



Personalised Sports Nutrition



Module Plan

Activity Block 1: Introduction to Functional Sports Nutrition

Part 1: Elizabeth Scott-Moncrieff

- Welcome & Introduction.
- What is different about applying functional nutrition in sport?
- Overview of module

Part 2: Ian Craig

- Functional Sports Nutrition – an overview of the integrative effect on human performance.
- Models of Performance, from a functional perspective.
- Models of fatigue – linear and integrative.
- Limitations of research and complexity research in integrative health.
- Genetics and individuality.

Part 3: Caroline Hansen

- Introduction to a DNA personalised approach for sporting performance.

Activity Block 2: Physiology and Biochemistry of Exercise

Part 1: Ian Craig

Exercise Physiology

- Exercise types - aerobic and anaerobic energy systems
- Muscle physiology, including muscle fibre types and sport specialisation.
- VO₂ max, economy of locomotion, lactate threshold, vs-VO₂max: what are they?
- Adaptations to training.

Part 2: Exercise Biochemistry

- Biochemistry of ATP and mitochondria
- Fuel metabolism during exercise - aerobic, anaerobic and alactic
- Bioenergetics, including Krebs cycle and oxidative phosphorylation
- Macronutrients as fuel and micronutrient requirements for enzymatic steps



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Activity Block 3: Strategies for Performance

Part 1: Alex Manos: Nutritional Strategies for Performance Enhancement

Macronutrient requirements: timing optimal dose and intake duration.

- Nutrient needs and timing for the endurance athlete.
- Nutrient needs and timing for the strength athlete
- Considerations for the ageing athlete.

Micronutrient requirements: considerations for the athlete

- Vitamins and minerals, phytonutrients, antioxidants.
- Hydration: Timing, optimal dose, and intake duration
- Electrolyte supplementation: timing, optimal dose and intake, duration.
- Applications in sport of ergogenic: aids.

Part 2: Elizabeth Scott-Moncrieff: Herbs/botanicals – applications in sport

- As ergogenic aids
- As adaptogens, digestive support, immune modulation, inflammation management.
- Cautions

Part 3: David Beales – Optimising performance with mindful coaching and visualisation

- Introduction to mind-body interactions leading to practices that enhance performance.
- Stress profiling: how to do this for yourself and others.
- Ultradian rhythms and maintaining an anabolic metabolism
- The role of sleep and how conscious breathing and habit modification can reduce physiological hyper-arousal and restful sleep.
- The role of diaphragmatic breathing.
- The value and place of visualisation and self-hypnosis. Demonstration.
- The value of positive affirmations and the use of our five senses to enhance performance.
- What is mindful breathing?



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Activity Block 4: Overtraining. Consideration & Management

Part 1: Ian Craig – Overtraining Syndrome defined from the perspective of sports medicine

- Attempts by sports medicine to measure and diagnose OTS
- A review of the near-endocrine axes and how they are affected by OTS
- Is adrenal fatigue a fair model for OTS? Adrenal fatigue - chronic fatigue continuum.
- Consideration of the anabolic/catabolic balance during OTS
- Clinical assessment of overtraining and adrenal fatigue
- Discussion of nutritional strategies, lifestyle intervention and nutraceutical support.

Part 2: David Beales – Breath and Buffers

- The breath's pivotal role in maintaining physical health and performance
- The relationship between stress and the breath.
- Buffers and the effect of over-breathing.
- Respiratory alkalosis and the Henderson-Hasselbalch equation
- The Bohr effect and its central role in releasing oxygen to tissues
- The value of capnography to help restore optimum breathing patterns.
- Evidence based self-care in asthma, high blood pressure, IBS and chronic pain.

Activity Block 5: Clinical Psychoneuroimmunology in sport

Tom Fox & Leo Pruinboom - cPNI Session 1

- Humans are made for exercising: evolution and sports. Humans and their biorhythm.
- Physiological differences between strength, endurance and team sport
- The important 'to dos' before, during and after physical exercise.
- Nutrition and physical exercise. Supplements in sport: necessary or redundant?

Activity Block 6: Clinical PNI in Sport and Nutrition - Part 2

Tom Fox & Leo Pruinboom - cPNI Session 2

- Stress and physical exercise
- Connective tissue - 'efficient tuning'. The successful way to cure injuries
- Lactic acid: friend or foe? Acid-base balance.
- Small size games: get ready
- The significance of neurotransmitters in physical exercise



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Activity Block 7: Injury and Illness: Keeping the athlete healthy

Part 1: Dr Jo Larkin – Common Injuries in Practice

- Description of common injuries and incidence in individual sports
- Head injuries and concussion

Part 2: Alex Manos – Addressing Injury and illness

- Allostatic load, illness and recovery capacity from exercise and Functional Testing
- Functional Testing
- Effective recovery strategies: nutrition, monitoring, lifestyle, supplements.
- Oxidative stress and its affect on athletic performance
- Nutritional strategies to support injury and illness

Part 3: Caroline Hansen – Nutrigenomic perspectives on injury and illness in sport

- Personalisation of training programmes,
- Improving recovery time,
- Supporting immune health and illness
- Reducing injury risk

Activity Block 8: Clinical Applications and Practice Models Session 1

Part 1: Anna Marsh – Case work

- Overview
- Practice Model
- Case Study Material
- Nutrition Plans

Part 2: Caroline Hansen – Nutrigenomics in practice

Practical Application of DNA-Personalised Nutrition for Health & Physical Performance, Creating genetically-tailored nutrition, supplement, and recipe programmes appropriate to different use cases.



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Activity Block 8: Clinical Applications and Practice Models Session 1 (cont.)

Part 3: Henrietta Paxton – Personal stories in elite sport

Managing injury and adversity: elite pole vault
Physiology of injury
Management: surgical, supplemental.
Functional Integration, analysis and management
Outcomes

Activity Block 9: Clinical Applications and Practice Models Session 2

Part 1: Pete Williams

- Functional Medicine in Practice –
 - An depth look at functional practice from the perspective of a highly experienced clinician, including case studies.

Part 2: Discussion Panel – Potential conflicts between health, longevity and sporting achievement, eg:

- How do short term sporting goals affect long term success in the chosen sport?
- Extreme endurance sport: is it healthy? Body building - can success be achieved safely?
- Does sport have a preventative impact on or promote premature aging?
- Impacts on emotional wellbeing and mental health - anorexia, crime

Part 3: Discussion Panel – Managing particular needs and their effects on health and performance

- Special diets - eg vegetarian, vegan, ketogenic, 'paleo', dairy/gluten free.
- Beliefs and their impacts on sporting achievement (eg attachments to dietary habit, religious and cultural impacts - fasting etc).
- Barriers to achievement: chronic health conditions, physical status, finances

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Lecturers



Elizabeth Scott-Moncrieff MSc, BSc, NLP Practitioner: Module Leader

Elizabeth is a BANT registered functional nutrition practitioner and lifestyle coach with an MSc in Personalised Nutrition from CNELM and is herself a graduate of this module. Using the principles of functional medicine, she works with her clients to increase emphasis on optimising health to enhance performance, minimise injury and extend years of activity within sport. She has a particular focus on digestive health and chronic conditions, especially autoimmunity, as well as an interest in epigenetics and addressing the impacts of lifestyle and environmental factors on gene expression.

Ian Craig MSc, BSc, DipCNE ,INLPTA, SAANT

Ian is a highly qualified exercise physiologist, nutritional therapist, NLP practitioner and lifestyle coach, who was the original developer and facilitator of this module. Ian specialises in functional nutrition, considering both the health and performance of individuals in an integrative manner. He is Editor of Functional Sports Nutrition (www.fsnmag.com), and has written for several South African publications. He developed the Functional Sports Nutrition Academy, and is the conference leader for the annual Sports Nutrition Live event in London. Now based in South Africa, he runs a private nutrition practice in Johannesburg and is consultant to genetics company DNAlysis Biotechnology (Johannesburg). His first book, 'Wholesome Nutrition', was recently published in South Africa.

Alex Manos MSc, BSc, NASM, AFMCP, NLP Practitioner

Alex is a Performance Coach and passionate about human potential. Due to his breadth of training and extensive specialist qualifications in performance and corrective exercise, he supports a range of clients from professional athletes on the European Tour to 'weekend warriors' or those suffering with chronic conditions. He is Managing Director of 'Conquering Fatigue Successfully', which specialises in supporting those with CFS. Alex delivers the BTN Advanced Academy, a 10 month online course introducing nutritionists and personal trainers to Functional Medicine and has lectured widely, including at the Institute of Optimum Nutrition, CNELM and Premier Global, where he delivered the NASM Personal Trainer module.

Caroline Hansen MA, BA, Dip NT (CNM)

Caroline is a nutritional therapist and genetic expert, specialising in weight management, wellness and fitness. Her expertise lies in the areas of nutrigenomics, epigenetics and genetic fitness, which she applies in a clinical context. She is the founder and director of the Clinical Nutrigenomics Working Group, a not for profit organisation focused on advancing knowledge and the practical application of nutritional genomics. She holds certifications from several DNA testing and interpretations companies, including DNAFit, DNALife and Dr Ben Lynch's 'Seeking Health' Methylation and Clinical Nutrigenomics.

Dr David Beales FRCP, MRCP, Dip Psych

David Beales is a physician and previous full time GP within the NHS. He specialises in mind-body medicine as clinician, educator and researcher. His focus is on promoting the benefits of behavioural physiology in healthcare. He works to restore his client's self-regulation using mindfulness, capnography and heart rate variability. He lectures extensively and has taught his approach to medical students at the Universities of British and Westminster, as well as teaching at the British School of Osteopathy and is medical advisor to CNELM. He has published 'Emotional Healing for Dummies' (2009) for the publisher Wiley, with co-author Helen Whitten.



Dr Leo Pruinboom, Master in PNI

Leo Pruinboom is Scientific Director and Head of Education at the Natura Foundation,. He is one of today's most prominent figures in clinical psychoneuroimmunology (cPNI). He has played a leading role in establishing cPNI on the world stage as a solid scientific discipline with a cutting edge approach to healthcare and lectures widely. Leo acts as the president of both the European and the International Association of cPNI and his ongoing research has been published in several scientific publications. He has a background in physiotherapy and physiology and has led many projects advising professional athletes and clubs.

Tom Fox MSc

Akademie kPNI, Bonn, Germany

Tom Fox is a naturopath, nutrition practitioner and sports scientist. His work focuses on treating patients with immunological or stress related conditions, as well as giving lectures in clinical psychoneuroimmunology (PNI), sports science and nutrition all over Europe. He is a member of the scientific board of the European Society for Clinical PNI and organises postgraduate courses on the subject.

Dr Joanne Larkin: Consultant in Sport & Exercise Medicine.

Jo has extensive experience in treating elite athletes of many disciplines and working in high performance environments, as well as managing musculoskeletal conditions of non athletes and physically active people in pain. Jo works with athletes of all abilities and has been fortunate enough to be involved in two Olympics and Paralympics in London 2012. More recently she travelled to Rio as the team physician for the men's and women's GB Rugby 7s squad. For the past 8 years, she has worked for England Rugby and has developed an interest in women's health and performance. Her special interests are sports injuries of the upper and lower limb, handling of concussion and return to play, women's health and performance, and the management of tendinopathies.

Anna Marsh MSc, BSc, Dip cPNI, NLP Practitioner

Anna is a Functional Medicine Practitioner (currently undergoing certification with the Institute for Functional Medicine), who holds a Masters degree in Personalised Nutrition from CNELM. She specialises in 'women only' weight loss programmes, using nutrition, exercise and coaching strategies. Anna is a graduate of the Personalised Sport module herself and led the course for two years.

Henrietta Paxton MSc

Henrietta holds a Masters degree in Personalised Nutrition from CNELM and has enjoyed a 15 year career as an international athlete in pole vault, with considerable experience of the impact of adversity and injury on her career having, amongst other things, missed out on the 2012 Olympic Games due to a knee injury. She is, therefore, well qualified to advise other athletes and is now working as a performance nutritionist with West London Track & Field.

Pete Williams

Pete is a medical scientist with degrees from both Liverpool and Sheffield Universities, and a graduate of the prestigious Institute for Functional Medicine. He is a strength and conditioning specialist and lifetime award winner with the Register for Exercise Professionals. He champions a functional medicine approach to helping individuals become and remain healthy. He has a particular interest in reversing the long term impacts of stress on establishing and maintaining optimal health in athletes and non athletes alike.