca L. Stearns, PhD, ATC, FNATA

Dr. Stearns is the Chief Operating Officer of the Korey Stringer Institute (KSI). Dr. Stearns is a certified athletic trainer and has experience as an athletic trainer at the high school level and at various mass medical tent events, including the Boston Marathon, Marine Corps Marathon, New York City Marathon, Falmouth Road Race, and Ironman Lake Placid. She has co-authored eight position statements related to preventing sudden death in sport and published over 90 research articles. Dr. Stearns earned her bachelor's degree in athletic training from Duquesne University and completed her master's and doctoral degrees in kinesiology at the University of Connecticut.



Stacey Watt, MD, MBA, MHPE, FASA

Dr. Watt is a pediatric anesthesiologist based in Buffalo, New York. She currently serves as President of the Malignant Hyperthermia Association of the United States and President of the New York State Society of Anesthesiologists. In addition to her clinical and leadership roles, Dr. Watt collaborates with the U.S. Olympic and Paralympic teams to support the safe screening of athletes entering their training centers. Her professional interests include heat-related illnesses and injuries, with a particular focus on prevention and clinical management.



Luuk van den Bersselaar, MD, PhD

Dr. Luuk van den Bersselaar is a Medical Doctor and earned his PhD at the Malignant Hyperthermia Investigation Unit at the Canisius Wilhelmina Hospital, Nijmegen, the Netherlands and the Department of Neurology at the Radboud University Medical Centre, Nijmegen, the Netherlands. His research mainly focuses on the neuromuscular phenotype of patients with RYR1-related malignant hyperthermia susceptibility and/or exertional rhabdomyolysis.

Patient Representatives



Sean Duffy

Sean Duffy lost his father in 1989 to anesthesia induced malignant hyperthermia. In August 2025, Sean lost his son while jogging in 100 degree heat. His body temperature reached 110 degrees and he experienced hyperkalemia, severe acidosis, exercise induced rhabdomyolysis, and tachycardia. Sean and his son carry the same RYR1 mutation and Sean's muscle biopsy tested positive for MH.



Robert Hanich, MD, FACC

Dr. Robert Hanich retired from Asheville Cardiology Associates in western North Carolina after thirty years as an electrophysiologist and interventional cardiologist. He holds an AB (Harvard College) and MD (University of Pennsylvania), completing his Internal Medicine residency and Cardiovascular Disease fellowship from Penn and Johns Hopkins, respectively. His dominant RYR1 mutation presented as MH/rhabdomyolysis phenotype. Bob serves on The Board of Directors for The RYR-1 Foundation.

Participants



Alakesh Bera, PhD

Alakesh Bera, PhD, is a tenure-track Assistant Professor at the Uniformed Services University of the Health Sciences (USUHS) and Director of the Malignant Hyperthermia Core Facility. His research focuses on RYR1 mutational analysis, investigating its role in malignant hyperthermia susceptibility, muscle dysfunction, and various cancers.



Susan Hamilton, PhD

Susan is a Professor and Chair of the Department of Integrative Physiology at Baylor College of Medicine. Her laboratory created some of the first mouse models of RYR-1 myopathies and used these models to elucidate disease mechanisms and identify new therapeutic targets. Years ago, Sofia Leon, a member of The RYR-1 Foundation's Board of Advisors, brought her entire family to visit the Hamilton laboratory several years in a row. These visits inspired many young trainees and, to this day, continue to drive the RYR-1-RD research in the Hamilton laboratory. Similarly, The RYR-1 Foundation brings together scientists, clinicians and the RYR-1-RD community to promote understanding of the many different manifestations of RYR-1-RD, inspire new research directions, and drive the development of therapeutic strategies. Dr. Hamilton is honored to serve as a member of the Board of Directors of The RYR-1 Foundation.



Hilde Joosten, MD

Dr. Joosten is a practicing sport physician at Canisius Wilhelmina Hospital. Her special interests are in heart failure, Parkinson's disease, post- COVID and RED-S. Heat-related illnesses and events I have seen very early in my career at different sport events, first scientific steps were made in this field. Now I see athletes who want to return to sports.



Heinz Jungbluth, MD, PhD

Dr. Jungbluth is Professor of Paediatric Neurology at King's College London and Consultant Paediatric Neurologist at the Evelina Children's Hospital, Guy's & St Thomas' NHS Foundation Trust, with more than 25 years clinical experience in Paediatric Neurology. His research interest is in early-onset neuromuscular and neurodevelopmental disorders. He has been interested in the clinical and genetic characterization of the congenital myopathies, in particular those affecting excitation-contraction coupling due to mutations in the skeletal muscle ryanodine receptor (RYR1) gene, and related episodic disorders such as malignant hyperthermia (MH) and (exertional) rhabdomyolysis (ERM). He has published widely and is a member of national and international expert consortia concerned with improving the care and developing therapies for early-onset neuromuscular and neurological disease. Dr. Jungbluth is honored to serve as a member of the Scientific Advisory Board of The RYR-1 Foundations.

Participants



Molly Maselko

Molly is a Pittsburgh native and a current student at the University of Pittsburgh, where she will graduate in May with a Master of Public Health in Public Health Genetics. Previously, she studied Biology at John Carroll University. During both of her degrees, she furthered her interest in genetics and developed a desire to improve healthcare access and health and genetic literacy in a future career. She is grateful for the opportunity to learn more about The RYR-1 Foundation and the research being done to better understand and hopefully treat RYR-1 Related Disorders.



Meyke Schouten, MD

Meyke Schouten is a clinical geneticist at the Department of Human Genetics of Radboud University Medical Center in Nijmegen. Her work focuses on the genetic basis of neurological and neuromuscular disorders and rare movement disorders, combining clinical care, genetic counselling, and research within multidisciplinary expert centres. The Radboudumc is part of the national Malignant Hyperthermia centre of expertise, together with the Canisius Wilhelmina Ziekenhuis.
