

Science and Medicine of Endurance Running

Friday, April 12, 2019
12 – 4:45pm

Nicholas Institute of Sports Medicine
and Athletic Trauma (NISMAT)
Manhattan Eye, Ear & Throat Hospital
210 East 64th Street, 5th Floor
New York, NY 10065



Co-Course Directors

Takumi Fukunaga, DPT, SCS, ATC, CSCS
Manager of Rehabilitation Services, Nicholas Institute
of Sports Medicine and Athletic Trauma (NISMAT)

Jacob Jansen, DPT, OCS
Supervisor of Rehabilitation Services, Nicholas Institute
of Sports Medicine and Athletic Trauma (NISMAT)

This symposium is made possible by a gift from
the family of Leon Hess.

Course Faculty

Edwina Adrien, DPT, CSCS
Meghan Bishop, MD
Takumi Fukunaga, DPT, SCS, ATC, CSCS
Beth Glace, MS
Jacob Jansen, DPT, OCS
Ian Kremenic, MEng
Susan Kwiecien, MS
Karl Orishimo, MS, CSCS
Stefanie Richards, DPT, OCS, CSCS
Nicholas Wessling, MD



Program Agenda

- 12pm** **Introduction/Running Injury Risk Factors**
Takumi Fukunaga, DPT, SCS, ATC, CSCS
- 12:15pm** **Management of Common Running Injuries**
Nicholas Wessling, MD
- 12:45pm (concurrent)**
Breakout 1a: Clinic-Based Gait Analysis – 2D Video, OptoGait, Inertial Sensors
Stefanie Richards, DPT, OCS, CSCS
Edwina Adrien, DPT, CSCS
- 12:45pm (concurrent)**
Breakout 1b: Lab-Based Gait Analysis – 3D Motion Capture
Karl Orishimo, MS, CSCS
Ian Kremenec, MEng
- 12:45pm (concurrent)**
Breakout 1c: Physical Exam of Runners – Movement Screening, Dynamometry, Foot Posture and Running Shoe Assessment
Takumi Fukunaga, DPT, SCS, ATC, CSCS
Jacob Jansen, DPT, OCS
- 1:30pm** **15 Minute Break**
- 1:45pm** **Physiology of Running and Training Considerations**
Beth Glace, MS
- 2:15pm** **Breakout 2: Running VO2 Testing**
Beth Glace, MS
Ian Kremenec, MEng
- 3pm** **15 Minute Break**
- 3:15pm** **The Joint Myth: Running and the Risk of Osteoarthritis**
Meghan Bishop, MD
- 3:45pm (concurrent)**
Breakout 3a: Training for Performance – Periodization and Recovery Strategies
Stefanie Richards, DPT, OCS, CSCS
Susan Kwiecien, MS
- 3:45pm (concurrent)**
Breakout 3b: Soft Tissue Intervention Techniques for Runners
Jacob Jansen, DPT, OCS
Edwina Adrien, DPT, CSCS
- 3:45pm (concurrent)**
Breakout 3c: Lab-Based Gait Analysis – 3D Motion Capture (repeat)
Karl Orishimo, MS, CSCS
Ian Kremenec, MEng
- 4:30pm** **Closing Remarks**
Jacob Jansen, DPT, OCS
- 4:45pm** **Adjourn**

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Course description

Long-distance running is an extremely popular activity among the general population. Although many patients with running-related injury are seen in a rehabilitation setting, practitioners often lack important knowledge and skills in injury prevention and treatment, and performance improvement for runners. This course seeks to fill a professional practice gap in evidence-based identification of running injury risk factors, objective assessment of running gait, strength, flexibility, and other attributes of runners, metabolic testing and its application to training design, and treatment techniques of running-related injuries.

Learning objectives

All Northwell Health education activities are designed to improve patient care, safety and outcomes. At the conclusion of this conference, participants should be able to:

- **Utilize** valid and reliable objective measurement methods to assess running performance factors and screen for impairments in runners.
- **Apply** knowledge of running physiology and training parameters to design safe and effective training programs.
- **Implement** evidence-based techniques to aid in recovery after running.
- **Describe** current evidence on the relationship between long-distance running and osteoarthritis to inform patients/clients.

Target audience

Physical therapists, physical therapist assistants, athletic trainers, coaches, personal trainers, and strength and conditioning specialists.

Continuing Education Credits

Physical Therapists: Long Island Jewish Medical Center, a member of Northwell Health, is recognized by the New York State Education Department's State Board for Physical Therapy as an approved provider of physical therapy and physical therapist assistant continuing education. Participants will receive a certificate at the completion of the conference for 4.8 contact hours.

Athletic Trainers: Northwell Health Rehabilitation Network (BOC AP#: P8350) is approved by the Board of Certification, Inc. to provide continuing education to Certified Athletic Trainers. This program is eligible for a maximum of 4 Category A hours/CEUs. ATs should claim only those hours actually spent in the educational program.

A certificate of attendance will be provided to all professionals.

Registration fees

\$50 for Northwell Health employees

\$50 for students

\$75 for all others

Registration fee includes course materials and CEU certificate of attendance.

Cancellation policy

To receive a refund, all cancellations must be confirmed in writing by April 5, 2019. An administrative fee of \$25 will be kept for all cancellations. No refunds will be given after this date or for "no-shows."



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Course Faculty

Edwina Adrien, DPT, CSCS

Edwina (Winnie) is a physical therapist at NISMAT. She earned her Doctor of Physical Therapy degree from New York University. She is a Certified Strength and Conditioning Specialist, an American Red Cross Emergency Medical Responder, and a Certified IASTM HawkGrip Practitioner (Level 1). She received her BS in Exercise and Sports Sciences with a Medical Concentration at Ithaca College. Winnie competed in Division III soccer and basketball and was inducted into the Athletic Hall of Fame at Blair Academy (Blairstown, NJ), her high school alma mater. Winnie has experience coaching high school and youth soccer, and training athletes at all levels. She coaches and teaches at the Julie Foudy Sports Leadership Academy, helping girls and young women find their voice and develop their physical and mental strength. Winnie has been a medical volunteer for the TCS NYC Marathon and is a member of the American Physical Therapy Association.

Meghan Bishop, MD

Dr. Bishop is a fellowship-trained orthopaedic surgeon who specializes in sports related injuries of the knee, shoulder and elbow. After graduating top of her class at George Washington University Medical School, she completed her residency in Orthopaedic Surgery at Thomas Jefferson University Hospital in Philadelphia, PA. She then completed a fellowship in Sports Medicine and Shoulder Surgery at Hospital for Special Surgery in New York, NY. During her fellowship, Dr. Bishop served as one of the team physicians for the New York Knicks and Iona College. Her clinical interests include anterior cruciate ligament (ACL) reconstruction, multi-ligament knee injuries, knee meniscus tears, patellofemoral instability and pain, cartilage restoration procedures, shoulder instability and labral tears, as well as rotator cuff repair. Dr. Bishop has a special interest in sports-related injuries of the female athlete. Dr. Bishop is a former Division I collegiate track and field athlete and continues to be an avid runner. She has run the Boston Marathon and has competed and placed in multiple other marathons throughout the country. Her athletic history has given her a personal understanding of the importance of maintaining a healthy and active lifestyle.

Takumi Fukunaga, DPT, SCS, ATC, CSCS

Tak is the Manager of Rehabilitation Services and Research Physical Therapist at NISMAT. He is a licensed physical therapist, board-certified specialist in sports physical therapy, certified athletic trainer, and certified strength and conditioning specialist. Tak graduated magna cum laude from Ithaca College with BS in Athletic Training and Exercise Science. He received his Doctor of Physical Therapy degree from New York University. Tak holds an academic appointment as Assistant Professor in the Department of Physical Medicine and Rehabilitation at the Zucker School of Medicine at Hofstra/Northwell. He is an adjunct instructor and master clinician for the Department of Physical Therapy at New York University. He is a member of the American Physical Therapy Association, Orthopedic, Sports Physical Therapy, and Research Sections.

Beth Glace, MS

Beth is a Sports Nutritionist and Research Associate at NISMAT. She has extensive experience in nutrition counseling, as well as performing fitness testing for professional and recreational athletes. Much of her responsibilities include designing, implementing and presenting research in the area of metabolism, exercise and nutrition. Areas of research have included elucidating the source of exercise-induced fatigue, eating disorders in athletes, metabolic rate in ballet dancers, and nutrition and blood values in ultra-marathoners. Beth is a competitive runner with particular interest in cross country and track events. She is President of the Shawangunk Runners in New Paltz, NY, and directs numerous trail and cross country races throughout the year.

Jacob Jansen, DPT, OCS

Jacob is the Supervisor of Rehabilitation Services and Center Coordinator of Clinical Education at NISMAT. As a recreational athlete with personal experience in martial arts, Jacob specializes in sport-related injuries. In addition to acute musculoskeletal injuries, Jacob has an interest in rehabilitation following total joint replacements. Jacob graduated from The Ohio State University with a Master's degree in Sports and Exercise Science, as well as, a Bachelor's degree in Evolution, Ecology, and Organismal Biology. He received his Doctor of Physical Therapy degree from Columbia University. Jacob has also earned his board certification as a clinical specialist in orthopedic physical therapy. He is a member of the American Physical Therapy Association orthopedic section. Jacob is a member of the United States of American Wushu Kungfu Federation and has competed in numerous local competitions, and internationally, at the 7th World Kungfu Championships in China.

Ian Kremenic, MEng

Ian received his Bachelor's and Master's Degrees in Electrical Engineering, with a minor in Biomedical Engineering from The Cooper Union in New York City. Ian is a member of the multidisciplinary research team at NISMAT, working as a Research Associate and Network Administrator. His expertise is in the application of engineering principles to problems in biomedicine, especially with regards to signal processing techniques. Among his research interests and areas in which he has published are analysis of human motion, biomechanical testing of implants and surgical techniques, magnetic stimulation of muscle and evaluation of fatigue. Ian is a member of the Institute of Electrical and Electronics Engineers, the Biomedical Engineering Society and the American College of Sports Medicine, and is a reviewer for Clinical Biomechanics, Clinical Neurophysiology, The American Journal of Physical Medicine and Rehabilitation and Medicine and Science in Sports and Exercise. Ian is an Adjunct Associate Professor of Biomedical Engineering at The Cooper Union.

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Susan Kwiecien, MS

Susan received her MS in Exercise Science from Adelphi University in Long Island, NY. She completed her undergraduate degree in Honours Human Kinetics at the University of Guelph, Ontario, Canada. Susan is currently pursuing her PhD in Exercise Physiology; The effects of prolonged cooling using phase change material on exercise recovery and clinical inflammatory conditions, at Northumbria University, Newcastle upon Tyne, England. Her research areas include functional recovery in ice hockey players, G-force exposure in contact sport, the use of accelerometers to quantify physical stress, performance demands in softball and baseball pitching, and the effect of adverse neural tension on hamstring strength in rugby players.

Karl Orishimo, MS, CSCS

Karl received his Bachelor's Degree in Bioengineering from the University of Pennsylvania and his Master's Degree in Biomedical Engineering from the University of Virginia. Karl also earned his Certification as a Strength and Conditioning Specialist (CSCS). Karl is a Biomechanist and Research Associate NISMAT, working with a multidisciplinary research team. His expertise is in biomechanics, human performance and in the application of engineering principles to problems in biomedicine. Among his research interests and areas in which he has published are the analysis of human motion, injury biomechanics, and testing of implants and surgical techniques. Karl is a member of the American College of Sports Medicine, the American Society of Biomechanics, the International Society of Biomechanics and the National Strength and Conditioning Association. He has served as a reviewer for Clinical Biomechanics and Human Movement Science and has been an Adjunct Associate Professor of Mechanical Engineering at The Cooper Union.

Stefanie Richards, DPT, OCS, CSCS

Stefanie is a licensed physical therapist with a Specialty Board Certification in Orthopedic Physical Therapy, a Certified Strength and Conditioning Specialist, a Road Runners Club of America certified running coach, and a licensed Power Pilates mat instructor. Stefanie is the leader of NISMAT's running performance program and running injury clinic. As a senior physical therapist at NISMAT, Stefanie specializes in the treatment of orthopedic and sports-related injuries, as well as rehabilitation after surgery. Stefanie earned her Doctorate of Physical Therapy from New York University. Stefanie obtained a BS in Exercise and Sports Science at Elon University. Stefanie participates in a variety of running clubs throughout New York City, most recently completing the New York City Marathon. Stefanie's professional memberships include the American Physical Therapy Association and the National Strength and Conditioning Association.

Nicholas Wessling, MD

Dr. Wessling is a fellowship trained orthopedic surgeon who specializes in sports medicine and foot and ankle surgery. Dr. Wessling has a special interest in total ankle replacement, sports injuries of the foot and ankle and bunion correction. Dr. Wessling received his medical degree from University of Kansas School of Medicine before completing his residency training in orthopedic surgery at Columbia University's St. Luke's-Roosevelt Hospital Center in New York City. His residency included orthopedic training at Memorial Sloan Kettering Cancer Center in New York and Alfred I. duPont Hospital for Children in Delaware. Following residency, Dr. Wessling completed a foot and ankle fellowship at Miami Ankle Foot International Associates at Doctors Hospital in Miami, FL, followed by a sports medicine fellowship at Lenox Hill Hospital in New York City. During his training, Dr. Wessling participated in the care of athletes from the New York Jets, New York Islanders, Miami Dolphins, Manhattanville College and Hunter College.

Planning committee:

Janet Christenson, MHA

Senior Administrative Director

Nicholas Institute of Sports Medicine and Athletic Trauma (NISMAT)

Takumi Fukunaga, DPT, SCS, ATC, CSCS

Manager of Rehabilitation Services

Nicholas Institute of Sports Medicine and Athletic Trauma (NISMAT)

Jacob Jansen, DPT, OCS

Supervisor of Rehabilitation Services

Nicholas Institute of Sports Medicine and Athletic Trauma (NISMAT)

Christina Petrone, PTA

Administrative Manager

Nicholas Institute of Sports Medicine and Athletic Trauma (NISMAT)

Ryan J. Strong

Senior Administrative Manager

Northwell Health Orthopaedic Service Line

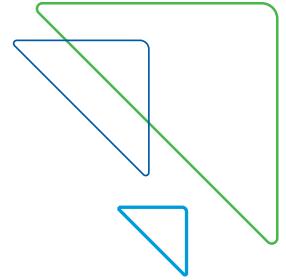
Northwell Health Rehabilitation Service Line

Acknowledgments: All educational/financial support will be acknowledged on the day of the program.

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Registration Form

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\$75 for all others

Three ways to register

1. Online at <https://bit.ly/2VCI67C>

2. Call **(646) 785-8213**

3. Mail this form with credit card information, or check (made payable to “NISMAT – Science and Medicine of Endurance Running”) to:

NISMAT

210 East 64th Street, 5th Floor

New York, NY 10065

Registration Information (Please print clearly)

Name _____ Credentials (MD, DO, PhD, PA, RN, etc.) _____

Address _____

City _____ State _____ Zip _____

Phone (Days) _____ Cell _____

Email _____

Affiliation _____

Specialty _____

Please indicate:

MD DO PA PT PTA ATC Other (please specify) _____

Charge \$ _____ to my VISA Mastercard AMEX Discover

Credit card # _____ Expiration date _____

Please list all 16 digits from your credit card and expiration date.

Authorizing signature _____ Today's date _____

A confirmation letter will be sent.

Cancellation Policy

To receive a refund, all cancellations must be received by April 5, 2019. An administrative fee of \$25 will be retained. No refunds will be made after this date or for “no-shows.”