

Strength and Conditioning in Dance: Power, Performance and Rehabilitation

30 October 2015
Elmhurst School of Dance
Birmingham



dance
UK

nidms

national institute of dance
medicine and science

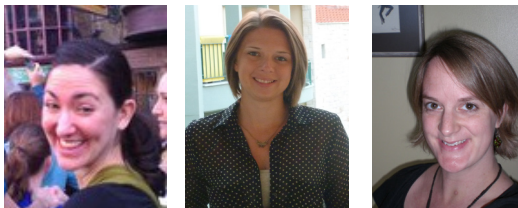
welcome

Welcome to Strength and Conditioning in Dance: Power, performance and rehabilitation. Our Healthier Dancer Conferences are always designed in response to feedback from members and from delegates at previous events. This time you told us you wanted practical sessions that put some of the theory behind performance enhancement into practice. We hope you'll find we deliver on that today. This conference is also a timely response to recent calls from dancers, artistic directors and choreographers to revolutionise training and performance to improve dancers' fitness and physical capacity.

Improving dancers' fitness and strength and the impact that has on performance is something that dance scientists have been studying and advocating for some time. The 1996 Brinson and Dick report *Fit to Dance?* highlighted that dancers should really be fitter and that this might help to prevent injury as well as improve performance. Dance has been learning a lot in the intervening years from the successful use of supplementary training in elite and Olympic level sport and has even been leading the way in reaping the benefits from a range of body conditioning techniques such as Pilates and yoga. And crucially, a growing body of dance specific research is now beginning to bear out the idea that fitter dancers are able to perform better and may be better protected from injury.

We are extremely excited that so many of you are here today, ready and willing to learn from and with experts in physiology and strength and conditioning for dance and elite sport. We hope you will enjoy, sweat, question and end up taking home an embodied understanding of effective strength and conditioning for dancers, as well as a theoretical one, that you can put into practice wherever you work.

Dance as an art form is pushing both artistic and physiological boundaries. Throughout their training and careers, dancers must be prepared for the demands of many styles, choreographic voices and physical demands.



Erin Sanchez, Sarah Beck, Helen Laws
The Healthier Dancer Programme / NIDMS team

With thanks to our funders and sponsors



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about us



National Institute of Dance Medicine and Science & Dance UK's Healthier Dancer Programme

This Strength and Conditioning in Dance: Power Performance and Rehabilitation conference has been organised by Dance UK's Healthier Dancer Programme (HDP) the primary education programme of the National Institute of Dance Medicine and Science.

Dance UK's Healthier Dancer Programme is a worldwide leader in the promotion of dancers' health and well-being. Since 1990, it has undertaken a programme of advocacy and education for all those involved in dance, from grass roots to elite. It provides information and advice and undertakes and facilitates research with the aim of improving the physical and psychological health and wellbeing of dancers and enhancing their performance.

Dance UK's HDP was the driving force behind establishing The National Institute of Dance Medicine and Science (NIDMS), a network of multidisciplinary partners who work together to provide better and more affordable access for all dancers to high quality, evidence-based, dance specific health care and dance science support services.

Launched in 2012, the founding partners of NIDMS are Dance UK, Trinity Laban Conservatoire of Music and Dance, University of Birmingham, University of Wolverhampton, Birmingham Royal Ballet's Jerwood Centre for the Prevention and Treatment of Dance Injuries, and the Royal National Orthopaedic Hospital (RNOH). These organisations include some of the UK's leading dance medicine and science researchers and clinicians and the most state-of-the-art dance medicine and science facilities available to dancers in the UK.

NIDMS' three main areas of work are in Research, Education and Clinical Services. Find out more about everything we do at www.nidms.co.uk.

Research – Dance UK carried out the two major Fit to Dance inquiries into dancers' health and injury (1996, 2005), surveying 2000 professional and pre-professional dancers and highlighting the fact that 80% of dancers incur an injury each year affecting their performance.

Education – since 2012 the HDP has delivered more than 200 educational talks to over 3600 dancers and dance teachers.

Clinical Services - to date more than 500 dancers have been treated through the three NIDMS dance injury clinics within the NHS, which are freely accessible to dance professionals through GP referral. These are based at:

- Royal National Orthopaedic Hospital (RNOH), London
- Queen Elizabeth Hospital Birmingham (QEHB)
- Royal United Hospital (RUH), Bath

programme

9.00 - 9.30
registration, tea and coffee

9.30 - 11.00
morning dance classes

break dance conditioning
Johannes 'Hatsolo' Hattunen
FlowMo Crew, Finland

ballet
Brian Maloney
Teacher and Rehabilitation Specialist
The Royal Ballet

contemporary floorwork
choreography
Khyle Eccles
Director Athletic Artist

11.00 - 11.30
tea and coffee

11.10 - 11.25
welcome from Sue Wyatt and Peter Knott

perspectives, context and theory

11.30 - 12.00
keynote 1 - strength and conditioning: dancers' perspective
Khyle Eccles, Johannes 'Hatsolo' Hattunen, Brian Maloney, and Glenn Wilkinson

12.00 - 12.25
keynote 2 - in context: dance application, uses and training in strength and conditioning
Greg Retter, Clinical Director, The Royal Ballet

12.25-13.00
keynote 3 - introduction to the theory
Professor Matthew Wyon, Course Leader MSc Dance Science, University of Wolverhampton

13.00 - 14.00
lunch

practical strength and conditioning

14.00 - 15.30
breakout session 1 - select one of the six sessions on the next page

15.30 - 16.00
tea and coffee

16.00 - 17.30
breakout session 2 - select one of the six sessions on the next page

rest and recovery

17.45 - 18.15
integrating recovery into training
Dr Benjamin Rosenblatt, Senior Strength and Conditioning Coach GB Hockey and English Institute of Sport

15.30 - 16.00
sum up and closing remarks
Dr Nick Allen, Clinical Director, Birmingham Royal Ballet

practical strength & conditioning breakout sessions

14.00 - 15.30
breakout session 1

16.00 - 17.30
breakout session 2

delegates are asked to select one of the six sessions below



Stretching for Recovery and Regeneration
Nikos Apostolopoulos, Founder of Stretch Therapy and microStretching



Power and Plyometric Training
Nick Grantham, Performance Enhancement Specialist



Simple and Practical Solutions for Supplementary Training
Nico Kolokythas ASCC, Performance Enhancement Coach and
PhD researcher at Elmhurst School for Dance



Cardiovascular Training
Dr. Emma Redding, Head of Dance Science and Sonia Rafferty, Senior Lecturer
at Trinity Laban Conservatoire of Music and Dance



Strength and Conditioning in Injury and Rehabilitation
Dr Benjamin Rosenblatt,
Senior Strength and Conditioning Coach GB Hockey and English Institute of Sport



Pilates
Natalie Rogalski and Ming George, Physiotherapists and Certified Pilates
instructors at the English National Ballet and
the Australian Physiotherapy and Pilates Institute (APPI)

Strength and Conditioning: Dancers' perspectives



Khyle Eccles

Independent dance artist / Strength and conditioning specialist for dance

Khyle trained at The Rambert School of Ballet and Contemporary Dance before touring internationally on large and small scale productions with numerous companies reaching South Korea, United Arab Emirates, USA, Spain, Norway, Germany and Ireland.

As an independent dance artist Khyle is the co-founder of Tall Tales Big Moves, creating small scale spectacles for younger audiences, as well as working with multiple UK venues, organisations, and companies to create exciting work and opportunities for the wider dance community and global audiences.

As a strength and conditioning specialist for dancers Khyle is the Director of Athletic Artist - a dancer training initiative based in the UK. Athletic Artist also delivers professional movement intensives, education events and lectures to support the larger dance community. He is a workshop leader for Dance UK's Healthier Dance Programme and a seasonal lecturer at multiple universities and vocational dance schools.

Khyle strives to create physically demanding and challenging choreography and movement to excite and inspire.



Johannes 'Hatsolo' Hattunen

FlowMo Crew, Finland

The moment Johannes Hattunen saw a friend sliding on his head at school disco was the moment the now-B-Boy Hatsolo fell in love with the dance.

Born and raised in Jyväskylä, Finland, Hatsolo took his B-Boy name, inspired by his Star Wars hero, Han Solo. Keeping to his ultra-energetic and surprising style, Hatsolo— who has also gone by Thor and White Gorilla- uses his strength and agility to come out on top in battles. He admits that while his technique is not always the smoothest, his commitment, speed and flow are not only eye-catching but also get the audience and judges going strong. "Breaking keeps my mind and body young. I jam on the streets and continue to go strong with my crew," he says. "My key inspirations are my friends, music, and all of the awesome people across different sports and cultural scenes that I meet through dance."

Hatsolo runs a dance school called Saiffa with his crew, Flow Mo. He teaches both dance and culture there, alongside Finland's top breakers. He also owns TFW Helsinki (Training for Warriors), a Helsinki gym, where the White Gorilla makes his living as a certified strength and conditioning coach. Implementing Finnish culture into both his own style and the local breakdance scene have been career-long projects for Hatsolo. He describes his dreams as learning something new every day. His personal goals are to keep improving as a B-Boy while enjoying the scene. He is grateful for each day he can continue to participate. As he said himself, breaking is what keeps him young!

Strength and Conditioning: Dancers' perspectives



Brian Maloney

Teacher and Rehabilitation Specialist, The Royal Ballet

Born in California, Brian trained at The Kirov Academy of Ballet in Washington DC. He danced for two years in Paris with Le Jeune Ballet de France before joining The Royal Ballet under Anthony Dowell in 2000. Promoted to Soloist in 2003 Brian danced several principal and soloist roles before retiring from dance in 2013.

A catalogue of major injuries during Brian's career sparked a passion in the rehabilitation pathway of dancers. Brian teaches company class for the Royal Ballet as well as coaching injured dancers through their strength and conditioning programs and return to dance.



Glenn Wilkinson

Teacher/Choreographer

Born in Leeds, Glenn trained in theatre dance at his mother and sister's school, Armley Dance Studio, and in contemporary dance at Intake High School with John Auty. Following his formal dance training at The Rambert School, he joined Rambert Dance Company in August 1987 and danced there for a record-breaking 17 years. Whilst there he worked with many choreographers, including Christopher Bruce, Richard Alston, Siobhan Davies, Mats Ekk, Jiri Kylian, Peter Darling, Ashley Page, Glen Tetley, Trisha Brown, Merce Cunningham, Twyla Tharp, Raphael Bonachela, Javier de Frutos, Laurie Booth, Lucinda Childs, David Gordon, Ian Spink and Paul Taylor. He was a member of the company when they won two Laurence Olivier awards; in 1997 for performances in AIRS, EIDOLON, PORT FOR ANGELS and STREAM and in 2001 for their performance of Mats Ek's SHE WAS BLACK. He was also one of only four company members to work with Trisha Brown in New York on "Opal Loop" in 1989 and one of only seven Rambert dancers to work with Merce Cunningham in New York on a new commission "Touchbase" in 1992.

Glenn's choreographies Brown Ballet One, Twin Suite Two, Tree Finger Soup and Six Pack were all integrated into Rambert's repertoire. After leaving Rambert in 2004, he was appointed Head of Performance at the Northern School of Contemporary Dance in Leeds, overseeing all the school's performance and technique work. He also assisted the school in setting up its own performance company, Verve, which performed his choreography Four Point Five in 2006 and Niner's in 2009. Glenn has over thirty years' experience of teaching contemporary technique to professionals/students nationally and internationally. Teaching credits include: Central School of Ballet, Rambert Dance Company, Michael Clark Dance Company, Phoenix Dance Theatre, Nubian Steps, Bonachela Dance Company, Rambert School, London Contemporary Dance School, Northern School of Contemporary Dance, Australian Ballet School, Laban Centre, The Open Dance Group, Dance Exchange, Swindon Dance, Dance East, University of East London (Urban Dance), Millenium School, Mathew Bourne, Manchester CAT, Leeds CAT, Royal Ballet School, YDA Exeter and Pineapple. In 2007 Glenn ventured into commercial theatre as Dance/fight captain in Lord of the Rings choreographed by Peter Darling. He returned to Rambert in 2008 as Rehearsal Director/Artistic Associate. Glenn became Resident Choreographer for the London stage show of Dirty Dancing in 2008. He has since been promoted to Associate Choreographer UK/South Africa/Asia re-staging and re-envisaging the choreography. For the Olympics 2012 he choreographed a new work for the Olympic Torch Relay. Resident choreographer Billy Elliot 2014. Mentor to the contemporary section of BBC young Dancer 2015 where his mentee Connor Scott won the overall competition. Glenn choreographed the new production of Sinatra which opened at the London Palladium on the 10th July 2015.

In Context: dance application, uses and training in strength and conditioning

Strength and Conditioning (S&C) is now widely recognised as a well-integrated, core component for all elite athletes, and is increasingly being delivered by well-informed S&C Coaches with advanced knowledge and training of the principles underpinning this discipline.

Yet there remains a resistance around the integration of S&C principles within a dance setting, despite an increasing body of evidence demonstrating its efficacy both for performance enhancement and injury recovery.

This presentation will look at models of best practice from the world of Olympic Sport and explore how these can be successfully implemented within a dance setting. It will discuss how S&C delivery can be complimentary to the more traditional modalities used in dance, and when used effectively in a truly interdisciplinary way, how S&C can improve performance, free up artistic expression, and help create multidisciplinary goal-driven objectivity around return-from-injury pathways.



Greg Retter

Clinical Director, The Royal Ballet

Greg joined the Royal Ballet to take up the new post of Clinical Director in October 2013.

His background is in sport where he had previously managed the British Olympic Association's Intensive Rehabilitation Unit for elite Olympic athletes, based at Bisham Abbey National Sports Centre. He has a long association with Team GB having worked as a Headquarters Physiotherapist at 5 Summer and Winter Olympic Games, starting with Sydney 2000, and culminating in London 2012.

Greg's passion lies in accurate clinical diagnoses with comprehensive management of a dancer's rehabilitation utilising a full team approach. He believes that the success of rehabilitation depends on building a strong foundation of support across all areas from Sports Science, through Pilates, Gyrotonic, Psychology, Nutrition, Soft Tissue Therapy and Sports Medicine, at all times placing the injured dancer at the heart of the process.

Greg's role at the Royal Ballet is to oversee and lead the Healthcare Team consisting of 15 talented individuals across this wide range of disciplines as they deliver a world-class service to the dancers of the Company.

Introduction to theory of strength and conditioning

The talk will address the concept of the reactive adaptive body and how present training in dance can cause deconditioning to occur. The talk will then examine some of the fundamental theories in strength and conditioning and how they can be applied to dance to enhance performance and help reduce injury incidence



Prof Matthew Wyon
Course Leader MSc Dance Science

Matthew Wyon, PhD, is a Professor in Dance Science at the University of Wolverhampton, UK and a Visiting Professor at the Division of Surgery and Intervention Science, Institute of Orthopaedics and Musculoskeletal Science, University College London and ArtEZ, Institute of the Arts, The Netherlands. At Wolverhampton he is the course leader for the MSc in Dance Science and Director of Studies for a number of dance science and medicine doctoral candidates. He is a founding partner of the National Institute of Dance Medicine and Science, UK. Prof. Wyon is President of International Association for Dance Medicine & Science and a past chair of the Research Committee. He has worked with numerous dancers and companies within the UK and Europe as an applied physiologist and strength and conditioning coach. He has published over 80 peer-reviewed articles in dance medicine and science.

Stretching for Recovery and Regeneration

Stretching is an integral part of the physical preparation for sports and the performing arts.

In the clinical setting it has been used as a means of injury rehabilitation. The force generated during stretching, both internally and externally, has been credited for increasing the ROM about a joint. Interestingly, a controversy exists as to whether this increase in ROM is caused through an actual physical change in the musculoskeletal tissue or due to an increase in the individual's tolerance to the stress or strain during stretching.

Regardless, recent evidence has shown that the intensity of the stretch, the magnitude of the force generated during stretching, may be responsible for causing tissue damage and inflammation, or aiding in its recovery from training and performance.

Therefore, stretching intensity, in conjunction with duration, and frequency represents a paradigm shift with regard to the purpose of stretching. In these sessions we explore stretching more deeply with an emphasis on this paradigm shift in thought.

Besides the presentation of the theory participants will be shown proper stretching exercises to facilitate proper recovery and regeneration of the musculoskeletal system.

Nikos Apostolopoulos
BPHE (Sports Medicine)
Founder of
Stretch Therapy and
microStretching

Nikos Apostolopoulos is a recovery and regeneration specialist and the Founder and Developer of microStretching and Stretch Therapy. He is the Director of the microStretching Clinic, the first clinic in the world to pioneer the development of therapeutic and performance enhancement microStretching. This recovery regeneration technique, based on functional clinical anatomy, has been used to treat many professional, elite, and amateur athletes. It has also been applied to treat individuals suffering from various musculoskeletal disorders.

Nikos graduated from the Faculty of Physical and Health Education at the University of Toronto with an emphasis in Sports Medicine, and is currently pursuing his PhD at Wolverhampton University. Nikos works for the IAAF (International Association of Athletics Federations), is a member of the International Association for the Study of Pain (IASP), and the International Society of Exercise and Immunology (ISEI).

Apostolopoulos has lectured and worked internationally as a consultant and therapist to various sports organizations and federations.

Power and Plyometric Training

In this session Nick will share with you the simple strategies that he uses on a daily basis to enhance lower extremity explosive power.

To perform at the highest level and reduce injuries, an integrated performance conditioning programme is needed to develop functional strength and neuromuscular efficiency. A systematic and progressive plyometric training programme can be integrated into any training structure and Nick will discuss the fundamental training principles that are central to the development an effective plyometric training programme.

- Components of explosive exercise
- Force Velocity Curve
- Strength development
- Landing mechanics and postural alignment
- Exercise selection and progression
- Safety factors

The concepts that Nick will discuss can be incorporated into your existing programmes and will expand your ability to design and implement safe and effective plyometric training as part of an integrated programme.

Nick Grantham Performance Enhancement Specialist

Nick's career spans four Olympic cycles working with many of the countries most talented athletes to help them realise their potential.

Nick's first job was as head of sport science for British Gymnastics at Lilleshall Sports Injury and Human Performance Centre, the first private, non-university-based provider of sport science support for teams and athletes.

An accredited Sport Scientist with the British Association of Sport and Exercise Sciences, Nick then gained the National Strength and Conditioning Association certification and became one of the first coaches in the UK to hold both qualifications.

In 2001 Nick moved from gymnastics to England Netball, to work in one of the first full-time strength and conditioning roles in high-performance UK sport. Two years later, he became one of the first strength and conditioning coaches to work for the English Institute of Sport, leading its West Midlands team across three sites.

Leaving the English Institute of Sport in 2007, Nick established himself as an independent Performance Enhancement Specialist working with a diverse range of clients, including the Chinese National Football team, the RFU, Great Britain's Men's and Women's Basketball teams, Championship and Premiership football teams, professional golfers, Birmingham Royal Ballet and Nike.

Nick is a published author, international speaker and sought-after expert recognised as a specialist in athletic preparation with a wealth of knowledge. He has a great ability to transfer his detailed knowledge of training athletes and make the complex, seem obvious and simple.

Simple and Practical Solutions for Supplementary Training

The session will focus on evidence based ways of training in and outside the gym and with or without equipment.

Using the body as the main resistance training instrument either with the use of bodyweight exercises or with the use of a partner, progressing to light weight overloads and the use of the Swissball.

Nico Kolokythas
ASCC, Performance
Enhancement Coach

Nico comes from a martial arts background and has been a Kung Fu practitioner for 15 years. He has also coached in amateur and professional sport for over 10 years.

His focus is on developmental ages and he is currently supporting England Netball, British Judo and Mixed Martial Artists. Nico recently joined Elmhurst School for Dance as part of the school's efforts to enhance the young dancers' performance and intergrate with the current injury prevention plan led from the physiotherapy department.

Cardiovascular Training

This practical session will explore ways of enhancing cardiorespiratory endurance through progressive dance specific material.

It will demonstrate the relationship between participants' heart rate and training zones in order to recognise effective means of training aerobically.

The session will also include examples of high intensity circuit training for dance.

The session will conclude with a discussion on the role and relevance of this type of training for dancers and how it might be incorporated within a dance training programme.

Dr Emma Redding Head of Dance Science

Dr Emma Redding is Head of Dance Science at Trinity Laban Conservatoire of Music and Dance. Emma originally trained as a dancer and performed with the company Tranz Danz, Hungary and for Rosalind Newman, Hong Kong.

She teaches contemporary dance technique at Trinity Laban and lectures in physiology alongside her management and research work.

She has been Principal Investigator for several large-scale research projects including a 3-year government funded study into dance talent identification and development as well as studies into the physical and mental demands of music playing and the role of mental imagery within creative practice.

She has published her work in academic journals and is a member of the Board of Directors and a Past-President of the International Association for Dance Medicine and Science (IADMS).

Sonia Rafferty MSc, FHEA Senior Lecturer at TrinityLaban Conservatoire of Music and Dance

Sonia is Senior Lecturer at TrinityLaban Conservatoire of Music and Dance, teaching dance technique and performance, as well as physical awareness, wellbeing and safe practice. She is also a freelance dance artist and continues to perform, choreograph and direct. A well-known teacher on the professional circuit, she regularly provides company classes, professional development and mentoring for a wide range of dance companies.

Sonia's practical work is substantially influenced by dance science, with her main interest being dance-specific fitness and performance enhancement. For the past few years, Sonia has been very involved in the development of safe practice for all levels of dance participation. She is a consultant in this field and is Senior Associate with Safe in Dance International (SiDI). She is co-author of "Safe dance practice: An applied dance science perspective", recently published by Human Kinetics.

Strength and Conditioning in Injury and Rehabilitation

Dancers get injured when the load placed through their body exceeds their capacity to tolerate it.

This workshop aims to provide practitioners with practical solutions to:

- Determine whether dancers can tolerate the load going through key joints
- Increase the capacity of the musculoskeletal system to tolerate the load
- Improve their body control to ensure that excessive loads do not get placed through structures which cannot tolerate them
- Put together a rehabilitation plan based on the need of the dancer and what they have to return to

Dr. Benjamin Rosenblatt
Senior Strength and
Conditioning Coach
GB Hockey and English
Institute of Sport

Dr. Ben Rosenblatt is the Head of Physical Preparation for the GB Women's Hockey team.

He is responsible for an environment for athletes to become training and tournament durable and work with the coaches to have a game impact at the Rio Olympics in 2016.

Previously Ben led the Sports Science and Fitness at Birmingham City FC before moving on to the BOA / EIS Intensive Rehabilitation Unit (IRU). The role of the IRU is to accelerate the rehabilitation of injured Olympic athletes.

Ben was responsible for providing S&C support and coaching to injured Olympic athletes and developing innovative solutions to rehabilitation problems within his inter-disciplinary team. He held this role through the cycle to the 2012 London Olympic Games.

Ben has completed his PhD in biomechanics and S&C (Cardiff School of Sport) and coaches several members of the British Olympic Judo team.

His research and applied interests lie in the biomechanical basis effective exercise selection and effective training regimes to deliver the needs of athletes and coaches.

Pilates

Pilates has long been a form of training closely linked to the dance world however when considered with regard to strength and conditioning of dancers, may not necessarily be seen as truly belonging within this category.

APPI are proud members of the English National Ballet Dance Medicine team and bring along to the conference an up to date understanding of where Pilates lies on the spectrum of Strength and Conditioning and how valuable its role is when looking at dance technique, skill, rehabilitation and preparation for later stages of strength training.

The session will be largely practical, taking you through our core programme completed by the dancers at the ENB as well as challenging your skills with a progressive and dynamic programme for the dancers hip.

Ming George

Physiotherapist, Pilates practitioner
and Presenter for APPI

Ming graduated in 2001 with honours in a Bachelor of Physiotherapy from the University of Melbourne, and has since dedicated herself to Pilates for rehabilitation and training.

Having trained with APPI and Polestar Pilates, she has worked in numerous clinical settings using the method, including the English National Ballet.

With many years' experience training hundreds of clients, Ming enjoys coaching people to progress through movement re-training and core strengthening.

Natalie Rogalski MCSP

Physiotherapist and Certified Pilates
Instructor

Natalie is an Australian trained Physiotherapist, Pilates rehabilitation practitioner and dancer.

Her dancing background includes over 20 years of training in classical ballet, tap, jazz and contemporary dance. Natalie now works at APPI Hampstead in musculoskeletal physiotherapy and pilates based rehabilitation as well as at the English National Ballet as a member of the Dance Medicine Team.

Her passion for dance and dance physiotherapy extends across the spectrum of abilities from beginners through to professionals, enjoying the opportunity and challenges that come with working with such an exciting, unique and diverse population.

Integrating recovery into training

Dr. Benjamin Rosenblatt
Senior Strength and Conditioning Coach
GB Hockey and English Institute of Sport

Professional dancers experience extreme volumes of training/rehearsal, up to double the quantity of some Olympic athletes. Due to an imbalance between training stress and appropriate recovery, unpublished evidence suggests in a large dancing school, 33% of dancers were ill or injured at any one time.

This presentation will discuss the options available to professionals working with dancers to optimise the recovery process. There will be a focus on the 3 main basics of optimal recovery: sleep, nutrition and rest. Evidence and anecdote will be provided from a range of Olympic sports. There will also be a discussion surrounding which recovery strategies could be used in addition to the basics, i.e cold water immersion, compression garments, active recovery, foam roller and muscle stimulation.



Sum up and Closing Remarks

Dr Nick Allen

Clinical Director, Birmingham Royal Ballet

Dr Nick Allen is the Clinical Director of the Birmingham Royal Ballet as well as the external consultant to the LTA's High Performance Centre in Edgbaston. Alongside this he has worked as an external Consultant to British Athletics, Great Britain Gymnastics, and England and Great Britain Hockey.

Prior to joining BRB he was Head of Medical Services for a Premiership rugby club. He is an Honorary Lecturer for Queen Mary's University London and lectures on the M.Sc. in Sports Medicine QMUL and Nottingham University. He is on the Sports Advisory Group for ARUK's Centre of Excellence in Sports, Exercise and Osteoarthritis. He completed his PhD in epidemiology.

His other research interests lie in optimising performance through screening, vitamin D, the management of tendinopathies, and cardiac risk.